# SECTION LAN LAN SYSTEM c

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### CONTENTS

#### **CAN FUNDAMENTAL**

| PRECAUTION14   |
|--|
| PRECAUTIONS  |
| SYSTEM DESCRIPTION15   |
| SYSTEM15   |
| CAN COMMUNICATION SYSTEM   |
| DIAG ON CAN  |
| <b>TROUBLE DIAGNOSIS</b> 18Condition of Error Detection18Symptom When Error Occurs in CAN Communi-<br>cation System18CAN Diagnosis with CONSULT-III21Self-Diagnosis22CAN Diagnostic Support Monitor22How to Use CAN Communication Signal Chart24 |
| BASIC INSPECTION25   |
| DIAGNOSIS AND REPAIR WORKFLOW25<br>Trouble Diagnosis Flow Chart25<br>Trouble Diagnosis Procedure25<br>CAN  |
| HOW TO USE THIS MANUAL   |
| HOW TO USE THIS SECTION  |

| Caution   | F   |
|---|-----|
| PRECAUTION31  | G   |
| PRECAUTIONS   | Н   |
| Precautions for Harness Repair  |     |
| SYSTEM DESCRIPTION33  |     |
| COMPONENT PARTS   | J   |
| SYSTEM34  | K   |
| CAN COMMUNICATION SYSTEM  | L   |
| WIRING DIAGRAM40  | LAN |
| CAN SYSTEM (WITH ICC)40<br>Wiring Diagram40                                 | N   |
| CAN SYSTEM (WITHOUT ICC)56<br>Wiring Diagram                                | 0   |
| BASIC INSPECTION68  | 0   |
| DIAGNOSIS AND REPAIR WORKFLOW68<br>Interview Sheet                          | Ρ   |
| DTC/CIRCUIT DIAGNOSIS69   |     |
| MALFUNCTION AREA CHART69<br>System Diagram69<br>CAN Communication Circuit69 |     |

#### LAN-1

| ITS Communication Circuit                   | 70  |
|---|-----|
| MAIN LINE BETWEEN TPMS AND HVAC             |     |
| CIRCUIT<br>Diagnosis Procedure              |     |
|   | 12  |
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT | 73  |
| Diagnosis Procedure                         |     |
| MAIN LINE BETWEEN A-BAG AND AV CIR-         |     |
| CUIT  |     |
| Diagnosis Procedure                         | 74  |
| MAIN LINE BETWEEN AV AND M&A CIR-           | 75  |
| CUIT<br>Diagnosis Procedure                 |     |
| MAIN LINE BETWEEN M&A AND DLC CIR-          |     |
|   | 76  |
| Diagnosis Procedure                         | 76  |
| MAIN LINE BETWEEN DLC AND BCM CIR-          |     |
| CUIT<br>Diagnosis Procedure                 |     |
| -   | , , |
| MAIN LINE BETWEEN BCM AND ABS CIR-<br>CUIT  | 78  |
| Diagnosis Procedure                         |     |
| MAIN LINE BETWEEN BCM AND 4WD CIR-          |     |
|   |     |
| Diagnosis Procedure                         | 80  |
| MAIN LINE BETWEEN BCM AND ADP CIR-<br>CUIT  | 01  |
| Diagnosis Procedure                         |     |
| MAIN LINE BETWEEN BCM AND RAS CIR-          |     |
| CUIT  |     |
| Diagnosis Procedure                         | 82  |
| MAIN LINE BETWEEN 4WD AND ABS CIR-<br>CUIT  | 02  |
| Diagnosis Procedure                         |     |
| MAIN LINE BETWEEN ADP AND ABS CIR-          |     |
| CUIT  |     |
| Diagnosis Procedure                         | 85  |
| MAIN LINE BETWEEN RAS AND ABS CIR-          |     |
| CUIT<br>Diagnosis Procedure                 |     |
| MAIN LINE BETWEEN RDR-L AND RDR-R           |     |
| CIRCUIT                                     |     |
| Diagnosis Procedure                         | 89  |
| MAIN LINE BETWEEN RDR-R AND APA CIR-        |     |
| CUIT<br>Diagnosis Procedure                 |     |
|   |     |

| MAIN LINE BETWEEN APA AND LANE CIR-                                     |
|---|
| CUIT  |
| ECM BRANCH LINE CIRCUIT   |
| TPMS BRANCH LINE CIRCUIT  |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 1)              |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 2)              |
| HVAC BRANCH LINE CIRCUIT  |
| TCM BRANCH LINE CIRCUIT       100         Diagnosis Procedure       100 |
| A-BAG BRANCH LINE CIRCUIT   |
| AV BRANCH LINE CIRCUIT102<br>Diagnosis Procedure                        |
| M&A BRANCH LINE CIRCUIT104<br>Diagnosis Procedure                       |
| DLC BRANCH LINE CIRCUIT   |
| BCM BRANCH LINE CIRCUIT106<br>Diagnosis Procedure                       |
| STRG BRANCH LINE CIRCUIT  |
| 4WD BRANCH LINE CIRCUIT108<br>Diagnosis Procedure                       |
| RAS BRANCH LINE CIRCUIT109<br>Diagnosis Procedure                       |
| ABS BRANCH LINE CIRCUIT110<br>Diagnosis Procedure                       |
| AFS BRANCH LINE CIRCUIT111<br>Diagnosis Procedure                       |
| IPDM-E BRANCH LINE CIRCUIT112<br>Diagnosis Procedure                    |
| ADP BRANCH LINE CIRCUIT113<br>Diagnosis Procedure                       |
| ICC BRANCH LINE CIRCUIT114<br>Diagnosis Procedure                       |

| PSB BRANCH LINE CIRCUIT   |  |
|---|--|
| RDR-L BRANCH LINE CIRCUIT         11           Diagnosis Procedure         1  |  |
| RDR-R BRANCH LINE CIRCUIT1<br>Diagnosis Procedure   |  |
| APA BRANCH LINE CIRCUIT1<br>Diagnosis Procedure   |  |
| LANE BRANCH LINE CIRCUIT  | -  |
| LASER BRANCH LINE CIRCUIT   |  |
| CAN COMMUNICATION CIRCUIT   |  |
| CAN COMMUNICATION CIRCUIT 112<br>Diagnosis Procedure  | -  |
| CAN COMMUNICATION CIRCUIT 212<br>Diagnosis Procedure  | -  |
| ITS COMMUNICATION CIRCUIT12<br>Diagnosis Procedure12<br>CAN GATEWAY   |  |
| PRECAUTION1   | 29   |
| PRECAUTIONS1  | ~~   |
| Precaution for Supplemental Restraint System<br>(SRS) "AIR BAG" and "SEAT BELT PRE-TEN-<br>SIONER"12  |  |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-   | 29   |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-<br>SIONER"  | 29<br>30<br>30   |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-<br>SIONER"  | 29<br>30<br>30<br>30<br>30   |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-<br>SIONER"  | 29<br>30<br>30<br>30<br>31<br>31<br>31   |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-<br>SIONER"  | 29<br>30<br>30<br>30<br>31<br>31<br>32<br>32   |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-<br>SIONER"       12         SYSTEM DESCRIPTION       13         COMPONENT PARTS       13         Component Parts Location       13         SYSTEM       14         SYSTEM       15         Diagnosis System (CAN GATEWAY)       14         CONSULT-III Function       15  | 29<br>30<br>30<br>30<br>31<br>31<br>32<br>32<br>33<br>33<br>33<br>33<br>33                               |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-<br>SIONER"       12         SYSTEM DESCRIPTION       13         COMPONENT PARTS       13         Component Parts Location       14         SYSTEM       15         System Description       14         DIAGNOSIS SYSTEM (CAN GATEWAY)       14         CONSULT-III Function       14         ECU DIAGNOSIS INFORMATION       14         Reference Value       14         DTC Inspection Priority Chart       14   | 29<br>30<br>30<br>31<br>31<br>32<br>33<br>33<br>33<br>33<br>33<br>33<br>33                               |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-<br>SIONER"       12         SYSTEM DESCRIPTION       13         COMPONENT PARTS       13         Component Parts Location       14         SYSTEM       15         System Description       14         DIAGNOSIS SYSTEM (CAN GATEWAY)       14         CONSULT-III Function       15         ECU DIAGNOSIS INFORMATION       14         CAN GATEWAY       14         Reference Value       15         DTC Inspection Priority Chart       15         DTC Index       15 | 29<br>30<br>30<br>31<br>31<br>32<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33 |

| 115                | ADDITIONAL SERVICE WHEN REPLACING   |     |
|--------------------|-------------------------------------|-----|
| 115                | CAN GATEWAY 137                     | А   |
| 116                | Description137                      |     |
| 116                | Work Procedure137                   |     |
|                    | CONFIGURATION (CAN GATEWAY)138      | В   |
| 117                | Description                         |     |
| 117                | Work Procedure                      |     |
| 118                |                                     | С   |
| 118                | DTC/CIRCUIT DIAGNOSIS140            |     |
| 110                | U1000 CAN COMM CIRCUIT              |     |
| 119                | Description                         | D   |
| 119                | DTC Logic                           |     |
| 120                | Diagnosis Procedure                 |     |
| 120                |                                     | E   |
| 120                | U1010 CONTROL UNIT (CAN) 141        |     |
| 121                | Description                         |     |
| 121                | DTC Logic                           | F   |
| 123                | Diagnosis Procedure141              |     |
| 123                | B2600 CONFIG ERROR142               |     |
| 123                | Description142                      | G   |
| 125                | DTC Logic142                        |     |
| 125                | Diagnosis Procedure142              |     |
| 127                | POWER SUPPLY AND GROUND CIRCUIT 143 | Н   |
| 127                | Diagnosis Procedure                 |     |
| 127                | -                                   |     |
|                    | REMOVAL AND INSTALLATION144         |     |
| 129                | CAN GATEWAY144                      |     |
|                    | Removal and Installation            |     |
| 129                | CAN SYSTEM (TYPE 1)                 | J   |
|                    |                                     |     |
| 129                | DTC/CIRCUIT DIAGNOSIS145            |     |
|                    |                                     | K   |
| 130                | MAIN LINE BETWEEN TPMS AND HVAC     |     |
| 130                | CIRCUIT                             |     |
| 130                | Diagnosis Procedure145              | L   |
| 130                | MAIN LINE BETWEEN HVAC AND A-BAG    |     |
| 131                | CIRCUIT                             |     |
| 131                | Diagnosis Procedure146              | LAN |
| 132                | MAIN LINE BETWEEN A-BAG AND AV CIR- |     |
| 132                | CUIT                                |     |
|                    | Diagnosis Procedure                 | Ν   |
| 133                |                                     |     |
|                    | MAIN LINE BETWEEN AV AND M&A CIR-   |     |
| <b> 133</b><br>133 | CUIT148                             | 0   |
| 133                | Diagnosis Procedure148              |     |
| 133                | MAIN LINE BETWEEN M&A AND DLC CIR-  | _   |
|                    | CUIT                                | Ρ   |
| 135                | Diagnosis Procedure                 |     |
| 405                | <b>v</b>                            |     |
| 135                | MAIN LINE BETWEEN DLC AND BCM CIR-  |     |
| 135                | CUIT                                |     |
|                    | Diagnosis Procedure                 |     |

| MAIN LINE BETWEEN BCM AND ADP CIR-   |            |
|--|------------|
| CUIT   |            |
| MAIN LINE BETWEEN ADP AND ABS CIR-   |            |
| CUIT   |            |
| ECM BRANCH LINE CIRCUIT 15<br>Diagnosis Procedure                            |            |
| TPMS BRANCH LINE CIRCUIT   |            |
| Diagnosis Procedure  |            |
| HVAC BRANCH LINE CIRCUIT         15           Diagnosis Procedure         15 |            |
| TCM BRANCH LINE CIRCUIT         15           Diagnosis Procedure         15  |            |
| A-BAG BRANCH LINE CIRCUIT 15<br>Diagnosis Procedure                          |            |
| AV BRANCH LINE CIRCUIT 16<br>Diagnosis Procedure                             |            |
| M&A BRANCH LINE CIRCUIT 16<br>Diagnosis Procedure                            |            |
| DLC BRANCH LINE CIRCUIT 16<br>Diagnosis Procedure                            |            |
| BCM BRANCH LINE CIRCUIT 16<br>Diagnosis Procedure                            |            |
| STRG BRANCH LINE CIRCUIT 16<br>Diagnosis Procedure                           |            |
| ABS BRANCH LINE CIRCUIT 16<br>Diagnosis Procedure                            |            |
| IPDM-E BRANCH LINE CIRCUIT   |            |
| ADP BRANCH LINE CIRCUIT 16<br>Diagnosis Procedure                            |            |
| CAN COMMUNICATION CIRCUIT 16   | 9          |
| Diagnosis Procedure16<br>CAN SYSTEM (TYPE 2)                                 | 9          |
| DTC/CIRCUIT DIAGNOSIS17  | '1         |
| MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT                                   | '1         |
| Diagnosis Procedure17  |            |
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT 17                               | <u>'</u> 2 |
| Diagnosis Procedure17  | 2          |
| MAIN LINE BETWEEN A-BAG AND AV CIR-<br>CUIT17                                | 3          |

| Diagnosis Procedure 173  |
|--|
| MAIN LINE BETWEEN AV AND M&A CIR-  |
| CUIT174<br>Diagnosis Procedure174  |
| MAIN LINE BETWEEN M&A AND DLC CIR-                                       |
| CUIT175<br>Diagnosis Procedure   |
| MAIN LINE BETWEEN DLC AND BCM CIR-                                       |
| CUIT176<br>Diagnosis Procedure   |
| MAIN LINE BETWEEN BCM AND RAS CIR-                                       |
| CUIT177<br>Diagnosis Procedure   |
| MAIN LINE BETWEEN RAS AND ABS CIR-                                       |
| CUIT178<br>Diagnosis Procedure   |
| ECM BRANCH LINE CIRCUIT180<br>Diagnosis Procedure                        |
| TPMS BRANCH LINE CIRCUIT       182         Diagnosis Procedure       182 |
| HVAC BRANCH LINE CIRCUIT       183         Diagnosis Procedure       183 |
| TCM BRANCH LINE CIRCUIT       184         Diagnosis Procedure       184  |
| A-BAG BRANCH LINE CIRCUIT  |
| AV BRANCH LINE CIRCUIT186<br>Diagnosis Procedure                         |
| M&A BRANCH LINE CIRCUIT188<br>Diagnosis Procedure                        |
| DLC BRANCH LINE CIRCUIT189<br>Diagnosis Procedure                        |
| BCM BRANCH LINE CIRCUIT190<br>Diagnosis Procedure                        |
| STRG BRANCH LINE CIRCUIT191<br>Diagnosis Procedure                       |
| RAS BRANCH LINE CIRCUIT192<br>Diagnosis Procedure                        |
| ABS BRANCH LINE CIRCUIT  |
| IPDM-E BRANCH LINE CIRCUIT   |
| ADP BRANCH LINE CIRCUIT195<br>Diagnosis Procedure                        |
|  |

| CAN COMMUNICATION CIRCUIT196<br>Diagnosis Procedure196  |
|---|
| CAN SYSTEM (TYPE 3)   |
| DTC/CIRCUIT DIAGNOSIS 198   |
| MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT  |
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT   |
| MAIN LINE BETWEEN A-BAG AND AV CIR-<br>CUIT   |
| MAIN LINE BETWEEN AV AND M&A CIR-         CUIT       201         Diagnosis Procedure       201  |
| MAIN LINE BETWEEN M&A AND DLC CIR-         CUIT       202         Diagnosis Procedure       202 |
| MAIN LINE BETWEEN DLC AND BCM CIR-         CUIT         Diagnosis Procedure         203         |
| MAIN LINE BETWEEN BCM AND ABS CIR-  |
| CUIT  |
| MAIN LINE BETWEEN RDR-L AND RDR-R<br>CIRCUIT  |
| MAIN LINE BETWEEN RDR-R AND APA CIR-<br>CUIT  |
| MAIN LINE BETWEEN APA AND LANE CIR-<br>CUIT   |
| ECM BRANCH LINE CIRCUIT210<br>Diagnosis Procedure   |
| <b>TPMS BRANCH LINE CIRCUIT</b> 212         Diagnosis Procedure       212                       |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 1)                                      |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 2)                                      |
| HVAC BRANCH LINE CIRCUIT  |

| Diagnosis Procedure216  |     |
|---|-----|
| TCM BRANCH LINE CIRCUIT       217         Diagnosis Procedure       217         | A   |
| A-BAG BRANCH LINE CIRCUIT   | В   |
| AV BRANCH LINE CIRCUIT  | С   |
| M&A BRANCH LINE CIRCUIT   | D   |
| DLC BRANCH LINE CIRCUIT   | E   |
| BCM BRANCH LINE CIRCUIT   |     |
| STRG BRANCH LINE CIRCUIT  | F   |
| ABS BRANCH LINE CIRCUIT   | G   |
| AFS BRANCH LINE CIRCUIT   | Η   |
| IPDM-E BRANCH LINE CIRCUIT  |     |
| ADP BRANCH LINE CIRCUIT   | J   |
| ICC BRANCH LINE CIRCUIT   |     |
| PSB BRANCH LINE CIRCUIT   | K   |
| RDR-L BRANCH LINE CIRCUIT         231           Diagnosis Procedure         231 | L   |
| RDR-R BRANCH LINE CIRCUIT   | LAN |
| APA BRANCH LINE CIRCUIT   | Ν   |
| LANE BRANCH LINE CIRCUIT  | 0   |
| LASER BRANCH LINE CIRCUIT   | 0   |
| CAN COMMUNICATION CIRCUIT 1   | Ρ   |
| CAN COMMUNICATION CIRCUIT 2 238<br>Diagnosis Procedure                          |     |
| ITS COMMUNICATION CIRCUIT   |     |

| CAN SYSTEM (TYPE 4)   |
|---|
| DTC/CIRCUIT DIAGNOSIS242  |
| MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT  |
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT   |
| MAIN LINE BETWEEN A-BAG AND AV CIR-<br>CUIT   |
| MAIN LINE BETWEEN AV AND M&A CIR-<br>CUIT   |
| MAIN LINE BETWEEN M&A AND DLC CIR-<br>CUIT  |
| MAIN LINE BETWEEN DLC AND BCM CIR-<br>CUIT  |
| MAIN LINE BETWEEN BCM AND RAS CIR-         CUIT       248         Diagnosis Procedure       248   |
| MAIN LINE BETWEEN RAS AND ABS CIR-         CUIT       249         Diagnosis Procedure       249   |
| MAIN LINE BETWEEN RDR-L AND RDR-R         CIRCUIT       251         Diagnosis Procedure       251 |
| MAIN LINE BETWEEN RDR-R AND APA CIR-<br>CUIT  |
| MAIN LINE BETWEEN APA AND LANE CIR-<br>CUIT   |
| ECM BRANCH LINE CIRCUIT   |
| TPMS BRANCH LINE CIRCUIT         257           Diagnosis Procedure         257                    |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 1)  |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 2)  |

| HVAC BRANCH LINE CIRCUIT    |
|-----------------------------|
| TCM BRANCH LINE CIRCUIT     |
| A-BAG BRANCH LINE CIRCUIT   |
| AV BRANCH LINE CIRCUIT      |
| M&A BRANCH LINE CIRCUIT     |
| DLC BRANCH LINE CIRCUIT     |
| BCM BRANCH LINE CIRCUIT     |
| STRG BRANCH LINE CIRCUIT    |
| RAS BRANCH LINE CIRCUIT     |
| ABS BRANCH LINE CIRCUIT     |
| AFS BRANCH LINE CIRCUIT     |
| IPDM-E BRANCH LINE CIRCUIT  |
| ADP BRANCH LINE CIRCUIT     |
| ICC BRANCH LINE CIRCUIT     |
| PSB BRANCH LINE CIRCUIT     |
| RDR-L BRANCH LINE CIRCUIT   |
| RDR-R BRANCH LINE CIRCUIT   |
| APA BRANCH LINE CIRCUIT     |
| LANE BRANCH LINE CIRCUIT    |
| LASER BRANCH LINE CIRCUIT   |
| CAN COMMUNICATION CIRCUIT 1 |
| CAN COMMUNICATION CIRCUIT 2 |

| Diagnosis Procedure284   | 4 |
|--|---|
| ITS COMMUNICATION CIRCUIT  |   |
| Diagnosis Procedure  | 5 |
| DTC/CIRCUIT DIAGNOSIS28  | B |
| MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT                                     |   |
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT                                    |   |
| MAIN LINE BETWEEN A-BAG AND AV CIR-  |   |
| CUIT   |   |
| Diagnosis Procedure  | J |
| MAIN LINE BETWEEN AV AND M&A CIR-<br>CUIT                                      | 1 |
| Diagnosis Procedure  |   |
| MAIN LINE BETWEEN M&A AND DLC CIR-   |   |
| CUIT   |   |
| MAIN LINE BETWEEN DLC AND BCM CIR-   | - |
| CUIT   |   |
| MAIN LINE BETWEEN BCM AND ADP CIR-   |   |
| CUIT   |   |
| MAIN LINE BETWEEN ADP AND ABS CIR-   |   |
| CUIT   |   |
| ECM BRANCH LINE CIRCUIT  | 7 |
| Diagnosis Procedure29  | 7 |
| TPMS BRANCH LINE CIRCUIT         299           Diagnosis Procedure         299 |   |
| HVAC BRANCH LINE CIRCUIT   |   |
| TCM BRANCH LINE CIRCUIT  |   |
| A-BAG BRANCH LINE CIRCUIT  |   |
| AV BRANCH LINE CIRCUIT   |   |
| M&A BRANCH LINE CIRCUIT  |   |
| DLC BRANCH LINE CIRCUIT  | 6 |

|                    |   | _ |
|--------------------|---|---|
| 284                | Diagnosis Procedure                         |   |
| <b>286</b><br>286  | BCM BRANCH LINE CIRCUIT                     |   |
| 288                | STRG BRANCH LINE CIRCUIT                    |   |
| 288                | ABS BRANCH LINE CIRCUIT                     | ( |
| 288                | IPDM-E BRANCH LINE CIRCUIT                  |   |
| <b> 289</b><br>289 | ADP BRANCH LINE CIRCUIT                     |   |
| <b> 290</b><br>290 | CAN COMMUNICATION CIRCUIT                   |   |
| 290                | CAN SYSTEM (TYPE 6)                         | F |
| 291                | DTC/CIRCUIT DIAGNOSIS 314                   |   |
| 291                | MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT  |   |
| <b> 292</b><br>292 | Diagnosis Procedure                         | ŀ |
| -<br>293           | CIRCUIT                                     |   |
| 293                | MAIN LINE BETWEEN A-BAG AND AV CIR-<br>CUIT |   |
| -<br>294           | Diagnosis Procedure                         |   |
| 294                | MAIN LINE BETWEEN AV AND M&A CIR-<br>CUIT   |   |
| 295                | Diagnosis Procedure                         |   |
| 295<br><b>297</b>  | MAIN LINE BETWEEN M&A AND DLC CIR-<br>CUIT  |   |
| 297                | Diagnosis Procedure                         |   |
| <b> 299</b><br>299 | CUIT  |   |
| <b> 300</b><br>300 | MAIN LINE BETWEEN BCM AND RAS CIR-<br>CUIT  | ľ |
| <b> 301</b><br>301 | Diagnosis Procedure                         |   |
| 302                | MAIN LINE BETWEEN RAS AND ABS CIR-<br>CUIT  |   |
| 302                | Diagnosis Procedure                         | ľ |
| <b> 303</b><br>303 | ECM BRANCH LINE CIRCUIT                     |   |
| <b> 305</b><br>305 | TPMS BRANCH LINE CIRCUIT                    |   |
| 306                | HVAC BRANCH LINE CIRCUIT                    |   |

| Diagnosis Procedure   | ;  |
|---|----|
| TCM BRANCH LINE CIRCUIT         327           Diagnosis Procedure         327 | ,  |
| A-BAG BRANCH LINE CIRCUIT   |    |
| AV BRANCH LINE CIRCUIT  |    |
| M&A BRANCH LINE CIRCUIT   |    |
| DLC BRANCH LINE CIRCUIT   |    |
| BCM BRANCH LINE CIRCUIT   |    |
| STRG BRANCH LINE CIRCUIT  |    |
| RAS BRANCH LINE CIRCUIT   |    |
| ABS BRANCH LINE CIRCUIT   |    |
| IPDM-E BRANCH LINE CIRCUIT  |    |
| ADP BRANCH LINE CIRCUIT   |    |
| CAN COMMUNICATION CIRCUIT   |    |
| DTC/CIRCUIT DIAGNOSIS   |    |
| MAIN LINE BETWEEN TPMS AND HVAC   |    |
| CIRCUIT   |    |
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT                                   |    |
| Diagnosis Procedure   |    |
| MAIN LINE BETWEEN A-BAG AND AV CIR-<br>CUIT                                   | \$ |
| Diagnosis Procedure   | }  |
| MAIN LINE BETWEEN AV AND M&A CIR-<br>CUIT                                     | •  |
| Diagnosis Procedure   |    |
| MAIN LINE BETWEEN M&A AND DLC CIR-  | •  |
| CUIT  |    |
| MAIN LINE BETWEEN DLC AND BCM CIR-<br>CUIT                                    | 5  |

| Diagnosis Procedure 34  | 6   |
|---|---|
| MAIN LINE BETWEEN BCM AND ABS CIR-<br>CUIT  |   |
| MAIN LINE BETWEEN RDR-L AND RDR-R<br>CIRCUIT  | 9   |
| MAIN LINE BETWEEN RDR-R AND APA CIR-<br>CUIT  |   |
| MAIN LINE BETWEEN APA AND LANE CIR-<br>CUIT   |   |
| ECM BRANCH LINE CIRCUIT35<br>Diagnosis Procedure  |   |
| TPMS BRANCH LINE CIRCUIT  |   |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 1)  |   |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 2)  |   |
| HVAC BRANCH LINE CIRCUIT  |   |
| Diagnosis Procedure   |   |
|   | 9<br>60   |
| Diagnosis Procedure   | 59<br>50<br>50  |
| Diagnosis Procedure   | 59<br>50<br>50<br>51<br>51<br>52  |
| Diagnosis Procedure   | 59<br>50<br>51<br>51<br>52<br>52<br>54  |
| Diagnosis Procedure       35         TCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         A-BAG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         AV BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         M&A BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36   | <b>i9</b><br><b>i0</b><br><b>i1</b><br><b>i1</b><br><b>i2</b><br><b>i4</b><br><b>i5</b><br><b>i5</b><br><b>i6</b><br><b>i7</b><br><b>i7</b><br><b>i7</b><br><b>i7</b><br><b>i7</b><br><b>i7</b><br><b>i7</b><br><b>i7</b> |
| Diagnosis Procedure       35         TCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         A-BAG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         AV BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         Diagnosis Procedure       36         Diagnosis Procedure       36         Diagnosis Procedure       36         DLC BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         BCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36  | <b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b>  |
| Diagnosis Procedure       35         TCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         A-BAG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         AV BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         DLC BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         BCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         STRG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         STRG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36  | i9         i0         i1         i2         i4         i5         i6         i7         i7  |
| Diagnosis Procedure       35         TCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         A-BAG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         AV BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         M&A BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         M&A BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         DLC BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         BCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         STRG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         STRG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         Strag BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         ABS BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         ABS BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36 | i9         i0         i1         i2         i4         i5         i6         i7         i8         i8   |
| Diagnosis Procedure       35         TCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         A-BAG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         AV BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         M&A BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         M&A BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         DLC BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         BCM BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         STRG BRANCH LINE CIRCUIT       36         Diagnosis Procedure       36         STRG BRANCH LINE CIRCUIT       36         ABS BRANCH LINE CIRCUIT       36   | 69<br>60<br>60<br>61<br>61<br>61<br>62<br>62<br>64<br>64<br>65<br>65<br>66<br>66<br>67<br>77<br>78<br>88<br>88<br>89<br>99  |

| Diagnosia Procedure 270   |
|---|
| Diagnosis Procedure   |
| ADP BRANCH LINE CIRCUIT   |
| ICC BRANCH LINE CIRCUIT   |
| PSB BRANCH LINE CIRCUIT   |
| RDR-L BRANCH LINE CIRCUIT   |
| RDR-R BRANCH LINE CIRCUIT   |
| APA BRANCH LINE CIRCUIT   |
| LANE BRANCH LINE CIRCUIT  |
| LASER BRANCH LINE CIRCUIT   |
| CAN COMMUNICATION CIRCUIT 1   |
| CAN COMMUNICATION CIRCUIT 2   |
| ITS COMMUNICATION CIRCUIT   |
| Diagnosis Procedure   |
| Diagnosis Procedure 383<br>CAN SYSTEM (TYPE 8)<br>DTC/CIRCUIT DIAGNOSIS 385<br>MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT 385<br>Diagnosis Procedure 385<br>MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT 386<br>Diagnosis Procedure 386<br>MAIN LINE BETWEEN A-BAG AND AV CIR-<br>CUIT 387   |
| Diagnosis Procedure       383         CAN SYSTEM (TYPE 8)         DTC/CIRCUIT DIAGNOSIS       385         MAIN LINE BETWEEN TPMS AND HVAC         CIRCUIT       385         Diagnosis Procedure       385         MAIN LINE BETWEEN HVAC AND A-BAG         CIRCUIT       386         Diagnosis Procedure       386         MAIN LINE BETWEEN HVAC AND A-BAG         CIRCUIT       386         Diagnosis Procedure       386         MAIN LINE BETWEEN A-BAG AND AV CIR-       387         Diagnosis Procedure       387         Diagnosis Procedure       387         Diagnosis Procedure       387         MAIN LINE BETWEEN AV AND M&A CIR-       388         Diagnosis Procedure       388         MAIN LINE BETWEEN M&A AND M&A CIR-       388         MAIN LINE BETWEEN M&A AND M&A CIR-       388         MAIN LINE BETWEEN M&A AND M&A CIR-       388         MAIN LINE BETWEEN M&A AND DLC CIR-       389 |
| Diagnosis Procedure       383         CAN SYSTEM (TYPE 8)         DTC/CIRCUIT DIAGNOSIS       385         MAIN LINE BETWEEN TPMS AND HVAC         CIRCUIT       385         Diagnosis Procedure       385         Diagnosis Procedure       385         MAIN LINE BETWEEN HVAC AND A-BAG       386         CIRCUIT       386         Diagnosis Procedure       386         MAIN LINE BETWEEN A-BAG AND AV CIR-       387         Diagnosis Procedure       388         Diagnosis Procedure       388         Diagnosis Procedure       388         Diagnosis Procedure       389         Diagnosis Procedure       389  |
| Diagnosis Procedure       383         CAN SYSTEM (TYPE 8)         DTC/CIRCUIT DIAGNOSIS       385         MAIN LINE BETWEEN TPMS AND HVAC         CIRCUIT       385         Diagnosis Procedure       385         MAIN LINE BETWEEN HVAC AND A-BAG         CIRCUIT       386         Diagnosis Procedure       386         MAIN LINE BETWEEN HVAC AND A-BAG         CIRCUIT       386         Diagnosis Procedure       386         MAIN LINE BETWEEN A-BAG AND AV CIR-       387         Diagnosis Procedure       387         Diagnosis Procedure       387         Diagnosis Procedure       387         MAIN LINE BETWEEN AV AND M&A CIR-       388         Diagnosis Procedure       388         MAIN LINE BETWEEN M&A AND M&A CIR-       388         MAIN LINE BETWEEN M&A AND M&A CIR-       388         MAIN LINE BETWEEN M&A AND M&A CIR-       388         MAIN LINE BETWEEN M&A AND DLC CIR-       389 |

| MAIN LINE BETWEEN BCM AND RAS CIR-<br>CUIT  | А      |
|---|--------|
| Diagnosis Procedure   | $\cap$ |
| MAIN LINE BETWEEN RAS AND ABS CIR-         CUIT                                       | В      |
| MAIN LINE BETWEEN RDR-L AND RDR-R<br>CIRCUIT  | С      |
| MAIN LINE BETWEEN RDR-R AND APA CIR-<br>CUIT  | D      |
| MAIN LINE BETWEEN APA AND LANE CIR-   | Е      |
| CUIT  | F      |
| ECM BRANCH LINE CIRCUIT   | G      |
| TPMS BRANCH LINE CIRCUIT         400           Diagnosis Procedure         400        |        |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 1) 401<br>Diagnosis Procedure | Η      |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 2)                            | J      |
| HVAC BRANCH LINE CIRCUIT  | K      |
| TCM BRANCH LINE CIRCUIT       405         Diagnosis Procedure       405               | N      |
| A-BAG BRANCH LINE CIRCUIT   | L      |
| AV BRANCH LINE CIRCUIT  | LAN    |
| M&A BRANCH LINE CIRCUIT   | Ν      |
| DLC BRANCH LINE CIRCUIT   | 0      |
| BCM BRANCH LINE CIRCUIT   | P      |
| STRG BRANCH LINE CIRCUIT  | 1      |
| RAS BRANCH LINE CIRCUIT   |        |
| ABS BRANCH LINE CIRCUIT 414<br>Diagnosis Procedure                                    |        |

| AFS BRANCH LINE CIRCUIT 415<br>Diagnosis Procedure415  |
|--|
| IPDM-E BRANCH LINE CIRCUIT 416<br>Diagnosis Procedure  |
| ADP BRANCH LINE CIRCUIT  |
| ICC BRANCH LINE CIRCUIT 418<br>Diagnosis Procedure   |
| PSB BRANCH LINE CIRCUIT 419<br>Diagnosis Procedure   |
| RDR-L BRANCH LINE CIRCUIT         420           Diagnosis Procedure         420                  |
| RDR-R BRANCH LINE CIRCUIT         421           Diagnosis Procedure         421                  |
| APA BRANCH LINE CIRCUIT  |
| LANE BRANCH LINE CIRCUIT   |
| LASER BRANCH LINE CIRCUIT 424<br>Diagnosis Procedure   |
| CAN COMMUNICATION CIRCUIT 1 425<br>Diagnosis Procedure   |
| CAN COMMUNICATION CIRCUIT 2 427<br>Diagnosis Procedure   |
| ITS COMMUNICATION CIRCUIT  |
| DTC/CIRCUIT DIAGNOSIS431   |
| MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT   |
| MAIN LINE BETWEEN HVAC AND A-BAG         CIRCUIT       432         Diagnosis Procedure       432 |
| MAIN LINE BETWEEN A-BAG AND AV CIR-         CUIT         Diagnosis Procedure         433         |
| MAIN LINE BETWEEN AV AND M&A CIR-<br>CUIT  |
| Diagnosis Procedure434   |
| MAIN LINE BETWEEN M&A AND DLC CIR-         CUIT         Diagnosis Procedure         435          |

| MAIN LINE BETWEEN DLC AND BCM CIR-  |
|---|
| CUIT436<br>Diagnosis Procedure  |
| -   |
| MAIN LINE BETWEEN BCM AND 4WD CIR-  |
| CUIT437<br>Diagnosis Procedure  |
| -   |
| MAIN LINE BETWEEN 4WD AND ABS CIR-  |
| CUIT438<br>Diagnosis Procedure  |
| -   |
| ECM BRANCH LINE CIRCUIT440<br>Diagnosis Procedure                         |
| -   |
| <b>TPMS BRANCH LINE CIRCUIT</b> 442         Diagnosis Procedure       442 |
| 5   |
| HVAC BRANCH LINE CIRCUIT443   |
| Diagnosis Procedure 443   |
| TCM BRANCH LINE CIRCUIT444  |
| Diagnosis Procedure 444   |
| A-BAG BRANCH LINE CIRCUIT445  |
| Diagnosis Procedure 445   |
| AV BRANCH LINE CIRCUIT446   |
| Diagnosis Procedure 446   |
| M&A BRANCH LINE CIRCUIT448  |
| Diagnosis Procedure 448   |
| DLC BRANCH LINE CIRCUIT449  |
| Diagnosis Procedure 449   |
| BCM BRANCH LINE CIRCUIT450  |
| Diagnosis Procedure 450   |
| STRG BRANCH LINE CIRCUIT451   |
| Diagnosis Procedure 451   |
| 4WD BRANCH LINE CIRCUIT452  |
| Diagnosis Procedure 452   |
| ABS BRANCH LINE CIRCUIT453  |
| Diagnosis Procedure 453   |
| IPDM-E BRANCH LINE CIRCUIT454   |
| Diagnosis Procedure 454   |
| ADP BRANCH LINE CIRCUIT455  |
| Diagnosis Procedure   |
| CAN COMMUNICATION CIRCUIT456  |
| Diagnosis Procedure 456   |
| CAN SYSTEM (TYPE 10)  |
| DTC/CIRCUIT DIAGNOSIS458  |
| MAIN LINE BETWEEN TPMS AND HVAC   |
| CIRCUIT458  |
| Diagnosis Procedure 458   |

|   | _ |
|---|---|
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT45             | a |
| Diagnosis Procedure                                       |   |
| MAIN LINE BETWEEN A-BAG AND AV CIR-                       | _ |
| CUIT  |   |
| MAIN LINE BETWEEN AV AND M&A CIR-                         |   |
| CUIT  |   |
| MAIN LINE BETWEEN M&A AND DLC CIR-                        |   |
| CUIT  |   |
| MAIN LINE BETWEEN DLC AND BCM CIR-                        |   |
| CUIT  |   |
| MAIN LINE BETWEEN BCM AND 4WD CIR-                        |   |
| CUIT  |   |
| MAIN LINE BETWEEN 4WD AND ABS CIR-                        | + |
| CUIT  |   |
| Diagnosis Procedure 463 MAIN LINE BETWEEN RDR-L AND RDR-R | b |
| CIRCUIT   | 7 |
| Diagnosis Procedure46                                     | 7 |
| MAIN LINE BETWEEN RDR-R AND APA CIR-<br>CUIT              | 8 |
| Diagnosis Procedure 46                                    |   |
| MAIN LINE BETWEEN APA AND LANE CIR-<br>CUIT470            | ^ |
| Diagnosis Procedure                                       |   |
| ECM BRANCH LINE CIRCUIT                                   |   |
| Diagnosis Procedure                                       |   |
| Diagnosis Procedure                                       |   |
| CGW BRANCH LINE CIRCUIT (CAN COM-                         |   |
| MUNICATION CIRCUIT 1)474<br>Diagnosis Procedure           |   |
| CGW BRANCH LINE CIRCUIT (CAN COM-                         |   |
| MUNICATION CIRCUIT 2)479<br>Diagnosis Procedure           |   |
| HVAC BRANCH LINE CIRCUIT                                  |   |
| Diagnosis Procedure                                       |   |
| TCM BRANCH LINE CIRCUIT478<br>Diagnosis Procedure478      |   |
| A-BAG BRANCH LINE CIRCUIT47                               |   |
| Diagnosis Procedure47                                     | 9 |

| AV BRANCH LINE CIRCUIT 480<br>Diagnosis Procedure      | A  |
|--|----|
| M&A BRANCH LINE CIRCUIT                                | В  |
| DLC BRANCH LINE CIRCUIT                                | D  |
| BCM BRANCH LINE CIRCUIT                                | С  |
| STRG BRANCH LINE CIRCUIT                               | D  |
| 4WD BRANCH LINE CIRCUIT                                | E  |
| ABS BRANCH LINE CIRCUIT 487<br>Diagnosis Procedure     | F  |
| AFS BRANCH LINE CIRCUIT                                | G  |
| IPDM-E BRANCH LINE CIRCUIT                             |    |
| ADP BRANCH LINE CIRCUIT 490<br>Diagnosis Procedure     | Η  |
| ICC BRANCH LINE CIRCUIT 491<br>Diagnosis Procedure     |    |
| PSB BRANCH LINE CIRCUIT                                | J  |
| RDR-L BRANCH LINE CIRCUIT                              | K  |
| RDR-R BRANCH LINE CIRCUIT                              | L  |
| APA BRANCH LINE CIRCUIT 495<br>Diagnosis Procedure     |    |
| LANE BRANCH LINE CIRCUIT                               | LA |
| LASER BRANCH LINE CIRCUIT                              | Ν  |
| CAN COMMUNICATION CIRCUIT 1 498<br>Diagnosis Procedure | 0  |
| CAN COMMUNICATION CIRCUIT 2 500<br>Diagnosis Procedure | Ρ  |
| ITS COMMUNICATION CIRCUIT                              |    |
| DTC/CIRCUIT DIAGNOSIS                                  |    |
|  |    |

| MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT<br>Diagnosis Procedure  |     |
|--|-----|
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT<br>Diagnosis Procedure |     |
| MAIN LINE BETWEEN A-BAG AND AV CIR-<br>CUIT                        | 506 |
| Diagnosis Procedure  |     |
| CUIT<br>Diagnosis Procedure  |     |
| MAIN LINE BETWEEN M&A AND DLC CIR-<br>CUIT                         | 508 |
| Diagnosis Procedure  |     |
| MAIN LINE BETWEEN DLC AND BCM CIR-                                 |     |
| CUIT<br>Diagnosis Procedure  |     |
| MAIN LINE BETWEEN BCM AND 4WD CIR-                                 |     |
| CUIT<br>Diagnosis Procedure  |     |
| MAIN LINE BETWEEN 4WD AND ABS CIR-                                 |     |
| CUIT<br>Diagnosis Procedure  |     |
| ECM BRANCH LINE CIRCUIT<br>Diagnosis Procedure                     |     |
| TPMS BRANCH LINE CIRCUIT<br>Diagnosis Procedure                    |     |
| HVAC BRANCH LINE CIRCUIT<br>Diagnosis Procedure                    |     |
| TCM BRANCH LINE CIRCUIT<br>Diagnosis Procedure                     | -   |
| A-BAG BRANCH LINE CIRCUIT<br>Diagnosis Procedure                   |     |
| AV BRANCH LINE CIRCUIT<br>Diagnosis Procedure                      |     |
| M&A BRANCH LINE CIRCUIT<br>Diagnosis Procedure                     |     |
| DLC BRANCH LINE CIRCUIT<br>Diagnosis Procedure                     |     |
| BCM BRANCH LINE CIRCUIT<br>Diagnosis Procedure                     |     |
| STRG BRANCH LINE CIRCUIT<br>Diagnosis Procedure                    |     |

| 4WD BRANCH LINE CIRCUIT         525           Diagnosis Procedure         525 |
|---|
| ABS BRANCH LINE CIRCUIT526<br>Diagnosis Procedure                             |
| IPDM-E BRANCH LINE CIRCUIT  |
| ADP BRANCH LINE CIRCUIT528<br>Diagnosis Procedure                             |
| CAN COMMUNICATION CIRCUIT529<br>Diagnosis Procedure                           |
| DTC/CIRCUIT DIAGNOSIS   |
|   |
| MAIN LINE BETWEEN TPMS AND HVAC<br>CIRCUIT531                                 |
| Diagnosis Procedure531  |
| MAIN LINE BETWEEN HVAC AND A-BAG<br>CIRCUIT532                                |
| Diagnosis Procedure 532   |
| MAIN LINE BETWEEN A-BAG AND AV CIR-<br>CUIT                                   |
| Diagnosis Procedure 533   |
| MAIN LINE BETWEEN AV AND M&A CIR-<br>CUIT                                     |
| MAIN LINE BETWEEN M&A AND DLC CIR-  |
| CUIT535   |
| Diagnosis Procedure 535   |
|   |
| CUIT536<br>Diagnosis Procedure  |
| MAIN LINE BETWEEN BCM AND 4WD CIR-<br>CUIT537                                 |
| Diagnosis Procedure 537   |
| MAIN LINE BETWEEN 4WD AND ABS CIR-<br>CUIT538                                 |
| Diagnosis Procedure 538   |
| MAIN LINE BETWEEN RDR-L AND RDR-R<br>CIRCUIT                                  |
| Diagnosis Procedure   |
| MAIN LINE BETWEEN RDR-R AND APA CIR-<br>CUIT                                  |
| MAIN LINE BETWEEN APA AND LANE CIR-   |
| CUIT  |
|   |

| ECM BRANCH LINE CIRCUIT54<br>Diagnosis Procedure54                                  |   |
|---|---|
| TPMS BRANCH LINE CIRCUIT         54           Diagnosis Procedure         54        |   |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 1)                          |   |
| CGW BRANCH LINE CIRCUIT (CAN COM-<br>MUNICATION CIRCUIT 2)54<br>Diagnosis Procedure |   |
| HVAC BRANCH LINE CIRCUIT55<br>Diagnosis Procedure55                                 |   |
| TCM BRANCH LINE CIRCUIT55<br>Diagnosis Procedure55                                  |   |
| A-BAG BRANCH LINE CIRCUIT55<br>Diagnosis Procedure55                                |   |
| AV BRANCH LINE CIRCUIT55<br>Diagnosis Procedure55                                   |   |
| M&A BRANCH LINE CIRCUIT55<br>Diagnosis Procedure55                                  |   |
| DLC BRANCH LINE CIRCUIT55<br>Diagnosis Procedure55                                  |   |
| BCM BRANCH LINE CIRCUIT55<br>Diagnosis Procedure                                    |   |
| STRG BRANCH LINE CIRCUIT55<br>Diagnosis Procedure55                                 | - |
| 4WD BRANCH LINE CIRCUIT55<br>Diagnosis Procedure55                                  |   |

| ABS BRANCH LINE CIRCUIT     |
|-----------------------------|
| AFS BRANCH LINE CIRCUIT     |
| IPDM-E BRANCH LINE CIRCUIT  |
| ADP BRANCH LINE CIRCUIT     |
| ICC BRANCH LINE CIRCUIT     |
| PSB BRANCH LINE CIRCUIT     |
| RDR-L BRANCH LINE CIRCUIT   |
| RDR-R BRANCH LINE CIRCUIT   |
| APA BRANCH LINE CIRCUIT     |
| LANE BRANCH LINE CIRCUIT    |
| LASER BRANCH LINE CIRCUIT   |
| CAN COMMUNICATION CIRCUIT 1 |
| CAN COMMUNICATION CIRCUIT 2 |
| ITS COMMUNICATION CIRCUIT   |

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#### PRECAUTIONS

Precautions for Trouble Diagnosis

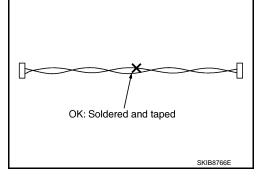
#### CAUTION:

- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

#### Precautions for Harness Repair

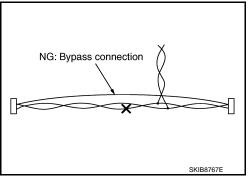
• Solder the repaired area and wrap tape around the soldered area. **NOTE:** 

A fray of twisted lines must be within 110 mm (4.33 in).



• Bypass connection is never allowed at the repaired area. **NOTE:** 

Bypass connection may cause CAN communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



• Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

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INFOID:000000006032375

#### < SYSTEM DESCRIPTION > SYSTEM DESCRIPTION

SYSTEM

CAN COMMUNICATION SYSTEM

#### CAN COMMUNICATION SYSTEM : System Description

INFOID:000000006032377

INFOID:000000006032378

А

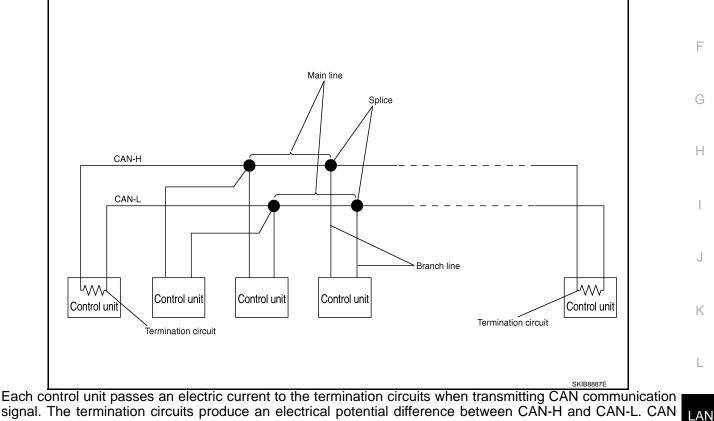
В

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- CAN communication is a multiplex communication system. This enables the system to transmit and receive large quantities of data at high speed by connecting control units with two communication lines (CAN-H and CAN-L).
- Control units on the CAN network transmit signals using the CAN communication control circuit. They receive only necessary signals from other control units to operate various functions.
- CAN communication lines adopt twisted-pair line style (two lines twisted) for noise immunity.

#### CAN COMMUNICATION SYSTEM : System Diagram



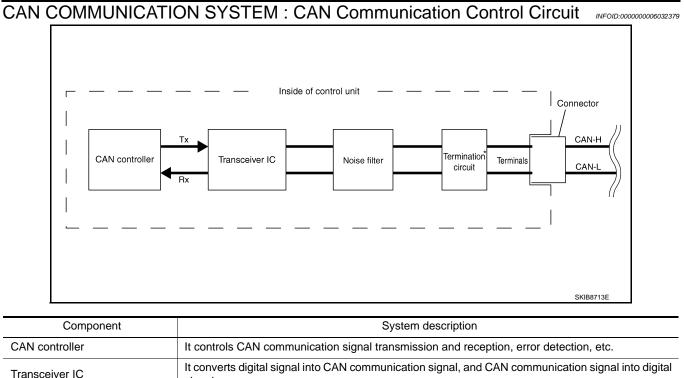
signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

| Component           | Description  |  |
|---------------------|--|--|
| Main line           | CAN communication line between splices   |  |
| Branch line         | CAN communication line between splice and a control unit                         |  |
| Splice              | A point connecting a branch line with a main line                                |  |
| Termination circuit | Refer to LAN-16, "CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit". |  |

#### SYSTEM

#### < SYSTEM DESCRIPTION >

#### [CAN FUNDAMENTAL]



| Transceiver IC   | signal.  |
|--|--|
| Noise filter   | It eliminates noise of CAN communication signal. |
| Termination circuit <sup>*</sup> (Resistance of approx. 120 $\Omega$ ) | It produces potential difference.                |

\*: These are the only control units wired with both ends of CAN communication system.

#### DIAG ON CAN

#### **DIAG ON CAN : Description**

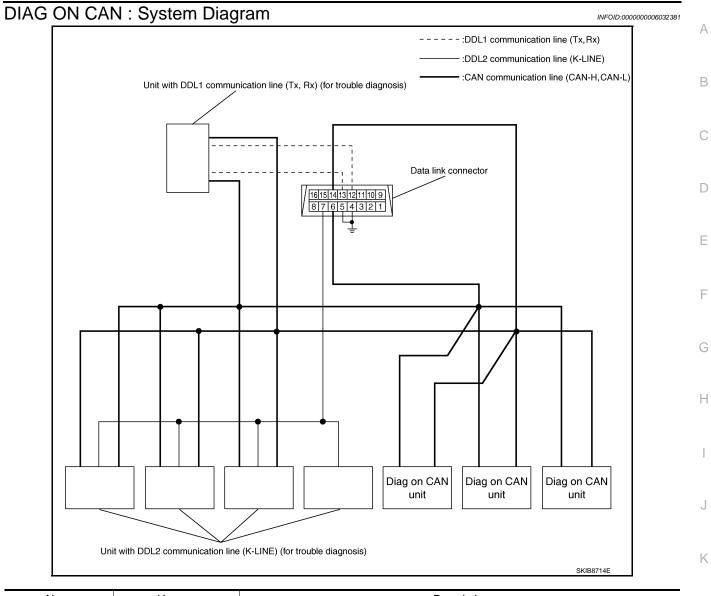
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"Diag on CAN" is a diagnosis using CAN communication instead of previous DDL1 and DDL2 communication lines, between control units and diagnosis unit.

#### SYSTEM

#### [CAN FUNDAMENTAL]

#### < SYSTEM DESCRIPTION >



| Name        | Harness        | Description  |     |
|-------------|----------------|--|-----|
| DDL1        | Tx<br>Rx       | It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling) | - L |
| DDL2        | K-LINE         | It is used for trouble diagnosis. (CAN-H and CAN-L are used for controlling) | LAN |
| Diag on CAN | CAN-H<br>CAN-L | It is used for trouble diagnosis and control.                                |     |

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#### Condition of Error Detection

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DTC of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT-III if a CAN communication signal is not transmitted or received between units for 2 seconds or more. **NOTE:** 

DTCs of CAN communication are as follows:

- U0101
- U0140
- U0164
- U1000
- U1001
- U1507
- U1508

#### CAN COMMUNICATION SYSTEM ERROR

- CAN communication line open (CAN-H, CAN-L, or both)
- CAN communication line short (ground, between CAN communication lines, other harnesses)
- Error of CAN communication control circuit of the unit connected to CAN communication line

## WHEN DTC OF CAN COMMUNICATION IS INDICATED EVEN THOUGH CAN COMMUNICATION SYSTEM IS NORMAL

- Removal/installation of parts: Error may be detected when removing and installing CAN communication unit and related parts while turning the ignition switch ON. (A DTC except for CAN communication may be detected.)
- Fuse blown out (removed): CAN communication of the unit may cease.
- Voltage drop: Error may be detected if voltage drops due to discharged battery when turning the ignition switch ON (Depending on the control unit which carries out CAN communication).
- Error may be detected if the power supply circuit of the control unit, which carries out CAN communication, malfunctions (Depending on the control unit which carries out CAN communication).
- Error may be detected if reprogramming is not completed normally.

#### **CAUTION:**

CAN communication system is normal if DTC of CAN communication is indicated on SELF-DIAG RESULTS of CONSULT-III under the above conditions. Erase the memory of the self-diagnosis of each unit.

Symptom When Error Occurs in CAN Communication System

INFOID:000000006032383

In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

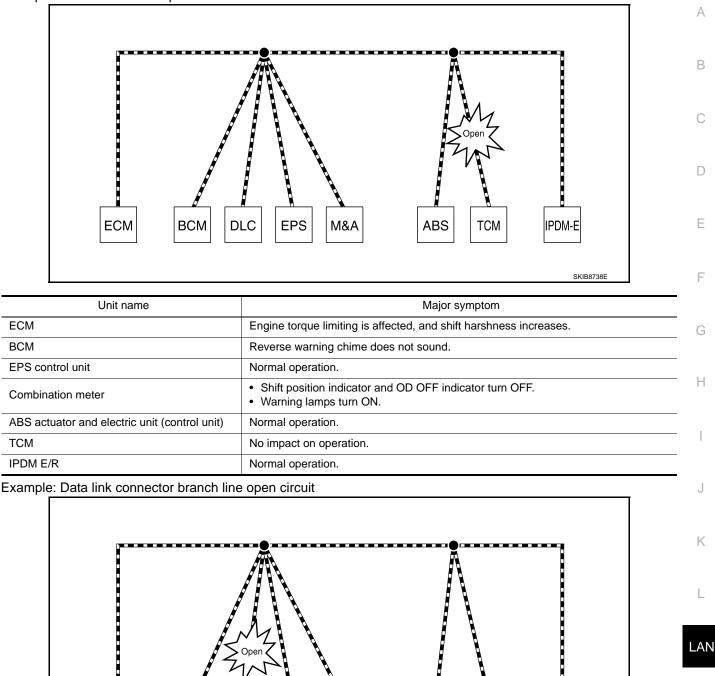
### ERROR EXAMPLE

NOTE:

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to LAN-30, "Abbreviation List" for the unit abbreviation.

#### < SYSTEM DESCRIPTION >

#### Example: TCM branch line open circuit



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ECM

BCM

DLC

EPS

M&A

TCM

ABS

IPDM-E

SKIB8739E

#### < SYSTEM DESCRIPTION >

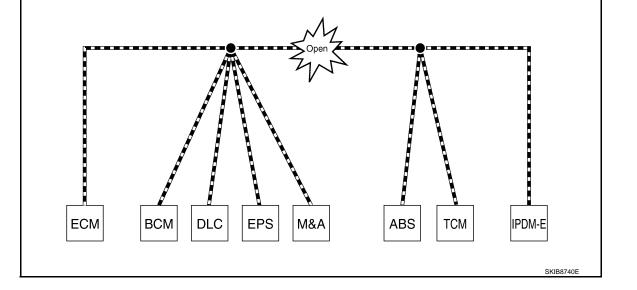
| Unit name                                     | Major symptom     |
|---|-------------------|
| ECM   |                   |
| BCM   |                   |
| EPS control unit                              |                   |
| Combination meter                             | Normal operation. |
| ABS actuator and electric unit (control unit) |                   |
| ТСМ   |                   |
| IPDM E/R                                      |                   |

#### NOTE:

- When data link connector branch line is open, transmission and reception of CAN communication signals are not affected. Therefore, no symptoms occur. However, be sure to repair malfunctioning circuit.
- The model (all units on CAN communication system are Diag on CAN) cannot perform CAN diagnosis with CONSULT-III if the following error occurs. The error is judged by the symptom.

| Error  | Difference of symptom  |  |  |
|--|--|--|--|
| Data link connector branch line open circuit | Normal operation.  |  |  |
| CAN-H, CAN-L harness short-circuit           | Most of the units which are connected to the CAN communication system enter fail-safe mode or are deactivated. |  |  |

Example: Main Line Between Data Link Connector and ABS Actuator and Electric Unit (Control Unit) Open Circuit

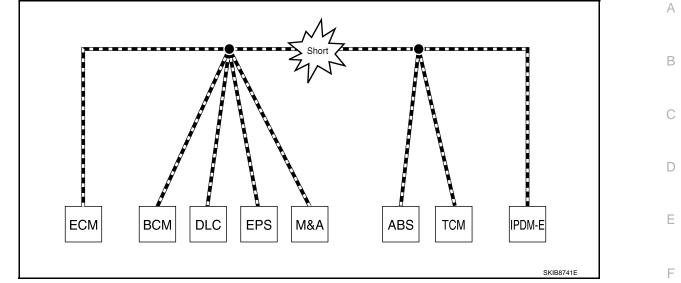


| Unit name                                     | Major symptom   |
|---|---|
| ECM   | Engine torque limiting is affected, and shift harshness increases.  |
| BCM   | <ul> <li>Reverse warning chime does not sound.</li> <li>The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.</li> </ul> |
| EPS control unit                              | The steering effort increases.  |
| Combination meter                             | <ul> <li>The shift position indicator and OD OFF indicator turn OFF.</li> <li>The speedometer is inoperative.</li> <li>The odo/trip meter stops.</li> </ul>                                     |
| ABS actuator and electric unit (control unit) | Normal operation.   |
| ТСМ   | No impact on operation.   |
| IPDM E/R                                      | <ul><li>When the ignition switch is ON,</li><li>The headlamps (Lo) turn ON.</li><li>The cooling fan continues to rotate.</li></ul>  |

#### < SYSTEM DESCRIPTION >

#### [CAN FUNDAMENTAL]

#### Example: CAN-H, CAN-L Harness Short Circuit



| Unit name                                     | Major symptom   |
|---|---|
| ECM   | <ul><li>Engine torque limiting is affected, and shift harshness increases.</li><li>Engine speed drops.</li></ul>  |
| ВСМ   | <ul> <li>Reverse warning chime does not sound.</li> <li>The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.</li> <li>The room lamp does not turn ON.</li> <li>The engine does not start (if an error or malfunction occurs while turning the ignition switch OFF.)</li> <li>The steering lock does not release (if an error or malfunction occurs while turning the ignition switch OFF.)</li> </ul> |
| EPS control unit                              | The steering effort increases.  |
| Combination meter                             | <ul> <li>The tachometer and the speedometer do not move.</li> <li>Warning lamps turn ON.</li> <li>Indicator lamps do not turn ON.</li> </ul>  |
| ABS actuator and electric unit (control unit) | Normal operation.   |
| ТСМ   | No impact on operation.   |
| IPDM E/R                                      | <ul><li>When the ignition switch is ON,</li><li>The headlamps (Lo) turn ON.</li><li>The cooling fan continues to rotate.</li></ul>  |

#### CAN Diagnosis with CONSULT-III

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CAN diagnosis on CONSULT-III extracts the root cause by receiving the following information.

- Response to the system call
- Control unit diagnosis information
- Self-diagnosis
- CAN diagnostic support monitor

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#### < SYSTEM DESCRIPTION >

#### Self-Diagnosis

INFOID:000000006032385

[CAN FUNDAMENTAL]

| DTC   | Self-diagnosis item<br>(CONSULT-III indication) |                   | DTC detection condition   | Inspection/Action  |  |  |
|-------|---|-------------------|---|--|--|--|
| U0101 | LOST COMM (TCM)                                 | cation sig        | CM is not transmitting or receiving CAN communi-<br>gnal of OBD (emission-related diagnosis) from<br>2 seconds or more.                                 |  |  |  |
| U0140 | LOST COMM (BCM)                                 | cation sig        | CM is not transmitting or receiving CAN communi-<br>nal of OBD (emission-related diagnosis) from<br>2 seconds or more.                                  |  |  |  |
| U0164 | LOST COMM (HVAC)                                | cation sig        | CM is not transmitting or receiving CAN communi-<br>inal of OBD (emission-related diagnosis) from A/<br>np. or unified meter and A/C amp. for 2 seconds | Start the inspection. Re-  |  |  |
| U1000 | CAN COMM CIRCUIT                                | ECM               | When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) for 2 seconds or more.                           | fer to the applicable sec-<br>tion of the indicated<br>control unit. |  |  |
| 01000 |   | Except<br>for ECM | When a control unit (except for ECM) is not transmitting or receiving CAN communication signal for 2 seconds or more.                                   |  |  |  |
| U1001 | CAN COMM CIRCUIT                                | cation sig        | M is not transmitting or receiving CAN communi-<br>nal other than OBD (emission-related diagnosis)<br>onds or more.                                     |  |  |  |
| U1002 | SYSTEM COMM                                     |                   | control unit is not transmitting or receiving CAN cation signal for 2 seconds or less.  | -  |  |  |
| U1010 | CONTROL UNIT(CAN)                               | When an           | error is detected during the initial diagnosis for  | Replace the control unit   |  |  |
| P0607 | ECM   |                   | troller of each control unit.   | indicating "U1010" or<br>"P0607".                                    |  |  |
| U1507 | LOST COMM (SIDE RDR R)                          |                   | DAS control unit is not receiving CAN communica-<br>al from side radar RH for 2 seconds or more.  | Start the inspection. Re-<br>fer to the applicable sec-              |  |  |
| U1508 | LOST COMM (SIDE RDR L)                          |                   | AS control unit is not receiving CAN communica-<br>al from side radar LH for 2 seconds or more.   | tion of the indicated control unit.                                  |  |  |

#### CAN Diagnostic Support Monitor

INFOID:000000006032386

#### MONITOR ITEM (CONSULT-III)

#### Example: CAN DIAG SUPPORT MNTR indication

| Withou        | t PAST |      | With          | PAST  |     |
|---------------|--------|------|---------------|-------|-----|
| EC            | М      |      | EC            | M     |     |
|               | PRSNT  | PAST |               | PRSNT | PAS |
| INITIAL DIAG  | OK     |      | TRANSMIT DIAG | ¦ OK  | OK  |
| TRANSMIT DIAG | l OK   |      | VDC/TCS/ABS   |       | 1-  |
| ТСМ           | OK     |      | METER/M&A     | ¦OK   | OK  |
| VDC/TCS/ABS   | UNKWN  |      | BCM/SEC       | ОК    | OK  |
| METER/M&A     | OK     |      | ICC           | ¦-    |     |
| ICC           | UNKWN  |      | HVAC          |       |     |
| BCM/SEC       | ¦ОК    |      | ТСМ           | lок   | OK  |
| IPDM E/R      | OK     |      | EPS           |       | ]-  |
|               |        |      | IPDM E/R      | lок   | OK  |
|               |        |      | e4WD          | -     | ]-  |
|               |        |      | AWD/4WD       | OK    | OK  |

#### < SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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| Item                                    | PRSNT | Description   |  |
|---|-------|---|--|
| Initial diagnasia                       | OK    | Normal at present   |  |
| Initial diagnosis                       | NG    | Control unit error (Except for some control units)                    |  |
|   | OK    | Normal at present   |  |
| Transmission diagnosis                  |       | Unable to transmit signals for 2 seconds or more.                     |  |
|   | UNKWN | Diagnosis not performed   |  |
|   | OK    | Normal at present   |  |
| Control unit name (Reception diagnosis) |       | Unable to receive signals for 2 seconds or more.                      |  |
|   | UNKWN | Diagnosis not performed   |  |
|   |       | No control unit for receiving signals. (No applicable optional parts) |  |

#### With PAST

| Item                   | PRSNT | PAST   | Description   |  |  |  |  |  |  |  |
|------------------------|-------|--------|---|--|--|--|--|--|--|--|
|                        |       | OK     | Normal at present and in the past   |  |  |  |  |  |  |  |
| Transmission diagnosis | ОК    | 1 – 39 | Normal at present, but unable to transmit signals for 2 seconds or mo<br>in the past. (The number indicates the number of ignition switch cycl<br>from OFF to ON.)    |  |  |  |  |  |  |  |
| -                      | UNKWN | 0      | Unable to transmit signals for 2 seconds or more at present.  |  |  |  |  |  |  |  |
| Control unit name      |       | OK     | Normal at present and in the past   |  |  |  |  |  |  |  |
|                        | ОК    | 1 – 39 | Normal at present, but unable to receive signals for 2 seconds or more<br>in the past. (The number indicates the number of ignition switch cycles<br>from OFF to ON.) |  |  |  |  |  |  |  |
| (Reception diagnosis)  | UNKWN | 0      | Unable to receive signals for 2 seconds or more at present.   |  |  |  |  |  |  |  |
| _                      |       |        | Diagnosis not performed.  |  |  |  |  |  |  |  |
|                        | —     | _      | No control unit for receiving signals. (No applicable optional parts)   |  |  |  |  |  |  |  |

## MONITOR ITEM (ON-BOARD DIAGNOSIS) NOTE:

For some models, CAN communication diagnosis result is received from the vehicle monitor.

Example: Vehicle Display

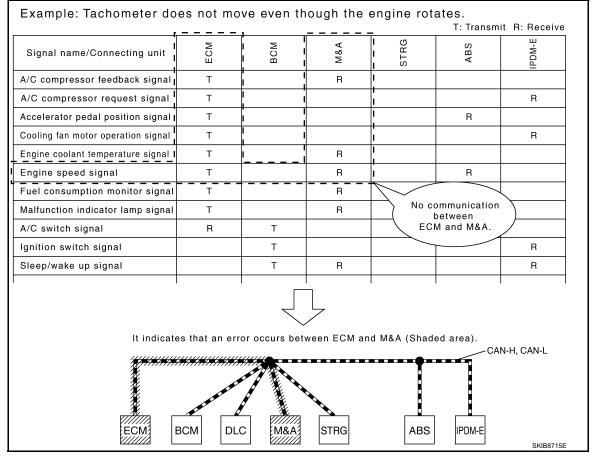
| Item  | Result indi-<br>cated | Error counter | Description  |  |  |  |  |  |  |  |
|---|-----------------------|---------------|--|--|--|--|--|--|--|--|
|   | OK                    | 0             | Normal at present  |  |  |  |  |  |  |  |
| CAN_COMM<br>(Initial diagnosis)                     | NG                    | 1 – 50        | Control unit error<br>(The number indicates how many times diagnosis has been<br>run.)                                 |  |  |  |  |  |  |  |
|   | ОК                    | 0             | Normal at present  |  |  |  |  |  |  |  |
| CAN_CIRC_1<br>(Transmission diagnosis)              | UNKWN                 | 1 – 50        | Unable to transmit for 2 seconds or more at present.<br>(The number indicates how many times diagnosis has be<br>run.) |  |  |  |  |  |  |  |
|   | ОК                    | 0             | Normal at present  |  |  |  |  |  |  |  |
| CAN_CIRC_2 – 9<br>Reception diagnosis of each unit) |                       |               | Unable to transmit for 2 seconds or more at present.<br>(The number indicates how many times diagnosis has been run.)  |  |  |  |  |  |  |  |
|   | UNKWN                 | 1 – 50        | Diagnosis not performed.   |  |  |  |  |  |  |  |
|   |                       |               | No control unit for receiving signals. (No applicable optional parts)  |  |  |  |  |  |  |  |

#### < SYSTEM DESCRIPTION >

#### How to Use CAN Communication Signal Chart

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The CAN communication signal chart lists the signals needed for trouble diagnosis. It is useful for detecting the root cause by finding a signal related to the symptom, and by checking transmission and reception unit.



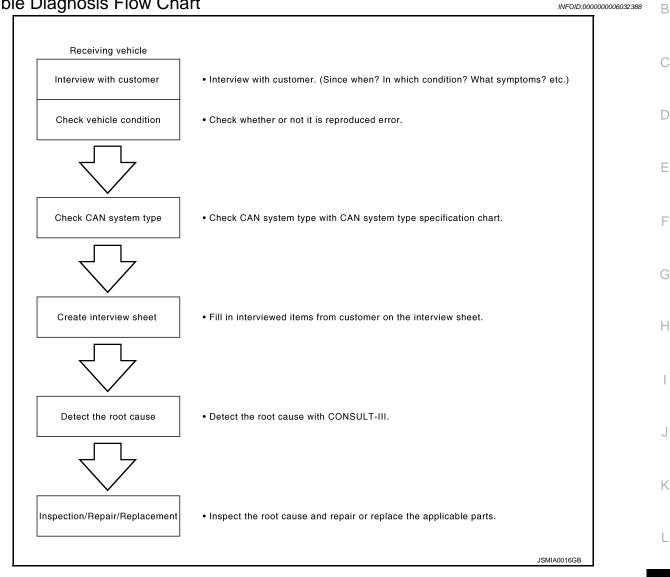
#### < BASIC INSPECTION >

### [CAN FUNDAMENTAL]

### **BASIC INSPECTION** DIAGNOSIS AND REPAIR WORKFLOW

### **Trouble Diagnosis Flow Chart**





### **Trouble Diagnosis Procedure**

#### INTERVIEW WITH CUSTOMER

Ν Interview with the customer is important to detect the root cause of CAN communication system errors and to understand vehicle condition and symptoms for proper trouble diagnosis.

Points in interview

- What: Parts name, system name
- When: Date, Frequency
- Where: Road condition, Place
- In what condition: Driving condition/environment
- Result: Symptom

#### NOTE:

- Check normal units as well as error symptoms.
- Example: Circuit between ECM and the combination meter is judged normal if the customer indicates tachometer functions normally.
- When a CAN communication system error is present, multiple control units may malfunction or go into failsafe mode.

### **LAN-25**

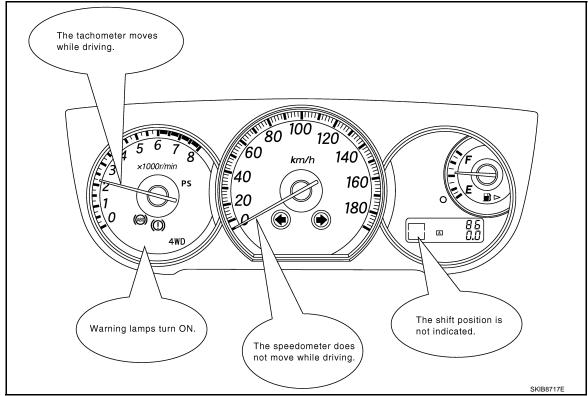
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#### < BASIC INSPECTION >

#### [CAN FUNDAMENTAL]

• Indication of the combination meter is important to detect the root cause because it is the most obvious to the customer, and it performs CAN communication with many units.



#### INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

#### NOTE:

Do not turn the ignition switch OFF or disconnect the battery cable while reproducing the error. The error may temporarily correct itself, making it difficult to determine the root cause.

CHECK OF CAN SYSTEM TYPE (HOW TO USE CAN SYSTEM TYPE SPECIFICATION CHART) Determine CAN system type based on vehicle equipment.

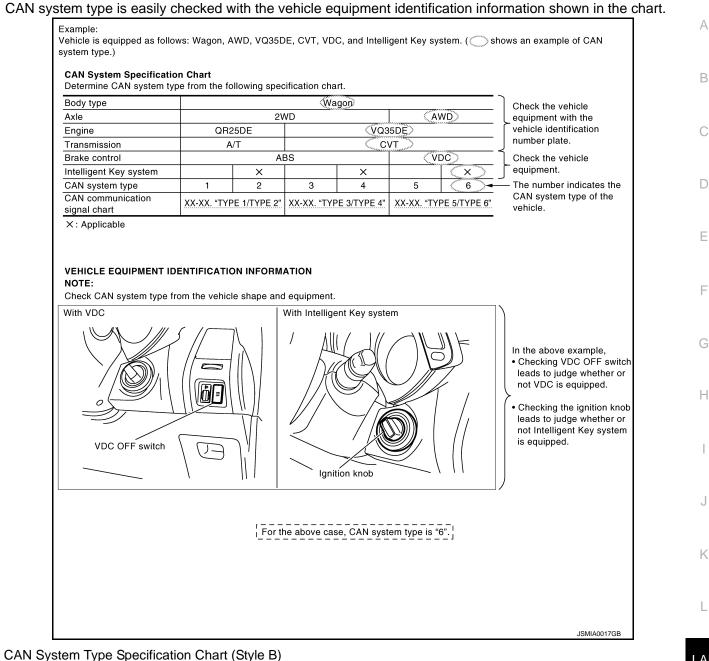
#### NOTE:

- This chart is used if CONSULT-III does not automatically recognize CAN system type.
- There are two styles for CAN system type specification charts. Depending on the number of available system types, either style A or style B may be used.

CAN System Type Specification Chart (Style A) **NOTE:** 

#### < BASIC INSPECTION >

#### [CAN FUNDAMENTAL]

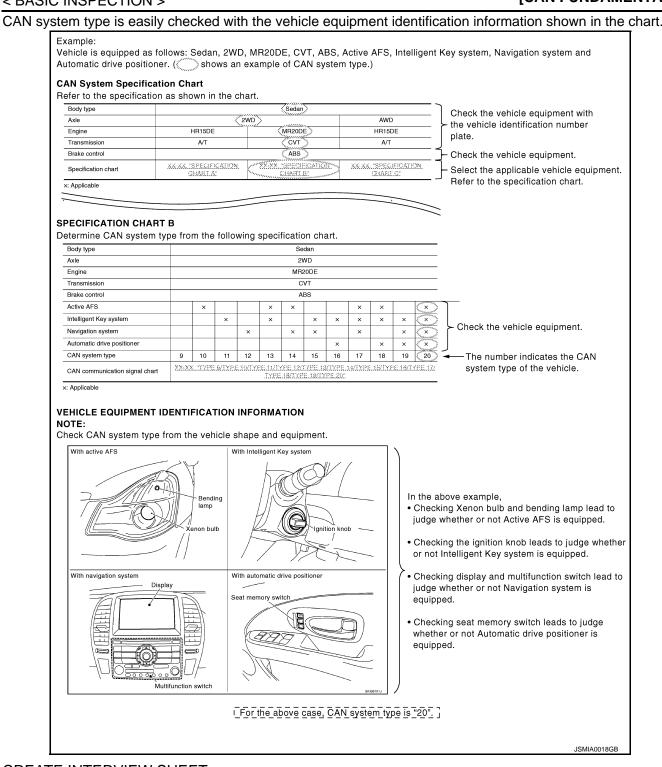


CAN System Type Specification Chart (Style B NOTE:

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#### < BASIC INSPECTION >



#### **CREATE INTERVIEW SHEET**

Fill out the symptom described by the customer, vehicle condition, and CAN system type on the interview sheet.

#### < BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example) А CAN Communication System Diagnosis Interview Sheet В Date received: 3, Feb. 2006 Type: DBA-KG11 VIN No.: KG11-005040 BDRARGZ397EDA-E-J-Model: D First registration: 10, Jan. 2001 Mileage: 62,140 Е CAN system type: Type 19 Symptom (Results from interview with customer) F ·Headlamps suddenly turn ON while driving the vehicle. •The engine does not restart after stopping the vehicle and turning the ignition switch OFF. ·The cooling fan continues rotating while turning the ignition switch ON. Н Condition at inspection Error Symptom: (Present) / Past The engine does not start. While turning the ignition switch ON, • The headlamps (Lo) turn ON, and the cooling fan continues rotating. Κ • The interior lamp does not turn ON. L JSMIA0019GB

#### DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT-III detects the root cause.

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### HOW TO USE THIS MANUAL HOW TO USE THIS SECTION

#### Caution

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• This section describes information peculiar to a vehicle and inspection procedures.

• For trouble diagnosis procedure, refer to LAN-25, "Trouble Diagnosis Procedure".

#### Abbreviation List

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Unit name abbreviations in CONSULT-III CAN diagnosis and in this section are as per the following list.

| Abbreviation | Unit name                                      |
|--------------|--|
| 4WD          | AWD control unit                               |
| A-BAG        | Air bag diagnosis sensor unit                  |
| ABS          | ABS actuator and electric unit (control unit)  |
| ADP          | Driver seat control unit                       |
| AFS          | AFS control unit                               |
| APA          | Accelerator pedal actuator                     |
| AV           | AV control unit                                |
| BCM          | BCM  |
| CGW          | CAN gateway                                    |
| DLC          | Data link connector                            |
| ECM          | ECM  |
| HVAC         | A/C auto amp.                                  |
| ICC          | ADAS control unit                              |
| IPDM-E       | IPDM E/R                                       |
| LANE         | Lane camera unit                               |
| LASER        | ICC sensor                                     |
| M&A          | Combination meter                              |
| PSB          | Pre-crash seat belt control unit (driver side) |
| RAS          | 4WAS main control unit                         |
| RDR-L        | Side radar LH                                  |
| RDR-R        | Side radar RH                                  |
| STRG         | Steering angle sensor                          |
| TCM          | ТСМ  |
| TPMS         | Low tire pressure warning control unit         |

### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT **PRE-TENSIONER**"

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The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. D Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

#### WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### WARNING:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

#### Precautions for Trouble Diagnosis

#### CAUTION:

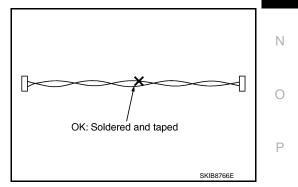
- Never apply 7.0 V or more to the measurement terminal.
- Use a tester with open terminal voltage of 7.0 V or less.
- Turn the ignition switch OFF and disconnect the battery cable from the negative terminal when checking the harness.

**LAN-31** 

#### Precautions for Harness Repair

 Solder the repaired area and wrap tape around the soldered area. NOTE:

A fray of twisted lines must be within 110 mm (4.33 in).





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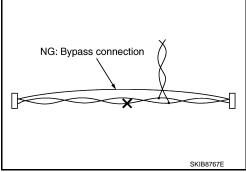
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#### PRECAUTIONS

#### < PRECAUTION >

Bypass connection is never allowed at the repaired area.
 NOTE:
 Bypass connection may cause CAN communication error

Bypass connection may cause CAN communication error. The spliced wire becomes separated and the characteristics of twisted line are lost.



• Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

#### < SYSTEM DESCRIPTION >

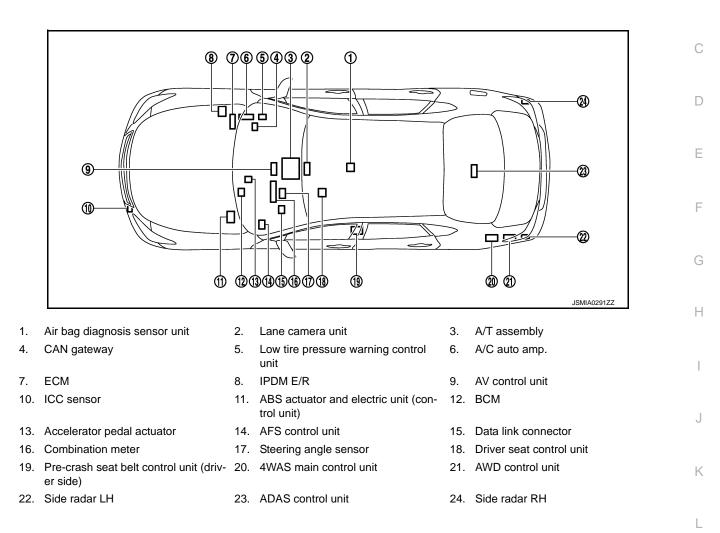
### SYSTEM DESCRIPTION COMPONENT PARTS

**Component Parts Location** 

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#### SYSTEM CAN COMMUNICATION SYSTEM

CAN COMMUNICATION SYSTEM : CAN System Specification Chart

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Determine CAN system type from the following specification chart.

NOTE:

Refer to LAN-25. "Trouble Diagnosis Procedure" for how to use CAN system specification chart.

| Body type                                      | Sedan   |     |        |           |        |     |      |   |     |      |        |    |  |
|--|---------|-----|--------|-----------|--------|-----|------|---|-----|------|--------|----|--|
| Axle   | 2WD     |     |        |           |        |     |      |   | AWD |      |        |    |  |
| Engine   | VQ37VHR |     |        |           |        | VK5 | 56VD |   | VQ3 | 7VHR | VK56VD |    |  |
| Transmission                                   |         |     |        |           | 1      | A   | /T   |   |     |      | 1      |    |  |
| Brake control                                  |         |     |        |           |        | V   | DC   |   |     |      |        |    |  |
| 4WAS   |         | ×   |        | ×         |        | ×   |      | × |     |      |        |    |  |
| Active AFS                                     |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| CAN system type                                | 1       | 2   | 3      | 4         | 5      | 6   | 7    | 8 | 9   | 10   | 11     | 12 |  |
|  |         | CAN | l comm | unicatio  | n unit | 1   | 1    |   |     | 1    | 1      |    |  |
| ECM  | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| Low tire pressure warning control unit         | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| CAN gateway                                    |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| A/C auto amp.                                  | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| ТСМ  | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| Air bag diagnosis sensor unit                  | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| AV control unit                                | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| Combination meter                              | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| Data link connector                            | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| BCM  | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| Steering angle sensor                          | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| AWD control unit                               |         |     |        |           |        |     |      |   | ×   | ×    | ×      | ×  |  |
| 4WAS main control unit                         |         | ×   |        | ×         |        | ×   |      | × |     |      |        |    |  |
| ABS actuator and electric unit (control unit)  | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| AFS control unit                               |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| IPDM E/R                                       | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| Driver seat control unit                       | ×       | ×   | ×      | ×         | ×      | ×   | ×    | × | ×   | ×    | ×      | ×  |  |
| ADAS control unit                              |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| Pre-crash seat belt control unit (driver side) |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| I  |         | ITS | commu  | unication | n unit |     |      |   |     |      | I      |    |  |
| ADAS control unit                              |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| Side radar LH                                  |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| Side radar RH                                  |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| Accelerator pedal actuator                     |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| Lane camera unit                               |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |
| ICC sensor                                     |         |     | ×      | ×         |        |     | ×    | × |     | ×    |        | ×  |  |

 $\times$ : Applicable

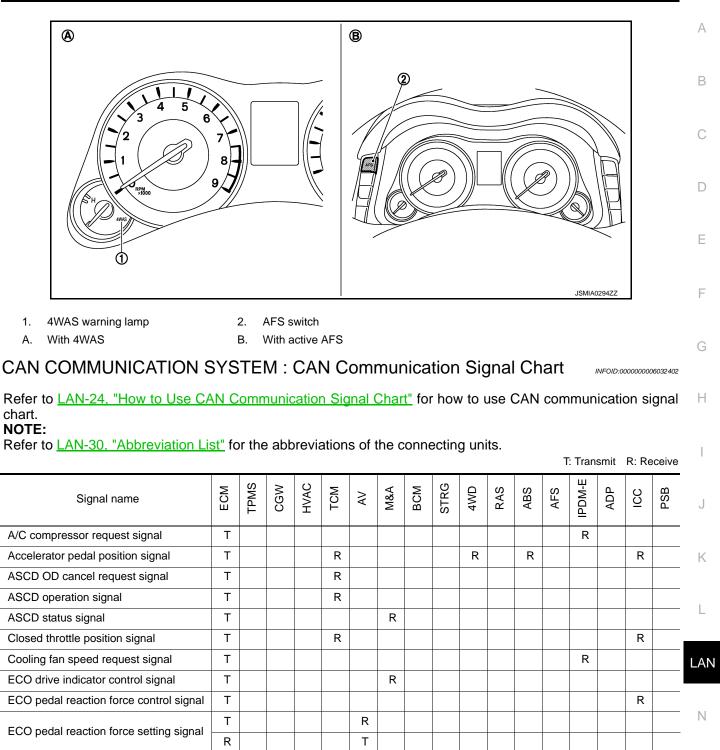
VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

NOTE:

Check CAN system type from the vehicle shape and equipment.

#### SYSTEM

#### < SYSTEM DESCRIPTION >



Engine speed signal

Engine status signal

ICC brake switch signal

ICC operation signal

Engine and A/T integrated control signal

Engine coolant temperature signal

Fuel consumption monitor signal

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#### SYSTEM

#### < SYSTEM DESCRIPTION >

| Signal name                                   | ECM | TPMS | CGW | HVAC | TCM | AV | M&A | BCM | STRG | 4WD | RAS | ABS | AFS | IPDM-E | ADP | ICC | PSB |
|---|-----|------|-----|------|-----|----|-----|-----|------|-----|-----|-----|-----|--------|-----|-----|-----|
| ICC prohibition signal                        |     |      |     |      |     |    |     |     |      |     |     |     |     |        |     | R   |     |
| ICC steering switch signal                    | Т   |      |     |      |     |    |     |     |      |     |     |     |     |        |     | R   |     |
| Malfunctioning indicator lamp signal          | Т   |      |     |      |     |    | R   |     |      |     |     |     |     |        |     |     |     |
| N idle instruction signal                     |     |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     |     |     |
|   |     |      |     |      | R   |    |     |     |      |     |     |     |     |        |     |     |     |
| Oil pressure warning lamp signal              | Т   |      |     |      |     |    | R   |     |      |     |     |     |     |        |     |     |     |
| Power generation command value sig-<br>nal    | Т   |      |     |      |     |    |     |     |      |     |     |     |     | R      |     |     |     |
| Snow mode switch signal                       | Т   |      |     |      |     |    |     |     |      |     |     | R   |     |        |     | R   |     |
|   | Т   |      |     |      |     |    |     |     |      |     |     |     |     |        |     | R   |     |
| Stop lamp switch signal                       |     |      |     |      | R   |    |     | Т   |      | -   |     | -   |     |        |     | 1   |     |
| Wide open throttle position signal            | Т   |      |     |      | R   |    |     |     |      | R   |     | Т   |     |        |     | R   |     |
| Low tire pressure warning lamp signal         |     |      |     |      |     |    | R   | Т   |      |     |     |     |     |        |     |     |     |
|   |     | Т    |     |      |     | R  |     | R   |      |     |     |     |     |        |     |     |     |
| Tire pressure data signal                     |     | Т    |     |      |     | R  |     |     |      |     |     |     |     |        |     |     |     |
| A/C display signal                            |     |      |     | Т    |     | R  |     |     |      |     |     |     |     |        |     |     |     |
| A/C evaporator temperature signal             | R   |      |     | Т    |     |    |     |     |      |     |     |     |     |        |     |     |     |
| A/C ON signal                                 | R   |      |     | Т    |     |    |     |     |      |     |     |     |     |        |     |     |     |
| Ambient sensor signal                         |     |      |     | Т    |     |    | R   |     |      |     |     |     |     |        |     |     |     |
| Blower fan ON signal                          | R   |      |     | Т    |     |    |     |     |      |     |     |     |     |        |     |     |     |
| ECO mode signal                               |     |      |     | Т    | R   |    | R   |     |      |     |     |     |     |        |     | R   |     |
| ECO mode signal                               | R   |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     |     |     |
| SNOW mode signal                              |     |      |     | Т    | R   |    | R   |     |      |     |     |     |     |        |     | R   |     |
| SPORT mode signal                             |     |      |     | Т    | R   |    | R   |     |      |     | R   |     |     |        |     | R   |     |
| STANDARD mode signal                          |     |      |     | Т    | R   |    | R   |     |      |     | R   |     |     |        |     | R   |     |
| Target A/C evaporator temperature sig-<br>nal | R   |      |     | т    |     |    |     |     |      |     |     |     |     |        |     |     |     |
| A/T CHECK indicator lamp signal               |     |      |     |      | Т   |    | R   |     |      |     |     |     | R   |        |     |     |     |
| A/T self-diagnosis signal                     | R   |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     |     |     |
| Current gear position signal                  | R   |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     | R   |     |
| Drive mode select signal                      | R   |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     | R   |     |
| Input speed signal                            |     |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     | R   |     |
| Manual mode shift refusal signal              |     |      |     |      | Т   |    | R   |     |      |     |     |     |     |        |     |     |     |
| N range signal                                |     |      |     |      | Т   |    |     | R   |      |     |     | R   |     |        |     |     |     |
| Next gear position signal                     | R   |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     |     |     |
| Output shaft revolution signal                | R   |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     | R   |     |
| P range signal                                |     |      |     |      | Т   |    |     | R   |      |     |     |     |     |        |     |     |     |
| R range signal                                |     |      |     |      | Т   |    |     |     |      |     |     | R   |     |        |     |     |     |
| Shift position signal                         |     |      |     |      | Т   |    | R   |     |      |     |     |     | R   |        | R   | R   |     |
| Shift schedule signal                         | R   |      |     |      | Т   |    |     |     |      |     |     |     |     |        |     |     |     |
| A/C switch operation signal                   | 1   |      |     | R    |     | Т  |     |     |      |     |     |     |     |        |     |     |     |
| Rear window defogger switch signal            |     |      |     |      |     | Т  |     | R   |      |     |     |     |     |        |     |     |     |

## SYSTEM

#### < SYSTEM DESCRIPTION >

| Signal name                                      | ECM | TPMS | CGW | HVAC | TCM | AV | M&A    | BCM    | STRG | 4WD | RAS | ABS | AFS | IPDM-E | ADP | ICC | PSB |   |
|--|-----|------|-----|------|-----|----|--------|--------|------|-----|-----|-----|-----|--------|-----|-----|-----|---|
| System selection signal                          |     |      |     |      |     | Т  |        |        |      |     |     |     |     |        |     | R   |     |   |
|  |     |      |     |      |     | Т  |        | R      |      |     |     |     |     |        | R   |     |     |   |
| System setting signal                            |     |      |     |      |     | R  |        | Т      |      |     |     |     |     |        |     |     |     |   |
|  |     |      |     |      |     | R  |        |        |      |     |     |     |     |        | Т   |     |     |   |
| Voice recognition signal                         |     |      |     | R    |     | Т  |        |        |      |     |     |     |     |        |     |     |     |   |
| Brake fluid level switch signal                  |     |      |     |      |     |    | Т      |        |      |     |     | R   |     |        |     |     |     |   |
| Distance to empty signal                         |     |      |     |      |     | R  | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Fuel level low warning signal                    |     |      |     |      |     | R  | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Fuel level sensor signal                         | R   |      |     |      |     |    | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Manual mode shift down signal                    |     |      |     |      | R   |    | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Manual mode shift up signal                      |     |      |     |      | R   |    | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Manual mode signal                               |     |      |     |      | R   |    | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Non-manual mode signal                           |     |      |     |      | R   |    | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Odometer signal                                  |     |      |     |      |     |    | Т      | R      |      |     |     |     |     |        |     |     |     |   |
| Paddle shifter shift down signal <sup>*</sup>    |     |      |     |      | R   |    | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Paddle shifter shift up signal <sup>*</sup>      |     |      |     |      | R   |    | Т      |        |      |     |     |     |     |        |     |     |     |   |
| Parking brake switch signal                      |     |      |     |      |     |    | Т      | R      |      | R   |     | R   |     |        |     | R   |     |   |
| Seat belt buckle switch signal (driver side)     |     |      |     |      |     |    | т      | R      |      |     |     |     |     |        |     |     |     |   |
| Sleep-ready signal                               |     |      |     |      |     |    | Т      | R      |      |     |     |     |     |        |     |     |     |   |
| Sleep-ready signal                               |     |      |     |      |     |    |        | R      |      |     |     |     |     | Т      |     |     |     |   |
| Vehicle speed signal                             | R   |      |     | R    | R   | R  | Т      | R      |      |     |     |     | R   | R      | R   |     | R   |   |
|  |     | R    |     |      |     |    | R      | R      |      | R   | R   | Т   |     |        | R   | R   |     |   |
| Wake up signal                                   |     |      |     |      |     |    | Т      | R      |      |     |     |     |     |        |     |     |     |   |
| Blower fan motor switch signal                   | R   |      |     |      |     |    |        | Т      |      |     |     |     |     |        |     |     |     |   |
| Buzzer output signal                             |     |      |     |      |     |    | R<br>R | Т      |      |     |     |     |     |        |     | Т   |     |   |
| Day time running light request signal            |     |      |     |      |     |    |        | Т      |      |     |     |     |     | R      |     |     |     |   |
| Dimmer signal                                    |     |      |     |      |     |    | R      | Т      |      |     |     |     |     |        |     | R   |     |   |
| Door switch signal                               |     |      |     |      |     |    | R      | Т      |      |     |     |     |     | R      | R   |     | R   | 1 |
| Door unlock signal                               |     |      |     |      |     |    |        | т      |      |     |     |     |     |        | R   |     |     |   |
| Front fog light request signal                   |     |      |     |      |     |    | R      | Т      |      |     |     |     |     | R      |     |     |     |   |
| Front wiper request signal                       |     |      |     |      |     |    |        | Т      |      |     |     |     |     | R      |     | R   |     |   |
| Handle position signal                           |     |      |     |      |     |    |        | Т      |      |     |     |     |     |        | R   |     |     |   |
| High beam request signal                         |     |      |     |      |     |    | R      | Т      |      |     |     |     |     | R      |     |     |     |   |
| Horn reminder signal                             |     |      |     |      |     |    |        | Т      |      |     |     |     |     | R      |     |     |     |   |
| Ignition switch ON signal                        |     |      |     |      |     |    |        | T<br>R |      |     |     |     |     | R<br>T |     |     | R   |   |
| Ignition switch signal                           |     |      |     |      |     |    |        | т      |      |     |     |     |     |        | R   |     | R   |   |
| Intelligent Key system warning display<br>signal |     |      |     |      |     |    | R      | Т      |      |     |     |     |     |        |     |     |     |   |
| Interlock/PNP switch signal                      |     |      |     |      |     |    |        | T<br>R |      |     |     |     |     | R<br>T |     |     |     |   |

[CAN]

#### SYSTEM

#### < SYSTEM DESCRIPTION >

| Signal name                                  | ECM | TPMS | CGW | HVAC | TCM | AV | M&A    | BCM    | STRG | 4WD | RAS | ABS | AFS | IPDM-E | ADP | ICC | PSB |
|--|-----|------|-----|------|-----|----|--------|--------|------|-----|-----|-----|-----|--------|-----|-----|-----|
| Key ID signal                                |     |      |     | R    |     |    |        | Т      |      |     |     |     |     |        | R   |     |     |
| Low beam request signal                      |     |      |     |      |     |    |        | Т      |      |     |     |     |     | R      |     |     |     |
| Meter display signal                         |     |      |     |      |     |    | R      | Т      |      |     |     |     |     |        |     |     |     |
| Meter ring illumination request signal       |     |      |     |      |     |    | R<br>R | Т      |      |     |     |     |     |        |     | Т   |     |
| Oil pressure switch signal                   |     |      |     |      |     |    | R      | Т      |      |     |     |     |     |        |     |     |     |
| Position light request signal                |     |      |     |      |     |    | R      | R<br>T |      |     |     |     |     | T<br>R |     |     |     |
| Rear window defogger control signal          | R   |      |     |      |     | R  |        | Т      |      |     |     |     |     | R<br>T |     |     |     |
| Sleep wake up signal                         |     |      | R   |      |     |    | R      | Т      |      |     |     |     |     | R      | R   |     | R   |
| Starter control relay signal                 |     |      |     |      |     |    |        | Т      |      |     |     |     |     | R      |     |     |     |
| Starter relay status signal                  |     |      |     |      |     |    | R      | T<br>R |      |     |     |     |     | R<br>T |     |     |     |
| Starting mode signal                         |     |      |     |      |     |    |        | Т      |      |     |     |     |     | 1      | R   |     |     |
| Steering lock relay signal                   |     |      |     |      |     |    |        | T<br>R |      |     |     |     |     | R<br>T |     |     |     |
| Steering lock unit status signal             |     |      |     |      |     |    |        | R      |      |     |     |     |     | Т      | R   |     |     |
| Theft warning horn request signal            |     |      |     |      |     |    |        | T      |      |     |     |     |     | R      | ĸ   |     |     |
| Trunk switch signal                          |     |      |     |      |     |    | R      | Т      |      |     |     |     |     |        |     |     |     |
| Turn indicator signal                        |     |      |     |      | R   |    | R      | Т      |      |     |     |     |     |        |     | R   |     |
| Steering angle sensor malfunction signal     |     |      |     |      |     |    |        |        | Т    |     |     |     |     |        |     | R   | R   |
| Steering angle sensor signal                 |     |      |     |      |     | R  |        |        | Т    |     | R   | R   | R   |        |     | R   | R   |
| Steering angle speed signal                  |     |      |     |      |     |    |        |        | Т    |     |     |     |     |        |     | R   | R   |
| Steering calibration signal                  |     |      |     |      |     |    |        |        | Т    |     |     |     |     |        |     |     | R   |
| AWD signal                                   |     |      |     |      |     |    |        |        |      | Т   |     | R   |     |        |     |     |     |
| AWD warning lamp signal                      |     |      |     |      |     |    | R      |        |      | Т   |     |     |     |        |     |     |     |
| 4WAS signal                                  |     |      |     |      |     |    |        |        |      |     | Т   | R   |     |        |     |     |     |
| 4WAS warning lamp signal                     |     |      |     |      |     |    | R      |        |      |     | Т   |     |     |        |     |     |     |
| A/T shift schedule change demand sig-<br>nal |     |      |     |      | R   |    |        |        |      |     |     | т   |     |        |     |     |     |
| ABS malfunction signal                       |     |      |     |      |     |    |        |        |      |     |     | Т   |     |        |     | R   |     |
| ABS operation signal                         |     |      |     |      | R   |    |        |        |      |     |     | Т   |     |        |     | R   | R   |
| ABS warning lamp signal                      |     |      |     |      |     |    | R      |        |      |     |     | Т   |     |        |     | R   |     |
| Brake warning lamp signal                    |     |      |     |      |     |    | R      |        |      |     |     | Т   |     |        |     |     |     |
| Decel G sensor signal                        |     |      |     |      | R   |    |        |        |      |     |     | Т   |     |        |     |     |     |
| Pressure sensor signal                       |     |      |     |      | R   |    |        |        |      |     |     | Т   |     |        |     |     |     |
| Side G sensor signal                         |     |      |     |      | R   |    |        |        |      |     |     | Т   |     |        |     | R   |     |
| TCS gear keep request signal                 |     |      |     |      | R   |    |        |        |      |     |     | Т   |     |        |     |     |     |
| TCS malfunction signal                       |     |      |     |      |     |    |        |        |      |     |     | Т   |     |        |     | R   |     |
| TCS operation signal                         |     |      |     |      |     |    |        |        |      |     |     | Т   |     |        |     | R   |     |
| VDC malfunction signal                       |     |      |     |      | R   |    |        |        |      |     |     | Т   |     |        |     | R   |     |

#### SYSTEM

#### < SYSTEM DESCRIPTION >

| Signal name                               | ECM | TPMS | CGW | HVAC | TCM | AV | M&A | BCM | STRG | 4WD | RAS | ABS | AFS | IPDM-E | ADP | ICC | PSB | A |
|---|-----|------|-----|------|-----|----|-----|-----|------|-----|-----|-----|-----|--------|-----|-----|-----|---|
| VDC OFF indicator lamp signal             |     |      |     |      |     |    | R   |     |      |     |     | Т   |     |        |     |     |     |   |
| VDC OFF switch signal                     |     |      |     |      |     |    |     |     |      |     |     | Т   |     |        |     | R   |     | В |
| VDC operation signal                      |     |      |     |      |     |    |     |     |      |     |     | Т   |     |        |     | R   |     |   |
| VDC warning lamp signal                   |     |      |     |      |     |    | R   |     |      |     |     | Т   |     |        |     |     |     | С |
| Yaw rate signal                           |     |      |     |      |     |    |     |     |      |     |     | Т   |     |        |     | R   |     |   |
| AFS OFF indicator lamp signal             |     |      |     |      |     |    | R   |     |      |     |     |     | Т   |        |     |     |     |   |
| A/C compressor feedback signal            | R   |      |     | R    |     |    |     |     |      |     |     |     |     | Т      |     |     |     | D |
| Front wiper position signal               |     |      |     |      |     |    |     | R   |      |     |     |     |     | Т      |     |     |     |   |
| High beam status signal                   | R   |      |     |      |     |    |     |     |      |     |     |     | R   | Т      |     |     |     | F |
| Hood switch signal                        |     |      |     |      |     |    |     | R   |      |     |     |     |     | Т      |     |     |     |   |
| Low beam status signal                    | R   |      |     |      |     |    |     |     |      |     |     |     | R   | Т      |     |     |     |   |
| Push-button ignition switch status signal |     |      |     |      |     |    |     | R   |      |     |     |     |     | Т      |     |     |     | F |
| Active Trace control signal               |     |      |     |      |     |    |     |     |      |     |     | R   |     |        |     | Т   |     |   |
| Brake fluid pressure control signal       |     |      |     |      |     |    |     |     |      |     |     | R   |     |        |     | Т   |     | 0 |
| BSI ON indicator signal                   |     |      |     |      |     |    | R   |     |      |     |     |     |     |        |     | Т   |     | G |
| BSW/BSI warning lamp signal               |     |      |     |      |     |    | R   |     |      |     |     |     |     |        |     | Т   |     |   |
| IBA OFF indicator lamp signal             |     |      |     |      |     |    | R   |     |      |     |     |     |     |        |     | Т   |     | Н |
| IBA operation signal                      |     |      |     |      |     |    |     |     |      |     |     |     |     |        |     | Т   | R   |   |
| ICC warning lamp signal                   |     |      |     |      |     |    | R   |     |      |     |     |     |     |        |     | Т   |     |   |
| Lane departure warning lamp signal        |     |      |     |      |     |    | R   |     |      |     |     |     |     |        |     | Т   |     |   |
| LDP ON indicator lamp signal              |     |      |     |      |     |    | R   |     |      |     |     |     |     |        |     | Т   |     |   |
| Target yaw moment signal                  |     |      |     |      |     |    |     |     |      |     |     | R   |     |        |     | Т   |     | J |

\*: Models with paddle shifter

NOTE:

CAN data of the air bag diagnosis sensor unit is not used by usual service work, thus it is omitted.

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[CAN]

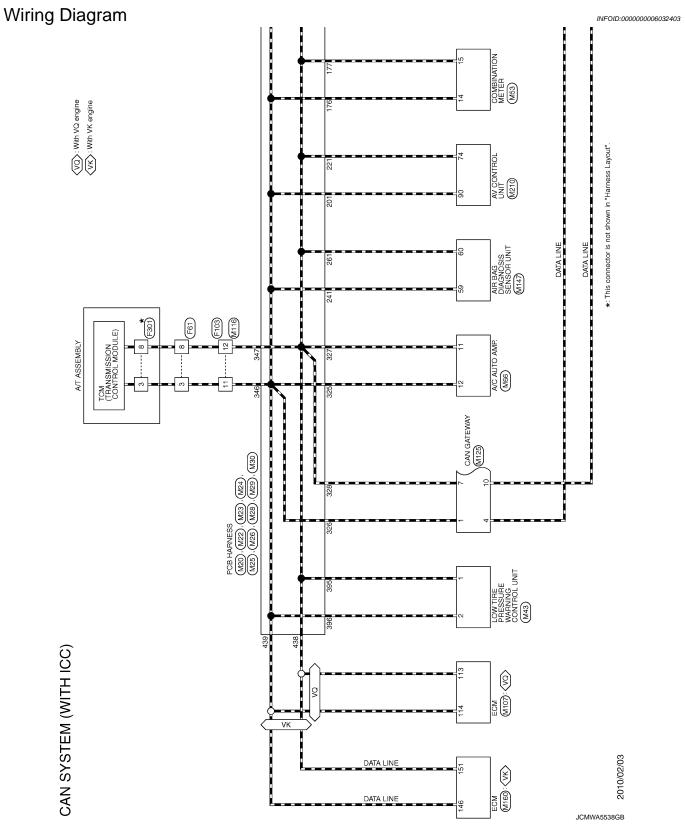
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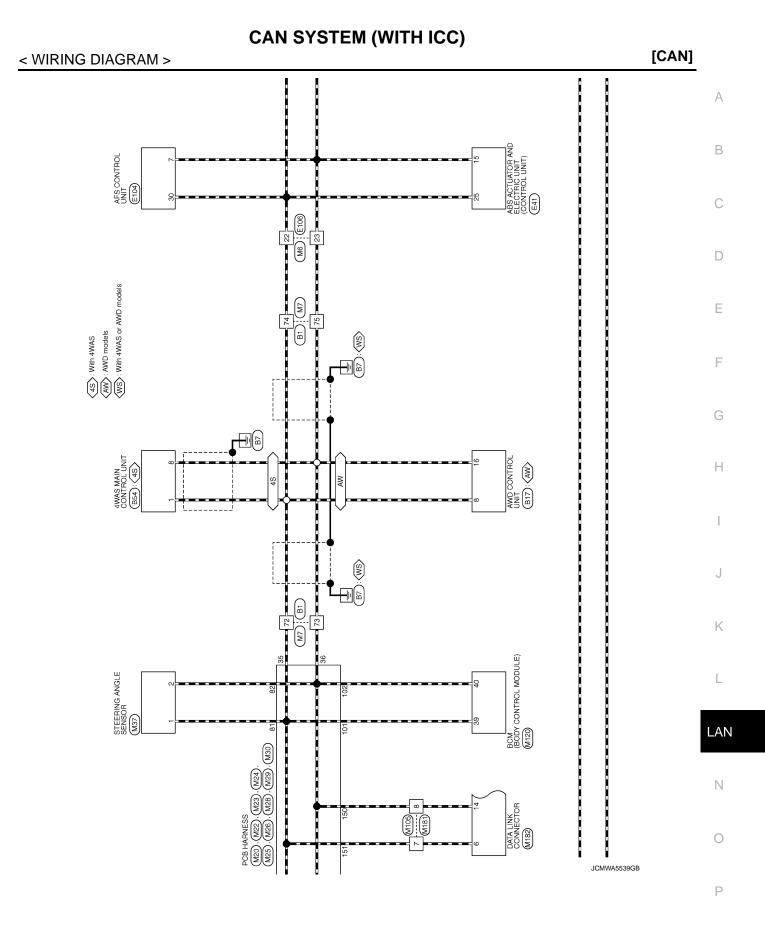
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# < WIRING DIAGRAM > WIRING DIAGRAM

CAN SYSTEM (WITH ICC)

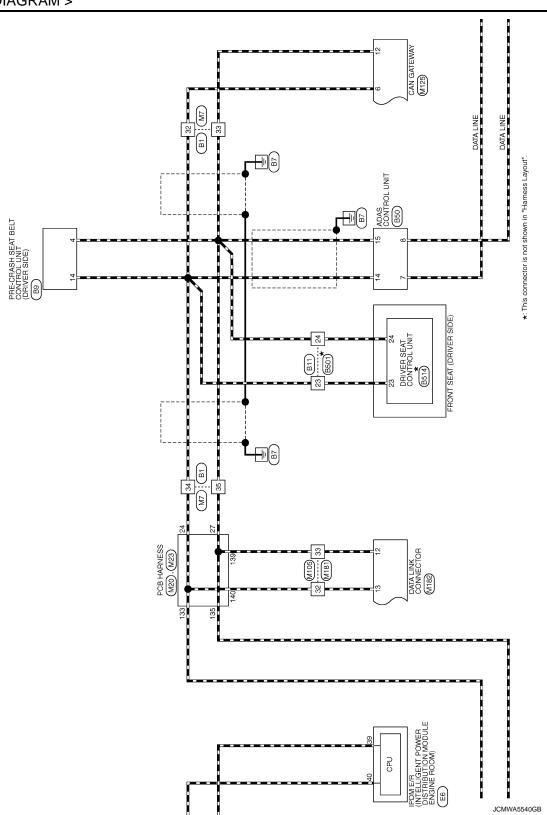


Revision: 2010 June



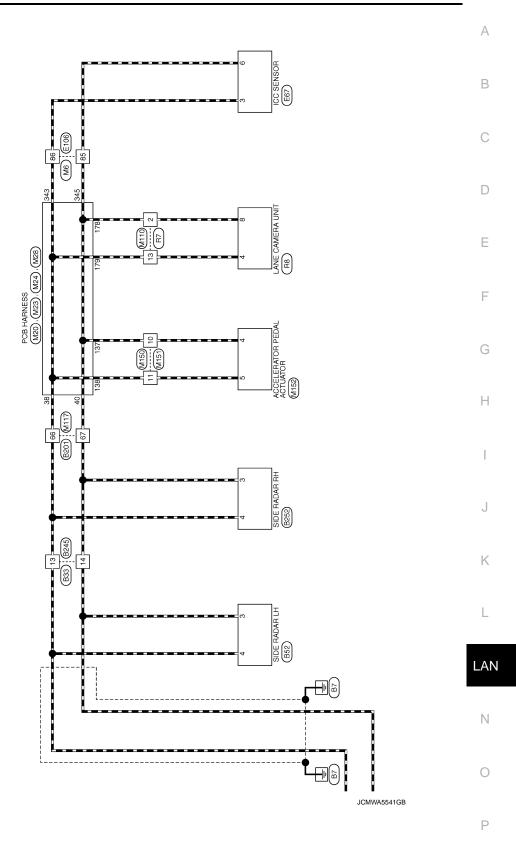
Revision: 2010 June

2011 M37/M56



## CAN SYSTEM (WITH ICC)





| Convertision         29         0         -         < | Connector Type THIEFW-NH   | Terminal         Color         Signal Name [Specification]           No.         of Wee         Signal Name [Specification]           1         2         R         AMD SOL (-)           2         R         AMD SOL (-)         Implementation           3         W         OLL TEMP (-)         Implementation           7         Y         CANH         Implementation           8         L         CANH         Implementation           10         B/Y         CANH         Implementation           11         B/Y         OND         Implementation           13         LG         OLL TEMP (-)         Implementation           13         LG         OLL TEMP (-)         VB           15         P         CANH         Implementation | 40<br>40   |
|---|--|--|--|
| Connector No. B9<br>Connector Name Pret count un chever are<br>Connector Type THIEPW-CS2<br>Connector Type 112 44 6 8 9<br>19 10 12 14 16 1718 20   | Terminal<br>No.         Color<br>of Wires         Signal Name (Specification)           1         V         Signal Name (Specification)           2         G         OUT 1           4         P         CANLO           6         LO CANLO           8         ER           9         SHELD           10         SHELD           2         SHELD   | B         -           L         -           L         -           K         -           W         -           W         -           B         -           Con         B1           Con         NITE           Con         WIRE TO WIRE           Con         -   | Terminal         Color         Signal 132         Color         Signal 432         Edit 40           Terminal         Color         Signal Name (Specification)         Signal Name (Specification)         Signal Name (Specification)           1         Signal         L         -         -         -           23         L         -         -         -         -         -           25         L         - |
|   |  |  |  |
| 37 SB<br>37 SHELD<br>40 SHELD<br>45 W/<br>45 W/<br>45 W/<br>49 BR<br>50 SB<br>53 LG<br>53 C   | 57 BR 57 BR 57 BR 57 BR 58 C 58  |  | 79         79         6           81         81         81         81           82         82         83         83         83           83         83         84         4         83         83           84         83         84         83                    |
| CAN SYSTEM (WITH ICC)<br>Cornector Name Mrie TO Write<br>Connector Type HaterW-CSIG-TM4<br>Connector Type   | Color Signal Name (Specification) of Wire Specification) Manual Manuel Specification) Manual Manua<br>Versited Manual Manu<br>Versited Manual Manua | - [With Olimate controlled seat] - [With heated seat] - [With heated seat] - [With heated seat] - [With heated seat]   | - (With Pre-cras<br>(Without Pre-cras<br>- (Without Pre-cras<br>- (Without Pre-cras  |
| CAN SYST<br>Connector No. E<br>Connector Type 1<br>Uconnector Type 1<br>1.S   | of Wire<br>GR < P LG × R   | ≤ ⋈ ๓ < 0 ⋈ ⅔ ⅔ ㅂ ∟ ⅔ < L <sup>G</sup>   | жггжг <mark>б</mark><br>В<br>В<br>В<br>В<br>В<br>В<br>С<br>С<br>С<br>В<br>В<br>В<br>В<br>В<br>С<br>С<br>С<br>С<br>В<br>В<br>В<br>В<br>В<br>В<br>С<br>С<br>С<br>С<br>С<br>В<br>В<br>В<br>В<br>В   |

JCMWA5542GB

| T (WITH ICC)<br>T WIRE<br>FGY-CS<br>5 4 3 2                | Connector No. B12<br>Connector Name SIDE RADAR LH<br>Connector Type AAC006FB-WP-SP | Connector No.<br>Connector Name<br>Connector Type | MIRE TO MRE<br>MIRE TO MRE<br>THEOMW-CSIG-TIM4 | 63 W<br>66 L<br>67 V<br>68 SB<br>69 B<br>69 B<br>76 SHIELD<br>77 G |                                  |
|--|--|---|--|--|----------------------------------|
|  | J  |   | 2 4 0  | +++  | 1 1 1                            |
| Terminal Color Signal Name [Specification]<br>No. of Wire  | e Signal Nam   | Terminal Color<br>No. of Wir                      | Color Signal Name [Specification] of Wire      | 82 BR<br>83 GR   | т                                |
| 2 L P  | 2 B/Y GND<br>3 Y ITS COMM-L  | 3   | GR   | 84 < < 85 LG   | 1                                |
| $\mathbb{H}$   | L ITS  | H   | ,<br>,   | $\mathbb{H}$   |                                  |
| 9 GK   | 5 GR BSW/BSI INDICATOR   | 19<br>20<br>G                                     | GR   | 8/<br>88 √   | 1 1                              |
| H  |  | $\mathbb{H}$                                      | -  | 89 BR  | 1                                |
| ╈  | Connector No. B54  | ╀   |  | 91 ER  | 1 1                              |
| 13 L   | Connector Name 4WAS MAIN CONTROL UNIT  | $\vdash$  | -  | $\vdash$   | - [With Climate controlled seat] |
|  | Connector Type A36FW-M4  | 26 26   | M  | 94 GR  |                                  |
| Γ  | Ĥ  | $\left  \right $                                  | - 0  |  | I                                |
|  |  | 29  |  | 97 P<br>98 LG  | T T                              |
|  | [1 3]4]5 7]8 W 27 252827   | H   | - 0  | H  | 1                                |
| Connector Type TH16FW-NH                                   | 1112 15 15 1 1 N 3132 34 35 01 30 30 44  | 9<br>9<br>9                                       | B/R  | 100 Y  | 1                                |
| E  |  | +   |  |  |                                  |
| HS   |  | H   | - w/R  |  |                                  |
|  | Terminal Color Signal Name [Specification]   | 42  | > 0  |  |                                  |
| 16 15 14 12  | t  | ╀   | - RB   |  |                                  |
|  | Н  | $\square$   | T  |  |                                  |
|  | +  | +   |  |  |                                  |
| I erminal Color Signal Name [Specification]<br>No. of Wire | 2 a  | +   | GR - [With heate controlled seat]              |  |                                  |
| Y WAR  | M  | H   |  |  |                                  |
| _  | _  | 49 0  | - 0  |  |                                  |
| E CD WARNING SYSTEMS ON IND                                |  | +   | ~ 6  |  |                                  |
|  | W/I 4WAS COM   | +   | - 01   |  |                                  |
|  | GR/V   |   | -  |  |                                  |
| H  | 5  | 56 F  |  |  |                                  |
| . ∝  | BS -   | +   | -  |  |                                  |
| 15 P CAN-H   | - a  | 200   |  |  |                                  |
| - B  | £ 0.   | +   | - 95   |  |                                  |
|  | Ĥ  | 62 1  |  |  |                                  |
|  |  |   |  |  |                                  |
|  |  |   |  |  |                                  |
|  |  |   |  |  |                                  |
|  |  |   |  |  |                                  |
|  |  |   |  |  |                                  |
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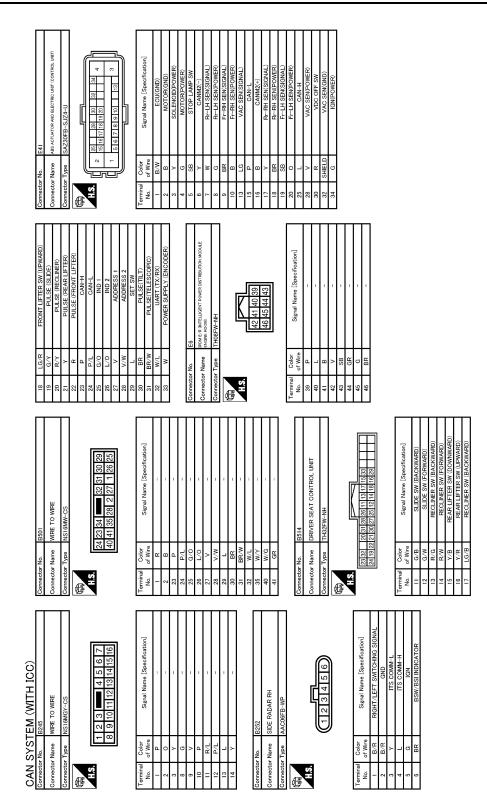
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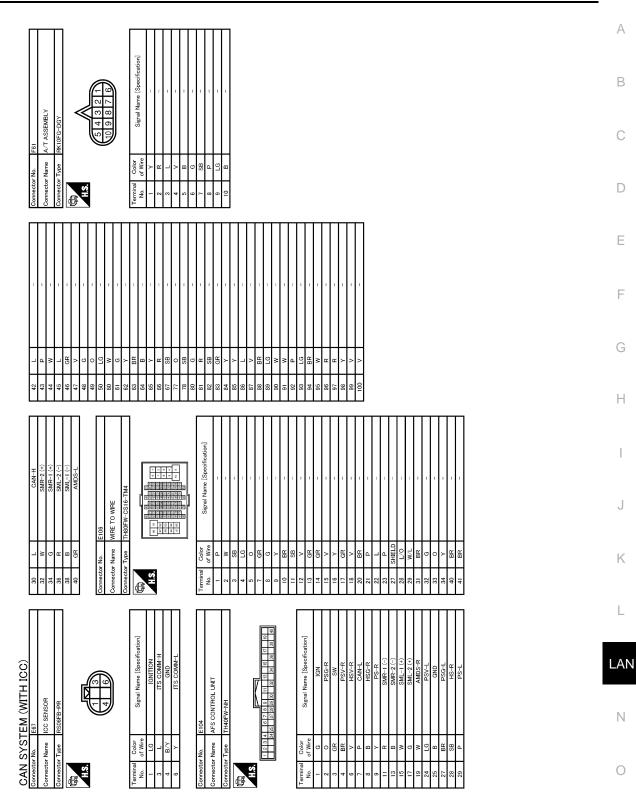
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## **CAN SYSTEM (WITH ICC)**

[CAN]



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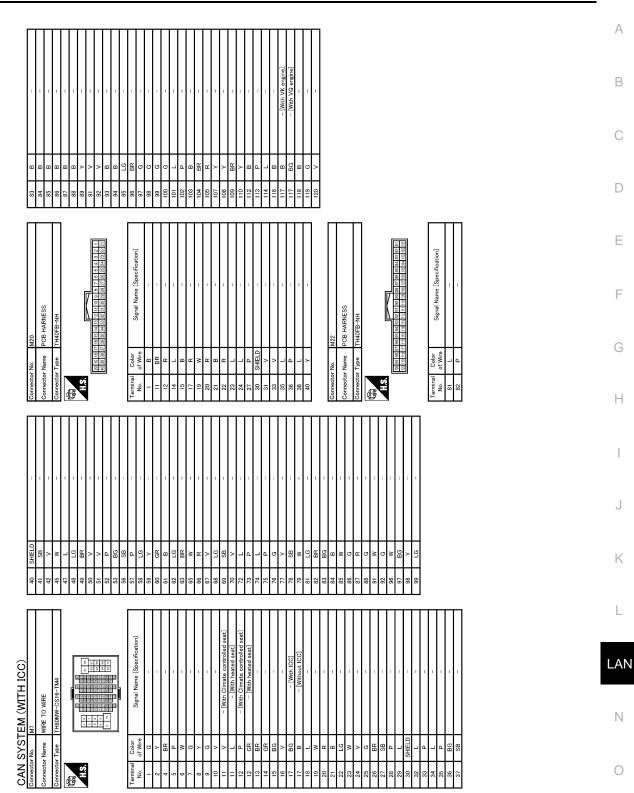
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| CAN            | _<br>S  | CAN SYSTEM (WITH ICC)   |          |                |  |              |         |     |     |    |   |  |
|----------------|---------|---|----------|----------------|--|--------------|---------|-----|-----|----|---|--|
| Connector No.  | or No.  | 5. F103   | Conne    | Connector No.  | F301   | 14           | 1       | 1   | 95  | w  | - |  |
| Connector Name | or Nan  | MRE TO WIRE   | Conne    | Connector Name | TCM (TRANSMISSION CONTROL MODULE)  | 2            | $\mid$  | 1   | 96  | œ  | 1 |  |
|                |         |   |          |                |  | =            | 16 B    | 1   | 97  | SB | I |  |
| Connect        | tor Typ | Connector Type TK36FW–NS10  | Conne    | Connector Type | SP10FG   | 1            | -       |     | 86  | α  | I |  |
| đ              |         |   | ą        |                |  | 18           | +       |     | 66  | ×  | 1 |  |
| -              |         |   | Ŧ        |                | ~  | Ň            | +       |     | 100 | _  | 1 |  |
| H.S.           |         |   | H.S.     | 1              |  | 17           | Щ.      |     |     |    |   |  |
|                | 38 37   | 10 8 3 7 36 34 33 32 34 39 20 11 8 11 16 15 14 13 12 11 1 5 1 4 3 2 1 1 4 1 1 16 14 14 14 14 14 14 14 14 14 14 14 14 14 |          |                | 12345  | 22           |         | 1 1 |     |    |   |  |
|                |         |   |          |                | 0  | ú i          | t       |     |     |    |   |  |
|                |         |   |          |                | 1 0 9  | 2/           | Alelu   |     |     |    |   |  |
|                |         |   |          |                |  | ŭ            | ╉       |     |     |    |   |  |
| Tauminal       |         | Calar<br>Calar  | Touring  | vala Calar     |  | 29           |         | 1 1 |     |    |   |  |
|                |         | Signal Name [Specification]   |          | _              | Signal Name [Specification]  | ° (          | ╉       |     |     |    |   |  |
| N0.            | 5       |   |          |                | VIGN   | 33           | 1 8     | 1 1 |     |    |   |  |
| ~              | ľ       |   | c        |                | BATT   | 10           |         |     |     |    |   |  |
| , 4            | 1       | R = [With VK ensine]  | 4 6      | +              | CAN-H  | 40           | ╉       |     |     |    |   |  |
| •              | ľ       |   | n -      |                | K INF  | P =          | ╀       |     |     |    |   |  |
| + u            |         |   | + u      | ╀              |  | ÷ 64         | ╀       |     |     |    |   |  |
| u u            | "       |   | 9        |                | VION   | ; ;          | ╞       |     |     |    |   |  |
| 0 1            | 1       |   | D r      | +              |  | <del>2</del> |         |     |     |    |   |  |
| -              | 1       | -   | ` '      | ╉              |  | ÷ [ :        | ╉       |     |     |    |   |  |
| ÷              | 1       |   | 20       | Ä              | CAN-L  | 45           | ╉       |     |     |    |   |  |
| 6              | ^       |   | 6        | +              | ST   | 46           | -       | I   |     |    |   |  |
| 6              | Ś       | SB – [With VQ engine]   | ≘        | W/B            | GND  | 47           |         | 1   |     |    |   |  |
| 01             | ۵       | BR – [With VK engine]   |          |                |  | 48           | +       | 1   |     |    |   |  |
| 10             | 1       | <ul> <li>[With VQ engine]</li> </ul>  |          |                |  | 4            | 9 BG    |     |     |    |   |  |
| 11             |         | L –   | Conne    | Connector No.  | M6   | 50           | M 0     | -   |     |    |   |  |
| 12             | 4       |   | , and a  | Connector Name |  | 90           | 0 GR    | 1   |     |    |   |  |
| 13             | Ĺ       | - A   |          |                |  | 61           | 8       | 1   |     |    |   |  |
| 14             | Ő       | SB  | Conne    | Connector Type | TH80MW-CS16-TM4  | 62           | 2 LG    | 1   |     |    |   |  |
| 15             | Ľ       | ۰<br>د  | 4        |                |  | 63           |         | 1   |     |    |   |  |
| 16             |         | N   | ľ        |                | d,   | 64           | ┝       |     |     |    |   |  |
| 17             | Ű       | GR -  |          | ¢.             | 11<br>12<br>13<br>13<br>14<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15<br>15 | 65           | œ<br>د  | 1   |     |    |   |  |
| 18             | Ĩ       | TG  |          | 5              | 2 7 1000 0005 000 1000 1000 00 00 00 00 00 00 00 00 0  | 99           |         | 1   |     |    |   |  |
| 21             | Ĺ       |   |          |                | 11日本の  | 67           | -       | 1   |     |    |   |  |
| 22             | Ľ       |   |          |                |  | 12           | 8       | ,   |     |    |   |  |
| 23             |         |   |          |                | 1020 0900 0160 7/60<br>20 20 20 20 20 20   | 78           |         | 1   |     |    |   |  |
| 24             | 6       | BR -  |          |                |  | 80           | 0       |     |     |    |   |  |
| 25             | ľ       |   | Termine  | nal Color      |  | 12           |         | ,   |     |    |   |  |
| 24             |         | ,<br>,  | Ň        | _              | Signal Name [Specification]  | 6            | - c     | ,   |     |    |   |  |
|                |         |   | -        | t              | ,  | 200          |         | ,   |     |    |   |  |
|                |         |   | ſ        | . >            | 1  | P P P        | ╀       |     |     |    |   |  |
|                |         |   | 1 0      | -              |  | 5 8          | ╀       |     |     |    |   |  |
|                |         |   | ľ        | ╉              |  | ó            | ╀       | 1   |     |    |   |  |
|                |         |   | 4 1      | 2 3            | r :  | 8            |         | 1   |     |    |   |  |
|                |         |   | 0        | ╉              | 1  | °            | +       | 1   |     |    |   |  |
|                |         |   | <u> </u> | +              | 1  | 88           | +       |     |     |    |   |  |
|                |         |   | 00       | ┥              | 1  | ő            | 89 LG   |     |     |    |   |  |
|                |         |   | 6        | >              | 1  | 6            | 0<br>BG | -   |     |    |   |  |

JCMWA5546GB

## **CAN SYSTEM (WITH ICC)**

[CAN]

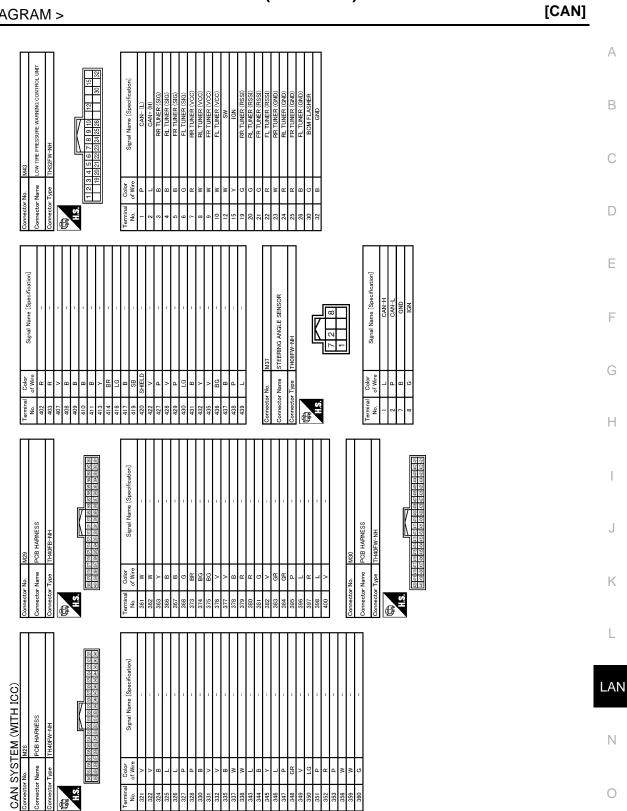


JCMWA5547GB

## CAN SYSTEM (WITH ICC)

| Connector No. M26<br>Connector Name PCB HARNESS<br>Connector Type TH40PM-NH                           |                                       | Terminal Color Signal Name [Specification]<br>No. of Wire | Н   | 243 R – | 9                       |  | - [Wi                                     | +       | 249 SHIELD                                      | t      | . 🗠    | W – [Wi              | в   |  | SHIELD                                    | 25/ SHIELD -<br>258 R - | ┝                       | 260 BG -             | _   | 269 GR – | +                                      | _   | _   | 4   | ĸ   | > (      | +    | 2// G    | ╞      | œ   | 280 Y – |
|---|---------------------------------------|---|-----|---------|-------------------------|--|---|---------|---|--------|--------|----------------------|---|--|---|-------------------------|-------------------------|----------------------|---|----------|--|---|-----|-----|-----|----------|------|----------|--------|-----|---------|
|   |                                       |   |     | _       | _                       |  |   |         | _   | -<br>- |        |                      |   |  | _   | _                       |                         |                      |   |          | _                                      |   | _   | _   | _   |          | +    |          | -<br>- |     |         |
| M25<br>PCB HARNESS<br>TH40FB-NH   | · · · · · · · · · · · · · · · · · · · | Signal Name [Specification]                               |     |         | - [Without BOSE system] | <ul> <li>[With BOSE system]</li> </ul> | <ul> <li>[Without BOSE system]</li> </ul> |         | - [With BOSE system]<br>- [Mithout BOSE system] | -      | -      | - [With BOSE system] | <ul> <li>[Without BOSE system]</li> </ul> | <ul> <li>[With BOSE system]</li> </ul> | <ul> <li>[Without BOSE system]</li> </ul> | - [With ROSF evenam]    | - [Without BOSE system] | - [With BOSE system] | <ul> <li>[Without BOSE system]</li> </ul> | -        |  | 1   | 1   | T   | 1   | t        | Ð    | -        | -      | -   | -       |
|   | 220 218 218 217<br>240 238 238 238    | Color<br>of Wire  | ٦   | σ-      | - 0                     | ٩                                      | L   | SHIELD  | ۳ B   | j œ    | SHIELD | >                    | GR  | LG                                     | 5   | SHIELD                  | jα                      | GR                   | ۷   | SHIELD   | ٩                                      | LG  | SB  | SB  | LG  | <u>۲</u> | Ηg ( | 99<br>24 | •      | ٩   | ш       |
| Connector No.<br>Connector Name<br>Connector Type   | HS.                                   | Ferminal<br>No.   | 201 | 208     | 209                     | 210                                    |   | +       | 212   | 213    |        | 215                  | 215                                       | 216                                    | +   | 21/                     | 218                     | 219                  | 219                                       |          | 221                                    | 222                                       | 223 | 224 | 225 | 226      | 230  | 231      | 233    | 234 | 235     |
| M24<br>POB HARNESS<br>TH40PW-NH   |                                       | e Signal Name [Specification]                             |     | 1       | 1                       | 1                                      | 1   | 1       | 1 1   | ,      | 1      | 1                    | Γ   | 1                                      | I   | 1 1                     | 1                       | I                    | -   | -        | <ul> <li>[With BOSE system]</li> </ul> | <ul> <li>[Without BOSE system]</li> </ul> | Ţ   | I   | I   | I        | I    | 1 1      | 1      | -   | -       |
| or No.<br>or Name<br>or Type  | 200 (129 (128                         | Color<br>of Wire  | BG  | ä       | <sup>5</sup> >          | >                                      | ٣   | 5<br>LG | <u>م</u> 1                                      | : œ    | • •    | ×                    | ш   | -                                      | <u>م</u> :                                |                         | LG I                    | H                    | J   | >        | ۵.                                     | >   | ٣   | -   | >   | : œ      | > <  | " a      | 5      | В   | æ       |
| Connector No.<br>Connector Name<br>Connector Type   | H.S.                                  | Terminal<br>No.   | 161 | 162     | 164                     | 165                                    | 166                                       | 167     | 168   | 170    | 172    | 174                  | 175                                       | 176                                    | 171                                       | 1/8                     | 180                     | 182                  | 183                                       | 184      | 185                                    | 185                                       | 186 | 187 | 188 | 189      | 190  | 191      | 193    | 194 | 198     |
| CAN SYSTEM (WITH ICC)<br>Connector No. M23<br>Connector Name PCB HARNESS<br>Connector Type TH40FW-1NH |                                       | Signal Name [Specification]                               |     |         | -                       | 1                                      | 1   | 1       |   |        |        | ſ                    | -   | 1                                      | 1   |                         | 1                       | 1                    | -   | -        | 1                                      | 1   | 1   | 1   | 1   | -        |      |          |        |     |         |
| CAN SYST<br>Connector No.<br>Connector Name<br>Connector Type   | 140 133 139 158 15                    | Color<br>of Wire  | ۳   | > 0     | BG                      | BR                                     | 8   | SB      | - רפ  |        | . >    |                      | ٩   | _                                      | N :                                       | ۵ م                     | . «                     | LG                   | в   | _        | œ                                      | ٩   | _[  | 8   | W   | N :      | N I  | ≥ 0      | : œ    |     |         |
| CAN<br>Connector<br>Connector   | H.S.                                  | Terminal<br>No.   | 121 | 122     |                         | 128                                    | 130                                       | 131     | 132   | T.     | Г      | 138                  |   | 140                                    | 141                                       | 142                     | 145                     | 146                  | 147                                       | 148      | 149                                    | 150                                       | 151 | 152 | 153 | 154      | 60 L | 158      | 159    | 1   |         |

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< WIRING DIAGRAM >

Revision: 2010 June

| CAN S          | YSTE       | CAN SYSTEM (WITH ICC)   | d             |                |   | ļ              | [       |                                | 1              | :              |                                  |
|----------------|------------|---|---------------|----------------|---|----------------|---------|--------------------------------|----------------|----------------|----------------------------------|
| Connector No.  | -<br>Q     | MD3   | Connector No. | COL NO.        | Mbb   | 5              | n       | I,                             | -              | >              | IACHU                            |
| Connector Name |            | COMBINATION METER   | Connec        | Connector Name | A/C AUTO AMP.   | 2 :            | × :     | 1                              | 112            | > (            | GNDA PDPRES/FTPRES               |
|                |            |   |               |                |   | =              | ×       | -                              | 113            | ۹.             | VEHCAN-L1                        |
| Connector Type |            | TH40FW-NH   | Connec        | Connector Type | TH20FW-TB6  | 12             | SB      | -                              | 114            | L              | VEHCAN-H1                        |
| ģ              |            |   | ą             |                |   | 14             | SB      |                                | 117            | >              | K-LINE                           |
| F              |            |   | F             |                |   | 15             | BR      | 1                              | 121            | IJ             | CDCV                             |
| Sit            |            | [   | SH            |                |   | 16             | >       | 1                              | 122            | Ч              | BRAKE                            |
|                |            |   |               | -              | Ļ   | 18             | σ       | 1                              | 123            | •              | GND                              |
| -18            | 2345       | 5 6 7 8 9 10 11 12 13 14 15 16<br>no po no no no - 20 20 24 25 26 27 20 20 40 |               | -              | 17 10 10 10 10 10 10 10 10 10 10 10 10 10   | 19             |         | 1                              | 124            |                | GND                              |
| 2              | 2 47 52 27 |   |               | 2              |   | 20             | >       | 1                              | 125            | ß              | VBR                              |
|                |            |   |               |                |   | 22             | BG      | 1                              | 126            | BR             | BNC SW                           |
|                |            |   |               |                |   | 23             |         | 1                              | 127            |                | GND                              |
| Terminal       | Color      | Cinnel Name Consideration   | Terminal      | al Color       | Simel Name [Same  | 25             | w       | 1                              | 128            |                | GND                              |
| No.            | of Wire    | olgriar Marrie Lopecinication]  | No.           | of Wire        |   | 30             | Я       | -                              |                |                |                                  |
| -              | W          | BATTERY POWER SUPPLY  | -             | -              | BATTERY POWER SUPPLY  | 31             | BR      | -                              |                |                |                                  |
| 2              | BG         | IGNITION SIGNAL   | 2             | W              | IGNITION POWER SUPPLY   | 32             | -       | -                              | Connector No.  | or No.         | M110                             |
| 9              | GR         | VEHICLE SPEED SIGNAL (2-PULSE)  | 9             | œ              | BLOWER MOTOR F/B SIGNAL   | 33             | ٩       | -                              | Connects       | Connector Name | WIRE TO WIRE                     |
| 4              | œ          | VEHICLE SPEED SIGNAL (8-PULSE)  | 7             | _              | POWER TRANSISTOR CONTROL SIGNAL   | 34             | LG      | I                              |                |                |                                  |
| 2              |            | ILLUMINATION CONTROL SIGNAL   | ₽             | •              | GROUND  | 35             | M       | T                              | Connector Type | or Type        | TH24MW-NH                        |
| 9              | в          | METER CONTROL SWITCH GROUND   | =             | ٩.             | CAN-L   | 36             | ΓG      | 1                              | ģ              |                |                                  |
| 7              | SB         | ENTER SWITCH SIGNAL   | 12            | -              | CAN-H   | 37             |         | 1                              | F              |                |                                  |
| ∞              | ГG         | SELECT SWITCH SIGNAL  | 13            | >              | ACC POWER SUPPLY  | 38             | æ       | 1                              | SI             |                |                                  |
| 6              | 5          | ILLUMINATION CONTROL SWITCH SIGNAL (+)  | 1             | ß              | ECV CONTROL SIGNAL  |                |         |                                |                | ļ              | 0<br>1<br>1<br>0                 |
| 10             |            | ILLUMINATION CONTROL SWITCH SIGNAL (=)  | 20            | ٣              | HUMIDITY SENSOR (SCK) SIGNAL  |                |         |                                |                | N<br>-         | 4 5 6 / 8 9 10 11                |
| =              |            | TRIP RESET SWITCH SIGNAL  | 21            | >              | HUMIDITY SENSOR (DATA) SIGNAL   | Connector No.  |         | M107                           |                | 13 14          | 14 15 16 17 18 19 20 21 22 23 24 |
| 12             |            | GROUND  | 22            | •              | HUMIDITY SENSOR GROUND  | -              |         | Lon                            |                |                |                                  |
| 14             | _          | CAN-H   | 23            | ×              | DRIVE MODE SELECT SW (SNOW)   | Connect        |         | ECM                            |                |                |                                  |
| 15             | Р          | CAN-L   | 24            | -              | DRIVE MODE SELECT SW (ECO)  | Connector Type | or Type | RH24FGY-RZ8-R-RH-Z             | Terminal       | _              | Cinnel Name [Canadification]     |
| 16             | ж          | AIR BAG SIGNAL  | 25            | σ              | DRIVE MODE SELECT SW (STANDARD)   | ą              |         |                                | No.            | of Wire        |                                  |
| 23             | в          | GROUND  | 26            | 7              | DRIVE MODE SELECT SW (SPORT)  | F              | 4       |                                | -              | σ              | -                                |
| 24             | ш          | FUEL LEVEL SENSOR GROUND  |               |                |   | H.S.           | _       | 128 124 1118112108104100       | 2              | Y              | -                                |
| 25             | ×          | ALTERNATOR SIGNAL   |               |                |   |                |         | 127 123 119 115 111 107 103 99 | e              | ×              | 1                                |
| 26             | >          | PARKING BRAKE SWITCH SIGNAL   | Connec        | Connector No.  | M105  |                |         | 102                            | 4              | ж              | 1                                |
| 27             | >          | BRAKE FLUID LEVEL SWITCH SIGNAL   | Conner        | Connector Name | WIRE TO WIRE  |                |         | 125 121 117 113 109 105 101 97 | 7              | BR             | -                                |
| 28             | 9          | SECURITY SIGNAL   |               |                |   |                | "       |                                | 80             | æ              | -                                |
| 29             | -          | WASHER LEVEL SWITCH SIGNAL  | Connec        | Connector Type | TH40FW-NH   | ļ              |         |                                | 6              | в              |                                  |
| 32             | IJ         | PADDLE SHIFTER SHIFT DOWN SIGNAL  | đ             |                |   | Terminal       | Color   | Cinnel Name [Canadian]         | 13             | ٦              | 1                                |
| 33             | BG         | PADDLE SHIFTER SHIFT UP SIGNAL  | F             |                |   | No.            | of Wire |                                | 14             | 8              | 1                                |
| 34             | σ          | FUEL LEVEL SENSOR SIGNAL  |               |                |   | 67             | ď       | APSI                           | 15             | ۲C             | 1                                |
| 35             | W SE       | SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)                                  |               | [              |   | 86             | >       | APS2                           | 16             | 7              | 1                                |
| 36             | ۵<br>ص     | PASSENGER SEAT BELT WARNING SIGNAL  |               | 20 19 18       | 17 16 15 14 13 12 11 10 9   | 66             | σ       | AVCC1-APS1                     | 17             | ×              | ,                                |
| 37             | 9          | NON-MANUAL MODE SIGNAL  |               | 40 39 38       | 37/38/39/34/33 32/31/30/29/28/27/29/29  | 100            | M       | GNDA-APS1                      | 18             | ٣              | 1                                |
| 38             | >          | MANUAL MODE SHIFT DOWN SIGNAL   |               |                |   | 101            | SB      | ASCD SW                        | 19             |                | 1                                |
| 39             |            | MANUAL MODE SHIFT UP SIGNAL   |               |                |   | 102            | ۵.      | FTPRES                         | 20             | >              | 1                                |
| 40             | M          | MANUAL MODE SIGNAL  | Terminal      | al Color       | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- | 103            |         | AVCC2-APS2                     | 21             | ٣              | 1                                |
|                |            |   | Ň             | of Wire        | Signal Name [Specification]   | 104            | BR      | GND-APS2 [With ICC]            | 22             | σ              | 1                                |
|                |            |   | 2             | ~              | 1   | 104            |         | GND-APS2 [Without ICC]         | 23             | _              | 1                                |
|                |            |   | e             | α              | 1   | 105            | с<br>-  | PUPRES                         | 24             | с<br>-         | 1                                |
|                |            |   |               | <u> </u>       | 1   | 901            | 3 0     | 15                             | 5              | 3              |                                  |
|                |            |   | 9             | 3 0            | ,   | 107            | BG      | AVCC2 PDPRES/ETPRES            |                |                |                                  |
|                |            |   | Ľ             |                | ,   | 108            | } >     | GND ASCD SW                    |                |                |                                  |
|                |            |   | - α           |                |   | 001            | - 8     |                                |                |                |                                  |
|                |            |   | '             |                |   | 2              | ŝ       | 1001                           |                |                |                                  |

CAN SYSTEM (WITH ICC)

#### < WIRING DIAGRAM >

JCMWA5550GB

| CAN SYSTEM (WITH ICC)                               |          |         |  |                |   |  |                |             |                             |   |
|---|----------|---------|--|----------------|---|--|----------------|-------------|-----------------------------|---|
| Connector No. M116                                  | Terminal |         | Signal Name [Specification]                        | 82             | BR                                      | 1  | Н              |             | DONGLE LINK                 |   |
| Connector Name WIRE TO WIRE                         | No.      | of Wire |  | 83             | GR                                      | 1  | +              |             | NATS ANT AMP.               |   |
| Т   | ο (      | +       | I  | 84<br>or       | > -                                     | T  | -              |             | I-KEY IDENTIFICATION        |   |
|   | - :      | ŝ       | I.   | 60 60          | : ב                                     | 1  | 5 62           |             | HAZARU SW                   |   |
|   | 0        | ╉       |  | 8              | > (                                     | 1  | +              |             |                             |   |
|   | 00       | 6 8     |  | 60<br>88       | د >                                     |  | ╀              |             | ARI SW OLITPIT 5            |   |
|   | 10       | ╉       |  | 00             | - 8                                     |  |                |             |                             |   |
| 1 2 3 4 5 112/213141516171819200 201223814555931203 | 20       | ╀       |  | 88             | 5 -                                     |  | ╀              |             |                             |   |
|   | 1 8      | ┝       | ,  | 91             | · >                                     | 1  | 35             | COM         | COMBI SW OUTPUT 2           |   |
|   | 24       |         | ,  | 63             | M                                       | - [With Climate controlled seat]   |                | COM         | ABLSW OLITPLIT 1            |   |
|   | 25       | ╀       |  | 8              | : "                                     | - [With heated cost]   | ╀              |             | P POSITION                  |   |
|   | 24 ac    | ╀       |  | 6              | ,<br>,                                  |  | +              |             | CAN-H                       |   |
| No of Wire Signal Name [Specification]              | 2        | ╀       |  | 10             |   |  | +              |             |                             |   |
| t   | 77       | +       | 1  | 00             |   | 1  |                |             | CAIN-L                      |   |
| 2 SB –  | 28       | +       | -  | 97             | >                                       | -  |                |             |                             |   |
|   | 29       | Т       |  | 96             | ня                                      | -  |                |             |                             |   |
| -<br>m  | 8        |         | I  | 66             | σ                                       | 1  | Connector No.  | M125        |                             |   |
| 4 SB – [With VQ engine]                             | 31       | 9       | -  | 100            | Y                                       | -  | Connector Name | CAN GATEWAY |                             |   |
| 5 B -   | 32       |         | -  |                |   |  |                |             |                             |   |
| - M 7   | 40       |         | I  |                |   |  | Connector Type | e TH12FW-NH |                             |   |
| 8 Y -   | 41       | ٣       | I  | Connector No.  | r No. M120                              |  | 4              |             |                             |   |
| 9 W – [With VK engine]                              | 42       |         |  |                |   |  | F              |             |                             |   |
|   | 44       | N       | 1  | CONTRECTO      |   |  | S I            | ľ           | 7                           |   |
|   | 45       | ß       | 1  | Connector Type | Γ                                       | TH40FB-NH  |                |             | Τ                           |   |
|   | 46       | _       | <ul> <li>[With Climate controlled seat]</li> </ul> | 4              |   |  |                | ε           | 4 5 6                       |   |
| 12 P -  | 46       | BG      | <ul> <li>[With heated seat]</li> </ul>             | F              |   |  |                | 7 9 1       | 10 11 12                    |   |
| >   | 47       | ┝       | <ul> <li>[With Climate controlled seat]</li> </ul> |                |   |  |                |             |                             |   |
| 14 R -  | 47       | GR      | <ul> <li>[With heated seat]</li> </ul>             |                |   | K  |                |             |                             |   |
| 7   | 48       | _       | 1  |                | 0.0000000000000000000000000000000000000 | 7 8 9 10 11 12 13 14 15 16 17 18 19 20<br>07 00 00 00 01 00 01 02 02 05 05 07 00 00 40 | nal            |             |                             |   |
| SB  | 49       | ┝       | -  |                | 21 22 23 24 25 26                       | 128 29 30 31 32 33 34 35 36 37 38 39   | No. of Wire    |             | Signal Name [Specification] |   |
|   | 20       | ┝       | -  |                |   |  | -              |             | CAN-H                       |   |
| ΓC  | 51       | ┝       | 1  |                |   |  | 3<br>GR        | œ           | BATTERY                     |   |
| ې<br>۱  | 5        | ┝       | ,  | Terminal       | Color                                   | ,  | ┝              |             | CAN-H                       |   |
| +   | 5        | +       | 1  | No             | of Wire                                 | Signal Name [Specification]  | c.             |             | GND                         |   |
|   | 99       | ┝       | 1  | -              | e                                       | BP WINDOW DEEG BLY CONT  | ┝              |             | CAN-H                       |   |
| A 3   | 8 6      | ╀       |  |                | 5                                       |  | ╀              |             | CAN-H                       |   |
|   | n u      | ╀       |  | v c            | 20                                      |  |                | . 3         | CAN-L<br>ICNITION           |   |
|   | 8        | +       | I  | •              | 0.                                      | COMBLOW INPUT 4  | +              | =           |                             |   |
|   | 80<br>F9 | +       |  | + u            | (                                       |  | ╀              |             |                             |   |
| Commentant Na 11443                                 | 5        | 2 >     |  |                | 5 a                                     |  | ╀              |             |                             |   |
| Т   | 29       | +       |  | 9              | ;                                       | COMBI SW INPUL 1   | 12             |             | CAN-L                       |   |
| Connector Name WIRE TO WIRE                         | 63       | +       | -  |                | >                                       | POWER WINDOW SW COMM   |                |             |                             |   |
| Т   | 99       | _       | -  | 6              | 1                                       | STOP LAMP SW 1   |                |             |                             |   |
| Connector Type TH80FW-CS16-TM4                      | 67       | +       | 1  | =              | œ                                       | RAIN SENSOR SERIAL LINK  |                |             |                             |   |
| đ   | 68       | SB      | -  | 14             | W                                       | OPTICAL SENSOR   |                |             |                             |   |
|   | 69       | в       | 1  | 16             | SB                                      | DIMMER SIGNAL  |                |             |                             |   |
| 11 11 11 11 11 11 11 11 11 11 11 11 11              | 70       | ч       | 1  | 17             | Y                                       | SENSOR PWR SPLY  |                |             |                             |   |
| 97 82 88 88 88 88 88 88 88 88 88 88 88 88           | 76       | SHIELD  | 1  | 18             | ۵                                       | RECEIVER / SENSOR GND  |                |             |                             |   |
| 11 (K)          | 17       | σ       | I  | 19             | æ                                       | RECEIVER PWR SPLY  |                |             |                             |   |
| 20177 67152 47152 27177<br>26178 66153 46156 2618   | 78       | ~       | ı  | 20             | BR                                      | KYLS ENT RECEIVER COMM   |                |             |                             |   |
|   | 52       | -       |  | 21             | •                                       | NATS ANT AMP   |                |             |                             |   |
| h   | Uα       | ı c     | 1  | 20             | ag                                      | KVI S ENT DECEIVED DOSI  |                |             |                             |   |
|   | 8 8      |         | 1  | 22             | j c                                     | SECLIPITY IND CONT   |                |             |                             |   |
|   | ō        | 4       | T  | 52             | 5                                       |  |                |             |                             |   |
|   |          |         |  |                |   |  |                |             |                             |   |
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## CAN SYSTEM (WITH ICC)

#### < WIRING DIAGRAM >

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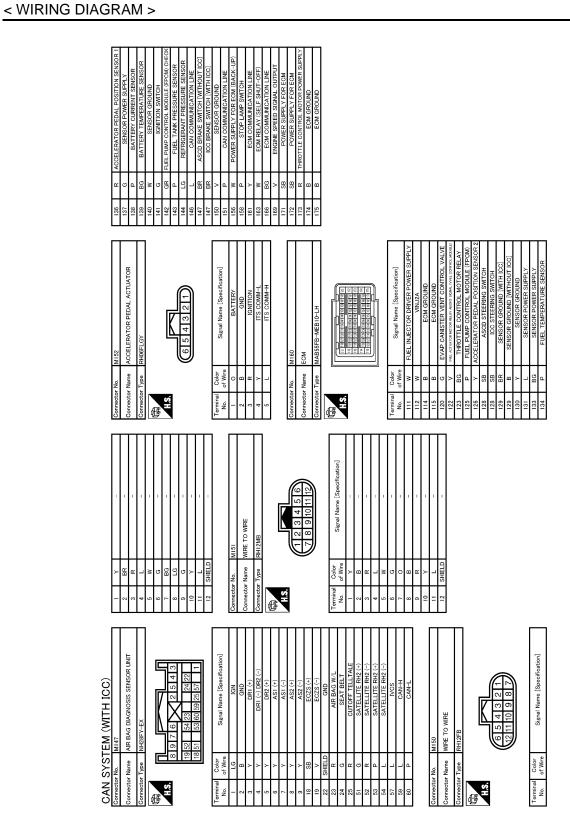
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| IAGRAM >  | [CAN] |
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| Ommetor No.     Ri       Connector Name     Anic CAMERA UNIT       Connector Name     Anic CAMERA UNIT       Image: Connector Type     Hondon Type       Image: Connector Type     Empiricani       Image: Connector Type     Connector Type  |       |
| 80         W         Contrion Stand.           81         BG         VEHICLE         STERES ISINAL           82         RE         VEHICLE         STERES ISINAL           83         BE         COMPOSITE MARIE SIGNAL         STERED           84         BE         COMPOSITE MARIE SIGNAL         STERED           89         Y         MICRAPHORE SIGNAL         STERED           90         Y         COMPOSITE MARIE SIGNAL         STERED           91         Y         COMMITIN         STERED         STERED           101         Oritic         Stered Name         INE         AV COMMITIN           11         T         T         T         T         T           11         T         T         T         T         T           11         T         T         T         T         T           11         T         T  |       |
| Commenter No.     MI82       Connector Name     DATA LINK CONNECTOR       Connector Name     Signal Name (Specification)       Connector Name     A CONTROL UNIT       Connector Name     Signal Name (Specification)       Connector Name     A CONTROL UNIT       Connector Name     Connector Name       Connector Name     Connector Name |       |
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**LAN-55** 

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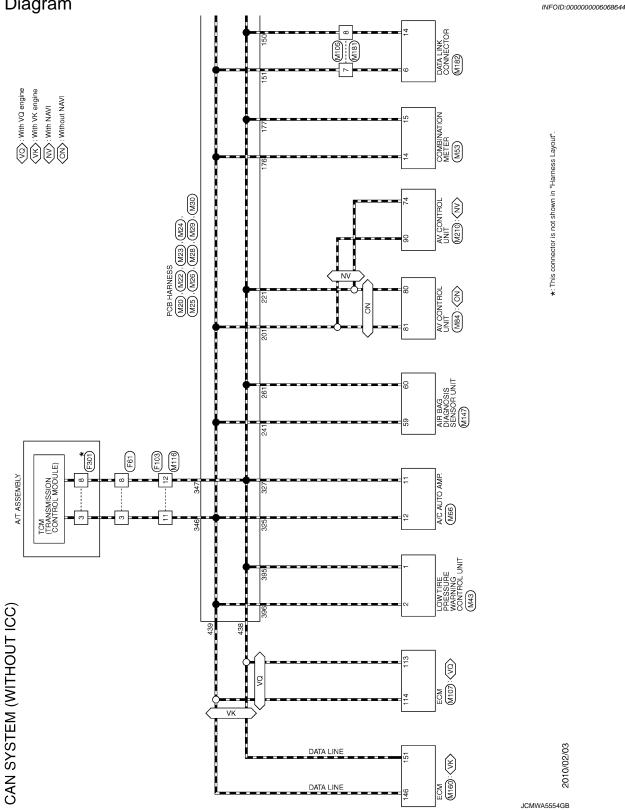
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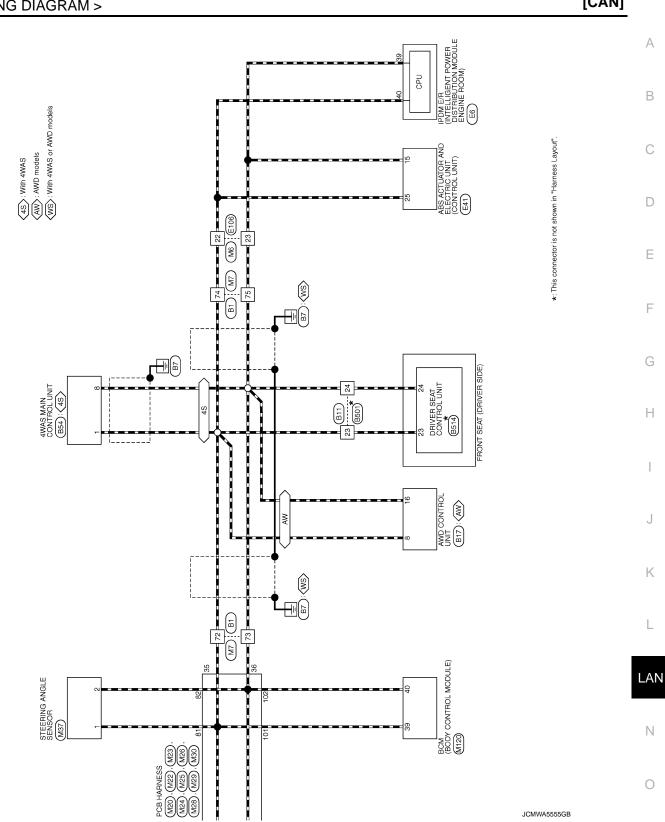




## CAN SYSTEM (WITHOUT ICC)







## **CAN SYSTEM (WITHOUT ICC)**

< WIRING DIAGRAM >

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| SB         Omnetor Nu         Connector Num           0X/V         - </th <th>Image: constrained by the constrained b</th> <th>11 B/Y GND<br/>13 LG OILEMP(-)<br/>15 LG VB</th> <th>10         P         C           13         12.2         13         41         40           2         228         35         41         40</th> <th>Signal Name [Specification]         Line         Control         <thcont< th="">         Control         <thcont< th=""></thcont<></thcont<></th> <th>******</th> <th></th> <th>3         7         8           11         13         15         16           Signal Name [Specification]         Amo SOL (+)         Amo SOL (+)         Amo SOL (+)           Amo SOL (+)         Amo SOL (+)         Amo SOL (+)         Amo SOL (+)           Amo SOL (+)         Amo SOL (+)         Amo SOL (+)         Amo SOL (+)</th> | Image: constrained by the constrained b  | 11 B/Y GND<br>13 LG OILEMP(-)<br>15 LG VB   | 10         P         C           13         12.2         13         41         40           2         228         35         41         40 | Signal Name [Specification]         Line         Control         Control <thcont< th="">         Control         <thcont< th=""></thcont<></thcont<> | ******   |                     | 3         7         8           11         13         15         16           Signal Name [Specification]         Amo SOL (+)         Amo SOL (+)         Amo SOL (+)           Amo SOL (+)         Amo SOL (+)         Amo SOL (+)         Amo SOL (+)           Amo SOL (+)         Amo SOL (+)         Amo SOL (+)         Amo SOL (+) |
|--|--|---|--|--|--|---------------------|---|
| Size   | Nithout ICO       Nithout ICO         Ner To Wire<br>Theorem-cstre-TM4   |   | 252  |  |  |                     | en Color<br>en Color<br>B S R R R R R R R R R R R R R R R R R R   |
|  | Signal Name (Sheerfication)       Signal Name (Sheerfication)         0       0         0<   |   |  | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-  | - [Without Co and 4MAS system]<br>- [Without Co and 4MAS system]<br>   |                     |   |
|  | Image: control of contro of contro of contro of control of control of control of control o  |   | *******  | <del>                     </del>   | ++++++++   | ++++++++++          |   |
|  | or Name<br>or Na | FEM (WITHOUT ICC)<br>BI<br>MRE TO WRE       |  |  | - Weh Climate cortrolled seat]<br>- IWeth heated seat]<br>- IWeth heated seat]<br>- IWeth Climate cortrolled seat]<br>- IWeth Fasted seat] |                     |   |
| EM (WITHOUT ICC)<br>BI<br>WRE TO WRE<br>THBOFW-CSIG-TM4<br>THBOFW-CSIG-TM4<br>Sterral Name (Specification)<br>Sterral Name (Specification)<br>Sterral Name (Specification)<br>Sterral Name (Specification)<br>- (With Fiber creation set bit system)<br>- (With Fiber creation set bit system)   |  | CAN SYST<br>Connector No.<br>Connector Name | Connector Type   | Terminal     Color       No.     of Wire       1     R       2     W       4     LG       5     P       6     V       7     GR   | B P L G < L < 4  | 2 α ο > α α ≥ α α Ω | C C C C C C C C C C C C C C C C C C C   |

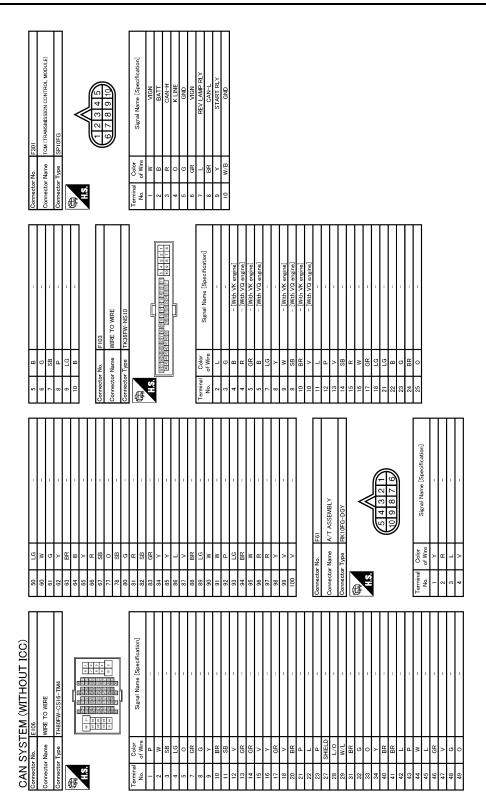
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< WIRING DIAGRAM >

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| E41 SA230FB-SJZ4-U SA230FB-SJZ4-U SIZ1819189 SIZ1819189 SIZ1819189 SIZ1819189 SIZ1819189 SIZ1819189 MOTORROWER MOTORROWER MOTORROWER MOTORROWER MOTORROWER SIZ18191814 H RENISORALU F F H RENISORALU F H R R R R R R R R R R R R R R R R R R  | F   |
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| Connector No.         Connector No.           Connector Name         Connector Name           Connector Name         Connector Name           Since Since Type         B           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           2         1           3         1           3         1           3         1           1         1           1         1           2         1           3         1           3         1           1         1           1         1           1         1           1         1           1         1  | Η   |
| W (UPWARD)<br>ULIED<br>ULIED<br>ULIET<br>ULIETER)<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIETER<br>ULIE | I   |
| FRONT LIFTER SW (UPWARD)<br>FRONT LIFTER SW (UPWARD)<br>PULSE (FRONT LIFTER)<br>PULSE (FRONT LIFTER)<br>PULSE (FRONT LIFTER)<br>PULSE (FRONT LIFTER)<br>ND 2<br>ADDRESS 1<br>ADDRESS   | J   |
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| M (WITHOUT ICC)<br>E TO WIRE<br>BAW-CS<br>BAW-CS<br>BAW-CS<br>35 281 2 271 26 25<br>35 281 2 271 26 25<br>35 281 2 271 26 25<br>35 281 2 271 126 25<br>35 281 126 26<br>35 281 126 26<br>36 280 126 26<br>37 2 280 126 26<br>37 2 280 126 26<br>38 28 26<br>38   | LAN |
| SYSTEM (WITHOUT IC<br>No.         Signal<br>B501           Name         WIE TO WRE           PL         222712           PL         -           Color         Signal Name (Specific<br>of Wre           R         R           BR         -           W/Y         -           Lu         -           V/W         -           MI         -           Min         B514           Min         B514           Min         B514           Min         Color           Signal Name (Specific           Ocior         Signal Name (Specific           Color         Signal Name (Specific           Color         Signal Ware (Specific           Color         Signal Name (Specific   | Ν   |
| Connector Name     BSU       Connector Name     WIE TO WIE       Connector Name     WIE TO WIE       Connector Name     BSU       Connector Name     No.       Connector Name     Signal Name (Specification)       Terminal     Color       Signal Name (Specification)       Signal Name (Specification)       Connector Name       Connector Name       Mission       Connector Name       Signal Name (Specification)       Connector Name       Signal Name (Specification)       Connector Name       BR/W       Connector Name       Connector Name       Connector Name       BR/W       Connector Name   | 0   |
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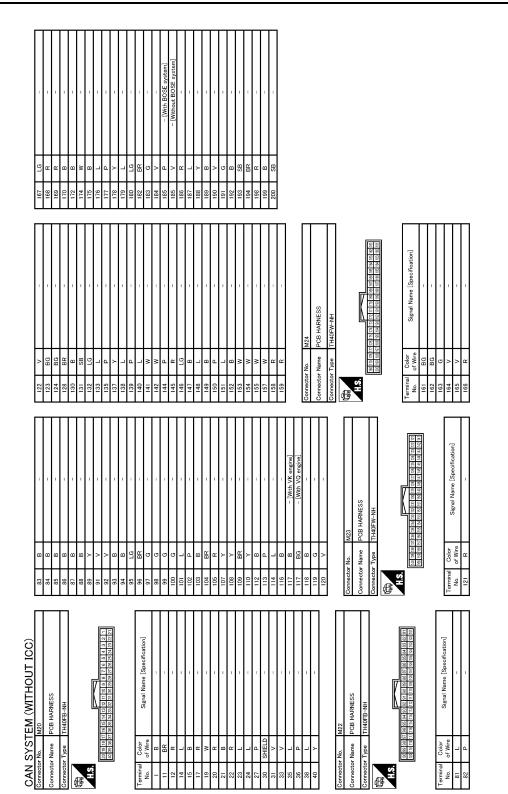


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| RING DIAGRAM >  |   | [CAN]         |
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| · · · · · · · · · · · · · · · · · · ·   | Signal Name (Specification)   | A             |
| Corrrector No. M29<br>Connector Name PCB HARNESS<br>Connector Type TH40FB-NH<br>H43   | Terminal<br>No.         Color<br>of Ware         Starting           361         W         361         W           362         W         363         Y           363         Y         Y         363           363         Y         Y         363           363         Y         Y         363           375         B         B         373           373         B         R         373           373         B         R         373           373         B         R         373           373         C         V         373           380         R         R         373           381         G         R         373           383         G         R         383           393         F         R         393           393         F         R         393           393         K         H         400   | C<br>D        |
| M28<br>PCB HARNESS<br>TH40PW-MH<br>DEB DEB DEB DEB DEB DEB DEB DEB DEB DEB  | Signat Name (Specification)   | F             |
| Currector No. M28<br>Connector Name PCB HAI<br>Connector Type 11440PW   | $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$   | G<br>H        |
| ●         M26           ●         PCB HARNESS           ●         PCB HARNESS           ●         TH40PW-MH           ●         TH40PW-MH           ●         TH40PW-MH           ●         TH40PW-MH           ●         TH40PW-MH           ●         TH40PW-MH | Signal Name (Specification)<br>   | l<br>J        |
| Connector No.<br>Connector Name<br>Connector Type   | Terminal         Color           No.         241         C           241         L         244         L           243         L         244         L           245         L         245         L           245         L         245         L           245         L         L         245           245         L         245         L           247         L         245         L           255         L         260         L           256         SHELD         255         L           256         L         256         L           256         L         270         V           270         Q         273         R           270         C         273         R           273         R         273         R           273         R         273         R           273         R         273         R           279         R         279         R           279         R         279         R           279         R         279         R  | К             |
| CAN SYSTEM (WITHOUT ICC)<br>Connector Name<br>Connector Name<br>Connector Type<br>Connector Type<br>Connector Type  | r     Signal Name (Specification)       -     -   | L<br>LAN<br>N |
| CAN SYS<br>Corrector Nume<br>Connector Nume<br>Connector Type   | Terminal<br>No.         Color           201         of Wire-<br>200         of Wire-<br>2 | 0             |

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Revision: 2010 June

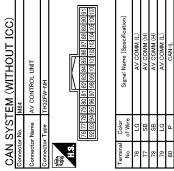
| CAN           | Х.                  | GAN SYSTEM (WITHOUT IGC)  |          |                      |   |               |                |  |                |                  |                                 |  |
|---------------|---------------------|---|----------|----------------------|---|---------------|----------------|--|----------------|------------------|---------------------------------|--|
| Connector No. | or No.              | M30   | Conne    | Connector No.        | M37                                     | 25            | œ              | FR TUNER (GND)   | Connector No.  | Π                | M66                             |  |
| Connec        | Connector Name      | ne PCB HARNESS  | Connet   | Connector Name       | STEERING ANGLE SENSOR                   | 20<br>30      | ш с            | FL TUNER (GND)<br>RCM EL ASHED   | Connector Name |                  | A/C AUTO AMP.                   |  |
| Connec        | Connector Type      | De TH40FW-NH  | Connec   | Connector Type       | TH08FW-NH                               | 32            | ) œ            | GND  | Connector Type | П                | TH20FW-TB6                      |  |
| ß             |                     |   | ſ        |                      |   |               |                |  | ß              |                  |                                 |  |
| H.S.          |                     |   | Ň        | 10                   | K                                       | Connector No. | or No.         | M53  | H.S.           |                  |                                 |  |
|               | 517 (07             | 415 411   |          | I                    | 7 2 8                                   | Connect       | Connector Name | COMBINATION METER  |                | 1 2              |                                 |  |
|               | 440 438             | 88 458 450 459 459 450 450 450 501 501 501 501 501 50 451 451 451 450 450 450 |          |                      | -                                       | Connect       | Connector Type | TH40FW-NH  |                | 13               | 17 18 20 21 22 23 24 25 26      |  |
|               |                     |   |          |                      | ]                                       | ſ             |                |  |                |                  |                                 |  |
| Terminal      | al Color<br>of Wire | blor Signal Name [Specification]  | Terminal | nal Color<br>of Wire | Signal Name [Specification]             | H.S.          |                |  | Terminal       | Color<br>of Wire | Signal Name [Specification]     |  |
| 402           | ,<br>;              | -   | -        | t                    | CAN-H                                   |               | 1 2 3 4        | 14 15 16   | T              | 2                | BATTERY POWER SUPPLY            |  |
| 403           | ٣                   | -   | 2        | ۵.                   | CAN-L                                   |               | 21 22 23 5     | 4 25 26 27 28 29 32 33 34 35 36 37 38 39 40  | 2              | N                | IGNITION POWER SUPPLY           |  |
| 407           | >                   | /   | 7        | 8                    | GND                                     |               |                |  | 9              | æ                | BLOWER MOTOR F/B SIGNAL         |  |
| 408           | 8                   |   | 80       | 5                    | IGN                                     |               |                |  | 7              | ٦                | POWER TRANSISTOR CONTROL SIGNAL |  |
| 409           | œ                   |   |          |                      |   | Terminal      | _              | Signal Name [Snecification]  | 10             | в                | GROUND                          |  |
| 410           | 8                   |   |          |                      |   | No.           | of Wire        |  | 11             | ٩                | CAN-L                           |  |
| 411           | в                   |   | Conner   | Connector No.        | M43                                     | -             | M              | BATTERY POWER SUPPLY   | 12             | L                | CAN-H                           |  |
| 413           | >                   |   | Conner   | Connector Name       | LOW TIRE PRESSURE WARNING CONTROL LINIT | 2             | BG             | IGNITION SIGNAL  | 13             | >                | ACC POWER SUPPLY                |  |
| 414           | BR                  | ۲.<br>۲.  |          |                      |   | e<br>S        | В              | VEHICLE SPEED SIGNAL (2-PULSE)   | 17             | BG               | ECV CONTROL SIGNAL              |  |
| 416           | _                   | D1  | Connet   | Connector Type       | TH32FW-NH                               | 4             | ٣              | VEHICLE SPEED SIGNAL (8-PULSE)   | 20             | œ                | HUMIDITY SENSOR (SCK) SIGNAL    |  |
| 417           | -                   | ,   | ą        |                      |   | ŝ             |                | ILLUMINATION CONTROL SIGNAL  | 21             | >                | HUMIDITY SENSOR (DATA) SIGNAL   |  |
| 419           | -                   | r<br>D  |          |                      |   | 9             |                | METER CONTROL SWITCH GROUND  | 22             |                  | HUMIDITY SENSOR GROUND          |  |
| 420           | SHIELD              | - ELD   | H.S.     | 16                   |   | 2             | 8              | ENTER SWITCH SIGNAL  | 23             | N                | DRIVE MODE SELECT SW (SNOW)     |  |
| 422           | _                   | -   |          | 5                    | 2 1 1 5 6 2 1 8 0 1 0 1 1 1 1 1 5       | 8             | P              | SELECT SWITCH SIGNAL   | 24             | _                | DRIVE MODE SELECT SW (ECO)      |  |
| 427           | 4                   | -   |          | -                    | 20 21 22 23 24                          | 6             | σ              | ILLUMINATION CONTROL SWITCH SIGNAL (+)   | 25             | σ                | DRIVE MODE SELECT SW (STANDARD) |  |
| 428           | > 0                 |   |          |                      |   | 2 =           | - B            | ILLUMINATION CONTROL SWITCH SIGNAL (-)<br>TDID DESET SWITCH SIGNAL                 | 26             | >                | DRIVE MODE SELECT SW (SPORT)    |  |
| 420           | -<br>-              |   |          |                      |   | 2             | -              |  |                |                  |                                 |  |
| 431           | 3 @                 | 1   | Terminal | nal Color            |   | 1 4           | ,              | CAN-H  |                |                  |                                 |  |
| 432           | >                   | /   | No.      | of Wire              | Signal Name [Specification]             | 15            | ۵.             | CAN-L  |                |                  |                                 |  |
| 435           | >                   | - /   | -        | ٩                    | CAN- (L)                                | 16            | æ              | AIR BAG SIGNAL   |                |                  |                                 |  |
| 436           | BG                  | -<br>5  | 2        | -                    | CAN+ (H)                                | 23            | 8              | GROUND   |                |                  |                                 |  |
| 437           | ß                   | 1   | ę        | 8                    | RR TUNER (SIG)                          | 24            | m              | FUEL LEVEL SENSOR GROUND   |                |                  |                                 |  |
| 438           | ۵                   | 1   | 4        | <u>م</u>             | RL TUNER (SIG)                          | 25            | >              | ALTERNATOR SIGNAL  |                |                  |                                 |  |
| 439           | -                   | 1   | ŝ        |                      | FR TUNER (SIG)                          | 26            | >              | PARKING BRAKE SWITCH SIGNAL  |                |                  |                                 |  |
|               |                     |   | 9        | σ                    | FL TUNER (SIG)                          | 27            | >              | BRAKE FLUID LEVEL SWITCH SIGNAL  |                |                  |                                 |  |
|               |                     |   | 2        | ۳                    | RR TUNER (VCC)                          | 28            | σ              | SECURITY SIGNAL  |                |                  |                                 |  |
|               |                     |   | ω        | >                    | RL TUNER (VCC)                          | 29            | _              | WASHER LEVEL SWITCH SIGNAL   |                |                  |                                 |  |
|               |                     |   | თ        | +                    | FR TUNER (VCC)                          | 32            | ۍ<br>ا         | PADDLE SHIFTER SHIFT DOWN SIGNAL   |                |                  |                                 |  |
|               |                     |   | 2        | _                    | FL TUNER (VCC)                          | 33            | g              | PADDLE SHIFTER SHIFT UP SIGNAL   |                |                  |                                 |  |
|               |                     |   | 12       | > :                  | SW                                      | 34            | σ ;            | FUEL LEVEL SENSOR SIGNAL   |                |                  |                                 |  |
|               |                     |   | <u>0</u> | ہ <                  | IGN<br>PR TLINFR (RSSI)                 | 35<br>98      | s c            | SEAT BELT BUCKLE SWITCH SIGNAL (URIVER SIDE)<br>PASSENGER SEAT RELT WARNING SIGNAL |                |                  |                                 |  |
|               |                     |   | 20       | ╞                    | RL TUNER (RSSI)                         | 37            | , 0            | NON-MANUAL MODE SIGNAL   |                |                  |                                 |  |
|               |                     |   | 21       |                      | FR TUNER (RSSI)                         | 88            | >              | MANUAL MODE SHIFT DOWN SIGNAL  |                |                  |                                 |  |
|               |                     |   | 22       | я                    | FL TUNER (RSSI)                         | 39            | -              | MANUAL MODE SHIFT UP SIGNAL  |                |                  |                                 |  |
|               |                     |   | 6        |                      |   | \$            | •              | MANULAL MODE CICNER  |                |                  |                                 |  |

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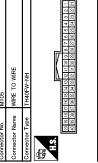
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| GRAM >   | [CAN] |
|--|-------|
|  |       |
| Mi.         M20           Phame         BCM (BODY CONTFOL MODULE)           Type         EM (BODY CONTFOL MODULE)           Type         EM (BODY CONTFOL MODULE)           Cold         Regularization           Cold         Signal Name (Specification)           G         Regularization           G         Regularization           G         Regularization           G         Regularization           G         Regularization           G         Coldition           G         Coldition           F         Coldition <th></th>  |       |
| K                  |       |
| Commettor Name         Commettor Name           Na |       |
|  |       |
| V     Cikluba PDPRESs, FTPRESs       L     VERCOMH-LI       VERCOM-LI     VERCOMH-LI       VERCOM-LI     VERCOMH-LI       B     CIND       B     CODO       B     CIND       COO     COO       B     CIND       COO     COO       B     CIND       COO     COO       B     CIND       COO     CIND       Vertice     CIND       Ve  |       |
|  |       |
| 113         1                |       |
|  |       |
|  |       |

CAN SYSTEM (WITHOUT ICC)



| Signal Name [Specification] | AV COMM (L) | AV COMM (H) | AV COMM (H) | AV COMM (L) | CANHL | CAN-H | SW GND | SHIELD | TEL VOICE SIGNAL (+) | TEL VOICE SIGNAL (-) | VEHICLE SPEED (8-PULSE) | PARKING BRAKE | REVERSE | IGNITION | DISK EJECT SIGNAL |  |
|-----------------------------|-------------|-------------|-------------|-------------|-------|-------|--------|--------|----------------------|----------------------|-------------------------|---------------|---------|----------|-------------------|--|
| Color<br>of Wire            | ΓC          | SB          | SB          | PG          | ۵.    | Γ     | BR     | SHIELD | ٩                    | ٦                    | ч                       | >             | BG      | M        | SB                |  |
| Terminal<br>No.             | 76          | <i>LL</i>   | 78          | 79          | 80    | 81    | 82     | 86     | 87                   | 88                   | 92                      | 93            | 94      | 95       | 96                |  |



| Signal Name [Specification] | - | I | 1  | 1 |   | 1 | 1 |  |
|-----------------------------|---|---|----|---|---|---|---|--|
| Color<br>of Wire            | ч | ш | 5T | ٩ | L | ٩ | 8 |  |
| Terminal<br>No.             | 2 | 3 | 5  | 9 | 7 | 8 | 6 |  |

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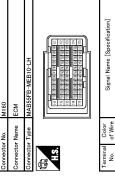
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| CAN SYS                       | CAN SYSTEM (WITHOUT ICC)       |     |     |  |                |   |     |                |                                   |  |
|-------------------------------|--------------------------------|-----|-----|--|----------------|---|-----|----------------|-----------------------------------|--|
| Connector No.                 | M147                           | Ξ   | ×   | FUEL INJECTOR DRIVER POWER SUPPLY                            | Connector No.  | M181  |     | Connector No.  | lo. M182                          |  |
| Connector Namo                | AID DAG DIAGNOSIS SENSOD LINIT | 112 | W   | VINJ2A   | Connoctor Namo |   |     | Connoctor Namo |                                   |  |
| COLLIGGTON NALLIG             |                                | 114 | 8   | ECM GROUND   | COLLINGCOL IN  |   |     | COLLIECTOL IN  |                                   |  |
| Connector Type                | NH28FY-EX                      | 115 | в   | ECM GROUND   | Connector Type | pe TH40MW-NH  |     | Connector Type | ype BD16FW                        |  |
| ą                             |                                | 120 | ۍ   | EVAP CANISTER VENT CONTROL VALVE                             | ą              |   |     | 1              |                                   |  |
| L F                           |                                | 122 | >   | VVEL ACTUATOR MOTOR RELAY ABORT SIGNAL (VVEL CONTROL MODULE) | A P            |   |     | No.            |                                   |  |
| H.S.                          |                                | 123 | BG  | THROTTLE CONTROL MOTOR RELAY                                 | H.S.           |   |     | H.S.           | IC                                |  |
|                               |                                | 125 | ٩   | FUEL PUMP CONTROL MODULE (FPCM)                              |                |   |     |                | 11 12 13 14 16                    |  |
|                               | 19 52 54 23 24 22              | 126 | ≻ ; | ACCELERATOR PEDAL POSITION SENSOR 2                          | 21             | 2 3 4 5 5 7 8 9 10 11 12 13 14 15 16 17 18 19 20 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 | 2 8 |                | / 1345678                         |  |
|                               | 18 51 53 60 50 55 57 1         | 128 | 99  | ASCD STEERING SWITCH   | J              |   | 1   |                |                                   |  |
| -                             | 07 60 00 cc                    | 128 | 8   | ICC STEERING SWITCH  |                |   |     |                |                                   |  |
| F                             |                                | 671 | 5   |  | Ŀ              |   | [   | F              |                                   |  |
| Terminal Color<br>No. of Wire | . Signal Name [Specification]  | 129 | m > | SENSOR GROUND [WITHOUT ICC]<br>SENSOR GROUND                 | Terminal o     | Color Signal Name [Specification]   |     | Terminal (     | Color Signal Name [Specification] |  |
| t                             | IGN                            | 131 | -   | SENSOR POWER SUPPLY  | t              |   | Γ   | t              |                                   |  |
| 2                             |                                | 133 | g   | SENSOR POWER SUPPLY  | e              |   |     | 4              |                                   |  |
| 3 <                           | DR1 (+)                        | 134 | ٩   | FUEL TEMPERATURE SENSOR                                      | 2              |   |     | 2              |                                   |  |
| 4 Y                           | DR1 (-) DR2 (-)                | 136 | ٣   | ACCELERATOR PEDAL POSITION SENSOR 1                          | 9              | BR -  |     | 9              | ·<br>_                            |  |
| 5                             | DR2 (+)                        | 137 | σ   | SENSOR POWER SUPPLY  | 7              |   |     | 7              | - >                               |  |
| 9                             | AS1 (+)                        | 138 | ۵.  | BATTERY CURRENT SENSOR                                       | 00             | ,<br>,  |     | ~~             | -<br>10                           |  |
| 7 Υ                           | AS1 (=)                        | 139 | BG  | BATTERY TEMPERATURE SENSOR                                   | 6              | - 8   |     | =              | - R                               |  |
| 8                             | AS2 (+)                        | 140 | ×   | SENSOR GROUND  | 10             | M   |     | 12             | ۰<br>۵                            |  |
| ×<br>6                        | AS2 (-)                        | 141 | σ   | IGNITION SWITCH  | 11             | - I   |     | 13             |                                   |  |
| 18 SB                         | ECZS (+)                       | 142 | GR  | FUEL PUMP CONTROL MODULE (FPCM) CHECK                        | 12             | SB -  |     | 14             | -<br>-                            |  |
| 7 61                          | ECZS (-)                       | 143 | ٩   | FUEL TANK PRESSURE SENSOR                                    | 14             | SB -  |     | 16             | - M                               |  |
| 22 SHIELD                     |                                | 144 | LG  | REFRIGERANT PRESSURE SENSOR                                  | 15             | BR  |     |                |                                   |  |
| 23 R                          | AIR BAG W/L                    | 146 | -   | CAN COMMUNICATION LINE                                       | 16             |   |     |                |                                   |  |
| 24 G                          | SEAT BELT                      | 147 | BR  | ASCD BRAKE SWITCH [WITHOUT ICC]                              | 18             | G –   |     |                |                                   |  |
| 25 R                          | CUTOFF TELLTALE                | 147 | BR  | ICC BRAKE SWITCH [WITH ICC]                                  | 19             | B -   |     |                |                                   |  |
| 51 G                          | SATELLITE RH2 (+)              | 150 | >   | SENSOR GROUND  | 20             | N   |     |                |                                   |  |
| 52 R                          | SATELLITE RH2 (-)              | 151 | ٩   | CAN COMMUNICATION LINE                                       | 22             | BG -  |     |                |                                   |  |
| 53 P                          | SATELLITE RH2 (+)              | 156 | M   | POWER SUPPLY FOR ECM (BACK-UP)                               | 23             | B –   |     |                |                                   |  |
| 54 L                          | SATELLITE RH2 (-)              | 158 | ٩   | STOP LAMP SWITCH   | 25             | M   |     |                |                                   |  |
| 57 L                          | IVCS                           | 161 | ۲   | ECM COMMUNICATION LINE                                       | 30             | R -   |     |                |                                   |  |
| 29 L                          | CAN-H                          | 163 | M   | ECM RELAY (SELF SHUT-OFF)                                    | 31             | BR –  |     |                |                                   |  |
| 60 P                          | CAN-L                          | 166 | BG  | ECM COMMUNICATION LINE                                       | 32             |   |     |                |                                   |  |
|                               |                                | 169 | ^   | ENGINE SPEED SIGNAL OUTPUT                                   | 33             |   |     |                |                                   |  |
|                               |                                | 171 | SB  | POWER SUPPLY FOR ECM   | 34             | TG  |     |                |                                   |  |
| Connector No.                 | M160                           | 172 | SB  | POWER SUPPLY FOR ECM   | 35             |   |     |                |                                   |  |
| Connector Name                | ECM                            | 173 | ч   | THROTTLE CONTROL MOTOR POWER SUPPLY                          | 36             | E   |     |                |                                   |  |
|                               |                                | 174 | в   | ECM GROUND   | 37             |   |     |                |                                   |  |
| Connector Type                | MAB55FB-MEB10-LH               | 175 | в   | ECM GROUND   | 38             | R –   |     |                |                                   |  |
| ŧ                             |                                |     |     | 1  |                |   |     |                |                                   |  |



JCMWA5564GB

| < WIRING DIAGRAM >  | CAN SYSTEM (WITHOUT ICC)   | [CAN]       |
|---|--|-------------|
|   |  | A           |
|   |  | В           |
|   |  | С           |
|   |  | D           |
|   |  | Е           |
|   |  | F           |
|   |  | G           |
|   |  | Н           |
|   |  | Ι           |
|   |  | J           |
|   |  | К           |
|   |  | L           |
| MITHOUT ICC)<br>MITHOUT ICC)<br>IROL UNIT<br>AH<br>AM<br>AM<br>AM<br>AM<br>AM<br>AM<br>AM<br>AM<br>AM<br>AM<br>AM<br>AM<br>AM | Parking BRAKE SIGNAL<br>COMPOSITE MAGE SIGNAL<br>COMPOSITE MAGE SIGNAL<br>COMPOSITE MAGE SIGNAL<br>COMMICEOPHONE SHELD<br>MICROPHONE VCC<br>COMMICEOPHONE VCC<br>COMMICEOPHONE VCC<br>COMMICEOPHONE SIGNAL<br>ISTATION SIGNAL<br>AV COMMILL<br>COMPOSITE SIGNAL<br>COMPOSITE SIGNAL<br>COMPOSITE SIGNAL<br>AV COMMILL<br>AV COMMILL  | LAN         |
| TEM ()<br>M210<br>TH32FW<br>TH32FW<br>TH32FW  |  | Ν           |
| CAN SYS<br>Connector Name<br>Connector Name<br>Connector Type   | No.         of Wr.           65         67         7           67         7         7         7           71         7         7         7           73         7         7         7           73         7         7         7           74         7         7         7           75         7         7         7           75         7         7         7           75         7         7         7           75         7         7         7           80         8         8         8           90         8         8         8           91         8         8         8           92         7         7         8           93         8         8         8           94         8         8         8           93         8         8         8           94         7         7         8           95         8         8         8           95         8         8         8           95         8         8         < | JCMWA5565GB |
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#### DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

## BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

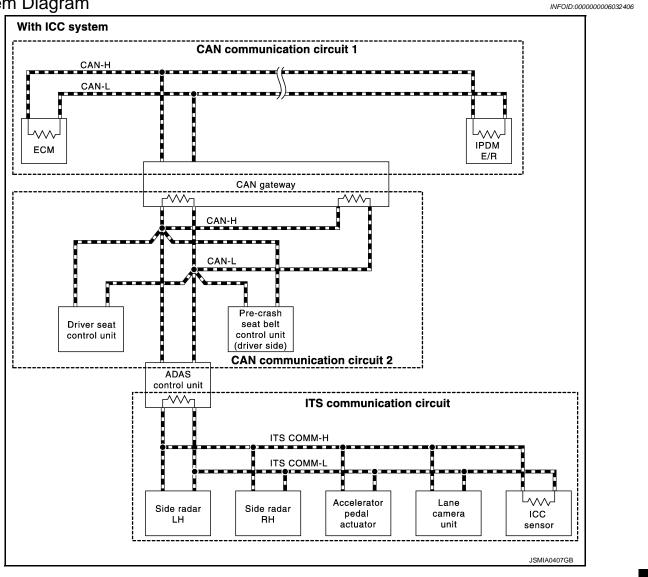
## **Interview Sheet**

| w Sneet                           |                                  | INFOID:000000006 |
|-----------------------------------|----------------------------------|------------------|
| CAN Communication S               | System Diagnosis Interview Sheet |                  |
|                                   | Date received:                   |                  |
|                                   |                                  |                  |
| Туре:                             | VIN No.:                         |                  |
| Model:                            |                                  |                  |
| irst registration:                | Mileage:                         |                  |
| CAN system type:                  |                                  |                  |
| Symptom (Results from interview v | with customer)                   |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
| Condition at inspection           |                                  |                  |
| Error symptom : Present / Pa      | Ist                              |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  |                  |
|                                   |                                  | SKIB8898E        |

#### < DTC/CIRCUIT DIAGNOSIS >

## DTC/CIRCUIT DIAGNOSIS MALFUNCTION AREA CHART

System Diagram



## **CAN** Communication Circuit

#### MAIN LINE

| Malfunction area   | Reference                     |   |
|--|-------------------------------|---|
| Main line between low tire pressure warning control unit and A/C auto amp.   | LAN-72, "Diagnosis Procedure" | C |
| Main line between A/C auto amp. and air bag diagnosis sensor unit            | LAN-73, "Diagnosis Procedure" |   |
| Main line between air bag diagnosis sensor unit and AV control unit          | LAN-74, "Diagnosis Procedure" | F |
| Main line between AV control unit and combination meter                      | LAN-75, "Diagnosis Procedure" |   |
| Main line between combination meter and data link connector                  | LAN-76, "Diagnosis Procedure" |   |
| Main line between data link connector and BCM                                | LAN-77, "Diagnosis Procedure" |   |
| Main line between BCM and ABS actuator and electric unit (con-<br>trol unit) | LAN-78, "Diagnosis Procedure" |   |

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Revision: 2010 June



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## MALFUNCTION AREA CHART

#### < DTC/CIRCUIT DIAGNOSIS >

| Malfunction area   | Reference                     |
|--|-------------------------------|
| Main line between BCM and AWD control unit   | LAN-80, "Diagnosis Procedure" |
| Main line between BCM and driver seat control unit   | LAN-81, "Diagnosis Procedure" |
| Main line between BCM and 4WAS main control unit   | LAN-82, "Diagnosis Procedure" |
| Main line between AWD control unit and ABS actuator and elec-<br>tric unit (control unit)    | LAN-83, "Diagnosis Procedure" |
| Main line between driver seat control unit and ABS actuator and electric unit (control unit) | LAN-85, "Diagnosis Procedure" |
| Main line between 4WAS main control unit and ABS actuator and electric unit (control unit)   | LAN-87, "Diagnosis Procedure" |

#### **BRANCH LINE**

| Malfunction area   | Reference                      |
|--|--------------------------------|
| ECM branch line circuit  | LAN-93, "Diagnosis Procedure"  |
| Low tire pressure warning control unit branch line circuit         | LAN-95, "Diagnosis Procedure"  |
| CAN gateway branch line circuit (CAN communication circuit 1)      | LAN-96, "Diagnosis Procedure"  |
| CAN gateway branch line circuit (CAN communication circuit 2)      | LAN-97, "Diagnosis Procedure"  |
| A/C auto amp. branch line circuit                                  | LAN-99, "Diagnosis Procedure"  |
| TCM branch line circuit  | LAN-100, "Diagnosis Procedure" |
| Air bag diagnosis sensor unit branch line circuit                  | LAN-101. "Diagnosis Procedure" |
| AV control unit branch line circuit                                | LAN-102, "Diagnosis Procedure" |
| Combination meter branch line circuit                              | LAN-104, "Diagnosis Procedure" |
| Data link connector branch line circuit                            | LAN-105, "Diagnosis Procedure" |
| BCM branch line circuit  | LAN-106, "Diagnosis Procedure" |
| Steering angle sensor branch line circuit                          | LAN-107, "Diagnosis Procedure" |
| AWD control unit branch line circuit                               | LAN-108, "Diagnosis Procedure" |
| 4WAS main control unit branch line circuit                         | LAN-109, "Diagnosis Procedure" |
| ABS actuator and electric unit (control unit) branch line circuit  | LAN-110, "Diagnosis Procedure" |
| AFS control unit branch line circuit                               | LAN-111, "Diagnosis Procedure" |
| IPDM E/R branch line circuit                                       | LAN-112, "Diagnosis Procedure" |
| Driver seat control unit branch line circuit                       | LAN-113. "Diagnosis Procedure" |
| ADAS control unit branch line circuit                              | LAN-114. "Diagnosis Procedure" |
| Pre-crash seat belt control unit (driver side) branch line circuit | LAN-115, "Diagnosis Procedure" |

#### SHORT CIRCUIT

| Malfunction area                               | Reference                      |  |
|--|--------------------------------|--|
| CAN communication circuit (Without ICC system) | LAN-121, "Diagnosis Procedure" |  |
| CAN communication circuit 1 (With ICC system)  | LAN-123, "Diagnosis Procedure" |  |
| CAN communication circuit 2 (With ICC system)  | LAN-125, "Diagnosis Procedure" |  |

## **ITS Communication Circuit**

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#### MAIN LINE

| Malfunction area                                  | Reference                     |  |
|---|-------------------------------|--|
| Main line between side radar LH and side radar RH | LAN-89, "Diagnosis Procedure" |  |

## LAN-70

## **MALFUNCTION AREA CHART**

## < DTC/CIRCUIT DIAGNOSIS >

[CAN]

| Malfunction area  | Reference                     | ^ |
|---|-------------------------------|---|
| Main line between side radar RH and accelerator pedal actuator    | LAN-90, "Diagnosis Procedure" | А |
| Main line between accelerator pedal actuator and lane camera unit | LAN-92, "Diagnosis Procedure" | R |

#### **BRANCH LINE**

| Malfunction area                               | Reference                      | ( |
|--|--------------------------------|---|
| Side radar LH branch line circuit              | LAN-116. "Diagnosis Procedure" |   |
| Side radar RH branch line circuit              | LAN-117, "Diagnosis Procedure" |   |
| Accelerator pedal actuator branch line circuit | LAN-118, "Diagnosis Procedure" |   |
| Lane camera unit branch line circuit           | LAN-119, "Diagnosis Procedure" |   |
| ICC sensor branch line circuit                 | LAN-120. "Diagnosis Procedure" |   |

#### SHORT CIRCUIT OR OPEN CIRCUIT

| Malfunction area          | Reference                      | F |
|---------------------------|--------------------------------|---|
| ITS communication circuit | LAN-127, "Diagnosis Procedure" |   |



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#### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### **Diagnosis Procedure**

INFOID:000000006032409

[CAN]

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

| -             | warning control unit<br>connector | A/C auto amp. harness connector |              | Continuity |
|---------------|-----------------------------------|---------------------------------|--------------|------------|
| Connector No. | Terminal No.                      | Connector No.                   | Terminal No. |            |
| M43           | 2                                 | M66                             | 12           | Existed    |
| 1             | IVIOO                             | 11                              | Existed      |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA  | IAIN LINE BETW<br>GNOSIS ><br>TWEEN HVAC          |                   |                       | IT<br>[CAN]             | ٨ |
|--|---|-------------------|-----------------------|-------------------------|---|
| Diagnosis Procedure  |   |                   |                       |                         |   |
| <b>1.</b> CHECK HARNES   |   | N CIRCUIT)        |                       |                         | В |
| <ul> <li>3. Disconnect the for</li> <li>ECM</li> <li>A/C auto amp.</li> <li>AV control unit</li> </ul> | attery cable from the no<br>llowing harness conne | ectors.           | nnector and the AV co | ntrol unit harness con- | C |
| nector.<br>- Models with navi  |   |                   |                       |                         | E |
| A/C auto amp.  | harness connector                                 | AV control unit h | arness connector      | Continuity              |   |
| Connector No.  | Terminal No.                                      | Connector No.     | Terminal No.          | Continuity              | _ |
| M66  | 12  | M210              | 90                    | Existed                 | F |
| IVIOU  | 11  | IVIZ I U          | 74                    | Existed                 |   |

Models without navigation system

| A/C auto amp. harness connector |              | AV control unit harness connector |              | Continuity |  |
|---------------------------------|--------------|-----------------------------------|--------------|------------|--|
| Connector No.                   | Terminal No. | Connector No.                     | Terminal No. | Continuity |  |
| MCC                             | 12           | M84                               | 81           | Existed    |  |
| IVIOO                           | M66 11       |                                   | 80           | Existed    |  |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### **Diagnosis Procedure**

INFOID:000000006032411

[CAN]

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit h | V control unit harness connector |            |
|-----------------|------------------|-------------------|----------------------------------|------------|
| Connector No.   | Terminal No.     | Connector No.     | Terminal No.                     | Continuity |
| M66             | 12               | M210              | 90                               | Existed    |
|                 | 11               | WZ TO             | 74                               | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity |  |
|-----------------|------------------|-----------------------------------|--------------|------------|--|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity |  |
| M66             | 12               | N0.4                              | 81           | Existed    |  |
|                 | 11               | M84                               | 80           | Existed    |  |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

|  |   |   |                     | [CAN]                  |
|--|---|---|---------------------|------------------------|
|  |   |   |                     |                        |
| Diagnosis Proced   | dure  |   |                     | INFOID:000000006032412 |
| 1.CHECK HARNESS  |   | N CIRCUIT)                                    |                     |                        |
| <ul> <li>3. Disconnect the fo</li> <li>ECM</li> <li>AV control unit</li> <li>Combination meters</li> </ul> | attery cable from the no<br>llowing harness conne<br>er<br>uity between the AV co | ctors.  | nnector and the com | pination meter harness |
| AV control unit  | harness connector   | Combination meter harness connector           |                     |                        |
| Connector No.  | Terminal No.  | Connector No.                                 | Terminal No.        | Continuity             |
| M210   | 90  | M53   | 14                  | Existed                |
| WIZ TO   | 74  | NICO NICO                                     | 15                  | Existed                |
| - Models without na  | avigation system  |   |                     |                        |
| AV control unit  | harness connector   | connector Combination meter harness connector |                     |                        |
| Connector No.  | Terminal No.  | Connector No.                                 | Terminal No.        | Continuity             |
| M84  | 81  | M53   | 14                  | Existed                |
| IVIO4  | 80  | IVIDO   | 15                  | Existed                |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### **Diagnosis Procedure**

INFOID:000000006032413

[CAN]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | r harness connector | Harness connector |              | Continuity |
|------------------|---------------------|-------------------|--------------|------------|
| Connector No.    | Terminal No.        | Connector No.     | Terminal No. | Continuity |
| M53              | 14                  | M105              | 7            | Existed    |
| IWI33            | 15                  | WITU5             | 8            | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the combination meter and the data link connector.
- NO >> Replace the PCB harness.

|  | MAIN LINE BEI  | WEEN DLC ANI          | D BCM CIRCUIT     |                        |  |
|--|--|-----------------------|-------------------|------------------------|--|
| < DTC/CIRCUIT DIAG   | GNOSIS >   |                       |                   | [CAN]                  |  |
| MAIN LINE BET  | TWEEN DLC A  | ND BCM CIRC           | UIT               |                        |  |
| Diagnosis Procedure  |  |                       |                   | INFOID:000000006032414 |  |
| 1.CHECK HARNESS  |  | N CIRCUIT)            |                   |                        |  |
| <ul> <li>3. Disconnect the fol</li> <li>ECM</li> <li>Harness connector</li> <li>BCM</li> </ul> | witch OFF.<br>ttery cable from the n<br>lowing harness conne<br>ors M181 and M105<br>ity between the harne | ectors.               | BCM harness conne | ctor.                  |  |
| Harness  | connector  | BCM harness connector |                   | Continuity             |  |
| Connector No.  | Terminal No.   | Connector No.         | Terminal No.      | - Continuity           |  |
|  | 7  |                       | 39                | Existed                |  |

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Is the inspection result normal?

M105

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YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the data link connector and the BCM. NO >> Replace the PCB harness.

M120

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Existed

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## MAIN LINE BETWEEN BCM AND ABS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN BCM AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006092436

[CAN]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

#### YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM
- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harne     | ess connector |              |            |
|---------------|---------------|--------------|------------|
| Connector No. | Terminal No.  | Terminal No. | Continuity |
| M120          | 39            | 35           | Existed    |
| IVI 120       | 40            | 36           | Existed    |

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

## **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |  |
|---------------|--------------|-------------------|--------------|------------|--|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |  |
| Mao           | 35           | M7                | 72           | Existed    |  |
| M20           | 36           | 1/17              | 73           | Existed    |  |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 72    | 74         | Existed |
|               | 73    | 75         | Existed |

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the main line between the harness connector terminals.

**5.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

## MAIN LINE BETWEEN BCM AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

| Harness connector |              | Harness connector |              |            |   |
|-------------------|--------------|-------------------|--------------|------------|---|
| Connector No.     | Terminal No. | Connector No.     | Terminal No. | Continuity |   |
| N 47              | 74           | M6                | 22 Existed   | Existed    |   |
| M7                | 75           |                   | 23           | Existed    | _ |

s the inspection result normal?

YES >> GO TO 6.

NO >> Repair the main line between the harness connectors M7 and M6.

### **6.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) E harness connector.

| Harness connector |              | ABS actuator and electric unit (control unit)<br>harness connector |              | Continuity | F |
|-------------------|--------------|--|--------------|------------|---|
| Connector No.     | Terminal No. | Connector No.  | Terminal No. |            |   |
| E106              | 22           | E41  | 25           | Existed    | G |
| EIUO              | 23           | <b>E</b> 41  | 15           | Existed    |   |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the ABS actuator and electric unit (control unit).

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### Diagnosis Procedure

INFOID:000000006032415

[CAN]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## **2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harne     | ss connector | PCB harness connector | Continuity |  |
|---------------|--------------|-----------------------|------------|--|
| Connector No. | Terminal No. | Terminal No.          | Continuity |  |
| M120          | 39           | 35                    | Existed    |  |
| IVI 120       | 40           | 36                    | Existed    |  |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness                    | Continuity |            |  |
|---------------|--------------|----------------------------|------------|------------|--|
| Connector No. | Terminal No. | Connector No. Terminal No. |            | Continuity |  |
| M20           | 35           | M7                         | 72         | Existed    |  |
| WZ0           | 36           | 1017                       | 73         | Existed    |  |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 72    | 74         | Existed |
| DI            | 73    | 75         | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit.

NO >> Replace the body harness.

|   |   | WEEN BCM AI  |                        | ſ<br>[CAN]              |
|---|---|--|------------------------|-------------------------|
|   | <b>FWEEN BCM A</b>  | ND ADP CIR   | CUIT                   |                         |
| Diagnosis Proced  | lure  |  |                        | INFOID:000000006068657  |
| .снеск соллест  | OR  |  |                        |                         |
| <ul> <li>Check the following and harness side)</li> <li>Harness connectore</li> <l< td=""><td>attery cable from the ne<br/>ng terminals and cont<br/>or M20 and PCB harne<br/>or M7<br/>or B1<br/><u>t normal?</u><br/>e terminal and connect<br/>s CONTINUITY (OPEN<br/>lowing harness conne</td><td>nectors for damage<br/>ess side connector<br/>tor.<br/>N CIRCUIT)</td><td>, bend and loose con</td><td>nection (connector side</td></l<></ul> | attery cable from the ne<br>ng terminals and cont<br>or M20 and PCB harne<br>or M7<br>or B1<br><u>t normal?</u><br>e terminal and connect<br>s CONTINUITY (OPEN<br>lowing harness conne | nectors for damage<br>ess side connector<br>tor.<br>N CIRCUIT) | , bend and loose con   | nection (connector side |
|   |   | harness connector a  | and the PCB harness of | connector.              |
| BCM harne   | ess connector   | PCB harr   | ess connector          | Continuity              |
| Connector No.   | Terminal No.  | Terminal No.   |                        |                         |
| M120  | 39  |  | 35                     | Existed                 |
|   | 40  |  | 36                     | Existed                 |
| CHECK HARNESS   | he PCB harness.<br>CONTINUITY (OPEN<br>Irness connectors M7<br>ity between the harne  | and B1.  |                        |                         |
| Harness   | connector   | Harnes   | s connector            |                         |
|   | Terminal No.  | Connector No.  | Terminal No.           | - Continuity            |
| Connector No.   | reminal NO.   |  |                        |                         |
|   | 35  | M7   | 72                     | Existed                 |
| M20   | 35<br>36  | M7   | 72<br>73               | Existed<br>Existed      |
| M20<br><u>s the inspection result</u><br>YES >> GO TO 4.<br>NO >> Repair the<br>I.CHECK HARNESS   | 35<br>36  | e harness connecto<br>N CIRCUIT)                               | 73                     |                         |
| M20<br><u>s the inspection result</u><br>YES >> GO TO 4.<br>NO >> Repair the<br>I.CHECK HARNESS   | 35<br>36<br>t normal?<br>e main line between th<br>5 CONTINUITY (OPEN   | e harness connecto<br>N CIRCUIT)                               | 73                     |                         |
| M20<br><u>s the inspection result</u><br>YES >> GO TO 4.<br>NO >> Repair the<br><b>1</b> .CHECK HARNESS<br>Check the continuity b   | 35<br>36<br>t normal?<br>e main line between th<br>5 CONTINUITY (OPEN   | e harness connecto<br>N CIRCUIT)<br>onnector terminals.        | 73                     | Existed                 |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.

NO-1 >> With 4WAS or AWD models: Replace the body harness.

NO-2 >> 2WD models without 4WAS: Repair the main line between the harness connector B1 and the driver seat control unit.

## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

### Diagnosis Procedure

INFOID:000000006068661

[CAN]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## **2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harne     | ss connector | PCB harness connector | Continuity |  |
|---------------|--------------|-----------------------|------------|--|
| Connector No. | Terminal No. | Terminal No.          | Continuity |  |
| M120          | 39           | 35                    | Existed    |  |
| WI120         | 40           | 36                    | Existed    |  |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness                    | Continuity |            |  |
|---------------|--------------|----------------------------|------------|------------|--|
| Connector No. | Terminal No. | Connector No. Terminal No. |            | Continuity |  |
| M20           | 35           | M7                         | 72         | Existed    |  |
| WZ0           | 36           | 1017                       | 73         | Existed    |  |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 72    | 74         | Existed |
| DI            | 73    | 75         | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the 4WAS main control unit. NO >> Replace the body harness.

| DTC/CIRCUIT DIAGNOSIS ><br>MAIN LINE BETWEEN 4WD AND ABS CIRCUIT<br>Diagnosis Procedure   | [CAN]                  |
|---|------------------------|
| Diagnosis Procedure   |                        |
|   |                        |
|   | INFOID:000000006068663 |
| .CHECK CONNECTOR  |                        |
| Turn the ignition switch OFF.<br>Disconnect the battery cable from the negative terminal.<br>Check the following terminals and connectors for damage, bend and loose connection<br>and harness side).<br>Harness connector B1<br>Harness connector M7<br>Harness connector M6<br>Harness connector E106<br><u>the inspection result normal?</u><br>YES >> GO TO 2.<br>NO >> Repair the terminal and connector.<br>.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)<br>Disconnect the harness connectors B1 and M7.  | on (connector side     |
| Check the continuity between the harness connector terminals.   |                        |
|   | Continuity             |
| B1 72 74 74 75  | Existed                |
|   |                        |
| CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106.  |                        |
| CHECK HARNESS CONTINUITY (OPEN CIRCUIT)<br>Disconnect the harness connectors M6 and E106.<br>Check the continuity between the harness connectors.   |                        |
| CHECK HARNESS CONTINUITY (OPEN CIRCUIT) Disconnect the harness connectors M6 and E106.  | Continuity             |
| .CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         Disconnect the harness connectors M6 and E106.         Check the continuity between the harness connectors.         Harness connector         Harness connector         Connector No.         Terminal No.         74  | Continuity<br>Existed  |
| .CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         Disconnect the harness connectors M6 and E106.<br>Check the continuity between the harness connectors.         Harness connector         Harness connector No.         Terminal No.         Connector No.         Terminal No.         M7         74         M6         22         23  |                        |
| <b>A</b> CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         Disconnect the harness connectors M6 and E106.         Check the continuity between the harness connectors.         Harness connector       Harness connector         Connector No.       Terminal No.         M7       74         M7       74         M6       22         23       23         the inspection result normal?         YES       >> GO TO 4.         NO       >> Repair the main line between the harness connectors M7 and M6.         •.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         Disconnect the connector of ABS actuator and electric unit (control unit).   | Existed                |
| CHECK HARNESS CONTINUITY (OPEN CIRCUIT)  Disconnect the harness connectors M6 and E106. Harness connector Harness connector Harness connector Arreminal No. Connector No. Terminal No. Arreminal No. Terminal No. Arreminal No. Terminal No. Arreminal No. Terminal No. Arreminal No. Terminal No. Connector No. Terminal No. Arreminal No. Arrem | Existed                |
| •.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         Disconnect the harness connectors M6 and E106.<br>Check the continuity between the harness connectors.         Harness connector       Harness connector         Max       Connector No.         Terminal No.       Connector No.         M7       74         M7       74         M6       22         23       23         the inspection result normal?         YES       >> GO TO 4.         NO       >> Repair the main line between the harness connectors M7 and M6.         •.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         Disconnect the connector of ABS actuator and electric unit (control unit).         Check the continuity between the harness connector and the ABS actuator and electric harness connector.   | Existed<br>Existed     |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the AWD control unit and the ABS actuator and electric unit (control unit).

### < DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

| < DTC/CIRCUIT DIA(   | MAIN LINE BET   | WEEN A                       | OP ANI      | O ABS CIRCUI                           | T<br>[CAN]                   |
|--|---|------------------------------|-------------|--|------------------------------|
| MAIN LINE BET  |   | ND ABS                       | CIRCI       | JIT                                    |                              |
| Diagnosis Proced   | lure  |                              |             |  | INFOID:000000006068655       |
| 1.CHECK CONNECT  | OR  |                              |             |  |                              |
|  | ttery cable from the n<br>ng terminals and con<br>r B1<br>r M7                              |                              |             | pend and loose cor                     | nnection (connector side     |
| <ul> <li>Harness connecto</li> </ul>   |   |                              |             |  |                              |
| <b>~</b> '   | e terminal and connec   |                              |             |  |                              |
| 2.CHECK HARNESS  |   |                              |             |  |                              |
|  | rness connectors B1 ity between the harne   |                              | terminal    | S.                                     |                              |
| Connector No.  |   | Terminal                     | l No.       |  | Continuity                   |
| B1   | 72  | 72 74                        |             | Existed                                |                              |
|  | 73 75   |                              | 75          | Existed                                |                              |
| ness conn<br><b>3.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu | ector B1.   | N CIRCUIT)<br>and E106.      | ·S.         | connector                              | control unit and the har-    |
| Connector No.  | Terminal No.  | Connecto                     | or No.      | Terminal No.                           | Continuity                   |
| M7   | 74  | - M6                         |             | 22                                     | Existed                      |
| IVI <i>1</i>   | 75  | IVI6                         |             | 23                                     | Existed                      |
| <b>1.</b> CHECK HARNESS  | e main line between th<br>CONTINUITY (OPE)<br>nnector of ABS actua<br>ity between the harne | N CIRCUIT)<br>tor and electr | ric unit (c | ontrol unit).                          | electric unit (control unit) |
| Harness  | connector   | ABS actua                    |             | ctric unit (control unit)<br>connector | Continuity                   |
| Connector No.  | Terminal No.  | Connecto                     | or No.      | Terminal No.                           |                              |
| E106   | 22  | E41                          |             | 25                                     | Existed                      |
|  | 23  |                              |             | 15                                     | Existed                      |

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

## LAN-85

< DTC/CIRCUIT DIAGNOSIS >

- YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).
- NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

| AIN LINE BET   |   | ND ABS                                    | CIRCL                       | ЛТ            |                              |
|--|---|---|-----------------------------|---------------|------------------------------|
| Diagnosis Proced   | ure   |   |                             |               | INFOID:000000006068662       |
| 1.снеск соллест  | OR  |   |                             |               |                              |
| <ol> <li>Check the followir<br/>and harness side).</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Source and the second seco</li></ol> | ttery cable from the n<br>ng terminals and con<br>r B1<br>r M7<br>r M6<br>r E106<br><u>normal?</u><br>terminal and connec | tor.<br>N CIRCUIT)<br>and M7.             | damage, b                   |               | onnection (connector side    |
| Connector No.  |   | Termin                                    |                             | -             | Continuity                   |
| B1   | 72  | -   |                             | 74            | Existed                      |
| 3.CHECK HARNESS  | e body harness.<br>CONTINUITY (OPEI<br>mess connectors M6<br>ty between the harne   | and E106.                                 |                             |               |                              |
|  | connector   |   | Harness                     | connector     |                              |
| Connector No.  | Terminal No.  | Connec                                    |                             | Terminal No.  | Continuity                   |
| M7   | 74<br>75  | - M                                       | 6                           | 22<br>23      | Existed<br>Existed           |
| 4.CHECK HARNESS  | main line between th<br>CONTINUITY (OPEI<br>nnector of ABS actua<br>ty between the harne                                  | N CIRCUIT)<br>tor and elec<br>ess connect | tric unit (co<br>or and the | ontrol unit). | electric unit (control unit) |
|  | connector   |   | harness c                   | connector     | Continuity                   |
| Connector No.  | Terminal No.  | Connec                                    | tor No.                     | Terminal No.  |                              |
|  | 22  |   |                             | 25            | Existed                      |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

### < DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

| MA<br>DTC/CIRCUIT DIAC  | AIN LINE BETW<br>GNOSIS >  | EEN RDR-L ANI         | D RDR-R CIRCU         | IT<br>[CAN]            |
|---|--|-----------------------|-----------------------|------------------------|
| MAIN LINE BET   | WEEN RDR-L   | AND RDR-R C           | IRCUIT                |                        |
| Diagnosis Proced  | ure  |                       |                       | INFOID:000000006068659 |
| 1.CHECK CONNECT   | OR   |                       |                       |                        |
| 3. Check the followir<br>and harness side).<br>Harness connecto<br>Harness connecto<br>s the inspection result<br>YES >> GO TO 2.<br>NO >> Repair the | ttery cable from the ne<br>ng terminals and conr<br>r B33<br>r B245<br>normal?<br>terminal and connect | nectors for damage, I | pend and loose conn   | ection (connector side |
| CHECK HARNESS   | CONTINUITY (OPEN   | I CIRCUIT)            |                       |                        |
| Side radar LH<br>Harness connecto<br>2. Check the continu   | owing harness conne<br>rs B33 and B245<br>ity between the side ra<br>arness connector                  | adar LH harness conr  | nector and the harnes |                        |
| Connector No.   | Terminal No.   | Connector No.         | Terminal No.          | Continuity             |
| B52   | 4  | B33                   | 13                    | Existed                |
| 032   | 3  | 200                   | 14                    | Existed                |
| CHECK HARNESS   | main line between th<br>CONTINUITY (OPEN<br>nector of side radar f<br>ity between the harne            | I CIRCUIT)<br>RH.     |                       |                        |
| Harness   | connector  | Side radar RH h       | arness connector      | Continuity             |
| Connector No.   | Terminal No.   | Connector No.         | Terminal No.          | -                      |
| B245  | 13   | B252                  | 4                     | Existed                |
|   | 14   |                       | 3                     | Existed                |
| s the inspection result<br>YES (Present error)><br>YES (Past error)>>Er<br>NO >> Repair the   | >Check CAN system  | e main line between   |                       |                        |

Ρ

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000006068660

[CAN]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B201
- Harness connector M117
- Harness connector M20 and PCB harness side connector
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar RH
- Harness connectors B201 and M117
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

| Side radar RH h | arness connector | Harness connector          |    | rness connector Harness connector |  | Continuity |
|-----------------|------------------|----------------------------|----|-----------------------------------|--|------------|
| Connector No.   | Terminal No.     | Connector No. Terminal No. |    | Continuity                        |  |            |
| B252            | 4                | B201                       | 66 | Existed                           |  |            |
| BZJZ            | 3                | B201                       | 67 | Existed                           |  |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B201.

3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness       | connector    | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M117          | 66           | M20           | 38           | Existed    |
|               | 67           | WIZ0          | 40           | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M20.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M150 and M151.

2. Check the continuity between the PCB harness connector and the harness connector.

| PCB harness connector | Harness of    | connector    | Continuity |
|-----------------------|---------------|--------------|------------|
| Terminal No.          | Connector No. | Terminal No. | Continuity |
| 38                    | M450          | 11           | Existed    |
| 40                    | M150          | 10           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

| <pre>&lt; DTC/CIRCUIT DIAGNOSIS &gt; [CAN] NO &gt;&gt; Replace the PCB harness.</pre> |  | RCUIT<br>[CAN] |
|---|--|----------------|
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## MAIN LINE BETWEEN APA AND LANE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN APA AND LANE CIRCUIT

### **Diagnosis Procedure**

INFOID:000000006068658

[CAN]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M150          | 11           | M110              | 13           | Existed    |
| 101130        | 10           |                   | 2            | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane camera unit.
- NO >> Replace the PCB harness.

## **ECM BRANCH LINE CIRCUIT**

|   |  | LINE CIRCUIT               |                                |     |
|---|--|----------------------------|--------------------------------|-----|
| < DTC/CIRCUIT DIAGNOS   |  |                            | [CAN]                          |     |
|   |  |                            |                                | А   |
| Diagnosis Procedure   |  |                            | INFOID:00000006032416          |     |
| <b>1.</b> CHECK CONNECTOR   |  |                            |                                | В   |
| <ul><li>3. Check the following terr nector side).</li><li>ECM</li></ul>                           | cable from the negative terr<br>ninals and connectors for d                              | amage, bend and loose o    | connection (unit side and con- | С   |
| <ul> <li>Harness connector M30</li> <li><u>Is the inspection result norm</u></li> </ul>           | ) and PCB harness side cor   | nnector                    |                                | D   |
| YES >> GO TO 2.   | inal and connector.  |                            |                                | E   |
| 2. CHECK HARNESS FOR  | OPEN CIRCUIT   |                            |                                |     |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> <li>VQ37VHR</li> </ol>      | or of ECM.<br>etween the ECM harness co  | onnector terminals.        |                                | F   |
|   | ECM harness connector  |                            | Desistance (O)                 | G   |
| Connector No.   | Termir   | nal No.                    | Resistance (Ω)                 |     |
| M107  | 114  | 113                        | Approx. 108 – 132              | Н   |
| - VK56VD  |  |                            |                                |     |
|   | ECM harness connector  |                            | Resistance (Ω)                 |     |
| Connector No.   | Termir   | nal No.                    |                                | I   |
| M160  | 146  | 151                        | Approx. 108 – 132              |     |
| Is the measurement value w<br>YES >> GO TO 3.<br>NO >> GO TO 4.                                   |  |                            |                                | J   |
| 3.CHECK POWER SUPPL   |  |                            |                                | Κ   |
| Check the power supply and<br>• VQ37VHR: <u>EC-180, "Diag</u><br>• VK56VD: <u>EC-716, "Diagne</u> | nosis Procedure"<br>osis Procedure"  | CM. Refer to the following | g.                             | L   |
| Is the inspection result norm   | <u>nal?</u><br>Iace the ECM. Refer to the  | following                  |                                |     |
| <ul> <li>VQ37VHR: E</li> <li>VK56VD: EC-</li> </ul>   | C-535. "Removal and Install<br>535. "Removal and Installa<br>ras detected in the ECM bra | lation"<br>tion"           |                                | LAI |
|   | er supply and the ground ci  | rcuit.                     |                                | Ν   |
| <ol> <li>Disconnect the harness</li> <li>Check the continuity be</li> <li>VQ37VHR</li> </ol>      | s connector M30.<br>Itween the ECM harness co  | nnector and the harness    | connector.                     | 0   |

| ECM harne     | ss connector | Harness       | connector    | Continuity | - |
|---------------|--------------|---------------|--------------|------------|---|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |   |
| M107          | 114          | M30           | 439          | Existed    | - |
| WITO7         | 113          | IVI30         | 438          | Existed    | - |

- VK56VD

## ECM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

| ECM harne     | ess connector | Harness       | connector    | Continuity |
|---------------|---------------|---------------|--------------|------------|
| Connector No. | Terminal No.  | Connector No. | Terminal No. | Continuity |
| M160          | 146           | M30           | 439          | Existed    |
| IVI TOO       | 151           | 10130         | 438          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

## **TPMS BRANCH LINE CIRCUIT**

| Diagnosis Procedure  |                                     |                      |                        |                | INFOID:00000000606916          |
|--|-------------------------------------|----------------------|------------------------|----------------|--------------------------------|
| 1.CHECK CONNECTOR  |                                     |                      |                        |                |                                |
| <ol> <li>Turn the ignition switch 0</li> <li>Disconnect the battery c</li> <li>Check the following term<br/>nector side).</li> <li>Low tire pressure warnin<br/>Harness connector M29</li> </ol> | able from the ne<br>inals and conne | ectors for damag     |                        | onnect         | ion (unit side and con-        |
| s the inspection result norma  | al?                                 |                      |                        |                |                                |
| YES >> GO TO 2.<br>NO >> Repair the termin<br>CHECK HARNESS FOR  |                                     |                      |                        |                |                                |
| . Disconnect the connector.<br>Check the resistance be   | tween the low ti                    | re pressure war      | ning control unit harn | ess co         | onnector terminals.            |
| Low tire pres  | ssure warning contr                 | ol unit harness conr | ector                  | _              | Resistance (Ω)                 |
| Connector No.  |                                     | Terminal No.         |                        |                |                                |
| M43  | 2                                   |                      | 1                      |                | Approx. 54 – 66                |
| <u>s the measurement value wi</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SUPPLY   | ·                                   |                      |                        |                |                                |
| Check the power supply and<br>Diagnosis Procedure".  | I the ground cire                   | cuit of the low ti   | e pressure warning o   | contro         | I unit. Refer to <u>WT-53.</u> |
| s the inspection result norma<br>YES (Present error)>>Repla<br>Installation".  |                                     | e pressure warn      | ing control unit. Refe | er to <u>)</u> | WT-70, "Removal and            |
| YES (Past error)>>Error wa<br>NO >> Repair the powe  | r supply and the                    | e ground circuit.    | re warning control ur  | nit bra        | nch line.                      |
| CHECK HARNESS CON  |                                     |                      |                        |                |                                |
| <ul> <li>Disconnect the harness</li> <li>Check the continuity bet ness connector.</li> </ul>   |                                     |                      | ning control unit harr | ness c         | connector and the har-         |
|  |                                     |                      |                        |                |                                |

|               | warning control unit<br>connector | Harness connector |              | Continuity |     |
|---------------|-----------------------------------|-------------------|--------------|------------|-----|
| Connector No. | Terminal No.                      | Connector No.     | Terminal No. | _          | Ν   |
| M43           | 2                                 | M29               | 396          | Existed    | -   |
| 10143         | 1                                 | 11/12/9           | 395          | Existed    |     |
|               |                                   |                   |              |            | - 0 |

### Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

AN

[CAN]

## **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)**

### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

### Diagnosis Procedure

INFOID:000000006069162

[CAN]

| 1.CHECK DTO | С |
|-------------|---|
|-------------|---|

Check DTC of the CAN gateway with CONSULT-III.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

## 2. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- CAN gateway
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

### 3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of CAN gateway.
- 2. Check the resistance between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector | ſ | Resistance (Ω)  |  |
|---------------|-------------------------------|---|-----------------|--|
| Connector No. | Terminal No.                  |   |                 |  |
| M125          | 1                             | 7 | Approx. 54 – 66 |  |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-143, "Diagnosis Proce-</u> dure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1). NO >> Repair the power supply and the ground circuit.

**5.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

| CAN gateway h | arness connector | Harness       | connector    | Continuity |
|---------------|------------------|---------------|--------------|------------|
| Connector No. | Terminal No.     | Connector No. | Terminal No. | Continuity |
| MADE          | 1                | MOO           | 326          | Existed    |
| M125          | 7                | M28           | 328          | Existed    |

### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

## CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

| CGW BRANCH   | LINE CIRCUIT   |  | JNICATION CI          | RCUITZ)                  |
|--|--|--|-----------------------|--------------------------|
| Diagnosis Proced   | lure   |  |                       | INFOID:000000006069163   |
| 1.снеск отс  |  |  |                       |                          |
| Check DTC of the CA  | N gateway with CONS  | ULT-III.   |                       |                          |
| Is U1010 or B2600 ind  |  |  |                       |                          |
| YES >> Perform a<br>NO >> GO TO 2.   | diagnosis of the indic   | ated DTC.  |                       |                          |
| 2.CHECK CONNECT  | OR   |  |                       |                          |
| <ol> <li>Check the followin<br/>nector side).</li> <li>CAN gateway</li> <li>Harness connector</li> </ol> | ttery cable from the ne<br>og terminals and conne<br>or M23 and PCB harne<br>or M20 and PCB harne<br>or M7 | ectors for damage, be<br>ess side connector                              | and and loose connec  | tion (unit side and con- |
| Is the inspection result   |  |  |                       |                          |
| YES >> GO TO 3.  |  |  |                       |                          |
| •  | e terminal and connect   |  |                       |                          |
| <b>3.</b> CHECK HARNESS  | CONTINUITY (OPEN   | N CIRCUIT)   |                       |                          |
|  | nnector of CAN gatew<br>ity between the CAN<br>CAN gateway harne   | gateway harness con  | nector terminals.     |                          |
| Connector No.  | CAN galeway ham  | Terminal No.   |                       | Continuity               |
|  | 4  |  | 6                     | Existed                  |
| M125   | 10   |  | 12                    | Existed                  |
| Is the inspection result   |  |  |                       |                          |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER S   |  | D CIRCUIT  |                       |                          |
|  |  |  | eway, Refer to LAN-1  | 143, "Diagnosis Proce-   |
| dure".<br><u>Is the inspection result</u><br>YES (Present error)><br>YES (Past error)>>E                 | <u>t normal?</u><br>>Replace the CAN ga<br>rror was detected in the<br>power supply and the                | nteway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit. | 144, "Removal and In  | istallation".            |
|  | rness connector M23.<br>ity between the CAN  |  | nector and the harnes | ss connector.            |
| CAN gateway h  | arness connector   | Harness  | connector             | Continuity               |
| Connector No.  | Terminal No.   | Connector No.  | Terminal No.          |                          |
| M125   | 4  | M23  | 133                   | Existed                  |
|  | 10   |  | 135                   | Existed                  |

Is the inspection result normal?

YES >> GO TO 6.

[CAN]

## **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)**

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

## 6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

| PCB harness connector | PCB harness connector | Continuity |
|-----------------------|-----------------------|------------|
| Terminal No.          | Terminal No.          | Continuity |
| 133                   | 24                    | Existed    |
| 135                   | 27                    | Existed    |

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the PCB harness.

## **7.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |  |
|---------------|--------------|-------------------|--------------|------------|--|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |  |
| M20           | 24           | M7                | 34           | Existed    |  |
| IM20          | 27           | IVI <i>1</i>      | 35           | Existed    |  |

#### Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

### **8.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 34    | 32         | Existed |
| וט            | 35    | 33         | Existed |

#### Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

[CAN]

## **HVAC BRANCH LINE CIRCUIT**

| DTC/CIRCUIT DIA   |  | _  |                   | [CAN]                          |
|---|--|--|-------------------|--------------------------------|
| IVAC BRANCH   | I LINE CIRCUIT   | Г  |                   |                                |
| iagnosis Proced   | ure  |  |                   | INFOID:00000006069164          |
| .CHECK CONNECT  | OR   |  |                   |                                |
| <ul> <li>Check the followin<br/>nector side).</li> <li>A/C auto amp.</li> <li>Harness connecto</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the co</li> </ul> | ttery cable from the ne<br>og terminals and conne<br>r M28 and PCB harne | ectors for damage, be<br>ss side connector<br>or.<br>-<br>np.            |                   | nection (unit side and con-    |
|   | A/C auto amp. harne  | -  |                   |                                |
| Connector No.   |  | Terminal No.   |                   | Resistance ( $\Omega$ )        |
| M66   | 12   |  | 11                | Approx. 54 – 66                |
| <ul> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; GO TO 4.</li> <li>CHECK POWER S</li> </ul>  | alue within the specific<br>UPPLY AND GROUN                              | D CIRCUIT  |                   |                                |
| agnosis Procedure".<br>the inspection result<br>'ES (Present error)>>E<br>'ES (Past error)>>E<br>IO >> Repair the   |  | o amp. Refer to <u>HAC-</u><br>e A/C auto amp. bran<br>e ground circuit. | 201, "Removal ar  | <u>C-167. "A/C AUTO AMP. :</u> |
| Disconnect the ha   | rness connector M28.<br>ity between the A/C a                            | ,  | nector and the ha | arness connector.              |
| A/C auto amp. h   | arness connector   | Harness  | connector         | Continuity                     |
| Connector No.   | Terminal No.   | Connector No.  | Terminal No.      |                                |
| M66   | 12   | M28  | 325               | Existed                        |
|   | 11   |  | 327               | Existed                        |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

11

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

327

Ρ

Ν

Existed

## TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:00000006032419

- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F103
- Harness connector M116
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

|               | A/T assembly harness connector | r | Resistance (Ω)  |
|---------------|--------------------------------|---|-----------------|
| Connector No. | Termi                          |   |                 |
| F61           | 3                              | 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8</u>, <u>"A/T CONTROL SYSTEM : Component Parts Location"</u>. (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the A/T assembly harness connector and the harness connector.

| A/T assembly h | arness connector | Harness connector |              | Continuity |
|----------------|------------------|-------------------|--------------|------------|
| Connector No.  | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| F61            | 3                | M28               | 346          | Existed    |
| FUI            | 8                | IVIZO             | 347          | Existed    |

### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

## **A-BAG BRANCH LINE CIRCUIT**

| < DTC/CIRCUIT DIAGNOSIS > [C  | AN]        |
|---|------------|
| A-BAG BRANCH LINE CIRCUIT   | Δ.         |
| Diagnosis Procedure   | A          |
| <ul> <li>WARNING:</li> <li>Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 min or more. (To discharge backup capacitor.)</li> <li>Never use unspecified tester or other measuring device.</li> </ul> | nutes<br>C |
| 1.CHECK CONNECTOR   |            |
| <ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the following terminals and connectors for damage, bend and loose connection (unit side and nector side).</li> </ol>      | D<br>con-  |
| <ul> <li>Air bag diagnosis sensor unit</li> <li>Harness connector M26 and PCB harness side connector</li> <li><u>Is the inspection result normal?</u></li> </ul>  | E          |
| YES >> GO TO 2.<br>NO >> Replace the main harness and/or the PCB harness.<br>2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT  | F          |
| Check the air bag diagnosis sensor unit. Refer to <u>SRC-32, "Work Flow"</u> .  | G          |
| <u>Is the inspection result normal?</u><br>YES >> Replace the main harness and/or the PCB harness.<br>NO >> Replace parts whose air bag system has a malfunction.   | Н          |

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## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

**1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M25 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

| AV control unit harness connector |       |    | Resistance ( $\Omega$ ) |
|-----------------------------------|-------|----|-------------------------|
| Connector No.                     | Termi |    |                         |
| M210                              | 90    | 74 | Approx. 54 – 66         |

Models without navigation system

| AV control unit harness connector |              |    | Posistanaa (O)          |
|-----------------------------------|--------------|----|-------------------------|
| Connector No.                     | Terminal No. |    | Resistance ( $\Omega$ ) |
| M84                               | 81           | 80 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-272, "AV CONTROL UNIT : Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.
- NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

| AV control unit h | arness connector | Harness       | connector    | Continuity |
|-------------------|------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No. | Terminal No. | Continuity |
| M210              | 90               | M25           | 201          | Existed    |
| 101210            | 74               | IVIZO         | 221          | Existed    |

Models without navigation system

## **AV BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

[CAN]

|                     | arness connector    | Harness               |                        | Continuity         |
|---------------------|---------------------|-----------------------|------------------------|--------------------|
| Connector No.       | Terminal No.        | Connector No.         | Terminal No.           |                    |
| M84                 | 81                  | M25                   | 201                    | Existed            |
| -                   | 80                  |                       | 221                    | Existed            |
| e inspection result |                     |                       |                        |                    |
| S >> Replace the    | e PCB harness.      | harmana hatuyaan tha  |                        | a connector MO10 a |
| (with navigation s  | s connector M25.    | harness between the A | AV control unit names  | s connector M210 a |
| (Without navigatio  | n system)>>Repair f | the harness between   | the AV control unit ha | arness connector M |
| and the hai         | rness connector M25 | 5.                    |                        |                    |
|                     |                     |                       |                        |                    |
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|                     |                     |                       |                        |                    |

## M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006032423

[CAN]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Combination meter
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

| Combination meter harness conne | Resistance ( $\Omega$ ) |                 |
|---------------------------------|-------------------------|-----------------|
| Connector No. Term              | Terminal No.            |                 |
| M53 14                          | 15                      | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the combination meter Refer to <u>MWI-70. "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | r harness connector | Harness connector |              | Continuity |
|------------------|---------------------|-------------------|--------------|------------|
| Connector No.    | Terminal No.        | Connector No.     | Terminal No. | Continuity |
| M53              | 14                  | M24               | 176          | Existed    |
| IND5             | 15                  | 10124             | 177          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

## **DLC BRANCH LINE CIRCUIT**

| < DTC/CIRCUIT DIAGNOSIS   | >  |                        | [CAN]                          |
|---|--|------------------------|--------------------------------|
| DLC BRANCH LINE (   | SIRCUIT  |                        |                                |
| Diagnosis Procedure   |  |                        | INF01D:00000006032422          |
| 1.CHECK CONNECTOR   |  |                        |                                |
| <ol> <li>Turn the ignition switch OF</li> <li>Disconnect the battery cab</li> <li>Check the following termin<br/>nector side).</li> <li>Data link connector</li> <li>Harness connector M181</li> <li>Harness connector M105</li> <li>Harness connector M23 ar</li> <li>Is the inspection result normal?<br/>YES &gt;&gt; GO TO 2.<br/>NO &gt;&gt; Repair the termina</li> <li>CHECK HARNESS FOR OF</li> </ol> | le from the negative ter<br>als and connectors for o<br>nd PCB harness side co | damage, bend and loose | connection (unit side and con- |
| Check the resistance between  |  | terminals.             |                                |
| Connector No.   | Data link connector  | nal No.                | Resistance (Ω)                 |
| M182  | 6  | 14                     | Approx. 54 – 66                |
| Is the measurement value with<br>YES (Present error)>>Check   | •  | ion again.             |                                |
| YES (Past error)>>Error was<br>NO >> GO TO 3.   |  |                        | rcuit.                         |

# 3. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M23.
- 2. Check the continuity between the data link connector and the harness connector.

| Data link     | connector    | Harness connector |              | Continuity | ĸ  |
|---------------|--------------|-------------------|--------------|------------|----|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity | 1. |
| M182          | 6            | M23               | 151          | Existed    | -  |
| 101102        | 14           | IVIZ3             | 150          | Existed    | L  |

Is the inspection result normal?

YES >> Replace the PCB harness.

>> Repair the harness between the data link connector M182 and the harness connector M23. NO

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## BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- BCM
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of BCM.
- 2. Check the resistance between the BCM harness connector terminals.

| Connector No.         Terminal No.         Terminal No.           M120         39         40         Approx. 54 – 66 |               | Resistance ( $\Omega$ ) |    |                 |
|--|---------------|-------------------------|----|-----------------|
| M120 39 40 Approx. 54 – 66   | Connector No. | Termi                   |    |                 |
|  | M120          | 39                      | 40 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to <u>BCS-79, "Removal and Installation"</u>.

YES (Past error)>> Error was detected in the BCM branch line.

NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

| BCM harne     | ess connector | Harness connector |              | Continuity |
|---------------|---------------|-------------------|--------------|------------|
| Connector No. | Terminal No.  | Connector No.     | Terminal No. | Continuity |
| M120          | 39            | M22               | 101          | Existed    |
| INT20         | 40            |                   | 102          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

INFOID:000000006032421

## **STRG BRANCH LINE CIRCUIT**

| < DTC/CIRCUIT DIAG  |   | <del></del>  |  | [CAN]                           |
|---|---|--|--|---------------------------------|
| SING BRANCE   | I LINE CIRCUI   | 1  |  |                                 |
| Diagnosis Proced  | ure   |  |  | INFOID:00000000603242-          |
| <b>1.</b> CHECK CONNECT   | OR  |  |  |                                 |
| <ol> <li>Check the followin<br/>nector side).</li> <li>Steering angle ser</li> <li>Harness connecto<br/><u>Is the inspection result</u><br/>YES &gt;&gt; GO TO 2.</li> </ol>  | ttery cable from the ne<br>g terminals and conne<br>nsor<br>r M22 and PCB harne<br><u>normal?</u><br>terminal and connect   | ectors for damage, be<br>ess side connector<br>tor.  | end and loose conne  | ection (unit side and con-      |
| 1. Disconnect the cor   | nnector of steering an  | ngle sensor.   |  |                                 |
| 2. Check the resistan   | ice between the steer   | ring angle sensor harr   | ness connector term  | inals.                          |
|   | Steering angle sensor harness connector   |  |  | Resistance (Ω)                  |
| Connector No.   |   | Terminal No.   |  | Resistance (22)                 |
| M37   | 1   |  | 2  | Approx. 54 – 66                 |
| Is the measurement va<br>YES >> GO TO 3.  | <u>lue within the specific</u>  | <u>cation?</u>   |  |                                 |
| NO >> GO TO 4.  |   |  |  |                                 |
| NO $\rightarrow$ GO TO 4.<br>3.CHECK POWER SI   |   |  | ngle sensor Refer  | to BBC-54 "Wiring Dia           |
| NO >> GO TO 4.<br>3.CHECK POWER SI  |   |  | ngle sensor. Refer   | to <u>BRC-54, "Wiring Dia</u> - |
| NO >> GO TO 4.<br>3.CHECK POWER SI<br>Check the power supp<br>gram".<br>Is the inspection result<br>YES (Present error)><br>YES (Past error)>>Er  | bly and the ground cir<br>normal?<br>>Replace the steering  | rcuit of the steering a<br>g angle sensor. Refer<br>ne steering angle sens   | to <u>BRC-144, "Remo</u>   | -                               |
| NO >> GO TO 4.<br>3.CHECK POWER SI<br>Check the power supp<br>gram".<br>Is the inspection result<br>YES (Present error)><br>YES (Past error)>>Er  | oly and the ground cir<br><u>normal?</u><br>>Replace the steering<br>fror was detected in the<br>power supply and the   | rcuit of the steering a<br>g angle sensor. Refer<br>ne steering angle sens<br>e ground circuit.  | to <u>BRC-144, "Remo</u>   | -                               |
| NO >> GO TO 4.<br>3.CHECK POWER SI<br>Check the power supp<br>gram".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the had   | oly and the ground cir<br>normal?<br>>Replace the steering<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22.                          | rcuit of the steering a<br>g angle sensor. Refer<br>ne steering angle sens<br>e ground circuit.<br>N CIRCUIT)                                      | to <u>BRC-144, "Remo</u> sor branch line.                        | -                               |
| NO >> GO TO 4.<br>3.CHECK POWER SI<br>Check the power supp<br>gram".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit                         | oly and the ground cir<br>normal?<br>>Replace the steering<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22.                          | rcuit of the steering a<br>g angle sensor. Refer<br>ne steering angle sens<br>e ground circuit.<br>N CIRCUIT)<br>ing angle sensor harm             | to <u>BRC-144, "Remo</u> sor branch line.                        | he harness connector.           |
| NO >> GO TO 4.<br>3.CHECK POWER SI<br>Check the power supp<br>gram".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit                         | oly and the ground cir<br>normal?<br>>Replace the steering<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22.<br>ity between the steeri | rcuit of the steering a<br>g angle sensor. Refer<br>ne steering angle sens<br>e ground circuit.<br>N CIRCUIT)<br>ing angle sensor harm             | to <u>BRC-144, "Remo</u> sor branch line.                        | oval and Installation".         |
| NO >> GO TO 4.<br>3.CHECK POWER SI<br>Check the power supp<br>gram".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the hal<br>2. Check the continuit<br>Steering angle sense | oly and the ground cir<br>normal?<br>Replace the steering<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22.<br>ity between the steeri | rcuit of the steering a<br>g angle sensor. Refer<br>he steering angle sens<br>e ground circuit.<br>N CIRCUIT)<br>ing angle sensor harne<br>Harness | to <u>BRC-144, "Remo</u> sor branch line.<br>ess connector and t | he harness connector.           |

### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness Ο connector M22.

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## 4WD BRANCH LINE CIRCUIT

## Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AWD control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AWD control unit.

2. Check the resistance between the AWD control unit harness connector terminals.

| AWD control unit harness connector |              |    | Resistance ( $\Omega$ ) |
|------------------------------------|--------------|----|-------------------------|
| Connector No.                      | Terminal No. |    |                         |
| B17                                | 8            | 16 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-47, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-59, "Removal and Installation"</u>.

YES (Past error)>>Error was detected in the AWD control unit branch line.

NO >> Repair the power supply and the ground circuit.

INFOID:000000006069167

# **RAS BRANCH LINE CIRCUIT**

|  | INAO DINANON  |  |                           |
|--|---|--|---------------------------|
| < DTC/CIRCUIT DIAGNOSIS >  | >   |  | [CAN]                     |
| RAS BRANCH LINE C  | IRCUIT  |  |                           |
| Diagnosis Procedure  |   |  | INFOID:000000006069177    |
| 1.CHECK CONNECTOR  |   |  |                           |
| · · · · · · · · · · · · · · · · · · ·  |   |  |                           |
| <ol> <li>Turn the ignition switch OFF</li> <li>Disconnect the battery cable</li> <li>Check the terminals and co<br/>tion (unit side and connecto</li> </ol>  | e from the negative terr<br>nnectors of the 4WAS  |  | e, bend and loose connec- |
| Is the inspection result normal?   | ,   |  |                           |
| YES >> GO TO 2.  |   |  |                           |
| NO >> Repair the terminal  |   |  |                           |
| 2.CHECK HARNESS FOR OP   | EN CIRCUIT  |  |                           |
| <ol> <li>Disconnect the connector of</li> <li>Check the resistance between</li> </ol>  |   | nit.<br>htrol unit harness connector t   | erminals.                 |
| 4WAS ma  | ain control unit harness conn   | ector  | Resistance (Ω)            |
| Connector No.  | Termir  | nal No.  |                           |
| B54  | 1   | 8  | Approx. 54 – 66           |
| Is the measurement value within<br>YES >> GO TO 3.<br>NO >> Replace the body ha<br><b>3.</b> CHECK POWER SUPPLY AN<br>Check the power supply and the<br>Procedure (4WAS Main Control<br>Is the inspection result normal?<br>YES (Present error)>>Replace<br>YES (Past error)>>Error was d<br>NO >> Repair the power su | arness.<br>ND GROUND CIRCUIT<br>e ground circuit of the<br><u>Unit)"</u> .<br>the 4WAS main contro<br>etected in the 4WAS m | 4WAS main control unit. Ref<br>ol unit. Refer to <u>STC-185, "Re</u><br>nain control unit branch line. |                           |
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## **ABS BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

# ABS BRANCH LINE CIRCUIT

#### Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator and electric unit (control unit) harness connector |              |  | Resistance ( $\Omega$ ) |
|---|--------------|--|-------------------------|
| Connector No.   | Terminal No. |  | Resistance (22)         |
| E41   | 25 15        |  | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

#### **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

# **AFS BRANCH LINE CIRCUIT**

|   | AI O BRANCH E   |   | [0.4.1]                    |
|---|---|---|----------------------------|
| < DTC/CIRCUIT DIAGNOSI  |   |   | [CAN]                      |
| AFS BRANCH LINE   | CIRCUIT   |   |                            |
| Diagnosis Procedure   |   |   | INFOID:00000006032417      |
| 1.CHECK CONNECTOR   |   |   |                            |
|   | ble from the negative term<br>connectors of the AFS con |   | and loose connection (unit |
| Is the inspection result normalYES>> GO TO 2.NO>> Repair the termin2.CHECK HARNESS FOR O  | al and connector.                                       |   |                            |
| 1. Disconnect the connector   |   | narness connector termina                               | als.                       |
| AF  | S control unit harness connector                        |   |                            |
| Connector No.   | Termina   | l No.   | Resistance ( $\Omega$ )    |
| E104  | 30  | 7   | Approx. 54 – 66            |
| 3.CHECK POWER SUPPLY  | ontrol unit branch line.<br>AND GROUND CIRCUIT          |   |                            |
| Check the power supply and<br>UNIT : Diagnosis Procedure".<br>Is the inspection result normal<br>YES (Present error)>>Replat<br>YES (Past error)>>Error was<br>NO >> Repair the power | I?<br>ce the AFS control unit. Re                       | efer to <u>EXL-126, "Remova</u><br>ol unit branch line. |                            |
|   |   |   |                            |
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# **IPDM-E BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

|               | IPDM E/R harness connector |    |                         |
|---------------|----------------------------|----|-------------------------|
| Connector No. | Terminal No.               |    | Resistance ( $\Omega$ ) |
| E6            | 40                         | 39 | Approx. 108 – 132       |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

NO >> Repair the power supply and the ground circuit.

INFOID:000000006032430

## ADP BRANCH LINE CIRCUIT

#### [CAN] < DTC/CIRCUIT DIAGNOSIS > ADP BRANCH LINE CIRCUIT А Diagnosis Procedure INFOID:00000006032425 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). Driver seat control unit Harness connector B501 D Harness connector B11 CAN gateway (With ICC system) Is the inspection result normal? E YES (With ICC system)>>GO TO 2. YES (Without ICC system)>>GO TO 3. NO >> Repair the terminal and connector. F 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. 2. Check the continuity between the CAN gateway harness connector terminals. CAN gateway harness connector Continuity Connector No. Terminal No. Н 4 6 Existed M125 10 12 Existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). **3.**CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway. (With ICC system) 1. Κ 2. Disconnect the connector of driver seat control unit. 3. Check the resistance between the driver seat control unit harness connector terminals. Driver seat control unit harness connector Resistance $(\Omega)$ Terminal No. Connector No. B514 23 24 Approx. 54 - 66 LAN Is the measurement value within the specification? YES >> GO TO 4. NO >> Repair the driver seat control unit branch line. Ν ${f 4.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the driver seat control unit. Refer to ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to <u>ADP-146, "Removal and Installation"</u>.

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

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# ICC BRANCH LINE CIRCUIT

#### Diagnosis Procedure

**1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |            |         |  |
|---------------|-------------------------------|------------|---------|--|
| Connector No. | Termi                         | Continuity |         |  |
| M125          | 4                             | 6          | Existed |  |
| 101125        | 10                            | 12         | Existed |  |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of ADAS control unit.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

| ADAS control unit harness connector |              |  | Resistance (Ω)  |
|-------------------------------------|--------------|--|-----------------|
| Connector No.                       | Terminal No. |  |                 |
| B50                                 | 14 15        |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-66, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".

YES (Past error)>>Error was detected in the ADAS control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **PSB BRANCH LINE CIRCUIT**

| < DTC/CIRCUIT DIAGNOSIS > |
|---------------------------|
|---------------------------|

[CAN]

|   | E CIRCUIT   |  |   |
|---|---|--|---|
| Diagnosis Procedure   |   |  | INFOID:00000006069168                         |
| 1.CHECK CONNECTOR   |   |  |   |
| <ol> <li>Check the following ternector side).</li> <li>Pre-crash seat belt corcent can gateway</li> <li><u>s the inspection result norr</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the tern</li> <li>CHECK HARNESS COI</li> <li>Disconnect the connect</li> </ol> | cable from the negative tern<br>minals and connectors for c<br>ntrol unit (driver side)<br><u>nal?</u><br>ninal and connector.<br>NTINUITY (OPEN CIRCUIT  | lamage, bend and loose co  | onnection (unit side and con-                 |
|   | CAN gateway harness connecto  |  |   |
| Connector No.   |   | nal No.  | Continuity                                    |
| M125  | 4   | 6  | Existed                                       |
| WIZJ  | 10  | 12   | Existed                                       |
|   | ness and repair or replace (  | if shield line is open) the ro   | oot cause (CAN communica-                     |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect  | R OPEN CIRCUIT<br>of CAN gateway.<br>tor of pre-crash seat belt co  | ntrol unit (driver side).  | oot cause (CAN communica-                     |
| tion circuit 2).<br>3.CHECK HARNESS FOF<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance to<br>nals.   | R OPEN CIRCUIT<br>of CAN gateway.<br>tor of pre-crash seat belt co  | ntrol unit (driver side).<br>belt control unit (driver sid   | e) harness connector termi-                   |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connector<br>3. Check the resistance to<br>als.<br>Pre-crash sea<br>Connector No.  | R OPEN CIRCUIT<br>of CAN gateway.<br>tor of pre-crash seat belt co<br>between the pre-crash seat<br>at belt control unit (driver side) har  | ntrol unit (driver side).<br>belt control unit (driver sid   | e) harness connector termi-<br>Resistance (Ω) |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connector<br>3. Check the resistance to<br>nals.<br>Pre-crash sea<br>Connector No.<br>B9   | R OPEN CIRCUIT<br>of CAN gateway.<br>tor of pre-crash seat belt co<br>between the pre-crash seat<br>at belt control unit (driver side) har<br>Termin<br>14  | ntrol unit (driver side).<br>belt control unit (driver sid   | e) harness connector termi-                   |
| tion circuit 2).<br>3.CHECK HARNESS FOF<br>1. Connect the connector<br>2. Disconnect the connector<br>3. Check the resistance to<br>als.<br>Pre-crash sea<br>Connector No.<br>B9<br>s the measurement value of<br>YES >> GO TO 4.<br>NO >> Repair the pre-<br>4.CHECK POWER SUPP      | A OPEN CIRCUIT<br>of CAN gateway.<br>tor of pre-crash seat belt co<br>between the pre-crash seat<br>at belt control unit (driver side) har<br>Termin<br>14<br>within the specification?<br>crash seat belt control unit<br>LY AND GROUND CIRCUIT<br>and the ground circuit of the<br>bure". | ntrol unit (driver side).<br>belt control unit (driver sid<br>ness connector<br>nal No.<br>4<br>(driver side) branch line. | e) harness connector termi-<br>Resistance (Ω) |

## **RDR-L BRANCH LINE CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

# **RDR-L BRANCH LINE CIRCUIT**

#### Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar LH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of side radar LH.
- 2. Check the resistance between the side radar LH harness connector terminals.

| Side radar LH harness connector |              |   | Resistance (Ω)  |
|---------------------------------|--------------|---|-----------------|
| Connector No.                   | Terminal No. |   |                 |
| B52                             | 4            | 3 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

#### **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-575, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-592, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar LH branch line.

NO >> Repair the power supply and the ground circuit.

#### **RDR-R BRANCH LINE CIRCUIT**

|   | RUR-R BRANCE  |                            |                            |
|---|---|----------------------------|----------------------------|
| < DTC/CIRCUIT DIAGNOSIS >   |   |                            | [CAN]                      |
| RDR-R BRANCH LINE   | CIRCUIT   |                            |                            |
| Diagnosis Procedure   |   |                            | INFOID:00000006069169      |
| 1.CHECK CONNECTOR   |   |                            |                            |
| <ol> <li>Turn the ignition switch OFF</li> <li>Disconnect the battery cable</li> <li>Check the terminals and conside and connector side).</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and construction of the terminal and construction.</li> </ol> | e from the negative tern<br>nnectors of the side ra<br>and connector. | idar RH for damage, bend   | and loose connection (unit |
| Check the right/left switching sig  |   |                            | "Diagnosis Procedure".     |
| Is the inspection result normal?YES>> GO TO 3.NO>> Repair the root cause  |   |                            |                            |
| 3.CHECK HARNESS FOR OP  | EN CIRCUIT  |                            |                            |
| <ol> <li>Disconnect the connector of</li> <li>Check the resistance betwe</li> </ol>   |   | arness connector terminals |                            |
| Side  | radar RH harness connector  |                            | Resistance (Ω)             |
| Connector No.   | Termin  |                            |                            |
| B252  | 4   | 3                          | Approx. 54 – 66            |
| Is the measurement value withinYES>> GO TO 4.NO>> Repair the side rada4.CHECK POWER SUPPLY AI   | r RH branch line.   |                            |                            |
| Check the power supply and the Diagnosis Procedure".<br>Is the inspection result normal?  |   |                            |                            |
| YES (Present error)>>Replace<br>YES (Past error)>>Error was d<br>NO >> Repair the power su  | etected in the side rada  | ar RH branch line.         | nd Installation".          |
|   |   |                            |                            |
|   |   |                            |                            |
|   |   |                            |                            |

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# APA BRANCH LINE CIRCUIT

## **Diagnosis Procedure**

INFOID:000000006069171

[CAN]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Accelerator pedal actuator
- Harness connector M151
- Harness connector M150
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

| Accel         | Accelerator pedal actuator harness connector |   |                 |
|---------------|--|---|-----------------|
| Connector No. | Terminal No.                                 |   | Resistance (Ω)  |
| M152          | 5  | 4 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to <u>DAS-203, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4, "MODELS WITH DIS-</u> <u>TANCE CONTROL ASSIST SYSTEM : Removal and Installation"</u>.

- YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

| Accelerator pedal actuator harness connector |              | Harness connector          |     | Continuity |
|--|--------------|----------------------------|-----|------------|
| Connector No.                                | Terminal No. | Connector No. Terminal No. |     | Continuity |
| M152   | 5            | M23                        | 138 | Existed    |
| 101132                                       | 4            | 10123                      | 137 | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the accelerator pedal actuator harness connector M152 and the harness connector M23.

## LANE BRANCH LINE CIRCUIT

| Diagnosis Procedu   | lie   |   |  |  | INFOID:00000000606917                      |
|---|---|---|--|--|--|
|   | OR  |   |  |  |  |
| <ul> <li>Check the following nector side).</li> <li>Lane camera unit Harness connector Harness connector Harness connector sthe inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the 2.CHECK HARNESS</li> <li>Disconnect the con</li> </ul>         | tery cable from the ne<br>g terminals and conne<br>R7<br>M110<br>M24 and PCB harne<br>normal?<br>terminal and connect   | ectors for da<br>ess side cor<br>tor.<br>r<br>a unit.   | amage, bend  |  | nection (unit side and con                 |
| . Check the resistant   | Lane camera unit har  |   |  | nnector termina                                      |  |
| Connector No.   |   | Termin  | al No.   |  | Resistance ( $\Omega$ )                    |
| R8  | 4   |   |  | 8  | Approx. 54 – 66                            |
|   |   | ation?  |  |  |  |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SL<br>Check the power suppl<br>JNIT : Diagnosis Processing<br>Sthe inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>CHECK HARNESS  | JPPLY AND GROUN<br>y and the ground cir<br><u>edure"</u> .<br><u>normal?</u><br>Replace the lane can<br>or was detected in the<br>power supply and the  | D CIRCUIT<br>cuit of the la<br>mera unit. F<br>le lane cam<br>e ground cir<br>N CIRCUIT)                | ane camera<br>Refer to <u>DAS</u><br>era unit bran<br>cuit.  | -419, "Removal                                       | AS-403, "LANE CAMERA<br>and Installation". |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SL<br>Check the power suppl<br>JNIT : Diagnosis Proce<br>s the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>4.CHECK HARNESS<br>Disconnect the har<br>Check the continuit       | JPPLY AND GROUN<br>y and the ground circ<br>edure".<br>normal?<br>Replace the lane can<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M24.<br>by between the lane c | D CIRCUIT<br>cuit of the la<br>mera unit. F<br>le lane cam<br>e ground cir<br>N CIRCUIT)                | ane camera<br>Refer to <u>DAS</u><br>era unit bran<br>cuit.  | -419, "Removal<br>ch line.<br>nector and the         | and Installation".                         |
| NO >> GO TO 4.<br>3.CHECK POWER SL<br>Check the power supply<br>INIT : Diagnosis Process<br>s the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>4.CHECK HARNESS<br>Disconnect the har  | JPPLY AND GROUN<br>y and the ground circ<br>edure".<br>normal?<br>Replace the lane can<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M24.<br>by between the lane c | D CIRCUIT<br>cuit of the la<br>mera unit. F<br>le lane cam<br>e ground cir<br>N CIRCUIT)                | Ane camera<br>Refer to <u>DAS</u> era unit bran<br>cuit.<br>harness con                              | -419, "Removal<br>ch line.<br>nector and the         | and Installation".                         |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SL<br>Check the power suppl<br>JNIT : Diagnosis Process<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit | JPPLY AND GROUN<br>y and the ground circ<br>edure".<br>Replace the lane can<br>for was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M24.<br>ty between the lane con        | D CIRCUIT<br>cuit of the la<br>mera unit. F<br>le lane cam<br>e ground cir<br>N CIRCUIT)<br>camera unit | ane camera<br>Refer to <u>DAS</u><br>era unit bran<br>cuit.<br>harness con<br>Harness cor<br>tor No. | - <u>419, "Removal</u><br>ch line.<br>nector and the | and Installation".                         |

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the lane camera unit harness connector R8 and the harness connector M24.

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[CAN]

# LASER BRANCH LINE CIRCUIT

## Diagnosis Procedure

1.CHECK CONNECTOR

- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ICC sensor
- Harness connector E106
- Harness connector M6
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

|               | ICC sensor harness connector |                |                   |  |
|---------------|------------------------------|----------------|-------------------|--|
| Connector No. | Termi                        | Resistance (Ω) |                   |  |
| E67           | 3                            | 6              | Approx. 108 – 132 |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-162, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation".

YES (Past error)>>Error was detected in the ICC sensor branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the ICC sensor harness connector and the harness connector.

| ICC sensor ha | rness connector | Harness connector       Connector No.     Terminal No. |     | Continuity |
|---------------|-----------------|--|-----|------------|
| Connector No. | Terminal No.    |  |     | Continuity |
| E67           | 3               | M28  | 343 | Existed    |
| 207           | 6               | ινίζο  | 345 | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

| < DTC/CIRCUIT DIAGNOS                                   | SIS >   |                  | [CAN]                       |  |  |  |
|---|---|------------------|-----------------------------|--|--|--|
| CAN COMMUNICA   | TION CIRCUIT  |                  |                             |  |  |  |
| Diagnosis Procedure                                     | iagnosis Procedure  |                  |                             |  |  |  |
| 1.CONNECTOR INSPECT                                     | ION   |                  |                             |  |  |  |
| 3. Disconnect all the unit of                           | cable from the negative terr<br>connectors on CAN commu<br>onnectors for damage, bend | nication system. |                             |  |  |  |
| YES >> GO TO 2.   |   |                  |                             |  |  |  |
| <b>^</b>  | inal and connector.   |                  |                             |  |  |  |
| 2.CHECK HARNESS CON                                     |   |                  |                             |  |  |  |
| Check the continuity betwee                             | en the data link connector te   | erminals.        |                             |  |  |  |
|   | Data link connector   |                  | Continuity                  |  |  |  |
| Connector No.   | Termir  | nal No.          | Continuity                  |  |  |  |
| M182<br>Is the inspection result norm                   | 6   | 14               | Not existed                 |  |  |  |
| Check the continuity betwee                             | TINUITY (SHORT CIRCUI<br>en the data link connector a                                 |                  | Occtionity                  |  |  |  |
| Connector No.   | Terminal No.  | Ground           | Continuity                  |  |  |  |
| M182  | 6   | Cround           | Not existed Not existed     |  |  |  |
| <b>4.</b> CHECK ECM AND IPDM<br>1. Remove the ECM and t | ess and repair or replace (if<br>I E/R TERMINATION CIRC                               |                  | s is short) the root cause. |  |  |  |
|   | ECM   |                  |                             |  |  |  |
|   | Terminal No.  |                  | Resistance (Ω)              |  |  |  |
| 114   | 113   | A                | pprox. 108 – 132            |  |  |  |
| - VK56VD  |   |                  |                             |  |  |  |
|   | ECM   |                  |                             |  |  |  |
|   | Terminal No.  |                  | Resistance ( $\Omega$ )     |  |  |  |
| 146   | 151   | A                | pprox. 108 – 132            |  |  |  |
| 3. Check the resistance be                              | etween the IPDM E/R termi   | nals.            |                             |  |  |  |
|   | IPDM E/R  |                  | Posistanco (O)              |  |  |  |
|   | Terminal No.  |                  | Resistance (Ω)              |  |  |  |

40

39

Approx. 108 – 132

< DTC/CIRCUIT DIAGNOSIS >

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

## 5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

#### **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication system. **NOTE:**

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

| < DTC/CIRCUIT DIAGNO   |   |  | [CAN  |
|--|---|--|---|
|  | ATION CIRCUIT 1   |  |   |
| Diagnosis Procedure  | •   |  | INFOID:0000000060691  |
| 1.CONNECTOR INSPEC   | TION  |  |   |
| 1. Turn the ignition switch  |   |  |   |
|  | cable from the negative ter<br>connectors on CAN communication  |  |   |
| NOTE:  |   |  |   |
| For identification of CA circuit, refer to LAN-69  |   | CAN communication circu  | uit 2, and ITS communication  |
|  | connectors for damage, bend   | d and loose connection.  |   |
| s the inspection result nor  | mal?  |  |   |
| YES >> GO TO 2.<br>NO >> Repair the terr   | ninal and connector.  |  |   |
| <b>`</b>   | NTINUITY (SHORT CIRCU   | IT)  |   |
|  | en the data link connector t  |  |   |
|  |   | <u> </u>   |   |
|  | Data link connector   |  | Continuity  |
| Connector No.  |   | inal No.   | -   |
| M182   | 6   | 14   | Not existed   |
| YES >> GO TO 3.<br>NO >> Check the ham<br><b>3.</b> CHECK HARNESS CO   | ness and repair or replace (<br>NTINUITY (SHORT CIRCU   | IT)  | ss is short) the root cause.  |
| NO >> Check the harr<br>3.CHECK HARNESS CO<br>Check the continuity between   | ness and repair or replace (  | IT)  |   |
| YES >> GO TO 3.<br>NO >> Check the ham<br>CHECK HARNESS CO<br>Check the continuity betwee  | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a  | IT)<br>and the ground.   | ss is short) the root cause.  |
| YES >> GO TO 3.<br>NO >> Check the harr<br>3.CHECK HARNESS CO<br>Check the continuity betwee<br>Data lin<br>Connector No.  | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a  | IT)  |   |
| YES >> GO TO 3.<br>NO >> Check the harr<br>3.CHECK HARNESS CO<br>Check the continuity betwee<br>Data lin<br>Connector No.<br>M182  | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a<br>k connector<br>Terminal No.<br>6<br>14  | IT)<br>and the ground.   | Continuity  |
| YES >> GO TO 3.<br>NO >> Check the ham<br>CHECK HARNESS CO<br>Check the continuity betwee<br>Data lin<br>Connector No.<br>M182<br>s the inspection result norm<br>YES >> GO TO 4.<br>NO >> Check the ham<br>CHECK ECM AND IPDI<br>1. Remove the ECM and  | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a<br>k connector<br>6<br>14<br>mal?<br>ness and repair or replace (<br>M E/R TERMINATION CIRC  | IT)<br>and the ground.<br>Ground<br>if shield line or PCB harnes | Continuity<br>Not existed<br>Not existed  |
| YES >> GO TO 3.<br>NO >> Check the ham<br>CHECK HARNESS CO<br>Check the continuity betwee<br>Data lin<br>Connector No.<br>M182<br>s the inspection result norm<br>YES >> GO TO 4.<br>NO >> Check the ham<br>CHECK ECM AND IPDI<br>1. Remove the ECM and<br>2. Check the resistance between the section of | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a<br>k connector<br>6<br>14<br>mal?<br>ness and repair or replace (<br>M E/R TERMINATION CIRC<br>the IPDM E/R.   | IT)<br>and the ground.<br>Ground<br>if shield line or PCB harnes | Continuity<br>Not existed<br>Not existed<br>Ses is short) the root cause.   |
| YES >> GO TO 3.<br>NO >> Check the ham<br>CHECK HARNESS CO<br>Check the continuity betwee<br>Data lin<br>Connector No.<br>M182<br>s the inspection result norm<br>YES >> GO TO 4.<br>NO >> Check the ham<br>CHECK ECM AND IPDI<br>1. Remove the ECM and<br>2. Check the resistance between the section of | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a<br>k connector<br>6<br>14<br>mal?<br>ness and repair or replace (<br>M E/R TERMINATION CIRC<br>the IPDM E/R.<br>petween the ECM terminals.   | IT)<br>and the ground.<br>Ground<br>if shield line or PCB harnes | Continuity<br>Not existed<br>Not existed  |
| YES >> GO TO 3.<br>NO >> Check the ham<br>CHECK HARNESS CO<br>Check the continuity betwee<br>Data lin<br>Connector No.<br>M182<br>s the inspection result norm<br>YES >> GO TO 4.<br>NO >> Check the ham<br>CHECK ECM AND IPDI<br>1. Remove the ECM and<br>2. Check the resistance between the section of | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a<br>k connector<br>6<br>14<br>mal?<br>ness and repair or replace (<br>M E/R TERMINATION CIRC<br>the IPDM E/R.<br>between the ECM terminals.   | IT) and the ground. Ground if shield line or PCB harnes CUIT     | Continuity<br>Not existed<br>Not existed<br>Ses is short) the root cause.   |
| YES >> GO TO 3.<br>NO >> Check the ham<br>CHECK HARNESS CO<br>Check the continuity between<br>Data lin<br>Connector No.<br>M182<br>s the inspection result norm<br>YES >> GO TO 4.<br>NO >> Check the ham<br>CHECK ECM AND IPDI<br>1. Remove the ECM and<br>Check the resistance to<br>VQ37VHR   | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a<br>k connector   | IT) and the ground. Ground if shield line or PCB harnes CUIT     | Continuity<br>Not existed<br>Not existed<br>State State |
| YES >> GO TO 3.<br>NO >> Check the ham<br>CHECK HARNESS CO<br>Check the continuity between<br>Data lin<br>Connector No.<br>M182<br>s the inspection result norm<br>YES >> GO TO 4.<br>NO >> Check the ham<br>CHECK ECM AND IPDI<br>1. Remove the ECM and<br>2. Check the resistance to<br>VQ37VHR  | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a<br>k connector   | IT) and the ground. Ground if shield line or PCB harnes CUIT     | Continuity<br>Not existed<br>Not existed<br>Ses is short) the root cause.<br>Resistance (Ω)   |
| YES >> GO TO 3.<br>NO >> Check the ham<br>CHECK HARNESS CO<br>Check the continuity between<br>Data lin<br>Connector No.<br>M182<br>s the inspection result norm<br>YES >> GO TO 4.<br>NO >> Check the ham<br>CHECK ECM AND IPDI<br>1. Remove the ECM and<br>2. Check the resistance to<br>VQ37VHR  | ness and repair or replace (<br>NTINUITY (SHORT CIRCU<br>een the data link connector a<br>k connector<br>Terminal No.<br>6<br>14<br>mal?<br>ness and repair or replace (<br>M E/R TERMINATION CIRC<br>the IPDM E/R.<br>between the ECM terminals.<br>ECM<br>Terminal No.<br>113 | IT) and the ground. Ground if shield line or PCB harnes CUIT     | Continuity<br>Not existed<br>Not existed<br>State State |

3. Check the resistance between the IPDM E/R terminals.

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN]

| IPDM E/R   |                                 | Pasistanas (O)                            |  |
|--|---------------------------------|---|--|
| Termi  | nal No.                         | Resistance ( $\Omega$ )                   |  |
| 40   | 39                              | Approx. 108 – 132                         |  |
| Is the measurement value within  | the specification?              |   |  |
| YES >> GO TO 5.<br>NO >> Replace the ECM ar  | nd/or the IPDM E/R.             |   |  |
| 5.CHECK SYMPTOM  |                                 |   |  |
| Connect all the connectors. Che<br>customer)" are reproduced.<br>Inspection result | ck if the symptoms described in | the "Symptom (Results from interview with |  |

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

#### **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 1. **NOTE:**

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

|   |  | JATION          |                  |                              |
|---|--|-----------------|------------------|------------------------------|
| < DTC/CIRCUIT DIAGNOS<br>CAN COMMUNICA  |  |                 |                  | [CAN]                        |
|   |  |                 |                  |                              |
| Diagnosis Procedure   |  |                 |                  | INFOID:00000006069175        |
| 1.CONNECTOR INSPECT   | ION  |                 |                  |                              |
| <ol> <li>Turn the ignition switch</li> <li>Disconnect the battery of</li> </ol>   | OFF.<br>cable from the negative te               | arminal         |                  |                              |
| 3. Disconnect all the unit of   | connectors on CAN comm                           |                 | cuit 2.          |                              |
| NOTE:<br>For identification of CAI  | N communication circuit 1                        | I, CAN comr     | nunication circu | uit 2, and ITS communication |
| <ul><li>circuit, refer to <u>LAN-69.</u></li><li>4. Check terminals and co</li></ul>                                      | <u>"System Diagram"</u> .                        | nd and loose    | connection       |                              |
| Is the inspection result norm   | •  |                 | connection.      |                              |
| YES >> GO TO 2.   |  |                 |                  |                              |
| NO >> Repair the term<br>2.CHECK HARNESS CON  |  | <u>ит</u> )     |                  |                              |
| Check the continuity betwee   |  |                 |                  |                              |
|   |  | terminais.      |                  |                              |
|   | Data link connector                              |                 |                  | _ Continuity                 |
| Connector No.   |  | ninal No.       | 10               | Not evisted                  |
| M182<br>Is the inspection result norm   | 13   |                 | 12               | Not existed                  |
| Data link   | connector  |                 |                  | Continuity                   |
| Connector No.   | Terminal No.                                     |                 | Ground           | Continuity                   |
| M182  | 13   |                 |                  | Not existed                  |
|   | 12   |                 |                  | Not existed                  |
| 4.CHECK CAN GATEWAY   | ess and repair or replace<br>TERMINATION CIRCUIT | Г               | e or PCB harnes  | es is short) the root cause. |
| (   | CAN gateway                                      |                 |                  |                              |
|   | Terminal No.                                     |                 |                  | Resistance (Ω)               |
| 4   | 10   |                 |                  | pprox. 108 – 132             |
| 6   | 12   |                 | A                | pprox. 108 – 132             |
| Is the measurement value w         YES       >> GO TO 5.         NO       >> Replace the CA         5       OUTOK OVARTOW | ·  |                 |                  |                              |
| 5.CHECK SYMPTOM   |  | da a sult de la | 41               |                              |
| customer)" are reproduced.  | Check if the symptoms                            | aescribed in    | tne "Symptom     | (Results from interview with |
| Inspection result   |  |                 |                  |                              |
|   |  |                 |                  |                              |

Revision: 2010 June

Reproduced>>GO TO 6.

#### < DTC/CIRCUIT DIAGNOSIS >

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

#### 6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
 NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

## **ITS COMMUNICATION CIRCUIT**

|  | 113 001  |                         | JINCOTT                  |                        |
|--|--|-------------------------|--------------------------|------------------------|
| < DTC/CIRCUIT DIAC   | GNOSIS >   |                         |                          | [CAN]                  |
| TS COMMUNI   | CATION CIRCL   | ЛΤ                      |                          |                        |
| Diagnosis Proced   | ure  |                         |                          | INFOID:000000006069176 |
| <b>1.</b> CHECK CAN DIAG   | NOSIS  |                         |                          |                        |
| Check the CAN diagn<br>communication circuit   |  |                         | the CAN communica        | tion circuit 1 and CAN |
| For identification of CA suit, refer to LAN-69, "  |  | cuit 1, CAN commun      | ication circuit 2, and I | TS communication cir-  |
| Are the CAN communi  |  | nmunication 2 circuits  | s normal?                |                        |
| YES >> GO TO 2.<br>NO >> Check and   | d repair CAN commun  | ication circuit 1 and/o | r CAN communicatior      | n circuit 2.           |
| 2.CONNECTOR INSI   | •  |                         |                          |                        |
| <ul> <li>Check the termina<br/>(unit side and cont<br/>sthe inspection result<br/>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the</li> </ul> | ttery cable from the ne<br>als and connectors of<br>nector side).<br>normal? | the ADAS control u      | nit for damage, bend     | and loose connection   |
| <b>3.</b> CHECK HARNESS  | CONTINUITY (OPEN   | I CIRCUIT)              |                          |                        |
| ADAS control unit<br>ICC sensor  |  |                         | connector and the IC     | C sensor harness con-  |
| ADAS control unit  | harness connector  | ICC sensor ha           | rness connector          | Continuity             |
| Connector No.  | Terminal No.   | Connector No.           | Terminal No.             | -                      |
| B50  | 7  | E67                     | 3<br>6                   | Existed                |
| s the inspection result  | J  |                         | 0                        | Existed                |
| YES >> GO TO 4.<br>NO >> Replace th  | ne body harness.<br>CONTINUITY (SHOF   | RT CIRCUIT)             |                          |                        |
|  | lowing harness conne   |                         |                          |                        |

- Side radar RH
  Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

| Al            | ADAS control unit harness connector |              |             |   |
|---------------|-------------------------------------|--------------|-------------|---|
| Connector No. | Termi                               | - Continuity |             |   |
| B50           | 7                                   | 8            | Not existed | Р |

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

## LAN-127

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# **ITS COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN]

| ADAS control unit harness connector |              |        | Continuity  |
|-------------------------------------|--------------|--------|-------------|
| Connector No.                       | Terminal No. | Ground | Continuity  |
| B50                                 | 7            | Gibana | Not existed |
| 850                                 | 8            |        | Not existed |

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

#### **6.**CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.

2. Check the resistance between the ADAS control unit terminals.

| ADAS | control unit | Resistance (Ω)    |
|------|--------------|-------------------|
| Term | inal No.     |                   |
| 7    | 8            | Approx. 108 – 132 |

3. Check the resistance between the ICC sensor terminals.

| ICC s        | ensor | Posistanco (0)    |  |
|--------------|-------|-------------------|--|
| Terminal No. |       | Resistance (Ω)    |  |
| 3            | 6     | Approx. 108 – 132 |  |

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ADAS control unit and/or the ICC sensor.

#### 7.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 8.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

#### 8. CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of ITS communication system. **NOTE:**

ADAS control unit and ICC sensor have a termination circuit. Check other units first.

- 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
  - NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

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# < PRECAUTION > PRECAUTION PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

#### WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### WARNING:

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

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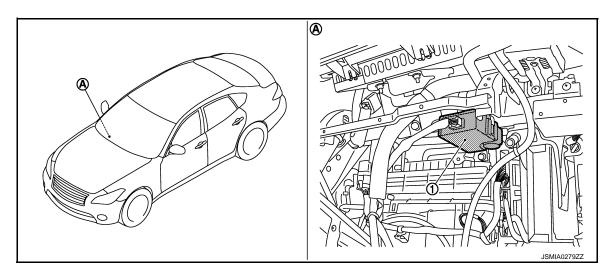
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# < SYSTEM DESCRIPTION > SYSTEM DESCRIPTION

COMPONENT PARTS

**Component Parts Location** 

INFOID:000000005987020

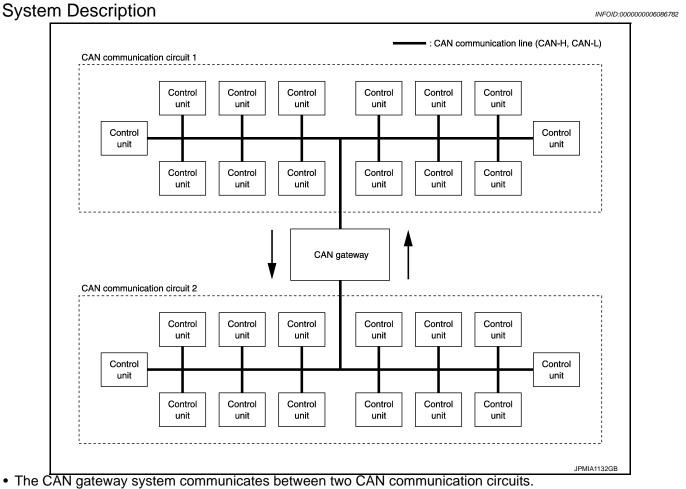


- 1. CAN gateway
- A. Over the glove box

# SYSTEM

# < SYSTEM DESCRIPTION >

# SYSTEM



• This system selects and transmits only necessary information.

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[CAN GATEWAY]

# **DIAGNOSIS SYSTEM (CAN GATEWAY)**

#### < SYSTEM DESCRIPTION >

# DIAGNOSIS SYSTEM (CAN GATEWAY)

#### **CONSULT-III** Function

INFOID:000000006086783

[CAN GATEWAY]

#### APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with CAN gateway.

| Diagnosis mode           | Function Description   |
|--------------------------|--|
| Ecu Identification       | The CAN gateway part number is displayed.  |
| Self Diagnostic Result   | Displays the diagnosis results judged by CAN gateway.  |
| CAN Diag Support Monitor | The results of transmit/receive diagnosis of CAN communication can be read.  |
| Configuration            | <ul><li>Read and save the vehicle specification.</li><li>Write the vehicle specification when replacing CAN gateway.</li></ul> |

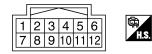
SELF DIAGNOSTIC RESULT

Refer to LAN-133, "DTC Index".

# ECU DIAGNOSIS INFORMATION CAN GATEWAY

#### Reference Value

#### **TERMINAL LAYOUT**



#### PHYSICAL VALUES

|            | inal No.      | Description                              |                  |                     | Value           |
|------------|---------------|--|------------------|---------------------|-----------------|
| (Wire<br>+ | e color)<br>– | Signal name                              | Input/<br>Output | Condition           | (Approx.)       |
| 1<br>(L)   | _             | CAN-H (CAN commu-<br>nication circuit 1) | Input/<br>Output | -                   | _               |
| 3<br>(GR)  | Ground        | Battery power supply                     | Input            | Ignition switch OFF | Battery voltage |
| 4<br>(L)   | _             | CAN-H (CAN commu-<br>nication circuit 2) | Input/<br>Output | _                   | _               |
| 5<br>(B)   | Ground        | Ground                                   | _                | Ignition switch ON  | 0 V             |
| 6<br>(L)   | _             | CAN-H (CAN commu-<br>nication circuit 2) | Input/<br>Output | _                   |                 |
| 7<br>(P)   |               | CAN-L (CAN commu-<br>nication circuit 1) | Input/<br>Output | _                   | _               |
| 9<br>(W)   | Ground        | Ignition power supply                    | Input            | Ignition switch ON  | Battery voltage |
| 10<br>(P)  | _             | CAN-L (CAN commu-<br>nication circuit 2) | Input/<br>Output | _                   |                 |
| 11<br>(B)  | Ground        | Ground                                   | _                | Ignition switch ON  | 0 V             |
| 12<br>(P)  | _             | CAN-L (CAN commu-<br>nication circuit 2) | Input/<br>Output | _                   | _               |

#### DTC Inspection Priority Chart

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

| Priority | DTC  | Р |
|----------|--|---|
| 1        | B2600: CONFIG ERROR     U1010: CONTROL UNIT(CAN) |   |
| 2        | U1000: CAN COMM CIRCUIT                          |   |

## DTC Index

NOTE:

INFOID:000000006086786

INFOID:000000006086785

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INFOID:000000006086784

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# CAN GATEWAY

#### < ECU DIAGNOSIS INFORMATION >

- The details of time display are as follows.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame Data).
- The number is 0 when is detected now
- The number increases like 1  $\rightarrow$  2  $\cdots$  38  $\rightarrow$  39 after returning to the normal condition whenever IGN OFF  $\rightarrow$  ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

| DTC   |                              | Reference      |
|---|------------------------------|----------------|
| No DTC is detected.<br>Further testing may be require | red.                         | _              |
| U1000: CAN COMM CIRCUI                                | Т                            | <u>LAN-140</u> |
| U1010: CONTROL UNIT(CA                                | N)                           | <u>LAN-141</u> |
| B2600: CONFIG ERROR                                   | WRONG DATA<br>NOT CONFIGURED | <u>LAN-142</u> |

# WIRING DIAGRAM CAN GATEWAY SYSTEM

Wiring Diagram

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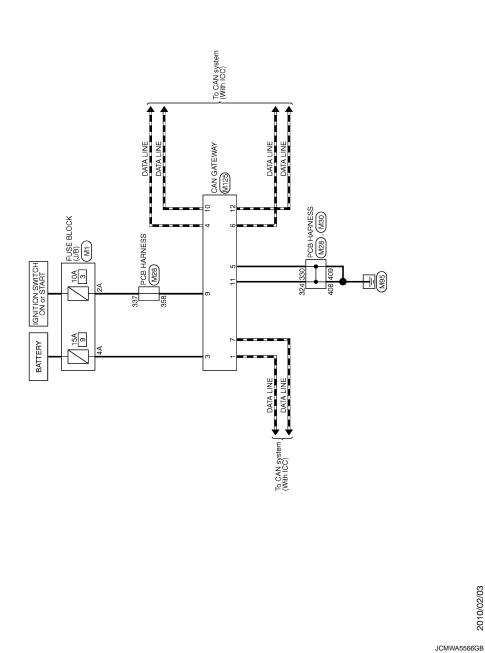
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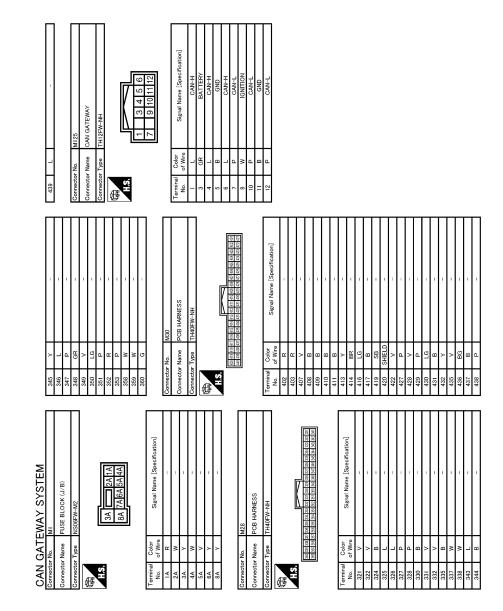
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CAN GATEWAY SYSTEM



JCMWA5567GB

# ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY < BASIC INSPECTION > [CAN GATEWAY] BASIC INSPECTION

# ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

| Description   | В  |
|---|----|
| BEFORE REPLACEMENT<br>When replacing CAN gateway, save or print current vehicle specification with CONSULT-III configuration<br>before replacement.<br>NOTE:  | С  |
| If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing CAN gateway.  | D  |
| AFTER REPLACEMENT<br>CAUTION:   | Е  |
| <ul> <li>When replacing CAN gateway, you must perform "WRITE CONFIGURATION" with CONSULT-III.</li> <li>Complete the procedure of "WRITE CONFIGURATION" in order.</li> <li>If you set incorrect "WRITE CONFIGURATION", incidents might occur.</li> <li>Configuration is different for each vehicle model. Confirm configuration of each vehicle model.</li> <li>Never perform "WRITE CONFIGURATION" except for new CAN gateway.</li> </ul> | F  |
| Work Procedure  |    |
| 1.SAVING VEHICLE SPECIFICATION  | G  |
| OCNSULT-III Configuration<br>Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>LAN-138</u> , " <u>Descrip-</u><br>tion".   | Η  |
| <b>NOTE:</b><br>If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing CAN gateway.  | I  |
| >> GO TO 2.   | J  |
| 2. REPLACE CAN GATEWAY  |    |
| Replace CAN gateway. Refer to LAN-144, "Removal and Installation".  | Κ  |
| >> GO TO 3.   |    |
| 3.WRITING VEHICLE SPECIFICATION   | L  |
| CONSULT-III Configuration<br>Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write<br>vehicle specification. Refer to <u>LAN-138</u> , "Work Procedure".   | LA |
| >> WORK END   | Ν  |

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# **CONFIGURATION (CAN GATEWAY)**

< BASIC INSPECTION >

# CONFIGURATION (CAN GATEWAY)

#### Description

INFOID:000000006086790

INFOID:000000006086791

[CAN GATEWAY]

Vehicle specification needs to be written with CONSULT-III because it is not written after replacing CAN gateway.

Configuration has three functions as follows

| Function                               | Description   |
|--|---|
| READ CONFIGURATION                     | <ul><li>Reads the vehicle configuration of current CAN gateway.</li><li>Saves the read vehicle configuration.</li></ul> |
| WRITE CONFIGURATION - Manual selection | Writes the vehicle configuration with manual selection.   |
| WRITE CONFIGURATION - Config file      | Writes the vehicle configuration with saved data.   |

#### **CAUTION:**

- When replacing CAN gateway, you must perform "WRITE CONFIGURATION" with CONSULT-III.
- Complete the procedure of "WRITE CONFIGURATION" in order.
- If you set incorrect "WRITE CONFIGURATION", incidents might occur.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.
- Never perform "WRITE CONFIGURATION" except for new CAN gateway.

#### Work Procedure

**1.**WRITING MODE SELECTION

CONSULT-III Configuration
 Select "CONFIGURATION" of CAN gateway.

When writing saved data>>GO TO 2. When writing manually>>GO TO 3.

**2.** PERFORM "WRITE CONFIGURATION - CONFIG FILE"

CONSULT-III Configuration
 Perform "WRITE CONFIGURATION - Config file".

>> WORK END

 ${f 3.}$  PERFORM "WRITE CONFIGURATION - MANUAL SELECTION"

CONSULT-III Configuration

- 1. Select "WRITE CONFIGURATION Manual selection".
- 2. Select "SETTING".
- 3. When "COMMAND FINISHED", select "End".

>> GO TO 4.

#### **4.**CHECK "SELF DIAGNOSTIC RESULT"

- 1. Erase all ECU self-diagnosis results using CONSULT-III.
- 2. Turn the ignition switch OFF.
- 3. Turn the ignition switch ON and wait for 2 seconds or more.
- 4. Perform "All DTC Reading" using CONSULT-III.
- 5. Check that all ECU self-diagnosis results have no DTC of CAN communication. **NOTE:**

DTCs of CAN communication are as follows:

- U0101
- U0140
- U0164
- U1000
- U1001
- U1507

#### LAN-138

|                      | <b>CONFIGURATION (CAN GATEWAY)</b> |               |   |
|----------------------|------------------------------------|---------------|---|
| < BASIC INSPECTION > |                                    | [CAN GATEWAY] |   |
| • U1508              |                                    |               | ^ |
| >> WORK END          |                                    |               | А |
|                      |                                    |               | В |
|                      |                                    |               | С |
|                      |                                    |               |   |
|                      |                                    |               | D |
|                      |                                    |               | E |
|                      |                                    |               | F |
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# DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

#### Description

INFOID:000000005987022

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H and CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart. Refer to <u>LAN-35, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"</u>.

#### DTC Logic

INFOID:000000005987023

#### DTC DETECTION LOGIC

| DTC   | CONSULT-III display de-<br>scription | DTC Detection Condition  | Possible cause           |
|-------|--------------------------------------|--|--------------------------|
| U1000 | CAN COMM CIRCUIT                     | When CAN gateway cannot communicate CAN communication signal continuously for 2 seconds or more. | CAN communication system |

#### **Diagnosis Procedure**

INFOID:000000005987024

#### **1.**PERFORM SELF DIAGNOSTIC

- 1. Turn the ignition switch ON and wait for 2 seconds or more.
- 2. Check "Self Diagnostic Result".
- Is "U1000: CAN COMM CIRCUIT" displayed?
- YES >> Refer to LAN-25. "Trouble Diagnosis Flow Chart".
- NO >> Refer to GI-38, "Intermittent Incident".

#### < DTC/CIRCUIT DIAGNOSIS >

# U1010 CONTROL UNIT (CAN)

# Description

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with two communication lines (CAN-H and CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart. Refer to LAN-35, "CAN COMMUNICATION SYSTEM : CAN Communication transmission with less to signal Chart".

#### DTC Logic

#### DTC DETECTION LOGIC

| DTC   | CONSULT-III display<br>description | DTC Detection Condition  | Possible cause | F |
|-------|------------------------------------|--|----------------|---|
| U1010 | CONTROL UNIT(CAN)                  | When an error is detected during the initial di-<br>agnosis for CAN controller of CAN gateway. | CAN gateway    | _ |
|       |                                    |  |                | 0 |

#### Diagnosis Procedure

**1.**REPLACE CAN GATEWAY

When DTC "U1010: CONTROL UNIT(CAN)" is detected, replace CAN gateway.

>> Replace CAN gateway. Refer to LAN-144, "Removal and Installation".

INFOID:000000005987025

INFOID:000000005987026

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#### < DTC/CIRCUIT DIAGNOSIS >

# B2600 CONFIG ERROR

#### Description

INFOID:000000005987028

[CAN GATEWAY]

The CAN gateway requires initial settings to judge necessary information, according to a vehicle specification. DTC Logic

#### DTC DETECTION LOGIC

| DTC   | CONSULT-III display<br>description | DTC Detection Condition   | Probable cause |
|-------|------------------------------------|---|----------------|
| B2600 | CONFIG ERROR<br>WRONG DATA         | When errors are detected in the configuration data stored in the CAN gateway. | CAN gateway    |
| B2000 | CONFIG ERROR<br>NOT CONFIGURED     | When no data are stored in the CAN gateway.                                   | CAN galeway    |

#### **Diagnosis Procedure**

INFOID:000000005987030

# **1.**REPLACE CAN GATEWAY

When DTC "B2600: CONFIG ERROR" is detected, replace CAN gateway.

>> Replace CAN gateway. Refer to LAN-144, "Removal and Installation".

### POWER SUPPLY AND GROUND CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# POWER SUPPLY AND GROUND CIRCUIT

#### **Diagnosis Procedure**

# 1.CHECK FUSE

Check that the following fuse are not blown.

| Signal name           | Fuse No. | С |
|-----------------------|----------|---|
| Battery power supply  | 9        |   |
| Ignition power supply | 3        | D |

#### Is the fuse fusing?

YES >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

NO >> GO TO 2.

# 2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the connector of CAN gateway.
- 3. Check voltage between CAN gateway harness connector and ground.

|           | Terminals |        | Condition |                 |
|-----------|-----------|--------|-----------|-----------------|
| (+        | -)        | (-)    | Condition | Voltage         |
| CAN ga    | ateway    |        | Ignition  | (Approx.)       |
| Connector | Terminal  |        | switch    |                 |
| M125 -    | 3         | Ground | OFF       | Battery voltage |
| 101125    | 9         |        | ON        | Battery voltage |

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

#### **3.**CHECK GROUND CIRCUIT

Check continuity between CAN gateway harness connector and ground.

| CAN gateway |          |          | Continuity |
|-------------|----------|----------|------------|
| Connector   | Terminal | - Ground | Continuity |
| M125        | 5        |          | Existed    |
|             | 11       |          |            |

#### Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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#### [CAN GATEWAY]

INFOID:000000005987031

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# REMOVAL AND INSTALLATION CAN GATEWAY

#### Removal and Installation

INFOID:000000005987038

[CAN GATEWAY]

#### CAUTION:

Before replacing CAN gateway, perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>LAN-137, "Description"</u>.

#### REMOVAL

- 1. Remove instrument lower panel RH. Refer to IP-13, "Removal and Installation".
- 2. Disconnect CAN gateway connector.
- 3. Remove mounting screw to remove CAN gateway.

#### **INSTALLATION**

Install in the reverse order of removal.

CAUTION:

Be sure to perform "WRITE CONFIGURATION" when replacing CAN gateway. Refer to <u>LAN-137</u>, <u>"Description"</u>.

#### [CAN SYSTEM (TYPE 1)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006093494 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM -D Low tire pressure warning control unit \_ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

### MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006093495

[CAN SYSTEM (TYPE 1)]

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | A/C auto amp. harness connector |                            | AV control unit harness connector |            |
|-----------------|---------------------------------|----------------------------|-----------------------------------|------------|
| Connector No.   | Terminal No.                    | Connector No. Terminal No. |                                   | Continuity |
| M66             | 12                              | M210                       | 90                                | Existed    |
| 1000            | 11                              | WIZ TO                     | 74                                | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector           Connector No.         Terminal No. |    | AV control unit harness connector |  | Continuity |
|-----------------|------------------|--|----|-----------------------------------|--|------------|
| Connector No.   | Terminal No.     |  |    | Continuity                        |  |            |
| MCC             | 12               | M84  | 81 | Existed                           |  |            |
| IVIOO           | M66 11           | 11/104   | 80 | Existed                           |  |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIAG   | SNOSIS >  |   | [CAN                 | SYSTEM (TYPE 1)]        |
|--|---|---|----------------------|-------------------------|
| MAIN LINE BET  | WEEN A-BAG  | AND AV CIRC                                 | UIT                  |                         |
| Diagnosis Proced   | ure   |   |                      | INFOID:000000006093496  |
| 1.CHECK HARNESS  | CONTINUITY (OPE   | N CIRCUIT)                                  |                      |                         |
|  | vitch OFF.<br>ttery cable from the n<br>owing harness conne |   |                      |                         |
| <ul> <li>AV control unit</li> </ul>  |   | auto amp. harness con                       | nector and the AV co | ntrol unit harness con- |
| <ul> <li>AV control unit</li> <li>Check the continuine nector.</li> <li>Models with navigation</li> </ul>  |   | auto amp. harness con<br>AV control unit ha |                      |                         |
| <ul> <li>AV control unit</li> <li>Check the continuine nector.</li> <li>Models with naviga</li> </ul>  | ation system  |   |                      | ntrol unit harness con- |
| <ul> <li>AV control unit</li> <li>Check the continuinector.</li> <li>Models with navigative A/C auto amp. https://doi.org/10.1000/100000000000000000000000000000</li></ul> | ation system  | AV control unit ha                          | arness connector     |                         |

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

| A/C auto amp. harness connector |              | AV control unit harness connector |    | Continuity |  |
|---------------------------------|--------------|-----------------------------------|----|------------|--|
| Connector No.                   | Terminal No. | Connector No. Terminal No.        |    | Continuity |  |
| M66                             | 12           | M84                               | 81 | Existed    |  |
| σοινι                           | 11           |                                   | 80 | Existed    |  |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006093497

[CAN SYSTEM (TYPE 1)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

| AV control unit h | AV control unit harness connector |                            | Combination meter harness connector |            |
|-------------------|-----------------------------------|----------------------------|-------------------------------------|------------|
| Connector No.     | Terminal No.                      | Connector No. Terminal No. |                                     | Continuity |
| M210              | 90                                | M53                        | 14                                  | Existed    |
| WZ 10             | 74                                | MSS                        | 15                                  | Existed    |

#### Models without navigation system

| AV control unit h | narness connector | Combination meter harness connector           Connector No.         Terminal No. |         | Continuity |
|-------------------|-------------------|--|---------|------------|
| Connector No.     | Terminal No.      |  |         | Continuity |
| M04               | 81                | ME2  | 14      | Existed    |
| M84               | 84 M53 —          | 15   | Existed |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA  |   |                          | -                         | SYSTEM (TYPE 1)]       |
|--|---|--------------------------|---------------------------|------------------------|
| MAIN LINE BE   | WEEN M&A A  | ND DLC CIRCU             |                           |                        |
| Diagnosis Proced   | lure  |                          |                           | INFOID:000000006093498 |
| <b>1.</b> CHECK HARNESS  | CONTINUITY (OPEI  | N CIRCUIT)               |                           |                        |
| <ol> <li>Disconnect the fol</li> <li>ECM</li> <li>Combination meteries</li> <li>Harness connector</li> </ol> | ttery cable from the n<br>lowing harness conne<br>er<br>ors M105 and M181 |                          | connector and the ha      | rness connector.       |
|  |   |                          |                           |                        |
| Combination mete   | r harness connector   | Harness of               | connector                 |                        |
| Combination mete   | r harness connector<br>Terminal No.                                       | Harness of Connector No. | connector<br>Terminal No. | Continuity             |
| Connector No.  |   | Connector No.            |                           | Continuity             |
|  | Terminal No.  |                          | Terminal No.              |                        |

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MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### MAIN LINE BETWEEN DLC AND BCM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### **Diagnosis Procedure**

INFOID:000000006093499

[CAN SYSTEM (TYPE 1)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

| Harness       | connector    | BCM harness connector |              | Continuity |
|---------------|--------------|-----------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.         | Terminal No. | Continuity |
| MAGE          | 7            | M400                  | 39           | Existed    |
| M105          | 8            | - M120                | 40           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

NO >> Replace the PCB harness.

|   | MAIN LINE BET   | WEEN E      | BCM AND               |                  |                           |
|---|---|-------------|-----------------------|------------------|---------------------------|
| CTC/CIRCUIT DIA   |   |             |                       | -                | CAN SYSTEM (TYPE 1)]      |
| MAIN LINE BET   | TWEEN BCM A   | ND AD       | P CIRCL               | JIT              |                           |
| Diagnosis Proced  | lure  |             |                       |                  | INFOID:000000006093502    |
|   | OR  |             |                       |                  |                           |
| <ol><li>Check the following<br/>and harness side)</li></ol>   | ttery cable from the nang terminals and con<br>or M20 and PCB harne<br>or M7<br>or B1 | nectors for | damage, b             | end and loose co | onnection (connector side |
| YES >> GO TO 2.   |   |             |                       |                  |                           |
| · ·   | e terminal and connec   |             |                       |                  |                           |
| 2.CHECK HARNESS   | CONTINUITY (OPEN  |             | )                     |                  |                           |
| <ul> <li>BCM</li> <li>Harness connector</li> </ul>  | lowing harness conne<br>or M20<br>ity between the BCM                                 |             | nnector and           | d the PCB harnes | s connector.              |
| BCM harne   | ss connector  |             | PCB harness connector |                  | Continuity                |
| Connector No.   | Terminal No.  |             | Termin                | al No.           | Continuity                |
| M120  | 39  |             | 35                    | -                | Existed                   |
| s the inspection result   | 40  |             | 36                    | 6                | Existed                   |
| <b>3.</b> CHECK HARNESS   | ne PCB harness.<br>CONTINUITY (OPE)<br>rness connectors M7<br>ity between the harne   | and B1.     |                       |                  |                           |
| Harness   | connector   |             | Harness c             | onnector         | Continuity                |
| Connector No.   | Terminal No.  | Conne       | ctor No.              | Terminal No.     | Continuity                |
| M20   | 35  | - N         | 17                    | 72               | Existed                   |
|   | 36  |             |                       | 73               | Existed                   |
| s the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS<br>Check the continuity b | e main line between th<br>CONTINUITY (OPE)  |             | )                     | M20 and M7.      |                           |
| Connector No.   |   | Termi       | nal No.               |                  | Continuity                |
|   | 72  |             |                       | 74               | Existed                   |
| B1  | 73  |             |                       | 75               | Existed                   |
|   |   |             |                       |                  |                           |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.

NO-1 >> With 4WAS or AWD models: Replace the body harness.

NO-2 >> 2WD models without 4WAS: Repair the main line between the harness connector B1 and the driver seat control unit.

### MAIN LINE BETWEEN ADP AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006093505

[CAN SYSTEM (TYPE 1)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 72    | 74         | Existed |
| Ы             | 73    | 75         | Existed |

Is the inspection result normal?

YES >> GO TO 3.

NO-1 >> With 4WAS or AWD models: Replace the body harness.

NO-2 >> 2WD models without 4WAS: Repair the main line between the driver seat control unit and the harness connector B1.

## **3.** CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M6 and E106.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector           al No.         Connector No. |    | Continuity |
|---------------|--------------|--|----|------------|
| Connector No. | Terminal No. |  |    | Continuity |
| M7            | 74           | MG   | 22 | Existed    |
| 1017          | 75           | 75 M6  | 23 | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness       | Harness connector ABS actuator and electric unit (control unit) harness connector |               | Continuity   |         |
|---------------|---|---------------|--------------|---------|
| Connector No. | Terminal No.  | Connector No. | Terminal No. |         |
| E106          | 22  | E41           | 25           | Existed |
| EIUO          | 23  |               | 15           | Existed |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

### LAN-152

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

EVETEM (TVDE 4)1

| < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 1)  | ]       |
|---|---------|
| YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit). | I-<br>A |
| NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric un (control unit).                                | it      |
|   | В       |
|   | 0       |
|   | С       |
|   | D       |
|   | F       |
|   | E       |
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## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093510

[CAN SYSTEM (TYPE 1)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M30 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

- VQ37VHR

|               | Resistance ( $\Omega$ ) |     |                   |
|---------------|-------------------------|-----|-------------------|
| Connector No. | Termi                   |     |                   |
| M107          | 114                     | 113 | Approx. 108 – 132 |

VK56VD

| ECM harness connector |              |     | Resistance (Ω)    |
|-----------------------|--------------|-----|-------------------|
| Connector No.         | Terminal No. |     |                   |
| M160                  | 146          | 151 | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the ECM. Refer to the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

#### Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "Removal and Installation"

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

| ECM harne     | ss connector | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M107          | 114          | M30               | 439          | Existed    |
| WITO7         | 113          |                   | 438          | Existed    |

- VK56VD

## ECM BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 1)]

| ECM harnes    | ss connector | Harness connector |              | Continuity | Α |
|---------------|--------------|-------------------|--------------|------------|---|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |   |
| M160          | 146          | M30               | 439          | Existed    | _ |
| MITOO         | 151          | MSO               | 438          | Existed    | В |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093511

[CAN SYSTEM (TYPE 1)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

| Low tire pressure warning control unit harness connector |              |  | Resistance ( $\Omega$ ) |
|--|--------------|--|-------------------------|
| Connector No.  | Terminal No. |  |                         |
| M43  | 2 1          |  | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

### $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

|               | warning control unit<br>connector | Harness connector          |     | Continuity |
|---------------|-----------------------------------|----------------------------|-----|------------|
| Connector No. | Terminal No.                      | Connector No. Terminal No. |     |            |
| M43           | 2                                 | M29                        | 396 | Existed    |
| 10145         | 1                                 | WIZ9                       | 395 | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

## **HVAC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 1)]

| HVAC BRANCH   | LINE CIRCUI   | I   |  |                                       |
|---|---|---|--|---------------------------------------|
| Diagnosis Procedu   | ure   |   |  | INFOID:000000006093514                |
|   | OR  |   |  |                                       |
| <ol> <li>Turn the ignition sw</li> <li>Disconnect the bat</li> <li>Check the following<br/>nector side).</li> <li>A/C auto amp.</li> </ol>  | tery cable from the n   | negative terminal.<br>nectors for damage, be  | nd and loose connec  | tion (unit side and con-              |
|   | M28 and PCB harn  | ess side connector  |  |                                       |
| Is the inspection result  | normal?   |   |  |                                       |
| YES >> GO TO 2.<br>NO >> Repair the   | terminal and connec   | tor   |  |                                       |
| 2.CHECK HARNESS   |   |   |  |                                       |
| 1. Disconnect the cor   | nector of A/C auto a  |   | nector terminals.  |                                       |
|   | A/C auto amp. harr  | ness connector  |  | Popietones (O)                        |
| Connector No.   |   | Terminal No.  | Resistance (Ω)   |                                       |
| M66   | 12  |   | 11   | Approx. 54 – 66                       |
|   |   | action?   |  |                                       |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SL   | lue within the specifi  | ND CIRCUIT  |  |                                       |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SU   | lue within the specifi  | ND CIRCUIT  |  | 67. "A/C AUTO AMP. :                  |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>Check the power supp<br>Diagnosis Procedure".  | Iue within the specifi<br>JPPLY AND GROUN<br>ly and the ground ci   | ND CIRCUIT  |  |                                       |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SU<br>Check the power supp<br>Diagnosis Procedure".<br>s the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the   | IUE within the specifi<br>JPPLY AND GROUN<br>Iy and the ground ci<br>normal?<br>Replace the A/C au<br>ror was detected in the<br>power supply and the   | ND CIRCUIT<br>rcuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.  | mp. Refer to <u>HAC-1</u><br>201. "Removal and I                                     | 67. "A/C AUTO AMP. :                  |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3. CHECK POWER SL<br>Check the power suppling<br>Diagnosis Procedure".<br>s the inspection result<br>YES (Present error)>><br>YES (Past error)>>Erron<br>NO >> Repair the<br>4. CHECK HARNESS  | Iue within the specifi<br>JPPLY AND GROUN<br>Iy and the ground ci<br>normal?<br>Replace the A/C au<br>ror was detected in ti<br>power supply and th<br>CONTINUITY (OPE  | ND CIRCUIT<br>rcuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)  | mp. Refer to <u>HAC-1</u><br>201. "Removal and I                                     | 67. "A/C AUTO AMP. :                  |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SL<br>Check the power supp<br>Diagnosis Procedure".<br>s the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the har   | IUE within the specifi<br>JPPLY AND GROUN<br>Iy and the ground ci<br>Normal?<br>Replace the A/C au<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPE<br>ness connector M28                          | ND CIRCUIT<br>rcuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)  | mp. Refer to <u>HAC-1</u><br>201. "Removal and I<br>ch line.                         | 67. "A/C AUTO AMP. :<br>nstallation". |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SL<br>Check the power supp<br>Diagnosis Procedure".<br>s the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>4.CHECK HARNESS  | Iue within the specifi<br>JPPLY AND GROUN<br>ly and the ground ci<br>normal?<br>PReplace the A/C au<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPE<br>ness connector M28<br>ty between the A/C a | ND CIRCUIT<br>rcuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)  | mp. Refer to <u>HAC-1</u><br>201. "Removal and I<br>ch line.<br>nector and the harne | 67. "A/C AUTO AMP. :<br>nstallation". |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>Check the power supp<br>Diagnosis Procedure".<br>S the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continuit                                 | Iue within the specifi<br>JPPLY AND GROUN<br>ly and the ground ci<br>normal?<br>PReplace the A/C au<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPE<br>ness connector M28<br>ty between the A/C a | ID CIRCUIT<br>rcuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>le ground circuit.<br>N CIRCUIT)  | mp. Refer to <u>HAC-1</u><br>201. "Removal and I<br>ch line.<br>nector and the harne | 67. "A/C AUTO AMP. :<br>nstallation". |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3. CHECK POWER SU<br>Check the power supp<br>Diagnosis Procedure".<br>s the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>4. CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit<br>A/C auto amp. ha | Iue within the specifi<br>JPPLY AND GROUN<br>Iy and the ground ci<br>normal?<br>Replace the A/C au<br>ror was detected in th<br>power supply and th<br>CONTINUITY (OPE<br>ness connector M28<br>ty between the A/C a    | ND CIRCUIT<br>rcuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>le ground circuit.<br>N CIRCUIT)<br>auto amp. harness cont<br>Harness c | mp. Refer to <u>HAC-1</u><br>201. "Removal and I<br>ch line.<br>hector and the harne | 67. "A/C AUTO AMP. :<br>nstallation". |

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

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## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093515

[CAN SYSTEM (TYPE 1)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F103
- Harness connector M116
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

|               | Resistance ( $\Omega$ ) |   |                 |
|---------------|-------------------------|---|-----------------|
| Connector No. | Termi                   |   |                 |
| F61           | 3                       | 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

#### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

| A/T assembly h | arness connector | Harness       | connector    | Continuity |
|----------------|------------------|---------------|--------------|------------|
| Connector No.  | Terminal No.     | Connector No. | Terminal No. | Continuity |
| F61            | 3                | M28           | 346          | Existed    |
| 1.01           | 8                | IVIZO         | 347          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

## [CAN SYSTEM (TYPE 1)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006093516 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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< DTC/CIRCUIT DIAGNOSIS >

## AV BRANCH LINE CIRCUIT

INFOID:000000006093517

### Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M25 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

|               | Resistance (Ω) |    |                 |
|---------------|----------------|----|-----------------|
| Connector No. | Termi          |    |                 |
| M210          | 90             | 74 | Approx. 54 – 66 |

Models without navigation system

| AV control unit harness connector |              |    | Resistance ( $\Omega$ ) |
|-----------------------------------|--------------|----|-------------------------|
| Connector No.                     | Terminal No. |    | Resistance (22)         |
| M84                               | 81           | 80 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.

NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

| AV control unit h | arness connector | Harness connector |              | Continuity |
|-------------------|------------------|-------------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| M210              | 90               | M25               | 201          | Existed    |
| WIZ 10            | 74               |                   | 221          | Existed    |

Models without navigation system

## **AV BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 1)]

| AV control unit h     | narness connector   | Harness       | connector              | Continuity           |  |
|-----------------------|---|---------------|------------------------|----------------------|--|
| Connector No.         | Terminal No.  | Connector No. | Terminal No.           | Continuity           |  |
| M84                   | 81  | M25           | 201                    | Existed              |  |
| 1004                  | 80  | M25 221       |                        | Existed              |  |
| the inspection result | t normal?   |               |                        |                      |  |
| O (Without navigati   | ss connector M25.<br>on system)>>Repair t<br>arness connector M25 |               | the AV control unit ha | arness connector M84 |  |
|                       |   |               |                        |                      |  |
|                       |   |               |                        |                      |  |
|                       |   |               |                        |                      |  |

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## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093518

[CAN SYSTEM (TYPE 1)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Combination meter
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

| Combination meter harness connector |              |    | Resistance ( $\Omega$ ) |
|-------------------------------------|--------------|----|-------------------------|
| Connector No.                       | Terminal No. |    | Resistance (22)         |
| M53                                 | 14           | 15 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

| Combination meter | r harness connector | Harness connector |              | Continuity |
|-------------------|---------------------|-------------------|--------------|------------|
| Connector No.     | Terminal No.        | Connector No.     | Terminal No. | Continuity |
| M53               | 14                  | M24               | 176          | Existed    |
| IND5              | 15                  | 10124             | 177          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

## **DLC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 1)]

| iagnosis Proced  | ure  |   |                   | INFOID:00000000609351        |  |
|--|--|---|-------------------|------------------------------|--|
| .CHECK CONNECT   | OR   |   |                   |                              |  |
| <ul> <li>Check the followin<br/>nector side).</li> <li>Data link connector</li> <li>Harness connector</li> </ul> | ttery cable from the n<br>g terminals and conn<br>r<br>r M181<br>r M105<br>r M23 and PCB harne<br>normal?<br>terminal and connect<br>FOR OPEN CIRCUI | ectors for damage, be<br>ess side connector<br>ctor.<br>T | nd and loose co   | nnection (unit side and con- |  |
|  |  |   |                   |                              |  |
| Connector No.  | Data link co   | Data link connector Resistance (Ω)                        |                   |                              |  |
| M182   | 6  |   | 14                | Approx. 54 – 66              |  |
| the measurement va   |  | cation?   |                   |                              |  |
| YES (Present error)  | Check CAN system<br>ror was detected in the system   | type decision again.<br>he data link connector            | branch line circu | uit.                         |  |
| YES (Past error)>>Er<br>NO >> GO TO 3.<br>CHECK HARNESS  | rness connector M23  |   | harness connec    | ctor.                        |  |
| YES (Past error)>>Er<br>NO >> GO TO 3.<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | rness connector M23  | link connector and the                                    | harness connec    |                              |  |
| YES (Past error)>>Er<br>NO >> GO TO 3.<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | rness connector M23<br>ity between the data l  | link connector and the                                    |                   | Continuity                   |  |
| YES (Past error)>>Er<br>NO >> GO TO 3.<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | rness connector M23<br>ity between the data<br>connector   | ink connector and the<br>Harness of                       | connector         | Continuity                   |  |

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< DTC/CIRCUIT DIAGNOSIS >

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093520

[CAN SYSTEM (TYPE 1)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- BCM
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of BCM.
- 2. Check the resistance between the BCM harness connector terminals.

| BCM harness connector |              |    | Resistance (Ω)  |
|-----------------------|--------------|----|-----------------|
| Connector No.         | Terminal No. |    |                 |
| M120                  | 39           | 40 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

YES (Past error)>>Error was detected in the BCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

| BCM harne     | ess connector | Harness       | connector    | Continuity |
|---------------|---------------|---------------|--------------|------------|
| Connector No. | Terminal No.  | Connector No. | Terminal No. | Continuity |
| M120          | 39            | M22           | 101          | Existed    |
| IVIT20        | 40            | IVIZZ         | 102          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

| iagnosis Proced  | lure  |  |  | INFOID:000000006093521  |
|--|---|--|--|---|
| .CHECK CONNECT   | OR  |  |  |   |
| <ul> <li>Turn the ignition s</li> <li>Disconnect the ba</li> <li>Check the followin<br/>nector side).</li> <li>Steering angle ser</li> </ul>                       | witch OFF.<br>ttery cable from the ne<br>og terminals and conne   | ectors for damage, b   | end and loose conne                          | ction (unit side and con-   |
| the inspection result  | t normal?   |  |  |   |
| YES >> GO TO 2.<br>NO >> Repair the  | e terminal and connect  | tor.   |  |   |
|  | FOR OPEN CIRCUIT  |  |  |   |
|  | nnector of steering an<br>nce between the steer   |  | ness connector termi                         | nals.   |
|  | Steering angle sensor h   | arness connector   |  | Resistance ( $\Omega$ )   |
| Connector No.  |   | Terminal No.   |  |   |
| M37  | alue within the specific  |  | 2  | Approx. 54 – 66   |
| theck the power support<br>ram".<br>the inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha | <u>normal?</u><br>>Replace the steering<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22. | rcuit of the steering a<br>g angle sensor. Refer<br>le steering angle sen<br>e ground circuit.<br>N CIRCUIT) | to <u>BRC-144, "Remo</u><br>sor branch line. | to <u>BRC-54, "Wiring Dia-</u><br>val and Installation".<br>ne harness connector. |
| . Check the continu  | Steering angle sensor harness connector Harness connector   |  | connector                                    |   |
|  | or harness connector  |  |  | Continuity  |
|  | or harness connector<br>Terminal No.  | Connector No.  | Terminal No.                                 | Continuity  |
| Steering angle sens  | 1   |  | Terminal No.<br>81<br>82                     | Continuity Existed Existed  |

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< DTC/CIRCUIT DIAGNOSIS >

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator a | ABS actuator and electric unit (control unit) harness connector |    |                         |
|----------------|---|----|-------------------------|
| Connector No.  | Terminal No.  |    | Resistance ( $\Omega$ ) |
| E41            | 25  | 15 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

### **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

Revision: 2010 June

### **IPDM-E BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 1)]

| < DTC/CIRCUIT DIAGNOS   |   |  | [CAN SYSTEM (TYPE 1)]       |
|---|---|--|-----------------------------|
| IPDM-E BRANCH L   | INE CIRCUIT   |  |                             |
| Diagnosis Procedure   |   |  | INFOID:0000000609352        |
| 1.CHECK CONNECTOR   |   |  |                             |
| <ol> <li>Check the terminals an and connector side).</li> <li>Is the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> </ol> | cable from the negative term<br>nd connectors of the IPDM E<br>nal?<br>ninal and connector. |  | loose connection (unit side |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>   | tor of IPDM E/R.<br>etween the IPDM E/R harne   | ss connector terminals.                  |                             |
|   | IPDM E/R harness connector  |  |                             |
| Connector No.   | Termina   | al No.                                   | Resistance ( $\Omega$ )     |
| E6  | 40  | 39                                       | Approx. 108 – 132           |
|   | M E/R branch line   |  |                             |
| Check the power supply and<br><u>Is the inspection result norm</u><br>YES (Present error)>>Rep<br>YES (Past error)>>Error w           | LY AND GROUND CIRCUIT<br>d the ground circuit of the IPI                                    | PCS-33, "Removal and I<br>R branch line. |                             |

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< DTC/CIRCUIT DIAGNOSIS >

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093527

[CAN SYSTEM (TYPE 1)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

#### Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |            |         |  |
|---------------|-------------------------------|------------|---------|--|
| Connector No. | Termi                         | Continuity |         |  |
| M125          | 4                             | 6          | Existed |  |
| IWI125        | 10                            | 12         | Existed |  |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

| Driv          | Driver seat control unit harness connector |                         |                 |
|---------------|--|-------------------------|-----------------|
| Connector No. | Termi                                      | Resistance ( $\Omega$ ) |                 |
| B514          | 23   | 24                      | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the driver seat control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-73, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

- YES (Past error)>>Error was detected in the driver seat control unit branch line.
- NO >> Repair the power supply and the ground circuit.

### CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 1)]

#### < DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT А **Diagnosis Procedure** INFOID:000000006093536 **1.**CONNECTOR INSPECTION 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Ε Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M182 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M182 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. ${f 4}$ . CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. Check the resistance between the ECM terminals. 2. VQ37VHR LAN ECM Resistance $(\Omega)$ Terminal No. Ν 114 113 Approx. 108 - 132 VK56VD ECM Resistance $(\Omega)$ Terminal No. Ρ 146 151 Approx. 108 - 132 Check the resistance between the IPDM E/R terminals. IPDM E/R Resistance $(\Omega)$ Terminal No. Approx. 108 - 132 40 39

### **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

## 5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

#### **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication system. **NOTE:**

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

#### [CAN SYSTEM (TYPE 2)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006094349 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM -D Low tire pressure warning control unit \_ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

### MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094350

[CAN SYSTEM (TYPE 2)]

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity |
|-----------------|------------------|-----------------------------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity |
| M66             | 12               | M210                              | 90           | Existed    |
| Wide            | 11               | M210 -                            | 74           | Existed    |

#### Models without navigation system

| A/C auto amp. harness connector |              | AV control unit harness connector |              | ness connector AV control unit harness connector |  | Continuity |
|---------------------------------|--------------|-----------------------------------|--------------|--|--|------------|
| Connector No.                   | Terminal No. | Connector No.                     | Terminal No. | Continuity                                       |  |            |
| M66                             | 12           | M84                               | 81           | Existed  |  |            |
| IVIOO                           | 11           | 11/104                            | 80           | Existed  |  |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

| DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 2 |   |  |  |  |  |
|---|---|--|--|--|--|
| WEEN A-BAG                                  | AND AV CIRC   | UIT  |  |  |  |
| ure   |   |  | INFOID:000000006094351   |  |  |
| CONTINUITY (OPEI                            | N CIRCUIT)  |  |  |  |  |
| owing harness conne                         | ectors.   | nector and the AV co   | ntrol unit harness con-  |  |  |
| arness connector                            | AV control unit ha  | arness connector   | Continuity   |  |  |
| Terminal No.                                | Connector No.   | Terminal No.   | Continuity   |  |  |
| 12  |   |  | 90   |  |  |
| 12  | M210  | 90   | Existed  |  |  |
|   | WEEN A-BAG<br>ure<br>CONTINUITY (OPEI<br>witch OFF.<br>tery cable from the n<br>owing harness conne<br>ty between the A/C a<br>ation system | WEEN A-BAG AND AV CIRC<br>ure<br>CONTINUITY (OPEN CIRCUIT)<br>witch OFF.<br>tery cable from the negative terminal.<br>owing harness connectors.<br>ty between the A/C auto amp. harness con<br>ation system<br>arness connector AV control unit ha | WEEN A-BAG AND AV CIRCUIT         ure         CONTINUITY (OPEN CIRCUIT)         vitch OFF.         tery cable from the negative terminal.         owing harness connectors.         ty between the A/C auto amp. harness connector and the AV co         ation system         arness connector         AV control unit harness connector |  |  |

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

|   | A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity | - |
|---|-----------------|------------------|-----------------------------------|--------------|------------|---|
|   | Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity | Н |
| _ | M66             | 12 M84           | 81                                | Existed      | -          |   |
|   | σοινι           | 11               | 10104                             | 80           | Existed    |   |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094352

[CAN SYSTEM (TYPE 2)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

| AV control unit h | arness connector | Combination meter harness connector |              | Continuity |
|-------------------|------------------|-------------------------------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No.                       | Terminal No. | Continuity |
| M210              | 90               | M53                                 | 14           | Existed    |
| WZ 10             | 74               | M53                                 | 15           | Existed    |

#### Models without navigation system

| AV control unit h | narness connector | Combination meter | harness connector | - Continuity |
|-------------------|-------------------|-------------------|-------------------|--------------|
| Connector No.     | Terminal No.      | Connector No.     | Terminal No.      | Continuity   |
| M84               | 81                | MEQ               | 14                | Existed      |
|                   | 80                | M53               | 15                | Existed      |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

| C/CIRCUIT DIAGI  | -   | SYSTEM (TYPE 2)]      |                      |                        |
|--|---|-----------------------|----------------------|------------------------|
| N LINE BET   | NEEN M&A A  | ND DLC CIRCU          | JIT                  |                        |
| nosis Procedu  | re  |                       |                      | INFOID:000000006094353 |
| ECK HARNESS (  |   | N CIRCUIT)            |                      |                        |
| isconnect the follo<br>CM<br>ombination meter<br>arness connectors | ery cable from the n<br>wing harness conne<br>M105 and M181 |                       | connector and the ha | rness connector.       |
| Combination meter h  | arness connector  | Harness               | connector            | Continuity             |
| Connector No.  | Terminal No.  | Connector No.         | Terminal No.         | Continuity             |
| ME2  | 14  | M105                  | 7                    | Existed                |
| 10100  | 15  |                       | 8                    | Existed                |
| Connector No   | 14  | Connector No.<br>M105 | 7                    | Existe                 |

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

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### MAIN LINE BETWEEN DLC AND BCM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### **Diagnosis Procedure**

INFOID:000000006094354

[CAN SYSTEM (TYPE 2)]

## 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

| Harness       | connector    | BCM harnes    | ss connector | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| MAGE          | 7            | N420          | 39           | Existed    |
| M105          | 8            | M120          | 40           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA  | GNOSIS >   |  | [CAI                      | N SYSTEM (TYPE 2)]      |
|--|--|--|---------------------------|-------------------------|
|  | TWEEN BCM A  | ND RAS CIRC  | UIT                       |                         |
| Diagnosis Proced   | lure   |  |                           | INFOID:000000006094358  |
| 1.CHECK CONNECT  | TOR  |  |                           |                         |
| <ol> <li>Check the followi<br/>and harness side)</li> <li>Harness connector</li> <li></li></ol> | attery cable from the ne<br>ng terminals and conn<br>or M20 and PCB harne<br>or M7<br>or B1<br><u>t normal?</u><br>e terminal and connect<br>5 CONTINUITY (OPEN<br>llowing harness conne | nectors for damage,<br>ess side connector<br>tor.<br>N CIRCUIT)  | bend and loose conr       | nection (connector side |
|  | lity between the BCM   | harness connector ar   | nd the PCB harness c      | onnector.               |
|  | ess connector  | PCB harness connector  |                           | Continuity              |
| Connector No.  | Terminal No.   | Terminal No.   |                           |                         |
| M120   | 39<br>40   |  | 35<br>36                  | Existed                 |
| Is the inspection resul<br>YES >> GO TO 3.<br>NO >> Replace t  |  |  |                           |                         |
| 3.CHECK HARNESS  | CONTINUITY (OPEN<br>Inness connectors M7<br>ity between the harne  | and B1.  |                           |                         |
| <b>3.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu  | rness connectors M7<br>ity between the harne   | and B1.<br>ss connectors.  | connector                 |                         |
| <b>3.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu  | rness connectors M7  | and B1.<br>ss connectors.  | connector<br>Terminal No. | Continuity              |
| 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No.  | rness connectors M7<br>hity between the harne<br>connector   | and B1.<br>ss connectors.<br>Harness<br>Connector No.  |                           | - Continuity<br>Existed |
| 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M20  | connector<br>Terminal No.<br>35<br>36  | and B1.<br>ss connectors.<br>Harness   | Terminal No.              |                         |
| 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M20 Is the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS   | rness connectors M7<br>hity between the harne<br>connector<br>Terminal No.<br>35<br>36<br>t normal?  | and B1.<br>ess connectors.<br>Harness<br>Connector No.<br>M7<br>M7<br>N CIRCUIT)   | Terminal No.<br>72<br>73  | Existed                 |
| 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M20 Is the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS Check the continuity b  | rness connectors M7<br>hity between the harne<br>connector<br>Terminal No.<br>35<br>36<br>t normal?<br>e main line between th<br>S CONTINUITY (OPEN                                      | and B1.<br>ess connectors.<br>Harness<br>Connector No.<br>M7<br>he harness connectors<br>N CIRCUIT)<br>onnector terminals. | Terminal No.<br>72<br>73  | Existed                 |
| 3.CHECK HARNESS 1. Disconnect the ha 2. Check the continu Harness Connector No. M20 Is the inspection resul YES >> GO TO 4. NO >> Repair the 4.CHECK HARNESS   | rness connectors M7<br>hity between the harne<br>connector<br>Terminal No.<br>35<br>36<br>t normal?<br>e main line between th<br>S CONTINUITY (OPEN                                      | and B1.<br>ess connectors.<br>Harness<br>Connector No.<br>M7<br>M7<br>N CIRCUIT)   | Terminal No.<br>72<br>73  | Existed                 |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the BCM and the 4WAS main control unit. NO >> Replace the body harness.

### MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094361

[CAN SYSTEM (TYPE 2)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. |    | Continuity |
|---------------|--------------|----|------------|
| B1            | 72           | 74 | Existed    |
| Ы             | 73           | 75 | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

### **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M7            | 74           | M6                | 22           | Existed    |
| 1017          | 75           |                   | 23           | Existed    |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness connector |              | ABS actuator and electric unit (control unit)<br>harness connector |              | Continuity |
|-------------------|--------------|--|--------------|------------|
| Connector No.     | Terminal No. | Connector No.  | Terminal No. |            |
| E106              | 22           | E41  | 25           | Existed    |
|                   | 23           |  | 15           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094365

[CAN SYSTEM (TYPE 2)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M30 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

- VQ37VHR

| ECM harness connector |       |     | Resistance ( $\Omega$ ) |
|-----------------------|-------|-----|-------------------------|
| Connector No.         | Termi |     |                         |
| M107                  | 114   | 113 | Approx. 108 – 132       |

VK56VD

| ECM harness connector |              |     | Posistance (O)    |
|-----------------------|--------------|-----|-------------------|
| Connector No.         | Terminal No. |     | Resistance (Ω)    |
| M160                  | 146          | 151 | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the ECM. Refer to the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

#### Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "Removal and Installation"

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

| ECM harness connector |              | Harness connector |              | Continuity |
|-----------------------|--------------|-------------------|--------------|------------|
| Connector No.         | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M107                  | 114          | - M30             | 439          | Existed    |
|                       | 113          |                   | 438          | Existed    |

- VK56VD

# ECM BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 2)]

| ECM harnes    | ss connector | Harness connector |              | Continuity | A   |
|---------------|--------------|-------------------|--------------|------------|-----|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |     |
| M160          | 146          | M30               | 439          | Existed    | -   |
| MITOO         | 151          | MSO               | 438          | Existed    | - B |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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# TPMS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094366

[CAN SYSTEM (TYPE 2)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

| Low tire pre  | Low tire pressure warning control unit harness connector |  |                 |
|---------------|--|--|-----------------|
| Connector No. | Terminal No.   |  | Resistance (Ω)  |
| M43           | 2 1  |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

|               | Low tire pressure warning control unit<br>harness connector |               | Harness connector |         |
|---------------|---|---------------|-------------------|---------|
| Connector No. | Terminal No.  | Connector No. | Terminal No.      |         |
| M43           | 2   | M29           | 396               | Existed |
| 10145         | 1   | WIZ9          | 395               | Existed |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

## **HVAC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 2)]

| HVAC BRANCH I   | INE CIRCUI                                 | Г                           |                            |                          | Δ   |
|---|--|-----------------------------|----------------------------|--------------------------|-----|
| Diagnosis Procedur  | e  |                             |                            | INFOID:000000006094369   | A   |
| 1.CHECK CONNECTOR   | २  |                             |                            |                          | В   |
| <ol> <li>Turn the ignition swit</li> <li>Disconnect the batte</li> <li>Check the following the nector side).</li> <li>A/C auto amp.</li> <li>Harness connector M</li> </ol> | ry cable from the ne<br>erminals and conne | ectors for damage, be       | end and loose connec       | tion (unit side and con- | С   |
| Is the inspection result no   | ormal?                                     |                             |                            |                          | D   |
| YES >> GO TO 2.<br>NO >> Repair the te  | rminal and connect                         | or.                         |                            |                          | Е   |
| 2. CHECK HARNESS FOR OPEN CIRCUIT   |  |                             |                            |                          |     |
| <ol> <li>Disconnect the conn</li> <li>Check the resistance</li> </ol>   |  | np.<br>auto amp. harness co | nnector terminals.         |                          | F   |
| A/C auto amp. harness connector Resistance (Ω)  |  |                             |                            |                          |     |
| Connector No.   |  | Terminal No.                |                            |                          | G   |
| M66   | 12   |                             | 11                         | Approx. 54 – 66          |     |
| Is the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.   |  |                             |                            |                          | Η   |
| 3. CHECK POWER SUP  |  |                             | amp. Defer to HAC 1        |                          |     |
| Check the power supply<br>Diagnosis Procedure".   | and the ground ch                          | cuit of the A/C auto a      | amp. Relet to <u>HAC-1</u> | 67, A/C AUTO AMP         |     |
| Is the inspection result no   |  |                             |                            |                          | J   |
| YES (Present error)>>F<br>YES (Past error)>>Erro<br>NO >> Repair the po   |  | e A/C auto amp. brar        |                            | <u>nstallation"</u> .    | K   |
| <b>4.</b> CHECK HARNESS C   | ONTINUITY (OPEN                            | I CIRCUIT)                  |                            |                          |     |
| <ol> <li>Disconnect the harne</li> <li>Check the continuity</li> </ol>  |  | uto amp. harness cor        | nector and the harne       | ss connector.            | L   |
| A/C auto amp. harr  | ess connector                              | Harness                     | connector                  | Continuity               |     |
| Connector No.   | Terminal No.                               | Connector No.               | Terminal No.               | Continuity               | LAN |
| M66   | 12   | M28                         | 325                        | Existed                  |     |
|   | 11   |                             | 327                        | Existed                  | Ν   |
| Is the inspection result no<br>YES >> Replace the   |  |                             |                            |                          |     |

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connec-Ο tor M28.

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# TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094370

[CAN SYSTEM (TYPE 2)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F103
- Harness connector M116
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

| A/T assembly harness connector |       |   | Resistance ( $\Omega$ ) |
|--------------------------------|-------|---|-------------------------|
| Connector No.                  | Termi |   |                         |
| F61                            | 3     | 8 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

| A/T assembly h | A/T assembly harness connector |               | connector    | Continuity |
|----------------|--------------------------------|---------------|--------------|------------|
| Connector No.  | Terminal No.                   | Connector No. | Terminal No. | Continuity |
| F61            | 3                              | M28           | 346          | Existed    |
| 1.01           | 8                              | IVIZO         | 347          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

# [CAN SYSTEM (TYPE 2)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:00000000609437 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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< DTC/CIRCUIT DIAGNOSIS >

# AV BRANCH LINE CIRCUIT

INFOID:000000006094372

## Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M25 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

|               | Resistance ( $\Omega$ ) |  |                 |
|---------------|-------------------------|--|-----------------|
| Connector No. | Termi                   |  |                 |
| M210          | 90 74                   |  | Approx. 54 – 66 |

Models without navigation system

| AV control unit harness connector |              |    | Posistance (O)  |
|-----------------------------------|--------------|----|-----------------|
| Connector No.                     | Terminal No. |    | Resistance (Ω)  |
| M84                               | 81           | 80 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.

NO >> Repair the power supply and the ground circuit.

## **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector  $\overline{M25}$ .
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

| AV control unit h | AV control unit harness connector |               | connector    | Continuity |
|-------------------|-----------------------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.                      | Connector No. | Terminal No. | Continuity |
| M210              | 90                                | M25           | 201          | Existed    |
| IVIZ TO           | 74                                |               | 221          | Existed    |

Models without navigation system

# **AV BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## [CAN SYSTEM (TYPE 2)]

| AV control unit h    | AV control unit harness connector                             |                       | Harness connector      |                      |
|----------------------|---|-----------------------|------------------------|----------------------|
| Connector No.        | Terminal No.  | Connector No.         | Terminal No.           | Continuity           |
| M84                  | 81  | M25                   | 201                    | Existed              |
| 10104                | 80  | IVIZO                 | 221                    | Existed              |
| he inspection result |   |                       |                        |                      |
| O (With navigation : | he PCB harness.<br>system)>>Repair the l<br>ss connector M25. | harness between the A | AV control unit harnes | s connector M210 and |

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

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# M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094373

[CAN SYSTEM (TYPE 2)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Combination meter
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

| Combination meter harness connector |              |  | Posistanco (O)          |
|-------------------------------------|--------------|--|-------------------------|
| Connector No.                       | Terminal No. |  | Resistance ( $\Omega$ ) |
| M53                                 | 14 15        |  | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

| Combination meter | r harness connector | Harness connector |              | Continuity |
|-------------------|---------------------|-------------------|--------------|------------|
| Connector No.     | Terminal No.        | Connector No.     | Terminal No. | Continuity |
| M53               | 14                  | M24               | 176          | Existed    |
| IND5              | 15                  |                   | 177          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

# **DLC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 2)]

| iagnosis Proced  | ure  |  |                  | INFOID:00000006094374        |
|--|--|--|------------------|------------------------------|
| .CHECK CONNECT   | OR   |  |                  |                              |
| <ul> <li>Check the following<br/>nector side).</li> <li>Data link connector</li> <li>Harness connector</li> <li></li></ul> | tery cable from the n<br>g terminals and conn<br>M181<br>M105<br>M23 and PCB harne<br>normal?<br>terminal and connect<br>FOR OPEN CIRCUI | ectors for damage, be<br>ess side connector<br>tor.<br>T | end and loose co | nnection (unit side and con- |
| heck the resistance b  | etween the data link   | connector terminals.                                     |                  |                              |
|  | Data link co   | Data link connector Resistance (Ω)                       |                  |                              |
| Connector No.  |  | Terminal No.   |                  |                              |
| M182<br>the measurement va   |  | 6 14   |                  | Approx. 54 – 66              |
| NO >> GO TO 3.<br>CHECK HARNESS  | ror was detected in th<br>CONTINUITY (OPEI<br>ness connector M23   | he data link connector<br>N CIRCUIT)                     |                  |                              |
|  | connector  | Harness  | connector        | Continuity                   |
| Data link  |  |  | Terminal No.     |                              |
| Data link Connector No.  | Terminal No.   | Connector No.  | Terriniar No.    |                              |
|  | Terminal No.<br>6<br>14  | Connector No.<br>M23                                     | 151<br>150       | Existed                      |

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< DTC/CIRCUIT DIAGNOSIS >

# BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094375

[CAN SYSTEM (TYPE 2)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- BCM
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of BCM.
- 2. Check the resistance between the BCM harness connector terminals.

| BCM harness connector |              |    | Resistance ( $\Omega$ ) |
|-----------------------|--------------|----|-------------------------|
| Connector No.         | Terminal No. |    | Tresistance (22)        |
| M120                  | 39           | 40 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

YES (Past error)>>Error was detected in the BCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

| BCM harne     | ss connector | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M120          | 39           | M22               | 101          | Existed    |
| 101120        | 40           | IVIZZ             | 102          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

|  | LINE CIRCUI   |  |   |                           |
|--|---|--|---|---------------------------|
| Diagnosis Procedu  | re  |  |   | INFOID:00000006094376     |
| .CHECK CONNECTO  | R   |  |   |                           |
| nector side).<br>Steering angle sens   | ery cable from the ne<br>terminals and conne  | ectors for damage, be  | nd and loose conne                          | ction (unit side and con- |
| the inspection result n  | ormal?  |  |   |                           |
| <pre>/ES &gt;&gt; GO TO 2.<br/>NO &gt;&gt; Repair the to<br/>.CHECK HARNESS F</pre>  | erminal and connect   |  |   |                           |
| Disconnect the conr  | nector of steering an   |  | ess connector termi                         | nals.                     |
| Steering angle sensor harness connector  |   | Posistance (0)   |   |                           |
| Connector No.  |   | Terminal No.   |   | Resistance (Ω)            |
| M37  | 1   |  | 2   | Approx. 54 – 66           |
| am".<br>the inspection result n<br>ES (Present error)>>F<br>ES (Past error)>>Error<br>IO >> Repair the p<br>CHECK HARNESS O<br>Disconnect the harn | and the ground cir<br><u>cormal?</u><br>Replace the steering<br>or was detected in the<br>cower supply and the<br>CONTINUITY (OPEN<br>mess connector M22. | cuit of the steering an<br>angle sensor. Refer t<br>e steering angle sens<br>ground circuit. | o <u>BRC-144, "Remov</u><br>or branch line. |                           |
| Steering angle sensor harness connector Harness connector  |   | Harness  | connector                                   |                           |
| Steering angle sensor  |   |  |   | O and it is               |
| Steering angle sensor<br>Connector No.   | Terminal No.  | Connector No.  | Terminal No.                                | - Continuity              |
|  |   | Connector No.  | Terminal No.<br>81                          | Continuity     Existed    |

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< DTC/CIRCUIT DIAGNOSIS >

# **RAS BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

# RAS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094378

[CAN SYSTEM (TYPE 2)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 4WAS main control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

| 4WA           | 4WAS main control unit harness connector |   |                 |
|---------------|--|---|-----------------|
| Connector No. | Terminal No.                             |   | Resistance (Ω)  |
| B54           | 1  | 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace the body harness.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to <u>STC-171, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-185, "Removal and Installation".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

NO >> Repair the power supply and the ground circuit.

## **ABS BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 2)]

| OFF.   |  | INFOID:000000006094379   |  |
|--|--|--|--|
| OFF  |  |  |  |
| OFF  |  |  |  |
| cable from the negative term<br>d connectors of the ABS act<br>unit side and connector side)<br><u>nal?</u><br>inal and connector. | tuator and electric unit (co   | ontrol unit) for damage, bend  |  |
|  |  | nit) harness connector termi-  |  |
| ABS actuator and electric unit (control unit) harness connector  |  | Resistance (Ω)   |  |
| Termina  | al No.   |  |  |
| 25   | 15   | Approx. 54 – 66  |  |
| Y AND GROUND CIRCUIT<br>nd the ground circuit of the a<br>dure".<br>nal?<br>lace the ABS actuator and e                            | ABS actuator and electric  | Refer to <u>BRC-141, "Removal</u>  |  |
|  |  | troi unit) branch line.  |  |
|  | etween the ABS actuator ar<br>and electric unit (control unit) harm<br>25<br>within the specification?<br>S actuator and electric unit (c<br>LY AND GROUND CIRCUIT<br>and the ground circuit of the<br>edure".<br>nal?<br>blace the ABS actuator and e | hinal and connector.<br>COPEN CIRCUIT<br>tor of ABS actuator and electric unit (control unit).<br>between the ABS actuator and electric unit (control unit)<br>and electric unit (control unit) harness connector<br>Terminal No.<br>25 15<br>within the specification?<br>S actuator and electric unit (control unit) branch line.<br>LY AND GROUND CIRCUIT<br>and the ground circuit of the ABS actuator and electric<br>adure".<br>nal?<br>blace the ABS actuator and electric unit (control unit). I |  |

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< DTC/CIRCUIT DIAGNOSIS >

# **IPDM-E BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000006094381

[CAN SYSTEM (TYPE 2)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

|               | IPDM E/R harness connector |    |                   |
|---------------|----------------------------|----|-------------------|
| Connector No. | Terminal No.               |    | Resistance (Ω)    |
| E6            | 40                         | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

NO >> Repair the power supply and the ground circuit.

| Diagnosis Procedure  |   |  |                              |  |
|--|---|--|------------------------------|--|
| _  |   |  | INFOID:000000006094382       |  |
| 1.CHECK CONNECTOR  |   |  |                              |  |
|  | cable from the negative tern<br>ninals and connectors for c<br>1<br>System)<br><u>hal?</u><br>GO TO 2.<br>>>GO TO 2.<br>inal and connector.<br>ITINUITY (OPEN CIRCUIT | lamage, bend and loose co                              | nnection (unit side and con- |  |
|  | tween the CAN gateway ha  | arness connector terminals.                            |                              |  |
| Connector No.  | CAN gateway harness connector Continuity  |  | Continuity                   |  |
|  | 4   | 6  | Existed                      |  |
| M125   | 10  | 12   | Existed                      |  |
| YES >> GO TO 3.<br>NO >> Check the harn  | ess and repair or replace (i  |  |                              |  |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat cont   | t.<br>rol unit harness connector t                     |                              |  |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat cont<br>er seat control unit harness conn                        | system)<br>t.<br>rol unit harness connector f<br>ector |                              |  |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat cont<br>er seat control unit harness conn                        | system)<br>t.<br>rol unit harness connector t          | erminals.                    |  |

< DTC/CIRCUIT DIAGNOSIS >

#### < DTC/CIRCUIT DIAGNOSIS >

# CAN COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:000000006094391

[CAN SYSTEM (TYPE 2)]

## **1.**CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 4. Check terminals and connectors for damage, bend and loose connection.

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Data link connector |    |             |
|---------------|---------------------|----|-------------|
| Connector No. | Terminal No.        |    | Continuity  |
| M182          | 6                   | 14 | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

## **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link     | Data link connector |        | Continuity  |
|---------------|---------------------|--------|-------------|
| Connector No. | Terminal No.        | Ground | Continuity  |
| M182          | 6                   |        | Not existed |
| IVI I OZ      | 14                  |        | Not existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

#### **4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

- VQ37VHR

| ECM    |         | Resistance (Ω)    |
|--------|---------|-------------------|
| Termir | nal No. |                   |
| 114    | 113     | Approx. 108 – 132 |

VK56VD

| ECM   |         | Resistance (Ω)    |
|-------|---------|-------------------|
| Termi | nal No. |                   |
| 146   | 151     | Approx. 108 – 132 |

3. Check the resistance between the IPDM E/R terminals.

| IPDN   | /IE/R   | Resistance (Ω)    |  |
|--------|---------|-------------------|--|
| Termir | nal No. |                   |  |
| 40     | 39      | Approx. 108 – 132 |  |

# **CAN COMMUNICATION CIRCUIT**

| < DTC/CIRCUIT DIAGNOSIS >   | [CAN SYSTEM (TYPE 2)]          |
|---|--------------------------------|
| Is the measurement value within the specification?  |                                |
| YES >> GO TO 5.   |                                |
| NO >> Replace the ECM and/or the IPDM E/R.  |                                |
| 5.CHECK SYMPTOM   |                                |
| Connect all the connectors. Check if the symptoms described in the "Sympto customer)" are reproduced.   | m (Results from interview with |
| Inspection result   |                                |
| Reproduced>>GO TO 6.  |                                |
| Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.   | procedure when past error is   |
| 6. CHECK UNIT REPRODUCTION  |                                |
| Perform the reproduction test as per the following procedure for each unit.   |                                |
| 1. Turn the ignition switch OFF.  |                                |
| 2. Disconnect the battery cable from the negative terminal.   |                                |
| 3. Disconnect one of the unit connectors of CAN communication system.   |                                |
| <b>NOTE:</b><br>ECM and IPDM E/R have a termination circuit. Check other units first.   |                                |
| 4. Connect the battery cable to the negative terminal. Check if the sympton   | ms described in the "Symptom   |
| (Results from interview with customer)" are reproduced.   |                                |
| NOTE:   |                                |
| Although unit-related error symptoms occur, do not confuse them with othe   | er symptoms.                   |
| Inspection result   |                                |
| Reproduced>>Connect the connector. Check other units as per the above pro<br>Non-reproduced>>Replace the unit whose connector was disconnected. | ocedure.                       |
|   |                                |

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### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

## **Diagnosis Procedure**

INFOID:000000006094997

# **1.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

| Low tire pressure warning control unit<br>harness connector |              | A/C auto amp. harness connector |              | Continuity |
|---|--------------|---------------------------------|--------------|------------|
| Connector No.   | Terminal No. | Connector No.                   | Terminal No. |            |
| M43   | 2            | M66                             | 12           | Existed    |
| 10143   | 1            | ΟΟΙΥΙ                           | 11           | Existed    |

#### Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
- YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIAG  | TC/CIRCUIT DIAGNOSIS > [C  |                                    |                                  |                         |  |
|---|--|------------------------------------|----------------------------------|-------------------------|--|
| MAIN LINE BET   | WEEN HVAC  | AND A-BAG CI                       | RCUIT                            |                         |  |
| Diagnosis Proced  | ure  |                                    |                                  | INFOID:000000006094998  |  |
| 1.CHECK HARNESS   | CONTINUITY (OPE  | N CIRCUIT)                         |                                  |                         |  |
| <ul> <li>3. Disconnect the foll</li> <li>ECM</li> <li>A/C auto amp.</li> <li>AV control unit</li> </ul> | tery cable from the n<br>owing harness conne<br>ty between the A/C a | ectors.                            | nector and the AV co             | ntrol unit harness con- |  |
|   |  |                                    |                                  |                         |  |
| A/C auto amp. ha  | arness connector   | AV control unit h                  | arness connector                 | Continuity              |  |
| A/C auto amp. ha  | arness connector<br>Terminal No.                                     | AV control unit h<br>Connector No. | arness connector<br>Terminal No. | Continuity              |  |
| · · ·   |  |                                    |                                  | Continuity<br>Existed   |  |

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

| A/C auto amp. h | arness connector | AV control unit h | arness connector | - Continuity |   |
|-----------------|------------------|-------------------|------------------|--------------|---|
| Connector No.   | Terminal No.     | Connector No.     | Terminal No.     | Continuity   |   |
| M66             | 12               | M84               | 81               | Existed      | _ |
| IVIOO           | 11               | 10104             | 80               | Existed      | _ |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

## **Diagnosis Procedure**

INFOID:000000006094999

[CAN SYSTEM (TYPE 3)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity |
|-----------------|------------------|-----------------------------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity |
| M66             | 12               | M210                              | 90           | Existed    |
| Wide            | 11               | WIZ TO                            | 74           | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity |
|-----------------|------------------|-----------------------------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity |
| M66             | 12               | M84                               | 81           | Existed    |
| IVIOO           | 11               | 10104                             | 80           | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

| DTC/CIRCUIT DIA   | GNOSIS >   |  | [CAN   | N SYSTEM (TYPE 3)]               |
|---|--|--|--|----------------------------------|
| MAIN LINE BE  | TWEEN AV AN  | D M&A CIRCUI   | Т  |                                  |
| Diagnosis Proced  | dure   |  |  | INFOID:000000006095000           |
| CHECK HARNES  | S CONTINUITY (OPE  | N CIRCUIT)   |  |                                  |
| <ol> <li>Disconnect the fo<br/>ECM<br/>AV control unit</li> </ol>   | attery cable from the n<br>llowing harness conne   |  |  |                                  |
| Combination mete<br>Check the contine<br>connector.<br>Models with navig  | uity between the AV co   | ontrol unit harness cor  | nnector and the com  | bination meter harness           |
| <ul> <li>Check the continu-<br/>connector.<br/>Models with navig</li> </ul>   | uity between the AV co   | ontrol unit harness cor<br>Combination meter                   |  |                                  |
| <ul> <li>Check the continu-<br/>connector.<br/>Models with navig</li> </ul>   | uity between the AV co<br>gation system  | 1  |  | bination meter harness           |
| <ul> <li>Check the continu-<br/>connector.<br/>Models with navig</li> <li>AV control unit</li> <li>Connector No.</li> </ul>   | uity between the AV co<br>gation system<br>narness connector   | Combination meter<br>Connector No.                             | harness connector  |                                  |
| <ul> <li>Check the continu-<br/>connector.<br/>Models with navig</li> <li>AV control unit</li> </ul>  | uity between the AV co<br>gation system<br>namess connector<br>Terminal No.                                  | Combination meter  | harness connector<br>Terminal No.                                  | Continuity                       |
| <ul> <li>Check the continu-<br/>connector.<br/>Models with navig</li> <li>AV control unit</li> <li>Connector No.</li> </ul>   | uity between the AV co<br>gation system<br>namess connector<br>Terminal No.<br>90<br>74                      | Combination meter<br>Connector No.                             | harness connector<br>Terminal No.<br>14                            | - Continuity<br>Existed          |
| <ul> <li>Check the continu-<br/>connector.<br/>Models with navig</li> <li>AV control unit</li> <li>Connector No.</li> <li>M210</li> <li>Models without na</li> </ul>                          | uity between the AV co<br>gation system<br>namess connector<br>Terminal No.<br>90<br>74                      | Combination meter<br>Connector No.                             | harness connector<br>Terminal No.<br>14<br>15                      | Continuity<br>Existed<br>Existed |
| <ul> <li>Check the continu-<br/>connector.<br/>Models with navig</li> <li>AV control unit</li> <li>Connector No.</li> <li>M210</li> <li>Models without na</li> </ul>                          | uity between the AV co<br>gation system<br>namess connector<br>Terminal No.<br>90<br>74<br>avigation system  | Combination meter<br>Connector No.<br>M53                      | harness connector<br>Terminal No.<br>14<br>15                      | - Continuity<br>Existed          |
| <ul> <li>Check the continu-<br/>connector.<br/>Models with navig</li> <li>AV control unit</li> <li>Connector No.</li> <li>M210</li> <li>Models without na</li> <li>AV control unit</li> </ul> | uity between the AV co<br>gation system<br>harness connector<br>Terminal No.<br>90<br>74<br>avigation system | Combination meter<br>Connector No.<br>M53<br>Combination meter | harness connector<br>Terminal No.<br>14<br>15<br>harness connector | Continuity<br>Existed<br>Existed |

MAIN LINE BETWEEN AV AND M&A CIRCUIT

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

## Diagnosis Procedure

INFOID:000000006095001

[CAN SYSTEM (TYPE 3)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | r harness connector | Harness connector |              | Continuity |
|------------------|---------------------|-------------------|--------------|------------|
| Connector No.    | Terminal No.        | Connector No.     | Terminal No. | Continuity |
| M53              | 14                  | M105              | 7            | Existed    |
| MISS             | 15                  | WITU5             | 8            | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the combination meter and the data link connector.
- NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA  |  | WEEN DLC AN   | D BCM CIRCUIT<br>[CAN | SYSTEM (TYPE 3)]       |   |
|--|--|---------------|-----------------------|------------------------|---|
| MAIN LINE BET  | WEEN DLC A   | ND BCM CIRC   | UIT                   |                        | ^ |
| Diagnosis Proced   | lure   |               |                       | INFOID:000000006095002 | A |
| <b>1.</b> CHECK HARNESS  |  | N CIRCUIT)    |                       |                        | В |
| <ul> <li>3. Disconnect the fol</li> <li>ECM</li> <li>Harness connector</li> <li>BCM</li> </ul> | ttery cable from the ne<br>lowing harness conne<br>ors M181 and M105 | ectors.       | BCM harness connec    | tor.                   | C |
| Harness  | connector  | BCM harne     | ess connector         | Continuity             | _ |
| Connector No.  | Terminal No.   | Connector No. | Terminal No.          | Continuity             | E |
|  | 7  | 14400         | 39                    | Existed                |   |

Is the inspection result normal?

M105

YES (Present error)>>Check CAN system type decision again.

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

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Existed

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN BCM AND ABS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN BCM AND ABS CIRCUIT

## Diagnosis Procedure

INFOID:000000006095003

[CAN SYSTEM (TYPE 3)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

#### YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM
- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harne     | ss connector | PCB harness connector | Continuity   |  |
|---------------|--------------|-----------------------|--------------|--|
| Connector No. | Terminal No. | Terminal No.          | - Continuity |  |
| M120          | 39           | 35                    | Existed      |  |
| W120          | 40           | 36                    | Existed      |  |

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness       | Harness connector |               | Harness connector |            |
|---------------|-------------------|---------------|-------------------|------------|
| Connector No. | Terminal No.      | Connector No. | Terminal No.      | Continuity |
| M20           | 35                | M7            | 72                | Existed    |
| IVIZU         | 36                | 1/17          | 73                | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. |    | Continuity |
|---------------|--------------|----|------------|
| B1            | 72           | 74 | Existed    |
|               | 73           | 75 | Existed    |

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair the main line between the harness connector terminals.

**5.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### MAIN LINE BETWEEN BCM AND ABS CIRCUIT GNOSIS > [CAN SYSTEM (TYPE 3)]

#### < DTC/CIRCUIT DIAGNOSIS >

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness       | connector    | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| N/7           | 74           | MC            | 22           | Existed    |
| M7            | 75           | M6            | 23           | Existed    |

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair the main line between the harness connectors M7 and M6.

### **6.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) E harness connector.

| Harness connector |              | ABS actuator and electric unit (control unit)<br>harness connector |              | Continuity | F |
|-------------------|--------------|--|--------------|------------|---|
| Connector No.     | Terminal No. | Connector No.  | Terminal No. |            |   |
| E106              | 22           | E41  | 25           | Existed    | G |
| EIUO              | 23           | <b>E</b> 41  | 15           | Existed    | - |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the ABS actuator and electric unit (control unit).

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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## MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

## Diagnosis Procedure

INFOID:000000006095010

[CAN SYSTEM (TYPE 3)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B33
- Harness connector B245

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

| Side radar LH I | narness connector | Harness       | connector    | Continuity |
|-----------------|-------------------|---------------|--------------|------------|
| Connector No.   | Terminal No.      | Connector No. | Terminal No. | Continuity |
| B52             | 4                 | B33           | 13           | Existed    |
| DJZ             | 3                 |               | 14           | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

## ${\it 3.}$ CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

| Harness       | Harness connector |               | Side radar RH harness connector |              |
|---------------|-------------------|---------------|---------------------------------|--------------|
| Connector No. | Terminal No.      | Connector No. | Terminal No.                    | - Continuity |
| B245          | 13                | B252          | 4                               | Existed      |
| B240          | 14                | BZ3Z          | 3                               | Existed      |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar LH and the side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

| IAIN LINE BET  | WEEN RDR-R  | AND APA CIR   | CUIT  |  |
|--|---|---|---|--|
| agnosis Proced   | ure   |   |   | INFOID:000000006095011                                       |
| CHECK CONNECT  | OR  |   |   |  |
|  |   |   |   |  |
| Check the followin<br>and harness side)<br>Harness connector<br>Harness connector<br>Harness connector<br>the inspection result<br>(ES >> GO TO 2.<br>IO >> Repair the<br>CHECK HARNESS  | ttery cable from the ne<br>ng terminals and conr<br>r B201<br>r M117<br>r M20 and PCB harne   | nectors for damage, l<br>ess side connector<br>for.<br>N CIRCUIT)   | bend and loose conne  | ection (connector side                                       |
| Check the continu  | rs B201 and M117<br>ity between the side ra<br>arness connector   |   | nector and the harnes   |  |
| Connector No.  | Terminal No.  | Connector No.   | Terminal No.  | Continuity   |
|  | 4   |   |   |  |
| B252   | 4   | B201  | 66  | Existed  |
| •  | 3   | B201  | 66<br>67  | Existed  |
| the inspection result<br>ES >> GO TO 3.<br>O >> Repair the<br>CHECK HARNESS<br>Disconnect the ha   | 3   | e side radar RH and t<br>I CIRCUIT)   | 67  | Existed  |
| the inspection result<br>ES >> GO TO 3.<br>O >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | 3<br>normal?<br>main line between th<br>CONTINUITY (OPEN<br>rness connector M20.  | e side radar RH and t<br>I CIRCUIT)<br>ss connectors.   | 67  | Existed<br>B201.   |
| the inspection result<br>(ES >> GO TO 3.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | 3<br>main line between th<br>CONTINUITY (OPEN<br>rness connector M20.<br>ity between the harne  | e side radar RH and t<br>I CIRCUIT)<br>ss connectors.   | 67<br>he harness connector  | Existed  |
| the inspection result<br>ES >> GO TO 3.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness  | 3<br>main line between th<br>CONTINUITY (OPEN<br>rness connector M20.<br>ity between the harne  | e side radar RH and t<br>I CIRCUIT)<br>ss connectors.<br><sup>Harness</sup>   | 67<br>he harness connector  | Existed<br>B201.   |
| the inspection result<br>(ES >> GO TO 3.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M117  | 3<br>main line between th<br>CONTINUITY (OPEN<br>rness connector M20.<br>ity between the harne<br>connector<br>Terminal No.<br>66<br>67   | e side radar RH and t<br>N CIRCUIT)<br>ss connectors.<br>Harness<br>Connector No.   | 67<br>he harness connector<br>connector<br>Terminal No.   | Existed<br>B201.<br>Continuity                               |
| the inspection result<br>(ES >> GO TO 3.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M117<br>the inspection result<br>(ES >> GO TO 4.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha  | 3<br>main line between th<br>CONTINUITY (OPEN<br>rness connector M20.<br>ity between the harne<br>connector<br>Terminal No.<br>66<br>67   | e side radar RH and t<br>N CIRCUIT)<br>ss connectors.<br>Harness<br>Connector No.<br>M20<br>e harness connectors<br>N CIRCUIT)<br>50 and M151.                                    | 67<br>he harness connector<br>connector<br>Terminal No.<br>38<br>40<br>5 M117 and M20.                            | Existed<br>B201.<br>Continuity<br>Existed<br>Existed         |
| the inspection result<br>(ES >> GO TO 3.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M117<br>the inspection result<br>(ES >> GO TO 4.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu                       | 3<br>main line between th<br>CONTINUITY (OPEN<br>rness connector M20.<br>ity between the harne<br>connector<br>Terminal No.<br>66<br>67<br>main line between th<br>CONTINUITY (OPEN<br>rness connectors M15<br>ity between the PCB f            | e side radar RH and t<br>N CIRCUIT)<br>ss connectors.<br>Harness<br>Connector No.<br>M20<br>e harness connectors<br>N CIRCUIT)<br>50 and M151.<br>harness connector an            | 67<br>he harness connector<br>connector<br>Terminal No.<br>38<br>40<br>5 M117 and M20.<br>d the harness connec    | Existed<br>B201.<br>Continuity<br>Existed<br>Existed         |
| the inspection result<br>(ES >> GO TO 3.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M117<br>the inspection result<br>(ES >> GO TO 4.<br>IO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>PCB harne          | 3<br>main line between th<br>CONTINUITY (OPEN<br>rness connector M20.<br>ity between the harne<br>connector<br>Terminal No.<br>66<br>67<br>normal?<br>main line between th<br>CONTINUITY (OPEN<br>rness connectors M15                          | e side radar RH and t<br>N CIRCUIT)<br>ss connectors.<br>Harness<br>Connector No.<br>M20<br>e harness connectors<br>N CIRCUIT)<br>50 and M151.<br>harness connector an            | 67<br>he harness connector<br>connector<br>Terminal No.<br>38<br>40<br>5 M117 and M20.                            | Existed<br>B201.<br>Continuity<br>Existed<br>Existed         |
| the inspection result<br>(ES >> GO TO 3.<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M117<br>the inspection result<br>(ES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>PCB harne<br>Termi | 3<br>main line between th<br>CONTINUITY (OPEN<br>rness connector M20.<br>ity between the harne<br>connector<br>Terminal No.<br>66<br>67<br>normal?<br>main line between th<br>CONTINUITY (OPEN<br>rness connectors M15<br>ity between the PCB f | e side radar RH and t<br>N CIRCUIT)<br>ss connectors.<br>Harness<br>Connector No.<br>M20<br>e harness connectors<br>N CIRCUIT)<br>50 and M151.<br>harness connector an<br>Harness | 67<br>he harness connector<br>connector<br>Terminal No.<br>38<br>40<br>6 M117 and M20.<br>d the harness connector | Existed<br>B201.<br>Continuity<br>Existed<br>Existed<br>tor. |

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

# LAN-207

# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

| MAIN LINE BETWEEN APA AND | LANE CIRCUIT          |
|---------------------------|-----------------------|
| AGNOSIS >                 | [CAN SYSTEM (TYPE 3)] |

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN APA AND LANE CIRCUIT

### Diagnosis Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |   |
|---------------|--------------|-------------------|--------------|------------|---|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity | E |
| M150          | 11           | M110              | 13           | Existed    | - |
| WI TOU        | 10           | WITTO             | 2            | Existed    | F |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane G camera unit.

NO >> Replace the PCB harness.

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# ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006095013

[CAN SYSTEM (TYPE 3)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M30 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

- VQ37VHR

|               | ECM harness connector |                         |                   |
|---------------|-----------------------|-------------------------|-------------------|
| Connector No. | Termi                 | Resistance ( $\Omega$ ) |                   |
| M107          | 114                   | 113                     | Approx. 108 – 132 |

VK56VD

|               | ECM harness connector |     | Posistanco (O)    |
|---------------|-----------------------|-----|-------------------|
| Connector No. | Terminal No.          |     | Resistance (Ω)    |
| M160          | 146                   | 151 | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the ECM. Refer to the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

#### Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "Removal and Installation"

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

## **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

| ECM harness connector |              | Harness connector |              | Continuity |
|-----------------------|--------------|-------------------|--------------|------------|
| Connector No.         | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M107                  | 114          | M30               | 439          | Existed    |
| WITO7                 | 113          | MISO              | 438          | Existed    |

- VK56VD

# ECM BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 3)]

| ECM harnes    | ECM harness connector |               | Harness connector |            | A   |
|---------------|-----------------------|---------------|-------------------|------------|-----|
| Connector No. | Terminal No.          | Connector No. | Terminal No.      | Continuity |     |
| M160          | 146                   | M30           | 439               | Existed    | -   |
| MITOO         | 151                   | MSO           | 438               | Existed    | - B |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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# TPMS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006095014

[CAN SYSTEM (TYPE 3)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

| Low tire pro  | Low tire pressure warning control unit harness connector |   |                 |
|---------------|--|---|-----------------|
| Connector No. | Terminal No.   |   | Resistance (Ω)  |
| M43           | 2  | 1 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

| -             | warning control unit<br>connector | Harness connector |              | Continuity |  |
|---------------|-----------------------------------|-------------------|--------------|------------|--|
| Connector No. | Terminal No.                      | Connector No.     | Terminal No. |            |  |
| M43           | 2                                 | M29               | 396          | Existed    |  |
| 10145         | 1                                 |                   | 395          | Existed    |  |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

[CAN SYSTEM (TYPE 3)]

## < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

| Diagnosis Procedu   | ure   |   |                          | INFOID:00000000609501       |
|---|---|---|--------------------------|-----------------------------|
| 1.снеск отс   |   |   |                          |                             |
| Check DTC of the CAN  | gateway with CONS   | ULT-III.  |                          |                             |
| <u>Is U1010 or B2600 indi</u>   |   |   |                          |                             |
| YES >> Perform a c<br>NO >> GO TO 2.  | diagnosis of the indic  | ated DTC.   |                          |                             |
| 2. CHECK CONNECTO   | OR  |   |                          |                             |
| <ol> <li>Check the following nector side).</li> <li>CAN gateway</li> <li>Harness connector</li> <li>Is the inspection result YES &gt;&gt; GO TO 3.</li> </ol> | tery cable from the ne<br>terminals and conne<br>M28 and PCB harne<br>normal?<br>terminal and connect | ectors for damage, be<br>ess side connector<br>cor. | nd and loose conr        | nection (unit side and con- |
|   | nector of CAN gatew<br>ce between the CAN   | ay.<br>gateway harness con                          | nector terminals.        |                             |
|   | CAN gateway harne   | ess connector                                       |                          | Resistance (Ω)              |
| Connector No.   |   | Terminal No.  |                          |                             |
| M125  | 1   |   | 7                        | Approx. 54 – 66             |
| Is the measurement val<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br><b>4.</b> CHECK POWER SU   |   |   |                          |                             |
| dure".  |   | rcuit of the CAN gate                               | eway. Refer to <u>LA</u> | N-143, "Diagnosis Proce     |
| <u>Is the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Err   | Replace the CAN ga  | teway. Refer to <u>LAN-</u><br>e CAN gateway bran   |                          |                             |
| NO >> Repair the  | power supply and the  | •   |                          | ,                           |
|   |   | •   |                          | · · · · · · · ,             |
| NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har  | CONTINUITY (OPEN<br>ness connector M28.   | N CIRCUIT)  | nector and the har       |                             |
| NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har  | CONTINUITY (OPEN<br>ness connector M28.<br>by between the CAN   | ateway harness con                                  | nector and the har       | ness connector.             |
| NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit  | CONTINUITY (OPEN<br>ness connector M28.<br>by between the CAN   | ateway harness con                                  |                          |                             |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

7

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

328

Ρ

Existed

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

## Diagnosis Procedure

INFOID:000000006095016

[CAN SYSTEM (TYPE 3)]

# 1.CHECK DTC

Check DTC of the CAN gateway with CONSULT-III.

#### Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

# 2. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- CAN gateway
- Harness connector M23 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | Continuity |            |         |
|---------------|------------|------------|---------|
| Connector No. | Termi      | Continuity |         |
| M125          | 4          | 6          | Existed |
| 101123        | 10         | 12         | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

#### **4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-143</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2).

# NO >> Repair the power supply and the ground circuit.

# **5.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connector M23.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

| CAN gateway h | arness connector | Harness connector |              | Continuity |
|---------------|------------------|-------------------|--------------|------------|
| Connector No. | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| M125          | 4                | M23               | 133          | Existed    |
| IM125         | 10               |                   | 135          | Existed    |

#### Is the inspection result normal?

YES >> GO TO 6.

#### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 3)]

#### < DTC/CIRCUIT DIAGNOSIS >

| NO | >> Repair the harness between the CAN gateway harness connector M125 and the harness connec- |  |
|----|--|--|
|    | tor M23.   |  |

## 6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

| PCB harness connector | PCB harnes | PCB harness connector |
|-----------------------|------------|-----------------------|
| Terminal No.          | Termir     | Terminal No.          |
| 24 Existed            | 2          | 133                   |
| 27 Existed            | 2          | 135                   |

#### Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the PCB harness.

## **7.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Disconnect the harness connectors M7 and B1. 1.

Check the continuity between the harness connectors.

| Harness       | Harness connector |               | Harness connector |            | _ |
|---------------|-------------------|---------------|-------------------|------------|---|
| Connector No. | Terminal No.      | Connector No. | Terminal No.      | Continuity | G |
| M20           | 24                | MZ            | 34                | Existed    | _ |
| IVIZU         | 27                | M7            | 35                | Existed    | H |

#### Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

#### **8.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| - | Connector No. | Termi | Continuity | -       |   |
|---|---------------|-------|------------|---------|---|
| _ | B1            | 34    | 32         | Existed | K |
|   | Ы             | 35    | 33         | Existed |   |

#### Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector L M125.

NO >> Replace the body harness. А

В

Е

F

# HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006095017

[CAN SYSTEM (TYPE 3)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/C auto amp.
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

|               | A/C auto amp. harness connecto | Resistance (Ω) |                 |
|---------------|--------------------------------|----------------|-----------------|
| Connector No. | Terminal No.                   |                |                 |
| M66           | 12                             | 11             | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-167, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-201, "Removal and Installation".

- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

| A/C auto amp. h | arness connector | Harness connector |              | Continuity |
|-----------------|------------------|-------------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| M66             | 12               | M28               | 325          | Existed    |
| MOO             | 11               | IVIZO             | 327          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

| iagnosis Procedure  |   |  |   | INFOID:000000006095018   |
|---|---|--|---|--|
| .CHECK CONNECTOR  |   |  |   |  |
| Turn the ignition switch<br>Disconnect the battery<br>Check the following ten<br>nector side).<br>A/T assembly<br>Harness connector F1<br>Harness connector M2<br>Harness connector M2<br>the inspection result nor<br>YES >> GO TO 2.<br>NO >> Repair the terr<br>.CHECK HARNESS FOI<br>Disconnect the connect<br>Check the resistance b | r cable from the ne<br>rminals and conne<br>16<br>28 and PCB harne<br><u>mal?</u><br>ninal and connect<br>R OPEN CIRCUIT<br>ctor of A/T assemb  | ectors for damage, ber<br>ss side connector<br>or.   |   | ction (unit side and con-  |
|   | A/T assembly harne  | -  |   | Resistance (Ω)   |
| Connector No.   |   | Terminal No.   |   |  |
|   |   |  |   |  |
| F61<br>the measurement value  | 3<br>within the specific  | ation?   | 8   | Approx. 54 – 66  |
| the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>•CHECK POWER SUPP<br>heck the power supply ar<br>the inspection result nor<br>YES (Present error)>>Re   | within the specific<br>PLY AND GROUNI<br>and the ground circu<br>mal?<br>place the control was detected in the<br>ver supply and the<br>NTINUITY (OPEN<br>is connector M28.   | D CIRCUIT<br>uit of the TCM. Refer t<br>valve with TCM. Refer<br>e A/T assembly if cont<br>e TCM branch line.<br>ground circuit.               | to <u>TM-156, "Diagnos</u><br>to <u>TM-8, "A/T CON</u><br>trol valve with TCM | sis Procedure".<br>TROL SYSTEM : Com-<br>is not listed in the latest |
| the measurement value<br>(ES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SUPP<br>heck the power supply ar<br>the inspection result nor<br>(ES (Present error)>>Re<br>ponent Parts L<br>parts list.)<br>(ES (Past error)>>Error NO<br>>> Repair the pow<br>.CHECK HARNESS CO<br>Disconnect the harnes<br>Check the continuity b          | within the specific<br>PLY AND GROUNI<br>and the ground circu<br>mal?<br>place the control v<br>.ocation". (Replace<br>was detected in th<br>ver supply and the<br>NTINUITY (OPEN<br>is connector M28.<br>etween the A/T as | D CIRCUIT<br>uit of the TCM. Refer t<br>valve with TCM. Refer<br>e A/T assembly if cont<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT) | to <u>TM-156, "Diagnos</u><br>to <u>TM-8, "A/T CON</u><br>trol valve with TCM | sis Procedure".<br>TROL SYSTEM : Com-<br>is not listed in the latest |
| the measurement value<br>(ES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SUPP<br>meck the power supply ar<br>the inspection result nor<br>(ES (Present error)>>Re<br>ponent Parts L<br>parts list.)<br>(ES (Past error)>>Error N<br>NO >> Repair the pow<br>.CHECK HARNESS CO<br>Disconnect the harnes                                  | within the specific<br>PLY AND GROUNI<br>and the ground circu<br>mal?<br>place the control v<br>.ocation". (Replace<br>was detected in th<br>ver supply and the<br>NTINUITY (OPEN<br>is connector M28.<br>etween the A/T as | D CIRCUIT<br>uit of the TCM. Refer t<br>valve with TCM. Refer<br>e A/T assembly if cont<br>e TCM branch line.<br>ground circuit.               | to <u>TM-156, "Diagnos</u><br>to <u>TM-8, "A/T CON</u><br>trol valve with TCM | sis Procedure".<br>TROL SYSTEM : Com-<br>is not listed in the latest |

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

# A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006095019

[CAN SYSTEM (TYPE 3)]

#### WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness and/or the PCB harness.
- NO >> Replace parts whose air bag system has a malfunction.

# **AV BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 3)]

| AV BRANCH LI  | NE CIRCUIT   |   |  | ٨                           |
|---|--|---|--|-----------------------------|
| Diagnosis Proced  | lure   |   |  | A<br>INFOID:000000006095020 |
| 1.CHECK CONNECT   | TOR  |   |  | В                           |
| <ol> <li>Check the followir<br/>nector side).</li> <li>AV control unit</li> </ol>   | ittery cable from the neighborn the neighbor   | ectors for damage, be   | end and loose connec   | tion (unit side and con- C  |
| YES >> GO TO 2.<br>NO >> Repair the   | e terminal and connec  | tor.  |  | -                           |
| 2.CHECK HARNESS   |  |   |  | E                           |
|   | nnector of AV control<br>nce between the AV co<br>ation system   |   | onnector terminals.  | F                           |
| Connector No.   | AV control unit harn   | ess connector<br>Terminal No.   |  | Resistance (Ω)              |
| M210  | 90   | Terminar NO.  | 74   | Approx. 54 – 66             |
| - Models without na   |  |   |  | Н                           |
|   | AV control unit harn   | ess connector   |  |                             |
| Connector No.   |  | Terminal No.  |  | Resistance ( $\Omega$ )     |
| M84   | 81   |   | 80   | Approx. 54 – 66             |
| BOSE audio with na     Is the inspection result     YES (Present error)>         Base au         BOSE a     YES (Past error)>>E     NO >> Repair the     A.CHECK HARNESS     1. Disconnect the ha | UPPLY AND GROUN<br>by and the ground circ<br>navigation system: AV-2<br>vigation system: AV-2<br>>Replace the AV cont<br>udio without navigation<br>udio with navigation s<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>inness connector M25<br>ity between the AV cont<br>ity betwe | D CIRCUIT<br>cuit of the AV control u<br>-90, "AV CONTROL U<br>72, "AV CONTROL U<br>trol unit. Refer to the<br>system: <u>AV-120, "Rem</u><br>be AV control unit bra<br>e ground circuit.<br>N CIRCUIT) | JNIT : Diagnosis Proc<br>NIT : Diagnosis Proce<br>following.<br>emoval and Installation<br>loval and Installation" | Lan                         |
|   | arness connector   | Harpoos   | connector  | Р                           |
| Connector No.   | Terminal No.   | Connector No.   | Terminal No.   | Continuity                  |
| M210  | 90   | M25   | 201  | Existed                     |
| IVIZ I U  | 74   | IVIZJ   | 221  | Existed                     |

Models without navigation system

# **AV BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

| AV control unit h | AV control unit harness connector |               | Harness connector |            |
|-------------------|-----------------------------------|---------------|-------------------|------------|
| Connector No.     | Terminal No.                      | Connector No. | Terminal No.      | Continuity |
| M84               | 81                                | M25           | 201               | Existed    |
| 10104             | 80                                | IVIZ5         | 221               | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

| iagnosis Proced  | lure  |   |  |  | INF01D:000000006095021     |
|--|---|---|--|--|----------------------------|
| CHECK CONNECT  |   |   |  |  |                            |
|  | -   |   |  |  |                            |
| <ul> <li>Check the followin<br/>nector side).</li> <li>Combination mete</li> </ul>   | ttery cable from the ne<br>og terminals and conne<br>er<br>r M24 and PCB harne  | ectors for dam  | nage, bend and   | l loose conne                          | ection (unit side and con- |
| YES >> GO TO 2.  |   |   |  |  |                            |
|  | e terminal and connect<br>FOR OPEN CIRCUI   |   |  |  |                            |
|  |   |   |  |  |                            |
|  | nnector of combination<br>nce between the comb  |   | harness conne  | ector termina                          | ls.                        |
|  | Combination meter ha  | arness connector  |  |  | Resistance (Ω)             |
|  | 1   |   |  |  | Resistance (Q)             |
| Connector No.  |   | Terminal  | No.  |  |                            |
| M53<br>s the measurement va<br>YES >> GO TO 3.   | 14<br>alue within the specific  |   | No.<br>15  |  | Approx. 54 – 66            |
| M53<br>s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>Check the power supp<br><u>AETER : Diagnosis Pr</u><br>s the inspection result<br>YES (Present error)><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>. Disconnect the ha                                  | UPPLY AND GROUN<br>Oly and the ground cir<br>rocedure".<br>A normal?<br>>Replace the combination<br>of the combination of the combination<br>of the power supply and the  | cation?<br>D CIRCUIT<br>rcuit of the co<br>ation meter. R<br>he combination<br>e ground circu<br>N CIRCUIT)                   | 15<br>mbination mete<br>Refer to <u>MWI-90</u><br>n meter branch<br>uit.                       | ), "Removal a<br>line.                 | Approx. 54 – 66            |
| M53<br>s the measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SI<br>Check the power suppression result<br>YES (Present error)><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu   | UPPLY AND GROUN<br>Oly and the ground cir<br>rocedure".<br>normal?<br>>Replace the combina<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.                              | cation?<br>D CIRCUIT<br>rcuit of the co<br>ation meter. R<br>he combination<br>e ground circu<br>N CIRCUIT)                   | 15<br>mbination mete<br>Refer to <u>MWI-90</u><br>n meter branch<br>uit.                       | ), "Removal a<br>line.<br>ctor and the | Approx. 54 – 66            |
| M53<br>S the measurement vary<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SI<br>Check the power suppression result<br>YES (Present error)><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | UPPLY AND GROUN<br>oly and the ground cir<br>cocedure".<br>Replace the combination<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.<br>ity between the comb               | cation?<br>D CIRCUIT<br>rcuit of the co<br>ation meter. R<br>he combination<br>e ground circu<br>N CIRCUIT)                   | 15<br>mbination meter<br>Refer to <u>MWI-90</u><br>n meter branch<br>uit.<br>harness connector | ), "Removal a<br>line.<br>ctor and the | Approx. 54 – 66            |
| M53<br>s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>Check the power supp<br>AETER : Diagnosis Pr<br>s the inspection result<br>YES (Present error)><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Combination meter | UPPLY AND GROUN<br>oly and the ground cir<br>rocedure".<br>a normal?<br>>Replace the combination<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.<br>ity between the comb | cation?<br>D CIRCUIT<br>rcuit of the co<br>ation meter. R<br>the combination<br>e ground circu<br>N CIRCUIT)<br>ination meter | 15<br>mbination meter<br>Refer to <u>MWI-90</u><br>n meter branch<br>uit.<br>harness connector | ), "Removal a<br>line.<br>ctor and the | Approx. 54 – 66            |

NO >> Repair the harness between the combination meter harness connector M53 and the harness con- O nector M24.

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# DLC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006095022

[CAN SYSTEM (TYPE 3)]

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

|               | Data link connector |         |                         |
|---------------|---------------------|---------|-------------------------|
| Connector No. | Termi               | nal No. | Resistance ( $\Omega$ ) |
| M182          | 6                   | 14      | Approx. 54 – 66         |

#### Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> GO TO 3.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the data link connector and the harness connector.

| Data link     | connector    | Harness       | connector    | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M182          | 6            | M23           | 151          | Existed    |
| 111102        | 14           | 10123         | 150          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

## **BCM BRANCH LINE CIRCUIT**

| BCM BRANCH   | LINE CIRCUIT  |   |                          |                          |
|--|---|---|--------------------------|--------------------------|
| Diagnosis Procec   | ure   |   |                          | INFOID:000000006095023   |
| 1.CHECK CONNECT  | OR  |   |                          |                          |
| <ul> <li>Check the followin nector side).</li> <li>BCM</li> <li>Harness connector side inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> </ul> | ttery cable from the neig terminals and conne<br>r M22 and PCB harne<br><u>: normal?</u><br>e terminal and connect                        | ectors for damage, be<br>ess side connector<br>tor.   | end and loose connec     | tion (unit side and con- |
| . Disconnect the co  |   | harness connector te  | erminals.                |                          |
| Connector No.  | DOM namess (  | Terminal No.  |                          | Resistance ( $\Omega$ )  |
| M120   | 39  |   | 40                       | Approx. 54 – 66          |
| YES >> GO TO 3.<br>NO >> GO TO 4.  | alue within the specific  |   |                          |                          |
|  | ly and the ground circ  |   | to BCS-73, "Diagnos      | is Procedure"            |
|  |   |   |                          | <u>io i rocodaro</u> .   |
| YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the  | >Replace the BCM. R<br>ror was detected in the power supply and the   | Refer to <u>BCS-79, "Ren</u><br>ne BCM branch line.<br>e ground circuit.  | noval and Installation   |                          |
| YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br><b>1</b> .CHECK HARNESS<br>Disconnect the ha                                    | >Replace the BCM. R<br>ror was detected in the power supply and the   | Refer to <u>BCS-79, "Ren</u><br>ne BCM branch line.<br>e ground circuit.<br>N CIRCUIT)                                    |                          | <u>'</u> .               |
| YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br><b>1</b> .CHECK HARNESS<br>Disconnect the ha<br>Check the continu               | Replace the BCM. For was detected in the power supply and the CONTINUITY (OPE) rness connector M22.                                       | Refer to <u>BCS-79, "Ren</u><br>ne BCM branch line.<br>e ground circuit.<br>N CIRCUIT)<br>harness connector ar            |                          |                          |
| YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha  | >Replace the BCM. F<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22<br>ity between the BCM | Refer to <u>BCS-79, "Ren</u><br>ne BCM branch line.<br>e ground circuit.<br>N CIRCUIT)<br>harness connector ar            | nd the harness conne     | ctor.                    |
| YES (Past error)>>E<br>NO >> Repair the<br><b>1</b> .CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>BCM harne                    | >Replace the BCM. F<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPE)<br>rness connector M22.<br>ity between the BCM | Refer to <u>BCS-79, "Ren</u><br>ne BCM branch line.<br>e ground circuit.<br>N CIRCUIT)<br>harness connector ar<br>Harness | nd the harness connector |                          |

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>> Replace the PCB harness. NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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Is the inspection result normal?

YES

# STRG BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000006095024

[CAN SYSTEM (TYPE 3)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

|               | Steering angle sensor harness conn | Resistance (Ω) |                 |
|---------------|------------------------------------|----------------|-----------------|
| Connector No. | Termi                              | nal No.        |                 |
| M37           | 1                                  | 2              | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-144, "Removal and Installation".

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

| Steering angle sens | Steering angle sensor harness connector |               | Harness connector |            |
|---------------------|---|---------------|-------------------|------------|
| Connector No.       | Terminal No.                            | Connector No. | Terminal No.      | Continuity |
| M37                 | 1                                       | M22           | 81                | Existed    |
| 10137               | 2                                       | IVIZZ         | 82                | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

## **ABS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 3)]

| Diagnosis Procedure  |  |  | INFOID:00000006095027  |
|--|--|--|--|
| .CHECK CONNECTOR   |  |  |  |
| . Check the terminals and  | able from the negative termin<br>I connectors of the ABS actua<br>nit side and connector side).<br>al?   |  | itrol unit) for damage, bend   |
| CHECK HARNESS FOR  |  |  |  |
| . Check the resistance be nals.  | or of ABS actuator and electric  | electric unit (control uni   | t) harness connector termi-  |
|  |  |  |  |
|  | Ind electric unit (control unit) harness   |  | Resistance ( $\Omega$ )  |
| Connector No.<br>E41   | Terminal I<br>25   |  | Resistance (Ω)<br>Approx. 54 – 66  |
| Connector No.<br>E41<br>the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the ABS<br>CHECK POWER SUPPL<br>heck the power supply an<br>RC-119, "Diagnosis Procee   | Terminal I<br>25<br>ithin the specification?<br>actuator and electric unit (cor<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the AB<br>lure".            | No.<br>15<br>ntrol unit) branch line.  | Approx. 54 – 66  |
| Connector No.<br>E41<br>the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the ABS<br>CHECK POWER SUPPL<br>Check the power supply and<br>RC-119. "Diagnosis Proceed<br>the inspection result norm<br>YES (Present error)>>Repl<br>and Installation"<br>YES (Past error)>>Error was | Terminal I<br>25<br>actuator and electric unit (cor<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the AB<br>lure".<br>al?<br>ace the ABS actuator and ele | No.<br>15<br>Itrol unit) branch line.<br>3S actuator and electric<br>ctric unit (control unit). R<br>or and electric unit (contr | Approx. 54 – 66<br>unit (control unit). Refer to<br>efer to <u>BRC-141, "Removal</u> |

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# AFS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006095028

[CAN SYSTEM (TYPE 3)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AFS control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

2. Check the resistance between the AFS control unit harness connector terminals.

|               | AFS control unit harness connector |         |                 |
|---------------|------------------------------------|---------|-----------------|
| Connector No. | Termi                              | nal No. | Resistance (Ω)  |
| E104          | 30                                 | 7       | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

## **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-84, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-126, "Removal and Installation".

YES (Past error)>>Error was detected in the AFS control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **IPDM-E BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 3)]

| <ol> <li>Disconnect the connector of IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector terminal</li> </ol>   | ls.                          |
|---|------------------------------|
| <ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the terminals and connectors of the IPDM E/R for damage, bend and connector side).</li> <li><u>s the inspection result normal?</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li>CHECK HARNESS FOR OPEN CIRCUIT</li> <li>Disconnect the connector of IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector terminal</li> </ol> | ls.                          |
| <ol> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the terminals and connectors of the IPDM E/R for damage, bend and connector side).</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li>CHECK HARNESS FOR OPEN CIRCUIT</li> <li>Disconnect the connector of IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector terminal</li> </ol>  | ls.                          |
| <ul> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li>2.CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of IPDM E/R.</li> <li>2. Check the resistance between the IPDM E/R harness connector terminal</li> </ul>  |                              |
| <ul> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li>2.CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of IPDM E/R.</li> <li>2. Check the resistance between the IPDM E/R harness connector terminal</li> </ul>   |                              |
| <ol> <li>CHECK HARNESS FOR OPEN CIRCUIT</li> <li>Disconnect the connector of IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector terminal</li> </ol>   |                              |
| <ol> <li>Disconnect the connector of IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector terminal</li> </ol>   |                              |
| 2. Check the resistance between the IPDM E/R harness connector terminal   |                              |
|   |                              |
| IPDM E/R harness connector  | Resistance (Ω)               |
| Connector No. Terminal No.  |                              |
| E6 40 39  | Approx. 108 – 132            |
| NO >> Repair the IPDM E/R branch line.<br>3.CHECK POWER SUPPLY AND GROUND CIRCUIT<br>Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PC</u><br>Is the inspection result permal?  | S-32, "Diagnosis Procedure". |
| <u>Is the inspection result normal?</u><br>YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-33. "Removal a</u>  | and Installation"            |
| YES (Past error)>>Error was detected in the IPDM E/R branch line.   | <u>ina motanation</u> .      |
| NO >> Repair the power supply and the ground circuit.   |                              |
|   |                              |
|   |                              |
|   |                              |
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# ADP BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006095030

[CAN SYSTEM (TYPE 3)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

#### Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

|               | Continuity |            |         |
|---------------|------------|------------|---------|
| Connector No. | Termi      | Continuity |         |
| M125          | 4          | 6          | Existed |
| IWI125        | 10         | 12         | Existed |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

| Driver seat control unit harness connector |       |  | Resistance ( $\Omega$ ) |
|--|-------|--|-------------------------|
| Connector No.                              | Termi |  |                         |
| B514                                       | 23 24 |  | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the driver seat control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-73, "DRIVER SEAT</u> <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

- YES (Past error)>>Error was detected in the driver seat control unit branch line.
- NO >> Repair the power supply and the ground circuit.

|  | CIRCUIT  |                                |                              |
|--|--|--------------------------------|------------------------------|
| Diagnosis Procedure  |  |                                | INFOID:000000006095031       |
| 1.CHECK CONNECTOR  |  |                                |                              |
|  | cable from the negative terr   |                                | nnection (unit side and con- |
| s the inspection result norm   | nal?   |                                |                              |
| YES >> GO TO 2.<br>NO >> Repair the term   | inal and connector.  |                                |                              |
| <b>`</b>   | ITINUITY (OPEN CIRCUIT   | )                              |                              |
| <ol> <li>Disconnect the connect</li> <li>Check the continuity be</li> </ol>  | tor of CAN gateway.<br>Stween the CAN gateway ha   | arness connector terminals.    |                              |
| CAN gateway harness connector Continuity   |  |                                |                              |
| Connector No.  |  | nal No.                        | Existed                      |
| M125   | 4  | 6                              | Existed                      |
| tion circuit 2).   |  | f shield line is open) the roo | ot cause (CAN communica-     |
| NO >> Check the harn<br>tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect   | OPEN CIRCUIT<br>of CAN gateway.<br>tor of ADAS control unit.   | f shield line is open) the roo |                              |
| <ul> <li>NO &gt;&gt; Check the harn tion circuit 2).</li> <li>3. CHECK HARNESS FOR</li> <li>1. Connect the connector</li> <li>2. Disconnect the connect</li> <li>3. Check the resistance be</li> </ul> | COPEN CIRCUIT<br>of CAN gateway.<br>tor of ADAS control unit.<br>etween the ADAS control u   | nit harness connector termi    |                              |
| <ul> <li>NO &gt;&gt; Check the harn tion circuit 2).</li> <li>3. CHECK HARNESS FOR</li> <li>1. Connect the connector</li> <li>2. Disconnect the connect</li> <li>3. Check the resistance be</li> </ul> | COPEN CIRCUIT<br>of CAN gateway.<br>tor of ADAS control unit.<br>etween the ADAS control unit<br>ADAS control unit harness connect                 | nit harness connector termi    |                              |
| NO >> Check the harn<br>tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be   | COPEN CIRCUIT<br>of CAN gateway.<br>tor of ADAS control unit.<br>etween the ADAS control unit<br>NDAS control unit harness connect<br>Termin<br>14 | nit harness connector termi    | nals.                        |

# **PSB BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000006095032

[CAN SYSTEM (TYPE 3)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Pre-crash seat belt control unit (driver side)
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |            |         |  |
|---------------|-------------------------------|------------|---------|--|
| Connector No. | Termi                         | Continuity |         |  |
| M125          | 4 6                           |            | Existed |  |
| 1123          | 10                            | 12         | Existed |  |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of pre-crash seat belt control unit (driver side).
- Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

| Pre-crash sea | Resistance ( $\Omega$ ) |   |                 |
|---------------|-------------------------|---|-----------------|
| Connector No. | Termi                   |   |                 |
| B9            | 14                      | 4 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the pre-crash seat belt control unit (driver side) branch line.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit (driver side). Refer to <u>SBC-47, "Diagnosis Procedure"</u>.

#### Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit (driver side). Refer to <u>SBC-54, "Removal</u> <u>and Installation"</u>.
- YES (Past error)>>Error was detected in the pre-crash seat belt control unit (driver side) branch line.
- NO >> Repair the power supply and the ground circuit.

## **RDR-L BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 3)]

| Diagnosis Procedure  |  |                                | INFOID:000000006095033     |
|--|--|--------------------------------|----------------------------|
| 1.CHECK CONNECTOR  |  |                                |                            |
|  | cable from the negative terminated connectors of the side rada     |                                | and loose connection (unit |
| Is the inspection result norm<br>YES >> GO TO 2.<br>NO >> Repair the term<br>2.CHECK HARNESS FOR | inal and connector.  |                                |                            |
| 1. Disconnect the connect  |  | ess connector terminals        |                            |
|  | Side radar LH harness connector                                    |                                | Resistance ( $\Omega$ )    |
| Connector No.<br>B52   | Terminal No.   |                                | Approx. 54 – 66            |
| Check the power supply an<br>Diagnosis Procedure".   | Y AND GROUND CIRCUIT   | e radar LH. Refer to <u>D/</u> | AS-575, "SIDE RADAR LH :   |
| Is the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w           | lace the side radar LH. Refer t<br>as detected in the side radar L | H branch line.                 | and Installation".         |
| NO >> Repair the pow   |  | IT.                            |                            |
|  | er supply and the ground circu                                     |                                |                            |
|  | er supply and the ground circu                                     |                                |                            |
|  | er supply and the ground circu                                     |                                | 1                          |

< DTC/CIRCUIT DIAGNOSIS >

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# RDR-R BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006095035

[CAN SYSTEM (TYPE 3)]

#### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar RH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check the right/left switching signal circuit of the side radar RH. Refer to <u>DAS-578</u>, "Diagnosis Procedure". Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the root cause.

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

#### 1. Disconnect the connector of side radar RH.

2. Check the resistance between the side radar RH harness connector terminals.

| Side radar RH harness connector |        |  | Resistance (Ω)  |
|---------------------------------|--------|--|-----------------|
| Connector No.                   | Termir |  |                 |
| B252                            | 4 3    |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the side radar RH branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-576. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-592, "Removal and Installation".

- YES (Past error)>>Error was detected in the side radar RH branch line.
- NO >> Repair the power supply and the ground circuit.

# **APA BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 3)]

|  | lure  |  |  | INFOID:000000006095037  |
|--|---|--|--|---|
| .CHECK CONNECT   | ŌR  |  |  |   |
| <ul> <li>Turn the ignition s</li> <li>Disconnect the ba</li> <li>Check the followir<br/>nector side).</li> <li>Accelerator pedal<br/>Harness connector<br/>Harness connector<br/>Harness connector</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> </ul> | witch OFF.<br>ttery cable from the ne<br>og terminals and conne<br>actuator<br>or M151<br>or M150<br>or M23 and PCB harne   | ectors for damage, be<br>ss side connector<br>or.<br>-   | nd and loose con   | nection (unit side and con-   |
|  | nce between the accel   |  | harness connecto   | r terminals.  |
| Connector No   | Accelerator pedal actuator  |  |  | Resistance ( $\Omega$ )   |
| Connector No.<br>M152  | 5   | Terminal No.   | 4  | Approx. 54 – 66   |
| -  | alue within the specific  |  | 4  | 700 - 100 - |
| theck the power supp<br><u>RATOR PEDAL ACT</u><br>the inspection result<br>YES (Present error)><br><u>TANCE C</u><br>YES (Past error)>>E<br>NO >> Repair the<br>.CHECK HARNESS<br>. Disconnect the ha  | <u>UATOR : Diagnosis P</u><br>t normal?<br>>Replace the accele<br><u>ONTROL ASSIST SYS</u><br>rror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M23. | uit of the accelerator<br>rocedure".<br>rator pedal assembly<br>STEM : Removal and<br>e accelerator pedal a<br>e ground circuit.<br>I CIRCUIT) | y. Refer to <u>ACC-</u><br>Installation".<br>ctuator branch line | efer to <u>DAS-203, "ACCEL-</u><br>4, "MODELS WITH DIS-<br>e.   |
|  | ator harness connector  | Harness  | connector  | Oraștinuitu   |
| Accelerator pedal actu   |   | Connector No.  | Terminal No.   | Continuity  |
| Accelerator pedal actu<br>Connector No.  | Terminal No.  |  |  |   |
| •  | Terminal No.<br>5   | M23  | 138  | Existed   |

# LANE BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000006095036

[CAN SYSTEM (TYPE 3)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Lane camera unit
- Harness connector R7
- Harness connector M110
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of lane camera unit.
- 2. Check the resistance between the lane camera unit harness connector terminals.

| L             | Resistance (Ω) |  |                 |
|---------------|----------------|--|-----------------|
| Connector No. | Termi          |  |                 |
| R8            | 4 8            |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>DAS-403</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-419, "Removal and Installation".

YES (Past error)>>Error was detected in the lane camera unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the lane camera unit harness connector and the harness connector.

| Lane camera unit | Lane camera unit harness connector |               | connector    | Continuity |
|------------------|------------------------------------|---------------|--------------|------------|
| Connector No.    | Terminal No.                       | Connector No. | Terminal No. | Continuity |
| R8               | 4                                  | M24           | 179          | Existed    |
| KO               | 8                                  | 11124         | 178          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the lane camera unit harness connector R8 and the harness connector M24.

#### LASER BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006095038 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). ICC sensor Harness connector E106 D Harness connector M6 Harness connector M28 and PCB harness side connector Is the inspection result normal? E YES >> GO TO 2. >> Repair the terminal and connector. NO 2.check harness for open circuit Disconnect the connector of ICC sensor. 1. 2. Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector Resistance $(\Omega)$ Connector No. Terminal No. E67 3 6 Approx. 108 - 132 Н Is the measurement value within the specification? YES >> GO TO 3. NO >> GO TO 4. 3 .CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-162, "ICC SENSOR : Diagno-. [ sis Procedure". Is the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation". Κ YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit. **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT) L 1. Disconnect the harness connector M28. Check the continuity between the ICC sensor harness connector and the harness connector. 2. LAN ICC sensor harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. Ν 3 343 Existed E67 M28 6 345 Fxisted Is the inspection result normal? YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

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# **CAN COMMUNICATION CIRCUIT 1**

#### Diagnosis Procedure

**1.**CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
  - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Continuity |            |             |
|---------------|------------|------------|-------------|
| Connector No. | Termi      | Continuity |             |
| M182          | 6 14       |            | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

# **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link     | Data link connector |        | Continuity  |
|---------------|---------------------|--------|-------------|
| Connector No. | Terminal No.        | Ground | Continuity  |
| M182          | 6                   |        | Not existed |
| INTO2         | 14                  |        | Not existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

- VQ37VHR

| ECM   |         | Resistance (Ω)    |  |
|-------|---------|-------------------|--|
| Termi | nal No. |                   |  |
| 114   | 113     | Approx. 108 – 132 |  |

VK56VD

| ECM   |         | Resistance (Ω)    |  |
|-------|---------|-------------------|--|
| Termi | nal No. |                   |  |
| 146   | 151     | Approx. 108 – 132 |  |

3. Check the resistance between the IPDM E/R terminals.

INFOID:000000006095040

# **CAN COMMUNICATION CIRCUIT 1**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

| IPDM E/R  |                         | Resistance (Ω)                              |
|---|-------------------------|---|
| Terminal No.  |                         |   |
| 40  | 39                      | Approx. 108 – 132                           |
| the measurement value within the spec   | cification?             |   |
| ES >> GO TO 5.  |                         |   |
| O >> Replace the ECM and/or the   | IPDM E/R.               |   |
| CHECK SYMPTOM   |                         |   |
|   | symptoms described i    | n the "Symptom (Results from interview with |
| stomer)" are reproduced.  |                         |   |
| spection result   |                         |   |
| eproduced>>GO TO 6.   | again Follow the trout  | ble diagnosis procedure when past error is  |
| detected.   | again. Follow the trou  | ble diagnosis procedure when past error is  |
| CHECK UNIT REPRODUCTION   |                         |   |
|   | following procedure for | anah unit                                   |
| rform the reproduction test as per the for<br>Turn the ignition switch OFF.   | ollowing procedure for  | each unit.                                  |
| Disconnect the battery cable from the   |                         |   |
| Disconnect one of the unit connectors   | s of CAN communication  | on circuit 1.                               |
| NOTE:<br>ECM and IPDM E/R have a termination  | on circuit. Check other | units first                                 |
|   |                         | if the symptoms described in the "Symptom   |
| (Results from interview with customer   |                         |   |
| NOTE:   | a agur da nat confuca   | them with other exampteme                   |
| Although unit-related error symptoms  | s occur, do not confuse |   |
| pection result  |                         | , ,   |
| $\alpha \alpha \beta \alpha \beta \alpha \beta \beta$ | `hook other unite on no |   |
| eproduced>>Connect the connector. C<br>on-reproduced>>Replace the unit who  |                         | r the above procedure.                      |

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# **CAN COMMUNICATION CIRCUIT 2**

## Diagnosis Procedure

**1.**CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 2.
  - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Data link connector |  | Continuity  |
|---------------|---------------------|--|-------------|
| Connector No. | Terminal No.        |  | Continuity  |
| M182          | 13 12               |  | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

# **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link connector |              |        | Continuity  |
|---------------------|--------------|--------|-------------|
| Connector No.       | Terminal No. | Ground | Continuity  |
| M182                | 13           | Ground | Not existed |
| IVI I OZ            | 12           |        | Not existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

| CAN gateway |         | Resistance (Ω)    |  |
|-------------|---------|-------------------|--|
| Termi       | nal No. |                   |  |
| 4           | 10      | Approx. 108 – 132 |  |
| 6           | 12      | Approx. 108 – 132 |  |

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

Inspection result

Reproduced>>GO TO 6.

INFOID:000000006095041

|          | CAN COMMUNICATION CIRCUIT 2   |
|----------|---|
| < C      | DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 3)]   |
| N        | on-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.   |
| 6.       | CHECK UNIT REPRODUCTION   |
| Pe       | form the reproduction test as per the following procedure for each unit.  |
| 1.       | Turn the ignition switch OFF.   |
| 2.<br>3. | Disconnect the battery cable from the negative terminal.<br>Disconnect one of the unit connectors of CAN communication circuit 2.   |
|          | NOTE:   |
| 4.       | CAN gateway has two termination circuits. Check other units first.<br>Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. |
|          | <b>NOTE:</b><br>Although unit-related error symptoms occur, do not confuse them with other symptoms.  |
| Ins      | pection result  |
|          | eproduced>>Connect the connector. Check other units as per the above procedure.<br>on-reproduced>>Replace the unit whose connector was disconnected.  |
|          |   |
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# ITS COMMUNICATION CIRCUIT

#### Diagnosis Procedure

INFOID:000000006095042

[CAN SYSTEM (TYPE 3)]

#### **1.**CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT-III to see that the CAN communication circuit 1 and CAN communication circuit 2 have no malfunction.

#### NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

Are the CAN communication 1 and CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

## 2.connector inspection

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ADAS control unit for damage, bend and loose connection (unit side and connector side).

#### Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

| ADAS control uni | t harness connector | ICC sensor ha | rness connector | Continuity |
|------------------|---------------------|---------------|-----------------|------------|
| Connector No.    | Terminal No.        | Connector No. | Terminal No.    | Continuity |
| B50              | 7                   | E67           | 3               | Existed    |
| 630              | 8                   | E07           | 6               | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

#### **4.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Side radar RH
- Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

| A             | DAS control unit harness connec | tor | Continuity  |
|---------------|---------------------------------|-----|-------------|
| Connector No. | Terminal No.                    |     | Continuity  |
| B50           | 7 8                             |     | Not existed |

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

 $\mathbf{5.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

#### LAN-240

# **ITS COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## [CAN SYSTEM (TYPE 3)]

| ADAS control unit l  | narness connector  |                                   | Orantiauitu                  |
|--|--|-----------------------------------|------------------------------|
| Connector No.  | Terminal No.   | Ground                            | Continuity                   |
| B50  | 7  | Ground                            | Not existed                  |
| 500  | 8  |                                   | Not existed                  |
| Is the inspection result normal<br>YES >> GO TO 6.<br>NO >> Check the harne<br>6.CHECK TERMINATION C | ess and repair or replace (i                             | if shield line or PCB harnes      | s is short) the root cause.  |
|  | rol unit and the ICC senso<br>tween the ADAS control u   |                                   |                              |
| AD   | AS control unit  |                                   |                              |
| T  | erminal No.  |                                   | Resistance (Ω)               |
| 7  | 8  | A                                 | pprox. 108 – 132             |
| 3. Check the resistance be   | tween the ICC sensor terr                                | ninals.                           |                              |
|  | ICC sensor   |                                   | Resistance (Ω)               |
|  | Ferminal No.   |                                   |                              |
| 3  | 6  | A                                 | pprox. 108 – 132             |
| 7. СНЕСК ЗҮМРТОМ   | AS control unit and/or the<br>Check if the symptoms d    |                                   | (Results from interview with |
| Inspection result  |  |                                   |                              |
| detected.  |  | <i>i</i> the trouble diagnosis pr | ocedure when past error is   |
| 8. CHECK UNIT REPRODU  | CTION  |                                   |                              |
| Perform the reproduction tes<br>1. Turn the ignition switch (<br>2. Disconnect the battery c         |  |                                   |                              |
| <ol> <li>Disconnect one of the ur<br/>NOTE:</li> </ol>   | nit connectors of ITS comr                               | munication system.                |                              |
| <ol> <li>Connect the battery cat<br/>(Results from interview v<br/>NOTE:</li> </ol>                  | ole to the negative termin<br>with customer)" are reprod | uced.                             | described in the "Symptom    |
| Although unit-related err<br>Inspection result   | or symptoms occur, do no                                 | t confuse them with other s       | symptoms.                    |
| Reproduced>>Connect the<br>Non-reproduced>>Replace   |  |                                   | edure.                       |

#### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### **Diagnosis Procedure**

INFOID:000000006094946

# **1.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

| -             | warning control unit<br>connector | A/C auto amp. h | arness connector | Continuity |
|---------------|-----------------------------------|-----------------|------------------|------------|
| Connector No. | Terminal No.                      | Connector No.   | Terminal No.     |            |
| M43           | 2                                 | M66             | 12               | Existed    |
| 10143         | 1                                 | ΟΟΙΥΙ           | 11               | Existed    |

#### Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
- YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIAG   | SNOSIS >   |                   | [CAN                  | I SYSTEM (TYPE 4)]      |
|--|--|-------------------|-----------------------|-------------------------|
| MAIN LINE BET  | WEEN HVAC  | AND A-BAG CI      | RCUIT                 |                         |
| Diagnosis Proced   | ure  |                   |                       | INFOID:000000006094947  |
| <b>1.</b> CHECK HARNESS  | CONTINUITY (OPEI   | N CIRCUIT)        |                       |                         |
| <ol> <li>Disconnect the foll</li> <li>ECM</li> <li>A/C auto amp.</li> <li>AV control unit</li> </ol> | tery cable from the n<br>owing harness conne<br>ty between the A/C a | ectors.           | nnector and the AV co | ntrol unit harness con- |
| A/C auto amp. ha   | arness connector   | AV control unit h | arness connector      | Continuity              |
| Connector No.  | Terminal No.   | Connector No.     | Terminal No.          | Continuity              |
| Connector No.  |  |                   |                       |                         |
| M66  | 12   | M210              | 90                    | Existed                 |

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

| A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity   | - |
|-----------------|------------------|-----------------------------------|--------------|--------------|---|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | - Continuity |   |
| M66             | 12               | M84                               | 81           | Existed      | - |
| IVIOO           | 11               | 10104                             | 80           | Existed      | - |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094948

[CAN SYSTEM (TYPE 4)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector       Connector No.   Terminal No. |    | Continuity |
|-----------------|------------------|--|----|------------|
| Connector No.   | Terminal No.     |  |    | Continuity |
| M66             | 12               | M210   | 90 | Existed    |
| 1000            | 11               | WIZ TO   | 74 | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |    | Continuity |
|-----------------|------------------|-----------------------------------|----|------------|
| Connector No.   | Terminal No.     | Connector No. Terminal No.        |    | Continuity |
| M66             | 12               | M84                               | 81 | Existed    |
| IVIOO           | 11               | 10104                             | 80 | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

| I SYSTEM (TYPE 4)                | [CAN   |  | NOSIS >  | TC/CIRCUIT DIAG  |
|----------------------------------|--|--|--|--|
|                                  | Т  | D M&A CIRCUI   | WEEN AV ANI  | AIN LINE BET   |
| INFOID:0000000060945             |  |  | ıre  | agnosis Procedu  |
|                                  |  | N CIRCUIT)   | CONTINUITY (OPEN   | CHECK HARNESS  |
|                                  |  |  | ery cable from the ne<br>owing harness conne   |  |
| pination meter harnes            | nnector and the combi  | ontrol unit harness con  | ty between the AV co   |  |
|                                  |  | ontrol unit harness con  | ty between the AV co   | Check the continuit connector.   |
| Dination meter harnes            |  |  | ty between the AV co   | Check the continuit<br>connector.<br>Models with naviga  |
|                                  | harness connector  | Combination meter<br>Connector No.                             | ty between the AV co<br>tion system<br>rness connector   | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.   |
| Continuity                       | harness connector<br>Terminal No.                                  | Combination meter  | ty between the AV co<br>tion system<br>rness connector<br>Terminal No.   | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha  |
| Continuity<br>Existed            | harness connector<br>Terminal No.<br>14                            | Combination meter<br>Connector No.                             | ty between the AV co<br>tion system<br>rness connector<br>Terminal No.<br>90<br>74                                       | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.   |
| Continuity<br>Existed<br>Existed | harness connector<br>Terminal No.<br>14<br>15                      | Combination meter<br>Connector No.                             | ty between the AV co<br>tion system<br>rness connector<br>Terminal No.<br>90<br>74<br>rigation system                    | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.<br>M210   |
| Continuity<br>Existed            | harness connector<br>Terminal No.<br>14<br>15                      | Combination meter<br>Connector No.<br>M53                      | ty between the AV co<br>tion system<br>rness connector<br>Terminal No.<br>90<br>74<br>rigation system                    | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.<br>M210<br>Models without nav                       |
| Continuity<br>Existed<br>Existed | harness connector<br>Terminal No.<br>14<br>15<br>harness connector | Combination meter<br>Connector No.<br>M53<br>Combination meter | ty between the AV co<br>tion system<br>rness connector<br>Terminal No.<br>90<br>74<br>rigation system<br>rness connector | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.<br>M210<br>Models without nav<br>AV control unit ha |

MAIN LINE BETWEEN AV AND M&A CIRCUIT

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094950

[CAN SYSTEM (TYPE 4)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | r harness connector | Harness connector          |   | Continuity |
|------------------|---------------------|----------------------------|---|------------|
| Connector No.    | Terminal No.        | Connector No. Terminal No. |   | Continuity |
| M53              | 14                  | 14 M105                    | 7 | Existed    |
| CCIVI            | 15                  | COT IVI                    | 8 | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the combination meter and the data link connector.
- NO >> Replace the PCB harness.

| < [                            | DTC/CIRCUIT DIA                                      |   | WEEN DLC AN   | D BCM CIRCUIT<br>[CAN | SYSTEM (TYPE 4)]       |   |
|--------------------------------|--|---|---------------|-----------------------|------------------------|---|
| M                              | AIN LINE BET   | FWEEN DLC AI  | ND BCM CIRC   | UIT                   |                        | Δ |
| Di                             | Diagnosis Procedure                                  |   |               |                       | INFOID:000000006094951 | A |
| 1.                             | 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)           |   |               |                       |                        | В |
| 1.<br>2.<br>3.<br>-<br>-<br>4. | Disconnect the fol<br>ECM<br>Harness connecto<br>BCM | Ittery cable from the no<br>lowing harness conne<br>ors M181 and M105 | ectors.       | BCM harness connec    | tor.                   |   |
|                                | Harness connector BCM harness connector              |   |               |                       | Continuity             |   |
|                                | Connector No.  | Terminal No.  | Connector No. | Terminal No.          | Continuity             | E |
|                                | N405   | 7   | 14400         | 39                    | Existed                |   |

Is the inspection result normal?

M105

YES (Present error)>>Check CAN system type decision again.

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YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

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NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN BCM AND RAS CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094955

[CAN SYSTEM (TYPE 4)]

#### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harness connector |              | ss connector PCB harness connector |            |
|-----------------------|--------------|------------------------------------|------------|
| Connector No.         | Terminal No. | Terminal No.                       | Continuity |
| M120                  | 39           | 35                                 | Existed    |
| IVI 120               | 40           | 36                                 | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector          |    | Continuity |
|---------------|--------------|----------------------------|----|------------|
| Connector No. | Terminal No. | Connector No. Terminal No. |    | Continuity |
| M20           | 35           | M7                         | 72 | Existed    |
| WZ0           | 36           | 1017                       | 73 | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 72    | 74         | Existed |
| DI            | 73    | 75         | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the 4WAS main control unit. NO >> Replace the body harness.

| < DTC/CIRCUIT DIA  | GNOSIS >   |  | 5 ANI                 |                           | I<br>N SYSTEM (TYPE 4)      |  |
|--|--|--|-----------------------|---------------------------|-----------------------------|--|
|  | TWEEN RAS A  | ND ABS (                                       | CIRCL                 | JIT                       |                             |  |
| Diagnosis Procec   | lure   |  |                       |                           | INF01D:00000000609495       |  |
|  | TOR  |  |                       |                           |                             |  |
| <ul> <li>Check the following and harness side)</li> <li>Harness connectore</li> <l< td=""><td>attery cable from the n<br/>ng terminals and con<br/>or B1<br/>or M7<br/>or M6<br/>or E106<br/>t normal?</td><td>nectors for da<br/>tor.<br/>N CIRCUIT)</td><td></td><td>bend and loose cor</td><td>nection (connector side</td></l<></ul> | attery cable from the n<br>ng terminals and con<br>or B1<br>or M7<br>or M6<br>or E106<br>t normal? | nectors for da<br>tor.<br>N CIRCUIT)           |                       | bend and loose cor        | nection (connector side     |  |
| <ol> <li>Check the continu</li> </ol>  | ity between the harne  | ess connector                                  |                       | s.                        |                             |  |
| Connector No.  |  | Terminal No. Continuity                        |                       |                           |                             |  |
| B1   | 72   |  |                       | 74                        | Existed<br>Existed          |  |
| CHECK HARNESS  | he body harness.<br>CONTINUITY (OPE)<br>rness connectors M6<br>ity between the harne               | and E106.                                      | 5.                    |                           |                             |  |
| Harness  | connector  |  | Harness               | connector                 |                             |  |
| Connector No.  | Terminal No.   | Connector                                      | No.                   | Terminal No.              |                             |  |
| <br>M7   | 74   | M6   |                       | 22                        | Existed                     |  |
|  | 75   |  |                       | 23                        | Existed                     |  |
| CHECK HARNESS     Disconnect the co     Check the continu     harness connecto   | e main line between the CONTINUITY (OPE)<br>nnector of ABS actua<br>ity between the harne          | N CIRCUIT)<br>tor and electri<br>ess connector | c unit (co<br>and the | ontrol unit).             | electric unit (control unit |  |
| Connector No.  | connector<br>Terminal No.  | Connector                                      | harness of            | connector<br>Terminal No. | Continuity                  |  |
|  | 22   |  |                       | 25                        | Existed                     |  |
| E106   |  | E41  | -                     |                           |                             |  |

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

23

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

15

Existed

[CAN SYSTEM (TYPE 4)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

# MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 4)] MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side C and harness side).
- Harness connector B33
- Harness connector B245

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## **2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

| Side radar LH h | Side radar LH harness connector |               | Harness connector |            | G |
|-----------------|---------------------------------|---------------|-------------------|------------|---|
| Connector No.   | Terminal No.                    | Connector No. | Terminal No.      | Continuity |   |
| B52             | 4                               | B33           | 13                | Existed    | Н |
| 002             | 3                               | 633           | 14                | Existed    |   |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

| - | Harness       | connector    | Side radar RH h | arness connector |            | K |
|---|---------------|--------------|-----------------|------------------|------------|---|
| - | Connector No. | Terminal No. | Connector No.   | Terminal No.     | Continuity |   |
| - | B245          | 13           | B252            | 4                | Existed    | L |
| _ | D243          | 14           | DZJZ            | 3                | Existed    |   |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar LH and the side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

LAN

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INFOID:000000006094959

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094960

[CAN SYSTEM (TYPE 4)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B201
- Harness connector M117
- Harness connector M20 and PCB harness side connector
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar RH
- Harness connectors B201 and M117
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

| Side radar RH h | arness connector | Harness       | connector    | Continuity |
|-----------------|------------------|---------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No. | Terminal No. | Continuity |
| B252            | 4                | B201          | 66           | Existed    |
| BZJZ            | 3                | 6201          | 67           | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B201.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the harness connectors.

| Harness connector |              | Harness connector |              | Continuity |
|-------------------|--------------|-------------------|--------------|------------|
| Connector No.     | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M117              | 66           | M20               | 38           | Existed    |
|                   | 67           |                   | 40           | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M20.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M150 and M151.

2. Check the continuity between the PCB harness connector and the harness connector.

| PCB harness connector | Harness connector |              | Continuity |
|-----------------------|-------------------|--------------|------------|
| Terminal No.          | Connector No.     | Terminal No. | Continuity |
| 38                    | M150              | 11           | Existed    |
| 40                    |                   | 10           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

Revision: 2010 June

[CAN SYSTEM (TYPE 4)] А В С D Е F G Н J Κ L LAN Ν Ο Ρ

### MAIN LINE BETWEEN APA AND LANE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN APA AND LANE CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094961

[CAN SYSTEM (TYPE 4)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              |            |  | Continuity |
|---------------|--------------|-------------------|--------------|------------|--|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |  |            |
| M150          | 11           | M44.0             | 13           | Existed    |  |            |
| 101130        | 10           | M110              | 2            | Existed    |  |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane camera unit.
- NO >> Replace the PCB harness.

### ECM BRANCH LINE CIRCUIT

| DIC/CIRCUIT DIAGNUS  | , i o >  |  |                               |
|--|--|--|-------------------------------|
| ECM BRANCH LINI  | ECIRCUIT   |  |                               |
| Diagnosis Procedure  |  |  | INF01D:000000060949           |
| 1. CHECK CONNECTOR   |  |  |                               |
| nector side).<br>- ECM<br>- Harness connector M30<br><u>Is the inspection result norm</u><br>YES >> GO TO 2.<br>NO >> Repair the termi<br>2.CHECK HARNESS FOR<br>1. Disconnect the connector<br>2. Check the resistance be | able from the negative<br>ninals and connectors f<br>and PCB harness side<br>al?<br>nal and connector.<br>OPEN CIRCUIT<br>or of ECM. | or damage, bend and loose  | connection (unit side and cor |
| - VQ37VHR  | ECM harness connector  | r  |                               |
| Connector No.  | Terminal No.   |  | Resistance (Ω)                |
| M107   | 114  | 113  | Approx. 108 – 132             |
| VK56VD   | ECM harness connector  | r<br>erminal No.   | — Resistance (Ω)              |
| M160   | 146  | 151  | Approx. 108 – 132             |
| VQ37VHR: <u>EC-180, "Diag</u><br>VK56VD: <u>EC-716, "Diagno</u>  | Y AND GROUND CIRC<br>I the ground circuit of th<br>nosis Procedure"<br>psis Procedure"   | CUIT<br>ne ECM. Refer to the followin                                      | ng.                           |
| <ul> <li>VK56VD: <u>EC-</u></li> <li>YES (Past error)&gt;&gt;Error was</li> </ul>  | ace the ECM. Refer to<br>C-535, "Removal and In<br>535, "Removal and Inst<br>as detected in the ECM<br>er supply and the groun       | <u>nstallation"</u><br>t <u>allation"</u><br>I branch line.<br>Id circuit. |                               |
| 1. Disconnect the harness  | connector M30.   | s connector and the harness  | s connector.                  |

< DTC/CIRCUIT DIAGNOSIS >

| ECM harnes    | ss connector | Harness connector |              | Continuity |  |
|---------------|--------------|-------------------|--------------|------------|--|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |  |
| M107          | 114          | M00               | 439          | Existed    |  |
| WITO7         | 113          | M30               | 438          | Existed    |  |

- VK56VD

## ECM BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

| ECM harne     | ss connector | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M160          | 146          | M30               | 439          | Existed    |
| WINO          | 151          | 10130             | 438          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

| TPMS BRANCH   | I LINE CIRCUI   | Г   |                       |  |
|---|---|---|-----------------------|--|
| Diagnosis Proced  | ure   |   |                       | INFOID:00000006094963                                |
| 1.CHECK CONNECT   | OR  |   |                       |  |
| <ol> <li>Check the followin<br/>nector side).</li> <li>Low tire pressure v</li> <li>Harness connecto</li> <li>Is the inspection result<br/>YES &gt;&gt; GO TO 2.<br/>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the context</li> </ol> | tery cable from the ne<br>g terminals and conne<br>warning control unit<br>r M29 and PCB harne<br>normal?<br>terminal and connect<br>FOR OPEN CIRCUIT | ectors for damage<br>ss side connecto<br>or.<br>-<br>ssure warning co | r<br>ntrol unit.      | onnection (unit side and con-                        |
|   |   |   |                       | ess connector terminals.                             |
| Low Connector No.   | ire pressure warning contr  | ol unit harness conne   | ctor                  | Resistance (Ω)                                       |
|   | 2   |   | 1                     | Approx. 54 – 66                                      |
| Is the measurement va<br>YES >> GO TO 3.  | lue within the specific   | ation?  |                       |  |
| NO >> GO TO 4.<br><b>3.</b> CHECK POWER SI<br>Check the power supp<br>"Diagnosis Procedure"<br>Is the inspection result   | ly and the ground cire  |   | e pressure warning o  | control unit. Refer to <u>WT-53.</u>                 |
| YES (Present error)><br>Installation<br>YES (Past error)>>Er<br>NO >> Repair the  | Replace the low tire  | e low tire pressure<br>ground circuit.                                | -                     | er to <u>WT-70, "Removal and</u><br>nit branch line. |
| <ol> <li>Check the continu<br/>ness connector.</li> </ol>   |   | re pressure warr  | ing control unit harr | ness connector and the har-                          |
| harness   | varning control unit<br>connector   |   | ness connector        | Continuity   |
| Connector No.   | Terminal No.<br>2   | Connector No.   | Terminal No<br>396    |  |
| M43   | 1   | M29   | 395                   | Existed  |
| s the inspection result   |   |   |                       |  |

#### Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

#### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

#### Diagnosis Procedure

INFOID:000000006094964

[CAN SYSTEM (TYPE 4)]

| 1. СНЕСК DTC |  |
|--------------|--|
|--------------|--|

Check DTC of the CAN gateway with CONSULT-III.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

# 2. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- CAN gateway
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

### 3.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of CAN gateway.
- 2. Check the resistance between the CAN gateway harness connector terminals.

|               | Resistance ( $\Omega$ ) |   |                 |
|---------------|-------------------------|---|-----------------|
| Connector No. | Terminal No.            |   |                 |
| M125          | 1                       | 7 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-143</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1). NO >> Repair the power supply and the ground circuit.

**5.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

| CAN gateway h | arness connector | Harness connector |              | Continuity |  |
|---------------|------------------|-------------------|--------------|------------|--|
| Connector No. | Terminal No.     | Connector No.     | Terminal No. | Continuity |  |
| MADE          | 1                | M28               | 326          | Existed    |  |
| M125          | 7                |                   | 328          | Existed    |  |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 4)]

< DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

| Diagnosis Proced  | ure   |  |                             | INFOID:000000006094965   |
|---|---|--|-----------------------------|--------------------------|
| 1.снеск ртс   |   |  |                             |                          |
|   |   |  |                             |                          |
| Check DTC of the CAN<br>Is U1010 or B2600 ind   | • •   | OLI-III.   |                             |                          |
|   | diagnosis of the indic  | ated DTC   |                             |                          |
| NO >> GO TO 2.  | -   |  |                             |                          |
| 2.CHECK CONNECT   | OR  |  |                             |                          |
| <ul> <li>3. Check the followin<br/>nector side).</li> <li>- CAN gateway</li> <li>- Harness connector</li> </ul>     | ttery cable from the ne<br>g terminals and conn<br>r M23 and PCB harne<br>r M20 and PCB harne<br>r M7       | ectors for damage, be<br>ess side connector  | end and loose connec        | tion (unit side and con- |
| Is the inspection result  |   |  |                             |                          |
| YES >> GO TO 3.   |   |  |                             |                          |
| <b>^</b>  | terminal and connec   |  |                             |                          |
| <b>3.</b> CHECK HARNESS   | CONTINUITY (OPEN  | N CIRCUIT)   |                             |                          |
|   | nnector of CAN gatew<br>ity between the CAN   |  | nector terminals.           |                          |
|   | CAN gateway harn  | ess connector  |                             | Continuity               |
| Connector No.   |   | Terminal No.   |                             | Continuity               |
| M125  | 4   |  | 6                           | Existed                  |
|   | 10  |  | 12                          | Existed                  |
| Is the inspection resultYES>> GO TO 4.NO>> GO TO 5.4.CHECK POWER S  | UPPLY AND GROUN   |  |                             |                          |
| Check the power supp<br>dure".  | bly and the ground c  | ircuit of the CAN gat  | eway. Refer to <u>LAN-1</u> | 43. "Diagnosis Proce-    |
| <u>ls the inspection result</u>   | normal?   |  |                             | L                        |
| •   | Replace the CAN gate  | ateway Refer to LAN.   | .1/// "Removal and In       |                          |
| YES (Past error)>>E   | power supply and the  | ne CAN gateway bran<br>e ground circuit.   | ich line (CAN commur        |                          |
| YES (Past error)>>E<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the ha                                  | power supply and the<br>CONTINUITY (OPEN<br>rness connector M23.  | ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)                                   |                             | nication circuit 2).     |
| YES (Past error)>>Er<br>NO >> Repair the<br><b>5.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu | power supply and the<br>CONTINUITY (OPEN<br>rness connector M23.  | ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con            | ich line (CAN commur        | nication circuit 2).     |
| YES (Past error)>>Er<br>NO >> Repair the<br><b>5.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu | Power supply and the<br>CONTINUITY (OPE)<br>rness connector M23<br>ity between the CAN                      | ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con            | nch line (CAN commur        | nication circuit 2).     |
| YES (Past error)>>En<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu         | power supply and the<br>CONTINUITY (OPEN<br>rness connector M23.<br>ity between the CAN<br>arness connector | ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con<br>Harness | nector and the harnes       | nication circuit 2).     |

Is the inspection result normal?

YES >> GO TO 6.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

[CAN SYSTEM (TYPE 4)]

#### < DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

### 6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

| PCB harness connector | PCB harness connector | Continuity |  |
|-----------------------|-----------------------|------------|--|
| Terminal No.          | Terminal No.          | Continuity |  |
| 133                   | 24                    | Existed    |  |
| 135                   | 27                    | Existed    |  |

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the PCB harness.

### **7.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors M7 and B1.

2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M20           | 24           | M7 -              | 34           | Existed    |
| WIZU          | 27           |                   | 35           | Existed    |

#### Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

#### **8.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 34    | 32         | Existed |
| וט            | 35    | 33         | Existed |

#### Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

## **HVAC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 4)]

| IVAC BRANCH  |   | -   |  |   |
|--|---|---|--|---|
| Diagnosis Proced   | ure   |   |  | INFOID:000000006094966                  |
|  | OR  |   |  |   |
| <ol> <li>Check the following<br/>nector side).</li> <li>A/C auto amp.</li> </ol>   | tery cable from the r   | nectors for damage, be  | nd and loose conned  | ction (unit side and con-               |
| s the inspection result  | normal?   |   |  |   |
| YES >> GO TO 2.<br>NO >> Repair the<br>CHECK HARNESS   | terminal and connect  |   |  |   |
|  | nector of A/C auto a  |   |  |   |
|  |   | auto amp. harness cor   | nnector terminals.   |   |
|  | A/C auto amp. harr  | ness connector  |  |   |
| Connector No.  |   | Terminal No.  | Terminal No. Resistance (Ω)  |   |
| M66  | 12  |   | 11   | Approx. 54 – 66                         |
| the measurement va   | lue within the specifi  | cation?   |  |   |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SU<br>heck the power supp<br>iagnosis Procedure".<br>the inspection result<br>YES (Present error)>>  | JPPLY AND GROUN<br>ly and the ground ci<br><u>normal?</u><br>>Replace the A/C au  | ND CIRCUIT<br>ircuit of the A/C auto a<br>ito amp. Refer to <u>HAC-</u>   | 201. "Removal and I  | 167. "A/C AUTO AMP. :<br>Installation". |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supp<br>iagnosis Procedure".<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Error)>>Error)>>Error)   | JPPLY AND GROUN<br>ly and the ground ci<br><u>normal?</u><br>>Replace the A/C au  | ND CIRCUIT<br>ircuit of the A/C auto a<br>ito amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran  | 201. "Removal and I  |   |
| NO >> GO TO 4.<br>CHECK POWER SU<br>theck the power suppling<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Error)>>Error)   | JPPLY AND GROUN<br>ly and the ground ci<br><u>normal?</u><br>>Replace the A/C au<br>ror was detected in t<br>power supply and th  | ND CIRCUIT<br>ircuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.   | 201. "Removal and I  |   |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>•CHECK POWER SU<br>heck the power supp<br>iagnosis Procedure".<br>•the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>•CHECK HARNESS<br>Disconnect the har                    | JPPLY AND GROUN<br>ly and the ground ci<br><u>normal?</u><br>Replace the A/C au<br>ror was detected in t<br>power supply and th<br>CONTINUITY (OPE<br>mess connector M28  | ND CIRCUIT<br>ircuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)   | 201. "Removal and I<br>ch line.  | Installation".                          |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>•CHECK POWER SU<br>heck the power supp<br>iagnosis Procedure".<br>• the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>•CHECK HARNESS<br>Disconnect the har                   | JPPLY AND GROUN<br>ly and the ground ci<br>normal?<br>Replace the A/C au<br>ror was detected in t<br>power supply and th<br>CONTINUITY (OPE<br>mess connector M28<br>ty between the A/C a                                     | ND CIRCUIT<br>ircuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)   | 201, "Removal and I<br>ch line.<br>nector and the harne                              | Installation".<br>ess connector.        |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supp<br>iagnosis Procedure".<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continui | JPPLY AND GROUN<br>ly and the ground ci<br>normal?<br>Replace the A/C au<br>ror was detected in t<br>power supply and th<br>CONTINUITY (OPE<br>mess connector M28<br>ty between the A/C a<br>arness connector<br>Terminal No. | ND CIRCUIT<br>ircuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)<br>3.<br>auto amp. harness con              | 201, "Removal and I<br>ch line.<br>nector and the harne<br>connector<br>Terminal No. | ess connector.                          |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supp<br>iagnosis Procedure".<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continui | JPPLY AND GROUN<br>ly and the ground ci<br><u>normal?</u><br>Replace the A/C au<br>ror was detected in t<br>power supply and th<br>CONTINUITY (OPE<br>ness connector M28<br>ty between the A/C a                              | ND CIRCUIT<br>ircuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)<br>B.<br>auto amp. harness con<br>Harness o | 201, "Removal and I<br>ch line.<br>nector and the harne                              | Installation".<br>ess connector.        |

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

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# TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094967

[CAN SYSTEM (TYPE 4)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F103
- Harness connector M116
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

|               | A/T assembly harness connector |                |                 |
|---------------|--------------------------------|----------------|-----------------|
| Connector No. | Termi                          | Resistance (Ω) |                 |
| F61           | 3                              | 8              | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

#### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

| A/T assembly h | arness connector | Harness                    | connector | Continuity |  |
|----------------|------------------|----------------------------|-----------|------------|--|
| Connector No.  | Terminal No.     | Connector No. Terminal No. |           | Continuity |  |
| F61            | 3                | M28                        | 346       | Existed    |  |
| 1.01           | 8                | IVIZO                      | 347       | Existed    |  |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

## [CAN SYSTEM (TYPE 4)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094968 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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# AV BRANCH LINE CIRCUIT

INFOID:000000006094969

### **Diagnosis Procedure**

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M25 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

| AV control unit harness connector |       |  | Resistance (Ω)  |
|-----------------------------------|-------|--|-----------------|
| Connector No.                     | Termi |  |                 |
| M210                              | 90 74 |  | Approx. 54 – 66 |

Models without navigation system

|               | AV control unit harness connecto | Resistance ( $\Omega$ ) |                 |
|---------------|----------------------------------|-------------------------|-----------------|
| Connector No. | Terminal No.                     |                         | Resistance (12) |
| M84           | 81                               | 80                      | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

#### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.

NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

| AV control unit h | arness connector | Harness connector Connector No. Terminal No. |     | Continuity |
|-------------------|------------------|--|-----|------------|
| Connector No.     | Terminal No.     |  |     | Continuity |
| M210              | 90               | M25  | 201 | Existed    |
| WIZ 10            | 74               |  | 221 | Existed    |

Models without navigation system

# **AV BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 4)]

| AV control unit ha  | arness connector  | Harness connector     |                         | Continuity          |  |
|---------------------|---|-----------------------|-------------------------|---------------------|--|
| Connector No.       | Terminal No.  | Connector No.         | Terminal No.            | Continuity          |  |
| N04                 | 81  | MOE                   | 201                     | Existed             |  |
| M84                 | 80  | – M25                 | 221                     | Existed             |  |
| e inspection result | normal?   |                       |                         |                     |  |
| (With navigation s  | e PCB harness.<br>system)>>Repair the<br>s connector M25. | harness between the A | AV control unit harness | s connector M210 an |  |

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

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# M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094970

[CAN SYSTEM (TYPE 4)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Combination meter
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

| Co            | ombination meter harness connect | Resistance ( $\Omega$ ) |                 |
|---------------|----------------------------------|-------------------------|-----------------|
| Connector No. | Terminal No.                     |                         | Resistance (22) |
| M53           | 14 15                            |                         | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter Refer to <u>MWI-70. "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

| Combination meter | r harness connector | Harness connector       Connector No.     Terminal No. |     | Continuity |
|-------------------|---------------------|--|-----|------------|
| Connector No.     | Terminal No.        |  |     | Continuity |
| M53               | 14                  | M24  | 176 | Existed    |
| IND5              | 15                  | 10124  | 177 | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

## **DLC BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 4)]

| agnosis Proced  |   |  |                           | INFOID:00000000609497       |                 |  |
|---|---|--|---------------------------|-----------------------------|-----------------|--|
| .CHECK CONNECT  | OR  |  |                           |                             |                 |  |
| Check the followin<br>nector side).<br>Data link connecto<br>Harness connecto<br>Harness connecto<br>Harness connecto<br>the inspection result<br>(ES >> GO TO 2. | tery cable from the n<br>g terminals and conn<br>M181<br>M105<br>M23 and PCB harne<br>normal?<br>terminal and connec<br>FOR OPEN CIRCUI | ectors for damage, be<br>ess side connector<br>tor.<br>T | end and loose co          | nnection (unit side and con |                 |  |
|   |   |  |                           |                             |                 |  |
| Connector No.   |   | Data link connector Resistance (Ω)                       |                           |                             |                 |  |
| M182  | 6   |  | 14                        | Approx. 54 – 66             |                 |  |
| the measurement va  | •   |  |                           |                             |                 |  |
| /ES (Present error)>:<br>/ES (Past error)>>Er<br>NO >> GO TO 3.   | CONTINUITY (OPEI  | ne data link connector                                   |                           |                             |                 |  |
|   |   | Harness connector  |                           |                             | ctor Harness co |  |
| Disconnect the ha   | connector   | Harness  | connector                 | Continuity                  |                 |  |
| Disconnect the har<br>Check the continui  | connector<br>Terminal No.   | Harness<br>Connector No.                                 | connector<br>Terminal No. | Continuity                  |                 |  |
| Disconnect the har<br>Check the continui<br>Data link   |   |  |                           | Continuity Existed Existed  |                 |  |

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# BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094972

[CAN SYSTEM (TYPE 4)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- BCM
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of BCM.
- 2. Check the resistance between the BCM harness connector terminals.

|               | BCM harness connector |  |                         |
|---------------|-----------------------|--|-------------------------|
| Connector No. | Terminal No.          |  | Resistance ( $\Omega$ ) |
| M120          | 39 40                 |  | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

YES (Past error)>>Error was detected in the BCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

| BCM harne     | ss connector | Harness       | Harness connector |            |
|---------------|--------------|---------------|-------------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No.      | Continuity |
| M120          | 39           | M22           | 101               | Existed    |
| 101120        | 40           | IVIZZ         | 102               | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

|  | LINE CIRCUI  | •  |                       |                          |
|--|--|--|-----------------------|--------------------------|
| Diagnosis Procedu  | ure  |  |                       | INFOID:000000006094973   |
| 1.CHECK CONNECT  | OR   |  |                       |                          |
| <ol> <li>Check the following<br/>nector side).</li> <li>Steering angle sen</li> </ol>  | tery cable from the ne<br>g terminals and conne  | ectors for damage, be  | nd and loose connec   | tion (unit side and con- |
| Is the inspection result   | normal?  |  |                       |                          |
| - ·  | terminal and connect   |  |                       |                          |
| 2.CHECK HARNESS  | FOR OPEN CIRCUIT   | T  |                       |                          |
|  | nnector of steering an<br>ce between the steeri  | gle sensor.<br>ing angle sensor harn   | ess connector termin  | als.                     |
|  | Steering angle sensor h  |  |                       | Resistance ( $\Omega$ )  |
| Connector No.  |  | Terminal No.   |                       |                          |
| M37<br>Is the measurement va   | 1  |  | 2                     | Approx. 54 – 66          |
| NO >> GO TO 4.<br>3.CHECK POWER SL<br>Check the power supp<br>gram <sup>"</sup> .  | ly and the ground cir  |  | ngle sensor. Refer to | BRC-54, "Wiring Dia-     |
| 4.CHECK HARNESS 1. Disconnect the har  | Replace the steering<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M22.                            | e steering angle sens<br>e ground circuit.<br>I CIRCUIT)                                     | or branch line.       |                          |
| YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br><b>4.</b> CHECK HARNESS<br>1. Disconnect the har                           | Replace the steering<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M22.<br>ty between the steering | e steering angle sens<br>e ground circuit.<br>I CIRCUIT)                                     | or branch line.       | e harness connector.     |
| YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br><b>4.</b> CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit | Replace the steering<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M22.<br>ty between the steering | e steering angle sens<br>e ground circuit.<br>I CIRCUIT)<br>ng angle sensor harne            | or branch line.       |                          |
| YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br><b>4.</b> CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit | Replace the steering<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M22.<br>ty between the steerin  | e steering angle sens<br>e ground circuit.<br>I CIRCUIT)<br>ng angle sensor harne<br>Harness | or branch line.       | e harness connector.     |

## **RAS BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

# RAS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094975

[CAN SYSTEM (TYPE 4)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the 4WAS main control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of 4WAS main control unit.
- 2. Check the resistance between the 4WAS main control unit harness connector terminals.

| 4WA           | 4WAS main control unit harness connector |         |                 |
|---------------|--|---------|-----------------|
| Connector No. | Termi                                    | nal No. | Resistance (Ω)  |
| B54           | 1  | 8       | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Replace the body harness.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the 4WAS main control unit. Refer to <u>STC-171, "Diagnosis</u> Procedure (4WAS Main Control Unit)".

Is the inspection result normal?

YES (Present error)>>Replace the 4WAS main control unit. Refer to STC-185, "Removal and Installation".

YES (Past error)>>Error was detected in the 4WAS main control unit branch line.

NO >> Repair the power supply and the ground circuit.

## **ABS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 4)]

| Diagnosis Procedure   |   |   | INFOID:00000006094976  |
|---|---|---|--|
| .CHECK CONNECTOR  |   |   |  |
| . Check the terminals and   | able from the negative termi<br>connectors of the ABS actu<br>it side and connector side).<br><u>I?</u><br>nal and connector.   | uator and electric unit (co   | ntrol unit) for damage, bend   |
|   | r of ABS actuator and elect<br>tween the ABS actuator an  |   | t) harness connector termi-  |
| ABS actuator and electric unit (control unit) harness connector   |   |   |  |
| ABS actuator at   | id electric unit (control unit) name  | ss connector  | $Resistance\left(\Omega\right)$  |
| ABS actuator an<br>Connector No.  | Termina   |   | Resistance (Ω)   |
| Connector No.<br>E41<br>the measurement value wit   | Termina<br>25   |   | Resistance (Ω)<br>Approx. 54 – 66  |
| Connector No.<br>E41<br>the measurement value with<br>YES >> GO TO 3.<br>NO >> Repair the ABS a<br>CHECK POWER SUPPLY<br>heck the power supply and<br>RC-119, "Diagnosis Proced<br>the inspection result normal | Termina<br>25<br>thin the specification?<br>actuator and electric unit (co<br>7 AND GROUND CIRCUIT<br>the ground circuit of the A<br>ure".<br>ace the ABS actuator and el | 1 No.<br>15<br>ontrol unit) branch line.<br>ABS actuator and electric<br>lectric unit (control unit). R | Approx. 54 – 66<br>unit (control unit). Refer to<br>efer to <u>BRC-141, "Removal</u> |

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< DTC/CIRCUIT DIAGNOSIS >

# AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094977

[CAN SYSTEM (TYPE 4)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AFS control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### **2.**CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

2. Check the resistance between the AFS control unit harness connector terminals.

| /             | AFS control unit harness connector |   |                 |
|---------------|------------------------------------|---|-----------------|
| Connector No. | Terminal No.                       |   | Resistance (Ω)  |
| E104          | 30                                 | 7 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

### **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-84, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-126, "Removal and Installation".

YES (Past error)>>Error was detected in the AFS control unit branch line.

NO >> Repair the power supply and the ground circuit.

### **IPDM-E BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

| IPDM-E BRANCH LINE CIRCUIT<br>Diagnosis Procedure   |                        |
|---|------------------------|
| Diagnosis Procedure   |                        |
|   | INFOID:000000006094978 |
| 1. CHECK CONNECTOR  |                        |
| <ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the terminals and connectors of the IPDM E/R for damage, bend and loose conne<br/>and connector side).</li> </ol> | ection (unit side      |
| Is the inspection result normal?  |                        |
| YES >> GO TO 2.   |                        |
| NO >> Repair the terminal and connector.<br>2.CHECK HARNESS FOR OPEN CIRCUIT  |                        |
|   |                        |
| <ol> <li>Disconnect the connector of IPDM E/R.</li> <li>Check the resistance between the IPDM E/R harness connector terminals.</li> </ol>   |                        |
| IPDM E/R harness connector Resist   | tance (Ω)              |
| Connector No. Terminal No.  |                        |
| E6 40 39 Approx.  | . 108 – 132            |
| NO >> Repair the IPDM E/R branch line.<br><b>3.</b> CHECK POWER SUPPLY AND GROUND CIRCUIT<br>Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis</u><br><u>Is the inspection result normal?</u> | Procedure".            |
| YES (Present error)>>Replace the IPDM E/R. Refer to <u>PCS-33, "Removal and Installation"</u> .<br>YES (Past error)>>Error was detected in the IPDM E/R branch line.<br>NO >> Repair the power supply and the ground circuit.             |                        |
|   |                        |
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< DTC/CIRCUIT DIAGNOSIS >

# ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094979

[CAN SYSTEM (TYPE 4)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

#### Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |    |            |
|---------------|-------------------------------|----|------------|
| Connector No. | Terminal No.                  |    | Continuity |
| M125          | 4                             | 6  | Existed    |
| IWI125        | 10                            | 12 | Existed    |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

| Driv          | Driver seat control unit harness connector |              |                 |
|---------------|--|--------------|-----------------|
| Connector No. | Termi                                      | Terminal No. |                 |
| B514          | 23   | 24           | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the driver seat control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-73</u>, "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

- YES (Past error)>>Error was detected in the driver seat control unit branch line.
- NO >> Repair the power supply and the ground circuit.

| Diagnosis Procedure         1. CHECK CONNECTOR         1. Turn the ignition switch OFF.         2. Scheck the following terminals and connectors for damage, bend and loose connection (unit side and connector side).         2. Orbeck the following terminals and connectors for damage, bend and loose connection (unit side and connector side).         3. Orbeck the following terminals and connector.         2. CAN gateway         Is the inspection result normal?         YES       > GO TO 2.         NO       >> Repair the terminal and connector.         2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         1. Disconnect the connector of CAN gateway harness connector terminals.         Connect the connector of CAN gateway harness connector terminals.         M125       10       12       Existed         Is the inspection result normal?         YES       > GO TO 3.       NO       >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3. CHECK HARNESS FOR OPEN CIRCUIT       1       1       Approx.54-66         Is the messurement value within the specification?       YES       >> GO TO 4.       1       Approx.54-66         Is the messurement value within the specification?       YES /> SO TO 4.       NO       >> Replace the body harness.       Acheck the ower supply and the ground circuit of the ADAS   |   |  |   |   |
|---|---|--|---|---|
| 1. Turn the ignition switch OFF.         2. Disconnect the battery cable from the negative terminal.         3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).         ADAS control unit         CAN gateway         sthe inspection result normal?         YES         YES         2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         1. Disconnect the connector of CAN gateway.         2. Check the continuity between the CAN gateway harness connector terminals.         Connector No.       Terminal No.         M125       10       12         Image: Sold of the angle state and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3. CHECK HARNESS FOR OPEN CIRCUIT         1. Connect the connector of CAN gateway.         2. Otheck the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3. CHECK HARNESS FOR OPEN CIRCUIT         1. Connect the connector of ADAS control unit.         3. Check the resistance between the ADAS control unit harness connector terminals.         MDAS control unit harness connector       Resistance (Ω)         2. Disconnect the connector of ADAS control unit.       Approx: 54 - 66         3. the measurement value within the specification?       YES         YES   | Diagnosis Procedure   |  |   | INFOID:000000006094980  |
| <ul> <li>Disconnect the battery cable from the negative terminal.</li> <li>Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).</li> <li>ADAS control unit</li> <li>CAN gateway</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li>CHECK HARNESS CONTINUITY (OPEN CIRCUIT)</li> <li>Disconnect the connector of CAN gateway.</li> <li>Check the continuity between the CAN gateway harness connector terminals.</li> <li>CAN gateway harness connector</li> <li>Connector No.</li> <li>Cannector No.</li> <li>Cannector No.</li> <li>Terminal No.</li> <li>M125</li> <li>Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).</li> <li>Check the resistance between the ADAS control unit.</li> <li>Connector No.</li> <li>Terminal No.</li> <li>Connect the connector of CAN gateway.</li> <li>Connect the connector of CAN gateway.</li> <li>Connect the connect of ADAS control unit.</li> <li>Connector No.</li> <li>Terminal No.</li> <li>ADAS control unit harness connector</li> <li>Resistance (Ω)</li> <li>Bo0</li> <li>14</li> <li>15</li> <li>Approx: 54 - 66</li> <li>Is the measurement value within the specification?</li> <li>YES (Paste the body harness.</li> <li>ACHECK POWER SUPPLY AND GROUND CIRCUIT</li> <li>Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Procedure.'</li> <li>Is the inspe</li></ul> | 1.CHECK CONNECTOR   |  |   |   |
| YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2C.HECK HARNESS CONTINUITY (OPEN CIRCUIT)         1. Disconnect the connector of CAN gateway.         2. Check the continuity between the CAN gateway harness connector terminals.         Image: Connector No.       Continuity         Connector No.       Terminal No.         M125       4       6         Image: Connector result normal?       Existed         YES       >> GO TO 3.         NO       >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3.CHECK HARNESS FOR OPEN CIRCUIT         1. Connect the connector of CAN gateway.         2. Disconnect the connector of ADAS control unit harness connector terminals.         Image: Connect the connector of ADAS control unit harness connector terminals.         Image: Connect the connector of ADAS control unit harness connector terminals.         Image: Connect the connector of ADAS control unit harness connector terminals.         Image: Connect No.       Terminal No.         Resistance (Ω)       Encident terminal No.         B50       14       15         ADAS control unit harness connector       Resistance (Ω)         Image: Connector No.       Terminal No.         B50       14  | <ol> <li>Disconnect the battery</li> <li>Check the following tern<br/>nector side).</li> <li>ADAS control unit</li> </ol>   | cable from the negative terr   |   | nnection (unit side and con-  |
| 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)         1. Disconnect the connector of CAN gateway.         2. Check the continuity between the CAN gateway harness connector terminals.         Connector No.       Terminal No.         M125       4       6         Existed       10       12         S the inspection result normal?       YES         YES       >> GO TO 3.         NO       >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3.CHECK HARNESS FOR OPEN CIRCUIT         1. Connect the connector of CAN gateway.         2. Disconnect the connector of ADAS control unit.         3. CHECK Harness FOR OPEN CIRCUIT         1. Connect the connector of ADAS control unit harness connector terminals.         Xonnect the connector of ADAS control unit.         B: Check the resistance between the ADAS control unit harness connector terminals.         Xonnector No.       Terminal No.         B: Ste measurement value within the specification?         YES       >> GO TO 4.         NO       >> Replace the body harness.         4.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Proce-<br>ture".         S the inspection result normal?         YES (Present   | YES >> GO TO 2.   |  |   |   |
| 1. Disconnect the connector of CAN gateway.         2. Check the continuity between the CAN gateway harness connector terminals.         CAN gateway harness connector       Continuity         M125       4       6       Existed         M125       10       12       Existed         Is the inspection result normal?       YES       >> GO TO 3.       NO       >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3.CHECK HARNESS FOR OPEN CIRCUIT       1. Connect the connector of CAN gateway.       2. Disconnect the connector of ADAS control unit.         3. Check the resistance between the ADAS control unit.       3. Check the resistance between the ADAS control unit.       Resistance (Ω)         MO       Sol       14       15       Approx. 54 - 66         Is the measurement value within the specification?       YES       >> GO TO 4.       NO       >> Replace the body harness.         4.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Proce-dure".       Ste inspection result normal?         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".       YES (Past error)>>Error was detected in the ADAS control unit branch line.   |   |  | )   |   |
| Connector No.       Terminal No.       Continuity         M125       4       6       Existed         interminal No.       10       12       Existed         s the inspection result normal?       YES       >> GO TO 3.       Existed         NO       >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3.CHECK HARNESS FOR OPEN CIRCUIT       Connect the connector of CAN gateway.         2. Disconnect the connector of ADAS control unit.       3.         3. Check the resistance between the ADAS control unit harness connector terminals.       Resistance (Ω)         Connector No.       Terminal No.         B50       14       15       Approx. 54 – 66         s the measurement value within the specification?       YES >> GO TO 4.       NO       >> Replace the body harness.         4.CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Procedure".         s the inspection result normal?       YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".         YES (Present error)>>Error was detected in the ADAS control unit branch line.       YES (Past error)>>Error was detected in the ADAS control unit branch line.   | I. Disconnect the connect   | tor of CAN gateway.  |   |   |
| M125       4       6       Existed         10       12       Existed         s the inspection result normal?         YES       >> GO TO 3.         NO       >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3. CHECK HARNESS FOR OPEN CIRCUIT         1.       Connect the connector of CAN gateway.         2.       Disconnect the connector of ADAS control unit.         3.       Check the resistance between the ADAS control unit harness connector terminals.         ADAS control unit harness connector       Resistance (Ω)         Connector No.       Terminal No.         B50       14       15       Approx. 54 – 66         Is the measurement value within the specification?       YES       >> GO TO 4.       NO       >> Replace the body harness.         4. CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Procedure".         s the inspection result normal?       YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".   |   |  |   | Continuity  |
| M125       10       12       Existed         Is the inspection result normal?       YES       >> GO TO 3.       NO       >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3.CHECK HARNESS FOR OPEN CIRCUIT       1       Connect the connector of CAN gateway.         2. Disconnect the connector of ADAS control unit.       3.         3. Check the resistance between the ADAS control unit harness connector terminals.       Resistance (Ω)         Connector No.       Terminal No.         B50       14       15         Approx. 54 - 66       Ste measurement value within the specification?         YES       >> GO TO 4.         NO       >> Replace the body harness.         4.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66, "Diagnosis Procedure".         Is the inspection result normal?         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".   | Connector No.   |  |   | Fxisted   |
| s the inspection result normal?         YES       >> GO TO 3.         NO       >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).         3.CHECK HARNESS FOR OPEN CIRCUIT         I. Connect the connector of CAN gateway.         2. Disconnect the connector of ADAS control unit.         3. Check the resistance between the ADAS control unit harness connector terminals.         ADAS control unit harness connector         Resistance (Ω)         Connector No.         Terminal No.         B50         14         15         Approx. 54 - 66         s the measurement value within the specification?         YES         YES         ADAS control circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Proce-ture".         S the inspection result normal?         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".         YES (Past error)>>Error was detected in the ADAS control unit branch line.  | M125  |  |   |   |
| Connector No.       Terminal No.       Resistance (Ω)         B50       14       15       Approx. 54 – 66         s the measurement value within the specification?       YES >> GO TO 4.       NO >> Replace the body harness.         NO >> Replace the body harness.       CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66, "Diagnosis Procelure".       DAS-66, "Diagnosis Procelure".         S the inspection result normal?       YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".         YES (Past error)>>Error was detected in the ADAS control unit branch line.  | · · · · · · · · · · · · · · · · · · ·   | OPEN CIRCUIT   |   |   |
| Connector No.       Terminal No.         B50       14       15       Approx. 54 – 66         s the measurement value within the specification?         YES       >> GO TO 4.         NO       >> Replace the body harness.         4.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".         YES (Past error)>>Error was detected in the ADAS control unit branch line.  | <ul> <li><b>B.</b>CHECK HARNESS FOR</li> <li>Connect the connector</li> <li>Disconnect the connect</li> </ul>   | of CAN gateway.<br>tor of ADAS control unit.   | nit harness connector termir  |   |
| s the measurement value within the specification?         YES       >> GO TO 4.         NO       >> Replace the body harness.         4.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ADAS control unit. Refer to DAS-66. "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67. "Removal and Installation".         YES (Past error)>>Error was detected in the ADAS control unit branch line.   | <ul> <li>CHECK HARNESS FOR</li> <li>Connect the connector</li> <li>Disconnect the connect</li> <li>Check the resistance b</li> </ul>  | of CAN gateway.<br>tor of ADAS control unit.<br>etween the ADAS control u  |   | nals.   |
| YES >> GO TO 4.<br>NO >> Replace the body harness. 4.CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-66. "Diagnosis Procedure"</u> . Is the inspection result normal? YES (Present error)>>Replace the ADAS control unit. Refer to <u>DAS-67. "Removal and Installation"</u> . YES (Past error)>>Error was detected in the ADAS control unit branch line.   | <ul> <li>CHECK HARNESS FOR</li> <li>Connect the connector</li> <li>Disconnect the connect</li> <li>Check the resistance b</li> </ul>  | of CAN gateway.<br>tor of ADAS control unit.<br>etween the ADAS control un<br>ADAS control unit harness connect  | tor   | nals.   |
|   | 3. CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance b<br>Connector No.<br>B50  | of CAN gateway.<br>tor of ADAS control unit.<br>etween the ADAS control un<br>ADAS control unit harness connect<br>Termir<br>14  | tor<br>nal No.  | nals.<br>Resistance (Ω)   |
|   | CHECK HARNESS FOR     Connect the connector     Disconnect the connector     Disconnect the connector     Check the resistance b     Connector No.     B50     sthe measurement value v     YES >> GO TO 4.     NO >> Replace the bo     CHECK POWER SUPPI Check the power supply an     dure".     s the inspection result norm     YES (Present error)>>Rep     YES (Past error)>>Error w | of CAN gateway.<br>tor of ADAS control unit.<br>etween the ADAS control unit<br>ADAS control unit harness connect<br>Termin<br>14<br>within the specification?<br>dy harness.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the A<br>nal?<br>place the ADAS control unit.<br>vas detected in the ADAS co | tor<br>hal No.<br>15<br>ADAS control unit. Refer to J<br>Refer to <u>DAS-67, "Remova</u><br>pontrol unit branch line. | nals.<br>Resistance (Ω)<br>Approx. 54 – 66<br>DAS-66. "Diagnosis Proce- |
|   | CHECK HARNESS FOR     Connect the connector     Disconnect the connector     Disconnect the connector     Check the resistance b     Connector No.     B50     sthe measurement value v     YES >> GO TO 4.     NO >> Replace the bo     CHECK POWER SUPPI Check the power supply an     dure".     s the inspection result norm     YES (Present error)>>Rep     YES (Past error)>>Error w | of CAN gateway.<br>tor of ADAS control unit.<br>etween the ADAS control unit<br>ADAS control unit harness connect<br>Termin<br>14<br>within the specification?<br>dy harness.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the A<br>nal?<br>place the ADAS control unit.<br>vas detected in the ADAS co | tor<br>hal No.<br>15<br>ADAS control unit. Refer to J<br>Refer to <u>DAS-67, "Remova</u><br>pontrol unit branch line. | nals.<br>Resistance (Ω)<br>Approx. 54 – 66<br>DAS-66. "Diagnosis Proce- |

# **PSB BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000006094981

[CAN SYSTEM (TYPE 4)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Pre-crash seat belt control unit (driver side)
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |              |         |
|---------------|-------------------------------|--------------|---------|
| Connector No. | Termi                         | Terminal No. |         |
| M125          | 4                             | 6            | Existed |
| 123           | 10                            | 12           | Existed |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of pre-crash seat belt control unit (driver side).
- Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

| Pre-crash sea | Pre-crash seat belt control unit (driver side) harness connector |         |                         |
|---------------|--|---------|-------------------------|
| Connector No. | Termi  | nal No. | Resistance ( $\Omega$ ) |
| B9            | 14   | 4       | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the pre-crash seat belt control unit (driver side) branch line.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit (driver side). Refer to <u>SBC-47, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit (driver side). Refer to <u>SBC-54, "Removal</u> <u>and Installation"</u>.
- YES (Past error)>>Error was detected in the pre-crash seat belt control unit (driver side) branch line.
- NO >> Repair the power supply and the ground circuit.

### **RDR-L BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 4)]

| Diagnosis Procedure  |  |                               | INFOID:00000006094982        |
|--|--|-------------------------------|------------------------------|
| 1.CHECK CONNECTOR  |  |                               |                              |
| <ol><li>Check the terminals an<br/>side and connector side</li></ol>                             | cable from the negative termin<br>d connectors of the side rada<br>e). |                               | d and loose connection (unit |
| Is the inspection result norm<br>YES >> GO TO 2.<br>NO >> Repair the term<br>2.CHECK HARNESS FOR | inal and connector.  |                               |                              |
| 1. Disconnect the connect  | or of side radar LH.   |                               |                              |
| 2. Check the resistance be   | etween the side radar LH harn  | ess connector terminals       | S.                           |
| Connector No.  | Side radar LH harness connector  | No                            | - Resistance (Ω)             |
| B52  | 4  | 3                             | Approx. 54 – 66              |
| Check the power supply an<br>Diagnosis Procedure".   | Y AND GROUND CIRCUIT   | e radar LH. Refer to <u>D</u> | AS-575, "SIDE RADAR LH :     |
| YES (Present error)>>Rep<br>YES (Past error)>>Error w  | lace the side radar LH. Refer as detected in the side radar L          | H branch line.                | and Installation".           |
| YES (Present error)>>Rep<br>YES (Past error)>>Error w  | lace the side radar LH. Refer  | H branch line.                | and Installation".           |
| YES (Past error)>>Error w  | lace the side radar LH. Refer as detected in the side radar L          | H branch line.                | and Installation".           |

Р

# RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094984

[CAN SYSTEM (TYPE 4)]

#### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar RH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check the right/left switching signal circuit of the side radar RH. Refer to <u>DAS-578</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO >> Repair the root cause.

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

#### 1. Disconnect the connector of side radar RH.

2. Check the resistance between the side radar RH harness connector terminals.

| Side radar RH harness connector |              | Resistance ( $\Omega$ ) |
|---------------------------------|--------------|-------------------------|
| Connector No. Termina           | Terminal No. |                         |
| B252 4                          | 3            | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the side radar RH branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-576. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-592, "Removal and Installation".

- YES (Past error)>>Error was detected in the side radar RH branch line.
- NO >> Repair the power supply and the ground circuit.

# **APA BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 4)]

| APA BRANCH L  | INE CIRCUIT  |   |                           |                                |
|---|--|---|---------------------------|--------------------------------|
| Diagnosis Proced  | ure  |   |                           | INFOID:0000000006094986        |
| 1.снеск соллест   | OR   |   |                           |                                |
| <ol> <li>Check the followin<br/>nector side).</li> <li>Accelerator pedal<br/>Harness connecto<br/>Harness connecto</li> </ol> | ttery cable from the ne<br>g terminals and conne<br>actuator<br>r M151                   | ectors for damage, be                                       | end and loose conn        | ection (unit side and con-     |
| s the inspection result<br>YES >> GO TO 2.  | normal?  |   |                           |                                |
|   | terminal and connect   | or.   |                           |                                |
| CHECK HARNESS   | FOR OPEN CIRCUIT   | -   |                           |                                |
|   | nnector of accelerator   |   |                           |                                |
| . Check the resistar  | ice between the accel  | erator pedal actuator                                       | r narness connector       | r terminals.                   |
|   | Accelerator pedal actuator   | r harness connector   |                           | Resistance (Ω)                 |
| Connector No.   |  | Terminal No.  |                           |                                |
| M152  | 5<br>alue within the specific  |   | 4                         | Approx. 54 – 66                |
| heck the power supp<br>RATOR PEDAL ACT<br>the inspection result<br>YES (Present error)>                                       | <u>UATOR : Diagnosis P</u><br><u>normal?</u><br>>Replace the accele                      | uit of the accelerator<br>rocedure".<br>rator pedal assembl | ly. Refer to <u>ACC-4</u> | fer to <u>DAS-203, "ACCEL-</u> |
| YES (Past error)>>Er<br>NO >> Repair the  | DNTROL ASSIST SYS<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN | e accelerator pedal a<br>e ground circuit.                  |                           |                                |
|   | rness connector M23.<br>ity between the accele   | erator pedal actuator                                       | harness connector         | and the harness connec-        |
| Accelerator pedal actu  | ator harness connector   | Harness   | connector                 | Continuity                     |
| Connector No.   | Terminal No.   | Connector No.   | Terminal No.              |                                |
| M152  | 5  | M23   | 138                       | Existed                        |
|   | 4  |   | 137                       | Existed                        |
| NO >> Repair the  | e PCB harness.   | accelerator pedal ac  | ctuator harness con       | nector M152 and the har-       |

# LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094985

[CAN SYSTEM (TYPE 4)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Lane camera unit
- Harness connector R7
- Harness connector M110
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of lane camera unit.
- 2. Check the resistance between the lane camera unit harness connector terminals.

| L             | Lane camera unit harness connector |              |                 |
|---------------|------------------------------------|--------------|-----------------|
| Connector No. | Termi                              | Terminal No. |                 |
| R8            | 4                                  | 8            | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>DAS-403</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-419, "Removal and Installation".

YES (Past error)>>Error was detected in the lane camera unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the lane camera unit harness connector and the harness connector.

| Lane camera unit | harness connector | Harness connector |              | Continuity |
|------------------|-------------------|-------------------|--------------|------------|
| Connector No.    | Terminal No.      | Connector No.     | Terminal No. | Continuity |
| R8               | 4                 | M24               | 179          | Existed    |
| KO               | 8                 | 11124             | 178          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the lane camera unit harness connector R8 and the harness connector M24.

< DTC/CIRCUIT DIAGNOSIS >

| Diagnosis Procedu  | ire  |  |   | INFOID:00000000609498   |
|--|--|--|---|---|
| CHECK CONNECTO   | )R   |  |   |   |
| <ul> <li>Turn the ignition sw</li> <li>Disconnect the battering</li> <li>Check the following nector side).</li> <li>ICC sensor</li> <li>Harness connector</li> <li>Harness connector</li> <li>Harness connector</li> <li>Sthe inspection result r</li> <li>YES &gt;&gt; GO TO 2.</li> </ul>  | itch OFF.<br>ery cable from the n<br>terminals and conn<br>E106<br>M6<br>M28 and PCB harn<br>hormal?<br>erminal and connec   | nectors for damage, be<br>ess side connector   | nd and loose con  | nection (unit side and con  |
| <ul> <li>Disconnect the control</li> <li>Check the resistance</li> </ul>   |  | sensor harness conne   | ector terminals.  |   |
|  |  |  |   |   |
| Connector No.  |  | Terminal No.   |   | Resistance ( $\Omega$ )   |
| E67<br>s the measurement valu  | 3  |  | 6   | Resistance (Ω)<br>Approx. 108 – 132                                     |
| E67<br>s the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>Check the power supply<br>is Procedure".<br>s the inspection result r<br>YES (Present error)>><br>YES (Past error)>>Error<br>NO >> Repair the p<br>CHECK HARNESS O<br>. Disconnect the harr   | 3<br>ue within the specifi<br>PPLY AND GROUN<br>and the ground circ<br>normal?<br>Replace the ICC se<br>or was detected in the<br>power supply and the<br>CONTINUITY (OPE<br>mess connector M28                          | cation?<br>ND CIRCUIT<br>cuit of the ICC sensor.<br>nsor. Refer to <u>CCS-18</u><br>he ICC sensor branch<br>he ground circuit.<br>N CIRCUIT)   | Refer to <u>CCS-16</u><br>0, "Removal and<br>line.                              | Approx. 108 – 132<br>2, "ICC SENSOR : Diagno<br>Installation".          |
| E67<br>s the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>Check the power supply<br>is Procedure".<br>s the inspection result r<br>YES (Present error)>><br>YES (Past error)>>Error<br>NO >> Repair the p<br>CHECK HARNESS O<br>. Disconnect the harr   | 3<br>ue within the specifi<br>PPLY AND GROUN<br>and the ground circ<br>normal?<br>Replace the ICC se<br>or was detected in the<br>power supply and the<br>CONTINUITY (OPE<br>mess connector M28                          | cation?<br>ND CIRCUIT<br>cuit of the ICC sensor.<br>nsor. Refer to <u>CCS-18</u><br>he ICC sensor branch<br>he ground circuit.<br>N CIRCUIT)   | Refer to <u>CCS-16</u><br>0, "Removal and<br>line.                              | Approx. 108 – 132<br>2, "ICC SENSOR : Diagno<br>Installation".          |
| E67<br>s the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>Check the power supply<br>is Procedure".<br>s the inspection result r<br>YES (Present error)>><br>YES (Past error)>>Error<br>NO >> Repair the p<br>CHECK HARNESS O<br>Disconnect the harr<br>Check the continuity<br>ICC sensor harn                                | 3<br>ue within the specifi<br>PPLY AND GROUN<br>and the ground circ<br>normal?<br>Replace the ICC se<br>or was detected in the<br>continuity (OPE<br>ness connector M28<br>y between the ICC se<br>ess connector         | cation?<br>ND CIRCUIT<br>cuit of the ICC sensor.<br>Insor. Refer to <u>CCS-18</u><br>the ICC sensor branch<br>the ground circuit.<br>N CIRCUIT)<br>S.<br>sensor harness connect<br>Harness | Refer to <u>CCS-16</u><br>0, <u>"Removal and</u><br>line.<br>ctor and the harne | Approx. 108 – 132<br>2, "ICC SENSOR : Diagno<br>Installation".          |
| E67<br><u>s the measurement value</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SU<br>Check the power supply<br><u>is Procedure</u> ".<br><u>s the inspection result r</u><br>YES (Present error)>><br>YES (Past error)>>Error<br>NO >> Repair the p<br><b>4.</b> CHECK HARNESS (C<br>. Disconnect the harror<br>. Check the continuity) | 3<br>UE within the specifi<br>PPLY AND GROUN<br>and the ground circ<br>normal?<br>Replace the ICC se<br>or was detected in the<br>power supply and the<br>CONTINUITY (OPE)<br>mess connector M28<br>y between the ICC se | cation?<br>ND CIRCUIT<br>cuit of the ICC sensor.<br>nsor. Refer to <u>CCS-18</u><br>he ICC sensor branch<br>he ground circuit.<br>N CIRCUIT)<br>S.<br>sensor harness connec                | Refer to <u>CCS-16</u><br>0, <u>"Removal and</u><br>line.<br>ctor and the harne | Approx. 108 – 132 2, "ICC SENSOR : Diagno Installation". ess connector. |

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

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# **CAN COMMUNICATION CIRCUIT 1**

### Diagnosis Procedure

**1.**CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
  - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Data link connector |         |             |
|---------------|---------------------|---------|-------------|
| Connector No. | Termi               | nal No. | Continuity  |
| M182          | 6                   | 14      | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

# **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link     | Data link connector |        | Continuity  |
|---------------|---------------------|--------|-------------|
| Connector No. | Terminal No.        | Ground | Continuity  |
| M182          | 6                   | Giouna | Not existed |
| IVI 1 02      | 14                  |        | Not existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

**4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

- VQ37VHR

| ECM   |         | - Resistance (Ω)  |
|-------|---------|-------------------|
| Termi | nal No. |                   |
| 114   | 113     | Approx. 108 – 132 |

VK56VD

| ECM   |         | Resistance (Ω)    |  |
|-------|---------|-------------------|--|
| Termi | nal No. |                   |  |
| 146   | 151     | Approx. 108 – 132 |  |

3. Check the resistance between the IPDM E/R terminals.

INFOID:000000006094989

# **CAN COMMUNICATION CIRCUIT 1**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

| IPDM E/R   |  | Resistance (Ω)  |
|--|--|---|
| Term   | ninal No.  | Resistance (12)   |
| 40   | 39   | Approx. 108 – 132   |
| s the measurement value within   | n the specification?   |   |
| YES >> GO TO 5.  |  |   |
| NO >> Replace the ECM a  | and/or the IPDM E/R.   |   |
| D.CHECK SYMPTOM  |  |   |
|  | eck if the symptoms described  | in the "Symptom (Results from interview with  |
| customer)" are reproduced.   |  |   |
| nspection result   |  |   |
| Reproduced>>GO TO 6.   | iagnosis again Follow the trop   | uble diagnosis procedure when past error is   |
| Non-reproduced>>Start the d  |  |   |
| Non-reproduced>>Start the d detected.  | agnosis again. Tonow the troo  | and allighters preservers when past ener is   |
| detected.  | 0  | and alagheole proceedie when pact offer le  |
| detected.<br>CHECK UNIT REPRODUCT  | ION  |   |
| detected.<br>CHECK UNIT REPRODUCT  | TON<br>s per the following procedure for   |   |
| detected.<br>CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>Turn the ignition switch OF<br>Disconnect the battery cable   | TION<br>s per the following procedure for<br>F.<br>e from the negative terminal.   | reach unit.   |
| detected.<br>CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>Turn the ignition switch OF<br>Disconnect the battery cables<br>Disconnect one of the unit of the second se | TON<br>s per the following procedure for<br>F.   | reach unit.   |
| detected.<br>CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>Turn the ignition switch OF<br>Disconnect the battery cables<br>Disconnect one of the unit of<br>NOTE:  | TION<br>s per the following procedure for<br>F.<br>e from the negative terminal.   | each unit.  |
| detected.<br>D.CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>1. Turn the ignition switch OFI<br>2. Disconnect the battery cable<br>3. Disconnect one of the unit of<br>NOTE:<br>ECM and IPDM E/R have as<br>4. Connect the battery cable   | TION<br>s per the following procedure for<br>F.<br>e from the negative terminal.<br>connectors of CAN communicati<br>a termination circuit. Check other<br>to the negative terminal. Check                                 | each unit.  |
| detected.<br><b>D</b> .CHECK UNIT REPRODUCT<br>Perform the reproduction test a<br>1. Turn the ignition switch OF<br>2. Disconnect the battery cable<br>3. Disconnect one of the unit of<br><b>NOTE:</b><br>ECM and IPDM E/R have a<br>4. Connect the battery cable<br>(Results from interview with   | TION<br>s per the following procedure for<br>F.<br>e from the negative terminal.<br>connectors of CAN communication circuit. Check other   | r each unit.  |
| detected.<br>D.CHECK UNIT REPRODUCT<br>Perform the reproduction test at<br>1. Turn the ignition switch OFI<br>2. Disconnect the battery cable<br>3. Disconnect one of the unit of<br>NOTE:<br>ECM and IPDM E/R have at<br>4. Connect the battery cable<br>(Results from interview with<br>NOTE:  | TION<br>s per the following procedure for<br>F.<br>e from the negative terminal.<br>connectors of CAN communicati<br>a termination circuit. Check other<br>to the negative terminal. Check<br>a customer)" are reproduced. | r each unit.<br>Ion circuit 1.<br>r units first.<br>c if the symptoms described in the "Symptom |
| detected.<br><b>D.CHECK UNIT REPRODUCT</b><br>Perform the reproduction test as<br>1. Turn the ignition switch OF<br>2. Disconnect the battery cable<br>3. Disconnect one of the unit of<br><b>NOTE:</b><br>ECM and IPDM E/R have as<br>4. Connect the battery cable<br>(Results from interview with<br><b>NOTE:</b><br>Although unit-related error   | TION<br>s per the following procedure for<br>F.<br>e from the negative terminal.<br>connectors of CAN communicati<br>a termination circuit. Check other<br>to the negative terminal. Check                                 | r each unit.<br>Ion circuit 1.<br>r units first.<br>c if the symptoms described in the "Symptom |
| detected.<br>D.CHECK UNIT REPRODUCT<br>Perform the reproduction test at<br>1. Turn the ignition switch OFI<br>2. Disconnect the battery cable<br>3. Disconnect one of the unit of<br>NOTE:<br>ECM and IPDM E/R have at<br>4. Connect the battery cable<br>(Results from interview with<br>NOTE:<br>Although unit-related error at<br>nspection result  | TION<br>s per the following procedure for<br>F.<br>e from the negative terminal.<br>connectors of CAN communicati<br>a termination circuit. Check other<br>to the negative terminal. Check<br>a customer)" are reproduced. | e each unit.  |

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# **CAN COMMUNICATION CIRCUIT 2**

### Diagnosis Procedure

**1**.CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 2.
  - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Data link connector |         |             |
|---------------|---------------------|---------|-------------|
| Connector No. | Termi               | nal No. | Continuity  |
| M182          | 13                  | 12      | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

# **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link connector |              |        | Continuity  |
|---------------------|--------------|--------|-------------|
| Connector No.       | Terminal No. | Ground | Continuity  |
| M182                | 13           | Ground | Not existed |
| IVI I OZ            | 12           |        | Not existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

| CAN gateway |         | Resistance ( $\Omega$ ) |  |
|-------------|---------|-------------------------|--|
| Termi       | nal No. |                         |  |
| 4           | 10      | Approx. 108 – 132       |  |
| 6           | 12      | Approx. 108 – 132       |  |

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

Inspection result

Reproduced>>GO TO 6.

INFOID:000000006094990

| CAN COMMUNICATION CIRCUIT 2   |
|---|
| < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 4)]   |
| Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.  |
| 6. CHECK UNIT REPRODUCTION  |
| <ul> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>1. Turn the ignition switch OFF.</li> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Disconnect one of the unit connectors of CAN communication circuit 2.<br/><b>NOTE:</b><br/>CAN gateway has two termination circuits. Check other units first.</li> <li>4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.<br/><b>NOTE:</b></li> </ul> |
| Although unit-related error symptoms occur, do not confuse them with other symptoms.<br>Inspection result   |
| Reproduced>>Connect the connector. Check other units as per the above procedure.<br>Non-reproduced>>Replace the unit whose connector was disconnected.  |
|   |
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< DTC/CIRCUIT DIAGNOSIS >

# ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094991

[CAN SYSTEM (TYPE 4)]

#### **1.**CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT-III to see that the CAN communication circuit 1 and CAN communication circuit 2 have no malfunction.

#### NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

Are the CAN communication 1 and CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

### 2.connector inspection

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ADAS control unit for damage, bend and loose connection (unit side and connector side).

#### Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

| ADAS control unit harness connector |              | ICC sensor harness connector |              | Continuity |  |
|-------------------------------------|--------------|------------------------------|--------------|------------|--|
| Connector No.                       | Terminal No. | Connector No.                | Terminal No. | Continuity |  |
| B50                                 | 7            | - E67                        | 3            | Existed    |  |
|                                     | 8            |                              | 6            | Existed    |  |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

#### **4.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Side radar RH
- Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

| ADAS control unit harness connector |       |            | Continuity  |
|-------------------------------------|-------|------------|-------------|
| Connector No.                       | Termi | Continuity |             |
| B50                                 | 7     | 8          | Not existed |

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

 $\mathbf{5.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

### LAN-286

# **ITS COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 4)]

| ADAS control unit h   | arness connector   |                             | Continuity                                 |  |
|---|--|-----------------------------|--|--|
| Connector No.   | Terminal No.   | Ground                      | Continuity                                 |  |
| B50   | 7  | Gibunu                      | Not existed                                |  |
| 200   | 8  |                             | Not existed                                |  |
| Is the inspection result norma<br>YES >> GO TO 6.<br>NO >> Check the harner<br>6.CHECK TERMINATION C                      | ss and repair or replace (i                                      | f shield line or PCB harnes | ss is short) the root cause.               |  |
|   | ol unit and the ICC senso<br>ween the ADAS control u             |                             |  |  |
| ADA   | AS control unit  |                             | Desistance (0)                             |  |
| T   | erminal No.  | Resistance (Ω)              |  |  |
| 7   | 8  | A                           | Approx. 108 – 132                          |  |
| <ol><li>Check the resistance bet</li></ol>  | ween the ICC sensor terr   | ninals.                     |  |  |
|   | CC sensor  |                             | Resistance ( $\Omega$ )                    |  |
|   | erminal No.  |                             |  |  |
| 3<br>Is the inspection result norma   | 6  | <i>P</i>                    | Approx. 108 – 132                          |  |
| 7.CHECK SYMPTOM<br>Connect all the connectors.<br>customer)" are reproduced.<br>Inspection result<br>Reproduced>>GO TO 8. |  | escribed in the "Symptom    | (Results from interview with               |  |
| 8.CHECK UNIT REPRODU  |  | edure for each unit.        |  |  |
|   | OFF.<br>able from the negative ter<br>ait connectors of ITS comr |                             |  |  |
| ADAS control unit and IC<br>4. Connect the battery cab  |  |                             | hits first.<br>s described in the "Symptom |  |
| Although unit-related erro  |  | t confuse them with other   |  |  |
| Reproduced>>Connect the Non-reproduced>>Replace   |  |                             | edure.                                     |  |

#### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

### **Diagnosis Procedure**

INFOID:000000006094400

# **1.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

| Low tire pressure warning control unit<br>harness connector |              | A/C auto amp. harness connector |              | Continuity |
|---|--------------|---------------------------------|--------------|------------|
| Connector No.   | Terminal No. | Connector No.                   | Terminal No. |            |
| M43 –   | 2            | M66                             | 12           | Existed    |
|   | 1            |                                 | 11           | Existed    |

#### Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
- YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIAG  | NOSIS >  |   | [CAN                 | SYSTEM (TYPE 5)]        |
|---|--|---|----------------------|-------------------------|
| MAIN LINE BET   | WEEN HVAC  | AND A-BAG CI                                | RCUIT                |                         |
| Diagnosis Procedu   | lre  |   |                      | INFOID:0000000609440    |
| 1.CHECK HARNESS   | CONTINUITY (OPEI   | N CIRCUIT)                                  |                      |                         |
|   | vitch OFF.<br>tery cable from the n<br>owing harness conne |   |                      |                         |
| A/C auto amp.<br>AV control unit  |  | auto amp. harness con                       | nector and the AV co | ntrol unit harness con- |
| <ul> <li>A/C auto amp.</li> <li>AV control unit</li> <li>Check the continuit nector.</li> </ul>                             | tion system  | auto amp. harness con<br>AV control unit ha |                      |                         |
| <ul> <li>A/C auto amp.</li> <li>AV control unit</li> <li>Check the continuit nector.</li> <li>Models with naviga</li> </ul> | tion system  |   |                      | ntrol unit harness con- |
| <ul> <li>A/C auto amp.</li> <li>AV control unit</li> <li>Check the continuit nector.</li> <li>Models with naviga</li> </ul> | tion system  | AV control unit ha                          | arness connector     |                         |

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

| A/C auto amp. h | arness connector | AV control unit harness connector |              |            |   | Continuity | - |
|-----------------|------------------|-----------------------------------|--------------|------------|---|------------|---|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity |   |            |   |
| M66             | 12               | M84                               | 81           | Existed    | - |            |   |
| IVIOO           | 11               | 1004                              | 80           | Existed    | - |            |   |

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

## Diagnosis Procedure

INFOID:000000006094402

[CAN SYSTEM (TYPE 5)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | A/C auto amp. harness connector |                            | AV control unit harness connector |            |
|-----------------|---------------------------------|----------------------------|-----------------------------------|------------|
| Connector No.   | Terminal No.                    | Connector No. Terminal No. |                                   | Continuity |
| M66             | 12                              | M210                       | 90                                | Existed    |
| 1000            | 11                              | WIZ TO                     | 74                                | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector Connector No. Terminal No. |    |              |  | Continuity |
|-----------------|------------------|--|----|--------------|--|------------|
| Connector No.   | Terminal No.     |  |    | - Continuity |  |            |
| M66             | 12               | M9.4   | 81 | Existed      |  |            |
| IVIOO           | 11               | M84  | 80 | Existed      |  |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

| DTC/CIRCUIT DIA   | N SYSTEM (TYPE 5)]   |  |  |                                  |
|---|--|--|--|----------------------------------|
| AIN LINE BE   | TWEEN AV AN  | D M&A CIRCUI   | Т  |                                  |
| Diagnosis Proced  | dure   |  |  | INFOID:000000006094403           |
| .CHECK HARNESS  |  | N CIRCUIT)   |  |                                  |
| <ul> <li>Disconnect the fo<br/>ECM<br/>AV control unit</li> </ul>   | attery cable from the n<br>llowing harness conne   |  |  |                                  |
| Combination mete<br>Check the continu<br>connector.<br>Models with navig  | uity between the AV c  | ontrol unit harness cor  | nnector and the com  | bination meter harness           |
| <ul> <li>Check the continu<br/>connector.<br/>Models with navig</li> </ul>  | uity between the AV c  | ontrol unit harness cor  |  |                                  |
| <ul> <li>Check the continu<br/>connector.<br/>Models with navig</li> </ul>  | uity between the AV constraints and system   |  |  | bination meter harness           |
| AV control unit H   | uity between the AV co<br>gation system<br>narness connector   | Combination meter<br>Connector No.                             | harness connector  |                                  |
| <ul> <li>Check the continu<br/>connector.<br/>Models with navig</li> <li>AV control unit h</li> </ul>   | uity between the AV contaction system  | Combination meter  | harness connector<br>Terminal No.                                  | Continuity                       |
| AV control unit H   | uity between the AV constraints system   | Combination meter<br>Connector No.                             | harness connector<br>Terminal No.<br>14                            | - Continuity<br>Existed          |
| Check the continu-<br>connector.<br>Models with navig<br>AV control unit H<br>Connector No.<br>M210<br>Models without na                      | uity between the AV constraints system   | Combination meter<br>Connector No.                             | harness connector<br>Terminal No.<br>14<br>15                      | Continuity<br>Existed<br>Existed |
| Check the continu-<br>connector.<br>Models with navig<br>AV control unit H<br>Connector No.<br>M210<br>Models without na                      | uity between the AV constraints system Terminal No. 90 74 Avigation system                                 | Combination meter<br>Connector No.<br>M53                      | harness connector<br>Terminal No.<br>14<br>15                      | - Continuity<br>Existed          |
| Check the continu-<br>connector.<br>Models with navig<br>AV control unit H<br>Connector No.<br>M210<br>Models without na<br>AV control unit H | uity between the AV constraints system<br>namess connector<br>Terminal No.<br>90<br>74<br>avigation system | Combination meter<br>Connector No.<br>M53<br>Combination meter | harness connector<br>Terminal No.<br>14<br>15<br>harness connector | Continuity<br>Existed<br>Existed |

MAIN LINE BETWEEN AV AND M&A CIRCUIT

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

## **Diagnosis** Procedure

INFOID:000000006094404

[CAN SYSTEM (TYPE 5)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | r harness connector | Harness connector |              | Continuity |
|------------------|---------------------|-------------------|--------------|------------|
| Connector No.    | Terminal No.        | Connector No.     | Terminal No. | Continuity |
| M53              | 14                  | M105              | 7            | Existed    |
| IVIJJ            | 15                  | 100               | 8            | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the combination meter and the data link connector.
- NO >> Replace the PCB harness.

| < DTC/CIR  | I<br>CUIT DIAG             |  | WEEN DLC AN   | D BCM CIRCUIT<br>[CAN | SYSTEM (TYPE 5)]       |   |
|--|----------------------------|--|---------------|-----------------------|------------------------|---|
| MAIN L   | INE BET                    | WEEN DLC A   | ND BCM CIRC   | UIT                   |                        | Δ |
| Diagnosi   | s Proced                   | ure  |               |                       | INFOID:000000006094405 | A |
| <b>1.</b> снеск  | HARNESS                    | CONTINUITY (OPEN   | I CIRCUIT)    |                       |                        | В |
| <ol> <li>Discon</li> <li>Discon</li> <li>ECM</li> <li>Harnes</li> <li>BCM</li> </ol> | nect the follows connector | ttery cable from the ne<br>owing harness conne<br>rs M181 and M105 | ctors.        | BCM harness connec    | tor.                   | C |
|  | Harness of                 | connector  | BCM harne     | ess connector         | Continuity             | _ |
| Conne  | ector No.                  | Terminal No.   | Connector No. | Terminal No.          | Continuity             | E |
|  | 405                        | 7  | 14400         | 39                    | Existed                |   |

Is the inspection result normal?

M105

YES (Present error)>>Check CAN system type decision again.

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

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NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN BCM AND ADP CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN BCM AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000006094408

[CAN SYSTEM (TYPE 5)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harness connector |              | PCB harness connector | Continuity |
|-----------------------|--------------|-----------------------|------------|
| Connector No.         | Terminal No. | Terminal No.          | Continuity |
| M120                  | 39           | 35                    | Existed    |
| IVI 120               | 40           | 36                    | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness       | Harness connector |            |
|---------------|--------------|---------------|-------------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No.      | Continuity |
| M20           | 35           | M7            | 72                | Existed    |
| WZ0           | 36           | 1017          | 73                | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 72    | 74         | Existed |
| DI            | 73    | 75         | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the driver seat control unit.

NO-1 >> With 4WAS or AWD models: Replace the body harness.

NO-2 >> 2WD models without 4WAS: Repair the main line between the harness connector B1 and the driver seat control unit.

| AIN LINF BF   | INFEN ADP A  | ND ABS CIRCL   | ЛТ  |   |
|---|--|--|---|---|
|   |  |  |   |   |
| iagnosis Procec   | lure   |  |   | INFOID:00000000609441   |
| .CHECK CONNECT  | ſOR  |  |   |   |
| Turn the ignition s<br>Disconnect the ba<br>Check the followi<br>and harness side)<br>Harness connecto<br>Harness connecto<br>Harness connecto<br>the inspection resul<br>(ES >> GO TO 2.<br>NO >> Repair the<br>.CHECK HARNESS<br>Disconnect the ha  | witch OFF.<br>Ittery cable from the r<br>ng terminals and cor<br>or B1<br>or M7<br>or M6<br>or E106<br><u>t normal?</u><br>e terminal and connectors B1<br>or ness connectors B1   | nnectors for damage, k<br>ctor.<br>N CIRCUIT)<br>and M7.   |   | nection (connector side   |
|   | lity between the harn  | ess connector terminal   | S.  |   |
| Connector No.   |  | Terminal No.   | 74  | Continuity  |
| B1  | 72   |  | 74  | Existed   |
|   | 10   |  |   |   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mod  | S or AWD models: R<br>lels without 4WAS: R   | eplace the body harnes   | SS.   | control unit and the har-   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mod<br>ness conr<br>CHECK HARNESS<br>Disconnect the ha   | S or AWD models: R<br>lels without 4WAS: R   | epair the main line betw<br>N CIRCUIT)<br>S and E106.  | SS.   |   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mod<br>ness conr<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | S or AWD models: R<br>lels without 4WAS: R<br>nector B1.<br>CONTINUITY (OPE<br>nectors Me  | epair the main line betw<br>N CIRCUIT)<br>S and E106.  | ss.<br>veen the driver seat   | control unit and the har-   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mod<br>ness conr<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | S or AWD models: R<br>lels without 4WAS: R<br>nector B1.<br>CONTINUITY (OPE<br>irness connectors Ma<br>nity between the harn   | epair the main line betw<br>N CIRCUIT)<br>6 and E106.<br>ess connectors.   | ss.<br>veen the driver seat   |   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mod<br>ness conr<br>.CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness  | S or AWD models: R<br>lels without 4WAS: R<br>hector B1.<br>CONTINUITY (OPE<br>arness connectors Me<br>hity between the harn<br>connector<br>Terminal No.<br>74  | epair the main line betw<br>N CIRCUIT)<br>5 and E106.<br>ess connectors.<br>Harness o  | SS.<br>veen the driver seat<br>connector<br>Terminal No.<br>22  | control unit and the har-   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mod<br>ness conr<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M7  | S or AWD models: R<br>lels without 4WAS: R<br>nector B1.<br>CONTINUITY (OPE<br>rrness connectors Me<br>nity between the harn<br>connector<br>Terminal No.<br>74<br>75  | epair the main line betw<br>EN CIRCUIT)<br>5 and E106.<br>ess connectors.<br>Harness of<br>Connector No.   | SS.<br>veen the driver seat<br>connector<br>Terminal No.  | control unit and the har-   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mode<br>ness conr<br>CHECK HARNESS<br>Disconnect the hat<br>Check the continu<br>Harness<br>Connector No.<br>M7<br>the inspection resul<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the co   | S or AWD models: R<br>lels without 4WAS: R<br>nector B1.<br>CONTINUITY (OPE<br>arness connectors Me<br>nity between the harn<br>connector<br>Terminal No.<br>74<br>75<br>t normal?<br>e main line between t<br>S CONTINUITY (OPE<br>onnector of ABS actua-<br>nity between the harn                                    | epair the main line betw<br>EN CIRCUIT)<br>5 and E106.<br>ess connectors.<br>Harness<br>Connector No.<br>M6<br>he harness connectors<br>EN CIRCUIT)<br>ator and electric unit (co  | SS.<br>veen the driver seat<br>connector<br>Terminal No.<br>22<br>23<br>M7 and M6.<br>ontrol unit).   | control unit and the har-   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mode<br>ness conrest<br>Output of the continut<br>Harness<br>Connector No.<br>M7<br>the inspection resul<br>YES >> GO TO 4.<br>NO >> Repair the<br>Output of the continut<br>harness connect of the continut | S or AWD models: R<br>lels without 4WAS: R<br>nector B1.<br>CONTINUITY (OPE<br>arness connectors Ma<br>hity between the harn<br>connector<br>Terminal No.<br>74<br>75<br>t normal?<br>e main line between t<br>S CONTINUITY (OPE<br>annector of ABS actual<br>hity between the harn<br>r.                              | epair the main line betw<br>N CIRCUIT)<br>S and E106.<br>ess connectors.<br>Harness connectors<br>Connector No.<br>M6<br>he harness connectors<br>N CIRCUIT)<br>ator and electric unit (consistency of the second | SS.<br>veen the driver seat<br>connector<br>Terminal No.<br>22<br>23<br>M7 and M6.<br>Ontrol unit).<br>ABS actuator and e<br>ctric unit (control unit)<br>connector                               | control unit and the har-<br>Continuity<br>Existed<br>Existed   |
| YES >> GO TO 3.<br>NO-1 >> With 4WA<br>NO-2 >> 2WD mode<br>ness conress conrects the harness<br>Disconnect the harness connector No.<br>M7<br>the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the constant of the continue harness connect the continue harness connector the continue harness  | S or AWD models: R<br>lels without 4WAS: R<br>hector B1.<br>CONTINUITY (OPE<br>arness connectors Me<br>hity between the harn<br>connector<br>Terminal No.<br>74<br>75<br>t normal?<br>e main line between t<br>S CONTINUITY (OPE<br>onnector of ABS actual<br>hity between the harn<br>r.<br>connector<br>Terminal No. | epair the main line betw<br>EN CIRCUIT)<br>5 and E106.<br>ess connectors.<br>Harness connectors of<br>Connector No.<br>M6<br>he harness connectors<br>EN CIRCUIT)<br>ator and electric unit (connector and the<br>ABS actuator and electors)   | SS.<br>veen the driver seat<br>connector<br>Terminal No.<br>22<br>23<br>M7 and M6.<br>M7 and M6.<br>chrrol unit).<br>ABS actuator and e<br>ctric unit (control unit)<br>connector<br>Terminal No. | control unit and the har-<br>Continuity<br>Existed<br>Existed<br>electric unit (control unit)<br>Continuity |
| NO-1 >> With 4WA<br>NO-2 >> 2WD mode<br>ness conrest<br>OCHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M7<br>Sthe inspection resul<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the continu<br>harness connector<br>Harness   | S or AWD models: R<br>lels without 4WAS: R<br>nector B1.<br>CONTINUITY (OPE<br>arness connectors Ma<br>hity between the harn<br>connector<br>Terminal No.<br>74<br>75<br>t normal?<br>e main line between t<br>S CONTINUITY (OPE<br>annector of ABS actual<br>hity between the harn<br>r.                              | epair the main line betw<br>N CIRCUIT)<br>S and E106.<br>ess connectors.<br>Harness connectors<br>Connector No.<br>M6<br>he harness connectors<br>N CIRCUIT)<br>ator and electric unit (consistency of the second | SS.<br>veen the driver seat<br>connector<br>Terminal No.<br>22<br>23<br>M7 and M6.<br>Ontrol unit).<br>ABS actuator and e<br>ctric unit (control unit)<br>connector                               | control unit and the har-<br>Continuity<br>Existed<br>Existed   |

MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

## LAN-295

< DTC/CIRCUIT DIAGNOSIS >

- YES (Past error)>>Error was detected in the main line between the driver seat control unit and the ABS actuator and electric unit (control unit).
- NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

## ECM BRANCH LINE CIRCUIT

| DIC/CIRCUIT DIAGNUS  | NG >   |                           |                               |
|--|--|---------------------------|-------------------------------|
| CM BRANCH LIN  | E CIRCUIT  |                           |                               |
| Diagnosis Procedure  |  |                           | INFOID:0000000669441          |
| CHECK CONNECTOR  |  |                           |                               |
| I. Turn the ignition switch  | OFF  |                           |                               |
| . Disconnect the battery of  | cable from the negative te                           |                           | connection (unit side and con |
| nector side).  |  | r damage, bend and loose  |                               |
| ECM  | and PCB harness side o                               | aanaatar                  |                               |
| s the inspection result norm   |  | Connector                 |                               |
| YES >> GO TO 2.  |  |                           |                               |
| NO >> Repair the term  |  |                           |                               |
| 2.CHECK HARNESS FOR  | OPEN CIRCUIT   |                           |                               |
| <ul> <li>Disconnect the connect</li> <li>Check the resistance be<br/>VQ37VHR</li> </ul>  | or of ECM.<br>htween the ECM harness                 | connector terminals.      |                               |
|  | ECM harness connector                                |                           | Posistance (0)                |
| Connector No.  | Terr   | minal No.                 | Resistance (Ω)                |
| M107   | 114  | 113                       | Approx. 108 – 132             |
| VK56VD   |  |                           |                               |
|  | ECM harness connector                                |                           |                               |
| Connector No.  | Terr   | minal No.                 | Resistance (Ω)                |
| M160   | 146  | 151                       | Approx. 108 – 132             |
| s the measurement value w  | ithin the specification?                             |                           |                               |
| YES >> GO TO 3.<br>NO >> GO TO 4.  |  |                           |                               |
| <b>B.</b> CHECK POWER SUPPL  |  | ШΤ                        |                               |
| Check the power supply and   |  |                           |                               |
| VQ37VHR: <u>EC-180, "Diag</u>  |  |                           | ıg.                           |
| VK56VD: <u>EC-716, "Diagno</u>   |  |                           |                               |
| s the inspection result norm   |  |                           |                               |
| YES (Present error)>>Rep<br>• VQ37VHR: F(  | lace the ECM. Refer to th<br>C-535, "Removal and Ins |                           |                               |
| <ul> <li>VK56VD: <u>EC-</u></li> </ul>   | 535, "Removal and Insta                              | llation"                  |                               |
| YES (Past error)>>Error wa   | as detected in the ECM b<br>er supply and the ground |                           |                               |
| <b>1.</b> CHECK HARNESS CON  |  |                           |                               |
|  |  | 11)                       |                               |
| <ol> <li>Disconnect the harness</li> <li>Check the continuity between the continuit</li></ol> |  | connector and the harness | connector.                    |
| - VQ37VHR  |  |                           |                               |

- VQ37VHR

< DTC/CIRCUIT DIAGNOSIS >

| ECM harnes    | ss connector | Harness connector |              | Harness connector |  | Continuity |
|---------------|--------------|-------------------|--------------|-------------------|--|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity        |  |            |
| M107          | 114          | M30               | 439          | Existed           |  |            |
| WITO7         | 113          | IVI30             | 438          | Existed           |  |            |

- VK56VD

## ECM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

| ECM harne     | ss connector | Harness       | connector    | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M160          | 146          | M30           | 439          | Existed    |
| MITOO         | 151          | 10130         | 438          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

|  | I LINE CIRCUI   | 1  |   |   |
|--|---|--|---|---|
| Diagnosis Proced   | lure  |  |   | INFOID:00000006094417                                       |
| 1. снеск соллест   | OR  |  |   |   |
| <ol> <li>Check the followin nector side).</li> <li>Low tire pressure</li> <li>Harness connector</li> <li>Is the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> </ol>                        | attery cable from the neighbor terminals and conner<br>warning control unit<br>or M29 and PCB harned<br>t normal?   | ectors for damage, be<br>ess side connector<br>tor.  | end and loose connec                            | ction (unit side and con-                                   |
| <ol> <li>Disconnect the co</li> <li>Check the resistar</li> </ol>  | nnector of low tire pre<br>nce between the low ti<br>tire pressure warning contr  | ssure warning control<br>re pressure warning c   |   | onnector terminals.   |
| Connector No.  |   | Terminal No.   |   | Resistance ( $\Omega$ )                                     |
| M43  | 2   |  | 1   | Approx. 54 – 66   |
|  | UPPLY AND GROUN   |  | essure warning contro                           | ol unit. Refer to WT-53.                                    |
| Is the inspection result<br>YES (Present error)><br>Installation<br>YES (Past error)>>E<br>NO >> Repair the<br>4.CHECK HARNESS   | ->Replace the low tire<br><u>n"</u> .<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN   | e low tire pressure wa<br>e ground circuit.<br>N CIRCUIT)                                    |   | WT-70, "Removal and   |
| Is the inspection result<br>YES (Present error)><br>Installation<br>YES (Past error)>>E<br>NO >> Repair the<br>A.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu-<br>ness connector. | ->Replace the low tire<br>n".<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>urness connector M29.<br>uity between the low t<br>warning control unit<br>connector       | e low tire pressure wa<br>e ground circuit.<br>N CIRCUIT)<br>ire pressure warning<br>Harness | arning control unit bra<br>control unit harness | WT-70, "Removal and   |
| Is the inspection result<br>YES (Present error)><br>Installation<br>YES (Past error)>>E<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu-<br>ness connector. | <ul> <li>Replace the low tire <u>n</u>".</li> <li>rror was detected in the power supply and the control was connector M29.</li> <li>uity between the low t</li> <li>warning control unit</li> </ul> | e low tire pressure wa<br>e ground circuit.<br>N CIRCUIT)<br>ire pressure warning            | arning control unit bra<br>control unit harness | WT-70, "Removal and<br>anch line.<br>connector and the har- |

#### Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

## HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094420

[CAN SYSTEM (TYPE 5)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/C auto amp.
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

| A/C auto amp. harness connector | Resistance (Ω) |  |  |
|---------------------------------|----------------|--|--|
| Connector No. Termina           | Terminal No.   |  |  |
| M66 12                          | 12 11          |  |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

# **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-167, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-201, "Removal and Installation".

- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

| A/C auto amp. h | arness connector | Harness connector |              | Continuity |
|-----------------|------------------|-------------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| M66             | 12               | M28               | 325          | Existed    |
| MOO             | 11               | IVIZO             | 327          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

| iagnosis Proced  | ure  |  |   | INFOID:0000000060944   |
|--|--|--|---|--|
|  | OR   |  |   |  |
| <ul> <li>Check the followin nector side).</li> <li>A/T assembly</li> <li>Harness connector</li> <li>Harness connector</li> <li>Harness connector</li> <li>Harness connector</li> <li>Source and the second se</li></ul>                 | ttery cable from the ne<br>g terminals and conne<br>r F103<br>r M116<br>r M28 and PCB harne<br>normal?<br>terminal and connect<br>FOR OPEN CIRCUIT   | ectors for damage, be<br>ss side connector<br>or.<br>-<br>bly.   |   | ction (unit side and con   |
| . Check the resistar   | nce between the A/T a  | -  | nector terminals.   |  |
|  | A/T assembly harne   | A/T assembly harness connector   |   |  |
| Connector No.  | A/T assembly harne   | Terminal No.   |   | Resistance ( $\Omega$ )  |
| F61<br>s the measurement va  | 3  | Terminal No.   | 8   | Resistance (Ω)<br>Approx. 54 – 66  |
| F61 $F61$  | 3<br>alue within the specific<br>UPPLY AND GROUNI<br>ly and the ground circ<br>normal?<br>>Replace the control v<br>rts Location". (Replac<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.                           | Terminal No.<br>ation?<br>D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if cor<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT)                                      | to <u>TM-156, "Diagno</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM    | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |
| F61 $s the measurement value of the value of the second second$ | 3<br>alue within the specific<br>UPPLY AND GROUN<br>ly and the ground circ<br>normal?<br>>Replace the control v<br>rts Location". (Replace<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/T as | Terminal No.<br>ation?<br>D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refe<br>e A/T assembly if cor<br>e TCM branch line.<br>e ground circuit.<br>I CIRCUIT)<br>ssembly harness conr             | to <u>TM-156, "Diagno</u> r<br>r to <u>TM-8, "A/T CON</u><br>htrol valve with TCM | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |
| F61<br>s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>Check the power supp<br>s the inspection result<br>YES (Present error)><br>ponent Pa<br>parts list.)<br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu   | 3<br>alue within the specific<br>UPPLY AND GROUNI<br>ly and the ground circ<br>normal?<br>>Replace the control v<br>rts Location". (Replac<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.                           | Terminal No.<br>ation?<br>D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refe<br>e A/T assembly if cor<br>e TCM branch line.<br>e ground circuit.<br>I CIRCUIT)<br>ssembly harness conr             | to <u>TM-156, "Diagno</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM    | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |
| F61 $s the measurement value of the value of the second second$ | 3<br>alue within the specific<br>UPPLY AND GROUNI<br>ly and the ground circe<br>normal?<br>>Replace the control v<br>rts Location". (Replace<br>the power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/T as                       | Terminal No.<br>ation?<br>D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if cor<br>e TCM branch line.<br>e ground circuit.<br>I CIRCUIT)<br>ssembly harness conr<br>Harness | to <u>TM-156, "Diagno</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM    | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

# A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094422

[CAN SYSTEM (TYPE 5)]

#### WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness and/or the PCB harness.
- NO >> Replace parts whose air bag system has a malfunction.

## **AV BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 5)]

| AV BRANCH LI  | NE CIRCUIT  |  |   |                             |
|---|---|--|---|-----------------------------|
| Diagnosis Proced  | lure  |  |   | A<br>INFOID:000000006094423 |
| 1.CHECK CONNECT   | OR  |  |   | В                           |
| <ol> <li>Check the followin nector side).</li> <li>AV control unit</li> </ol>   | ttery cable from the ne   | ectors for damage, be  | and and loose connec  | tion (unit side and con- C  |
| Is the inspection result  | t normal?   |  |   | D                           |
| 2.CHECK HARNESS<br>1. Disconnect the co   | e terminal and connect<br>FOR OPEN CIRCUIT<br>nnector of AV control<br>nce between the AV co  | Г<br>unit.   | nnector terminals   | E<br>F                      |
| <ul> <li>Models with navig</li> </ul>   |   |  |   |                             |
|   | AV control unit harn  | ess connector  |   | Resistance (Ω)              |
| Connector No.   |   | Terminal No.   |   |                             |
| M210  | 90  |  | 74  | Approx. 54 – 66             |
| <ul> <li>Models without na</li> </ul>   | ivigation system  |  |   |                             |
|   | AV control unit harn  | ess connector  |   | Posistance (0)              |
| Connector No.   |   | Terminal No.   |   | Resistance (Ω)              |
| M84   | 81  |  | 80  | Approx. 54 – 66             |
| Is the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER S<br>Check the power supp<br>• Base audio without r<br>• BOSE audio with na<br>Is the inspection result | UPPLY AND GROUN<br>Ily and the ground circ<br>navigation system: <u>AV</u><br>vigation system: <u>AV-2</u>  | D CIRCUIT<br>cuit of the AV control u<br>-90, "AV CONTROL U  | JNIT : Diagnosis Proc   | edure"                      |
| YES (Present error)><br>• Base au<br>• BOSE a<br>YES (Past error)>>E<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha   | Replace the AV control of t | n system: <u>AV-120, "Re</u><br>ystem: <u>AV-298, "Rem</u><br>ne AV control unit bran<br>e ground circuit.<br>N CIRCUIT) | moval and Installation<br>oval and Installation"<br>nch line. | N                           |
| - Models with navig   |   |  |   |                             |
|   | arness connector  |  | connector   | P                           |
| Connector No.   | Terminal No.<br>90  | Connector No.  | Terminal No.<br>201   | Existed                     |
| M210  | 74  | M25  | 201   | Existed                     |
|   |   |  |   |                             |

Models without navigation system

< DTC/CIRCUIT DIAGNOSIS >

## **AV BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

| AV control unit h | arness connector | Harness       | connector    | Continuity |
|-------------------|------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No. | Terminal No. | Continuity |
| M84               | 81               | M25           | 201          | Existed    |
| 10104             | 80               | IVIZ5         | 221          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

| M&A BRANCH I  |   |   |  |   |
|---|---|---|--|---|
| Diagnosis Procedu   | ure   |   |  | INFOID:00000006094424   |
| 1.CHECK CONNECT   | OR  |   |  |   |
| <ol> <li>Check the following<br/>nector side).</li> <li>Combination meter</li> </ol>  | tery cable from the ne<br>g terminals and conne   | ectors for damage, b  | end and loose cor  | nnection (unit side and con-  |
| s the inspection result   | normal?   |   |  |   |
| YES >> GO TO 2.<br>NO >> Repair the   | terminal and connect  | for   |  |   |
| 2. CHECK HARNESS  |   |   |  |   |
|   | nnector of combination<br>ce between the comb   |   | ss connector termi   | nals.   |
|   |   | races connector   |  |   |
|   | Combination meter ha  |   |  | Resistance ( $\Omega$ )   |
| Connector No.   |   | Terminal No.  | 45   | Resistance (Ω)  |
| M53<br>s the measurement va   | 14  | Terminal No.  | 15   | Resistance (Ω)<br>Approx. 54 – 66   |
| M53<br><u>s the measurement va</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SL<br>Check the power supp<br>METER : Diagnosis Pro-<br><u>s the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br><b>4.</b> CHECK HARNESS<br>1. Disconnect the har   | 14<br>Iue within the specific<br>JPPLY AND GROUN<br>ly and the ground cir<br><u>pocedure"</u> .<br><u>normal?</u><br>Replace the combination<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.  | Terminal No.  | ion meter Refer to<br><u>MWI-90, "Remova</u><br>r branch line.                       | Approx. 54 – 66<br>MWI-70. "COMBINATION<br>al and Installation".                          |
| M53<br><u>s the measurement va</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SL<br>Check the power supp<br>METER : Diagnosis Pro-<br><u>s the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Erron<br>NO >> Repair the<br><b>4.</b> CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit             | 14         Iue within the specific         JPPLY AND GROUN         Iy and the ground cir         Decedure".         normal?         >Replace the combinator was detected in the power supply and the control of the power supply and the control of the contro | Terminal No.  | ion meter Refer to<br><u>MWI-90, "Remova</u><br>r branch line.<br>s connector and th | Approx. 54 – 66   |
| M53<br><u>s the measurement va</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SL<br>Check the power supp<br>METER : Diagnosis Pro-<br><u>s the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br><b>4.</b> CHECK HARNESS<br>1. Disconnect the har   | 14         Iue within the specific         JPPLY AND GROUN         Iy and the ground cir         Decedure".         normal?         >Replace the combinator was detected in the power supply and the control of the power supply and the control of the contro | Terminal No.  | ion meter Refer to<br><u>MWI-90, "Remova</u><br>r branch line.                       | Approx. 54 – 66<br>MWI-70. "COMBINATION<br>al and Installation".                          |
| M53<br><u>s the measurement va</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SL<br>Check the power supp<br>METER : Diagnosis Pro-<br>s the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br><b>4.</b> CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit<br>Combination meter | 14<br>Iue within the specific<br>JPPLY AND GROUN<br>Iy and the ground cir<br><u>ocedure"</u> .<br><u>normal?</u><br>Replace the combination<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.<br>ty between the combination<br>harness connector  | Terminal No.<br>cation?<br>D CIRCUIT<br>cuit of the combinat<br>ation meter. Refer to<br>be combination meter<br>a ground circuit.<br>N CIRCUIT)<br>ination meter harnes<br>Harness | ion meter Refer to<br><u>MWI-90, "Remova</u><br>r branch line.<br>s connector and th | Approx. 54 – 66<br>MWI-70. "COMBINATION<br>al and Installation".<br>he harness connector. |

NO >> Repair the harness between the combination meter harness connector M53 and the harness con- O nector M24.

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< DTC/CIRCUIT DIAGNOSIS >

# DLC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094425

[CAN SYSTEM (TYPE 5)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

| Data link connector |       |         | Resistance (Ω)  |
|---------------------|-------|---------|-----------------|
| Connector No.       | Termi | nal No. |                 |
| M182                | 6     | 14      | Approx. 54 – 66 |

#### Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> GO TO 3.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the data link connector and the harness connector.

| Data link     | connector    | Harness       | connector    | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M182          | 6            | M23           | 151          | Existed    |
| IVI I OZ      | 14           | IVIZ5         | 150          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

## **BCM BRANCH LINE CIRCUIT**

| BCM BRANCH   | LINE CIRCUIT  |   |                              |                          |
|--|---|---|------------------------------|--------------------------|
| Diagnosis Proced   | lure  |   |                              | INFOID:000000006094426   |
| 1.CHECK CONNECT  | OR  |   |                              |                          |
| <ol> <li>Check the followin<br/>nector side).</li> <li>BCM</li> <li>Harness connector</li> <li>Is the inspection result<br/>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the co</li> </ol> | ttery cable from the neig terminals and connect<br>or M22 and PCB harnes<br>to normal?<br>terminal and connect<br>FOR OPEN CIRCUI | ectors for damage, b<br>ess side connector<br>tor.<br>T                 |                              | tion (unit side and con- |
|  | BCM harness of  |   |                              |                          |
| Connector No.  |   | Terminal No.  |                              | Resistance (Ω)           |
| M120   | 39  |   | 40                           | Approx. 54 – 66          |
| s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER S<br>Check the power supp   | UPPLY AND GROUN   | D CIRCUIT   | r to <u>BCS-73, "Diagnos</u> | sis Procedure".          |
| s the inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the   | <u>normal?</u><br>>Replace the BCM. R<br>rror was detected in the<br>power supply and the   | Refer to <u>BCS-79, "Re</u><br>ne BCM branch line.<br>e ground circuit. | moval and Installation       |                          |
|  | rness connector M22.  | ,   | nd the harness conne         | ctor.                    |
| BCM harne  | ss connector  | Harness   | connector                    | Continuity               |
| Connector No.  | Terminal No.  | Connector No.   | Terminal No.                 | Continuity               |
| M120   | 39  | M22   | 101                          | Existed                  |
|  | 40  |   | 102                          | Existed                  |

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<u>Is the inspection result normal?</u> YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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## STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094427

[CAN SYSTEM (TYPE 5)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

| Steering angle sensor harness connector |              |   | Resistance (Ω)  |
|---|--------------|---|-----------------|
| Connector No.                           | Terminal No. |   |                 |
| M37                                     | 1            | 2 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-144, "Removal and Installation"</u>.

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

| Steering angle sens | or harness connector | Harness connector          |    | Continuity |
|---------------------|----------------------|----------------------------|----|------------|
| Connector No.       | Terminal No.         | Connector No. Terminal No. |    | Continuity |
| M37                 | 1                    | M22                        | 81 | Existed    |
| WIS7                | 2                    | IVIZZ                      | 82 | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

## **ABS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 5)]

| 1. CHECK CONNECTOR         1. Turn the ignition switch OFF.         2. Disconnect the battery cable from the negative terminal.         3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage and loose connection (unit side and connector side).         Is the inspection result normal?         YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of ABS actuator and electric unit (control unit).         2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector nals.         ABS actuator and electric unit (control unit) harness connector         E41       25         Is the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the ABS actuator and electric unit (control unit) branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to BRC-141. "Real and installation".         YES (Pesent error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141. "Real and installation".         YES (Past error)>>Replace the ABS actuator and electric unit (control unit) branch line.         NO       >> Replare the ABS actuator and electric unit (control unit) branch line. | Procedure   | INFOID:000000006094430         |
|--|---|--------------------------------|
| <ul> <li>2. Disconnect the battery cable from the negative terminal.</li> <li>3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage and loose connection (unit side and connector side).</li> <li>Is the inspection result normal?</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the terminal and connector.</li> <li>2. CHECK HARNESS FOR OPEN CIRCUIT</li> <li>1. Disconnect the connector of ABS actuator and electric unit (control unit).</li> <li>2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector nals.</li> </ul> ABS actuator and electric unit (control unit) harness connector nals. ABS actuator and electric unit (control unit) harness connector nals. ABS actuator and electric unit (control unit) harness connector Resistance (Ω) E41 25 15 Approx.54 - 66 Is the measurement value within the specification? YES >> GO TO 3. NO >> Repair the ABS actuator and electric unit (control unit) branch line. 3. CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Real of an Installation".</u> YES (Pesent error)>> Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Real of an Installation".</u> YES (Past error)>> Error was detected in the ABS actuator and electric unit (control unit) branch line.              | ONNECTOR  |                                |
| YES       >> GO TO 2.         NO       >> Repair the terminal and connector.         2.CHECK HARNESS FOR OPEN CIRCUIT         1. Disconnect the connector of ABS actuator and electric unit (control unit).         2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector nals.         ABS actuator and electric unit (control unit) harness connector         Resistance ( $\Omega$ )         Connector No.         E41       25         15       Approx. 54 - 66         s the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the ABS actuator and electric unit (control unit) branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R         BRC-119. "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Real And Installation".</u> YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.   | ect the battery cable from the negative terminal.<br>he terminals and connectors of the ABS actuator and electric unit (contro<br>e connection (unit side and connector side).                              | rol unit) for damage, bend     |
| 1. Disconnect the connector of ABS actuator and electric unit (control unit).         2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector nals.         ABS actuator and electric unit (control unit) harness connector         Resistance (Ω)         Connector No.         E41       25         15       Approx. 54 - 66         s the measurement value within the specification?         YES       > GO TO 3.         NO       >> Repair the ABS actuator and electric unit (control unit) branch line.         3.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R         BRC-119. "Diagnosis Procedure".         s the inspection result normal?         YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141, "Re and Installation".         YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.  | GO TO 2.<br>Repair the terminal and connector.  |                                |
| Connector No.       Terminal No.       Resistance (Ω)         E41       25       15       Approx. 54 – 66         s the measurement value within the specification?       YES       >> GO TO 3.       NO       >> Repair the ABS actuator and electric unit (control unit) branch line.         Output       CHECK POWER SUPPLY AND GROUND CIRCUIT       Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to unit). Refer to unit (control unit).       Reference         Sthe inspection result normal?       YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141, "Reference         YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.  |   | harness connector termi-       |
| Connector No.       Terminal No.         E41       25       15       Approx. 54 – 66         is the measurement value within the specification?         YES       >> GO TO 3.         NO       >> Repair the ABS actuator and electric unit (control unit) branch line.         J.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R         RC-119. "Diagnosis Procedure".         is the inspection result normal?         YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to BRC-141, "Real and Installation".         YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.  | ABS actuator and electric unit (control unit) harness connector   |                                |
| <ul> <li><u>s the measurement value within the specification?</u></li> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the ABS actuator and electric unit (control unit) branch line.</li> <li>CHECK POWER SUPPLY AND GROUND CIRCUIT</li> <li>Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R</li> <li><u>SRC-119. "Diagnosis Procedure"</u>.</li> <li><u>S the inspection result normal?</u></li> <li>YES (Present error)&gt;&gt;Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Reand Installation"</u>.</li> <li>YES (Past error)&gt;&gt;Error was detected in the ABS actuator and electric unit (control unit) branch line.</li> </ul>   | ector No. Terminal No.  | Resistance $(\Omega)$          |
| <ul> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Repair the ABS actuator and electric unit (control unit) branch line.</li> <li>CHECK POWER SUPPLY AND GROUND CIRCUIT</li> <li>Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). R</li> <li>RC-119. "Diagnosis Procedure".</li> <li>S the inspection result normal?</li> <li>YES (Present error)&gt;&gt;Replace the ABS actuator and electric unit (control unit). Refer to BRC-141, "Reand Installation".</li> <li>YES (Past error)&gt;&gt;Error was detected in the ABS actuator and electric unit (control unit) branch line.</li> </ul>   | E41 25 15   | Approx. 54 – 66                |
|  | Repair the ABS actuator and electric unit (control unit) branch line.<br>POWER SUPPLY AND GROUND CIRCUIT<br>ower supply and the ground circuit of the ABS actuator and electric uni<br>iagnosis Procedure". |                                |
|  | ent error)>>Replace the ABS actuator and electric unit (control unit). Refe   | fer to <u>BRC-141, "Remova</u> |

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< DTC/CIRCUIT DIAGNOSIS >

# **IPDM-E BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000006094432

[CAN SYSTEM (TYPE 5)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

| IPDM E/R harness connector |              |  | Resistance (Ω)    |
|----------------------------|--------------|--|-------------------|
| Connector No.              | Terminal No. |  |                   |
| E6                         | 40 39        |  | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

NO >> Repair the power supply and the ground circuit.

| iagnosis Procedure   |  |   | INFOID:000000006094433                |
|--|--|---|---------------------------------------|
| .CHECK CONNECTOR   |  |   |                                       |
| <ul> <li>Check the following terr<br/>nector side).</li> <li>Driver seat control unit<br/>Harness connector B50<br/>Harness connector B11<br/>CAN gateway (With ICC<br/>sthe inspection result norm<br/>YES (With ICC system)&gt;&gt;0<br/>YES (Without ICC system)<br/>NO &gt;&gt; Repair the term</li> </ul> | cable from the negative terr<br>ninals and connectors for d<br>1<br>System)<br>hal?<br>GO TO 2.<br>>>GO TO 3.  | amage, bend and loose cor                               | nnection (unit side and con-          |
| Disconnect the connect   | or of CAN gateway.   | arness connector terminals.                             |                                       |
|  | CAN gateway harness connector  |   | Continuity                            |
| Connector No.  |  | nal No.   | · · · · · · · · · · · · · · · · · · · |
| M125   | 4 10   | 6<br>12   | Existed                               |
| YES >> GO TO 3.  | ess and repair or replace (i   | f shield line is open) the red                          | ot cause (CAN communica-              |
| NO >> Check the harn<br>tion circuit 2).<br>CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connect   | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni   | system)   |                                       |
| <ul> <li>NO &gt;&gt; Check the harm tion circuit 2).</li> <li>CHECK HARNESS FOR</li> <li>Connect the connect of Disconnect the connect</li> <li>Check the resistance be</li> </ul>   | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat control   | system)<br>t.<br>rol unit harness connector to          |                                       |
| NO >> Check the harm<br>tion circuit 2).<br>3.CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connect<br>Check the resistance be  | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat control<br>er seat control unit harness conne                 | system)<br>t.<br>rol unit harness connector to          |                                       |
| NO >> Check the harm<br>tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be   | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat control<br>er seat control unit harness conne<br>Termin<br>23 | system)<br>t.<br>rol unit harness connector to<br>ector | erminals.                             |

< DTC/CIRCUIT DIAGNOSIS >

### < DTC/CIRCUIT DIAGNOSIS >

# CAN COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:000000006094442

[CAN SYSTEM (TYPE 5)]

## **1.**CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 4. Check terminals and connectors for damage, bend and loose connection.

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Data link connector |  |             |
|---------------|---------------------|--|-------------|
| Connector No. | Terminal No.        |  | Continuity  |
| M182          | 6 14                |  | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

## **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link connector |              |        | Continuity  |  |
|---------------------|--------------|--------|-------------|--|
| Connector No.       | Terminal No. | Ground | Continuity  |  |
| M182                | 6            | Ground | Not existed |  |
| WITO2               | 14           |        | Not existed |  |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

### **4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

- VQ37VHR

| EC           | CM  | Resistance (Ω)    |  |
|--------------|-----|-------------------|--|
| Terminal No. |     |                   |  |
| 114          | 113 | Approx. 108 – 132 |  |

VK56VD

| ECM          |  | Resistance (Ω)    |  |
|--------------|--|-------------------|--|
| Terminal No. |  |                   |  |
| 146 151      |  | Approx. 108 – 132 |  |

3. Check the resistance between the IPDM E/R terminals.

| IPDN         | /IE/R | - Resistance (Ω)  |  |
|--------------|-------|-------------------|--|
| Terminal No. |       |                   |  |
| 40           | 39    | Approx. 108 – 132 |  |

# **CAN COMMUNICATION CIRCUIT**

| < DTC/CIRCUIT DIAGNOSIS >   | [CAN SYSTEM (TYPE 5)]           |
|---|---------------------------------|
| Is the measurement value within the specification?  |                                 |
| YES >> GO TO 5.   |                                 |
| NO >> Replace the ECM and/or the IPDM E/R.  |                                 |
| <b>5.</b> CHECK SYMPTOM   |                                 |
| Connect all the connectors. Check if the symptoms described in the "Symptocustomer)" are reproduced.  | om (Results from interview with |
| Inspection result   |                                 |
| Reproduced>>GO TO 6.  |                                 |
| Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.   | procedure when past error is    |
| 6. CHECK UNIT REPRODUCTION  |                                 |
| Perform the reproduction test as per the following procedure for each unit.   |                                 |
| 1. Turn the ignition switch OFF.  |                                 |
| 2. Disconnect the battery cable from the negative terminal.   |                                 |
| 3. Disconnect one of the unit connectors of CAN communication system.   |                                 |
| <b>NOTE:</b><br>ECM and IPDM E/R have a termination circuit. Check other units first.   |                                 |
| 4. Connect the battery cable to the negative terminal. Check if the sympto  | ms described in the "Symptom    |
| (Results from interview with customer)" are reproduced.   |                                 |
| NOTE:   |                                 |
| Although unit-related error symptoms occur, do not confuse them with othe   | er symptoms.                    |
| Inspection result   |                                 |
| Reproduced>>Connect the connector. Check other units as per the above pro<br>Non-reproduced>>Replace the unit whose connector was disconnected. | ocedure.                        |
|   |                                 |

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### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

## **Diagnosis Procedure**

INFOID:000000006094451

# **1.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

|               | warning control unit<br>connector | A/C auto amp. harness connector |    | Continuity |
|---------------|-----------------------------------|---------------------------------|----|------------|
| Connector No. | Terminal No.                      | Connector No. Terminal No.      |    |            |
| M43           | 2                                 | M66                             | 12 | Existed    |
| 10143         | 1                                 | ΟΟΙΥΙ                           | 11 | Existed    |

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

| S >                      |                   |                              | -                    | N SYSTEM (TYPE 6)]        |
|--------------------------|-------------------|------------------------------|----------------------|---------------------------|
| EN H                     | IVAC              | AND A-BAG C                  | IRCUIT               |                           |
|                          |                   |                              |                      | INFOID:00000006094452     |
| ידוטאו                   |                   | N CIRCUIT)                   |                      |                           |
|                          | om the ness conne | egative terminal.<br>ectors. |                      |                           |
| veen th<br>vstem         | he A/C a          | auto amp. harness coi        | nnector and the AV c | control unit harness con- |
|                          |                   |                              | nnector and the AV c |                           |
| vstem                    | or                |                              |                      | control unit harness con- |
| v <b>stem</b><br>onnecto | or                | AV control unit h            | arness connector     |                           |

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

| A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity   |   |
|-----------------|------------------|-----------------------------------|--------------|--------------|---|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | - Continuity | ŀ |
| M66             | 12               | M84                               | 81           | Existed      | _ |
| IVIOO           | 11               | 1004                              | 80           | Existed      | _ |

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

## Diagnosis Procedure

INFOID:000000006094453

[CAN SYSTEM (TYPE 6)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |            | Continuity |
|-----------------|------------------|-----------------------------------|------------|------------|
| Connector No.   | Terminal No.     | Connector No.                     | Continuity |            |
| M66             | 12               | M210                              | 90         | Existed    |
| 1000            | 11               | WIZ TO                            | 74         | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector Connector No. Terminal No. |    | Continuity |  |
|-----------------|------------------|--|----|------------|--|
| Connector No.   | Terminal No.     |  |    |            |  |
| M66             | 12               | M84  | 81 | Existed    |  |
| IVIOO           | 11               | 10104  | 80 | Existed    |  |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

| N SYSTEM (TYPE 6)                | [CAN   |  | NOSIS >   | DTC/CIRCUIT DIAG  |
|----------------------------------|--|--|---|---|
|                                  | Т  | D M&A CIRCUI   | WEEN AV ANI   | AIN LINE BET  |
| INFOID:0000000060944             |  |  | ure   | agnosis Proced  |
|                                  |  | I CIRCUIT)   | CONTINUITY (OPEN  | CHECK HARNESS   |
|                                  |  |  | tery cable from the ne<br>owing harness conne                                   | Disconnect the follo<br>ECM<br>AV control unit<br>Combination meter   |
| bination meter harnes            | nnector and the combi  | ontrol unit harness con  |   | Check the continui<br>connector.<br>Models with naviga  |
|                                  |  | ontrol unit harness con  | tion system   | connector.  |
| bination meter harnes            |  |  | tion system   | connector.<br>Models with naviga  |
|                                  | harness connector  | Combination meter h  | ation system  | Connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.   |
| Continuity                       | harness connector<br>Terminal No.                                  | Combination meter h  | ation system<br>arness connector<br>Terminal No.                                | connector.<br>Models with naviga<br>AV control unit ha  |
| - Continuity<br>Existed          | harness connector<br>Terminal No.<br>14                            | Combination meter h  | ation system<br>arness connector<br>Terminal No.<br>90<br>74                    | Connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.   |
| Continuity<br>Existed<br>Existed | harness connector<br>Terminal No.<br>14<br>15                      | Combination meter h  | ation system<br>arness connector<br>Terminal No.<br>90<br>74<br>Vigation system | Connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.<br>M210   |
| - Continuity<br>Existed          | harness connector<br>Terminal No.<br>14<br>15                      | Combination meter h<br>Connector No.<br>M53                        | ation system<br>arness connector<br>Terminal No.<br>90<br>74<br>Vigation system | Connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.<br>M210<br>Models without nav                       |
| Continuity<br>Existed<br>Existed | harness connector<br>Terminal No.<br>14<br>15<br>harness connector | Combination meter h<br>Connector No.<br>M53<br>Combination meter h | ation system<br>arness connector<br>Terminal No.<br>90<br>74<br>Vigation system | Connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.<br>M210<br>Models without nav<br>AV control unit ha |

MAIN LINE BETWEEN AV AND M&A CIRCUIT

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

## Diagnosis Procedure

INFOID:000000006094455

[CAN SYSTEM (TYPE 6)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | r harness connector | Harness connector Connector No. Terminal No. |   | Continuity |
|------------------|---------------------|--|---|------------|
| Connector No.    | Terminal No.        |  |   | Continuity |
| M53              | 14                  | M105   | 7 | Existed    |
| CCIVI            | 15                  | COT IVI                                      | 8 | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the combination meter and the data link connector.
- NO >> Replace the PCB harness.

| < [                            | DTC/CIRCUIT DIA                                      |  | WEEN DLC AN   | D BCM CIRCUIT<br>[CAN | SYSTEM (TYPE 6)]       |   |
|--------------------------------|--|--|---------------|-----------------------|------------------------|---|
| M                              | AIN LINE BET   | FWEEN DLC A  | ND BCM CIRC   | UIT                   |                        | ٨ |
| Di                             | agnosis Proced                                       | lure   |               |                       | INFOID:000000006094456 | A |
| 1.                             | CHECK HARNESS  |  | N CIRCUIT)    |                       |                        | В |
| 1.<br>2.<br>3.<br>-<br>-<br>4. | Disconnect the fol<br>ECM<br>Harness connecto<br>BCM | Ittery cable from the n<br>lowing harness conne<br>ors M181 and M105 | ectors.       | BCM harness connec    | tor.                   | C |
|                                | Harness  | connector  | BCM harne     | ess connector         | Continuity             | _ |
|                                | Connector No.  | Terminal No.   | Connector No. | Terminal No.          | Continuity             | E |
|                                | 14.05  | 7  |               | 39                    | Existed                |   |

Is the inspection result normal?

M105

YES (Present error)>>Check CAN system type decision again.

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

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NO >> Replace the PCB harness.

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Existed

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## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN BCM AND RAS CIRCUIT

## Diagnosis Procedure

INFOID:000000006094460

[CAN SYSTEM (TYPE 6)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harne     | ss connector | PCB harness connector | Continuity |
|---------------|--------------|-----------------------|------------|
| Connector No. | Terminal No. | Terminal No.          | Continuity |
| M120          | 39           | 35                    | Existed    |
| IVI 120       | 40           | 36                    | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector Connector No. Terminal No. |    | nnector Harness connector |  | Continuity |
|---------------|--------------|--|----|---------------------------|--|------------|
| Connector No. | Terminal No. |  |    | Continuity                |  |            |
| M20           | 35           | M7   | 72 | Existed                   |  |            |
| WZ0           | 36           | 1017   | 73 | Existed                   |  |            |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 72    | 74         | Existed |
| DI            | 73    | 75         | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the 4WAS main control unit. NO >> Replace the body harness.

| < DTC/CIRCUIT DIA  | GNOSIS >  |   | 3 ANI                 |  | I I<br>AN SYSTEM (TYPE 6)   |
|--|---|---|-----------------------|--|-----------------------------|
|  | TWEEN RAS A   | ND ABS C  | CIRCL                 | -  |                             |
| Diagnosis Proced   | lure  |   |                       |  | INFOID:00000000609446       |
|  | OR  |   |                       |  |                             |
| <ol> <li>Turn the ignition s</li> <li>Disconnect the ba</li> <li>Check the followin<br/>and harness side)<br/>Harness connector<br/>Harness connector<br/>Harness connector<br/>Harness connector<br/>Sthe inspection result<br/>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the<br/>CHECK HARNESS</li> <li>Disconnect the ha</li> </ol> | witch OFF.<br>Ittery cable from the n<br>ng terminals and con<br>or B1<br>or M6<br>or E106<br><u>t normal?</u><br>e terminal and connec<br>5 CONTINUITY (OPE)<br>orness connectors B1 | tor.<br>N CIRCUIT)<br>and M7.                   | mage, t               |  | nnection (connector side    |
|  | ity between the harne   |   |                       | S.   |                             |
| Connector No.  |   | Terminal N                                      | NO.                   |  | Continuity                  |
| B1   | 72  |   |                       | 74   | Existed                     |
| CHECK HARNESS  | he body harness.<br>CONTINUITY (OPEI<br>Irness connectors M6<br>ity between the harne   | and E106.                                       |                       |  |                             |
| Harness  | connector   |   | Harness               | connector  |                             |
| Connector No.  | Terminal No.  | Connector                                       |                       | Terminal No.   | Continuity                  |
|  | 74  |   |                       | 22   | Existed                     |
| M7   | 75  | - M6  | ł                     | 23   | Existed                     |
| CHECK HARNESS     Disconnect the co     Check the continu     harness connecto   | e main line between th<br>CONTINUITY (OPEI<br>nnector of ABS actua<br>ity between the harne   | N CIRCUIT)<br>tor and electric<br>ess connector | c unit (co<br>and the | ontrol unit).<br>ABS actuator and<br>ctric unit (control unit) | electric unit (control unit |
| Connector No.  | Terminal No.  | Connector                                       | harness o<br>No.      | connector<br>Terminal No.                                      | Continuity                  |
|  | 22  |   |                       | 25   | Existed                     |
| E106   |   | E41   | -                     |  |                             |

MAIN LINE BETWEEN RAS AND ABS CIRCUIT

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

23

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

15

Existed

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

## **ECM BRANCH LINE CIRCUIT**

| DIC/CIRCUIT DIAGNUS  | >>>  |  |                              |
|--|--|--|------------------------------|
| CM BRANCH LIN  | E CIRCUIT  |  |                              |
| iagnosis Procedure   |  |  | INFOID:00000006094467        |
| CHECK CONNECTOR  |  |  |                              |
| <ul> <li>Check the following terr<br/>nector side).</li> <li>ECM</li> <li>Harness connector M30</li> </ul> | cable from the negative tern<br>ninals and connectors for c<br>) and PCB harness side co   | lamage, bend and loose cor                     | nnection (unit side and con- |
| the inspection result norm<br>(ES >> GO TO 2.<br>NO >> Repair the term<br>.CHECK HARNESS FOR               | inal and connector.  |  |                              |
| Disconnect the connect   |  | onnector terminals.                            |                              |
|  | ECM harness connector  |  |                              |
| Connector No.  | Termi  | nal No.  | Resistance ( $\Omega$ )      |
| M107   | 114  | 113  | Approx. 108 – 132            |
| VK56VD   | ECM harness connector  |  | Resistance (Ω)               |
| Connector No.  |  | nal No.  | Approx 100 122               |
| M160<br>the measurement value w  | 146  | 151  | Approx. 108 – 132            |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>•CHECK POWER SUPPL  | Y AND GROUND CIRCUI  | T<br>CM. Refer to the following.               |                              |
| VQ37VHR: <u>EC-180, "Diag</u><br>VK56VD: <u>EC-716, "Diagno<br/>the inspection result norm</u>             | nosis Procedure"<br>osis Procedure"  | -  |                              |
| YES (Present error)>>Rep<br>• VQ37VHR: <u>E(</u><br>• VK56VD: <u>EC-</u><br>YES (Past error)>>Error w      | lace the ECM. Refer to the<br>C-535, "Removal and Insta<br>535, "Removal and Installa<br>as detected in the ECM bra<br>er supply and the ground ci | <u>llation"</u><br><u>ition"</u><br>anch line. |                              |
|  | ITINUITY (OPEN CIRCUIT   | )  |                              |
| <ul> <li>Disconnect the harness</li> <li>Check the continuity be<br/>VQ37VHR</li> </ul>                    |  | onnector and the harness co                    | unnector.                    |

< DTC/CIRCUIT DIAGNOSIS >

| ECM harness connector |              | Harness connector |              | Continuity | - |
|-----------------------|--------------|-------------------|--------------|------------|---|
| Connector No.         | Terminal No. | Connector No.     | Terminal No. | Continuity |   |
| M107                  | 114          | M30               | 439          | Existed    | - |
|                       | 113          |                   | 438          | Existed    | - |

VK56VD

## ECM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

| ECM harness connector |              | Harness connector |              | Continuity |  |
|-----------------------|--------------|-------------------|--------------|------------|--|
| Connector No.         | Terminal No. | Connector No.     | Terminal No. | Continuity |  |
| M160                  | 146          | - M30             | 439          | Existed    |  |
|                       | 151          |                   | 438          | Existed    |  |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

| TPMS BRANCH  | LINE CIRCUI  | Т  |                      |  |
|--|--|--|----------------------|--|
| Diagnosis Proced   | ure  |  |                      | INFOID:000000006094468   |
| 1. СНЕСК СОЛЛЕСТ   | OR   |  |                      |  |
| <ul> <li>3. Check the followin nector side).</li> <li>- Low tire pressure</li> <li>- Harness connector</li> <li>Is the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> </ul> | ttery cable from the ne<br>og terminals and conne<br>warning control unit<br>r M29 and PCB harne<br><u>c normal?</u><br>e terminal and connect | ectors for damage, b<br>ess side connector<br>tor. | pend and loose con   | nection (unit side and con-  |
| 2.CHECK HARNESS<br>1. Disconnect the co  | nnector of low tire pre  |  | ol unit.             |  |
|  |  |  |                      | ss connector terminals.  |
|  | tire pressure warning contr  |  | or                   | Resistance ( $\Omega$ )  |
| Connector No.  |  | Terminal No.                                       |                      |  |
| M43<br>Is the measurement va   | 2  |  | 1                    | Approx. 54 – 66  |
| "Diagnosis Procedure"<br>Is the inspection result  | bly and the ground cire<br><u>normal?</u>  | cuit of the low tire p                             | -                    | ontrol unit. Refer to <u>WT-53.</u><br>r to <u>WT-70, "Removal and</u> |
| Installation<br>YES (Past error)>>E  |  | e low tire pressure                                |                      |  |
|  | CONTINUITY (OPEN   | •  |                      |  |
| 4.CHECK HARNESS 1. Disconnect the ha   | CONTINUITY (OPEN<br>rness connector M29.   | N CIRCUIT)   | g control unit harne | ess connector and the har-   |
| <ul> <li>4.CHECK HARNESS</li> <li>1. Disconnect the ha</li> <li>2. Check the continuous connector.</li> <li>Low tire pressure</li> </ul>   | CONTINUITY (OPEN<br>rness connector M29.   | N CIRCUIT)   | g control unit harne |  |
| <ul> <li>4.CHECK HARNESS</li> <li>1. Disconnect the ha</li> <li>2. Check the continuous connector.</li> <li>Low tire pressure</li> </ul>   | CONTINUITY (OPEN<br>rness connector M29.<br>hity between the low the<br>warning control unit   | N CIRCUIT)   | -                    |  |
| <ul> <li>4.CHECK HARNESS</li> <li>1. Disconnect the ha</li> <li>2. Check the continuness connector.</li> <li>Low tire pressure harness</li> </ul>  | CONTINUITY (OPEN<br>rness connector M29.<br>ity between the low the<br>warning control unit<br>connector                                       | N CIRCUIT)<br>ire pressure warning<br>Harnes       | s connector          |  |

#### Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

# HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094471

[CAN SYSTEM (TYPE 6)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/C auto amp.
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

| 1             | A/C auto amp. harness connector |    |                 |
|---------------|---------------------------------|----|-----------------|
| Connector No. | Terminal No.                    |    | Resistance (Ω)  |
| M66           | 12                              | 11 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-167, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-201, "Removal and Installation".

- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

| A/C auto amp. h | arness connector | Harness       | connector    | Continuity |
|-----------------|------------------|---------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No. | Terminal No. | Continuity |
| M66             | 12               | M28           | 325          | Existed    |
| MOO             | 11               | IVIZO         | 327          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

| iagnosis Proced  | ure  |  |   | INFOID:00000000609447  |
|--|--|--|---|--|
| .CHECK CONNECT   | OR   |  |   |  |
| <ol> <li>Check the followin<br/>nector side).</li> <li>A/T assembly<br/>Harness connecto<br/>Harness connecto<br/>Harness connecto</li> <li>Source the inspection result<br/>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the<br/>CHECK HARNESS</li> <li>Disconnect the co</li> </ol>   | ttery cable from the ne<br>og terminals and conne<br>r F103<br>r M116<br>r M28 and PCB harne   | ectors for damage, bei<br>ss side connector<br>or.<br>-<br>bly.  |   | ction (unit side and con   |
|  |  | -  |   |  |
|  | A/T assembly harne   | ess connector  |   | Posistanco(0)  |
| Connector No.  |  | Terminal No.   |   | Resistance (Ω)   |
| F61<br>s the measurement va  | A/T assembly harne   | Terminal No.   | 8   | Resistance (Ω)<br>Approx. 54 – 66  |
| F61<br><u>s the measurement va</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3. CHECK POWER S<br>Check the power supp<br><u>s the inspection result</u><br>YES (Present error)><br><u>ponent Pa</u><br>parts list.)<br>YES (Past error)>>En<br>NO >> Repair the<br>4. CHECK HARNESS<br>1. Disconnect the ha  | 3<br>alue within the specific<br>UPPLY AND GROUN<br>ly and the ground circ<br>normal?<br>>Replace the control v<br>rts Location". (Replac<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.                              | Terminal No.<br>ation?<br>D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT)  | to <u>TM-156, "Diagnor</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM                         | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |
| F61 $s the measurement values of the measurement values of the measurement values of the measurement values of the measurement of the measurement values of the measurement of the me$ | 3<br>alue within the specific<br>UPPLY AND GROUN<br>ly and the ground circ<br>normal?<br>>Replace the control v<br>rts Location". (Replace<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/T as   | Terminal No.<br>ation?<br>D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT)<br>ssembly harness conn                      | to <u>TM-156, "Diagnor</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM                         | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |
| F61<br>s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3. CHECK POWER S<br>Check the power supp<br>s the inspection result<br>YES (Present error)><br>ponent Pa<br>parts list.)<br>YES (Past error)>>Er<br>NO >> Repair the<br>4. CHECK HARNESS<br>Disconnect the ha<br>Check the continu   | 3<br>alue within the specific<br>UPPLY AND GROUNI<br>ly and the ground circe<br>normal?<br>>Replace the control v<br>rts Location". (Replace<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/T as | Terminal No.<br>ation?<br>D CIRCUIT<br>uit of the TCM. Refer to<br>valve with TCM. Refer<br>e A/T assembly if cont<br>e TCM branch line.<br>e ground circuit.<br>I CIRCUIT)<br>ssembly harness conn<br>Harness con | to <u>TM-156, "Diagnor</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM<br>nector and the harne | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |
| F61 $s the measurement values of the measurement of the matrix of the measurement of the$  | 3<br>alue within the specific<br>UPPLY AND GROUN<br>ly and the ground circ<br>normal?<br>>Replace the control v<br>rts Location". (Replace<br>fror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/T as   | Terminal No.<br>ation?<br>D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT)<br>ssembly harness conn                      | to <u>TM-156, "Diagnor</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM                         | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

# A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094473

[CAN SYSTEM (TYPE 6)]

### WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness and/or the PCB harness.
- NO >> Replace parts whose air bag system has a malfunction.

# **AV BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 6)]

| AV BRANCH LI  | NE CIRCUIT   |  |  | ٨                          |
|---|--|--|--|----------------------------|
| Diagnosis Proced  | lure   |  |  | A                          |
| 1.CHECK CONNECT   | OR   |  |  | В                          |
| <ol> <li>Check the followin nector side).</li> <li>AV control unit</li> </ol>   | ttery cable from the ne  | ectors for damage, be  | and and loose connec   | tion (unit side and con- C |
| Is the inspection result  |  |  |  | D                          |
| 2.CHECK HARNESS<br>1. Disconnect the co   | e terminal and connect<br>FOR OPEN CIRCUIT<br>nnector of AV control<br>nce between the AV co               | Г<br>unit.   | nnector terminals.   | E<br>F                     |
| <ul> <li>Models with navig</li> </ul>   | ation system   |  |  |                            |
|   | AV control unit harn   |  |  | Resistance (Ω)             |
| Connector No.<br>M210   | 90   | Terminal No.   | 74   | Approx. 54 – 66            |
| - Models without na   |  |  |  | H                          |
|   | AV control unit harn   | ess connector  |  |                            |
| Connector No.   |  | Terminal No.   |  | Resistance ( $\Omega$ )    |
| M84   | 81   |  | 80   | Approx. 54 – 66            |
| <ul> <li>BOSE audio with na</li> <li>Is the inspection result</li> <li>YES (Present error)&gt;</li> <li>Base au</li> <li>BOSE a</li> <li>YES (Past error)&gt;&gt;E</li> </ul> | UPPLY AND GROUN<br>Ily and the ground circ<br>navigation system: <u>AV</u><br>vigation system: <u>AV-2</u> | D CIRCUIT<br>suit of the AV control u<br>-90, "AV CONTROL U<br>72, "AV CONTROL U<br>trol unit. Refer to the f<br>system: <u>AV-120, "Re</u><br>ystem: <u>AV-298, "Rem</u><br>ne AV control unit brar | JNIT : Diagnosis Proce<br>NIT : Diagnosis Proce<br>following.<br>moval and Installation<br>oval and Installation | edure" L                   |
| 4.CHECK HARNESS   | ,  | ,  |  |                            |
|   | Irness connector M25.<br>ity between the AV co<br>ation system   |  | nnector and the harne  | ss connector.              |
|   | arness connector   |  | connector  | Continuity                 |
| Connector No.   | Terminal No.   | Connector No.  | Terminal No.   | -                          |
| M210  | 90 74  | M25  | 201<br>221   | Existed<br>Existed         |
|   | ΓT   |  | <i>LL</i> 1  | EXISTON                    |

Models without navigation system

< DTC/CIRCUIT DIAGNOSIS >

# **AV BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

| AV control unit h | arness connector | Harness       | connector    | Continuity |
|-------------------|------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No. | Terminal No. | Continuity |
| M84               | 81               | M25           | 201          | Existed    |
| 10104             | 80               | IVIZ5         | 221          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

< DTC/CIRCUIT DIAGNOSIS >

| iagnosis Proced   | lure  |  |  | INFOID:0000000609447   |  |
|---|---|--|--|--|--|
| -   |   |  |  | IN CID.000000000000000000000000000000000000  |  |
| .CHECK CONNECT  |   |  |  |  |  |
| . Check the followin<br>nector side).<br>Combination mete<br>Harness connecto<br>the inspection result<br>YES >> GO TO 2.<br>NO >> Repair the   | ttery cable from the ne<br>og terminals and conne<br>er<br>r M24 and PCB harne  | ectors for damag<br>ess side connecto<br>tor.  |  | onnection (unit side and con-  |  |
|   | nnector of combinatio   |  |  |  |  |
|   | nce between the comb  |  | arness connector terr  | ninals.  |  |
|   | Combination meter ha  | irness connector   |  |  |  |
|   | Connector No. Terminal No. Resistance (Ω)   |  |  |  |  |
| Connector No.   |   |  |  |  |  |
| M53<br>the measurement va<br>YES >> GO TO 3.  | 14<br>alue within the specific  |  | 15   | Approx. 54 – 66  |  |
| M53<br>the measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>theck the power supple<br>TETER : Diagnosis Pro-<br>the inspection result<br>YES (Present error)><br>YES (Past error)>>En<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha   | UPPLY AND GROUN<br>Oly and the ground cir<br>rocedure".<br>normal?<br>>Replace the combina<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.                              | D CIRCUIT<br>rouit of the comb<br>ation meter. Refe<br>the combination m<br>e ground circuit.<br>N CIRCUIT)  | ination meter Refer<br>er to <u>MWI-90, "Remo</u><br>neter branch line.                        | to <u>MWI-70. "COMBINATION</u>   |  |
| M53<br>S the measurement vary<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>Check the power suppression result<br>S the inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | UPPLY AND GROUN<br>oly and the ground cir<br>cocedure".<br>Replace the combination<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.<br>ity between the comb               | cation?<br>D CIRCUIT<br>reuit of the comb<br>ation meter. Refe<br>the combination m<br>e ground circuit.<br>N CIRCUIT)   | ination meter Refer<br>er to <u>MWI-90, "Remo</u><br>neter branch line.<br>rness connector and | to <u>MWI-70, "COMBINATION</u><br>val and Installation".                           |  |
| M53<br>S the measurement vary<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>CHECK POWER S<br>CHECK POWER S<br>CHECK POWER S<br>TETER : Diagnosis Prison<br>S the inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu | UPPLY AND GROUN<br>Oly and the ground cir<br>rocedure".<br>normal?<br>>Replace the combina<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.                              | cation?<br>D CIRCUIT<br>reuit of the comb<br>ation meter. Refe<br>the combination m<br>e ground circuit.<br>N CIRCUIT)   | ination meter Refer<br>er to <u>MWI-90, "Remo</u><br>neter branch line.<br>rness connector and | to <u>MWI-70. "COMBINATION</u><br>val and Installation".<br>the harness connector. |  |
| M53<br>s the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>Check the power supp<br><u>AETER : Diagnosis Pr</u><br>s the inspection result<br>YES (Present error)><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Combination mete      | UPPLY AND GROUN<br>oly and the ground cir<br>rocedure".<br>a normal?<br>>Replace the combination<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.<br>ity between the comb | Cation?<br>D CIRCUIT<br>Trouit of the comb<br>ation meter. Reference<br>or combination meter<br>or ground circuit.<br>N CIRCUIT)<br>Transition meter han<br>Ha | ination meter Refer<br>er to <u>MWI-90, "Remo</u><br>neter branch line.<br>rness connector and | to <u>MWI-70. "COMBINATION</u><br>val and Installation".<br>the harness connector. |  |

NO >> Repair the harness between the combination meter harness connector M53 and the harness con- O nector M24.

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# DLC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094476

[CAN SYSTEM (TYPE 6)]

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

|               | Data link connector |              |  |  |
|---------------|---------------------|--------------|--|--|
| Connector No. | Termi               | Terminal No. |  |  |
| M182          | 6                   | 6 14         |  |  |

#### Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> GO TO 3.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the data link connector and the harness connector.

| Data link     | connector    | Harness       | connector    | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M182          | 6            | M23           | 151          | Existed    |
| IVI 102       | 14           | WIZ5          | 150          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

## **BCM BRANCH LINE CIRCUIT**

| BCM BRANCH   | LINE CIRCUIT   |  |                              |                          |
|--|--|--|------------------------------|--------------------------|
| Diagnosis Procec   | lure   |  |                              | INFOID:00000006094477    |
| 1.CHECK CONNECT  | OR   |  |                              |                          |
| <ol> <li>Check the followir nector side).</li> <li>BCM</li> <li>Harness connector lis the inspection result YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the 2.CHECK HARNESS</li> <li>Disconnect the co</li> </ol> | ttery cable from the neig terminals and connect<br>or M22 and PCB harnes<br>t normal?<br>terminal and connect<br>FOR OPEN CIRCUI | ectors for damage, be<br>ess side connector<br>tor.<br>Γ |                              | tion (unit side and con- |
|  | BCM harness of   |  |                              |                          |
| Connector No.  |  | Terminal No.   |                              | Resistance (Ω)           |
| M120   | 39   |  | 40                           | Approx. 54 – 66          |
| Is the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER S  | UPPLY AND GROUN  | D CIRCUIT  |                              |                          |
|  |  | uit of the BCM. Refe                                     | r to <u>BCS-73, "Diagnos</u> | <u>is Procedure"</u> .   |
| YES (Past error)>>E  |  | e BCM branch line.                                       | noval and Installation       | <u>.</u>                 |
| 4.CHECK HARNESS  | CONTINUITY (OPEN   | N CIRCUIT)   |                              |                          |
|  | rness connector M22.<br>ity between the BCM  |  | nd the harness connect       | ctor.                    |
| BCM harne  | ss connector   | Harness  | connector                    | Continuity               |
| Connector No.  | Terminal No.   | Connector No.  | Terminal No.                 | - Continuity             |
| M120   | 39   | M22  | 101                          | Existed                  |
|  |  |  |                              |                          |

Ν

Is the inspection result normal? YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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# STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094478

[CAN SYSTEM (TYPE 6)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

|               | Steering angle sensor harness connector |              |  |  |
|---------------|---|--------------|--|--|
| Connector No. | Termi                                   | Terminal No. |  |  |
| M37           | 1                                       | 1 2          |  |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

# **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to <u>BRC-144, "Removal and Installation"</u>.

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

| Steering angle sens | or harness connector | Harness       | connector    | Continuity |
|---------------------|----------------------|---------------|--------------|------------|
| Connector No.       | Terminal No.         | Connector No. | Terminal No. | Continuity |
| M37                 | 1                    | M22           | 81           | Existed    |
| 10137               | 2                    | IVIZZ         | 82           | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

# **RAS BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 6)]

|   | ECIRCUIT   |  |  |
|---|--|--|--|
| Diagnosis Procedure   |  |  | INFOID:00000006094480  |
| <b>1</b> .CHECK CONNECTOR   |  |  |  |
| <ol> <li>Check the terminals and<br/>tion (unit side and conning<br/>s the inspection result norm</li> </ol>  | cable from the negative terr<br>d connectors of the 4WAS<br>ector side).   |  | age, bend and loose connec-  |
| YES >> GO TO 2.<br>NO >> Repair the term  | inal and connector   |  |  |
| 2. CHECK HARNESS FOR  |  |  |  |
| 2. Check the resistance be  | or of 4WAS main control ur<br>etween the 4WAS main con   | trol unit harness connecto   | or terminals.  |
|   | S main control unit harness conn   |  | Resistance (Ω)   |
| Connector No.   | Termir   |  |  |
|   |  | 0  | Approx 54 66   |
| B54   | 1<br>vithin the specification?   | 8  | Approx. 54 – 66  |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Replace the boo<br>CHECK POWER SUPPL  | vithin the specification?  |  | Approx. 54 – 66  |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Replace the boo<br>CHECK POWER SUPPL<br>Check the power supply and<br>Procedure (4WAS Main Cor  | vithin the specification?<br>dy harness.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the 4<br>htrol Unit)".   |  | Approx. 54 – 66<br>Refer to <u>STC-171, "Diagnosis</u>             |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Replace the boo<br>CHECK POWER SUPPL<br>Check the power supply and<br>Procedure (4WAS Main Cor<br>s the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | vithin the specification?<br>dy harness.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the 4<br>htrol Unit)".   | WAS main control unit. F<br>I unit. Refer to <u>STC-185,</u><br>ain control unit branch line | Refer to <u>STC-171, "Diagnosis</u><br>"Removal and Installation". |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Replace the boo<br>CHECK POWER SUPPL<br>Check the power supply and<br>Procedure (4WAS Main Cor<br>s the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | vithin the specification?<br>dy harness.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the 4<br><u>htrol Unit)"</u> .<br><u>hal?</u><br>lace the 4WAS main control<br>as detected in the 4WAS m | WAS main control unit. F<br>I unit. Refer to <u>STC-185,</u><br>ain control unit branch line | Refer to <u>STC-171, "Diagnosis</u><br>"Removal and Installation". |

< DTC/CIRCUIT DIAGNOSIS >

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# ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator and electric unit (control unit) harness connector |              |  | Resistance (Ω)  |
|---|--------------|--|-----------------|
| Connector No.   | Terminal No. |  | Resistance (22) |
| E41   | 25 15        |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

Revision: 2010 June

INFOID:000000006094481

## **IPDM-E BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 6)]

|  | SIS >  |   | [CAN SYSTEM (TYPE 6)]          |
|--|--|---|--------------------------------|
| PDM-E BRANCH L   | INE CIRCUIT  |   |                                |
| Diagnosis Procedure  |  |   | INFOID:00000006094483          |
| <b>1</b> .CHECK CONNECTOR  |  |   |                                |
|  | cable from the negative terr   |   | nd loose connection (unit side |
| · ·  | inal and connector.  |   |                                |
| CHECK HARNESS FOR  |  |   |                                |
| . Disconnect the connect<br>. Check the resistance be  | tor of IPDM_E/R.<br>etween the IPDM_E/R harn   | ess connector terminals.  |                                |
|  | IDDM E/D barnage connector   |   |                                |
| Connector No.  | IPDM E/R harness connector<br>Terminal No.   |   | Resistance ( $\Omega$ )        |
| E6   | 40   | 39  | Approx. 108 – 132              |
|  | within the specification?  |   |                                |
| the measurement value v  |  |   |                                |
| YES >> GO TO 3.  |  |   |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI   | M E/R branch line.   | _   |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL  | M E/R branch line.<br>_Y AND GROUND CIRCUIT  |   |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL  | M E/R branch line.<br>-Y AND GROUND CIRCUIT<br>d the ground circuit of the IF  |   | 32, "Diagnosis Procedure".     |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL<br>Check the power supply and<br>the inspection result norm  | M E/R branch line.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the IF<br>nal?  | PDM E/R. Refer to PCS-  |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL<br>check the power supply and<br>the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | M E/R branch line.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the IF<br><u>nal?</u><br>blace the IPDM E/R. Refer t<br>vas detected in the IPDM E/ | PDM E/R. Refer to <u>PCS-</u><br>o <u>PCS-33. "Removal and</u><br>/R branch line. |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL<br>theck the power supply and<br>the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | M E/R branch line.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the IF<br>nal?<br>blace the IPDM E/R. Refer t                                       | PDM E/R. Refer to <u>PCS-</u><br>o <u>PCS-33. "Removal and</u><br>/R branch line. |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL<br>check the power supply and<br>the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | M E/R branch line.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the IF<br><u>nal?</u><br>blace the IPDM E/R. Refer t<br>vas detected in the IPDM E/ | PDM E/R. Refer to <u>PCS-</u><br>o <u>PCS-33. "Removal and</u><br>/R branch line. |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL<br>Check the power supply and<br>the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | M E/R branch line.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the IF<br><u>nal?</u><br>blace the IPDM E/R. Refer t<br>vas detected in the IPDM E/ | PDM E/R. Refer to <u>PCS-</u><br>o <u>PCS-33. "Removal and</u><br>/R branch line. |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL<br>Check the power supply and<br>the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | M E/R branch line.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the IF<br><u>nal?</u><br>blace the IPDM E/R. Refer t<br>vas detected in the IPDM E/ | PDM E/R. Refer to <u>PCS-</u><br>o <u>PCS-33. "Removal and</u><br>/R branch line. |                                |
| YES >> GO TO 3.<br>NO >> Repair the IPDI<br>CHECK POWER SUPPL<br>Check the power supply and<br>the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | M E/R branch line.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the IF<br><u>nal?</u><br>blace the IPDM E/R. Refer t<br>vas detected in the IPDM E/ | PDM E/R. Refer to <u>PCS-</u><br>o <u>PCS-33. "Removal and</u><br>/R branch line. |                                |
| NO >> Repair the IPDI<br>3.CHECK POWER SUPPL<br>Check the power supply and<br><u>s the inspection result norm</u><br>YES (Present error)>>Rep<br>YES (Past error)>>Error w         | M E/R branch line.<br>_Y AND GROUND CIRCUIT<br>d the ground circuit of the IF<br><u>nal?</u><br>blace the IPDM E/R. Refer t<br>vas detected in the IPDM E/ | PDM E/R. Refer to <u>PCS-</u><br>o <u>PCS-33. "Removal and</u><br>/R branch line. |                                |

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< DTC/CIRCUIT DIAGNOSIS >

# ADP BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094484

[CAN SYSTEM (TYPE 6)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

#### Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

### 1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |    |            |  |  |
|---------------|-------------------------------|----|------------|--|--|
| Connector No. | Terminal No.                  |    | Continuity |  |  |
| M125          | 4                             | 6  | Existed    |  |  |
| WT25          | 10                            | 12 | Existed    |  |  |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

| Driv          | Driver seat control unit harness connector |  |                         |  |
|---------------|--|--|-------------------------|--|
| Connector No. | Terminal No.                               |  | Resistance ( $\Omega$ ) |  |
| B514          | 23 24                                      |  | Approx. 54 – 66         |  |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the driver seat control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-73</u>, "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

- YES (Past error)>>Error was detected in the driver seat control unit branch line.
- NO >> Repair the power supply and the ground circuit.

## CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 6)]

#### < DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT А **Diagnosis Procedure** INFOID:000000006094493 **1.**CONNECTOR INSPECTION 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Ε Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M182 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M182 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. ${f 4}$ . CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. Check the resistance between the ECM terminals. 2. VQ37VHR LAN ECM Resistance $(\Omega)$ Terminal No. Ν 114 113 Approx. 108 - 132 VK56VD ECM Resistance $(\Omega)$ Terminal No. Ρ 146 151 Approx. 108 - 132 Check the resistance between the IPDM E/R terminals. 3 IPDM E/R Resistance $(\Omega)$ Terminal No. Approx. 108 - 132 40 39

## **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

### Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

# 5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

### **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication system. **NOTE:**

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

#### [CAN SYSTEM (TYPE 7)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006094895 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM \_ D Low tire pressure warning control unit \_ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094896

[CAN SYSTEM (TYPE 7)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit h | arness connector | Continuity |
|-----------------|------------------|-------------------|------------------|------------|
| Connector No.   | Terminal No.     | Connector No.     | Terminal No.     | Continuity |
| M66             | 12               | M210              | 90               | Existed    |
| 1000            | 11               | M210              | 74               | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit ha | arness connector | Continuity |
|-----------------|------------------|--------------------|------------------|------------|
| Connector No.   | Terminal No.     | Connector No.      | Terminal No.     | Continuity |
| Mee             | 12               | M84                | 81               | Existed    |
| IVIOO           | M66 11           | 11/104             | 80               | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

| SNOSIS >                                     |  | [CAN  | I SYSTEM (TYPE 7)]  |
|--|--|---|---|
| WEEN A-BAG                                   | AND AV CIRC  | UIT   |   |
| ure  |  |   | INFOID:000000006094897  |
| CONTINUITY (OPEI                             | N CIRCUIT)   |   |   |
| tery cable from the n<br>owing harness conne | ectors.  | nector and the AV co  | ntrol unit harness con-   |
| arness connector                             | AV control unit ha   | arness connector  | Continuity  |
| Terminal No.                                 | Connector No.  | Terminal No.  | Continuity  |
| 12   | M240   | 90  | Existed   |
|  | – M210   |   |   |
|  | WEEN A-BAG<br>ure<br>CONTINUITY (OPE<br>vitch OFF.<br>tery cable from the n<br>owing harness conne<br>ty between the A/C a<br>ation system<br>arness connector<br>Terminal No. | WEEN A-BAG AND AV CIRC         ure         CONTINUITY (OPEN CIRCUIT)         vitch OFF.         tery cable from the negative terminal.         owing harness connectors.         ty between the A/C auto amp. harness connectors.         ation system         arness connector         AV control unit harness connector No. | WEEN A-BAG AND AV CIRCUIT         ure         CONTINUITY (OPEN CIRCUIT)         vitch OFF.         tery cable from the negative terminal.         owing harness connectors.         ty between the A/C auto amp. harness connector and the AV control unit harness connector         ation system         arness connector         AV control unit harness connector         Terminal No. |

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

| A/C auto amp. h | arness connector | AV control unit h | arness connector | Continuity | _ |
|-----------------|------------------|-------------------|------------------|------------|---|
| Connector No.   | Terminal No.     | Connector No.     | Terminal No.     | Continuity | Н |
| M66             | 12               | M84               | 81               | Existed    | - |
| IVIOO           | 11               | 1004              | 80               | Existed    | - |

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

## Diagnosis Procedure

INFOID:000000006094898

[CAN SYSTEM (TYPE 7)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

| AV control unit h | arness connector | Combination meter | harness connector | Continuity |
|-------------------|------------------|-------------------|-------------------|------------|
| Connector No.     | Terminal No.     | Connector No.     | Terminal No.      | Continuity |
| M210              | 90               | M53               | 14                | Existed    |
| WZ 10             | 74               | M53               | 15                | Existed    |

#### Models without navigation system

| AV control unit h | narness connector | Combination meter | harness connector | - Continuity |
|-------------------|-------------------|-------------------|-------------------|--------------|
| Connector No.     | Terminal No.      | Connector No.     | Terminal No.      | Continuity   |
| M94               | 81                | M53               | 14                | Existed      |
| M84 80            | 80                | CCIVI             | 15                | Existed      |

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

| DTC/CIRCUIT DIAC  |   |               | -                    | SYSTEM (TYPE 7)]       |
|---|---|---------------|----------------------|------------------------|
| Diagnosis Proced  |   |               |                      | INFOID:000000006094899 |
| .CHECK HARNESS  | CONTINUITY (OPEI  | N CIRCUIT)    |                      |                        |
| <ol> <li>Disconnect the foll<br/>ECM</li> <li>Combination mete</li> <li>Harness connecto</li> </ol> | ttery cable from the n<br>lowing harness conne<br>r<br>rs M105 and M181 |               | connector and the ha | rness connector.       |
| Combination meter   | r harness connector   | Harness       | connector            | <b>.</b>               |
| Connector No.   | Terminal No.  | Connector No. | Terminal No.         | Continuity             |
| M53   | 14  | N405          | 7                    | Existed                |
| 1/10.3  |   | M105          | 8                    |                        |
| Wibb  | 15  |               | 0                    | Existed                |

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

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## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### **Diagnosis Procedure**

INFOID:000000006094900

[CAN SYSTEM (TYPE 7)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

| Harness       | connector    | BCM harness connector |              | Continuity |
|---------------|--------------|-----------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.         | Terminal No. | Continuity |
| M405          | 7            | M400                  | 39           | Existed    |
| M105          | 8            | - M120                | 40           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

NO >> Replace the PCB harness.

| AIN LINE BET  | WEEN BCM A  | ND ABS CIRCL   | JIT                                   |  |
|---|---|--|---------------------------------------|--|
| agnosis Proced  | ure   |  |                                       | INFOID:0000000060945                                   |
| .CHECK CONNECT  | OR  |  |                                       |  |
| . Check the followir<br>and harness side)<br>Harness connecto<br>Harness connecto<br>Harness connecto<br>Harness connecto<br>Harness connecto   | ttery cable from the ne<br>ng terminals and conr<br>r M20 and PCB harne<br>r M7<br>r B1<br>r M6<br>r E106   | nectors for damage, b  | pend and loose conn                   | ection (connector sid                                  |
| <u>s the inspection result</u><br>YES >> GO TO 2.   | <u>normal?</u>  |  |                                       |  |
|   | terminal and connect  | tor.   |                                       |  |
| CHECK HARNESS   | CONTINUITY (OPEN  | N CIRCUIT)   |                                       |  |
| BCM<br>Harness connecto   |   | ctors.<br>harness connector and  | d the PCB harness c                   | onnector.  |
| . Check the continu   |   |  |                                       |  |
|   | ss connector  | PCB harnes   | s connector                           | Continuity   |
|   | ss connector<br>Terminal No.  | Termin   | al No.                                | Continuity   |
| BCM harne   | ss connector<br>Terminal No.<br>39  | Termin<br>31   | al No.<br>5                           | Existed  |
| BCM harne<br>Connector No.<br>M120  | ss connector<br>Terminal No.<br>39<br>40  | Termin   | al No.<br>5                           | -  |
| BCM harne<br>Connector No.<br>M120<br>the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>. Disconnect the ha  | ss connector<br>Terminal No.<br>39<br>40  | Termin<br>39<br>30<br>N CIRCUIT)<br>and B1.  | al No.<br>5                           | Existed  |
| BCM harne<br>Connector No.<br>M120<br>the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>. Disconnect the ha<br>. Check the continu   | ss connector<br>Terminal No.<br>39<br>40<br>anormal?<br>ne PCB harness.<br>CONTINUITY (OPEN<br>rness connectors M7  | Termin<br>39<br>30<br>N CIRCUIT)<br>and B1.  | nal No.<br>5<br>6                     | Existed  |
| BCM harne<br>Connector No.<br>M120<br>the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>. Disconnect the ha<br>. Check the continu   | ss connector<br>Terminal No.<br>39<br>40<br>anormal?<br>ne PCB harness.<br>CONTINUITY (OPEN<br>rness connectors M7<br>ity between the harne   | Termin<br>3:<br>3:<br>3:<br>3:<br>3:<br>3:<br>3:<br>3:<br>3:<br>3:<br>3:<br>3:<br>3:   | nal No.<br>5<br>6                     | Existed  |
| BCM harne<br>Connector No.<br>M120<br>Sthe inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>. Disconnect the ha<br>. Check the continu<br>Harness   | ss connector<br>Terminal No.<br>39<br>40<br>normal?<br>ne PCB harness.<br>CONTINUITY (OPEN<br>rness connectors M7<br>ity between the harne<br>connector<br>Terminal No.<br>35   | Termin<br>33<br>30<br>N CIRCUIT)<br>and B1.<br>ss connectors.<br>Harness c   | connector<br>Terminal No.<br>72       | Existed<br>Existed<br>Continuity<br>Existed            |
| BCM harne<br>Connector No.<br>M120<br>the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M20  | ss connector<br>Terminal No.<br>39<br>40<br>anormal?<br>ne PCB harness.<br>CONTINUITY (OPEN<br>rness connectors M7<br>ity between the harne<br>connector<br>Terminal No.<br>35<br>36  | Termin<br>33<br>30<br>N CIRCUIT)<br>and B1.<br>ss connectors.<br>Harness of<br>Connector No.   | connector<br>Terminal No.             | Existed<br>Existed                                     |
| BCM harne<br>Connector No.<br>M120<br>the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M20<br>the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS                           | ss connector<br>Terminal No.<br>39<br>40<br>normal?<br>ne PCB harness.<br>CONTINUITY (OPEN<br>rness connectors M7<br>ity between the harne<br>connector<br>Terminal No.<br>35<br>36<br>normal?  | Termin<br>33<br>30<br>N CIRCUIT)<br>and B1.<br>ss connectors.<br>Harness connectors<br>M7<br>e harness connectors<br>N CIRCUIT)                        | connector<br>Terminal No.<br>72<br>73 | Existed<br>Existed<br>Continuity<br>Existed            |
| BCM harne<br>Connector No.<br>M120<br>the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M20<br>the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS                           | ss connector<br>Terminal No.<br>39<br>40<br>anormal?<br>ne PCB harness.<br>CONTINUITY (OPEN<br>rness connectors M7<br>ity between the harne<br>connector<br>Terminal No.<br>35<br>36<br>anormal?<br>e main line between the<br>CONTINUITY (OPEN | Termin<br>33<br>30<br>N CIRCUIT)<br>and B1.<br>ss connectors.<br>Harness connectors<br>M7<br>e harness connectors<br>N CIRCUIT)                        | connector<br>Terminal No.<br>72<br>73 | Existed<br>Existed<br>Continuity<br>Existed            |
| BCM harne<br>Connector No.<br>M120<br>the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M20<br>the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS<br>Check the continuity b | ss connector<br>Terminal No.<br>39<br>40<br>anormal?<br>ne PCB harness.<br>CONTINUITY (OPEN<br>rness connectors M7<br>ity between the harne<br>connector<br>Terminal No.<br>35<br>36<br>anormal?<br>e main line between the<br>CONTINUITY (OPEN | Termin<br>33<br>34<br>34<br>35<br>36<br>36<br>36<br>37<br>36<br>37<br>36<br>37<br>37<br>37<br>37<br>37<br>37<br>37<br>37<br>37<br>37<br>37<br>37<br>37 | connector<br>Terminal No.<br>72<br>73 | Existed<br>Existed<br>Continuity<br>Existed<br>Existed |

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

# MAIN LINE BETWEEN BCM AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

- 1. Disconnect the harness connectors M6 and E106.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness       | connector    | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M7            | 74           | M6            | 22           | Existed    |
| 1417          | 75           |               | 23           | Existed    |

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair the main line between the harness connectors M7 and M6.

### **6.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness       | connector    |                            | ectric unit (control unit)<br>connector | Continuity |  |
|---------------|--------------|----------------------------|---|------------|--|
| Connector No. | Terminal No. | Connector No. Terminal No. |   |            |  |
| E106          | E41          |                            | 25                                      | Existed    |  |
| ETUO          | 23           | <b>E</b> 41                | 15                                      | Existed    |  |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the BCM and the ABS actuator and electric unit (control unit).
- NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

# MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 7)] MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side C and harness side).
- Harness connector B33
   Harness connector B245
- Hamess connector B245

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## **2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

| Side radar LH h | arness connector | Harness       | connector    | Continuity | G |
|-----------------|------------------|---------------|--------------|------------|---|
| Connector No.   | Terminal No.     | Connector No. | Terminal No. | Continuity |   |
| B52             | 4                | B33           | 13           | Existed    | Н |
| 002             | 3                | 633           | 14           | Existed    |   |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

| Harness c     | onnector     | Side radar RH h | arness connector | Continuity |   |
|---------------|--------------|-----------------|------------------|------------|---|
| Connector No. | Terminal No. | Connector No.   | Terminal No.     | Continuity |   |
| B245          | 13           | B252            | 4                | Existed    | L |
| D240          | 14           | B202            | 3                | Existed    |   |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar LH and the side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

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INFOID:000000006094908

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# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

## Diagnosis Procedure

INFOID:000000006094909

[CAN SYSTEM (TYPE 7)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B201
- Harness connector M117
- Harness connector M20 and PCB harness side connector
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar RH
- Harness connectors B201 and M117
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

| Side radar RH h | Side radar RH harness connector Harness |               | connector    | Continuity |
|-----------------|---|---------------|--------------|------------|
| Connector No.   | Terminal No.                            | Connector No. | Terminal No. | Continuity |
| B252            | 4                                       |               | 66           | Existed    |
| BZJZ            | 3                                       | B201          | 67           | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B201.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the harness connectors.

| Harness connector |              | Harness connector |              | Continuity |
|-------------------|--------------|-------------------|--------------|------------|
| Connector No.     | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M117              | 66           | M20               | 38           | Existed    |
|                   | 67           | IVI20             | 40           | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M20.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M150 and M151.

2. Check the continuity between the PCB harness connector and the harness connector.

| PCB harness connector | Harness connector |                            | Continuity |
|-----------------------|-------------------|----------------------------|------------|
| Terminal No.          | Connector No.     | Connector No. Terminal No. |            |
| 38                    | N450              | 11                         | Existed    |
| 40                    | M150              | 10                         | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

### MAIN LINE BETWEEN RDR-R AND APA CIRCUIT AGNOSIS > [CAN SYSTEM (TYPE 7)]

### < DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN APA AND LANE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN APA AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094910

[CAN SYSTEM (TYPE 7)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

| Harness connector |              | Harness connector |              | Continuity |
|-------------------|--------------|-------------------|--------------|------------|
| Connector No.     | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M150              | 11           | M110              | 13           | Existed    |
| 101150            | 10           | - WITO            | 2            | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane camera unit.
- NO >> Replace the PCB harness.

## **ECM BRANCH LINE CIRCUIT**

| DIC/CIRCUIT DIAGNUS  | 00 >   |  |                               |
|--|--|--|-------------------------------|
| CM BRANCH LIN  | E CIRCUIT  |  |                               |
| Diagnosis Procedure  |  |  | INFOID:00000006094911         |
| .CHECK CONNECTOR   |  |  |                               |
| <ul> <li>Check the following term<br/>nector side).</li> <li>ECM</li> </ul>  | able from the negative terr  | amage, bend and loose co                 | onnection (unit side and con- |
| the inspection result norm   |  | Inector                                  |                               |
| YES >> GO TO 2.<br>NO >> Repair the term   | nal and connector.   |  |                               |
| Disconnect the connect<br>Check the resistance be<br>VQ37VHR   | or of ECM.<br>Stween the ECM harness co  | onnector terminals.                      |                               |
|  | ECM harness connector  |  | Posistanco (O)                |
| Connector No.  | Termir   | nal No.                                  | Resistance (Ω)                |
| M107   | 114  | 113                                      | Approx. 108 – 132             |
| VK56VD   |  |  |                               |
|  | ECM harness connector  |  |                               |
| Connector No.  | Termir   | nal No.                                  | - Resistance (Ω)              |
| M160   | 146  | 151                                      | Approx. 108 – 132             |
| heck the power supply and<br>VQ37VHR: <u>EC-180, "Diag</u>   | Y AND GROUND CIRCUIT<br>I the ground circuit of the E  |  |                               |
| VK56VD: <u>EC-716, "Diagno</u><br>the inspection result norm   |  |  |                               |
| YES (Present error)>>Rep<br>• VQ37VHR: E(<br>• VK56VD: EC-<br>YES (Past error)>>Error way<br>NO >> Repair the powe | ace the ECM. Refer to the<br>C-535, "Removal and Instal<br>535, "Removal and Installa<br>as detected in the ECM bra<br>er supply and the ground ci<br>TINUITY (OPEN CIRCUIT) | lation"<br>tion"<br>Inch line.<br>rcuit. |                               |
| Disconnect the harness   |  |  | onnector.                     |

< DTC/CIRCUIT DIAGNOSIS >

| ECM harnes    | ss connector | Harness       | connector    | - Continuity | - |
|---------------|--------------|---------------|--------------|--------------|---|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity   |   |
| M107          | 114          | 1400          | 439          | Existed      | _ |
| WITO7         | 113          | M30           | 438          | Existed      | _ |

VK56VD

# ECM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

| ECM harne     | ss connector | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M160          | 146          | M30               | 439          | Existed    |
| MITOO         | 151          | 10130             | 438          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

| <b>FPMS BRANCH</b>  | I LINE CIRCUI   | Γ   |                            |                              |
|---|---|---|----------------------------|------------------------------|
| Diagnosis Proced  | ure   |   |                            | INFOID:000000006094912       |
| <b>1</b> .CHECK CONNECT   | OR  |   |                            |                              |
| <ul> <li>Check the followin nector side).</li> <li>Low tire pressure of Harness connectors</li> <li><u>s the inspection result</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the context</li> </ul> | tery cable from the ne<br>g terminals and conne<br>warning control unit<br>r M29 and PCB harne<br>normal?<br>terminal and connect<br>FOR OPEN CIRCUIT                   | ectors for damage,<br>ess side connector<br>tor.<br>Γ<br>ssure warning con                            | rol unit.                  | nnection (unit side and con- |
|   | tire pressure warning contr   |   | -                          |                              |
| Connector No.   |   | Terminal No.  |                            | Resistance ( $\Omega$ )      |
| M43   | 2   |   | 1                          | Approx. 54 – 66              |
| Diagnosis Procedure"<br>s the inspection result<br>YES (Present error)><br><u>Installation</u><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha  | ly and the ground cire<br>normal?<br>>Replace the low tire<br><u>"</u> .<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M29. | cuit of the low tire<br>e pressure warning<br>le low tire pressure<br>e ground circuit.<br>N CIRCUIT) | g control unit. Refe       |                              |
| ness connector.   | varning control unit  |   | ng control unit harne      | ess connector and the har-   |
| harness<br>Connector No.  | Terminal No.  | Connector No.   | Terminal No.               |                              |
|   |   | Connector No.<br>M29  | Terminal No.<br>396<br>395 | Existed<br>Existed           |

#### Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

### CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 7)]

### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

### Diagnosis Procedure

INFOID:000000006094913

| 1. СНЕСК DTC |  |
|--------------|--|
|--------------|--|

Check DTC of the CAN gateway with CONSULT-III.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

- Turn the ignition switch OFF. 1.
- Disconnect the battery cable from the negative terminal. 2.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side).
- CAN gateway
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of CAN gateway. 1.
- Check the resistance between the CAN gateway harness connector terminals. 2.

|               | CAN gateway harness connector |                |                 |  |
|---------------|-------------------------------|----------------|-----------------|--|
| Connector No. | Termi                         | Resistance (Ω) |                 |  |
| M125          | 1                             | 7              | Approx. 54 – 66 |  |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to LAN-143, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1). NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

Check the continuity between the CAN gateway harness connector and the harness connector. 2.

| CAN gateway h | arness connector | Harness       | connector    | Continuity |
|---------------|------------------|---------------|--------------|------------|
| Connector No. | Terminal No.     | Connector No. | Terminal No. | Continuity |
| MADE          | 1                | 1400          | 326          | Existed    |
| M125          | 7                | M28           | 328          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

>> Repair the harness between the CAN gateway harness connector M125 and the harness connec-NO tor M28.

## **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 7)]

# < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

|   | ure  |   |  | INFOID:000000006094914   |
|---|--|---|--|--|
| Diagnosis Proced<br>1.снеск отс   |  |   |  |  |
|   |  |   |  |  |
| Check DTC of the CAN<br>Is U1010 or B2600 indi  | <b>o</b> ,   |   |  |  |
|   | diagnosis of the indic   | ated DTC  |  |  |
| NO $>>$ GO TO 2.  |  |   |  |  |
| 2. CHECK CONNECT  | OR   |   |  |  |
| <ol> <li>Check the following<br/>nector side).</li> <li>CAN gateway</li> <li>Harness connector</li> </ol>   | tery cable from the ne<br>g terminals and conn<br>M23 and PCB harne<br>M20 and PCB harne<br>M7   | ectors for damage, b<br>ess side connector  | end and loose connec   | tion (unit side and con-   |
| Is the inspection result  |  |   |  |  |
| YES >> GO TO 3.   |  |   |  |  |
| NO >> Repair the  | terminal and connec  |   |  |  |
| 3.CHECK HARNESS   | CONTINUITY (OPEN   | N CIRCUIT)  |  |  |
|   | nector of CAN gatew<br>ty between the CAN  | vay.<br>gateway harness cor   | nector terminals.  |  |
|   | CAN gateway harn   | ess connector   |  | Continuity   |
| Connector No.   |  | Terminal No.  |  |  |
| M125 4 6  |  | 6   |  |  |
| M125  |  |   |  | Existed  |
|   | 10   |   | 12   | Existed  |
| M125<br>Is the inspection result<br>YES $>>$ GO TO 4.<br>NO $>>$ GO TO 5.<br>4.CHECK POWER SU   | normal?  |   |  |  |
| Is the inspection result<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU   | normal?<br>JPPLY AND GROUN   |   | 12   |  |
| $\begin{tabular}{ls the inspection result} \hline YES >> GO TO 4. \\ NO >> GO TO 5. \\ \end{tabular}$   | normal?<br>JPPLY AND GROUN<br>ly and the ground ci   |   | 12   | Existed  |
| Is the inspection result<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the  | normal?<br>JPPLY AND GROUN<br>ly and the ground c<br>normal?<br>•Replace the CAN ga<br>•or was detected in th<br>power supply and the  | ircuit of the CAN gat<br>ateway. Refer to <u>LAN</u><br>ne CAN gateway brar<br>e ground circuit.                                      | 12<br>reway. Refer to <u>LAN-1</u>   | Existed  |
| Is the inspection result<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>5.CHECK HARNESS   | normal?<br>JPPLY AND GROUN<br>ly and the ground c<br>normal?<br>Replace the CAN ga<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN  | ircuit of the CAN gat<br>ateway. Refer to <u>LAN</u><br>ne CAN gateway brar<br>e ground circuit.<br>N CIRCUIT)                        | 12<br>reway. Refer to <u>LAN-1</u>   | Existed  |
| Is the inspection result<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har                          | normal?<br>JPPLY AND GROUN<br>ly and the ground c<br>normal?<br>Replace the CAN ga<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M23  | ircuit of the CAN gat<br>ateway. Refer to <u>LAN</u><br>ne CAN gateway brar<br>e ground circuit.<br>N CIRCUIT)                        | 12<br>reway. Refer to <u>LAN-1</u>   | Existed<br>43. "Diagnosis Proce-<br>stallation".<br>nication circuit 2). |
| Is the inspection result<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har                          | normal?<br>JPPLY AND GROUN<br>ly and the ground ci<br>normal?<br>Replace the CAN ga<br>or was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M23<br>ty between the CAN                  | ircuit of the CAN gat<br>ateway. Refer to <u>LAN</u><br>he CAN gateway brar<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness cor | 12<br>reway. Refer to <u>LAN-1</u><br>-144. "Removal and In<br>high line (CAN commun | Existed  |
| Is the inspection result<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continui | normal?<br>JPPLY AND GROUN<br>ly and the ground ci<br>normal?<br>Replace the CAN ga<br>or was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M23<br>ty between the CAN                  | ircuit of the CAN gat<br>ateway. Refer to <u>LAN</u><br>he CAN gateway brar<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness cor | 12<br>reway. Refer to <u>LAN-1</u><br>-144. "Removal and In<br>the line (CAN commun  | Existed<br>43. "Diagnosis Proce-<br>stallation".<br>nication circuit 2). |
| Is the inspection result<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continui | IPPLY AND GROUN<br>ly and the ground control<br>Prormal?<br>Replace the CAN gate<br>for was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M23<br>ty between the CAN<br>rness connector | ircuit of the CAN gat<br>ateway. Refer to <u>LAN</u><br>ne CAN gateway brar<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness cor | 12<br>reway. Refer to <u>LAN-1</u><br>-144. "Removal and Ir<br>inch line (CAN commun | Existed  |

Is the inspection result normal?

YES >> GO TO 6.

### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 7)]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

## 6.CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- Check the continuity between the PCB harness connectors. 2.

| PCB harness connector | PCB harness connector | Continuity |
|-----------------------|-----------------------|------------|
| Terminal No.          | Terminal No.          | Continuity |
| 133                   | 24                    | Existed    |
| 135                   | 27                    | Existed    |

Is the inspection result normal?

>> GO TO 7. YES

>> Replace the PCB harness. NO

## **7.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### Disconnect the harness connectors M7 and B1. 1.

Check the continuity between the harness connectors. 2.

| Harness       | connector    | Harness connector |              | Continuity |  |
|---------------|--------------|-------------------|--------------|------------|--|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |  |
| M20           | 24           | 147               | 34           | Existed    |  |
| WIZU          | 27           | M7                | 35           | Existed    |  |

#### Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

### **8.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 34    | 32         | Existed |
| DI            | 35    | 33         | Existed |

#### Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

# **HVAC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 7)]

| IVAC BRANCH   |  | 1  |  |                                |
|---|--|--|--|--------------------------------|
| Diagnosis Procedu   | ure  |  |  | INFOID:000000006094915         |
| CHECK CONNECT   | OR   |  |  |                                |
| <ul> <li>Check the following<br/>nector side).</li> <li>A/C auto amp.</li> </ul>  | tery cable from the n  | nectors for damage, bei  | nd and loose connec  | tion (unit side and con-       |
| the inspection result   |  |  |  |                                |
| YES >> GO TO 2.<br>NO >> Repair the<br>CHECK HARNESS  | terminal and connec  |  |  |                                |
|   | nector of A/C auto a   |  |  |                                |
|   |  | auto amp. harness cor  | nector terminals.  |                                |
|   | A/C auto amp. harr   | ness connector   |  |                                |
| Connector No.   |  | Terminal No.   |  | Resistance ( $\Omega$ )        |
| M66   | 12   |  | 11   | Approx. 54 – 66                |
| <u>s the measurement va</u><br>YES >> GO TO 3.  |  |  |  |                                |
| CHECK POWER SU  |  |  |  |                                |
| • CHECK POWER SU<br>heck the power supp<br>iagnosis Procedure".   | ly and the ground ci   |  | mp. Refer to <u>HAC-1</u>  | <u>67. "A/C AUTO AMP. :</u>    |
| CHECK POWER SU<br>check the power supp<br>biagnosis Procedure".<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the  | ly and the ground ci<br><u>normal?</u><br>•Replace the A/C au<br>ror was detected in th<br>power supply and th   | to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran  | <u>201. "Removal and I</u>   |                                |
| CHECK POWER SU<br>Check the power suppliagnosis Procedure".<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Erron<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har                           | ly and the ground ci<br>normal?<br>Replace the A/C au<br>ror was detected in th<br>power supply and th<br>CONTINUITY (OPEI<br>ness connector M28   | to amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)  | 201. "Removal and I<br>ch line.  | nstallation".                  |
| CHECK POWER SU<br>check the power supp<br>biagnosis Procedure".<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>.CHECK HARNESS<br>Disconnect the har<br>Check the continuit | ly and the ground ci<br>normal?<br>Replace the A/C au<br>ror was detected in th<br>power supply and th<br>CONTINUITY (OPE<br>ness connector M28<br>ty between the A/C a  | to amp. Refer to <u>HAC-3</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)<br>auto amp. harness cont<br>Harness c                | 201, "Removal and I<br>ch line.<br>nector and the harne                              | nstallation".                  |
| CHECK POWER SU<br>Check the power supp<br>Diagnosis Procedure".<br>Sthe inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continuit | ly and the ground ci<br><u>normal?</u><br>Replace the A/C au-<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPE)<br>ness connector M28<br>ty between the A/C and<br>arness connector<br>Terminal No. | ircuit of the A/C auto a<br>to amp. Refer to <u>HAC-3</u><br>he A/C auto amp. bran<br>le ground circuit.<br>N CIRCUIT)<br>auto amp. harness coni | 201. "Removal and I<br>ch line.<br>nector and the harne<br>connector<br>Terminal No. | nstallation".<br>ss connector. |
| CHECK POWER SU<br>Check the power supp<br>Diagnosis Procedure".<br>Sthe inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continuit | ly and the ground ci<br>normal?<br>Replace the A/C au<br>ror was detected in th<br>power supply and th<br>CONTINUITY (OPE<br>ness connector M28<br>ty between the A/C a  | to amp. Refer to <u>HAC-3</u><br>he A/C auto amp. bran<br>he ground circuit.<br>N CIRCUIT)<br>auto amp. harness cont<br>Harness c                | 201, "Removal and I<br>ch line.<br>nector and the harne                              | nstallation".<br>ss connector. |

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

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# TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094916

[CAN SYSTEM (TYPE 7)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F103
- Harness connector M116
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

|               | Resistance (Ω) |   |                 |
|---------------|----------------|---|-----------------|
| Connector No. | Termi          |   |                 |
| F61           | 3              | 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

| A/T assembly harness connector |              | Harness connector |              | Continuity |
|--------------------------------|--------------|-------------------|--------------|------------|
| Connector No.                  | Terminal No. | Connector No.     | Terminal No. | Continuity |
| F61                            | 3            | M28               | 346          | Existed    |
|                                | 8            |                   | 347          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

# [CAN SYSTEM (TYPE 7)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094917 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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< DTC/CIRCUIT DIAGNOSIS >

# AV BRANCH LINE CIRCUIT

INFOID:000000006094918

### Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M25 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

|               | AV control unit harness connecto | r       | Resistance (Ω)  |
|---------------|----------------------------------|---------|-----------------|
| Connector No. | Termi                            | nal No. |                 |
| M210          | 90                               | 74      | Approx. 54 – 66 |

Models without navigation system

| AV control unit harness connecto | r       | Resistance (Ω)   |
|----------------------------------|---------|--|
| Termi                            | nal No. |  |
| 81                               | 80      | Approx. 54 – 66  |
|                                  | Termi   | AV control unit harness connector<br>Terminal No.<br>81 80 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

#### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

- Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"
- BOSE audio with navigation system: AV-272, "AV CONTROL UNIT : Diagnosis Procedure"

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation system: <u>AV-120, "Removal and Installation"</u>
- BOSE audio with navigation system: <u>AV-298, "Removal and Installation"</u>
- YES (Past error)>>Error was detected in the AV control unit branch line.
- NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

| AV control unit h | arness connector | Harness       | connector    | Continuity |
|-------------------|------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No. | Terminal No. | Continuity |
| M210              | 90               | M25           | 201          | Existed    |
| MZ 10             | 74               | WIZ5          | 221          | Existed    |

Models without navigation system

# **AV BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 7)]

| Connector No.                        | Terminal No.                     | Connector No.  | Terminal No. | Continuity |
|--------------------------------------|----------------------------------|--|--------------|------------|
|                                      |                                  |  | ienninal NO. |            |
| M84                                  | 81                               | M25  | 201          | Existed    |
| 104                                  | 80                               | IVI25  | 221          | Existed    |
| ne inspection result no              | ormal?                           |  |              |            |
| the harness<br>O (Without navigation | stem)>>Repair the connector M25. | harness between the A<br>the harness between t<br>5. |              |            |
|                                      |                                  |  |              |            |
|                                      |                                  |  |              |            |

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# M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094919

[CAN SYSTEM (TYPE 7)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Combination meter
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

| Co            | ombination meter harness connect | ctor    | Resistance (Ω)  |
|---------------|----------------------------------|---------|-----------------|
| Connector No. | Termi                            | nal No. |                 |
| M53           | 14                               | 15      | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

| Combination meter | r harness connector | Harness       | connector    | Continuity |
|-------------------|---------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.        | Connector No. | Terminal No. | Continuity |
| M53               | 14                  | M24           | 176          | Existed    |
| IND5              | 15                  | 10124         | 177          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

# **DLC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 7)]

| .CHECK CONNECTOR  | 9   |  |                  | INFOID:00000006094920       |
|---|---|--|------------------|-----------------------------|
|   |   |  |                  |                             |
| <ul> <li>Turn the ignition switc</li> <li>Disconnect the battery</li> <li>Check the following tenector side).</li> <li>Data link connector</li> <li>Harness connector M</li> <li>Harness connector M</li> <li>Harness connector M</li> <li>Harness connector M</li> </ul> | y cable from the ne<br>erminals and conne<br>181<br>105<br>23 and PCB harne                             | ectors for damage, be  | nd and loose cor | nection (unit side and con- |
|   | minal and connect   |  |                  |                             |
| CHECK HARNESS FO  |   |  |                  |                             |
| heck the resistance betw  | veen the data link o  | connector terminals.   |                  |                             |
|   | Data link con   | nector   |                  | Resistance ( $\Omega$ )     |
| Connector No.   |   | Terminal No.   |                  |                             |
| M182  | 6   |  | 14               | Approx. 54 – 66             |
|   | within the specific   | ation?   |                  |                             |
| the measurement value<br>YES (Present error)>>Ch<br>YES (Past error)>>Error<br>NO >> GO TO 3.<br>CHECK HARNESS CC<br>Disconnect the harnes<br>Check the continuity b  | neck CAN system t<br>was detected in th<br>ONTINUITY (OPEN<br>ss connector M23.                         | type decision again.<br>e data link connector<br>I CIRCUIT)                                      |                  |                             |
| the measurement value<br>YES (Present error)>>Ch<br>YES (Past error)>>Error<br>NO >> GO TO 3.<br>CHECK HARNESS CC<br>Disconnect the harnes  | neck CAN system t<br>was detected in th<br>ONTINUITY (OPEN<br>ss connector M23.<br>Detween the data li  | type decision again.<br>e data link connector<br>I CIRCUIT)                                      | harness connect  | or.                         |
| the measurement value<br>YES (Present error)>>Ch<br>YES (Past error)>>Error<br>NO >> GO TO 3.<br>CHECK HARNESS CC<br>Disconnect the harnes<br>Check the continuity b  | neck CAN system t<br>was detected in th<br>ONTINUITY (OPEN<br>ss connector M23.<br>Detween the data li  | type decision again.<br>e data link connector<br>I CIRCUIT)<br>nk connector and the              | harness connect  |                             |
| the measurement value<br>YES (Present error)>>Ch<br>YES (Past error)>>Error<br>NO >> GO TO 3.<br>CHECK HARNESS CC<br>Disconnect the harnes<br>Check the continuity to<br>Data link cont   | neck CAN system t<br>was detected in th<br>ONTINUITY (OPEN<br>ass connector M23.<br>Detween the data li | type decision again.<br>e data link connector<br>I CIRCUIT)<br>nk connector and the<br>Harness o | harness connect  | or.                         |

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< DTC/CIRCUIT DIAGNOSIS >

# BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094921

[CAN SYSTEM (TYPE 7)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- BCM
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of BCM.
- 2. Check the resistance between the BCM harness connector terminals.

|               | BCM harness connector |        | Resistance (Ω)  |
|---------------|-----------------------|--------|-----------------|
| Connector No. | Termin                | al No. |                 |
| M120          | 39                    | 40     | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

YES (Past error)>>Error was detected in the BCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

| BCM harne     | ess connector | Harness       | connector    | Continuity |
|---------------|---------------|---------------|--------------|------------|
| Connector No. | Terminal No.  | Connector No. | Terminal No. | Continuity |
| M120          | 39            | M22           | 101          | Existed    |
| IVIT20        | 40            | IVIZZ         | 102          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

|  |   | Г  |                           |   |
|--|---|--|---------------------------|---|
| Diagnosis Procedu  | re  |  |                           | INFOID:000000006094922                                  |
| 1. снеск соллестс  | IR  |  |                           |   |
| <ul> <li>Check the following<br/>nector side).</li> <li>Steering angle sens</li> </ul>                                       | ery cable from the ne terminals and conne               | ectors for damage, ber   | nd and loose conne        | ction (unit side and con-                               |
| s the inspection result n  | ormal?  |  |                           |   |
| · ·  | erminal and connect                                     |  |                           |   |
| 2.CHECK HARNESS F  |   |  |                           |   |
|  | nector of steering and<br>e between the steeri          | ng angle sensor harne  | ess connector termi       | nals.   |
|  | Steering angle sensor ha                                |  |                           | Resistance (Ω)  |
| Connector No.  |   | Terminal No.   | -                         |   |
| M37<br>s the measurement valu  | 1   |  | 2                         | Approx. 54 – 66   |
| <u>aram"</u> .<br><u>s the inspection result n</u><br>YES (Present error)>>I<br>YES (Past error)>>Erro<br>NO >> Repair the p | y and the ground cire<br>ormal?<br>Replace the steering | cuit of the steering an<br>angle sensor. Refer to<br>e steering angle senso<br>ground circuit. | D <u>BRC-144, "Remo</u> v | o <u>BRC-54, "Wiring Dia-</u><br>val and Installation". |
| I. Disconnect the harn   | ess connector M22.<br>/ between the steerin             | ng angle sensor harne  | ss connector and th       | e harness connector.                                    |
| . Disconnect the harn  | / between the steerin                                   | ng angle sensor harne<br>Harness c   |                           |   |
| Disconnect the harn<br>Check the continuity  | / between the steerin                                   |  |                           | e harness connector.                                    |
| Disconnect the harn<br>Check the continuity<br>Steering angle sensor   | / between the steerin<br>harness connector              | Harness c  | onnector                  |   |

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< DTC/CIRCUIT DIAGNOSIS >

# ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator a | and electric unit (control unit) har | ness connector | Resistance (Ω)  |
|----------------|--------------------------------------|----------------|-----------------|
| Connector No.  | Termi                                | nal No.        |                 |
| E41            | 25                                   | 15             | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

### $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

Revision: 2010 June

INFOID:000000006094925

# **AFS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 7)]

| Diagnosis Procedure   |  |   | INFOID:000000006094926     |
|---|--|---|----------------------------|
| 1.CHECK CONNECTOR   |  |   |                            |
|   | cable from the negative termi  |   | and loose connection (unit |
| Is the inspection result norm   | al?  |   |                            |
| YES >> GO TO 2.<br>NO >> Repair the termi   | inal and connector.  |   |                            |
| 2. CHECK HARNESS FOR  |  |   |                            |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>   | or of AFS control unit.<br>Stween the AFS control unit h   | arness connector termina  | als.                       |
| A   | AFS control unit harness connector   |   | Resistance (Ω)             |
|   |  |   |                            |
| Connector No.   | Termina  |   |                            |
| E104  | 30   | No. 7   | Approx. 54 – 66            |
| E104<br>Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AFS<br>3.CHECK POWER SUPPL<br>Check the power supply an   | 30<br>vithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCUIT<br>ind the ground circuit of the <i>i</i>   | 7   | Approx. 54 – 66            |
| E104<br>Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AFS<br>3.CHECK POWER SUPPL<br>Check the power supply an<br>UNIT : Diagnosis Procedure   | 30<br>vithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the v  | 7   | Approx. 54 – 66            |
| E104<br>Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AFS<br>3.CHECK POWER SUPPL<br>Check the power supply an<br>UNIT : Diagnosis Procedure<br>Is the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error wa  | 30<br>vithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the v  | 7<br>NFS control unit. Refer to<br>fer to <u>EXL-126, "Remova</u><br>of unit branch line. | Approx. 54 – 66            |
| E104<br>Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AFS<br>3.CHECK POWER SUPPL<br>Check the power supply an<br>UNIT : Diagnosis Procedure<br>Is the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error was | 30<br><u>vithin the specification?</u><br>control unit branch line.<br>Y AND GROUND CIRCUIT<br>id the ground circuit of the <i>n</i><br><u>"</u> .<br><u>hal?</u><br>lace the AFS control unit. Re<br>as detected in the AFS control | 7<br>NFS control unit. Refer to<br>fer to <u>EXL-126, "Remova</u><br>of unit branch line. | Approx. 54 – 66            |
| E104<br>Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AFS<br>3.CHECK POWER SUPPL<br>Check the power supply an<br>UNIT : Diagnosis Procedure<br>Is the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error wa  | 30<br><u>vithin the specification?</u><br>control unit branch line.<br>Y AND GROUND CIRCUIT<br>id the ground circuit of the <i>n</i><br><u>"</u> .<br><u>hal?</u><br>lace the AFS control unit. Re<br>as detected in the AFS control | 7<br>NFS control unit. Refer to<br>fer to <u>EXL-126, "Remova</u><br>of unit branch line. | Approx. 54 – 66            |

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< DTC/CIRCUIT DIAGNOSIS >

# **IPDM-E BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000006094927

[CAN SYSTEM (TYPE 7)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

|               | IPDM E/R harness connector |                         |                   |  |
|---------------|----------------------------|-------------------------|-------------------|--|
| Connector No. | Termi                      | Resistance ( $\Omega$ ) |                   |  |
| E6            | 40                         | 39                      | Approx. 108 – 132 |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

NO >> Repair the power supply and the ground circuit.

| ADP BRANCH LINE   | ECIRCUIT  |   |                                |
|---|---|---|--------------------------------|
| Diagnosis Procedure   |   |   | INFOID:00000006094928          |
| 1.CHECK CONNECTOR   |   |   |                                |
|   | cable from the negative terr<br>ninals and connectors for d<br>1<br>System)<br><u>al?</u><br>GO TO 2.<br>>>GO TO 2.<br>inal and connector.<br>TINUITY (OPEN CIRCUIT | amage, bend and loose c   | connection (unit side and con- |
|   | tween the CAN gateway ha  |   | s.                             |
| Connector No.   | CAN gateway harness connector   | nal No.   | Continuity                     |
|   | 4   | 6   | Existed                        |
| M125  | 10  | 12  | Existed                        |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be   |   | system)<br>t.<br>rol unit harness connector   |                                |
| Connector No.   | Termir  | nal No.   | Resistance (Ω)                 |
| B514  | 23  | 24  | Approx. 54 – 66                |
| 4.CHECK POWER SUPPL<br>Check the power supply and<br>CONTROL UNIT : Diagnosis<br>Is the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error w | r seat control unit branch li<br>Y AND GROUND CIRCUIT<br>I the ground circuit of the dr<br><u>s Procedure"</u> .<br>hal?<br>lace the driver seat control            | iver seat control unit. Refe<br>unit. Refer to <u>ADP-146. "</u><br>at control unit branch line |                                |

< DTC/CIRCUIT DIAGNOSIS >

# ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094929

[CAN SYSTEM (TYPE 7)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |            |         |  |  |
|---------------|-------------------------------|------------|---------|--|--|
| Connector No. | Termi                         | Continuity |         |  |  |
| M125          | 4                             | 6          | Existed |  |  |
| 11120         | 10                            | 12         | Existed |  |  |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of ADAS control unit.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

| AD/           | Resistance (Ω) |    |                 |
|---------------|----------------|----|-----------------|
| Connector No. | Termir         |    |                 |
| B50           | 14             | 15 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-66, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".

YES (Past error)>>Error was detected in the ADAS control unit branch line.

NO >> Repair the power supply and the ground circuit.

| CHECK CONNECTOR  |  |                             | INFOID:00000006094930          |
|--|--|-----------------------------|--------------------------------|
|  |  |                             |                                |
| Check the following term<br>nector side).<br>Pre-crash seat belt con<br>CAN gateway     the inspection result norm<br>YES >> GO TO 2.<br>NO >> Repair the term     CHECK HARNESS CON | cable from the negative tern<br>minals and connectors for c<br>trol unit (driver side)<br><u>mal?</u><br>inal and connector.<br>ITINUITY (OPEN CIRCUIT | lamage, bend and loose co   | nnection (unit side and con-   |
|  |  | arness connector terminals. |                                |
|  | CAN gateway harness connector  |                             | Continuity                     |
| Connector No.  |  | nal No.                     | Evictoria                      |
| M125   | 4  | 6                           | Existed                        |
| the inspection result norn   |  | 12                          | Existed                        |
|  | of CAN gateway.<br>or of pre-crash seat belt co  |                             | e) harness connector termi-    |
| Pre-crash sea  | t belt control unit (driver side) har  | ness connector              | Resistance (Ω)                 |
| Connector No.  | Termi  | nal No.                     |                                |
| B9   | 14   | 4                           | Approx. 54 – 66                |
|  | vitnin the specification?  |                             |                                |
| CHECK POWER SUPPL  |  | Γ                           | I unit (driver side). Refer to |

< DTC/CIRCUIT DIAGNOSIS >

# **RDR-L BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000006094931

[CAN SYSTEM (TYPE 7)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar LH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of side radar LH.
- 2. Check the resistance between the side radar LH harness connector terminals.

|               | Resistance ( $\Omega$ ) |         |                 |
|---------------|-------------------------|---------|-----------------|
| Connector No. | Termi                   | nal No. |                 |
| B52           | 4                       | 3       | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

### **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-575, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-592, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar LH branch line.

NO >> Repair the power supply and the ground circuit.

### **RDR-R BRANCH LINE CIRCUIT**

| < DTC/CIRCUIT DIAGNOSIS >  |                         | [CAN SYSTEM (TYPE 7)]        |
|--|-------------------------|------------------------------|
| RDR-R BRANCH LINE CIRCUIT  |                         |                              |
| Diagnosis Procedure  |                         | INFOID:00000006094933        |
| 1.CHECK CONNECTOR  |                         |                              |
| <ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminals.<br/>Check the terminals and connectors of the side radal side and connector side).</li> <li>Is the inspection result normal?<br/>YES &gt;&gt; GO TO 2.<br/>NO &gt;&gt; Repair the terminal and connector.</li> <li>CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT</li> </ol>  |                         | d and loose connection (unit |
| Check the right/left switching signal circuit of the side rada   | RH. Refer to DAS-578    | 3, "Diagnosis Procedure".    |
| Is the inspection result normal?<br>YES >> GO TO 3.<br>NO >> Repair the root cause.<br><b>3.</b> CHECK HARNESS FOR OPEN CIRCUIT  |                         |                              |
| <ol> <li>Disconnect the connector of side radar RH.</li> <li>Check the resistance between the side radar RH harm</li> </ol>  | ess connector terminals | S.                           |
| Side radar RH harness connector  |                         | - Resistance (Ω)             |
| Connector No. Terminal N<br>B252 4   | 3                       | Approx. 54 – 66              |
| Is the measurement value within the specification?         YES       >> GO TO 4.         NO       >> Repair the side radar RH branch line.         4.CHECK POWER SUPPLY AND GROUND CIRCUIT         Check the power supply and the ground circuit of the side   | radar RH. Refer to D/   | AS-576, "SIDE RADAR RH :     |
| Diagnosis Procedure".<br>Is the inspection result normal?  |                         |                              |
| YES (Present error)>>Replace the side radar RH. Refer to YES (Past error)>>Error was detected in the side radar R NO >> Repair the power supply and the ground circuited in th | H branch line.          | and Installation".           |
|  |                         |                              |
|  |                         |                              |
|  |                         |                              |

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< DTC/CIRCUIT DIAGNOSIS >

# APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094935

[CAN SYSTEM (TYPE 7)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Accelerator pedal actuator
- Harness connector M151
- Harness connector M150
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

| Accel         | Accelerator pedal actuator harness connector |         |                         |  |  |
|---------------|--|---------|-------------------------|--|--|
| Connector No. | Termi  | nal No. | Resistance ( $\Omega$ ) |  |  |
| M152          | 5  | 4       | Approx. 54 – 66         |  |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 ${
m 3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to <u>DAS-203, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4, "MODELS WITH DIS-</u> <u>TANCE CONTROL ASSIST SYSTEM : Removal and Installation"</u>.

- YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

| Accelerator pedal actu | ator harness connector | Harness connector |              | Continuity |
|------------------------|------------------------|-------------------|--------------|------------|
| Connector No.          | Terminal No.           | Connector No.     | Terminal No. | Continuity |
| M152                   | 5                      | M23               | 138          | Existed    |
| 101132                 | 4                      | 10123             | 137          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the accelerator pedal actuator harness connector M152 and the harness connector M23.

| iagnosis Procedu   | ure   |   |   | INFOID:00000000609493  |
|--|---|---|---|--|
| .CHECK CONNECT   | OR  |   |   |  |
| Check the following<br>nector side).<br>Lane camera unit<br>Harness connector<br>Harness connector<br>Harness connector<br>the inspection result<br>YES >> GO TO 2.<br>NO >> Repair the<br>CHECK HARNESS   | tery cable from the ne<br>g terminals and conne<br>M110<br>M24 and PCB harne<br>normal?<br>terminal and connect<br>FOR OPEN CIRCUIT   | ectors for damage, be<br>ss side connector<br>or.   | nd and loose conne  | ection (unit side and con                                    |
|  | nnector of lane camer<br>ce between the lane o  | a unit.<br>camera unit harness c  | connector terminals   |  |
|  | Lano camora unit har  | ness connector  |   |  |
| Connector No.  | Lane camera unit har  | ness connector<br>Terminal No.  |   | Resistance ( $\Omega$ )                                      |
| R8<br>the measurement va<br>'ES >> GO TO 3.  | 4   | Terminal No.  | 8   | Resistance (Ω)<br>Approx. 54 – 66                            |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power suppled<br>NIT : Diagnosis Procession<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Error<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har  | 4<br>Iue within the specific<br>JPPLY AND GROUNI<br>ly and the ground circ<br>edure".<br>normal?<br>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.  | Terminal No.<br>ation?<br>D CIRCUIT<br>cuit of the lane camer<br>mera unit. Refer to <u>DA</u><br>e lane camera unit bra<br>e ground circuit.<br>I CIRCUIT)                                 | a unit. Refer to <u>DA</u><br><u>S-419, "Removal a</u><br>anch line.                  | Approx. 54 – 66  |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supple<br>NIT : Diagnosis Proce<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>En<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continuit                              | 4<br><u>Iue within the specific</u><br>JPPLY AND GROUN<br>ly and the ground circ<br><u>adure</u> ".<br><u>normal?</u><br>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.<br>ty between the lane c   | Terminal No.<br>ation?<br>D CIRCUIT<br>cuit of the lane camer<br>mera unit. Refer to DA<br>e lane camera unit bra<br>e ground circuit.<br>I CIRCUIT)<br>amera unit harness co               | a unit. Refer to <u>DA</u><br><u>S-419, "Removal a</u><br>anch line.                  | Approx. 54 – 66  |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SU<br>heck the power supply<br>NIT : Diagnosis Process<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Erron<br>NO >> Repair the<br>.CHECK HARNESS<br>Disconnect the har<br>Check the continuit<br>Lane camera unit h | 4<br><u>Iue within the specific</u><br>JPPLY AND GROUNI<br>ly and the ground circ<br><u>adure"</u> .<br><u>normal?</u><br>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.<br>ty between the lane c | Terminal No.<br>ation?<br>D CIRCUIT<br>cuit of the lane camer<br>mera unit. Refer to DA<br>e lane camera unit bra<br>e ground circuit.<br>I CIRCUIT)<br>amera unit harness co<br>Harness co | a unit. Refer to DA<br><u>S-419, "Removal a</u><br>anch line.<br>connector and the ha | Approx. 54 – 66  |
| R8<br>the measurement va<br>(ES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SU<br>heck the power suppled<br>NIT : Diagnosis Proce<br>the inspection result<br>(ES (Present error)>><br>(ES (Past error)>>En<br>NO >> Repair the<br>.CHECK HARNESS<br>Disconnect the har<br>Check the continuit                           | 4<br><u>Iue within the specific</u><br>JPPLY AND GROUN<br>ly and the ground circ<br><u>adure</u> ".<br><u>normal?</u><br>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.<br>ty between the lane c   | Terminal No.<br>ation?<br>D CIRCUIT<br>cuit of the lane camer<br>mera unit. Refer to DA<br>e lane camera unit bra<br>e ground circuit.<br>I CIRCUIT)<br>amera unit harness co               | a unit. Refer to <u>DA</u><br><u>S-419, "Removal a</u><br>anch line.                  | Approx. 54 – 66<br>S-403, "LANE CAMERA<br>and Installation". |

< DTC/CIRCUIT DIAGNOSIS >

# LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094936

[CAN SYSTEM (TYPE 7)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ICC sensor
- Harness connector E106
- Harness connector M6
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

|               | Resistance ( $\Omega$ ) |         |                   |
|---------------|-------------------------|---------|-------------------|
| Connector No. | Termi                   | nal No. |                   |
| E67           | 3                       | 6       | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-162, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation".

YES (Past error)>>Error was detected in the ICC sensor branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the ICC sensor harness connector and the harness connector.

| ICC sensor ha | rness connector | Harness connector |              | ector Harness connector |  | Continuity |
|---------------|-----------------|-------------------|--------------|-------------------------|--|------------|
| Connector No. | Terminal No.    | Connector No.     | Terminal No. | Continuity              |  |            |
| E67           | 3               | M28               | 343          | Existed                 |  |            |
| 207           | 6               | ινίζο             | 345          | Existed                 |  |            |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

| DIC/CIRCUIT DIAGNUS   | >0.5  |  |   |
|---|---|--|---|
| AN COMMUNICA  | TION CIRCUIT 1  |  |   |
| iagnosis Procedure  |   |  | INFOID:00000006094938   |
| CONNECTOR INSPECT   | ION   |  |   |
| Disconnect all the unit c<br>NOTE:  | cable from the negative term<br>connectors on CAN commur<br>N communication circuit 1, 0  | nication circuit 1.  | cuit 2, and ITS communication   |
|   | onnectors for damage, bend  | and loose connection.  |   |
| the inspection result norm  | <u>nal?</u>   |  |   |
| 'ES >> GO TO 2.<br>IO >> Repair the termi   | inal and connector.   |  |   |
|   | ITINUITY (SHORT CIRCUIT   | Г)   |   |
| neck the continuity betwee  | en the data link connector te   | rminals.   |   |
|   | Data link connector   |  |   |
| Connector No.   | Termin  | al No.   | Continuity  |
| M182  | 6   | 14   | Not existed   |
| the inspection result norm<br>ES >> GO TO 3.<br>IO >> Check the harne   | ess and repair or replace (if   | shield line or PCB harne   | ess is short) the root cause.   |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>CHECK HARNESS CON<br>heck the continuity between  | nal?  | shield line or PCB harne   | ·<br>   |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>CHECK HARNESS CON<br>heck the continuity between  | nal?<br>ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar   | shield line or PCB harne   | ess is short) the root cause.   |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>CHECK HARNESS CON<br>heck the continuity between<br>Data link   | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6   | shield line or PCB harne<br>r)<br>nd the ground.   | Continuity<br>Not existed   |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>.CHECK HARNESS CON<br>heck the continuity between<br>Data link<br>Connector No.   | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6<br>14   | shield line or PCB harne<br>r)<br>nd the ground.   | Continuity  |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>.CHECK HARNESS CON<br>heck the continuity between<br>Data link<br>Connector No.<br>M182<br>the inspection result norm<br>(ES >> GO TO 4.<br>NO >> Check the harne<br>.CHECK ECM AND IPDM<br>Remove the ECM and the content of the tech and | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6<br>14<br>14<br>nal?<br>ess and repair or replace (if<br>I E/R TERMINATION CIRCU   | shield line or PCB harne<br>T)<br>nd the ground.<br>Ground<br>shield line or PCB harne         | Continuity<br>Not existed<br>Not existed  |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>CHECK HARNESS CON<br>heck the continuity between<br>Data link<br>Connector No.<br>M182<br>the inspection result norm<br>(ES >> GO TO 4.<br>NO >> Check the harne<br>CHECK ECM AND IPDM<br>Remove the ECM and the<br>Check the resistance be   | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6<br>14<br>nal?<br>ess and repair or replace (if<br>I E/R TERMINATION CIRCU   | shield line or PCB harne<br>T)<br>nd the ground.<br>Ground<br>shield line or PCB harne         | Continuity<br>Not existed<br>Not existed<br>ess is short) the root cause.   |
| the inspection result norm<br>(ES >> GO TO 3.<br>IO >> Check the harne<br>CHECK HARNESS CON<br>heck the continuity between<br>Data link<br>Connector No.<br>M182<br>the inspection result norm<br>(ES >> GO TO 4.<br>IO >> Check the harne<br>CHECK ECM AND IPDM<br>Remove the ECM and the<br>Check the resistance be<br>VQ37VHR  | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6<br>14<br>nal?<br>ess and repair or replace (if<br>I E/R TERMINATION CIRCU<br>the IPDM E/R.<br>etween the ECM terminals.                               | shield line or PCB harne<br>T)<br>Ind the ground.<br>Ground<br>Shield line or PCB harne<br>UIT | Continuity<br>Not existed<br>Not existed<br>ess is short) the root cause.<br>Resistance (Ω)   |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>.CHECK HARNESS CON<br>heck the continuity between<br>Data link<br>Connector No.<br>M182<br>the inspection result norm<br>(ES >> GO TO 4.<br>NO >> Check the harne<br>.CHECK ECM AND IPDM<br>Remove the ECM and the<br>Check the resistance be<br>VQ37VHR<br>114   | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6<br>14<br>nal?<br>ess and repair or replace (if<br>M E/R TERMINATION CIRCU<br>the IPDM E/R.<br>etween the ECM terminals.                               | shield line or PCB harne<br>T)<br>Ind the ground.<br>Ground<br>Shield line or PCB harne<br>UIT | Continuity<br>Not existed<br>Not existed<br>ess is short) the root cause.   |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>CHECK HARNESS CON<br>heck the continuity between<br>Data link<br>Connector No.<br>M182<br>the inspection result norm<br>(ES >> GO TO 4.<br>NO >> Check the harne<br>CHECK ECM AND IPDM<br>Remove the ECM and th<br>Check the resistance be<br>VQ37VHR   | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6<br>14<br>nal?<br>ess and repair or replace (if<br>M E/R TERMINATION CIRCU<br>the IPDM E/R.<br>etween the ECM terminals.                               | shield line or PCB harne<br>T)<br>Ind the ground.<br>Ground<br>Shield line or PCB harne<br>UIT | Continuity<br>Not existed<br>Not existed<br>ess is short) the root cause.<br>Resistance (Ω)   |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>.CHECK HARNESS CON<br>heck the continuity between<br>Data link<br>Connector No.<br>M182<br>the inspection result norm<br>(ES >> GO TO 4.<br>NO >> Check the harne<br>.CHECK ECM AND IPDM<br>Remove the ECM and the<br>Check the resistance be<br>VQ37VHR<br>114   | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6<br>14<br>nal?<br>ess and repair or replace (if<br>M E/R TERMINATION CIRCU<br>the IPDM E/R.<br>etween the ECM terminals.                               | shield line or PCB harne<br>T)<br>Ind the ground.<br>Ground<br>Shield line or PCB harne<br>UIT | Continuity         Not existed         Not existed         ess is short) the root cause.         Resistance (Ω)         Approx. 108 – 132 |
| the inspection result norm<br>(ES >> GO TO 3.<br>NO >> Check the harne<br>.CHECK HARNESS CON<br>heck the continuity between<br>Data link<br>Connector No.<br>M182<br>the inspection result norm<br>(ES >> GO TO 4.<br>NO >> Check the harne<br>.CHECK ECM AND IPDM<br>Remove the ECM and th<br>Check the resistance be<br>VQ37VHR<br>114<br>VK56VD  | ess and repair or replace (if<br>ITINUITY (SHORT CIRCUIT<br>en the data link connector ar<br>connector<br>Terminal No.<br>6<br>14<br>nal?<br>ess and repair or replace (if<br>M E/R TERMINATION CIRCU<br>the IPDM E/R.<br>etween the ECM terminals.<br>ECM<br>Terminal No.<br>113 | shield line or PCB harne<br>T)<br>Ind the ground.<br>Ground<br>Shield line or PCB harne<br>UIT | Continuity<br>Not existed<br>Not existed<br>ess is short) the root cause.<br>Resistance (Ω)   |

3. Check the resistance between the IPDM E/R terminals.

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

| IPDM                                | Posistance (0)    |  |
|-------------------------------------|-------------------|--|
| Termina                             | Resistance (Ω)    |  |
| 40                                  | Approx. 108 – 132 |  |
| Is the measurement value within the | ne specification? |  |
| YES >> GO TO 5.                     |                   |  |

NO >> Replace the ECM and/or the IPDM E/R.

### 5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

#### **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 1. **NOTE:**

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

| < DTC/CIRCUIT DIAGNOSIS  | S >  |   | [CAN SYSTEM (TYPE 7)]                |
|--|--|---|--------------------------------------|
| CAN COMMUNICATI  | ON CIRCUIT 2   |   | ļ                                    |
| Diagnosis Procedure  |  |   | INFCID:00000006094939                |
| 1.CONNECTOR INSPECTIO  | N  |   | E                                    |
| <ol> <li>Turn the ignition switch OF</li> <li>Disconnect the battery cat</li> <li>Disconnect all the unit corning of CAN of Content of CAN of Canadian of C</li></ol> | ble from the negative ter<br>inectors on CAN communication circuit 1,<br><u>ystem Diagram</u> ".<br>ectors for damage, ben | unication circuit 2.<br>, CAN communication circu | it 2, and ITS communication          |
| YES >> GO TO 2.<br>NO >> Repair the termina  |  |   | E                                    |
| 2.CHECK HARNESS CONTI  |  | IT)   |                                      |
| Check the continuity between   |  |   | F                                    |
|  | Data link connector  |   |                                      |
| Connector No.  |  | inal No.  | Continuity                           |
| M182   | 13   | 12  | Not existed                          |
| 3.CHECK HARNESS CONTI<br>Check the continuity between  | the data link connector a  |   | Continuity                           |
| Connector No.  | Terminal No.   | - Ground  |                                      |
| M182   | 13   | _   | Not existed                          |
| Is the inspection result normal  |  |   | NOT EXISTED                          |
| YES >> GO TO 4.<br>NO >> Check the harness<br>4.CHECK CAN GATEWAY TH<br>1. Remove the CAN gateway<br>2. Check the resistance betw  | ERMINATION CIRCUIT   |   |                                      |
|  | N gateway  |   | Resistance (Ω)                       |
| Ter  | minal No.  | ٨٢  | DECOV 109 122                        |
| 6  | 10   |   | oprox. 108 – 132<br>oprox. 108 – 132 |
| Is the measurement value with         YES       >> GO TO 5.         NO       >> Replace the CAN <b>5.</b> CHECK SYMPTOM         Connect all the connectors. C         customer)" are reproduced.         Inspection result   | gateway.   | lescribed in the "Symptom                         | Results from interview with          |

Revision: 2010 June

#### < DTC/CIRCUIT DIAGNOSIS >

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

#### 6.CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
 NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

### **ITS COMMUNICATION CIRCUIT**

|  | GNOSIS >  |  |  | I SYSTEM (TYPE 7)]                  |
|--|---|--|--|-------------------------------------|
| <b>FS COMMUNI</b>  | CATION CIRCL  | ЛТ   |  |                                     |
| iagnosis Proced  | lure  |  |  | INFOID:000000006094940              |
| .CHECK CAN DIAG  | NOSIS   |  |  |                                     |
|  |   | NSULT-III to see that t  | the CAN communica                        | tion circuit 1 and CAN              |
|  | 2 have no malfunctior   |  |  |                                     |
|  |   | cuit 1, CAN communic   | cation circuit 2, and I                  | TS communication cir-               |
|  |   | nmunication 2 circuits   | normal?                                  |                                     |
| YES >> GO TO 2.  |   | inction circuit 1 and/or   |  |                                     |
| NO >> Check and<br>CONNECTOR INS   |   | ication circuit 1 and/or   | CAN communication                        | 1 CIFCUIT 2.                        |
|  |   |  |  |                                     |
| Disconnect the ba<br>Check the termina<br>(unit side and con<br>the inspection result  | ttery cable from the ne<br>als and connectors of<br>nector side).   |  | it for damage, bend                      | and loose connection                |
| YES >> GO TO 3.<br>NO >> Repair the  | e terminal and connect  | or   |  |                                     |
|  |   |  |  |                                     |
|  | lowing harness conne  |  |  |                                     |
| ADAS control unit<br>ICC sensor  | -   | ctors.   | connector and the IC                     | C sensor harness con-               |
| ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.  | -   | ctors.   |  |                                     |
| ADAS control unit<br>ICC sensor<br>. Check the continu<br>nector.  | ity between the ADAS  | ctors.<br>S control unit harness o   |  | C sensor harness con-<br>Continuity |
| ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.<br>ADAS control unit<br>Connector No.  | ity between the ADAS  | ctors.<br>Control unit harness of<br>ICC sensor harr<br>Connector No.  | ness connector                           |                                     |
| ADAS control unit<br>ICC sensor<br>. Check the continu<br>nector.<br>ADAS control unit   | ity between the ADAS<br>harness connector<br>Terminal No.   | ctors.<br>S control unit harness of<br>ICC sensor harr   | ness connector<br>Terminal No.           | Continuity                          |
| ADAS control unit<br>ICC sensor<br>. Check the continu<br>nector.<br>ADAS control unit<br>Connector No.<br>B50<br>s the inspection result<br>YES >> GO TO 4.<br>NO >> Replace th   | ity between the ADAS harness connector Terminal No. 7 8 t normal?   | ctors.<br>S control unit harness of<br>ICC sensor harr<br>Connector No.<br>E67   | ness connector<br>Terminal No.<br>3      | Continuity<br>Existed               |
| ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.<br>ADAS control unit<br>Connector No.<br>B50<br>the inspection result<br>YES >> GO TO 4.<br>NO >> Replace the<br>CHECK HARNESS<br>Disconnect the foll<br>Side radar LH<br>Side radar RH<br>Lane camera unit<br>Accelerator pedal                                       | ity between the ADAS harness connector Terminal No. 7 8 cnormal? he body harness. CONTINUITY (SHOF lowing harness conne actuator                      | Ctors.<br>Control unit harness of<br>ICC sensor harr<br>Connector No.<br>E67   | ness connector<br>Terminal No.<br>3<br>6 | Continuity<br>Existed               |
| ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.<br>ADAS control unit<br>Connector No.<br>B50<br>the inspection result<br>YES >> GO TO 4.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the foll<br>Side radar LH<br>Side radar RH<br>Lane camera unit<br>Accelerator pedal  | ity between the ADAS harness connector Terminal No. 7 8 cnormal? he body harness. CONTINUITY (SHOF lowing harness conne actuator ity between the ADAS | ctors. Control unit harness of ICC sensor harr Connector No. E67 CT CIRCUIT) Ctors. Control unit harness of Control unit harne | ness connector<br>Terminal No.<br>3<br>6 | Continuity<br>Existed               |
| ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.<br>ADAS control unit<br>Connector No.<br>B50<br>Sthe inspection result<br>YES >> GO TO 4.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the foll<br>Side radar LH<br>Side radar LH<br>Side radar RH<br>Lane camera unit<br>Accelerator pedal<br>Check the continu | ity between the ADAS harness connector Terminal No. 7 8 cnormal? he body harness. CONTINUITY (SHOF lowing harness conne actuator                      | ctors.<br>Control unit harness of<br>ICC sensor harr<br>Connector No.<br>E67<br>CORCUIT)<br>Ctors.<br>Control unit harness of<br>Thess connector   | ness connector<br>Terminal No.<br>3<br>6 | Continuity<br>Existed               |
| ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.<br>ADAS control unit<br>Connector No.<br>B50<br>the inspection result<br>YES >> GO TO 4.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the foll<br>Side radar LH<br>Side radar RH<br>Lane camera unit<br>Accelerator pedal  | ity between the ADAS harness connector Terminal No. 7 8 cnormal? he body harness. CONTINUITY (SHOF lowing harness conne actuator ity between the ADAS | ctors. Control unit harness of ICC sensor harr Connector No. E67 CT CIRCUIT) Ctors. Control unit harness of Control unit harne | ness connector<br>Terminal No.<br>3<br>6 | Continuity<br>Existed<br>Existed    |

YES >> GO TO 5. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. NO

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

### **LAN-383**

# **ITS COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

#### [CAN SYSTEM (TYPE 7)]

| ADAS control unit | harness connector |        | Continuity  |
|-------------------|-------------------|--------|-------------|
| Connector No.     | Terminal No.      | Ground | Continuity  |
| B50               | 7                 | Ground | Not existed |
| 600               | 8                 |        | Not existed |

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

#### **6.**CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.

2. Check the resistance between the ADAS control unit terminals.

| ADAS control unit |         | Resistance (Ω)    |
|-------------------|---------|-------------------|
| Termi             | nal No. |                   |
| 7 8               |         | Approx. 108 – 132 |

3. Check the resistance between the ICC sensor terminals.

| ICC s | sensor  | Resistance (Ω)    |
|-------|---------|-------------------|
| Termi | nal No. |                   |
| 3     | 6       | Approx. 108 – 132 |

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ADAS control unit and/or the ICC sensor.

#### 7.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 8.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

#### 8. CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of ITS communication system. **NOTE:**

ADAS control unit and ICC sensor have a termination circuit. Check other units first.

- 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
  - NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

#### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT [CAN SYSTEM (TYPE 8)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006094668 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM -D Low tire pressure warning control unit \_ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

### MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094669

[CAN SYSTEM (TYPE 8)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector Connector No. Terminal No. |    | Continuity |
|-----------------|------------------|--|----|------------|
| Connector No.   | Terminal No.     |  |    | Continuity |
| M66             | 12 M210          | M210   | 90 | Existed    |
| 1000            | 11               | WIZ TO   | 74 | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity |  |
|-----------------|------------------|-----------------------------------|--------------|------------|--|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity |  |
| Mee             | 12               | 2                                 | 81           | Existed    |  |
| M66             | 11               | M84                               | 80           | Existed    |  |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA   | GNOSIS >  |                   | [CAI                  | N SYSTEM (TYPE 8)]       |
|---|---|-------------------|-----------------------|--------------------------|
| MAIN LINE BET   | WEEN A-BAG  | AND AV CIRC       | UIT                   |                          |
| Diagnosis Proced  | lure  |                   |                       | INFOID:000000006094670   |
| <b>1.</b> CHECK HARNESS   |   | N CIRCUIT)        |                       |                          |
| <ol> <li>Disconnect the fol</li> <li>ECM</li> <li>A/C auto amp.</li> <li>AV control unit</li> </ol> | ttery cable from the n<br>lowing harness conne<br>ity between the A/C a | ectors.           | nnector and the AV co | ontrol unit harness con- |
| A/C auto amp. h   | arness connector  | AV control unit h | arness connector      | Continuity               |
| Connector No.   | Terminal No.  | Connector No.     | Terminal No.          | Continuity               |
| M66   | 12  | - M210            | 90                    | Existed                  |
| IVIOO   | 11  | - IVIZ I U        | 74                    | Existed                  |
| - Models without na   | vigation system   |                   |                       |                          |
| A/C outo omn h  | ornoon connoctor  | AV control unit b | ornoon connector      |                          |

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

|   | A/C auto amp. h | arness connector | AV control unit harness connector |              | AV control unit harness connector Continuity |   | Continuity | - |
|---|-----------------|------------------|-----------------------------------|--------------|--|---|------------|---|
|   | Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity                                   | Н |            |   |
| _ | M66             | 12               | M84                               | 81           | Existed                                      | - |            |   |
|   | σοινι           | 11               | 10104                             | 80           | Existed                                      |   |            |   |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094671

[CAN SYSTEM (TYPE 8)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

| AV control unit h | arness connector | Combination meter harness connector           Connector No.         Terminal No. |    | Continuity |
|-------------------|------------------|--|----|------------|
| Connector No.     | Terminal No.     |  |    | Continuity |
| M210              | 90               | M53  | 14 | Existed    |
| WZ 10             | 74               | MSS  | 15 | Existed    |

#### Models without navigation system

| AV control unit harness connector |              | Combination meter harness connector |              | Continuity |
|-----------------------------------|--------------|-------------------------------------|--------------|------------|
| Connector No.                     | Terminal No. | Connector No.                       | Terminal No. | Continuity |
| M84                               | 81           | MED                                 | 14           | Existed    |
|                                   | 80           | M53                                 | 15           | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

|  | SNOSIS >   | -             | SYSTEM (TYPE 8)]     |                        |
|--|--|---------------|----------------------|------------------------|
| IN LINE BET  | WEEN M&A A   | ND DLC CIRCU  | JIT                  |                        |
| gnosis Proced  | ure  |               |                      | INFOID:000000006094672 |
| HECK HARNESS   | CONTINUITY (OPE  | N CIRCUIT)    |                      |                        |
| Disconnect the foll<br>ECM<br>Combination mete<br>Harness connecto | ttery cable from the n<br>owing harness conne<br>r<br>rs M105 and M181 |               | connector and the ha | rness connector.       |
| Combination meter  | harness connector  | Harness of    | connector            | Continuity             |
| <b>0</b> / N   | Terminal No.   | Connector No. | Terminal No.         | Continuity             |
| Connector No.  |  | 7             |                      |                        |
| Connector No.<br>M53   | 14   | M105          | 7                    | Existed                |
| Connector No.  |  |               |                      |                        |

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### MAIN LINE BETWEEN DLC AND BCM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

#### **Diagnosis Procedure**

INFOID:000000006094673

[CAN SYSTEM (TYPE 8)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

| Harness connector |              | BCM harness connector |              | Continuity |
|-------------------|--------------|-----------------------|--------------|------------|
| Connector No.     | Terminal No. | Connector No.         | Terminal No. | Continuity |
| M105 -            | 7            | M120                  | 39           | Existed    |
|                   | 8            |                       | 40           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA(  | MAIN LINE BET  | WEEN BCI   | M AND RAS CIF              | RCUIT<br>[CAN SYSTEM (TYPE 8)] |  |  |
|---|--|--|----------------------------|--------------------------------|--|--|
| MAIN LINE BET   |  | ND RAS (   | CIRCUIT                    |                                |  |  |
| Diagnosis Proced  | lure   |  |                            | INFOID:000000006094677         |  |  |
| 1.снеск соллест   | OR   |  |                            |                                |  |  |
| <ol> <li>Check the followin<br/>and harness side)</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Is the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the fol</li> <li>BCM</li> <li>Harness connecto</li> </ol> | ttery cable from the n<br>ng terminals and con<br>or M20 and PCB harned<br>or M7<br>or B1<br><u>a normal?</u><br>e terminal and connect<br>of CONTINUITY (OPEN<br>lowing harness connect | nectors for dat<br>ess side conne<br>tor.<br>N CIRCUIT)<br>ectors. | mage, bend and loo<br>ctor | se connection (connector side  |  |  |
|   | ss connector   | 1  | B harness connector        |                                |  |  |
| Connector No.   | Terminal No.   |  | Terminal No.               | Continuity                     |  |  |
| M120  | 39   | 35   |                            | Existed                        |  |  |
| 10120   | 40   |  | 36                         | Existed                        |  |  |
| 3. CHECK HARNESS  | ne PCB harness.<br>CONTINUITY (OPE)<br>rness connectors M7   | and B1.  |                            |                                |  |  |
| Harness   | connector  |  | Harness connector          |                                |  |  |
| Connector No.   | Terminal No.   | Connector  | No. Terminal               | Continuity<br>No.              |  |  |
| M20   | 35   | M7   | 72                         | Existed                        |  |  |
|   | 36   |  | 73                         | Existed                        |  |  |
| the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS<br>Check the continuity b   | e main line between th<br>CONTINUITY (OPE)   | N CIRCUIT)   |                            |                                |  |  |
|   |  | Terminal No. Continuity  |                            |                                |  |  |
| Connector No.   |  |  |                            |                                |  |  |
| Connector No.   | 72   |  | 74                         | Existed                        |  |  |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the BCM and the 4WAS main control unit. NO >> Replace the body harness.

### MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RAS AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094680

[CAN SYSTEM (TYPE 8)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

| Connector No. | Termi | nal No. | Continuity |
|---------------|-------|---------|------------|
| B1            | 72    | 74      | Existed    |
| Ы             | 73    | 75      | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

#### **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

| Harness connector |              | Harness connector |              | Continuity |
|-------------------|--------------|-------------------|--------------|------------|
| Connector No.     | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M7                | 74           | M6                | 22           | Existed    |
| IVI 7             | 75           |                   | 23           | Existed    |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness       | connector    | ABS actuator and electric unit (control unit)<br>harness connector |              | Continuity |
|---------------|--------------|--|--------------|------------|
| Connector No. | Terminal No. | Connector No.  | Terminal No. | -          |
| F400          | 22           | E 44   | 25           | Existed    |
| E106          | 23           | E41  | 15           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the 4WAS main control unit and the ABS actuator and electric unit (control unit).

# MAIN LINE BETWEEN RAS AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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### MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094681

[CAN SYSTEM (TYPE 8)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B33
- Harness connector B245

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

| Side radar LH I | Side radar LH harness connector |               | Harness connector |            |
|-----------------|---------------------------------|---------------|-------------------|------------|
| Connector No.   | Terminal No.                    | Connector No. | Terminal No.      | Continuity |
| B52             | 4                               | B33           | 13                | Existed    |
| D02             | 3                               |               | 14                | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

### ${\it 3.}$ CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

| Harness connector |              | Side radar RH harness connector |              | Continuity |
|-------------------|--------------|---------------------------------|--------------|------------|
| Connector No.     | Terminal No. | Connector No.                   | Terminal No. | Continuity |
| B245 13           | 13           | B252                            | 4            | Existed    |
|                   | 14           | - DZJZ                          | 3            | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar LH and the side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

|  | GNOSIS >   |   | -  | SYSTEM (TYPE 8)]                 |
|--|--|---|--|----------------------------------|
| MAIN LINE BE   | WEEN RDR-R   | AND APA CIRC  | CUIT   |                                  |
| Diagnosis Proced   | lure   |   |  | INFOID:000000006094682           |
| 1.CHECK CONNECT  | OR   |   |  |                                  |
| <ul> <li>Check the followi<br/>and harness side)</li> <li>Harness connector</li> <li></li></ul> | attery cable from the ne<br>ng terminals and conr<br>or B201<br>or M117<br>or M20 and PCB harne<br><u>t normal?</u>  | nectors for damage, b<br>ess side connector<br>tor.<br>N CIRCUIT)   | end and loose conne  | ection (connector side           |
| Side radar RH<br>Harness connecto  | ors B201 and M117  | adar RH harness conn  | ector and the harnes   | s connector.                     |
|  | arness connector   | Harness c   |  | Continuity                       |
| Connector No.  | Terminal No.   | Connector No.   | Terminal No.   | Eviated                          |
| B252   | 4  | B201  | 66<br>67   | Existed                          |
|  | CONTINUITY (OPEN<br>arness connector M20.  |   | ne harness connector   | B201.                            |
| I. Disconnect the ha   | lity between the harne   |   |  |                                  |
| <ol> <li>Disconnect the ha</li> <li>Check the continu</li> <li>Harness</li> </ol>  | connector  | Harness c   |  | Continuity                       |
| <ol> <li>Disconnect the hat</li> <li>Check the continution</li> </ol>  | connector<br>Terminal No.  |   | Terminal No.   | Continuity                       |
| Disconnect the ha     Check the continu     Harness  | connector  | Harness c   |  | Continuity<br>Existed<br>Existed |
| 1. Disconnect the ha<br>2. Check the continu<br>Harness<br>Connector No.<br>M117<br>S the inspection resul<br>YES >> GO TO 4.<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha   | connector<br>Terminal No.<br>66<br>67<br>t normal?<br>e main line between th<br>5 CONTINUITY (OPEN<br>trness connectors M15  | Harness c<br>Connector No.<br>M20<br>e harness connectors<br>N CIRCUIT)   | Terminal No.<br>38<br>40<br>M117 and M20.                          | Existed                          |
| <ol> <li>Disconnect the ha</li> <li>Check the continuer Harness</li> <li>Connector No.</li> <li>M117</li> <li>s the inspection result</li> <li>YES &gt;&gt; GO TO 4.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the ha</li> <li>Check the continuer</li> </ol>   | connector<br>Terminal No.<br>66<br>67<br>t normal?<br>e main line between th<br>5 CONTINUITY (OPEN<br>trness connectors M15  | Harness c<br>Connector No.<br>M20<br>e harness connectors<br>N CIRCUIT)<br>50 and M151.                                       | Terminal No.<br>38<br>40<br>M117 and M20.<br>I the harness connect | Existed<br>Existed               |
| 1. Disconnect the ha<br>2. Check the continu<br>Harness<br>Connector No.<br>M117<br>S the inspection resul<br>YES >> GO TO 4.<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>PCB harne  | connector<br>Terminal No.<br>66<br>67<br>t normal?<br>e main line between th<br>S CONTINUITY (OPEN<br>trness connectors M15<br>ity between the PCB h                   | Harness c<br>Connector No.<br>M20<br>e harness connectors<br>N CIRCUIT)<br>50 and M151.<br>harness connector and              | Terminal No.<br>38<br>40<br>M117 and M20.<br>I the harness connect | Existed                          |
| Disconnect the ha     Check the continu     Harness     Connector No.     M117     s the inspection result     YES >> GO TO 4.     NO >> Repair the     A.CHECK HARNESS     Disconnect the ha     Check the continu     PCB harne     Termi  | connector<br>Terminal No.<br>66<br>67<br>t normal?<br>e main line between th<br>5 CONTINUITY (OPEN<br>trness connectors M15<br>bity between the PCB to<br>ss connector | Harness c<br>Connector No.<br>M20<br>e harness connectors<br>N CIRCUIT)<br>50 and M151.<br>harness connector and<br>Harness c | Terminal No.<br>38<br>40<br>M117 and M20.<br>I the harness connect | Existed<br>Existed               |

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

### LAN-395

# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

| MAIN LINE BETWEEN APA AND LAN |                       |
|-------------------------------|-----------------------|
| AGNOSIS >                     | [CAN SYSTEM (TYPE 8)] |

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN APA AND LANE CIRCUIT

### Diagnosis Procedure

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |   |
|---------------|--------------|-------------------|--------------|------------|---|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity | E |
| M150          | 11           | M110              | 13           | Existed    | - |
|               | 10           | WITTO             | 2            | Existed    | F |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane G camera unit.

NO >> Replace the PCB harness.

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INFOID:000000006094683

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# ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094684

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M30 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

- VQ37VHR

| ECM harness connector |       |     | Resistance ( $\Omega$ ) |
|-----------------------|-------|-----|-------------------------|
| Connector No.         | Termi |     |                         |
| M107                  | 114   | 113 | Approx. 108 – 132       |

VK56VD

| ECM harness connector |              |  | Resistance (Ω)    |
|-----------------------|--------------|--|-------------------|
| Connector No.         | Terminal No. |  |                   |
| M160                  | 146 151      |  | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the ECM. Refer to the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

#### Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "Removal and Installation"

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

## **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

| ECM harness connector |              | Harness       | connector    | Continuity |
|-----------------------|--------------|---------------|--------------|------------|
| Connector No.         | Terminal No. | Connector No. | Terminal No. | Continuity |
| M107                  | 114          | M30           | 439          | Existed    |
|                       | 113          | 10130         | 438          | Existed    |

- VK56VD

## ECM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 8)]

| ECM harness connector |              | Harness connector |              | Continuity | Α |
|-----------------------|--------------|-------------------|--------------|------------|---|
| Connector No.         | Terminal No. | Connector No.     | Terminal No. | Continuity |   |
| M160 146 151          | 146          | M20               | 439          | Existed    | _ |
|                       | M30          | 438               | Existed      | В          |   |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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# TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094685

[CAN SYSTEM (TYPE 8)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

| Low tire pressure warning control unit harness connector |              |  | Resistance (Ω)  |
|--|--------------|--|-----------------|
| Connector No.  | Terminal No. |  |                 |
| M43  | 2 1          |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

| Low tire pressure warning control unit<br>harness connector |              | Harness connector |              | Continuity |
|---|--------------|-------------------|--------------|------------|
| Connector No.   | Terminal No. | Connector No.     | Terminal No. |            |
| M43   | 2            | M29               | 396          | Existed    |
| 10145   | 1            | 10129             | 395          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

## CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

[CAN SYSTEM (TYPE 8)]

## < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

| Diagnosis Procedu   |   |  |   |   |
|---|---|--|---|---|
| 2.39.100101.100000  | lre   |  |   | INFOID:00000000609468                                     |
| 1.снеск отс   |   |  |   |   |
| Check DTC of the CAN  | gateway with CONS   | SULT-III.  |   |   |
| ls U1010 or B2600 indi  |   |  |   |   |
| NO >> GO TO 2.  | diagnosis of the indic  | ated DTC.  |   |   |
| 2.CHECK CONNECT   | )R  |  |   |   |
| <ol> <li>Check the following<br/>nector side).</li> <li>CAN gateway</li> <li>Harness connector<br/>ls the inspection result<br/>YES &gt;&gt; GO TO 3.</li> </ol>  | tery cable from the ne<br>terminals and conne<br>M28 and PCB harne<br>normal?<br>terminal and connect   | ectors for damage, be<br>ess side connector<br>tor.  | end and loose conne   | ction (unit side and con                                  |
|   |   |  |   |   |
|   | nector of CAN gatew   | vay.<br>gateway harness cor  | nector terminals  |   |
|   |   | galoria) harriooo oor  |   |   |
|   | CAN gateway harne   | ess connector  |   | Resistance (Ω)  |
| Connector No.   |   | Terminal No.   |   | · · ·   |
| M125  | 1   |  | 7   | Approx. 54 – 66   |
|   | ue within the specific  | nation?  |   |   |
| <u>s the measurement va</u><br>YES >> GO TO 4.<br>NO >> GO TO 5.<br><b>4.</b> CHECK POWER SU  | IPPLY AND GROUN   |  |   |   |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU   |   | D CIRCUIT  | eway. Refer to <u>LAN</u>   | -143, "Diagnosis Proce                                    |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SL   | ly and the ground ci  | D CIRCUIT  | eway. Refer to <u>LAN</u>   | -143, "Diagnosis Proce                                    |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err   | ly and the ground ci<br>normal?<br>Replace the CAN ga<br>or was detected in th  | D CIRCUIT<br>ircuit of the CAN gate<br>ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran   | 144, "Removal and I   | nstallation".   |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SL<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the   | ly and the ground ci<br>normal?<br>Replace the CAN ga<br>or was detected in th<br>power supply and the  | D CIRCUIT<br>ircuit of the CAN gate<br>ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit.                                      | 144, "Removal and I   | nstallation".   |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SL<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>5.CHECK HARNESS  | ly and the ground ci<br>normal?<br>Replace the CAN ga<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN  | D CIRCUIT<br>ircuit of the CAN gate<br>ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)                        | 144, "Removal and I   | nstallation".   |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har                           | ly and the ground ci<br>normal?<br>Replace the CAN ga<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.                         | D CIRCUIT<br>ircuit of the CAN gate<br>ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)                        | 144, "Removal and I<br>ch line (CAN commu                         | Installation".<br>unication circuit 1).                   |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har                           | ly and the ground ci<br>normal?<br>Replace the CAN ga<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.<br>by between the CAN g | D CIRCUIT<br>ircuit of the CAN gate<br>ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con | 144, "Removal and I<br>ch line (CAN commu                         | Installation".<br>unication circuit 1).<br>ess connector. |
| YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SU<br>Check the power supp<br>dure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the<br>5.CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continuit | ly and the ground ci<br>normal?<br>Replace the CAN ga<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.<br>by between the CAN g | D CIRCUIT<br>ircuit of the CAN gate<br>ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con | 144, "Removal and I<br>ch line (CAN commu<br>nector and the harne | Installation".<br>unication circuit 1).                   |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

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NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

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## CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

### Diagnosis Procedure

INFOID:000000006094687

[CAN SYSTEM (TYPE 8)]

## 1.CHECK DTC

Check DTC of the CAN gateway with CONSULT-III.

### Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

# 2. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- CAN gateway
- Harness connector M23 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | Continuity |            |         |
|---------------|------------|------------|---------|
| Connector No. | Termi      | Continuity |         |
| M125          | 4          | 6          | Existed |
|               | 10         | 12         | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

### **4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-143</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2).

# NO >> Repair the power supply and the ground circuit.

## **5.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connector M23.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

| CAN gateway h | arness connector | Harness connector |              | Continuity |
|---------------|------------------|-------------------|--------------|------------|
| Connector No. | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| M125          | 4                | M23               | 133          | Existed    |
| 1123          | 10               | IVIZ5             | 135          | Existed    |

#### Is the inspection result normal?

YES >> GO TO 6.

### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 8)]

#### < DTC/CIRCUIT DIAGNOSIS >

| NO | >> Repair the harness between the CAN gateway harness connector M125 and the harness connec- |  |
|----|--|--|
|    | tor M23.   |  |

## 6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

| PCB harness connector | PCB harness connector |
|-----------------------|-----------------------|
| Terminal No.          | Terminal No.          |
| 24 Existed            | 133                   |
| 27 Existed            | 135                   |

#### Is the inspection result normal?

>> GO TO 7. YES

NO >> Replace the PCB harness.

### **7.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Disconnect the harness connectors M7 and B1. 1.

Check the continuity between the harness connectors.

| Harness       | connector    | Harness       | connector    | Continuity | _ |
|---------------|--------------|---------------|--------------|------------|---|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity | G |
| M20           | 24           | MZ            | 34           | Existed    | _ |
| IVIZU         | 27           | M7            | 35           | Existed    | H |

### Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

### **8.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No | ). | Termiı | nal No. | Continuity | • |
|--------------|----|--------|---------|------------|---|
| B1           |    | 34     | 32      | Existed    | ĸ |
| DI           |    | 35     | 33      | Existed    |   |

#### Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector L M125.

NO >> Replace the body harness. А

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# HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094688

[CAN SYSTEM (TYPE 8)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/C auto amp.
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

| A/C auto amp. harness connector | Resistance (Ω) |                 |
|---------------------------------|----------------|-----------------|
| Connector No. Termina           | al No.         |                 |
| M66 12                          | 11             | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

# **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-167, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-201, "Removal and Installation".

- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

| A/C auto amp. h | arness connector | Harness       | connector    | Continuity |
|-----------------|------------------|---------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No. | Terminal No. | Continuity |
| M66             | 12               | M28           | 325          | Existed    |
| MOO             | 11               | IVIZO         | 327          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

| iagnosis Procedure  |  |  |  | INFOID:00000000609468  |
|---|--|--|--|--|
| .CHECK CONNECTOR  |  |  |  |  |
| <ul> <li>Turn the ignition switch</li> <li>Disconnect the battery</li> <li>Check the following ternector side).</li> <li>A/T assembly</li> <li>Harness connector F10</li> <li>Harness connector M1</li> <li>Harness connector M2</li> <li>the inspection result norr</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the tern</li> <li>CHECK HARNESS FOF</li> <li>Disconnect the connector</li> </ul>  | cable from the ne<br>rminals and conne<br>03<br>16<br>8 and PCB harnes<br><u>mal?</u><br>ninal and connecto<br>R OPEN CIRCUIT<br>ctor of A/T assemb  | ctors for damage, be<br>as side connector<br>or.   |  | ction (unit side and con   |
|   |  | -  |  |  |
|   | A/T assembly harnes  | ss connector   |  | Resistance (Ω)   |
| Connector No.   |  | ss connector<br>Terminal No.   | 0  | Resistance (Ω)   |
| F61<br>s the measurement value  | 3  | Terminal No.   | 8  | Resistance (Ω)<br>Approx. 54 – 66  |
| F61<br><u>s the measurement value v</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SUPP<br>Check the power supply an<br><u>s the inspection result norr</u><br>YES (Present error)>>Rej  | 3<br>within the specifica<br>LY AND GROUNE<br>ad the ground circu<br>mal?<br>place the control v<br>ocation". (Replace<br>vas detected in the<br>ver supply and the<br>NTINUITY (OPEN<br>s connector M28.                      | Terminal No.   | to <u>TM-156, "Diagno</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |
| F61<br><u>s the measurement value v</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SUPP<br>Check the power supply an<br><u>s the inspection result norr</u><br>YES (Present error)>>Reponent Parts L<br>parts list.)<br>YES (Past error)>>Error v<br>NO >> Repair the power<br><b>1.</b> CHECK HARNESS COI<br>. Disconnect the harness<br>2. Check the continuity be   | 3<br>within the specifica<br>LY AND GROUNE<br>ad the ground circu<br>mal?<br>place the control v<br>ocation". (Replace<br>vas detected in the<br>ver supply and the<br>NTINUITY (OPEN<br>s connector M28.<br>etween the A/T as | Terminal No.<br>ation?<br>O CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>CIRCUIT)<br>sembly harness conr | to <u>TM-156, "Diagno</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |
| F61<br><u>s the measurement value v</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SUPP<br>Check the power supply and<br><u>s the inspection result norresult norr</u> | 3<br>within the specifica<br>LY AND GROUNE<br>ad the ground circu<br>mal?<br>place the control v<br>ocation". (Replace<br>vas detected in the<br>ver supply and the<br>NTINUITY (OPEN<br>s connector M28.<br>etween the A/T as | Terminal No.<br>ation?<br>O CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>CIRCUIT)<br>sembly harness conr | to <u>TM-156, "Diagno</u><br>r to <u>TM-8, "A/T CON</u><br>trol valve with TCM | Approx. 54 – 66<br>sis Procedure".<br>ITROL SYSTEM : Com<br>is not listed in the lates |

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

# A-BAG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094690

[CAN SYSTEM (TYPE 8)]

### WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness and/or the PCB harness.
- NO >> Replace parts whose air bag system has a malfunction.

## **AV BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 8)]

| AV BRANCH LI  | NE CIRCUIT  |  |                           |                            |   |
|---|---|--|---------------------------|----------------------------|---|
| Diagnosis Proced  | lure  |  |                           | A                          |   |
| 1.CHECK CONNECT   | OR  |  |                           | В                          |   |
| <ol> <li>Check the followin nector side).</li> <li>AV control unit</li> </ol>       | ttery cable from the ne   | ectors for damage, be  | and and loose connec      | tion (unit side and con- C |   |
| Is the inspection result  | t normal?   |  |                           | D                          |   |
| 2.CHECK HARNESS<br>1. Disconnect the co   | e terminal and connec<br>FOR OPEN CIRCUI<br>nnector of AV control<br>nce between the AV co                                  | T<br>unit.   | nnector terminals.        | F                          |   |
| - Models with navig   |   |  |                           |                            |   |
|   | AV control unit harn  | ess connector  |                           | Resistance (Ω)             | į |
| Connector No.   |   | Terminal No.   |                           |                            |   |
| M210  | 90  |  | 74                        | Approx. 54 – 66            |   |
| - Models without na   | ivigation system  |  |                           |                            |   |
|   | AV control unit harn  | ess connector  |                           | Resistance (Ω)             |   |
| Connector No.   |   | Terminal No.   |                           |                            |   |
| M84   | 81  |  | 80                        | Approx. 54 – 66            |   |
| <ul> <li>BOSE audio with nat</li> </ul>   | UPPLY AND GROUN<br>Ily and the ground circ<br>navigation system: <u>AV</u><br>vigation system: <u>AV-2</u>                  | D CIRCUIT<br>cuit of the AV control u<br>-90, "AV CONTROL U  | JNIT : Diagnosis Proc     | edure"                     |   |
| • Base au<br>• BOSE a<br>YES (Past error)>>E<br>NO >> Repair the<br>4.CHECK HARNESS | Replace the AV cont<br>dio without navigation<br>udio with navigation s<br>rror was detected in the<br>power supply and the | n system: <u>AV-120, "Re</u><br>ystem: <u>AV-298, "Rem</u><br>ne AV control unit brar<br>e ground circuit.<br>N CIRCUIT) | moval and Installation    | N                          |   |
| <ul> <li>Models with navig</li> </ul>   | -   |  |                           |                            |   |
| AV control unit r   | arness connector<br>Terminal No.  | Connector No.  | connector<br>Terminal No. | Continuity                 |   |
|   | 90  |  | 201                       | Existed                    |   |
| M210  | 74  | M25  | 221                       | Existed                    |   |
|   |   |  |                           |                            |   |

Models without navigation system

# **AV BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

| AV control unit h | arness connector | Harness       | connector    | Continuity |
|-------------------|------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No. | Terminal No. | Continuity |
| M84               | 81               | M25           | 201          | Existed    |
| 10104             | 80               | IVI25         | 221          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

< DTC/CIRCUIT DIAGNOSIS >

| agnosis Proced   | lure   |   |   | INFOID:000000006094692   |
|--|--|---|---|--|
| -  |  |   |   | 114-012.00000000000094692  |
| .CHECK CONNECT   | OR   |   |   |  |
| Check the followin<br>nector side).<br>Combination meter<br>Harness connecto<br>the inspection result<br>YES >> GO TO 2.<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the co   | ittery cable from the ne<br>ng terminals and conne<br>er<br>or M24 and PCB harne   | ectors for damage,<br>ess side connector<br>cor.<br>r<br>n meter.   |   | nnection (unit side and con-   |
|  | Combination meter ha   |   |   |  |
|  |  | Terminal No.  |   | Resistance ( $\Omega$ )  |
| Connector No.  |  |   |   |  |
| M53<br>the measurement va<br>YES >> GO TO 3.   | 14<br>alue within the specific   |   | 15  | Approx. 54 – 66  |
| M53<br>The measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>CHECK POWER S<br>CHECK POWER S<br>The inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha   | UPPLY AND GROUNI<br>alue within the specific<br>UPPLY AND GROUNI<br>oly and the ground circ  | ation?<br>D CIRCUIT<br>cuit of the combin<br>ation meter. Refer<br>e combination meter<br>ground circuit.                                     | ation meter Refer to<br>to <u>MWI-90, "Remov</u><br>ter branch line.                        | Approx. 54 – 66<br>D <u>MWI-70. "COMBINATION</u><br>ral and Installation".                   |
| M53<br>the measurement vary<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>the inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu   | alue within the specific<br>UPPLY AND GROUNI<br>oly and the ground cire<br>rocedure".<br>thormal?<br>>Replace the combinator<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>urness connector M24.   | ation?<br>D CIRCUIT<br>cuit of the combin<br>ation meter. Refer<br>e combination meter<br>ground circuit.<br>N CIRCUIT)                       | ation meter Refer to<br>to <u>MWI-90, "Remov</u><br>ter branch line.                        | Approx. 54 – 66<br>D MWI-70. "COMBINATION<br>ral and Installation".<br>he harness connector. |
| M53<br>the measurement vary<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>heck the power supplement<br>the inspection result<br>YES (Present error)><br>YES (Past error)>>EN<br>YES (Past error)>>EN<br>YES (Past error)>>EN<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu | alue within the specific<br>UPPLY AND GROUNI<br>oly and the ground circ<br>rocedure".<br>Normal?<br>Normal?<br>Normal?<br>Normal?<br>SCONTINUITY (OPEN<br>Inness connector M24.<br>Normal Scommetter M24.                      | ation?<br>D CIRCUIT<br>cuit of the combin<br>ation meter. Refer<br>e combination meter<br>ground circuit.<br>N CIRCUIT)                       | ation meter Refer to<br>to <u>MWI-90, "Remov</u><br>ter branch line.<br>ess connector and t | Approx. 54 – 66<br>D <u>MWI-70. "COMBINATION</u><br>ral and Installation".                   |
| M53<br>S the measurement vary<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER S<br>Check the power supple<br>METER : Diagnosis Pro-<br>S the inspection result<br>YES (Present error)><br>YES (Past error)>>End<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Combination mete | UPPLY AND GROUNI<br>oly and the ground cire<br>rocedure".<br>t normal?<br>>Replace the combinator<br>of contrinuity and the<br>contrinuity (OPEN<br>inters connector M24.<br>ity between the combinator<br>r harness connector | ation?<br>D CIRCUIT<br>cuit of the combin<br>ation meter. Refer<br>e combination mere<br>ground circuit.<br>N CIRCUIT)<br>ination meter harne | ation meter Refer to<br>to <u>MWI-90, "Remov</u><br>ter branch line.<br>ess connector and t | Approx. 54 – 66<br>D MWI-70. "COMBINATION<br>ral and Installation".<br>he harness connector. |

NO >> Repair the harness between the combination meter harness connector M53 and the harness con- O nector M24.

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# DLC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094693

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

|               | Data link connector |         |                         |
|---------------|---------------------|---------|-------------------------|
| Connector No. | Termi               | nal No. | Resistance ( $\Omega$ ) |
| M182          | 6 14                |         | Approx. 54 – 66         |

#### Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> GO TO 3.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the data link connector and the harness connector.

| Data link     | connector    | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M182          | 6            | M23               | 151          | Existed    |
| IVI I OZ      | 14           | IVIZ5             | 150          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

## **BCM BRANCH LINE CIRCUIT**

| BCM BRANCH   | LINE CIRCUIT  |   |                          |                          |
|--|---|---|--------------------------|--------------------------|
| Diagnosis Procec   | ure   |   |                          | INFOID:000000006094694   |
| 1.CHECK CONNECT  | OR  |   |                          |                          |
| <ul> <li>Check the followir nector side).</li> <li>BCM</li> <li>Harness connector sthe inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> </ul> | ttery cable from the ne<br>og terminals and conne<br>or M22 and PCB harne                 | ectors for damage, be<br>ess side connector<br>tor. | end and loose connec     | tion (unit side and con- |
| Disconnect the co<br>Check the resistan  | nnector of BCM.<br>nce between the BCM<br>BCM harness of                                  |   | erminals.                |                          |
| Connector No.  |   | Terminal No.  |                          | Resistance ( $\Omega$ )  |
| M120   | 39  |   | 40                       | Approx. 54 – 66          |
| YES >> GO TO 3.<br>NO >> GO TO 4.  | alue within the specific<br>UPPLY AND GROUN   |   |                          |                          |
| heck the power supp  | ly and the ground circ  | uit of the BCM. Refer                               | to BCS-73, "Diagnos      | is Procedure".           |
| <u>s the inspection resul</u><br>YES (Present error)>  | <u>normal?</u><br>>Replace the BCM. R<br>rror was detected in th                          | efer to <u>BCS-79, "Rer</u><br>le BCM branch line.  | -                        |                          |
| NO >> Repair the   | power supply and the  | •   |                          |                          |
| NO >> Repair the<br><b>1.</b> CHECK HARNESS<br>Disconnect the ha   | a power supply and the<br>CONTINUITY (OPEN<br>rness connector M22.<br>ity between the BCM | N CIRCUIT)  | nd the harness connec    | ctor.                    |
| NO >> Repair the<br><b>1</b> .CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | CONTINUITY (OPEN<br>rness connector M22.  | NCIRCUIT)   | nd the harness connector |                          |
| NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha   | CONTINUITY (OPEN<br>rness connector M22.<br>ity between the BCM                           | NCIRCUIT)   |                          | Continuity               |
| NO >> Repair the<br><b>1</b> .CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>BCM harne   | CONTINUITY (OPEN<br>rness connector M22.<br>ity between the BCM<br>ss connector           | N CIRCUIT)<br>harness connector ar<br>Harness       | connector                |                          |

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<u>Is the inspection result normal?</u> YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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# STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094695

[CAN SYSTEM (TYPE 8)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

| Steering angle sensor harness connector |              |  | Resistance (Ω)  |
|---|--------------|--|-----------------|
| Connector No.                           | Terminal No. |  |                 |
| M37                                     | 1 2          |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-144, "Removal and Installation".

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M22.
- 2. Check the continuity between the steering angle sensor harness connector and the harness connector.

| Steering angle sens | or harness connector | Harness connector Connector No. Terminal No. |    | Continuity |
|---------------------|----------------------|--|----|------------|
| Connector No.       | Terminal No.         |  |    | Continuity |
| M37                 | 1                    | M22  | 81 | Existed    |
| W37                 | 2                    | IVIZZ  | 82 | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

## **RAS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 8)]

| RAS BRANCH LINE   | ECIRCUIT  |   |                                   |
|---|---|---|-----------------------------------|
| Diagnosis Procedure   |   |   | INFOID:000000006094697            |
| 1. CHECK CONNECTOR  |   |   |                                   |
| 3. Check the terminals and tion (unit side and connection)  | cable from the negative terr<br>d connectors of the 4WAS<br>ector side).                      | ninal.<br>main control unit for damag   | e, bend and loose connec-         |
| Is the inspection result norm<br>YES >> GO TO 2.<br>NO >> Repair the term<br>2.CHECK HARNESS FOR  | inal and connector.   |   |                                   |
| 1. Disconnect the connect   | or of 4WAS main control ur  | nit.<br>trol unit harness connector   | terminals.                        |
|   | S main control unit harness conn  | ector   | Basistanas (O)                    |
| Connector No.   | Termir  | nal No.   | Resistance ( $\Omega$ )           |
| B54   | 1   | 8   | Approx. 54 – 66                   |
| Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Replace the boo<br>3.CHECK POWER SUPPL<br>Check the power supply and<br>Procedure (4WAS Main Cor | dy harness.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the 4<br><u>htrol Unit)"</u> . |   | fer to <u>STC-171, "Diagnosis</u> |
| YES (Past error)>>Error w   | lace the 4WAS main contro   | ol unit. Refer to <u>STC-185, "R</u><br>ain control unit branch line.<br>rcuit. | emoval and Installation".         |
|   |   |   |                                   |
|   |   |   |                                   |

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# ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator and electric unit (control unit) harness connector |              |  | Resistance ( $\Omega$ ) |
|---|--------------|--|-------------------------|
| Connector No.   | Terminal No. |  |                         |
| E41   | 25 15        |  | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

### **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

INFOID:000000006094698

## **AFS BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 8)]

| Diagnosis Procedure   |  |  | INFOID:00000006094699         |
|---|--|--|-------------------------------|
| 1.CHECK CONNECTOR   |  |  |                               |
|   | able from the negative te<br>I connectors of the AFS c<br>).   | rminal.<br>ontrol unit for damage, benc  | and loose connection (unit    |
| YES >> GO TO 2.<br>NO >> Repair the termi<br>2.CHECK HARNESS FOR  | nal and connector.   |  |                               |
| <ol> <li>Disconnect the connector</li> <li>Check the resistance be</li> </ol>   |  | it harness connector termina   | als.                          |
|   | FS control unit harness connec   |  | Resistance ( $\Omega$ )       |
| Connector No.   | 30   | inal No.   | <b>54_00</b>                  |
| E104<br>s the measurement value w<br>YES >> GO TO 3.  |  | 1  | Approx. 54 – 66               |
| Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AFS<br>3.CHECK POWER SUPPL<br>Check the power supply an<br>UNIT : Diagnosis Procedure   | ithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCU<br>d the ground circuit of th  | T  |                               |
| Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AFS<br>3.CHECK POWER SUPPL<br>Check the power supply an<br>UNIT : Diagnosis Procedure<br>Is the inspection result norm<br>YES (Present error)>>Repl<br>YES (Past error)>>Error wa | ithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCU<br>d the ground circuit of th<br><br>al?<br>ace the AFS control unit.  | T<br>e AFS control unit. Refer to<br>Refer to <u>EXL-126, "Remova</u><br>ntrol unit branch line. | D <u>EXL-84, "AFS CONTROL</u> |
| Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AFS<br>3.CHECK POWER SUPPL<br>Check the power supply an<br>UNIT : Diagnosis Procedure<br>Is the inspection result norm<br>YES (Present error)>>Repl<br>YES (Past error)>>Error wa | ithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCU<br>d the ground circuit of th<br><u>-</u> .<br>al?<br>ace the AFS control unit.<br>as detected in the AFS co | T<br>e AFS control unit. Refer to<br>Refer to <u>EXL-126, "Remova</u><br>ntrol unit branch line. | D <u>EXL-84, "AFS CONTROL</u> |

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# **IPDM-E BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000006094700

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

|               | IPDM E/R harness connector |    |                   |
|---------------|----------------------------|----|-------------------|
| Connector No. | Terminal No.               |    | Resistance (Ω)    |
| E6            | 40                         | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

NO >> Repair the power supply and the ground circuit.

| iagnosis Procedure   |  |  | INFOID:00000006094701                                     |
|--|--|--|---|
| .CHECK CONNECTOR   |  |  |   |
| <ul> <li>Check the following term nector side).</li> <li>Driver seat control unit Harness connector B50 Harness connector B11 CAN gateway (With ICC sthe inspection result norm YES (With ICC system)&gt;&gt;0 YES (Without ICC system):</li> <li>NO &gt;&gt; Repair the termination of term</li></ul> | cable from the negative terr<br>ninals and connectors for d<br>1<br>System)<br>al?<br>GO TO 2.<br>>>GO TO 2.<br>inal and connector.<br>TINUITY (OPEN CIRCUIT   | amage, bend and loose co   | nnection (unit side and con-                              |
| -  | tween the CAN gateway ha   |  |   |
| Connector No.  | Termir   |  | Continuity  |
|  | 4  | 6  | Existed   |
| M125   | 10   | 12   | Eviated   |
|  | al?  | .2   | Existed   |
| <ul> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Check the harned tion circuit 2).</li> <li>CHECK HARNESS FOR</li> <li>Connect the connector of Disconnect the connect</li> </ul>   | ess and repair or replace (i   | f shield line is open) the ro<br>system)   | oot cause (CAN communica-                                 |
| YES >> GO TO 3.<br>NO >> Check the harne<br>tion circuit 2).<br>•CHECK HARNESS FOR<br>• Connect the connector of<br>• Disconnect the connector<br>• Check the resistance be  | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni-<br>etween the driver seat control<br>er seat control unit harness conne                  | f shield line is open) the ro<br>system)<br>ol unit harness connector t          | oot cause (CAN communica-                                 |
| YES >> GO TO 3.<br>NO >> Check the harne<br>tion circuit 2).<br>• CHECK HARNESS FOR<br>• Connect the connector of<br>Disconnect the connector<br>• Check the resistance be<br>• Drive<br>Connector No.   | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control unit<br>etween the driver seat control<br>er seat control unit harness conno<br>Termin        | f shield line is open) the ro<br>system)<br>ol unit harness connector t<br>ector | oot cause (CAN communica-<br>terminals.<br>Resistance (Ω) |
| NO >> Check the harne<br>tion circuit 2).<br>CHECK HARNESS FOR<br>Connect the connector of<br>Disconnect the connector<br>Check the resistance be  | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control unit<br>etween the driver seat control<br>er seat control unit harness connor<br>Termin<br>23 | f shield line is open) the ro<br>system)<br>ol unit harness connector t          | oot cause (CAN communica-                                 |

# ICC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094702

[CAN SYSTEM (TYPE 8)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |            |         |
|---------------|-------------------------------|------------|---------|
| Connector No. | Termi                         | Continuity |         |
| M125          | 4 6                           |            | Existed |
| 123           | 10                            | 12         | Existed |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of ADAS control unit.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

| ADAS control unit harness connector |              |  | Resistance (Ω)  |
|-------------------------------------|--------------|--|-----------------|
| Connector No.                       | Terminal No. |  |                 |
| B50                                 | 14 15        |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-66, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".

YES (Past error)>>Error was detected in the ADAS control unit branch line.

NO >> Repair the power supply and the ground circuit.

|   | ECIRCUIT   |   |  |
|---|--|---|--|
| agnosis Procedure   |  |   | INFOID:000000006094703   |
| -   |  |   |  |
| CHECK CONNECTOR   |  |   |  |
| Check the following terr<br>nector side).<br>Pre-crash seat belt con<br>CAN gateway   | cable from the negative tern<br>minals and connectors for c<br>trol unit (driver side)   |   | nnection (unit side and con-                                     |
| the inspection result norm  | <u>nal?</u>  |   |  |
| ES >> GO TO 2.<br>O >> Repair the term  | inal and connector.  |   |  |
| •   | ITINUITY (OPEN CIRCUIT   | .)  |  |
| Disconnect the connect<br>Check the continuity be   |  | arness connector terminals.   |  |
|   | CAN gateway harness connector  | r   | Continuity   |
| Connector No.   |  | nal No.   | · · · · · · · · · · · · · · · · · · ·                            |
| M125  | 4  | 6   | Existed  |
|   | 10   | 12  | Existed  |
| 'ES >> GO TO 3.   |  | if shield line is open) the ro  | ot cause (CAN communica-   |
| ES >> GO TO 3.<br>IO >> Check the harn<br>tion circuit 2).<br>CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connect  | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway.<br>or of pre-crash seat belt co  | ontrol unit (driver side).  |  |
| <ul> <li>YES &gt;&gt; GO TO 3.</li> <li>NO &gt;&gt; Check the harn tion circuit 2).</li> <li>CHECK HARNESS FOR Connect the connect or Disconnect the connect check the resistance b nals.</li> </ul>  | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway.<br>or of pre-crash seat belt co  | ontrol unit (driver side).<br>belt control unit (driver side  | e) harness connector termi-                                      |
| ES >> GO TO 3.<br>O >> Check the harn<br>tion circuit 2).<br>CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connect<br>Check the resistance b<br>nals.  | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway.<br>or of pre-crash seat belt co<br>etween the pre-crash seat<br>t belt control unit (driver side) har  | ontrol unit (driver side).<br>belt control unit (driver side  |  |
| YES >> GO TO 3.<br>NO >> Check the harn<br>tion circuit 2).<br>.CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connector<br>Check the resistance b<br>nals.<br>Pre-crash sea<br>Connector No.<br>B9   | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway.<br>for of pre-crash seat belt co<br>etween the pre-crash seat<br>t belt control unit (driver side) har<br>Termin   | ontrol unit (driver side).<br>belt control unit (driver side  | e) harness connector termi-                                      |
| YES       >> GO TO 3.         NO       >> Check the harn tion circuit 2).         •CHECK HARNESS FOR         Connect the connector         Disconnect the connector         Disconnect the connector         Check the resistance b         nals.         Pre-crash sea         Connector No.         B9         the measurement value w         YES       >> GO TO 4.         NO       >> Repair the pre-or         •CHECK POWER SUPPL   | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway.<br>for of pre-crash seat belt co<br>etween the pre-crash seat<br>t belt control unit (driver side) har<br>Termin<br>14<br>vithin the specification?<br>crash seat belt control unit<br>LY AND GROUND CIRCUIT   | ontrol unit (driver side).<br>belt control unit (driver side<br>ness connector<br>nal No.<br>4<br>(driver side) branch line.<br>T                                 | e) harness connector termi-<br>Resistance (Ω)<br>Approx. 54 – 66 |
| NO >> Check the harn<br>tion circuit 2).<br>• CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connector<br>Check the resistance b<br>nals.<br>Pre-crash sea<br>Connector No.<br>B9<br>the measurement value w<br>YES >> GO TO 4.<br>NO >> Repair the pre-co-<br>• CHECK POWER SUPPL  | ess and repair or replace (i<br>OPEN CIRCUIT<br>of CAN gateway.<br>or of pre-crash seat belt co<br>etween the pre-crash seat<br>t belt control unit (driver side) har<br>Termin<br>14<br>vithin the specification?<br>crash seat belt control unit<br>AND GROUND CIRCUIT<br>of the ground circuit of the<br>ure".  | ontrol unit (driver side).<br>belt control unit (driver side<br>ness connector<br>nal No.<br>4<br>(driver side) branch line.<br>T                                 | e) harness connector termi-<br>Resistance (Ω)                    |
| YES       >> GO TO 3.         NO       >> Check the harn tion circuit 2).         .CHECK HARNESS FOR         Connect the connector         Disconnect the connector         Disconnect the connector         Disconnect the connector         Check the resistance b         nals.         Pre-crash sea         Connector No.         B9         the measurement value w         YES       >> GO TO 4.         NO       >> Repair the pre-construction         .CHECK POWER SUPPL         heck the power supply an         BC-47, "Diagnosis Proced         the inspection result norm         YES (Present error)>>Rep         and Installation | ess and repair or replace (i<br>COPEN CIRCUIT<br>of CAN gateway.<br>for of pre-crash seat belt co<br>etween the pre-crash seat<br>t belt control unit (driver side) har<br>t belt control unit (driver side) har<br>14<br>vithin the specification?<br>Crash seat belt control unit<br>14<br>vithin the specification? | ontrol unit (driver side).<br>belt control unit (driver side<br>ness connector<br>nal No.<br>4<br>(driver side) branch line.<br>T<br>e pre-crash seat belt contro | e) harness connector termi-<br>Resistance (Ω)<br>Approx. 54 – 66 |

# **RDR-L BRANCH LINE CIRCUIT**

### Diagnosis Procedure

INFOID:000000006094704

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar LH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of side radar LH.
- 2. Check the resistance between the side radar LH harness connector terminals.

|               | Side radar LH harness connector |                         |                 |
|---------------|---------------------------------|-------------------------|-----------------|
| Connector No. | Termi                           | Resistance ( $\Omega$ ) |                 |
| B52           | 4                               | 3                       | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

## **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-575, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-592, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar LH branch line.

NO >> Repair the power supply and the ground circuit.

### **RDR-R BRANCH LINE CIRCUIT**

| < DTC/CIRCUIT DIAGNOS  | ilS >   |  | [CAN SYSTEM (TYPE 8)]            |
|--|---|--|----------------------------------|
| RDR-R BRANCH LI  | NE CIRCUIT  |  |                                  |
| Diagnosis Procedure  |   |  | INFOID:000000006094706           |
| 1. CHECK CONNECTOR   |   |  |                                  |
| <ol> <li>Check the terminals and side and connector side is the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the termination of terminati</li></ol> | able from the negative terr<br>d connectors of the side ra<br>).<br><u>al?</u><br>nal and connector.<br>VITCHING SIGNAL CIRCU | adar RH for damage, bend<br>JIT  | and loose connection (unit       |
| Check the right/left switching<br>Is the inspection result norm<br>YES >> GO TO 3.<br>NO >> Repair the root of   | al?   | adar RH. Refer to <u>DAS-578</u>   | <u>, "Diagnosis Procedure"</u> . |
| 3. CHECK HARNESS FOR   |   |  |                                  |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>  |   | arness connector terminals   |                                  |
|  | Side radar RH harness connecto  | r  | Resistance ( $\Omega$ )          |
| Connector No.  |   | nal No.  |                                  |
| B252<br>Is the measurement value w   | 4   | 3  | Approx. 54 – 66                  |
| YES >> GO TO 4.<br>NO >> Repair the side<br>4.CHECK POWER SUPPL<br>Check the power supply and<br>Diagnosis Procedure".<br>Is the inspection result norm<br>YES (Present error)>>Repl<br>YES (Past error)>>Error wa   | radar RH branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the s<br>al?<br>ace the side radar RH. Re            | side radar RH. Refer to <u>DA</u><br>fer to <u>DAS-592. "Removal a</u><br>ar RH branch line. |                                  |
|  |   |  |                                  |
|  |   |  |                                  |

< DTC/CIRCUIT DIAGNOSIS >

# APA BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094708

[CAN SYSTEM (TYPE 8)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Accelerator pedal actuator
- Harness connector M151
- Harness connector M150
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

| Accel         | Accelerator pedal actuator harness connector |                         |                 |
|---------------|--|-------------------------|-----------------|
| Connector No. | Termi  | Resistance ( $\Omega$ ) |                 |
| M152          | 5 4  |                         | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 ${f 3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to <u>DAS-203, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4, "MODELS WITH DIS-</u> <u>TANCE CONTROL ASSIST SYSTEM : Removal and Installation"</u>.

- YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

| Accelerator pedal actu | ator harness connector | Harness connector          |     | Continuity |
|------------------------|------------------------|----------------------------|-----|------------|
| Connector No.          | Terminal No.           | Connector No. Terminal No. |     | Continuity |
| M152                   | 5                      | 5 M23                      | 138 | Existed    |
| 101132                 | 4                      |                            | 137 | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the accelerator pedal actuator harness connector M152 and the harness connector M23.

| iagnosis Procedu   | ure   |   |   | INFOID:00000000609470  |
|--|---|---|---|--|
| CHECK CONNECT  | OR  |   |   |  |
| Check the following<br>nector side).<br>Lane camera unit<br>Harness connector<br>Harness connector<br>Harness connector<br>the inspection result<br>YES >> GO TO 2.<br>NO >> Repair the<br>CHECK HARNESS   | tery cable from the ne<br>g terminals and conne<br>M110<br>M24 and PCB harne<br>normal?<br>terminal and connect<br>FOR OPEN CIRCUIT   | ectors for damage, be<br>ss side connector<br>or.<br>-  | nd and loose conne  | ection (unit side and con                                    |
|  | nnector of lane camer<br>ce between the lane of   | camera unit harness c   | connector terminals   |  |
|  | Long comoro unit hor  | ane camera unit harness connector     Resistance (Ω)  |   |  |
| Connector No.  | Lane camera unit har  | Terminal No.  |   | Resistance ( $\Omega$ )                                      |
| R8<br>the measurement va<br>YES >> GO TO 3.  | 4   | Terminal No.  | 8   | Resistance (Ω)<br>Approx. 54 – 66                            |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supple<br>NIT : Diagnosis Procession<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Erron<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har   | 4<br><u>Iue within the specific</u><br>JPPLY AND GROUNI<br>ly and the ground circ<br><u>adure"</u> .<br><u>normal?</u><br>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.                          | Terminal No.<br>Eation?<br>D CIRCUIT<br>cuit of the lane camer<br>mera unit. Refer to DA<br>e lane camera unit bra<br>e ground circuit.<br>I CIRCUIT)   | a unit. Refer to <u>DA</u><br><u>S-419, "Removal a</u><br>anch line.                  | Approx. 54 – 66<br>S-403, "LANE CAMERA                       |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supple<br>NIT : Diagnosis Proce<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>En<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continuit                            | 4<br><u>Iue within the specific</u><br>JPPLY AND GROUN<br>ly and the ground circ<br><u>adure</u> ".<br><u>normal?</u><br>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.<br>ty between the lane c   | Terminal No.  | a unit. Refer to <u>DA</u><br><u>S-419, "Removal a</u><br>anch line.                  | Approx. 54 – 66<br>S-403, "LANE CAMERA                       |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supple<br>NIT : Diagnosis Process<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Error<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continuit<br>Lane camera unit h | 4<br><u>Iue within the specific</u><br>JPPLY AND GROUNI<br>ly and the ground circ<br><u>adure"</u> .<br><u>normal?</u><br>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M24.<br>ty between the lane c | Terminal No.<br>ation?<br>D CIRCUIT<br>cuit of the lane camer<br>mera unit. Refer to DA<br>e lane camera unit bra<br>e ground circuit.<br>I CIRCUIT)<br>amera unit harness con<br>Harness con | a unit. Refer to DA<br><u>S-419, "Removal a</u><br>anch line.<br>connector and the ha | Approx. 54 – 66<br>S-403, "LANE CAMERA                       |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supple<br>NIT : Diagnosis Proce<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>><br>YES (Past error)>><br>YES (Past error)>><br>CHECK HARNESS<br>Disconnect the har<br>Check the continuit      | 4<br><u>Iue within the specific</u><br>JPPLY AND GROUN<br>ly and the ground circ<br><u>adure</u> ".<br><u>normal?</u><br>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.<br>ty between the lane c   | Terminal No.  | a unit. Refer to <u>DA</u><br><u>S-419, "Removal a</u><br>anch line.                  | Approx. 54 – 66<br>S-403, "LANE CAMERA<br>and Installation". |

# LASER BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094709

[CAN SYSTEM (TYPE 8)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ICC sensor
- Harness connector E106
- Harness connector M6
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

|               | Resistance ( $\Omega$ ) |  |                   |
|---------------|-------------------------|--|-------------------|
| Connector No. | Termi                   |  |                   |
| E67           | 3 6                     |  | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-162, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation".

YES (Past error)>>Error was detected in the ICC sensor branch line.

NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the ICC sensor harness connector and the harness connector.

| ICC sensor ha | rness connector | Harness connector          |     | Continuity |  |
|---------------|-----------------|----------------------------|-----|------------|--|
| Connector No. | Terminal No.    | Connector No. Terminal No. |     | Continuity |  |
| E67           | 3               | M28                        | 343 | Existed    |  |
| 207           | 6               | ινίζο                      | 345 | Existed    |  |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

[CAN SYSTEM (TYPE 8)]

| CAN COMMUNICA  | TION CIRCUIT 1  |   |                             |
|--|---|---|-----------------------------|
| Diagnosis Procedure  |   |   | INFOID:000000006094711      |
| 1.CONNECTOR INSPECT  | ION   |   |                             |
| <ol> <li>Disconnect all the unit of NOTE:<br/>For identification of CAI circuit, refer to <u>LAN-69</u>.</li> <li>Check terminals and co <u>Is the inspection result norm</u><br/>YES &gt;&gt; GO TO 2.<br/>NO &gt;&gt; Repair the term</li> </ol> | cable from the negative ter<br>connectors on CAN communication circuit 1,<br><u>"System Diagram"</u> .<br>nnectors for damage, bench<br>nal?<br>inal and connector. | unication circuit 1.<br>, CAN communication circui<br>d and loose connection. | it 2, and ITS communication |
| 2.CHECK HARNESS CON  |   |   |                             |
| Check the continuity betwee  | en the data link connector t  | terminals.  |                             |
|  | Data link connector   |   | Continuity                  |
| Connector No.  | Term  | inal No.  | -                           |
| M182   | 6   | 14  | Not existed                 |
| Check the continuity betwee  | connector<br>Terminal No.   | - Ground  | Continuity                  |
| M182   | 6   | _   | Not existed                 |
| 4.CHECK ECM AND IPDM<br>1. Remove the ECM and t  | ess and repair or replace (<br>I E/R TERMINATION CIRC   |   | s is short) the root cause. |
|  | ECM   |   |                             |
|  | Terminal No.  | I   | Resistance ( $\Omega$ )     |
| 114  | 113   | Ap  | oprox. 108 – 132            |
| - VK56VD   |   |   |                             |
|  | ECM<br>Terminal No.   |   | Resistance (Ω)              |
| 146  | 151   | Ar  | oprox. 108 – 132            |
|  | etween the IPDM E/R term  |   | ·                           |

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

| IPDM                                | Begistange (O)    |                  |  |
|-------------------------------------|-------------------|------------------|--|
| Terminal No.                        |                   | – Resistance (Ω) |  |
| 40                                  | Approx. 108 – 132 |                  |  |
| Is the measurement value within the | he specification? |                  |  |
|                                     |                   |                  |  |

NO >> Replace the ECM and/or the IPDM E/R.

### 5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

### **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 1. **NOTE:**

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

### NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

[CAN SYSTEM (TYPE 8)]

#### < DTC/CIRCUIT DIAGNOSIS > CAN COMMUNICATION CIRCUIT 2 А **Diagnosis** Procedure INFOID:000000006094712 **1**.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect all the unit connectors on CAN communication circuit 2. NOTE: For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to LAN-69, "System Diagram". D 4. Check terminals and connectors for damage, bend and loose connection. Is the inspection result normal? YES >> GO TO 2. Е NO >> Repair the terminal and connector. **2.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) F Check the continuity between the data link connector terminals. Data link connector Continuity Connector No. Terminal No. M182 13 12 Not existed Is the inspection result normal? Н YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. ${\it 3.}$ check harness continuity (short circuit) Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 13 Not existed M182 Κ 12 Not existed Is the inspection result normal? YES >> GO TO 4. L NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. ${f 4}$ . CHECK CAN GATEWAY TERMINATION CIRCUIT LAN Remove the CAN gateway. 1. 2. Check the resistance between the CAN gateway terminals. Ν CAN gateway Resistance $(\Omega)$ Terminal No. 4 10 Approx. 108 - 132 6 12 Approx. 108 - 132 Is the measurement value within the specification? Ρ YES >> GO TO 5. NO >> Replace the CAN gateway. **5.**CHECK SYMPTOM Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced. Inspection result Reproduced>>GO TO 6.

Revision: 2010 June

### LAN-427

### < DTC/CIRCUIT DIAGNOSIS >

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

### **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
 NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

## **ITS COMMUNICATION CIRCUIT**

# [CAN SYSTEM (TYPE 8)]

| ITS COMMUNIC  | CATION CIRCU  | ΠT                      |                        |                        |
|---|---|-------------------------|------------------------|------------------------|
| Diagnosis Procedu   | ure   |                         |                        | INFOID:000000006094713 |
| 1.CHECK CAN DIAG  | NOSIS   |                         |                        |                        |
| Check the CAN diagno<br>communication circuit 2<br><b>NOTE:</b><br>For identification of CA<br>cuit, refer to <u>LAN-69</u> , "S  | 2 have no malfunction<br>N communication cire                   |                         |                        |                        |
| Are the CAN communic  | cation 1 and CAN con  | nmunication 2 circuits  | s normal?              |                        |
| YES >> GO TO 2.<br>NO >> Check and  | repair CAN commun   | ication circuit 1 and/o | r CAN communicatior    | n circuit 2.           |
| 2.CONNECTOR INSP  | PECTION   |                         |                        |                        |
| <ol> <li>Check the termina<br/>(unit side and conn<br/><u>Is the inspection result</u><br/>YES &gt;&gt; GO TO 3.</li> </ol>   | tery cable from the ne<br>ls and connectors of<br>nector side). | the ADAS control u      | nit for damage, bend   | and loose connection   |
| 3.CHECK HARNESS   | CONTINUITY (OPEN  | I CIRCUIT)              |                        |                        |
| nector.<br>ADAS control unit l  | harness connector   | ICC sensor ha           | rness connector        | C sensor harness con-  |
| Connector No.   | Terminal No.<br>7   | Connector No.           | Terminal No.           | Existed                |
| B50   | 8   | E67                     | 6                      | Existed                |
| <ul> <li>4.CHECK HARNESS</li> <li>1. Disconnect the follo</li> <li>- Side radar LH</li> <li>- Side radar RH</li> <li>- Lane camera unit</li> <li>- Accelerator pedal a</li> </ul> | e body harness.<br>CONTINUITY (SHOF<br>owing harness conne      | ctors.                  | connector terminals.   |                        |
|   | ADAS control unit har   | noss connector          |                        |                        |
| Connector No.   |   | Terminal No.            |                        | Continuity             |
| B50   | 7   |                         | 8                      | Not existed            |
| Is the inspection resultYES>> GO TO 5.NO>> Check theF   |   | replace (if shield line | e or PCB harness is sl | hort) the root cause.  |

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

< DTC/CIRCUIT DIAGNOSIS >

### LAN-429

## **ITS COMMUNICATION CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 8)]

| ADAS control unit | harness connector |        | Continuity  |
|-------------------|-------------------|--------|-------------|
| Connector No.     | Terminal No.      | Ground | Continuity  |
| B50               | 7                 | Ground | Not existed |
| 830               | 8                 |        | Not existed |

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

### **6.**CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.

2. Check the resistance between the ADAS control unit terminals.

| ADAS control unit |  | – Resistance (Ω)  |  |
|-------------------|--|-------------------|--|
| Terminal No.      |  |                   |  |
| 7 8               |  | Approx. 108 – 132 |  |

3. Check the resistance between the ICC sensor terminals.

| ICC sensor   |   | Resistance (Ω)    |  |
|--------------|---|-------------------|--|
| Terminal No. |   |                   |  |
| 3            | 6 | Approx. 108 – 132 |  |

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ADAS control unit and/or the ICC sensor.

### 7.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 8.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

### 8. CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of ITS communication system. **NOTE:**

ADAS control unit and ICC sensor have a termination circuit. Check other units first.

- 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
  - NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

#### [CAN SYSTEM (TYPE 9)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006094502 В 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM \_ D Low tire pressure warning control unit \_ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

### MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094503

[CAN SYSTEM (TYPE 9)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit h          | arness connector | Continuity |
|-----------------|------------------|----------------------------|------------------|------------|
| Connector No.   | Terminal No.     | Connector No. Terminal No. |                  | Continuity |
| M66             | 12               | M210                       | 90               | Existed    |
|                 | 11               | M210                       | 74               | Existed    |

#### Models without navigation system

| A/C auto amp. harness connector |              | AV control unit harness connector |              | Continuity |
|---------------------------------|--------------|-----------------------------------|--------------|------------|
| Connector No.                   | Terminal No. | Connector No.                     | Terminal No. | Continuity |
| M66                             | 12           | M84                               | 81           | Existed    |
|                                 | 11           |                                   | 80           | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

| DTC/CIRCUIT DIAG  | SNOSIS >  |   | [CAN                 | SYSTEM (TYPE 9)]        |
|---|---|---|----------------------|-------------------------|
| 1AIN LINE BET   | WEEN A-BAG  | AND AV CIRC                                 | UIT                  |                         |
| agnosis Proced  | ure   |   |                      | INFOID:000000006094504  |
| .CHECK HARNESS  | CONTINUITY (OPEI  | N CIRCUIT)                                  |                      |                         |
| . Disconnect the foll   | witch OFF.<br>ttery cable from the n<br>owing harness conne |   |                      |                         |
| ECM<br>A/C auto amp.<br>AV control unit<br>. Check the continui<br>nector.<br>Models with naviga                              |   | auto amp. harness con                       | nector and the AV co | ntrol unit harness con- |
| <ul> <li>A/C auto amp.</li> <li>AV control unit</li> <li>Check the continuinector.</li> <li>Models with navigation</li> </ul> |   | auto amp. harness con<br>AV control unit ha |                      |                         |
| <ul> <li>A/C auto amp.</li> <li>AV control unit</li> <li>Check the continuinector.</li> <li>Models with navigation</li> </ul> | ation system  |   |                      | ntrol unit harness con- |
| A/C auto amp.<br>AV control unit<br>. Check the continui<br>nector.<br>Models with naviga                                     | ation system  | AV control unit ha                          | arness connector     |                         |

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

|   | A/C auto amp. h | arness connector | or AV control unit harness connector |              | Continuity | - |
|---|-----------------|------------------|--------------------------------------|--------------|------------|---|
|   | Connector No.   | Terminal No.     | Connector No.                        | Terminal No. | Continuity | Н |
| _ | M66             | 12               | M84                                  | 81           | Existed    | - |
|   | σοινι           | 11               | 10104                                | 80           | Existed    |   |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

## **Diagnosis** Procedure

INFOID:000000006094505

[CAN SYSTEM (TYPE 9)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

| AV control unit h | AV control unit harness connector |               | Combination meter harness connector |            |
|-------------------|-----------------------------------|---------------|-------------------------------------|------------|
| Connector No.     | Terminal No.                      | Connector No. | Terminal No.                        | Continuity |
| M210              | 90                                | M53           | 14                                  | Existed    |
| WZ 10             | 74                                | MSS           | 15                                  | Existed    |

#### Models without navigation system

| AV control unit h | narness connector | Combination meter harness connector |              | Continuity |
|-------------------|-------------------|-------------------------------------|--------------|------------|
| Connector No.     | Terminal No.      | Connector No.                       | Terminal No. | Continuity |
| 1404              | 81                | MED                                 | 14           | Existed    |
| M84               | 80                | M53                                 | 15           | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

|   | GNOSIS >            |                   | -                    | SYSTEM (TYPE 9)]       |
|---|---------------------|-------------------|----------------------|------------------------|
| AIN LINE BET  | WEEN M&A A          | ND DLC CIRCU      | JIT                  |                        |
| agnosis Proced  | ure                 |                   |                      | INFOID:000000006094506 |
| CHECK HARNESS   | CONTINUITY (OPE     | N CIRCUIT)        |                      |                        |
| Disconnect the fol<br>ECM<br>Combination meter<br>Harness connector | rs M105 and M181    |                   | connector and the ha | rness connector.       |
| Combination mete  | r harness connector | Harness connector |                      | Continuitu             |
| O a una a sta a Nia   | Terminal No.        | Connector No.     | Terminal No.         | Continuity             |
| Connector No.   |                     |                   |                      |                        |
| M53   | 14                  | M105              | 7                    | Existed                |
| Connector No.   | 1                   |                   |                      |                        |

MAIN LINE BETWEEN M&A AND DLC CIRCUIT

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## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

#### **Diagnosis** Procedure

INFOID:000000006094507

[CAN SYSTEM (TYPE 9)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

| Harness connector BCM harness connector |              | Continuity    |              |            |
|---|--------------|---------------|--------------|------------|
| Connector No.                           | Terminal No. | Connector No. | Terminal No. | Continuity |
| M405                                    | 7            | M400          | 39           | Existed    |
| M105                                    | 8            | - M120        | 40           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

NO >> Replace the PCB harness.

|   |   |   |  | AN SYSTEM (TYPE 9)]                                    |
|---|---|---|--|--|
| DTC/CIRCUIT DIA   | TWEEN BCM A   | ND 4WD CIR  | -  |  |
|   | _   |   | 0011   |  |
| Diagnosis Proced  | lure  |   |  | INFOID:000000006094509                                 |
| .CHECK CONNECT  | FOR   |   |  |  |
| <ul> <li>Check the following<br/>and harness side)</li> </ul>   | attery cable from the ne<br>ng terminals and coni<br>i.<br>or M20 and PCB harne<br>or M7  | nectors for damage  | , bend and loose co                                  | nnection (connector side                               |
| s the inspection result   | t normal?   |   |  |  |
| YES >> GO TO 2.   |   |   |  |  |
|   | e terminal and connect  |   |  |  |
|   |   |   |  |  |
| BCM<br>Harness connecto   | llowing harness conne<br>or M20<br>lity between the BCM   |   | and the PCB harness                                  | connector.   |
| BCM harne   | ess connector   | PCB harr  | ness connector                                       | Continuity   |
| <b>a</b>  |   |   |  |  |
| Connector No.   | Terminal No.  | Terr  | minal No.  | Continuity   |
|   | Terminal No.<br>39  | Terr  | ninal No.<br>35                                      | Existed  |
| M120  | 39<br>40  | Terr  |  | -  |
| M120<br>s the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>. Disconnect the ha  | 39<br>40<br>t normal?   | I CIRCUIT)<br>and B1.   | 35   | Existed  |
| M120<br>s the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu   | 39<br>40<br>t normal?<br>he PCB harness.<br>S CONTINUITY (OPEN<br>arness connectors M7  | N CIRCUIT)<br>and B1.<br>ss connectors.   | 35   | Existed  |
| M120<br>s the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu   | 39<br>40<br>t normal?<br>he PCB harness.<br>S CONTINUITY (OPEN<br>arness connectors M7<br>hity between the harne  | N CIRCUIT)<br>and B1.<br>ss connectors.   | 35<br>36   | Existed  |
| M120<br>s the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>. Disconnect the ha<br>. Check the continu<br>Harness<br>Connector No.   | 39<br>40<br>t normal?<br>he PCB harness.<br>S CONTINUITY (OPEN<br>arness connectors M7<br>hity between the harne  | I CIRCUIT)<br>and B1.<br>ss connectors.<br>Harnes<br>Connector No.  | 35<br>36<br>ss connector                             | Existed  |
| M120<br>s the inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness  | 39<br>40<br>t normal?<br>he PCB harness.<br>S CONTINUITY (OPEN<br>arness connectors M7<br>ity between the harne<br>connector<br>Terminal No.<br>35<br>36  | I CIRCUIT)<br>and B1.<br>ss connectors.<br>Harnes   | 35<br>36<br>ss connector<br>Terminal No.             | Existed<br>Existed                                     |
| M120<br>Sthe inspection result<br>YES >> GO TO 3.<br>NO >> Replace th<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu<br>Harness<br>Connector No.<br>M20<br>Sthe inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS<br>Check the continuity b | 39<br>40<br>t normal?<br>he PCB harness.<br>S CONTINUITY (OPEN<br>arness connectors M7<br>hity between the harne<br>connector<br>Terminal No.<br>35<br>36<br>t normal?  | N CIRCUIT)<br>and B1.<br>ss connectors.<br>Connector No.<br>M7<br>e harness connecto<br>N CIRCUIT)<br>onnector terminals. | 35<br>36<br>ss connector<br>Terminal No.<br>72<br>73 | Existed<br>Existed<br>Continuity<br>Existed<br>Existed |
| M120<br>Solution the inspection result<br>YES >> GO TO 3.<br>NO >> Replace the<br>CHECK HARNESS<br>Disconnect the hall<br>Check the continue<br>Harness<br>Connector No.<br>M20<br>Solution the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>CHECK HARNESS       | 39<br>40<br>t normal?<br>he PCB harness.<br>S CONTINUITY (OPEN<br>arness connectors M7<br>ity between the harne<br>connector<br>Terminal No.<br>35<br>36<br>t normal?<br>e main line between th<br>S CONTINUITY (OPEN | N CIRCUIT)<br>and B1.<br>ss connectors.<br>Harnes<br>Connector No.<br>M7<br>e harness connector<br>N CIRCUIT)             | 35<br>36<br>ss connector<br>Terminal No.<br>72<br>73 | Existed<br>Existed                                     |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit. NO >> Replace the body harness.

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

## Diagnosis Procedure

INFOID:000000006094512

[CAN SYSTEM (TYPE 9)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. |    | Continuity |
|---------------|--------------|----|------------|
| B1            | 72           | 74 | Existed    |
| Ы             | 73           | 75 | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

## **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M7            | 74           | M6                | 22           | Existed    |
| IVI 7         | 75           |                   | 23           | Existed    |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness connector |              | ABS actuator and electric unit (control unit)<br>harness connector |              | Continuity |
|-------------------|--------------|--|--------------|------------|
| Connector No.     | Terminal No. | Connector No.  | Terminal No. | -          |
| F100              | 22           | Γ.44   | 25           | Existed    |
| E106              | 23           | E41  | 15           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AWD control unit and the ABS actuator and electric unit (control unit).

# MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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# ECM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094518

[CAN SYSTEM (TYPE 9)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M30 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

- VQ37VHR

|               | ECM harness connector |                         |                   |
|---------------|-----------------------|-------------------------|-------------------|
| Connector No. | Termi                 | Resistance ( $\Omega$ ) |                   |
| M107          | 114 113               |                         | Approx. 108 – 132 |

VK56VD

| ECM harness connector |         |              | Resistance (Ω)    |
|-----------------------|---------|--------------|-------------------|
| Connector No.         | Termi   | Terminal No. |                   |
| M160                  | 146 151 |              | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the ECM. Refer to the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: <u>EC-716</u>, "Diagnosis Procedure"

#### Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "Removal and Installation"

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

## **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

| ECM harne     | ss connector | Harness       | connector    | Continuity |
|---------------|--------------|---------------|--------------|------------|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |
| M107          | 114          | M30           | 439          | Existed    |
| WITO7         | 113          | MISO          | 438          | Existed    |

- VK56VD

# ECM BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

#### [CAN SYSTEM (TYPE 9)]

| ECM harnes    | ss connector | Harness       | connector    | Continuity | A   |
|---------------|--------------|---------------|--------------|------------|-----|
| Connector No. | Terminal No. | Connector No. | Terminal No. | Continuity |     |
| M160          | 146          | M30           | 439          | Existed    | -   |
| MITOO         | 151          | MSO           | 438          | Existed    | - B |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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# TPMS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094519

[CAN SYSTEM (TYPE 9)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

| Low tire pre  | essure warning control unit harness connector<br>Terminal No. |   | Resistance (Ω)  |  |
|---------------|---|---|-----------------|--|
| Connector No. |   |   |                 |  |
| M43           | 2   | 1 | Approx. 54 – 66 |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

|               | warning control unit<br>connector | Harness       | connector    | Continuity |
|---------------|-----------------------------------|---------------|--------------|------------|
| Connector No. | Terminal No.                      | Connector No. | Terminal No. |            |
| M43           | 2                                 | M29           | 396          | Existed    |
| 10145         | 1                                 | 10129         | 395          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

## **HVAC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 9)]

| HVAC BRANCH  | LINE CIRCUI  | Γ   |  |   | Λ                |
|--|--|---|--|---|------------------|
| Diagnosis Proced   | ure  |   |  | INFOID:000000006094522                  | A                |
| 1.CHECK CONNECT  | OR   |   |  |   | В                |
| <ul> <li>3. Check the following nector side).</li> <li>A/C auto amp.</li> <li>Harness connector Is the inspection result YES &gt;&gt; GO TO 2.</li> </ul>  | tery cable from the ne<br>g terminals and conne<br>M28 and PCB harne<br>normal?  | ectors for damage, ber  | nd and loose conned  | ction (unit side and con-               | C                |
| NO >> Repair the 2.CHECK HARNESS   | terminal and connect   |   |  |   | E                |
| 1. Disconnect the cor  | nector of A/C auto a   |   | nector terminals.  |   | F                |
|  | A/C auto amp. harn   | ess connector   |  | Resistance (Ω)                          |                  |
| Connector No.  |  | Terminal No.  |  |   | 0                |
|  |  |   |  |   | G                |
| M66  | 12   |   | 11   | Approx. 54 – 66                         | G                |
| M66<br>Is the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SU  | lue within the specific  |   | 11   | Approx. 54 – 66                         | H                |
| Is the measurement vaYES>> GO TO 3.NO>> GO TO 4. <b>3.</b> CHECK POWER SUCheck the power supp  | lue within the specific  | D CIRCUIT   |  | Approx. 54 – 66<br>67. "A/C AUTO AMP. : |                  |
| Is the measurement vaYES>> GO TO 3.NO>> GO TO 4. <b>3.</b> CHECK POWER SU  | Iue within the specific<br>JPPLY AND GROUN<br>ly and the ground cir  | D CIRCUIT   |  |   |                  |
| Is the measurement valueYES>> GO TO 3.NO>> GO TO 4. <b>3.</b> CHECK POWER SUCheck the power suppDiagnosis Procedure".Is the inspection resultYES (Present error)>>YES (Past error)>>ErNO>> Repair the  | IVE WITHIN THE SPECIFIC<br>UPPLY AND GROUN<br>IV and the ground cir<br>Normal?<br>Replace the A/C aut<br>For was detected in the<br>power supply and the   | D CIRCUIT<br>cuit of the A/C auto a<br>o amp. Refer to <u>HAC-2</u><br>ie A/C auto amp. branc<br>e ground circuit.  | mp. Refer to <u>HAC-1</u><br>201. "Removal and I                                     | 67. "A/C AUTO AMP. :                    |                  |
| Is the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SU<br>Check the power supp<br>Diagnosis Procedure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er   | IVE WITHIN THE SPECIFIC<br>UPPLY AND GROUN<br>IV and the ground cir<br>Normal?<br>Replace the A/C aut<br>For was detected in the<br>power supply and the   | D CIRCUIT<br>cuit of the A/C auto a<br>o amp. Refer to <u>HAC-2</u><br>ie A/C auto amp. branc<br>e ground circuit.  | mp. Refer to <u>HAC-1</u><br>201. "Removal and I                                     | 67. "A/C AUTO AMP. :                    | H<br>J           |
| Is the measurement value         YES       >> GO TO 3.         NO       >> GO TO 4. <b>3.</b> CHECK POWER SU         Check the power supp         Diagnosis Procedure".         Is the inspection result         YES (Present error)>>         YES (Past error)>>Er         NO       >> Repair the <b>4.</b> CHECK HARNESS         1.       Disconnect the har                                     | IVE WITHIN THE SPECIFIC<br>IVE WITHIN THE SPECIFIC<br>IVE AND GROUN<br>IVE AND GROUN<br>I | D CIRCUIT<br>rcuit of the A/C auto a<br>o amp. Refer to <u>HAC-2</u><br>ie A/C auto amp. branc<br>e ground circuit.<br>N CIRCUIT)                         | mp. Refer to <u>HAC-1</u><br>201. "Removal and I<br>ch line.                         | 67. "A/C AUTO AMP. :<br>nstallation".   | H<br>J           |
| Is the measurement value         YES       >> GO TO 3.         NO       >> GO TO 4. <b>3.</b> CHECK POWER SU         Check the power supp         Diagnosis Procedure".         Is the inspection result         YES (Present error)>         YES (Past error)>>Err         NO       >> Repair the <b>4.</b> CHECK HARNESS         1.       Disconnect the har                                     | IVE WITHIN THE SPECIFIC<br>UPPLY AND GROUN<br>IV and the ground cir<br>normal?<br>PReplace the A/C aut<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.<br>ty between the A/C a   | D CIRCUIT<br>rcuit of the A/C auto a<br>o amp. Refer to <u>HAC-2</u><br>ie A/C auto amp. branc<br>e ground circuit.<br>N CIRCUIT)                         | mp. Refer to <u>HAC-1</u><br>201. "Removal and I<br>ch line.<br>nector and the harne | 67. "A/C AUTO AMP. :<br>nstallation".   | H<br>J<br>K<br>L |
| Is the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SU<br>Check the power supp<br>Diagnosis Procedure".<br>Is the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continui  | IVE WITHIN THE SPECIFIC<br>UPPLY AND GROUN<br>IV and the ground cir<br>normal?<br>PReplace the A/C aut<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.<br>ty between the A/C a   | D CIRCUIT<br>cuit of the A/C auto a<br>o amp. Refer to <u>HAC-2</u><br>ie A/C auto amp. branc<br>e ground circuit.<br>N CIRCUIT)<br>uto amp. harness conr | mp. Refer to <u>HAC-1</u><br>201. "Removal and I<br>ch line.<br>nector and the harne | 67. "A/C AUTO AMP. :<br>nstallation".   | H<br>J           |
| Is the measurement value         YES       >> GO TO 3.         NO       >> GO TO 4. <b>3.</b> CHECK POWER SU         Check the power supp         Diagnosis Procedure".         Is the inspection result         YES (Present error)>         YES (Past error)>>Err         NO       >> Repair the <b>4.</b> CHECK HARNESS         1.       Disconnect the har         2.       Check the continui | IVE WITHIN THE SPECIFIC<br>JPPLY AND GROUN<br>IV and the ground cir<br>normal?<br>Replace the A/C aut<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.<br>ty between the A/C a   | D CIRCUIT<br>cuit of the A/C auto a<br>o amp. Refer to <u>HAC-2</u><br>he A/C auto amp. branc<br>e ground circuit.<br>N CIRCUIT)<br>uto amp. harness conr | mp. Refer to <u>HAC-1</u><br>201, "Removal and I<br>ch line.<br>hector and the harne | 67. "A/C AUTO AMP. :<br>nstallation".   | H<br>J<br>K<br>L |

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connec-Ο tor M28.

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# TCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094523

[CAN SYSTEM (TYPE 9)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F103
- Harness connector M116
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

|               | A/T assembly harness connector |   | Resistance (Ω)  |
|---------------|--------------------------------|---|-----------------|
| Connector No. | Terminal No.                   |   |                 |
| F61           | 3                              | 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

#### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

| A/T assembly h | arness connector | Harness       | connector    | Continuity |
|----------------|------------------|---------------|--------------|------------|
| Connector No.  | Terminal No.     | Connector No. | Terminal No. | Continuity |
| F61            | 3                | M28           | 346          | Existed    |
| 1.01           | 8                | IVIZO         | 347          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

# [CAN SYSTEM (TYPE 9)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094524 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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< DTC/CIRCUIT DIAGNOSIS >

# AV BRANCH LINE CIRCUIT

INFOID:000000006094525

## **Diagnosis Procedure**

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M25 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

|               | AV control unit harness connecto | Resistance (Ω) |                 |
|---------------|----------------------------------|----------------|-----------------|
| Connector No. | Terminal No.                     |                |                 |
| M210          | 90                               | 74             | Approx. 54 – 66 |

Models without navigation system

|               | AV control unit harness connector<br>Terminal No. |    | Resistance (Ω)  |
|---------------|---|----|-----------------|
| Connector No. |   |    |                 |
| M84           | 81  | 80 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.

NO >> Repair the power supply and the ground circuit.

## **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector  $\overline{M25}$ .
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

| AV control unit h | arness connector | Harness       | connector    | Continuity |
|-------------------|------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No. | Terminal No. | Continuity |
| M210              | 90               | M25           | 201          | Existed    |
| WIZ 10            | 74               | WIZ5          | 221          | Existed    |

Models without navigation system

# **AV BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

## [CAN SYSTEM (TYPE 9)]

| Connector No.       Terminal No.       Connector No.       Terminal No.       Continuity         M84       81       M25       201       Existed         M84       80       M25       221       Existed         he inspection result normal?       ES       >> Replace the PCB harness.       ES       >> Replace the PCB harness.         O (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.       O (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25. | M84  | 81  |                      |     | · · · · · · · · · · · · · · · · · · · |
|---|--|---|----------------------|-----|---------------------------------------|
| M84       M25       Z21       Existed         he inspection result normal?       ES       >> Replace the PCB harness.       D (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.         D (Without navigation system)>>Repair the harness between the AV control unit harness connector M25.         D (Without navigation system)>>Repair the harness between the AV control unit harness connector M84   |  |   | M25                  | 201 | Existed                               |
| 80       221       Existed         he inspection result normal?       ES       >> Replace the PCB harness.         D (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.       D (Without navigation system)>>Repair the harness between the AV control unit harness connector M84   |  | 80  | IVIZ5                |     |                                       |
| ES >> Replace the PCB harness.<br>O (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and<br>the harness connector M25.<br>O (Without navigation system)>>Repair the harness between the AV control unit harness connector M84  | the increation result he   |   |                      | 221 | Existed                               |
| D (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and<br>the harness connector M25.<br>D (Without navigation system)>>Repair the harness between the AV control unit harness connector M84  |  | ormal?  |                      |     |                                       |
|   | O (With navigation sys<br>the harness o<br>O (Without navigation | tem)>>Repair the<br>connector M25.<br>system)>>Repair t | he harness between t |     |                                       |
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# M&A BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094526

[CAN SYSTEM (TYPE 9)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Combination meter
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

| Co            | ombination meter harness connector<br>Terminal No. |    | Resistance (Ω)  |
|---------------|--|----|-----------------|
| Connector No. |  |    | Resistance (32) |
| M53           | 14   | 15 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | r harness connector | Harness connector |              | Continuity |
|------------------|---------------------|-------------------|--------------|------------|
| Connector No.    | Terminal No.        | Connector No.     | Terminal No. | Continuity |
| M53              | 14                  | M24               | 176          | Existed    |
| IVISS            | 15                  | 10124             | 177          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

# **DLC BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 9)]

| iagnosis Proced   | Jre  |  |                 | INFOID:0000000609452         |  |
|---|--|--|-----------------|------------------------------|--|
| .CHECK CONNECT  | OR   |  |                 |                              |  |
| <ul> <li>Check the following nector side).</li> <li>Data link connector Harness connector Harness connector Harness connector Harness connector the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> </ul> | tery cable from the n<br>g terminals and conn<br><sup>•</sup> M181<br>• M105<br>• M23 and PCB harne<br>normal?<br>terminal and connec<br>FOR OPEN CIRCUI | ectors for damage, be<br>ess side connector<br>tor.<br>T | nd and loose co | nnection (unit side and con- |  |
| neck the resistance b   |  |  |                 |                              |  |
| Connector No  | Data link cor  | Data link connector Resistance (Ω)                       |                 |                              |  |
| Connector No.<br>M182   | 6  | Terminal No.   | 14              | Approx. 54 – 66              |  |
| the measurement va  |  | cation?  | 17              |                              |  |
| NO >> GO TO 3.<br>CHECK HARNESS   | ror was detected in th<br>CONTINUITY (OPEI<br>mess connector M23   | ne data link connector<br>N CIRCUIT)                     |                 |                              |  |
| . Check the continui  |  | Harness connector  |                 |                              |  |
| . Check the continui Data link  | connector  | Harness  |                 | Continuity                   |  |
|   | connector<br>Terminal No.  | Connector No.  | Terminal No.    | Continuity                   |  |
| Data link   |  |  |                 | Existed                      |  |

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< DTC/CIRCUIT DIAGNOSIS >

# BCM BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094528

[CAN SYSTEM (TYPE 9)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- BCM
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of BCM.
- 2. Check the resistance between the BCM harness connector terminals.

| BCM harness connector |        |                   | Resistance (Ω)  |
|-----------------------|--------|-------------------|-----------------|
| Connector No.         | Termin | 1(ESISIAIICE (22) |                 |
| M120                  | 39     | 40                | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

YES (Past error)>>Error was detected in the BCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

| BCM harne     | ss connector | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M120          | 39           | M22               | 101          | Existed    |
| 101120        | 40           | IVIZZ             | 102          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

|  | LINE CIRCUI   | l   |  |   |
|--|---|---|--|---|
| Diagnosis Procedu  | ire   |   |  | INFOID:000000006094529                            |
| 1.CHECK CONNECTO   | DR  |   |  |   |
| <ol> <li>Check the following<br/>nector side).</li> <li>Steering angle sens</li> </ol>   | ery cable from the ne<br>terminals and conne  | ectors for damage, ber  | nd and loose conne                         | ction (unit side and con-                         |
| s the inspection result r  | normal?   |   |  |   |
| YES >> GO TO 2.<br>NO >> Repair the t<br>2.CHECK HARNESS F   | erminal and connect   |   |  |   |
| 1. Disconnect the con  | nector of steering an   |   | ess connector termi                        | nals.   |
|  | Steering angle sensor h   | ng angle sensor harness connector   |  | Resistance (Ω)                                    |
| Connector No.  |   | Terminal No.  |  |   |
| M37<br>s the measurement val   | 1   |   | 2  | Approx. 54 – 66                                   |
| gram".<br>Is the inspection result r<br>YES (Present error)>><br>YES (Past error)>>Erro<br>NO >> Repair the p<br>4.CHECK HARNESS ( | y and the ground cir<br>normal?<br>Replace the steering<br>or was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M22. | cuit of the steering ar<br>angle sensor. Refer t<br>e steering angle sense<br>ground circuit.<br>I CIRCUIT) | o <u>BRC-144, "Remo</u><br>or branch line. | to BRC-54, "Wiring Dia-<br>val and Installation". |
|  | y between the steen   | ng angle sensor narne   | ss connector and tr                        | ne harness connector.                             |
|  |   | Harness c   |  |   |
| <ol> <li>Check the continuity</li> </ol>   |   |   |  | Continuity  |
| 2. Check the continuity<br>Steering angle sensor   | harness connector   | Harness c   | connector                                  |   |

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< DTC/CIRCUIT DIAGNOSIS >

# 4WD BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094530

[CAN SYSTEM (TYPE 9)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AWD control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AWD control unit.

2. Check the resistance between the AWD control unit harness connector terminals.

| A             | AWD control unit harness connector |                         |                 |  |
|---------------|------------------------------------|-------------------------|-----------------|--|
| Connector No. | Termi                              | Resistance ( $\Omega$ ) |                 |  |
| B17           | 8                                  | 16                      | Approx. 54 – 66 |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-47, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-59, "Removal and Installation"</u>.

YES (Past error)>>Error was detected in the AWD control unit branch line.

NO >> Repair the power supply and the ground circuit.

## **ABS BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 9)]

| Diagnosis Procedure  |   |                               | INFOID:00000006094532             |
|--|---|-------------------------------|-----------------------------------|
| 1.CHECK CONNECTOR  |   |                               |                                   |
| 3. Check the terminals and   | able from the negative termin<br>a connectors of the ABS actunit side and connector side).<br>al?<br>nal and connector.   |                               | ntrol unit) for damage, bend      |
|  | or of ABS actuator and electrice the sector and electrice the ABS actuator and actuator and the ABS actuator and the sector actuator and the sector actuator actu |                               | it) harness connector termi-      |
| ABS actuator and electric unit (control unit) harness connector  |   | Posistance (O)                |                                   |
| Connector No.  | Terminal  | No.                           | Resistance ( $\Omega$ )           |
| E41  | 25  | 15                            | Approx. 54 – 66                   |
| · ·  | actuator and electric unit (co<br>Y AND GROUND CIRCUIT  | ntrol unit) branch line.      |                                   |
| Check the power supply an<br><u>BRC-119, "Diagnosis Proceed</u><br><u>s the inspection result norm</u><br>YES (Present error)>>Repl<br><u>and Installation</u> " | al?<br>ace the ABS actuator and ele   | ectric unit (control unit). F | Refer to <u>BRC-141, "Removal</u> |

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< DTC/CIRCUIT DIAGNOSIS >

# **IPDM-E BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000006094534

[CAN SYSTEM (TYPE 9)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

|               | IPDM E/R harness connector |    |                   |
|---------------|----------------------------|----|-------------------|
| Connector No. | Terminal No.               |    | Resistance (Ω)    |
| E6            | 40                         | 39 | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

NO >> Repair the power supply and the ground circuit.

| iagnosis Procedure  |  |   | INFOID:000000006094535                |
|---|--|---|---------------------------------------|
| .CHECK CONNECTOR  |  |   |                                       |
|   | cable from the negative terr<br>ninals and connectors for d<br>1<br>System)<br><u>hal?</u><br>GO TO 2.<br>>>GO TO 3.<br>inal and connector.                        | lamage, bend and loose cor                              | nnection (unit side and con-          |
| Disconnect the connect  | or of CAN gateway.   | arness connector terminals.                             |                                       |
|   | CAN gateway harness connector  |   | Continuity                            |
| Connector No.   |  | nal No.   | · · · · · · · · · · · · · · · · · · · |
| M125  | 4 10   | 6<br>12   | Existed<br>Existed                    |
|   | ess and renair or replace (i   | febield line is energy the res                          | t cause (CAN communica-               |
| . Connect the connector   | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni   | system)   |                                       |
| <ul> <li>NO &gt;&gt; Check the harm tion circuit 2).</li> <li>CHECK HARNESS FOR</li> <li>Connect the connect or 2. Disconnect the connect</li> <li>Check the resistance be</li> </ul> | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni   | system)<br>t.<br>rol unit harness connector te          |                                       |
| <ul> <li>NO &gt;&gt; Check the harm tion circuit 2).</li> <li>CHECK HARNESS FOR</li> <li>Connect the connect or 2. Disconnect the connect</li> <li>Check the resistance be</li> </ul> | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat control<br>er seat control unit harness conne                 | system)<br>t.<br>rol unit harness connector te          |                                       |
| NO >> Check the harm<br>tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be                                | OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat control<br>er seat control unit harness conne<br>Termin<br>23 | system)<br>t.<br>rol unit harness connector te<br>ector | erminals.                             |

< DTC/CIRCUIT DIAGNOSIS >

#### < DTC/CIRCUIT DIAGNOSIS >

# CAN COMMUNICATION CIRCUIT

## Diagnosis Procedure

INFOID:000000006094544

[CAN SYSTEM (TYPE 9)]

## **1.**CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication system.
- 4. Check terminals and connectors for damage, bend and loose connection.

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Data link connector |            |             |  |
|---------------|---------------------|------------|-------------|--|
| Connector No. | Termi               | Continuity |             |  |
| M182          | 6                   | 14         | Not existed |  |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

## **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link     | Data link connector |        | Continuity  |
|---------------|---------------------|--------|-------------|
| Connector No. | Terminal No.        | Ground | Continuity  |
| M182          | 6                   | Ground | Not existed |
| WITO2         | 14                  |        | Not existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

#### **4.**CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

- VQ37VHR

| ECM          |     | Resistance (Ω)    |  |
|--------------|-----|-------------------|--|
| Terminal No. |     |                   |  |
| 114          | 113 | Approx. 108 – 132 |  |

VK56VD

| E     | CM Resistance (Ω) |                   |
|-------|-------------------|-------------------|
| Termi | nal No.           |                   |
| 146   | 151               | Approx. 108 – 132 |

3. Check the resistance between the IPDM E/R terminals.

| IPDN   | /IE/R   | Resistance (Ω)    |  |
|--------|---------|-------------------|--|
| Termir | nal No. |                   |  |
| 40     | 39      | Approx. 108 – 132 |  |

# **CAN COMMUNICATION CIRCUIT**

| < DTC/CIRCUIT DIAGNOSIS >   | [CAN SYSTEM (TYPE 9)]           |
|---|---------------------------------|
| Is the measurement value within the specification?  |                                 |
| YES >> GO TO 5.   |                                 |
| NO >> Replace the ECM and/or the IPDM E/R.  |                                 |
| 5. СНЕСК ЅҮМРТОМ  |                                 |
| Connect all the connectors. Check if the symptoms described in the "Sympt customer)" are reproduced.  | om (Results from interview with |
| Inspection result   |                                 |
| Reproduced>>GO TO 6.  |                                 |
| Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis detected.   | s procedure when past error is  |
| $\mathfrak{d}.$ CHECK UNIT REPRODUCTION   |                                 |
| Perform the reproduction test as per the following procedure for each unit.   |                                 |
| 1. Turn the ignition switch OFF.  |                                 |
| 2. Disconnect the battery cable from the negative terminal.   |                                 |
| <ol> <li>Disconnect one of the unit connectors of CAN communication system.</li> <li>NOTE:</li> </ol>   |                                 |
| ECM and IPDM E/R have a termination circuit. Check other units first.   |                                 |
| 4. Connect the battery cable to the negative terminal. Check if the sympto  | oms described in the "Symptom   |
| (Results from interview with customer)" are reproduced.   | 2 1                             |
| NOTE:   |                                 |
| Although unit-related error symptoms occur, do not confuse them with oth  | ner symptoms.                   |
| Inspection result   |                                 |
| Reproduced>>Connect the connector. Check other units as per the above p<br>Non-reproduced>>Replace the unit whose connector was disconnected. | rocedure.                       |
|   |                                 |

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#### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

## **Diagnosis Procedure**

INFOID:000000006094617

# **1.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

| Low tire pressure warning control unit<br>harness connector |              | A/C auto amp. harness connector |              | Continuity |
|---|--------------|---------------------------------|--------------|------------|
| Connector No.   | Terminal No. | Connector No.                   | Terminal No. |            |
| M43   | 2            | M66                             | 12           | Existed    |
| 10143   | 1            | ΟΟΙΥΙ                           | 11           | Existed    |

#### Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
- YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIAG   | SNOSIS >   |                   | [CAN                  | SYSTEM (TYPE 10)]       |
|--|--|-------------------|-----------------------|-------------------------|
| MAIN LINE BET  | WEEN HVAC  | AND A-BAG CI      | RCUIT                 |                         |
| Diagnosis Proced   | ure  |                   |                       | INFOID:000000006094618  |
| 1.CHECK HARNESS  | CONTINUITY (OPE  | N CIRCUIT)        |                       |                         |
| <ol> <li>Disconnect the follor</li> <li>ECM</li> <li>A/C auto amp.</li> <li>AV control unit</li> </ol> | tery cable from the n<br>owing harness conne<br>ty between the A/C a | ectors.           | nnector and the AV co | ntrol unit harness con- |
| A/C auto amp. ha   | arness connector   | AV control unit h | arness connector      | Continuity              |
| Connector No.  | Terminal No.   | Connector No.     | Terminal No.          | Continuity              |
|  | 12   | M210              | 90                    | Existed                 |
| M66  |  |                   |                       |                         |

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

| A/C auto amp. harness connector |              | AV control unit harness connector |              | rness connector AV control unit harness connector |   | Continuity |  |
|---------------------------------|--------------|-----------------------------------|--------------|---|---|------------|--|
| Connector No.                   | Terminal No. | Connector No.                     | Terminal No. | Continuity  |   |            |  |
| M66                             | 12           | M84                               | 81           | Existed   | _ |            |  |
| IVIOO                           | 11           | 10184                             | 80           | Existed   | _ |            |  |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

## Diagnosis Procedure

INFOID:000000006094619

[CAN SYSTEM (TYPE 10)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |              | Continuity |
|-----------------|------------------|-----------------------------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity |
| M66             | 12               | M210                              | 90           | Existed    |
| 1000            | 11               | WIZ TO                            | 74           | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |              | - Continuity |
|-----------------|------------------|-----------------------------------|--------------|--------------|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity   |
| M66             | 12               | M84                               | 81           | Existed      |
| IVIOO           | 11               | 104                               | 80           | Existed      |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA   |   | TWEEN AV AND   |  | SYSTEM (TYPE 10)]                |
|---|---|--|--|----------------------------------|
|   |   | D M&A CIRCUI   | -  |                                  |
| Diagnosis Proced  | lure  |  |  | INFOID:000000006094620           |
| 1.CHECK HARNESS   | CONTINUITY (OPE   | N CIRCUIT)   |  |                                  |
| <ol> <li>Disconnect the fol</li> <li>ECM</li> </ol>   | littery cable from the r<br>llowing harness conne   |  |  |                                  |
| <ul> <li>AV control unit</li> <li>Combination meter</li> <li>Check the continuconnector.</li> <li>Models with navig</li> </ul>  | uity between the AV c   | control unit harness cor                                       | nector and the com   | bination meter harness           |
| <ul> <li>Combination meter</li> <li>Check the continuconnector.</li> <li>Models with navig</li> </ul>   | uity between the AV c   | control unit harness cor                                       |  |                                  |
| <ul> <li>Combination meter</li> <li>Check the continuconnector.</li> <li>Models with navig</li> </ul>   | uity between the AV c   |  |  | bination meter harness           |
| <ul> <li>Combination meter</li> <li>Check the continuconnector.</li> <li>Models with navig</li> <li>AV control unit h</li> <li>Connector No.</li> </ul>   | uity between the AV c<br>nation system<br>narness connector   | Combination meter<br>Connector No.                             | harness connector  |                                  |
| <ul> <li>Combination meter</li> <li>Check the continuconnector.</li> <li>Models with navig</li> <li>AV control unit h</li> </ul>  | uity between the AV c<br>nation system<br>narness connector<br>Terminal No.   | Combination meter  | harness connector<br>Terminal No.                                  | Continuity                       |
| <ul> <li>Combination meter</li> <li>Check the continuconnector.</li> <li>Models with navig</li> <li>AV control unit h</li> <li>Connector No.</li> </ul>   | aity between the AV c<br>nation system<br>narness connector<br>Terminal No.<br>90<br>74                                       | Combination meter<br>Connector No.                             | harness connector<br>Terminal No.<br>14                            | - Continuity<br>Existed          |
| Combination meter     Check the continu-<br>connector.     Models with navig     AV control unit h     Connector No.     M210     Models without na   | aity between the AV c<br>nation system<br>narness connector<br>Terminal No.<br>90<br>74                                       | Combination meter<br>Connector No.                             | harness connector<br>Terminal No.<br>14<br>15                      | Continuity<br>Existed<br>Existed |
| Combination meter     Check the continu-<br>connector.     Models with navig     AV control unit h     Connector No.     M210     Models without na   | uity between the AV c<br>nation system<br>namess connector<br>Terminal No.<br>90<br>74<br>avigation system                    | Combination meter<br>Connector No.<br>M53                      | harness connector<br>Terminal No.<br>14<br>15                      | - Continuity<br>Existed          |
| <ul> <li>Combination meter</li> <li>Check the continuconnector.</li> <li>Models with navig</li> <li>AV control unit h</li> <li>Connector No.</li> <li>M210</li> <li>Models without na</li> <li>AV control unit h</li> </ul> | aity between the AV contains system<br>harness connector<br>Terminal No.<br>90<br>74<br>Avigation system<br>harness connector | Combination meter<br>Connector No.<br>M53<br>Combination meter | harness connector<br>Terminal No.<br>14<br>15<br>harness connector | Continuity<br>Existed<br>Existed |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

## Diagnosis Procedure

INFOID:000000006094621

[CAN SYSTEM (TYPE 10)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | r harness connector | Harness connector |              | Continuity |
|------------------|---------------------|-------------------|--------------|------------|
| Connector No.    | Terminal No.        | Connector No.     | Terminal No. | Continuity |
| M53              | 14                  | M105              | 7            | Existed    |
| CCIVI            | 15                  | COT IVI           | 8            | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the combination meter and the data link connector.
- NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA                                   | MAIN LINE BET<br>GNOSIS >   | WEEN DLC ANI         |                    | SYSTEM (TYPE 10)]      |   |
|---|---|----------------------|--------------------|------------------------|---|
| MAIN LINE BET                                       | WEEN DLC A  | ND BCM CIRC          | UIT                |                        | Δ |
| Diagnosis Proced                                    | lure  |                      |                    | INFOID:000000006094622 | A |
| <b>1.</b> CHECK HARNESS                             |   | N CIRCUIT)           |                    |                        | В |
| <ul><li>3. Disconnect the fol</li><li>ECM</li></ul> | witch OFF.<br>ittery cable from the ne<br>lowing harness conne<br>ors M181 and M105 |                      |                    |                        | С |
| - BCM   | ity between the harne   | ss connector and the | BCM harness connec | ctor.                  | D |
| Harness connector BCM harness connector Continuity  |   |                      |                    |                        |   |
| Connector No.                                       | Terminal No.  | Connector No.        | Terminal No.       | Continuity             |   |

Is the inspection result normal?

M105

YES (Present error)>>Check CAN system type decision again.

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YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

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NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094624

[CAN SYSTEM (TYPE 10)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harne     | ss connector | PCB harness connector | Continuity |
|---------------|--------------|-----------------------|------------|
| Connector No. | Terminal No. | Terminal No.          | Continuity |
| M120          | 39           | 35                    | Existed    |
| IVI 120       | 40           | 36                    | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness connector Harness connector |              | Continuity    |              |            |
|-------------------------------------|--------------|---------------|--------------|------------|
| Connector No.                       | Terminal No. | Connector No. | Terminal No. | Continuity |
| M20                                 | 35           | M7            | 72           | Existed    |
| IVI20                               | 36           | 1017          | 73           | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. |    | Continuity |
|---------------|--------------|----|------------|
| B1            | 72           | 74 | Existed    |
| DI            | 73           | 75 | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit.

NO >> Replace the body harness.

|  |   | WEEN 4WD A  |   | ·<br>SYSTEM (TYPE 10)]      |
|--|---|---|---|-----------------------------|
| < DTC/CIRCUIT DIA  |   | ND ABS CIR  | -   | STSTEM (TTPE TO)]           |
|  |   |   |   |                             |
| Diagnosis Procec   | lure  |   |   | INFOID:000000006094627      |
|  | ΓOR   |   |   |                             |
| <ul> <li>Check the followi<br/>and harness side)<br/>Harness connector<br/>Harness connector<br/>Harness connector<br/>Harness connector<br/>Sthe inspection result<br/>YES &gt;&gt; GO TO 2.<br/>NO &gt;&gt; Repair the<br/>CHECK HARNESS</li> <li>Disconnect the hard</li> </ul> | attery cable from the non-<br>ng terminals and con-<br>or B1<br>or M7<br>or M6<br>or E106<br><u>t normal?</u><br>e terminal and connect<br>S CONTINUITY (OPEN<br>arness connectors B1 | nectors for damage<br>tor.<br>N CIRCUIT)<br>and M7. |   | nection (connector side     |
| 2. Check the continu   | uity between the harne  | ess connector termir                                | als.  | Continuity                  |
|  | 72  | Terminar No.  | 74  | Existed                     |
| B1   | 73  |   | 75  | Existed                     |
| CHECK HARNESS  | he body harness.<br>S CONTINUITY (OPEN<br>arness connectors M6<br>uity between the harne  | and E106.   |   |                             |
|  | -   |   |   |                             |
| Connector No.  | connector<br>Terminal No.   | Harne:<br>Connector No.                             | Terminal No.                                | - Continuity                |
|  | 74  |   | 22  | Existed                     |
| M7   | 75  | - M6  | 23  | Existed                     |
| LCHECK HARNESS   | e main line between th<br>S CONTINUITY (OPEN<br>onnector of ABS actua<br>uity between the harne   | N CIRCUIT)<br>tor and electric unit                 | (control unit).                             | lectric unit (control unit) |
|  | connector   | harnes  | electric unit (control unit)<br>s connector | Continuity                  |
| Connector No.  | Terminal No.  | Connector No.                                       | Terminal No.                                | Eviatod                     |
| E106   | 22  | E41   | 25  | Existed                     |

AIN LINE DETWEEN AND AND ARE CIRCUIT

Is the inspection result normal?

23

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the AWD control unit and the ABS actuator and electric unit (control unit).

15

Existed

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

## MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 10)] MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

| Diagnosis Procedure | Diagnosis | Procedure |
|---------------------|-----------|-----------|
|---------------------|-----------|-----------|

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side C and harness side).
- Harness connector B33
   Harness connector B245
- Hamess connector B245

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## **2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

| Side radar LH h | Side radar LH harness connector Harness connector Continuity |               | Continuity   | G          |   |
|-----------------|--|---------------|--------------|------------|---|
| Connector No.   | Terminal No.   | Connector No. | Terminal No. | Continuity |   |
| B52             | 4  | B33           | 13           | Existed    | Н |
| D02             | 3  | 635           | 14           | Existed    |   |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

| ness connec | ctor         | Side radar RH h | arness connector | Continuity |   |
|-------------|--------------|-----------------|------------------|------------|---|
|             | Terminal No. | Connector No.   | Terminal No.     | Continuity |   |
|             | 13           | B252            | 4                | Existed    | L |
|             | 14           | B232            | 3                | Existed    |   |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar LH and the side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

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INFOID:000000006094630

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## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

## Diagnosis Procedure

INFOID:000000006094631

[CAN SYSTEM (TYPE 10)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B201
- Harness connector M117
- Harness connector M20 and PCB harness side connector
- Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar RH
- Harness connectors B201 and M117
- 2. Check the continuity between the side radar RH harness connector and the harness connector.

| Side radar RH h | Side radar RH harness connector Harness connector |               | Continuity   |            |
|-----------------|---|---------------|--------------|------------|
| Connector No.   | Terminal No.                                      | Connector No. | Terminal No. | Continuity |
| B252            | 4   | B201          | 66           | Existed    |
| BZJZ            | 3   | B201          | 67           | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B201.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the harness connectors.

| Harness connector Harness connector |              | Continuity    |              |            |
|-------------------------------------|--------------|---------------|--------------|------------|
| Connector No.                       | Terminal No. | Connector No. | Terminal No. | Continuity |
| M117                                | 66           | M20           | 38           | Existed    |
|                                     | 67           | IVI20         | 40           | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M117 and M20.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M150 and M151.

2. Check the continuity between the PCB harness connector and the harness connector.

| PCB harness connector | Harness connector |              | Continuity |
|-----------------------|-------------------|--------------|------------|
| Terminal No.          | Connector No.     | Terminal No. | Continuity |
| 38                    | M450              | 11           | Existed    |
| 40                    | M150              | 10           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

### MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

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#### MAIN LINE BETWEEN APA AND LANE CIRCUIT GNOSIS > [CAN SYSTEM (TYPE 10)]

#### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN APA AND LANE CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094632

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ADAS control unit
- Harness connectors M151 and M150
- Harness connectors M110 and R7
- 4. Check the continuity between the harness connectors.

| Harness connector |              | Harness connector |              | nector Harness connector |  | Continuity |
|-------------------|--------------|-------------------|--------------|--------------------------|--|------------|
| Connector No.     | Terminal No. | Connector No.     | Terminal No. | Continuity               |  |            |
| M150              | 11           | 11                | 13           | Existed                  |  |            |
| 101130            | 10           | M110              | 2            | Existed                  |  |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane camera unit.
- NO >> Replace the PCB harness.

### **ECM BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 10)]

| DIC/CIRCUIT DIAGNO   | 515 >   | L   |                               |
|--|---|---|-------------------------------|
| CM BRANCH LIN  | E CIRCUIT   |   |                               |
| agnosis Procedure  |   |   | INFOID:00000000609463.        |
| CHECK CONNECTOR  |   |   |                               |
| Turn the ignition switch<br>Disconnect the battery<br>Check the following terr<br>nector side).<br>ECM<br>Harness connector M30<br>the inspection result norm<br>(ES >> GO TO 2.<br>IO >> Repair the term<br>CHECK HARNESS FOR<br>Disconnect the connect | cable from the negative ter<br>minals and connectors for o<br>0 and PCB harness side co<br><u>nal?</u><br>inal and connector.   | damage, bend and loose co                           | onnection (unit side and con- |
| VQ37VHR  |   |   |                               |
| Connector No   | ECM harness connector   |   | Resistance (Ω)                |
| Connector No.<br>M107  |   | inal No.  | Approv 400 - 400              |
| VK56VD   | 114   | 113   | Approx. 108 – 132             |
| VIGUVD   |   |   |                               |
|  | ECM harness connector   |   | Resistance (Ω)                |
| Connector No.  | Term  | inal No.  |                               |
| M160   | 146   | 151   | Approx. 108 – 132             |
|  | Y AND GROUND CIRCUI   | T<br>ECM. Refer to the following                    |                               |
| VK56VD: <u>EC-716</u> , "Diagn<br>the inspection result norm   | osis Procedure"   |   |                               |
| ES (Present error)>>Rep<br>• VQ37VHR: E<br>• VK56VD: EC-<br>ES (Past error)>>Error w<br>IO >> Repair the pow   | Alace the ECM. Refer to the<br><u>C-535, "Removal and Insta</u><br><u>535, "Removal and Installa</u><br>as detected in the ECM br<br>er supply and the ground c<br>ITINUITY (OPEN CIRCUIT | <u>allation"</u><br>ation"<br>anch line.<br>ircuit. |                               |
| Disconnect the harness<br>Check the continuity be<br>VQ37VHR   |   | onnector and the harness c                          | onnector.                     |

< DTC/CIRCUIT DIAGNOSIS >

| ECM harne     | ss connector | Harness connector |              |            |   | Continuity |  |
|---------------|--------------|-------------------|--------------|------------|---|------------|--|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |   |            |  |
| M107          | 114          | M30               | 439          | Existed    | _ |            |  |
| MIO7          | 113          | WISO              | 438          | Existed    | _ |            |  |

VK56VD -

### ECM BRANCH LINE CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

| ECM harne     | ss connector | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M160          | 146          | M30               | 439          | Existed    |
| WITOO         | 151          | 10130             | 438          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

|   | H LINE CIRCUI  | I  |                    |  |
|---|--|--|--------------------|--|
| Diagnosis Proced  | lure   |  |                    | INFOID:000000006094634   |
|   | ſOR  |  |                    |  |
| <ol> <li>Check the followin nector side).</li> <li>Low tire pressure Harness connectors in the inspection result YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the 2.CHECK HARNESS</li> </ol> | attery cable from the neighborn the neighborn terminals and conneighborn warning control unit<br>or M29 and PCB harned the terminal termin | ectors for damage, be<br>ess side connector<br>tor.<br>Γ   |                    | nnection (unit side and con-   |
| 2. Check the resistar   |  | re pressure warning  | control unit harne | ess connector terminals.   |
| Connector No.   |  | Terminal No.   |                    | Resistance ( $\Omega$ )  |
| M43   | 2  |  | 1                  | Approx. 54 – 66  |
| Check the power supp<br><u>Diagnosis Procedure</u><br><u>s the inspection result</u><br>YES (Present error)><br><u>Installation</u><br>YES (Past error)>>E  | UPPLY AND GROUN<br>bly and the ground circ<br><u>.</u> .<br><u>t normal?</u><br>>Replace the low tire  | cuit of the low tire protection of the low tire protection of the low tire pressure warning of the low tire pressure warning t | control unit. Refe | ontrol unit. Refer to <u>WT-53,</u><br>er to <u>WT-70, "Removal and</u><br>it branch line. |
| CHECK HARNESS   | CONTINUITY (OPEN<br>arness connector M29.  | N CIRCUIT)   |                    |  |
| <ul> <li>CHECK HARNESS</li> <li>Disconnect the ha</li> <li>Check the continuous connector.</li> <li>Low tire pressure harness</li> </ul>  | CONTINUITY (OPEN<br>arness connector M29.<br>uity between the low the<br>warning control unit<br>connector   | N CIRCUIT)<br>ire pressure warning<br>Harness  | connector          | ess connector and the har-   |
| Low tire pressure   | CONTINUITY (OPEN<br>arness connector M29.<br>uity between the low to<br>warning control unit   | N CIRCUIT)   |                    |  |

#### Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

#### CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1) [CAN SYSTEM (TYPE 10)]

#### < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

#### Diagnosis Procedure

INFOID:000000006094635

| 1. СНЕСК DTC |  |
|--------------|--|
|--------------|--|

Check DTC of the CAN gateway with CONSULT-III.

Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

2. CHECK CONNECTOR

- Turn the ignition switch OFF. 1.
- Disconnect the battery cable from the negative terminal. 2.
- Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side).
- CAN gateway
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

3.CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect the connector of CAN gateway. 1.
- Check the resistance between the CAN gateway harness connector terminals. 2.

|               | CAN gateway harness connector |   |                         |
|---------------|-------------------------------|---|-------------------------|
| Connector No. | Terminal No.                  |   | Resistance ( $\Omega$ ) |
| M125          | 1                             | 7 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to LAN-143, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1). NO >> Repair the power supply and the ground circuit.

5. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

Check the continuity between the CAN gateway harness connector and the harness connector. 2.

| CAN gateway harness connector Harness connector |              |               | Continuity   |            |  |
|---|--------------|---------------|--------------|------------|--|
| Connector No.                                   | Terminal No. | Connector No. | Terminal No. | Continuity |  |
| MADE  | 1            | MOO           | 326          | Existed    |  |
| M125 7  | M28          | 328           | Existed      |            |  |

Is the inspection result normal?

YES >> Replace the PCB harness.

>> Repair the harness between the CAN gateway harness connector M125 and the harness connec-NO tor M28.

#### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 10)]

< DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

| Diagnosis Procedur   |  |  |  | INFOID:000000000094636  |
|--|--|--|--|---|
| 1.снеск отс  |  |  |  | В   |
| Check DTC of the CAN g   | ateway with CONS   | SULT-III.  |  |   |
| s<br>Is U1010 or B2600 indica  | -  |  |  |   |
|  | agnosis of the indic   | ated DTC.  |  | С   |
| NO >> GO TO 2.   | _  |  |  |   |
| 2.CHECK CONNECTOR  | २  |  |  | D   |
| <ol> <li>Turn the ignition swite</li> <li>Disconnect the batter</li> <li>Check the following to<br/>nector side).</li> <li>CAN gateway</li> <li>Harness connector N</li> <li>Harness connector N</li> <li>Harness connector N</li> <li>Harness connector B</li> </ol>  | ry cable from the net<br>erminals and conne<br>123 and PCB harne<br>120 and PCB harne<br>17  | ectors for damage, be<br>ess side connector  | and and loose connec   | tion (unit side and con- $_{\textstyle{\vdash}}$  |
| Is the inspection result no  | ormal?   |  |  | G   |
| YES >> GO TO 3.  |  |  |  |   |
| -  | rminal and connect   |  |  | Н   |
| 3.CHECK HARNESS CO   |  |  |  |   |
| <ol> <li>Disconnect the connect</li> <li>Check the continuity</li> </ol>   |  | /ay.<br>gateway harness con  | nector terminals.  |   |
| ,  |  | 5 ,  |  |   |
|  | CAN gateway harne  |  |  | Continuity  |
| Connector No.  |  |  |  | Continuity  |
|  |  | ess connector  | 6  | Continuity<br>Existed   |
| Connector No.<br>M125  | CAN gateway harne  | ess connector  |  | J   |
| Connector No.<br>M125<br>Is the inspection result no   | CAN gateway harne  | ess connector  | 6  | Existed   |
| Connector No.<br>M125  | CAN gateway harne  | ess connector  | 6  | Existed J   |
| Connector No.<br>M125<br>Is the inspection result no<br>YES >> GO TO 4.  | CAN gateway harne<br>4<br>10<br>ormal?   | ess connector<br>Terminal No.  | 6  | Existed J   |
| Connector No.<br>M125<br>Is the inspection result no<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SUP<br>Check the power supply   | CAN gateway harne<br>4<br>10<br>prmal?<br>PPLY AND GROUN   | D CIRCUIT  | 6<br>12  | Existed<br>Existed<br>K<br>L<br>43. "Diagnosis Proce-   |
| Connector No.<br>M125<br>Is the inspection result no<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SUP   | CAN gateway harned<br>4<br>10<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000  | D CIRCUIT  | 6<br>12  | Existed K   |
| Connector No.         M125         Is the inspection result no         YES >> GO TO 4.         NO       >> GO TO 5. <b>4.</b> CHECK POWER SUP         Check the power supply         dure".         Is the inspection result no         YES (Present error)>>R         YES (Present error)>>R         YES (Past error)>>R         NO   | CAN gateway harned<br>4<br>10<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000  | D CIRCUIT<br>Terminal No.  | 6<br>12<br>eway. Refer to <u>LAN-1</u>   | Existed J<br>Existed K<br>L<br>43. "Diagnosis Proce-<br>LAN<br>stallation".   |
| Connector No.<br>M125<br>Is the inspection result no<br>YES >> GO TO 4.<br>NO >> GO TO 5.<br>4.CHECK POWER SUP<br>Check the power supply<br>dure".<br>Is the inspection result no<br>YES (Present error)>>R<br>YES (Past error)>>Error   | CAN gateway harned<br>4<br>10<br>20rmal?<br>2PLY AND GROUN<br>and the ground ci<br>20rmal?<br>2eplace the CAN gate<br>r was detected in the<br>20rmal of the construction of of the construction of the construction of the<br>20rmal of the construction of the construction of the construction of the<br>20rmal of the construction of the constr   | D CIRCUIT<br>Terminal No.  | 6<br>12<br>eway. Refer to <u>LAN-1</u>   | Existed<br>Existed<br>K<br>L<br>143. "Diagnosis Proce-<br>LAN<br>stallation".<br>hication circuit 2).   |
| Connector No.         M125         Is the inspection result no         YES >> GO TO 4.         NO       >> GO TO 5. <b>4.</b> CHECK POWER SUP         Check the power supply         dure".         Is the inspection result no         YES (Present error)>>R         YES (Present error)>>R         YES (Past error)>>R         YES (Past error)>>R         YES (Past error)>>R         S.CHECK HARNESS CO                                 | CAN gateway harned<br>4<br>10<br>2PLY AND GROUN<br>and the ground ci<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2  | D CIRCUIT<br>Terminal No.<br>D CIRCUIT<br>Trcuit of the CAN gate<br>the CAN gateway bran<br>a ground circuit.<br>N CIRCUIT)  | 6<br>12<br>eway. Refer to <u>LAN-1</u><br>144. "Removal and In<br>ch line (CAN commur              | Existed<br>Existed<br>K<br>L<br>43. "Diagnosis Proce-<br>IAN<br>Stallation".<br>nication circuit 2).  |
| Connector No.         M125         Is the inspection result no         YES >> GO TO 4.         NO       >> GO TO 5. <b>4.</b> CHECK POWER SUP         Check the power supply         Qure".         Is the inspection result no         YES (Present error)>>R         YES (Present error)>>R         YES (Past error)>>R         YES (Past error)>>R         YES (Past error)>>R         S.CHECK HARNESS CO         1. Disconnect the harne | CAN gateway harned<br>4<br>10<br>2PLY AND GROUN<br>and the ground ci<br>2rmal?<br>2eplace the CAN gate<br>r was detected in the<br>cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Corma | D CIRCUIT<br>Terminal No.<br>D CIRCUIT<br>Trouit of the CAN gate<br>teway. Refer to LAN-<br>te CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con              | 6<br>12<br>eway. Refer to <u>LAN-1</u><br>144. "Removal and In<br>ch line (CAN commur              | Existed       K         Existed       K         L       L         143. "Diagnosis Proce-       LAN         stallation".       N         nication circuit 2).       N         oss connector.       O |
| Connector No.         M125         Is the inspection result no         YES       >> GO TO 4.         NO       >> GO TO 5.         4.CHECK POWER SUP         Check the power supply         dure".         Is the inspection result no         YES (Present error)>>R         YES (Past error)>>Error         NO       >> Repair the po         5.CHECK HARNESS CO         1. Disconnect the harne         2. Check the continuity            | CAN gateway harned<br>4<br>10<br>2PLY AND GROUN<br>and the ground ci<br>2rmal?<br>2eplace the CAN gate<br>r was detected in the<br>cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Cormal?<br>Corma | D CIRCUIT<br>Terminal No.<br>D CIRCUIT<br>Trouit of the CAN gate<br>teway. Refer to LAN-<br>te CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con              | 6 12 eway. Refer to LAN-1 144. "Removal and In ch line (CAN commur nector and the harnes           | Existed       K         Existed       K         L       L         143. "Diagnosis Proce-       LAN         Istallation".       N         nication circuit 2).       N         es connector.       O |
| Connector No.         M125         Is the inspection result no         YES       >> GO TO 4.         NO       >> GO TO 5.         4.CHECK POWER SUP         Check the power supply         dure".         Is the inspection result no         YES (Present error)>>R         YES (Past error)>>Error         NO       >> Repair the po         5.CHECK HARNESS CO         1. Disconnect the harne         2. Check the continuity            | CAN gateway harned<br>4<br>10<br>2PLY AND GROUN<br>and the ground ci<br>2Place the CAN gat<br>r was detected in the<br>cormal?<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>r was detected in the<br>cormal of the ground ci<br>2eplace the CAN gat<br>cormal of the ground ci<br>2eplace the cormal of the ground ci<br>2eplace the cormal of the ground ci<br>2eplace the gro   | D CIRCUIT<br>Terminal No.<br>D CIRCUIT<br>Trouit of the CAN gate<br>teway. Refer to LAN-<br>te CAN gateway bran<br>te ground circuit.<br>N CIRCUIT)<br>gateway harness cont<br>Harness | 6 12 eway. Refer to LAN-1 144. "Removal and In ch line (CAN commur nector and the harnes connector | Existed       K         Existed       K         L       L         143. "Diagnosis Proce-       LAN         stallation".       N         nication circuit 2).       N         oss connector.       O |

Is the inspection result normal?

YES >> GO TO 6.

#### **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)** [CAN SYSTEM (TYPE 10)]

#### < DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M23.

### 6. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- Check the continuity between the PCB harness connectors. 2.

| PCB harness connector | PCB harness connector | Continuity |
|-----------------------|-----------------------|------------|
| Terminal No.          | Terminal No.          | Continuity |
| 133                   | 24                    | Existed    |
| 135                   | 27                    | Existed    |

Is the inspection result normal?

>> GO TO 7. YES

>> Replace the PCB harness. NO

### **7.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### Disconnect the harness connectors M7 and B1. 1.

Check the continuity between the harness connectors. 2.

| Harness       | connector    | Harness connector |              |            |  | Continuity |
|---------------|--------------|-------------------|--------------|------------|--|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |  |            |
| M20           | 24           | MZ                | 34           | Existed    |  |            |
| WIZU          | 27           | M7                | 35           | Existed    |  |            |

#### Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

#### **8.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | B1 34 |            | Existed |
| DI            | 35    | 33         | Existed |

#### Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

### **HVAC BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 10)]

| IVAC BRANCH  |   | 1   |  |  |
|--|---|---|--|--|
| agnosis Proced   | ure   |   |  | INFOID:000000006094637   |
| .CHECK CONNECT   | OR  |   |  |  |
|  | ttery cable from the ne   |   | nd and loose connec  | tion (unit side and con-   |
|  | r M28 and PCB harne   | ess side connector  |  |  |
| the inspection result  | normal?   |   |  |  |
| YES >> GO TO 2.<br>NO >> Repair the  | terminal and connect  | tor.  |  |  |
|  | FOR OPEN CIRCUIT  |   |  |  |
|  | nnector of A/C auto an<br>the between the A/C a   | mp.<br>auto amp. harness cor  | nnector terminals.   |  |
|  | A/C auto amp. harne   | ess connector   |  |  |
|  |   |   |  |  |
| Connector No.  |   | Terminal No.  |  | Resistance ( $\Omega$ )  |
| M66  | 12  |   | 11   | Resistance (Ω)<br>Approx. 54 – 66  |
| M66<br>the measurement va<br>(ES >> GO TO 3.<br>NO >> GO TO 4.   |   | cation?   | 11   |  |
| M66<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>•CHECK POWER SI<br>heck the power supp<br>iagnosis Procedure".   | 12<br>alue within the specific<br>UPPLY AND GROUN<br>oly and the ground cir   | cation?<br>D CIRCUIT  |  |  |
| M66<br>the measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>• CHECK POWER SU<br>heck the power suppling<br>iagnosis Procedure".<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the   | 12<br>alue within the specific<br>UPPLY AND GROUN<br>oly and the ground cir<br><u>normal?</u><br>>Replace the A/C auto  | Cation?<br>D CIRCUIT<br>Trouit of the A/C auto a<br>to amp. Refer to <u>HAC-2</u><br>the A/C auto amp. brance<br>or ground circuit.                                       | mp. Refer to <u>HAC-1</u>  | Approx. 54 – 66<br>67. "A/C AUTO AMP. :                                    |
| M66<br>the measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SU<br>heck the power suppling<br>index inspection result<br>YES (Present error)>=<br>YES (Past error)> | 12<br>alue within the specific<br>UPPLY AND GROUN<br>oly and the ground cir<br>normal?<br>>Replace the A/C autor<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.   | Cation?<br>D CIRCUIT<br>Trouit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>the A/C auto amp. brance<br>a ground circuit.<br>N CIRCUIT)                           | mp. Refer to <u>HAC-1</u><br>201. "Removal and Ir<br>ch line.                                | Approx. 54 – 66<br>67. "A/C AUTO AMP. :<br>Installation".                  |
| M66<br>the measurement va<br>(ES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SI<br>heck the power supple<br>agnosis Procedure".<br>the inspection result<br>(ES (Present error)>><br>(ES (Past error)>>Er<br>NO >> Repair the<br>.CHECK HARNESS<br>Disconnect the han<br>Check the continuit   | 12<br>alue within the specific<br>UPPLY AND GROUN<br>oly and the ground cir<br>normal?<br>>Replace the A/C autor<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.   | Cation?<br>D CIRCUIT<br>Trouit of the A/C auto a<br>to amp. Refer to <u>HAC-2</u><br>the A/C auto amp. brand<br>the ground circuit.<br>N CIRCUIT)                         | mp. Refer to <u>HAC-1</u><br>201. "Removal and Ir<br>ch line.<br>nector and the harne        | Approx. 54 – 66<br>67. "A/C AUTO AMP. :<br>Installation".<br>ss connector. |
| M66<br>the measurement va<br>(ES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SI<br>heck the power supple<br>agnosis Procedure".<br>the inspection result<br>(ES (Present error)>><br>(ES (Past error)>>Er<br>NO >> Repair the<br>.CHECK HARNESS<br>Disconnect the han<br>Check the continuit   | 12<br>alue within the specific<br>UPPLY AND GROUN<br>bly and the ground cir<br>normal?<br>>Replace the A/C aut<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/C aut                         | D CIRCUIT<br>cuit of the A/C auto a<br>o amp. Refer to <u>HAC-</u><br>he A/C auto amp. bran<br>e ground circuit.<br>N CIRCUIT)<br>uto amp. harness cont                   | mp. Refer to <u>HAC-1</u><br>201. "Removal and Ir<br>ch line.<br>nector and the harne        | Approx. 54 – 66<br>67. "A/C AUTO AMP. :<br>Installation".                  |
| M66<br>the measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SU<br>heck the power suppling<br>index inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>.CHECK HARNESS<br>Disconnect the har<br>Check the continuit<br>A/C auto amp. har  | 12<br>alue within the specific<br>UPPLY AND GROUN<br>oly and the ground cir<br>normal?<br>>Replace the A/C autor<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/C autor<br>anness connector | D CIRCUIT<br>rcuit of the A/C auto a<br>to amp. Refer to <u>HAC-</u><br>the A/C auto amp. brance<br>e ground circuit.<br>N CIRCUIT)<br>uto amp. harness cont<br>Harness c | mp. Refer to <u>HAC-1</u><br>201, <u>"Removal and Ir</u><br>ch line.<br>nector and the harne | Approx. 54 – 66<br>67. "A/C AUTO AMP. :<br>Installation".<br>ss connector. |

YES >> Replace the PCB harness.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

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### TCM BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094638

[CAN SYSTEM (TYPE 10)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/T assembly
- Harness connector F103
- Harness connector M116
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of A/T assembly.

2. Check the resistance between the A/T assembly harness connector terminals.

| A/T assembly harness connector |       |   | Resistance (Ω)  |
|--------------------------------|-------|---|-----------------|
| Connector No.                  | Termi |   |                 |
| F61                            | 3     | 8 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

#### $\mathbf{3.}$ CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the TCM. Refer to <u>TM-156, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the control valve with TCM. Refer to <u>TM-8, "A/T CONTROL SYSTEM : Com-</u> ponent Parts Location". (Replace A/T assembly if control valve with TCM is not listed in the latest parts list.)

YES (Past error)>>Error was detected in the TCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/T assembly harness connector and the harness connector.

| A/T assembly h | A/T assembly harness connector |               | connector    | Continuity |
|----------------|--------------------------------|---------------|--------------|------------|
| Connector No.  | Terminal No.                   | Connector No. | Terminal No. | Continuity |
| F61            | 3                              | M28           | 346          | Existed    |
| 1.01           | 8                              | IVIZO         | 347          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

### [CAN SYSTEM (TYPE 10)]

#### A-BAG BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094639 WARNING: В Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.) • Never use unspecified tester or other measuring device. С 1. CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. D Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. nector side). Air bag diagnosis sensor unit Е Harness connector M26 and PCB harness side connector Is the inspection result normal? YES >> GO TO 2. F NO >> Replace the main harness and/or the PCB harness. 2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow". Is the inspection result normal? YES >> Replace the main harness and/or the PCB harness. Н NO >> Replace parts whose air bag system has a malfunction.

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### AV BRANCH LINE CIRCUIT

### **Diagnosis** Procedure

INFOID:000000006094640

#### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- AV control unit
- Harness connector M25 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of AV control unit.
- 2. Check the resistance between the AV control unit harness connector terminals.
- Models with navigation system

|               | Resistance (Ω) |  |                 |
|---------------|----------------|--|-----------------|
| Connector No. | Termi          |  |                 |
| M210          | 90 74          |  | Approx. 54 – 66 |

Models without navigation system

| AV control unit harness connector |              |    | Resistance ( $\Omega$ ) |
|-----------------------------------|--------------|----|-------------------------|
| Connector No.                     | Terminal No. |    | Resistance (32)         |
| M84                               | 81           | 80 | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

#### 3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AV control unit. Refer to the following.

• Base audio without navigation system: AV-90, "AV CONTROL UNIT : Diagnosis Procedure"

BOSE audio with navigation system: <u>AV-272, "AV CONTROL UNIT : Diagnosis Procedure"</u>

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to the following.

- Base audio without navigation system: AV-120, "Removal and Installation"
- BOSE audio with navigation system: <u>AV-298</u>, "Removal and Installation"
- YES (Past error)>>Error was detected in the AV control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M25.
- 2. Check the continuity between the AV control unit harness connector and the harness connector.
- Models with navigation system

| AV control unit h | V control unit harness connector Harness connector |               | Continuity   |            |
|-------------------|--|---------------|--------------|------------|
| Connector No.     | Terminal No.                                       | Connector No. | Terminal No. | Continuity |
| M210              | 90   | M25           | 201          | Existed    |
|                   | 74   |               | 221          | Existed    |

Models without navigation system

### **AV BRANCH LINE CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

#### [CAN SYSTEM (TYPE 10)]

| AV control unit ha | arness connector | Harness connector |              | - Continuity |   |
|--------------------|------------------|-------------------|--------------|--------------|---|
| Connector No.      | Terminal No.     | Connector No.     | Terminal No. | Continuity   |   |
| M84                | 81               | M25               | 201          | Existed      | _ |
| 10104              | 80               | IVIZO             | 221          | Existed      |   |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

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### M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094641

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Combination meter
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of combination meter.
- 2. Check the resistance between the combination meter harness connector terminals.

| Combination meter harness connector |       |  | Resistance (Ω)  |
|-------------------------------------|-------|--|-----------------|
| Connector No.                       | Termi |  |                 |
| M53                                 | 14 15 |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the combination meter Refer to <u>MWI-70, "COMBINATION</u> <u>METER : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the combination meter. Refer to MWI-90, "Removal and Installation".

- YES (Past error)>>Error was detected in the combination meter branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the combination meter harness connector and the harness connector.

| Combination meter | Combination meter harness connector |               | connector    | Continuity |
|-------------------|-------------------------------------|---------------|--------------|------------|
| Connector No.     | Terminal No.                        | Connector No. | Terminal No. | Continuity |
| M53               | 14                                  | M24           | 176          | Existed    |
| IND5              | 15                                  | 10124         | 177          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the combination meter harness connector M53 and the harness connector M24.

### **DLC BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 10)]

| Diagnosis Proced   | ure   |   |                         | INFOID:0000000060946      |
|--|---|---|-------------------------|---------------------------|
| 1.CHECK CONNECT  | OR  |   |                         |                           |
| <ol> <li>Check the following<br/>nector side).</li> <li>Data link connector<br/>Harness connector<br/>Harness connector<br/>Harness connector</li> <li><u>s the inspection result</u></li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> </ol> | ttery cable from the n<br>g terminals and conn<br>r<br>M181<br>r M105<br>r M23 and PCB harne<br>normal?<br>terminal and connec<br>FOR OPEN CIRCUI | ectors for damage, b<br>ess side connector<br>tor.<br>T |                         | ection (unit side and con |
| Check the resistance b   |   |   |                         |                           |
|  | Data link cor   |   |                         | Resistance ( $\Omega$ )   |
| Connector No.  |   | Terminal No.  |                         | A                         |
| M182<br>s the measurement va   | 6   |   | 14                      | Approx. 54 – 66           |
|  | ror was detected in th  | ne data link connecto<br>N CIRCUIT)                     | or branch line circuit. |                           |
| Data link o  | connector   | Harnes  | s connector             | Continuity                |
| Connector No.  | Terminal No.  | Connector No.   | Terminal No.            | Continuity                |
|  | 6   | M23   | 151                     | Existed                   |
| M182   |   |   | 150                     | Existed                   |

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### BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094643

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- BCM
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of BCM.
- 2. Check the resistance between the BCM harness connector terminals.

|               | Resistance ( $\Omega$ ) |  |                 |
|---------------|-------------------------|--|-----------------|
| Connector No. | Termi                   |  |                 |
| M120          | 39 40                   |  | Approx. 54 – 66 |
|               |                         |  |                 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the BCM. Refer to <u>BCS-73, "Diagnosis Procedure"</u>. Is the inspection result normal?

YES (Present error)>>Replace the BCM. Refer to BCS-79, "Removal and Installation".

YES (Past error)>>Error was detected in the BCM branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the BCM harness connector and the harness connector.

| BCM harne     | ss connector | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M120          | 39           | M22               | 101          | Existed    |
| 101120        | 40           | IVIZZ             | 102          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

| STRG BRANCH  |  |   |   |  |
|--|--|---|---|--|
| Diagnosis Proced   | ure  |   |   | INFOID:000000006094644   |
|  | OR   |   |   |  |
| <ol> <li>Check the followin nector side).</li> <li>Steering angle sendering angle send</li></ol> | ttery cable from the ne<br>g terminals and conne<br>nsor<br>r M22 and PCB harne<br><u>normal?</u><br>terminal and connecte   | ectors for damage, be<br>ss side connector<br>or.<br>-<br>gle sensor.   |   | tion (unit side and con-   |
|  | Steering angle sensor ha   | arness connector  |   | Resistance (Ω)   |
|  |  |   |   |  |
| Connector No.  |  | Terminal No.  |   |  |
| M37<br>s the measurement va  | 1<br>alue within the specific  |   | 2   | Approx. 54 – 66  |
| M37<br><u>s the measurement va</u><br>YES >> GO TO 3.<br>NO >> GO TO 4.<br><b>3.</b> CHECK POWER SI<br>Check the power supp<br><u>tram</u> ".<br><u>s the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br><b>1.</b> CHECK HARNESS<br>. Disconnect the had  | UPPLY AND GROUNI   | ation?<br>D CIRCUIT<br>cuit of the steering an<br>angle sensor. Refer t<br>e steering angle sens<br>ground circuit.<br>I CIRCUIT)                                       | ngle sensor. Refer to<br>to <u>BRC-144, "Remov</u><br>or branch line. | Approx. 54 – 66<br>D BRC-54. "Wiring Dia-<br>al and Installation". |
| M37<br>S the measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SI<br>Check the power support<br>Tam".<br>S the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>. Disconnect the han<br>. Check the continuit  | UPPLY AND GROUNI<br>oly and the ground cirr<br>normal?<br>>Replace the steering<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22.                             | ation?<br>D CIRCUIT<br>cuit of the steering an<br>angle sensor. Refer t<br>e steering angle sens<br>ground circuit.<br>I CIRCUIT)                                       | ngle sensor. Refer to<br>to <u>BRC-144, "Remov</u><br>or branch line. | Approx. 54 – 66<br>D BRC-54, "Wiring Dia-<br>al and Installation". |
| M37<br>S the measurement vary<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SI<br>CHECK POWER SI<br>CHECK POWER SI<br>S the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the han<br>Check the continui  | UPPLY AND GROUNI<br>oly and the ground circ<br>normal?<br>>Replace the steering<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22.<br>ity between the steering | ation?<br>D CIRCUIT<br>cuit of the steering at<br>angle sensor. Refer t<br>e steering angle sens<br>e ground circuit.<br>I CIRCUIT)<br>ng angle sensor harne            | ngle sensor. Refer to<br>to <u>BRC-144, "Remov</u><br>or branch line. | Approx. 54 – 66<br>D BRC-54. "Wiring Dia-<br>al and Installation". |
| M37<br>Sthe measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>Check the power suppram.<br>Sthe inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continui   | UPPLY AND GROUND<br>oly and the ground cirr<br>normal?<br>>Replace the steering<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M22.<br>ity between the steerin  | ation?<br>D CIRCUIT<br>cuit of the steering an<br>angle sensor. Refer t<br>e steering angle sens<br>e ground circuit.<br>I CIRCUIT)<br>ng angle sensor harne<br>Harness | ngle sensor. Refer to<br>to <u>BRC-144, "Remov</u><br>or branch line. | Approx. 54 – 66<br>D BRC-54, "Wiring Dia-<br>al and Installation". |

### 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094645

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AWD control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AWD control unit.

2. Check the resistance between the AWD control unit harness connector terminals.

| A             | AWD control unit harness connector |         |                         |
|---------------|------------------------------------|---------|-------------------------|
| Connector No. | Termi                              | nal No. | Resistance ( $\Omega$ ) |
| B17           | 8                                  | 16      | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AWD control unit branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AWD control unit. Refer to <u>DLN-47, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the AWD control unit. Refer to <u>DLN-59, "Removal and Installation"</u>.

YES (Past error)>>Error was detected in the AWD control unit branch line.

NO >> Repair the power supply and the ground circuit.

### **ABS BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 10)]

| Diagnosis Procedure  |   |   | INFOID:00000006094647   |
|--|---|---|---|
| .CHECK CONNECTOR   |   |   |   |
| Check the terminals and<br>and loose connection (us<br>the inspection result norm  | cable from the negative termi<br>d connectors of the ABS actunity<br>nit side and connector side).  | ator and electric unit (co  | ntrol unit) for damage, bend  |
| YES >> GO TO 2.<br>NO >> Repair the termi  | nal and connector   |   |   |
| CHECK HARNESS FOR  |   |   |   |
|  | etween the ABS actuator and   |   | ity namess connector termi  |
| nals.  | and electric unit (control unit) harne:   | ss connector  |   |
| nals.  | and electric unit (control unit) harne:<br>Terminal   |   | Resistance (Ω)  |
| nals.<br>ABS actuator a  | Terminal<br>25  |   | Resistance (Ω)<br>Approx. 54 – 66   |
| ABS actuator a<br>Connector No.<br>E41<br>the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the ABS<br>CHECK POWER SUPPL<br>heck the power supply an<br>RC-119, "Diagnosis Proceed<br>the inspection result norm<br>YES (Present error)>>Rep<br>and Installation" | Terminal<br>25<br>ithin the specification?<br>actuator and electric unit (co<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the A<br>dure".<br>al?<br>ace the ABS actuator and electron | No.<br>15<br>Introl unit) branch line.<br>BS actuator and electric<br>ectric unit (control unit). F | Approx. 54 – 66<br>e unit (control unit). Refer to<br>Refer to <u>BRC-141, "Removal</u> |

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## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094648

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the AFS control unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### **2.**CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of AFS control unit.

2. Check the resistance between the AFS control unit harness connector terminals.

| /             | AFS control unit harness connector |                |                 |
|---------------|------------------------------------|----------------|-----------------|
| Connector No. | Termi                              | Resistance (Ω) |                 |
| E104          | 30                                 | 7              | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AFS control unit branch line.

### **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the AFS control unit. Refer to EXL-84, "AFS CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the AFS control unit. Refer to EXL-126, "Removal and Installation".

YES (Past error)>>Error was detected in the AFS control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **IPDM-E BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 10)]

| 1.CHECK CONNECTOR  |   |                                     |                                |
|--|---|-------------------------------------|--------------------------------|
|  | able from the negative term   |                                     | nd loose connection (unit side |
| s the inspection result norm   | <u>al?</u>  |                                     |                                |
| YES >> GO TO 2.<br>NO >> Repair the termi  | nal and connector.  |                                     |                                |
| 2. CHECK HARNESS FOR   | OPEN CIRCUIT  |                                     |                                |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>  | or of IPDM E/R.<br>tween the IPDM E/R harne   | ss connector terminals.             |                                |
|  | IPDM E/R harness connector  |                                     |                                |
| Connector No.  | Termina   | l No.                               | Resistance (Ω)                 |
| E6   | 40  | 39                                  | Approx. 108 – 132              |
| NO >> Repair the IPDN  |   |                                     |                                |
| <b>3.</b> CHECK POWER SUPPL'<br>Check the power supply and<br>Is the inspection result norm<br>YES (Present error)>>Repl<br>YES (Past error)>>Error wa | Y AND GROUND CIRCUIT<br>the ground circuit of the IPI   | PCS-33, "Removal an<br>branch line. | -                              |
| <b>3.</b> CHECK POWER SUPPL'<br>Check the power supply and<br>Is the inspection result norm<br>YES (Present error)>>Repl<br>YES (Past error)>>Error wa | Y AND GROUND CIRCUIT<br>the ground circuit of the IPI<br>al?<br>ace the IPDM E/R. Refer to<br>as detected in the IPDM E/F | PCS-33, "Removal an<br>branch line. | -                              |
| <b>3.</b> CHECK POWER SUPPL'<br>Check the power supply and<br>Is the inspection result norm<br>YES (Present error)>>Repl<br>YES (Past error)>>Error wa | Y AND GROUND CIRCUIT<br>the ground circuit of the IPI<br>al?<br>ace the IPDM E/R. Refer to<br>as detected in the IPDM E/F | PCS-33, "Removal an<br>branch line. | -                              |
| <b>3.</b> CHECK POWER SUPPL'<br>Check the power supply and<br>Is the inspection result norm<br>YES (Present error)>>Repl<br>YES (Past error)>>Error wa | Y AND GROUND CIRCUIT<br>the ground circuit of the IPI<br>al?<br>ace the IPDM E/R. Refer to<br>as detected in the IPDM E/F | PCS-33, "Removal an<br>branch line. | -                              |

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< DTC/CIRCUIT DIAGNOSIS >

### ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094650

[CAN SYSTEM (TYPE 10)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

#### Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

### 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |            |         |
|---------------|-------------------------------|------------|---------|
| Connector No. | Termir                        | Continuity |         |
| M125          | 4                             | 6          | Existed |
| 11123         | 10                            | 12         | Existed |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

| Driv          | Driver seat control unit harness connector |         |                         |
|---------------|--|---------|-------------------------|
| Connector No. | Termi                                      | nal No. | Resistance ( $\Omega$ ) |
| B514          | 23   | 24      | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the driver seat control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-73</u>, "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

YES (Past error)>>Error was detected in the driver seat control unit branch line.

NO >> Repair the power supply and the ground circuit.

|  | CIRCUIT   |                                      |                             |
|--|---|--------------------------------------|-----------------------------|
| Diagnosis Procedure  |   |                                      | INFOID:000000006094651      |
| 1.CHECK CONNECTOR  |   |                                      |                             |
|  | cable from the negative terr  | ninal.<br>lamage, bend and loose con | nection (unit side and con- |
| Is the inspection result norm  | nal?  |                                      |                             |
| YES >> GO TO 2.<br>NO >> Repair the term   | inal and connector.   |                                      |                             |
| 2.CHECK HARNESS CON  |   | )                                    |                             |
| <ol> <li>Disconnect the connect</li> <li>Check the continuity be</li> </ol>  | or of CAN gateway.<br>tween the CAN gateway ha  | arness connector terminals.          |                             |
|  | CAN gateway harness connector   |                                      | Continuity                  |
| Connector No.  | Termiı<br>4   | nal No.<br>6                         | Existed                     |
| M125   | 10  | 12                                   | Existed                     |
| tion circuit 2).   |   | f shield line is open) the roo       | t cause (CAN communica-     |
| tion circuit 2).<br><b>3.</b> CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect                               | OPEN CIRCUIT<br>of CAN gateway.<br>or of ADAS control unit.   | f shield line is open) the roo       |                             |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be         | OPEN CIRCUIT<br>of CAN gateway.<br>or of ADAS control unit.<br>etween the ADAS control u  | nit harness connector termin         |                             |
| tion circuit 2).<br>3.CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be         | OPEN CIRCUIT<br>of CAN gateway.<br>or of ADAS control unit.<br>etween the ADAS control un<br>DAS control unit harness connect                   | nit harness connector termin         |                             |
| tion circuit 2).<br><b>3.</b> CHECK HARNESS FOR<br>1. Connect the connector<br>2. Disconnect the connect<br>3. Check the resistance be | OPEN CIRCUIT<br>of CAN gateway.<br>or of ADAS control unit.<br>etween the ADAS control unit<br>DAS control unit harness connect<br>Termin<br>14 | nit harness connector termin         | als.                        |

### PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094652

[CAN SYSTEM (TYPE 10)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Pre-crash seat belt control unit (driver side)
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |            |         |  |
|---------------|-------------------------------|------------|---------|--|
| Connector No. | Termi                         | Continuity |         |  |
| M125          | 4                             | 6          | Existed |  |
| 1123          | 10                            | 12         | Existed |  |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of pre-crash seat belt control unit (driver side).
- Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

| Pre-crash sea | Pre-crash seat belt control unit (driver side) harness connector |         |                         |
|---------------|--|---------|-------------------------|
| Connector No. | Termi  | nal No. | Resistance ( $\Omega$ ) |
| B9            | 14   | 4       | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the pre-crash seat belt control unit (driver side) branch line.

#### 4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the pre-crash seat belt control unit (driver side). Refer to <u>SBC-47, "Diagnosis Procedure"</u>.

Is the inspection result normal?

- YES (Present error)>>Replace the pre-crash seat belt control unit (driver side). Refer to <u>SBC-54, "Removal</u> <u>and Installation"</u>.
- YES (Past error)>>Error was detected in the pre-crash seat belt control unit (driver side) branch line.
- NO >> Repair the power supply and the ground circuit.

### **RDR-L BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 10)]

| Diagnosis Procedure   |  |                            | INFOID:00000006094653      |
|---|--|----------------------------|----------------------------|
| <b>1</b> .CHECK CONNECTOR   |  |                            |                            |
|   | cable from the negative term<br>ad connectors of the side ra                               |                            | and loose connection (unit |
| s the inspection result norm  | nal?   |                            |                            |
| YES >> GO TO 2.<br>NO >> Repair the term  | inal and connector.  |                            |                            |
| 2. CHECK HARNESS FOR  |  |                            |                            |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>                 | or of side radar LH.<br>etween the side radar LH h   | arness connector terminals | S.                         |
|   | Side radar LH harness connecto   | r                          | Resistance (Ω)             |
| Connector No.   | Termi  | nal No.                    |                            |
| B52   | 4  | 3                          | Approx. 54 – 66            |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the side<br>CHECK POWER SUPPL  | radar LH branch line.  | г                          |                            |
| Check the power supply an<br><u>Diagnosis Procedure"</u> .<br>Is the inspection result norm | -  | side radar LH. Refer to D/ | AS-575, "SIDE RADAR LH :   |
| YES (Present error)>>Rep<br>YES (Past error)>>Error w                                       | lace the side radar LH. Ref<br>as detected in the side rada<br>er supply and the ground ci | ar LH branch line.         | and Installation".         |
|   |  |                            |                            |
|   |  |                            |                            |
|   |  |                            |                            |
|   |  |                            |                            |

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## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094655

[CAN SYSTEM (TYPE 10)]

#### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar RH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK RIGHT/LEFT SWITCHING SIGNAL CIRCUIT

Check the right/left switching signal circuit of the side radar RH. Refer to <u>DAS-578</u>, "<u>Diagnosis Procedure</u>". <u>Is the inspection result normal?</u>

YES >> GO TO 3.

NO >> Repair the root cause.

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

#### 1. Disconnect the connector of side radar RH.

2. Check the resistance between the side radar RH harness connector terminals.

| Side radar RH harness connector |              | Resistance ( $\Omega$ ) |                 |
|---------------------------------|--------------|-------------------------|-----------------|
| Connector No.                   | Terminal No. |                         |                 |
| B252                            | 4            | 3                       | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the side radar RH branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar RH. Refer to <u>DAS-576. "SIDE RADAR RH :</u> <u>Diagnosis Procedure"</u>.

#### Is the inspection result normal?

YES (Present error)>>Replace the side radar RH. Refer to DAS-592, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar RH branch line.

NO >> Repair the power supply and the ground circuit.

### **APA BRANCH LINE CIRCUIT**

### [CAN SYSTEM (TYPE 10)]

| re   |  |   |   |
|--|--|---|---|
|  |  |   | INFOID:000000006094657  |
| R  |  |   |   |
| terminals and connectuator<br>M151<br>M150   | ctors for damage, be   | nd and loose conr   | nection (unit side and con-   |
| ormal?   |  |   |   |
| erminal and connect  | )r   |   |   |
|  |  |   |   |
|  | pedal actuator.  |   |   |
|  |  | harness connecto  | r terminals.  |
| ccelerator pedal actuator  | harness connector  |   |   |
|  | Terminal No.   |   | Resistance ( $\Omega$ )   |
| 5  |  | 4   | Approx. 54 – 66   |
| and the ground circu<br>ATOR : Diagnosis Pro-<br>ormal?<br>Replace the accelera<br>NTROL ASSIST SYS<br>or was detected in the<br>ower supply and the<br>CONTINUITY (OPEN<br>ess connector M23. | uit of the accelerator<br>ocedure".<br>ator pedal assembly<br><u>TEM : Removal and</u><br>accelerator pedal ac<br>ground circuit.<br>CIRCUIT)  | /. Refer to <u>ACC-/</u><br><u>Installation"</u> .<br>ctuator branch line   | 4, "MODELS WITH DIS-<br>9.  |
|  |  |   | r and the harness connec-   |
|  |  |   | Continuity  |
| 5  |  | 138   | Existed   |
|  | M23  | 137   |   |
|  | ery cable from the neterminals and conneterminals and conneterminal and connector<br>2007 OPEN CIRCUIT<br>2007 O | ary cable from the negative terminal.         terminals and connectors for damage, be         ctuator         M151         M150         M23 and PCB harness side connector         ormal?         erminal and connector.         COR OPEN CIRCUIT         nector of accelerator pedal actuator.         e between the accelerator pedal actuator         cccelerator pedal actuator harness connector         cccelerator pedal actuator harness connector         cccelerator pedal actuator harness connector         ge within the specification?         PPLY AND GROUND CIRCUIT         and the ground circuit of the accelerator         ATOR : Diagnosis Procedure".         ormal?         Replace the accelerator pedal assembly         NTROL ASSIST SYSTEM : Removal and power supply and the ground circuit.         CONTINUITY (OPEN CIRCUIT)         ess connector M23.         v between the accelerator pedal actuator for the accelerator peda | ery cable from the negative terminal.<br>terminals and connectors for damage, bend and loose connector<br>M151<br>M150<br>M23 and PCB harness side connector<br>ormal?<br>erminal and connector.<br>COR OPEN CIRCUIT<br>nector of accelerator pedal actuator.<br>e between the accelerator pedal actuator harness connector<br>ccelerator pedal actuator harness connector<br>PPLY AND GROUND CIRCUIT<br>and the ground circuit of the accelerator pedal actuator. Re<br>ATOR : Diagnosis Procedure".<br>ormal?<br>Replace the accelerator pedal assembly. Refer to ACC-<br>NTROL ASSIST SYSTEM : Removal and Installation".<br>or was detected in the accelerator pedal actuator branch line<br>iower supply and the ground circuit.<br>CONTINUITY (OPEN CIRCUIT)<br>less connector M23.<br>r between the accelerator pedal actuator harness connector |

## LANE BRANCH LINE CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094656

[CAN SYSTEM (TYPE 10)]

### 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Lane camera unit
- Harness connector R7
- Harness connector M110
- Harness connector M24 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of lane camera unit.
- 2. Check the resistance between the lane camera unit harness connector terminals.

| L             | Lane camera unit harness connector |         |                         |
|---------------|------------------------------------|---------|-------------------------|
| Connector No. | Termi                              | nal No. | Resistance ( $\Omega$ ) |
| R8            | 4                                  | 8       | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 ${
m 3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to <u>DAS-403</u>, "LANE CAMERA <u>UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-419, "Removal and Installation".

YES (Past error)>>Error was detected in the lane camera unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M24.

2. Check the continuity between the lane camera unit harness connector and the harness connector.

| Lane camera unit | Lane camera unit harness connector |               | connector    | Continuity |
|------------------|------------------------------------|---------------|--------------|------------|
| Connector No.    | Terminal No.                       | Connector No. | Terminal No. | Continuity |
| R8               | 4                                  | M24           | 179          | Existed    |
| KO               | 8                                  | 11124         | 178          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the lane camera unit harness connector R8 and the harness connector M24.

< DTC/CIRCUIT DIAGNOSIS >

#### LASER BRANCH LINE CIRCUIT А **Diagnosis** Procedure INFOID:000000006094658 1.CHECK CONNECTOR В 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-3. С nector side). ICC sensor Harness connector E106 D Harness connector M6 Harness connector M28 and PCB harness side connector Is the inspection result normal? E YES >> GO TO 2. >> Repair the terminal and connector. NO 2.check harness for open circuit Disconnect the connector of ICC sensor. 1. 2. Check the resistance between the ICC sensor harness connector terminals. ICC sensor harness connector Resistance $(\Omega)$ Connector No. Terminal No. E67 3 6 Approx. 108 - 132 Н Is the measurement value within the specification? YES >> GO TO 3. NO >> GO TO 4. 3 .CHECK POWER SUPPLY AND GROUND CIRCUIT Check the power supply and the ground circuit of the ICC sensor. Refer to CCS-162, "ICC SENSOR : Diagno-. [ sis Procedure". Is the inspection result normal? YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation". Κ YES (Past error)>>Error was detected in the ICC sensor branch line. NO >> Repair the power supply and the ground circuit. **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT) L 1. Disconnect the harness connector M28. Check the continuity between the ICC sensor harness connector and the harness connector. 2. LAN ICC sensor harness connector Harness connector Continuity Connector No. Terminal No. Connector No. Terminal No. Ν 3 343 Existed E67 M28 6 345 Fxisted Is the inspection result normal? YES >> Replace the PCB harness. NO

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

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< DTC/CIRCUIT DIAGNOSIS >

# **CAN COMMUNICATION CIRCUIT 1**

#### Diagnosis Procedure

**1.**CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 1.
  - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Data link connector |         |             |
|---------------|---------------------|---------|-------------|
| Connector No. | Termi               | nal No. | Continuity  |
| M182          | 6                   | 14      | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

# **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data lin      | Data link connector |        | Continuity  |
|---------------|---------------------|--------|-------------|
| Connector No. | Terminal No.        | Ground | Continuity  |
| M182          | 6                   | Ground | Not existed |
| IVI 102       | 14                  |        | Not existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT

1. Remove the ECM and the IPDM E/R.

2. Check the resistance between the ECM terminals.

- VQ37VHR

| ECM   |         | Resistance (Ω)    |
|-------|---------|-------------------|
| Termi | nal No. |                   |
| 114   | 113     | Approx. 108 – 132 |

VK56VD

| ECM   |         | Resistance (Ω)    |
|-------|---------|-------------------|
| Termi | nal No. |                   |
| 146   | 151     | Approx. 108 – 132 |

3. Check the resistance between the IPDM E/R terminals.

INFOID:000000006094660

### **CAN COMMUNICATION CIRCUIT 1**

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

| IPDM E/R  |   | Resistance (Ω)  |
|---|---|---|
| Term  | ninal No.   | - Resistance (12)   |
| 40  | 39  | Approx. 108 – 132   |
| Is the measurement value within   | n the specification?  |   |
| YES >> GO TO 5.   |   |   |
| NO >> Replace the ECM a   | and/or the IPDM E/R.  |   |
| 5.CHECK SYMPTOM   |   |   |
| Connect all the connectors. Ch customer)" are reproduced.   | eck if the symptoms described ir  | the "Symptom (Results from interview with   |
| Inspection result   |   |   |
| Reproduced>>GO TO 6.  |   |   |
|   | iagnosis again. Follow the troub  | le diagnosis procedure when past error is   |
| Non-reproduced>>Start the d detected.   | 0   | le diagnosis procedure when past error is   |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT  | TION  |   |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>1. Turn the ignition switch OF  | TION<br>s per the following procedure for e<br>F.   |   |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT<br>Perform the reproduction test a<br>1. Turn the ignition switch OF<br>2. Disconnect the battery cabl   | TION<br>s per the following procedure for e<br>F.<br>e from the negative terminal.  | each unit.  |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT<br>Perform the reproduction test a<br>1. Turn the ignition switch OF<br>2. Disconnect the battery cabl   | TION<br>s per the following procedure for e<br>F.   | each unit.  |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>1. Turn the ignition switch OFI<br>2. Disconnect the battery cabl<br>3. Disconnect one of the unit of<br>NOTE:<br>ECM and IPDM E/R have a   | TION<br>s per the following procedure for e<br>F.<br>e from the negative terminal.<br>connectors of CAN communicatio<br>a termination circuit. Check other u  | each unit.<br>n circuit 1.<br>units first.  |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>1. Turn the ignition switch OFI<br>2. Disconnect the battery cabl<br>3. Disconnect one of the unit of<br>NOTE:<br>ECM and IPDM E/R have a<br>4. Connect the battery cable<br>(Results from interview with   | TION<br>s per the following procedure for e<br>F.<br>e from the negative terminal.<br>connectors of CAN communicatio<br>a termination circuit. Check other u  | each unit.  |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>1. Turn the ignition switch OFI<br>2. Disconnect the battery cabl<br>3. Disconnect one of the unit of<br>NOTE:<br>ECM and IPDM E/R have a<br>4. Connect the battery cable<br>(Results from interview with<br>NOTE:  | TION<br>s per the following procedure for e<br>F.<br>e from the negative terminal.<br>connectors of CAN communication<br>a termination circuit. Check other u<br>to the negative terminal. Check                                  | each unit.<br>n circuit 1.<br>units first.<br>if the symptoms described in the "Symptom   |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT<br>Perform the reproduction test at<br>1. Turn the ignition switch OF<br>2. Disconnect the battery cabl<br>3. Disconnect one of the unit of<br>NOTE:<br>ECM and IPDM E/R have at<br>4. Connect the battery cable<br>(Results from interview with<br>NOTE:<br>Although unit-related error starts)   | TION<br>s per the following procedure for e<br>F.<br>e from the negative terminal.<br>connectors of CAN communication<br>a termination circuit. Check other u<br>to the negative terminal. Check in<br>customer)" are reproduced. | each unit.<br>n circuit 1.<br>units first.<br>if the symptoms described in the "Symptom   |
| Non-reproduced>>Start the d<br>detected.<br>6.CHECK UNIT REPRODUCT<br>Perform the reproduction test as<br>1. Turn the ignition switch OFI<br>2. Disconnect the battery cabl<br>3. Disconnect one of the unit of<br>NOTE:<br>ECM and IPDM E/R have a<br>4. Connect the battery cable<br>(Results from interview with<br>NOTE:<br>Although unit-related error so<br>Inspection result<br>Reproduced>>Connect the co | TION<br>s per the following procedure for e<br>F.<br>e from the negative terminal.<br>connectors of CAN communication<br>a termination circuit. Check other u<br>to the negative terminal. Check in<br>customer)" are reproduced. | each unit.<br>n circuit 1.<br>units first.<br>if the symptoms described in the "Symptom<br>hem with other symptoms.<br>the above procedure. |

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# **CAN COMMUNICATION CIRCUIT 2**

### Diagnosis Procedure

**1.**CONNECTOR INSPECTION

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect all the unit connectors on CAN communication circuit 2.
  - NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

|               | Data link connector |         |             |
|---------------|---------------------|---------|-------------|
| Connector No. | Termi               | nal No. | Continuity  |
| M182          | 13                  | 12      | Not existed |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

# **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

| Data link connector |              |        | Continuity  |
|---------------------|--------------|--------|-------------|
| Connector No.       | Terminal No. | Ground | Continuity  |
| M182                | 13           | Ground | Not existed |
| IVI I OZ            | 12           |        | Not existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.

2. Check the resistance between the CAN gateway terminals.

| CAN gateway |         | Resistance (Ω)    |  |
|-------------|---------|-------------------|--|
| Termi       | nal No. |                   |  |
| 4           | 10      | Approx. 108 – 132 |  |
| 6           | 12      | Approx. 108 – 132 |  |

Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the CAN gateway.

5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

Inspection result

Reproduced>>GO TO 6.

INFOID:000000006094661

| CAN COMMUNICATION CIRCUIT 2<br>< DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 10)]   |
|---|
| <u>CAN SYSTEM (TYPE 10)</u> Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is  |
| detected.   |
| 6. CHECK UNIT REPRODUCTION  |
| <ol> <li>Perform the reproduction test as per the following procedure for each unit.</li> <li>Turn the ignition switch OFF.</li> <li>Disconnect the battery cable from the negative terminal.</li> <li>Disconnect one of the unit connectors of CAN communication circuit 2.</li> </ol> |
| <ul> <li>NOTE:<br/>CAN gateway has two termination circuits. Check other units first.</li> <li>4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.</li> <li>NOTE:</li> </ul> |
| Although unit-related error symptoms occur, do not confuse them with other symptoms.  |
| Inspection result<br>Reproduced>>Connect the connector. Check other units as per the above procedure.<br>Non-reproduced>>Replace the unit whose connector was disconnected.   |
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< DTC/CIRCUIT DIAGNOSIS >

### ITS COMMUNICATION CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094662

[CAN SYSTEM (TYPE 10)]

#### **1.**CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT-III to see that the CAN communication circuit 1 and CAN communication circuit 2 have no malfunction.

#### NOTE:

For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to <u>LAN-69, "System Diagram"</u>.

Are the CAN communication 1 and CAN communication 2 circuits normal?

YES >> GO TO 2.

NO >> Check and repair CAN communication circuit 1 and/or CAN communication circuit 2.

### 2.connector inspection

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ADAS control unit for damage, bend and loose connection (unit side and connector side).

#### Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair the terminal and connector.

### **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the following harness connectors.
- ADAS control unit
- ICC sensor
- Check the continuity between the ADAS control unit harness connector and the ICC sensor harness connector.

| ADAS control unit harness connector ICC sensor harness of |              | rness connector | Continuity   |            |  |
|---|--------------|-----------------|--------------|------------|--|
| Connector No.   | Terminal No. | Connector No.   | Terminal No. | Continuity |  |
| B50 —   | 7            | E67             | 3            | Existed    |  |
|   | 8            |                 | 6            | Existed    |  |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace the body harness.

#### **4.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

- 1. Disconnect the following harness connectors.
- Side radar LH
- Side radar RH
- Lane camera unit
- Accelerator pedal actuator
- 2. Check the continuity between the ADAS control unit harness connector terminals.

| ADAS control unit harness connector |       |            | Continuity  |
|-------------------------------------|-------|------------|-------------|
| Connector No.                       | Termi | Continuity |             |
| B50                                 | 7     | 8          | Not existed |

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

 $\mathbf{5.}$ CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

#### LAN-502

### **ITS COMMUNICATION CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

### [CAN SYSTEM (TYPE 10)]

| Connector No.   |   |  | Continuity                   |  |
|---|---|--|------------------------------|--|
|   | Terminal No.  | Ground   | Continuity                   |  |
| B50   | 7   | Ground   | Not existed                  |  |
|   | 8   |  | Not existed                  |  |
| CHECK TERMINATION C   | ss and repair or replace (if  |  | ss is short) the root cause. |  |
| ΔDA   | S control unit  |  |                              |  |
|   | erminal No.   |  | Resistance (Ω)               |  |
| 7   | 8   | Α  | pprox. 108 – 132             |  |
| Check the resistance bet  | ween the ICC sensor term  |  |                              |  |
|   | CC sensor   |  |                              |  |
|   | erminal No.   |  | Resistance ( $\Omega$ )      |  |
| 3   | 6   | Α  | pprox. 108 – 132             |  |
| CHECK SYMPTOM<br>onnect all the connectors. (<br>istomer)" are reproduced.<br><u>spection result</u><br>Reproduced>>GO TO 8.<br>Non-reproduced>>Start the   |   |  |                              |  |
| delected.   |   |  |                              |  |
| detected.<br>CHECK UNIT REPRODUC  | CTION   |  |                              |  |
| CHECK UNIT REPRODUC<br>erform the reproduction test<br>Turn the ignition switch O<br>Disconnect the battery ca<br>Disconnect one of the unit<br><b>NOTE:</b><br>ADAS control unit and IC<br>Connect the battery cabl<br>(Results from interview w<br><b>NOTE:</b> | as per the following proce<br>OFF.<br>able from the negative term<br>it connectors of ITS comm<br>C sensor have a termination | ninal.<br>unication system.<br>on circuit. Check other un<br>I. Check if the symptoms<br>iced. | described in the "Symptor    |  |

#### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

# DTC/CIRCUIT DIAGNOSIS MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### **Diagnosis Procedure**

INFOID:000000006094553

### **1.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Low tire pressure warning control unit
- A/C auto amp.
- 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C auto amp. harness connector.

| Low tire pressure warning control unit<br>harness connector |              | A/C auto amp. harness connector |              | Continuity |
|---|--------------|---------------------------------|--------------|------------|
| Connector No.   | Terminal No. | Connector No.                   | Terminal No. |            |
| M43 –   | 2            | M66                             | 12           | Existed    |
|   | 1            |                                 | 11           | Existed    |

#### Is the inspection result normal?

- YES (Present error)>>Check CAN system type decision again.
- YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp.
- NO >> Replace the PCB harness.

| DTC/CIRCUIT DIAG  | SNOSIS >   |                   | [CAN                 | SYSTEM (TYPE 11)]        |
|---|--|-------------------|----------------------|--------------------------|
| MAIN LINE BET   | WEEN HVAC  | AND A-BAG CI      | RCUIT                |                          |
| Diagnosis Proced  | ure  |                   |                      | INFOID:000000006094554   |
| I.CHECK HARNESS   | CONTINUITY (OPE  | N CIRCUIT)        |                      |                          |
| <ol> <li>Disconnect the foll<br/>ECM<br/>A/C auto amp.<br/>AV control unit</li> </ol> | tery cable from the n<br>owing harness conne<br>ty between the A/C a | ectors.           | nnector and the AV c | ontrol unit harness con- |
| A/C auto amp. ha  | arness connector   | AV control unit h | arness connector     | Continuity               |
| Connector No.   | Terminal No.   | Connector No.     | Terminal No.         | Continuity               |
| Connector No.   |  |                   |                      |                          |
| M66   | 12   | M210              | 90                   | Existed                  |

MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

Models without navigation system -

| A/C auto amp. h | arness connector | AV control unit harness connector |              |            |   | Continuity |  |
|-----------------|------------------|-----------------------------------|--------------|------------|---|------------|--|
| Connector No.   | Terminal No.     | Connector No.                     | Terminal No. | Continuity |   |            |  |
| M66             | 12               | M84                               | 81           | Existed    | _ |            |  |
| IVIOO           | 11               | 10184                             | 80           | Existed    | _ |            |  |

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

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## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094555

[CAN SYSTEM (TYPE 11)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |    | Continuity |
|-----------------|------------------|-----------------------------------|----|------------|
| Connector No.   | Terminal No.     | Connector No. Terminal No.        |    | Continuity |
| M66             | 12               | M210                              | 90 | Existed    |
| 1000            | 11               | M210 74                           |    | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector |    | ess connector AV control unit harn |  | Continuity |
|-----------------|------------------|-----------------------------------|----|------------------------------------|--|------------|
| Connector No.   | Terminal No.     | Connector No. Terminal No.        |    | Continuity                         |  |            |
| M66             | 12               | M84                               | 81 | Existed                            |  |            |
| IVIOO           | 11               | 10104                             | 80 | Existed                            |  |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

| I SYSTEM (TYPE 1 <sup>,</sup>    | [CAN S   |  | NOSIS >   | TC/CIRCUIT DIAG  |
|----------------------------------|--|--|---|--|
|                                  | Т  | D M&A CIRCUI   | WEEN AV AND   | AIN LINE BET   |
| INF01D:0000000060                |  |  | ure   | agnosis Procedu  |
|                                  |  | I CIRCUIT)   | CONTINUITY (OPEN  | CHECK HARNESS  |
|                                  |  |  | tery cable from the ne<br>owing harness conne   |  |
| nbination meter harne            | nnector and the comb   | ontrol unit harness con  | ty between the AV co  |  |
|                                  |  | ontrol unit harness con  | ty between the AV co  | Check the continui connector.  |
| Dination meter harne             |  |  | ty between the AV co  | Check the continui<br>connector.<br>Models with naviga   |
|                                  | harness connector  | Combination meter  | ty between the AV co<br>ation system<br>arness connector  | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.   |
| - Continuity                     | harness connector<br>Terminal No.                                  | Combination meter  | ty between the AV co<br>ation system<br>arness connector<br>Terminal No.                                | Check the continui<br>connector.<br>Models with naviga<br>AV control unit ha   |
| - Continuity<br>Existed          | harness connector<br>Terminal No.<br>14                            | Combination meter  | ty between the AV co<br>ation system<br>arness connector<br>Terminal No.<br>90<br>74                    | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.   |
| Continuity<br>Existed<br>Existed | harness connector<br>Terminal No.<br>14<br>15                      | Combination meter  | ty between the AV co<br>ation system<br>arness connector<br>Terminal No.<br>90<br>74<br>/igation system | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit ha<br>Connector No.<br>M210   |
| - Continuity<br>Existed          | harness connector<br>Terminal No.<br>14<br>15                      | Combination meter<br>Connector No.<br>M53                      | ty between the AV co<br>ation system<br>arness connector<br>Terminal No.<br>90<br>74<br>/igation system | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit hat<br>Connector No.<br>M210<br>Models without nav                        |
| Continuity<br>Existed<br>Existed | harness connector<br>Terminal No.<br>14<br>15<br>harness connector | Combination meter<br>Connector No.<br>M53<br>Combination meter | ty between the AV co<br>ation system<br>arness connector<br>Terminal No.<br>90<br>74<br>/igation system | Check the continuit<br>connector.<br>Models with naviga<br>AV control unit hat<br>Connector No.<br>M210<br>Models without nav<br>AV control unit hat |

MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

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### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### **Diagnosis** Procedure

INFOID:000000006094557

[CAN SYSTEM (TYPE 11)]

1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Combination meter
- Harness connectors M105 and M181
- 4. Check the continuity between the combination meter harness connector and the harness connector.

| Combination mete | harness connector Harness connector |               | Harness connector |            |
|------------------|-------------------------------------|---------------|-------------------|------------|
| Connector No.    | Terminal No.                        | Connector No. | Terminal No.      | Continuity |
| M53              | 14                                  | M105          | 7                 | Existed    |
| CCIVI            | 15                                  | COT IVI       | 8                 | Existed    |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

- YES (Past error)>>Error was detected in the main line between the combination meter and the data link connector.
- NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA                                   | MAIN LINE BET<br>GNOSIS >  | WEEN DLC ANI         |                     | SYSTEM (TYPE 11)]      |   |
|---|--|----------------------|---------------------|------------------------|---|
| MAIN LINE BET                                       | WEEN DLC AN  | ND BCM CIRC          | UIT                 |                        | Δ |
| Diagnosis Proced                                    | lure   |                      |                     | INFOID:000000006094558 | A |
| <b>1.</b> CHECK HARNESS                             | CONTINUITY (OPEN   | I CIRCUIT)           |                     |                        | В |
| <ol> <li>Disconnect the fol</li> <li>ECM</li> </ol> | witch OFF.<br>ttery cable from the ne<br>lowing harness conne<br>ors M181 and M105 |                      |                     |                        | С |
| <ul><li>BCM</li><li>Check the continu</li></ul>     | ity between the harnes   | ss connector and the | BCM harness connect | ctor.                  | D |
| Harness   | connector  | BCM harnes           | ss connector        | Continuity             | F |
| Connector No.                                       | Terminal No.   | Connector No.        | Terminal No.        | Continuity             | E |

Is the inspection result normal?

M105

YES (Present error)>>Check CAN system type decision again.

7

8

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

M120

39

40

NO >> Replace the PCB harness.

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Existed

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### MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### Diagnosis Procedure

INFOID:000000006094560

[CAN SYSTEM (TYPE 11)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- BCM

- Harness connector M20
- 2. Check the continuity between the BCM harness connector and the PCB harness connector.

| BCM harne     | ss connector | PCB harness connector | Continuity |  |
|---------------|--------------|-----------------------|------------|--|
| Connector No. | Terminal No. | Terminal No.          | Continuity |  |
| M120          | 39           | 35                    | Existed    |  |
| IVI 120       | 40           | 36                    | Existed    |  |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the PCB harness.

**3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connectors M7 and B1.
- 2. Check the continuity between the harness connectors.

| Harness       | connector    | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M20           | 35           | M7                | 72           | Existed    |
| WZ0           | 36           | 1017              | 73           | Existed    |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M20 and M7.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| Connector No. | Termi | Continuity |         |
|---------------|-------|------------|---------|
| B1            | 72    | 74         | Existed |
| DI            | 73    | 75         | Existed |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit.

NO >> Replace the body harness.

| SYSTEM (TYPE 11)]          |  | WEEN 4WD ANI   |   | N<br>DTC/CIRCUIT DIAG   |
|----------------------------|--|--|---|---|
|                            | -                                      | ND ABS CIRC  |   | AIN LINE BET  |
| INFOID:000000006094563     |  |  | Э   | iagnosis Procedu  |
|                            |  |  |   | .CHECK CONNECTO   |
|                            |  |  |   | Turn the ignition sw  |
| ection (connector side     |  | nectors for damage, b<br>tor.<br>N CIRCUIT)<br>and M7. | y cable from the ne<br>erminals and coni<br>7<br>6<br>106<br><u>rmal?</u><br>minal and connect<br>DNTINUITY (OPEN<br>ss connectors B1 | Disconnect the batt<br>Check the following<br>and harness side).<br>Harness connector<br>Harness connector<br>Harness connector<br>the inspection result in<br>YES >> GO TO 2.<br>NO >> Repair the to<br>CHECK HARNESS (<br>Disconnect the harr |
| Continuity                 | S.                                     | ss connector terminal                                  | between the harne   | Check the continuit   |
| Existed                    | 74                                     |  | 72  | Connector No.   |
| Existed                    | 75                                     |  | 73  | B1  |
|                            |  | and E106.  | ONTINUITY (OPEN<br>ss connectors M6   | YES >> GO TO 3.<br>NO >> Replace the<br>CHECK HARNESS (<br>Disconnect the ham<br>Check the continuit  |
|                            | connector                              | Harness  | nector  | Harness c   |
| Continuity                 | Terminal No.                           | Connector No.  | Terminal No.  | Connector No.   |
| Existed                    | 22                                     | M6   | 74  | M7  |
| Existed                    | 23                                     | ΙΫΙΟ   | 75  |   |
| ectric unit (control unit) | ontrol unit).                          | tor and electric unit (c                               | ain line between th<br>DNTINUITY (OPE)  | CHECK HARNESS   |
| Continuity                 | ctric unit (control unit)<br>connector | harness  |   | Harness c   |
| Existed                    | Terminal No.<br>25                     | Connector No.  | Terminal No.  | Connector No.   |
| EXISTER                    | 20                                     | E41  | 22  | E106  |

AIN LINE DETWEEN AND AND ARE CIRCUIT

Is the inspection result normal?

23

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the AWD control unit and the ABS actuator and electric unit (control unit).

15

Existed

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

## **ECM BRANCH LINE CIRCUIT**

| DIC/CIRCUIT DIAGNUS  | >  |                                  |                                |
|--|--|----------------------------------|--------------------------------|
| CM BRANCH LIN  | E CIRCUIT  |                                  |                                |
| Diagnosis Procedure  |  |                                  | INFOID:000000006094569         |
| 1.CHECK CONNECTOR  |  |                                  |                                |
| <ol> <li>Check the following terr<br/>nector side).</li> <li>ECM</li> <li>Harness connector M30</li> <li>Is the inspection result norm</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the term</li> <li>CHECK HARNESS FOR</li> <li>Disconnect the connect</li> </ol> | cable from the negative termininals and connectors for da<br>and PCB harness side conr<br>al?<br>Inal and connector.<br>OPEN CIRCUIT   | mage, bend and loose             | connection (unit side and con- |
|  | ECM harness connector  |                                  | Posistanco (O)                 |
| Connector No.  | Termina  | l No.                            | Resistance (Ω)                 |
| M107   | 114  | 113                              | Approx. 108 – 132              |
| VK56VD   |  |                                  |                                |
|  | ECM harness connector  |                                  |                                |
| Connector No.  | Termina  | l No.                            | Resistance (Ω)                 |
| M160   | 146  | 151                              | Approx. 108 – 132              |
|  | Y AND GROUND CIRCUIT<br>I the ground circuit of the EC<br>nosis Procedure"   | M. Refer to the followir         | ıg.                            |
| Is the inspection result norm  | al?  |                                  |                                |
| <ul> <li>VQ37VHR: <u>EC</u></li> <li>VK56VD: <u>EC</u>-</li> <li>YES (Past error)&gt;&gt;Error w</li> </ul>  | lace the ECM. Refer to the for<br><u>C-535</u> , "Removal and Installa<br><u>535</u> , "Removal and Installation<br>as detected in the ECM bran<br>er supply and the ground circ | <u>ition"</u><br>on"<br>ch line. |                                |
| <b>4.</b> CHECK HARNESS CON  | TINUITY (OPEN CIRCUIT)   |                                  |                                |
| <ol> <li>Disconnect the harness</li> <li>Check the continuity be</li> <li>VQ37VHR</li> </ol>   | connector M30.<br>tween the ECM harness con  | nector and the harness           | connector.                     |

< DTC/CIRCUIT DIAGNOSIS >

| ECM harne     | ess connector | Harness connector |              | Continuity |  |
|---------------|---------------|-------------------|--------------|------------|--|
| Connector No. | Terminal No.  | Connector No.     | Terminal No. | Continuity |  |
| M107          | 114           | M30               | 439          | Existed    |  |
| WITO7         | 113           | WISO              | 438          | Existed    |  |
|               |               |                   |              |            |  |

VK56VD

## ECM BRANCH LINE CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

| ECM harne     | ss connector | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M160          | 146          | M30               | 439          | Existed    |
| WITOO         | 151          | 10130             | 438          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

| FPMS BRANCH  | I LINE CIRCUI   | Т   |                        |   |
|--|---|---|------------------------|---|
| Diagnosis Proced   | lure  |   |                        | INFOID:000000006094570  |
|  | OR  |   |                        |   |
| <ul> <li>Check the followin nector side).</li> <li>Low tire pressure Harness connectors the inspection result YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the CHECK HARNESS</li> </ul> | ttery cable from the neig terminals and conneig<br>warning control unit<br>or M29 and PCB harnes<br>to normal?<br>terminal and connect<br>FOR OPEN CIRCUI | ectors for damage, be<br>ess side connector<br>tor.<br>Γ  |                        | ection (unit side and con-  |
| . Check the resistar   | nnector of low tire pre   | ire pressure warning  |                        | connector terminals.  |
| Connector No.  |   | Terminal No.  |                        | Resistance ( $\Omega$ )   |
| M43  | 2   |   | 1                      | Approx. 54 – 66   |
| heck the power supp<br>Diagnosis Procedure<br>the inspection result<br>YES (Present error)><br>Installation<br>YES (Past error)>>E<br>NO >> Repair the<br>CHECK HARNESS                      | 2.<br><u>normal?</u><br>>Replace the low tire<br><u>orror was detected in the</u><br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M29.     | cuit of the low tire pre<br>e pressure warning on<br>the low tire pressure w<br>e ground circuit.<br>N CIRCUIT) | control unit. Refer to | Trol unit. Refer to <u>WT-53</u> ,<br>b <u>WT-70</u> , <u>"Removal and</u><br>ranch line. |
| -  | warning control unit connector  | Harness   | connector              | Continuity  |
| Connector No.  | Terminal No.  | Connector No.   | Terminal No.           | -   |
|  |   |   |                        |   |
| M43  | 2   | M29   | 396<br>395             | Existed   |

#### Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

## HVAC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094573

[CAN SYSTEM (TYPE 11)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/C auto amp.
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

| A/C auto amp. harness connector |              |    | Resistance (Ω)  |
|---------------------------------|--------------|----|-----------------|
| Connector No.                   | Terminal No. |    |                 |
| M66 12                          |              | 11 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-167, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-201, "Removal and Installation".

- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

| A/C auto amp. h | arness connector | Harness connector |              | Continuity |
|-----------------|------------------|-------------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| M66             | 12               | M28               | 325          | Existed    |
| MOO             | 11               | IVIZO             | 327          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

| iagnosis Proced  | ure  |  |  | INFOID:000000006094574                             |
|--|--|--|--|--|
| CHECK CONNECT  | OR   |  |  |  |
| <ul> <li>Check the followin<br/>nector side).</li> <li>A/T assembly<br/>Harness connecto<br/>Harness connecto<br/>Harness connecto</li> <li>the inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the con</li> </ul> | ttery cable from the ne<br>g terminals and conne<br>r F103<br>r M116<br>r M28 and PCB harne  | ectors for damage, be<br>ss side connector<br>or.<br>-<br>bly.   |  | ction (unit side and con-                          |
|  | A/T assembly harne   | _  |  | Posistance (0)                                     |
| Connector No.  |  | Terminal No.   |  | Resistance ( $\Omega$ )                            |
| F61  | 3  |  | 8  | Approx. 54 – 66                                    |
|  |  |  |  |  |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>.CHECK POWER SI<br>heck the power supp<br>the inspection result<br>YES (Present error)><br>ponent Pa<br>parts list.)<br>YES (Past error)>>Er<br>NO >> Repair the<br>.CHECK HARNESS<br>Disconnect the ha   | Replace the control v<br>rts Location". (Replace<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.   | D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>e ground circuit.<br>I CIRCUIT)                                  | to <u>TM-8, "A/T CON</u><br>trol valve with TCM                          | ITROL SYSTEM : Com-<br>is not listed in the lates  |
| NO >> GO TO 4.<br>CHECK POWER SI<br>the ck the power supp<br>the inspection result<br>YES (Present error)><br><u>ponent Pa</u><br>parts list.)<br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the ha<br>Check the continu  | ly and the ground circl<br>normal?<br>>Replace the control v<br>rts Location". (Replace<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/T as        | D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT)<br>ssembly harness conr            | to <u>TM-8, "A/T CON</u><br>trol valve with TCM                          | ITROL SYSTEM : Com-<br>is not listed in the lates  |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>•CHECK POWER SI<br>heck the power supp<br>the inspection result<br>YES (Present error)><br><u>ponent Pa</u><br>parts list.)<br>YES (Past error)>>Er<br>NO >> Repair the<br>•CHECK HARNESS<br>Disconnect the ha<br>Check the continu                       | ly and the ground circe<br><u>normal?</u><br>>Replace the control v<br>rts Location". (Replace<br>fror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.                          | D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT)                                    | to <u>TM-8, "A/T CON</u><br>trol valve with TCM                          | ITROL SYSTEM : Com-<br>is not listed in the lates  |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>• CHECK POWER SI<br>heck the power supp<br>the inspection result<br>YES (Present error)><br>ponent Pa<br>parts list.)<br>YES (Past error)>>Er<br>NO >> Repair the<br>• CHECK HARNESS<br>Disconnect the ha<br>Check the continu                            | ly and the ground circe<br><u>normal?</u><br>>Replace the control v<br>rts Location". (Replace<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ity between the A/T as | D CIRCUIT<br>uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT)<br>ssembly harness conr<br>Harness | trol <u>TM-8, "A/T CON</u><br>trol valve with TCM<br>ector and the harne | ITROL SYSTEM : Com-<br>is not listed in the latest |

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

# A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094575

### WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness and/or the PCB harness.
- NO >> Replace parts whose air bag system has a malfunction.

## **AV BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 11)]

| AV BRANCH LI  |  |   |   |   |
|---|--|---|---|---|
|   |  |   |   |   |
| Diagnosis Proced  | dure   |   |   | INFOID:000000006094576  |
| <b>1</b> .CHECK CONNEC  | TOR  |   |   |   |
| <ul> <li>Check the followin nector side).</li> <li>AV control unit</li> <li>Harness connector</li> <li>s the inspection result</li> <li>YES &gt;&gt; GO TO 2</li> <li>NO &gt;&gt; Repair the</li> </ul>   | attery cable from the nang terminals and conn<br>or M25 and PCB harne<br>It normal?  | ectors for damage, be<br>ess side connector<br>tor.   | end and loose connec  | tion (unit side and con-  |
| . Disconnect the co   | onnector of AV control<br>nce between the AV co  | unit.   | nnector terminals.  |   |
|   | AV control unit harn   |   |   | Resistance (Ω)  |
| Connector No.<br>M210   | 90   | Terminal No.  | 74  | Approx. 54 – 66   |
| Models without na   | avigation system   |   |   |   |
|   | AV control unit harn   | loss connector  |   |   |
|   |  |   |   | Resistance ( $\Omega$ )   |
| Connector No.   |  | Terminal No.  |   | Resistance (Ω)  |
| M84   | 81   | Terminal No.  | 80  | Resistance (Ω)<br>Approx. 54 – 66                                 |
| M84<br>YES >> GO TO 3<br>NO >> GO TO 4<br>3.CHECK POWER S<br>Check the power supp<br>Base audio without<br>BOSE audio with na<br>Is the inspection resulf<br>YES (Present error):<br>Base audio<br>YES (Past error)>>E<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the har  | 81<br>alue within the specific<br>SUPPLY AND GROUN<br>bly and the ground circ<br>navigation system: AV-2<br>avigation system: AV-2<br>avigation system: AV-2<br>blt normal?<br>>>Replace the AV cont<br>audio without navigation s<br>arror was detected in the<br>power supply and the<br>S CONTINUITY (OPEN<br>arness connector M25.   | Terminal No.<br>Cation?<br>ID CIRCUIT<br>Cuit of the AV control u<br>-90. "AV CONTROL U<br>72. "AV CONTROL U<br>trol unit. Refer to the f<br>n system: <u>AV-120. "Re</u><br>system: <u>AV-298, "Rem</u><br>ne AV control unit brar<br>e ground circuit.<br>N CIRCUIT)                              | Init. Refer to the follow<br>JNIT : Diagnosis Proce<br>NIT : Diagnosis Proce<br>following.<br>Imoval and Installation<br>oval and Installation<br>oval and Installation                           | Approx. 54 – 66<br>ving.<br>edure"<br>dure"                       |
| M84<br>S the measurement v<br>YES >> GO TO 3<br>NO >> GO TO 4<br>3.CHECK POWER S<br>Check the power supp<br>Base audio without<br>BOSE audio without<br>BOSE audio without<br>BOSE audio without<br>BOSE audio without<br>S (Present error)<br>Base au<br>S (Present error)<br>Base au<br>S (Past error)<br>YES (Past error)<br>NO >> Repair the<br>A.CHECK HARNESS<br>Disconnect the ha<br>Check the continu-<br>Models with navig                                 | 81         alue within the specific         SUPPLY AND GROUN         SUPPLY AND GROUN         oly and the ground circ         navigation system: AV-2         avigation system: AV-2         by and the ground circ         avigation system: AV-2         avigation system: AV-2         by and the ground circ         avigation system: AV-2         by and the ground circ         by and the ground circ         avigation system         by and the ground circ         avigation system         avigation system   | Terminal No.<br>Cation?<br>D CIRCUIT<br>cuit of the AV control u<br>-90, "AV CONTROL U<br>72, "AV CONTROL U<br>trol unit. Refer to the f<br>n system: AV-120, "Re<br>system: AV-298, "Rem<br>ne AV control unit brar<br>e ground circuit.<br>N CIRCUIT)<br>-<br>ontrol unit harness cor             | Init. Refer to the follow<br>JNIT : Diagnosis Proce<br>NIT : Diagnosis Proce<br>following.<br>Immoval and Installation<br>oval and Installation<br>oval and Installation<br>oval and Installation | Approx. 54 – 66<br>ving.<br>edure"<br>dure"                       |
| M84<br><u>s the measurement v</u><br>YES >> GO TO 3<br>NO >> GO TO 4<br><b>3.</b> CHECK POWER S<br>Check the power supp<br>Base audio without<br>BOSE audio without<br>BOSE audio with na<br><u>s the inspection resul</u><br>YES (Present error):<br>Base au<br>Base au<br>Sthe inspection resul<br>YES (Present error):<br>Base au<br>Stress (Past error):<br>NO >> Repair the<br>A.CHECK HARNESS<br>Disconnect the ha<br>Check the continu-<br>Models with navig | 81<br>alue within the specific<br>SUPPLY AND GROUN<br>by and the ground circ<br>navigation system: AV-2<br>avigation system: AV-2<br>avigation system: AV-2<br>by and the ground circ<br>navigation system: AV-2<br>avigation system: AV-2<br>by and the ground circ<br>navigation system: AV-2<br>by and the ground circ<br>navigation system: AV-2<br>by and the ground circ<br>avigation system: AV-2<br>avigation system: AV-2<br>av | Terminal No.<br>Cation?<br>D CIRCUIT<br>cuit of the AV control u<br>-90, "AV CONTROL U<br>72, "AV CONTROL U<br>trol unit. Refer to the f<br>n system: AV-120, "Re<br>system: AV-298, "Rem<br>ne AV control unit brar<br>e ground circuit.<br>N CIRCUIT)<br>-<br>ontrol unit harness cor             | Init. Refer to the follow<br>JNIT : Diagnosis Proce<br>NIT : Diagnosis Proce<br>following.<br>Imoval and Installation<br>oval and Installation<br>oval and Installation                           | Approx. 54 – 66<br>ving.<br>edure"<br>dure"                       |
| M84<br><u>s the measurement v</u><br>YES >> GO TO 3<br>NO >> GO TO 4<br><b>3.</b> CHECK POWER S<br>Check the power supple<br>Base audio without<br>BOSE audio with na<br><u>s the inspection resul</u><br>YES (Present error):<br>Base audio<br>Sthe inspection resulf<br>YES (Past error):<br>Base audio<br>SCHECK HARNESS<br>1. Disconnect the have<br>Check the continue<br>Models with navige<br>AV control unit  | 81<br>alue within the specific<br>SUPPLY AND GROUN<br>oly and the ground circ<br>navigation system: AV-2<br>avigation system: AV-2<br>avigation system: AV-2<br>avigation system: AV-2<br>bit normal?<br>>>Replace the AV cont<br>audio without navigation s<br>arror was detected in the<br>power supply and the<br>S CONTINUITY (OPEN<br>arness connector M25.<br>uity between the AV cont<br>pation system<br>harness connector   | Terminal No.<br>Cation?<br>ID CIRCUIT<br>Cuit of the AV control u<br>-90. "AV CONTROL U<br>72. "AV CONTROL U<br>trol unit. Refer to the f<br>n system: AV-120. "Re<br>system: AV-298, "Rem<br>ne AV control unit brar<br>e ground circuit.<br>N CIRCUIT)<br>-<br>ontrol unit harness cor<br>Harness | init. Refer to the follow<br>JNIT : Diagnosis Proce<br>NIT : Diagnosis Proce<br>following.<br>moval and Installation<br>oval and Installation<br>nch line.  | Approx. 54 – 66<br>ving.<br>edure"<br>dure"<br>"<br>ss connector. |

Models without navigation system

< DTC/CIRCUIT DIAGNOSIS >

## **AV BRANCH LINE CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

| AV control unit h | arness connector | Harness connector          |     | Continuity |
|-------------------|------------------|----------------------------|-----|------------|
| Connector No.     | Terminal No.     | Connector No. Terminal No. |     | Continuity |
| <br>M84           | 81               | M25                        | 201 | Existed    |
|                   | 80               | IVI25                      | 221 | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

|  | INE CIRCUIT   |   |  |  |  |
|--|---|---|--|--|--|
| Diagnosis Procedu  | ure   |   |  | INFOID:00000006094577                      |  |
| 1. CHECK CONNECTO  | DR  |   |  |  |  |
| <ul> <li>Check the following nector side).</li> <li>Combination meter</li> <li>Harness connector</li> <li><u>s the inspection result r</u></li> <li>YES &gt;&gt; GO TO 2.</li> </ul>   | ery cable from the n<br>terminals and conn<br>M24 and PCB harne<br>normal?<br>terminal and connec   | ectors for damage, be<br>ess side connector<br>tor.   | nd and loose conr  | ection (unit side and con-                 |  |
| . Disconnect the con   | nector of combinatio  | on meter.   |  |  |  |
| 2. Check the resistand   | ce between the com  | bination meter harness  | s connector termin   | als.                                       |  |
|  | Combination meter ha  | arness connector  |  | Posistanco (O)                             |  |
| Connector No.  |   | Terminal No.  |  | Resistance ( $\Omega$ )                    |  |
|  |   |   |  |  |  |
| M53<br>s the measurement val   | 14<br>ue within the specific  | cation?   | 15   | Approx. 54 – 66                            |  |
| Is the measurement val         YES       >> GO TO 3.         NO       >> GO TO 4.         3.CHECK POWER SU         Check the power supplement valor         METER : Diagnosis Product         Is the inspection result in         YES (Present error)>>         YES (Past error)>>Err         NO       >> Repair the part of the part  | ue within the specific<br>IPPLY AND GROUN<br>y and the ground cir<br>ocedure".<br>normal?<br>Replace the combin<br>or was detected in th<br>power supply and th<br>CONTINUITY (OPEI<br>ness connector M24                       | ID CIRCUIT<br>rcuit of the combination<br>nation meter. Refer to <u>Nation</u><br>he combination meter le<br>ground circuit.<br>N CIRCUIT)                          | on meter Refer to j<br>MWI-90, "Removal<br>branch line.                      | MWI-70, "COMBINATION<br>and Installation". |  |
| Is the measurement val<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SU<br>Check the power supple<br>METER : Diagnosis Pro-<br>Is the inspection result of<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the power supple<br>4.CHECK HARNESS (Compared to the formation of the | ue within the specific<br>IPPLY AND GROUN<br>y and the ground ci-<br><u>ocedure"</u> .<br>Replace the combin<br>or was detected in th<br>power supply and th<br>CONTINUITY (OPEI<br>ness connector M24<br>y between the comb    | ID CIRCUIT<br>rcuit of the combination<br>nation meter. Refer to <u>Nation</u><br>the combination meter is<br>a ground circuit.<br>N CIRCUIT)                       | on meter Refer to b<br>MWI-90, "Removal<br>branch line.<br>connector and the | MWI-70, "COMBINATION<br>and Installation". |  |
| s the measurement val<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SU<br>Check the power suppl<br>METER : Diagnosis Pro-<br>s the inspection result in<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the p<br>4.CHECK HARNESS (<br>1. Disconnect the harn<br>2. Check the continuit   | ue within the specific<br>IPPLY AND GROUN<br>y and the ground cir<br>ocedure".<br>normal?<br>Replace the combin<br>or was detected in th<br>power supply and th<br>CONTINUITY (OPEI<br>ness connector M24<br>y between the comb | ID CIRCUIT<br>rcuit of the combination<br>nation meter. Refer to <u>Nation</u><br>the combination meter<br>e ground circuit.<br>N CIRCUIT)<br>ination meter harness | on meter Refer to b<br>MWI-90, "Removal<br>branch line.<br>connector and the | MWI-70, "COMBINATION<br>and Installation". |  |
| Is the measurement val<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SU<br>Check the power supple<br>METER : Diagnosis Pro-<br>Is the inspection result of<br>YES (Present error)>><br>YES (Past error)>>Err<br>NO >> Repair the power supple<br>4.CHECK HARNESS (Compared to the formation of the | ue within the specific<br>IPPLY AND GROUN<br>y and the ground ci-<br><u>ocedure"</u> .<br>Replace the combin<br>or was detected in th<br>power supply and th<br>CONTINUITY (OPEI<br>ness connector M24<br>y between the comb    | ID CIRCUIT<br>rcuit of the combination<br>nation meter. Refer to <u>Nation</u><br>the combination meter is<br>a ground circuit.<br>N CIRCUIT)                       | on meter Refer to b<br>MWI-90, "Removal<br>branch line.<br>connector and the | MWI-70. "COMBINATION<br>and Installation". |  |

NO >> Repair the harness between the combination meter harness connector M53 and the harness con nector M24.

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< DTC/CIRCUIT DIAGNOSIS >

## DLC BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094578

[CAN SYSTEM (TYPE 11)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

| Data link connector |       |  | Resistance (Ω)  |
|---------------------|-------|--|-----------------|
| Connector No.       | Termi |  |                 |
| M182                | 6 14  |  | Approx. 54 – 66 |

#### Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> GO TO 3.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the data link connector and the harness connector.

| Data link     | connector    | Harness connector |              | Continuity |
|---------------|--------------|-------------------|--------------|------------|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |
| M182          | 6            | M23               | 151          | Existed    |
| WI 102        | 14           | WIZ5              | 150          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

## **BCM BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 11)]

| BCM BRANCH  | LINE CIRCUIT   |   |                            |                              |
|---|--|---|----------------------------|------------------------------|
| Diagnosis Procec  | lure   |   |                            | INFOID:00000006094579        |
| 1.CHECK CONNECT   | ſOR  |   |                            |                              |
| <ol> <li>Check the followir<br/>nector side).</li> <li>BCM</li> </ol> | ttery cable from the ne  | ectors for damage, b                    | end and loose cor          | nnection (unit side and con- |
| s the inspection result   |  |   |                            |                              |
| YES >> GO TO 2.<br>NO >> Repair the                                   | e terminal and connect   |   |                            |                              |
|   | FOR OPEN CIRCUIT   | Г<br>                                   |                            |                              |
| . Disconnect the co<br>2. Check the resistant                         | nnector of BCM.<br>nce between the BCM                                 | harness connector                       | terminals.                 |                              |
|   | BCM harness o  | connector                               |                            | Resistance ( $\Omega$ )      |
| Connector No.   |  | Terminal No.                            |                            |                              |
| M120  | 39   |   | 40                         | Approx. 54 – 66              |
| YES >> GO TO 3.<br>NO >> GO TO 4.                                     |  |   |                            |                              |
|   | bly and the ground circ  |   | er to <u>BCS-73, "Diac</u> | gnosis Procedure".           |
| YES (Past error)>>E<br>NO >> Repair the                               | Replace the BCM. R<br>rror was detected in the<br>power supply and the | e BCM branch line.<br>e ground circuit. | moval and Installa         | ition".                      |
| CHECK HARNESS   | CONTINUITY (OPEN   | I CIRCUIT)                              |                            |                              |
|   | irness connector M22.<br>hity between the BCM                          |   | nd the harness co          | nnector.                     |
| BCM harne   | ess connector  | Harnes                                  | s connector                | Continuity                   |
| Connector No.   | Terminal No.   | Connector No.                           | Terminal No.               | Continuity                   |
|   | 39   |   | 101                        | Existed                      |
| M120  |  | M22                                     | 102                        |                              |

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094580

[CAN SYSTEM (TYPE 11)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

| Steering angle sensor harness connector |              |   | Resistance (Ω)  |
|---|--------------|---|-----------------|
| Connector No.                           | Terminal No. |   |                 |
| M37                                     | 1            | 2 | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

## $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-144, "Removal and Installation".

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

| Steering angle sens | or harness connector | Harness connector |              | Continuity |  |
|---------------------|----------------------|-------------------|--------------|------------|--|
| Connector No.       | Terminal No.         | Connector No.     | Terminal No. | Continuity |  |
| M37                 | 1                    | M22               | 81           | Existed    |  |
| W37                 | 2                    | IVIZZ             | 82           | Existed    |  |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

## **4WD BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 11)]

| Diagnosis Procedure  |   |   | INFOID:00000006094581        |
|--|---|---|------------------------------|
| 1. CHECK CONNECTOR   |   |   |                              |
|  | cable from the negative terr<br>d connectors of the AWD co  | ninal.<br>ontrol unit for damage, benc  | l and loose connection (unit |
| s the inspection result norm<br>YES >> GO TO 2.<br>NO >> Repair the term   |   |   |                              |
| 2.check harness for  | OPEN CIRCUIT  |   |                              |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>  |   | it harness connector termin   | als.                         |
| Α  | WD control unit harness connect   | or  | Resistance ( $\Omega$ )      |
| Connector No.  |   | nal No.   |                              |
|  |   | 10  | A                            |
| B17  | 8   | 16  | Approx. 54 – 66              |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>CHECK POWER SUPPL  | vithin the specification?<br>Control unit branch line.<br>Y AND GROUND CIRCUIT  | Γ   |                              |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>CHECK POWER SUPPL<br>Check the power supply and<br>ture".  | vithin the specification?<br>O control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the   | Γ   |                              |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>CHECK POWER SUPPL<br>Check the power supply and<br>dure".<br>s the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error wa  | vithin the specification?<br>Control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the<br>hal?<br>lace the AWD control unit.                               | AWD control unit. Refer to<br>Refer to <u>DLN-59, "Removal</u><br>ntrol unit branch line. | DLN-47, "Diagnosis Proce-    |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>CHECK POWER SUPPL<br>Check the power supply and<br>dure".<br>s the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error wa  | vithin the specification?<br>Control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the<br>hal?<br>lace the AWD control unit.<br>as detected in the AWD con | AWD control unit. Refer to<br>Refer to <u>DLN-59, "Removal</u><br>ntrol unit branch line. | DLN-47, "Diagnosis Proce-    |
| s the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>CHECK POWER SUPPL<br>Check the power supply and<br>dure".<br>Is the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error wa | vithin the specification?<br>Control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the<br>hal?<br>lace the AWD control unit.<br>as detected in the AWD con | AWD control unit. Refer to<br>Refer to <u>DLN-59, "Removal</u><br>ntrol unit branch line. | DLN-47, "Diagnosis Proce-    |

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< DTC/CIRCUIT DIAGNOSIS >

## ABS BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094583

[CAN SYSTEM (TYPE 11)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator a | Resistance ( $\Omega$ ) |  |                 |
|----------------|-------------------------|--|-----------------|
| Connector No.  | Terminal No.            |  | (122)           |
| E41            | 25 15                   |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

### **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

### **IPDM-E BRANCH LINE CIRCUIT**

## [CAN SYSTEM (TYPE 11)]

|                                   | M (TYPE 11)]           |
|-----------------------------------|------------------------|
|                                   |                        |
|                                   | INFOID:000000006094585 |
|                                   |                        |
| loose conne                       | ction (unit side       |
|                                   |                        |
|                                   |                        |
| Resista                           | ance ( $\Omega$ )      |
|                                   |                        |
| Approx.                           | 108 – 132              |
| 2, "Diagnosis  <br>Installation". | Procedure".            |
|                                   |                        |
|                                   |                        |

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< DTC/CIRCUIT DIAGNOSIS >

## ADP BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006094586

[CAN SYSTEM (TYPE 11)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Driver seat control unit
- Harness connector B501
- Harness connector B11
- CAN gateway (With ICC system)

#### Is the inspection result normal?

YES (With ICC system)>>GO TO 2.

YES (Without ICC system)>>GO TO 3.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

### 1. Disconnect the connector of CAN gateway.

2. Check the continuity between the CAN gateway harness connector terminals.

|               | Continuity |            |         |
|---------------|------------|------------|---------|
| Connector No. | Termir     | Continuity |         |
| M125          | 4          | 6          | Existed |
| M125          | 10         | 12         | Existed |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway. (With ICC system)
- 2. Disconnect the connector of driver seat control unit.
- 3. Check the resistance between the driver seat control unit harness connector terminals.

| Driv          | Resistance (Ω) |  |                 |
|---------------|----------------|--|-----------------|
| Connector No. | Termi          |  |                 |
| B514          | 23 24          |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the driver seat control unit branch line.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the driver seat control unit. Refer to <u>ADP-73</u>, "DRIVER SEAT <u>CONTROL UNIT : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to ADP-146. "Removal and Installation".

- YES (Past error)>>Error was detected in the driver seat control unit branch line.
- NO >> Repair the power supply and the ground circuit.

### CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 11)]

#### CAN COMMUNICATION CIRCUIT А **Diagnosis Procedure** INFOID:000000006094595 **1.**CONNECTOR INSPECTION 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect all the unit connectors on CAN communication system. 3. C Check terminals and connectors for damage, bend and loose connection. 4. Is the inspection result normal? YES >> GO TO 2. D NO >> Repair the terminal and connector. 2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Ε Check the continuity between the data link connector terminals. Data link connector Continuity F Connector No. Terminal No. M182 6 14 Not existed Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Н Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M182 14 Not existed Is the inspection result normal? Κ YES >> GO TO 4. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. ${f 4}$ . CHECK ECM AND IPDM E/R TERMINATION CIRCUIT Remove the ECM and the IPDM E/R. 1. Check the resistance between the ECM terminals. 2. VQ37VHR LAN ECM Resistance $(\Omega)$ Terminal No. Ν 114 113 Approx. 108 - 132 VK56VD ECM Resistance $(\Omega)$ Terminal No. Ρ 146 151 Approx. 108 - 132 Check the resistance between the IPDM E/R terminals. IPDM E/R Resistance $(\Omega)$ Terminal No. Approx. 108 - 132 40 39

< DTC/CIRCUIT DIAGNOSIS >

## **CAN COMMUNICATION CIRCUIT**

< DTC/CIRCUIT DIAGNOSIS >

#### Is the measurement value within the specification?

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

## 5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

### **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication system. **NOTE:**

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

### [CAN SYSTEM (TYPE 12)] < DTC/CIRCUIT DIAGNOSIS > **DTC/CIRCUIT DIAGNOSIS** А MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT **Diagnosis** Procedure INFOID:000000006093545 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. Disconnect the following harness connectors. ECM -D Low tire pressure warning control unit \_ A/C auto amp. 4. Check the continuity between the low tire pressure warning control unit harness connector and the A/C Е auto amp. harness connector. Low tire pressure warning control unit A/C auto amp. harness connector harness connector Continuity F Connector No. Terminal No. Connector No. Terminal No. 2 12 Existed M43 M66 1 11 Existed Is the inspection result normal? YES (Present error)>>Check CAN system type decision again. Н YES (Past error)>>Error was detected in the main line between the low tire pressure warning control unit and the A/C auto amp. NO >> Replace the PCB harness. Κ L LAN Ν Ρ

MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

### MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006093546

[CAN SYSTEM (TYPE 12)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- A/C auto amp.
- AV control unit
- Check the continuity between the A/C auto amp. harness connector and the AV control unit harness connector.
- Models with navigation system

| A/C auto amp. h | arness connector | AV control unit harness connector       Connector No.   Terminal No. |    | Continuity |
|-----------------|------------------|--|----|------------|
| Connector No.   | Terminal No.     |  |    | Continuity |
| M66             | 12               | M210   | 90 | Existed    |
| 1000            | 11               |  | 74 | Existed    |

#### Models without navigation system

| A/C auto amp. h | arness connector | AV control unit ha         | arness connector | Continuity |
|-----------------|------------------|----------------------------|------------------|------------|
| Connector No.   | Terminal No.     | Connector No. Terminal No. |                  | Continuity |
| Mcc             | 12               | MOA                        | 81               | Existed    |
| M66 11          | M84              | 80                         | Existed          |            |

#### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the A/C auto amp. and the air bag diagnosis sensor unit.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIA  | GNOSIS >   | _                 | [CAN                 | SYSTEM (TYPE 12)]        |  |  |
|--|--|-------------------|----------------------|--------------------------|--|--|
| MAIN LINE BE   | ΓWEEN Α-BAG  | AND AV CIRC       | UIT                  |                          |  |  |
| Diagnosis Proced   | lure   |                   |                      | INFOID:000000006093547   |  |  |
| 1.CHECK HARNESS  |  | N CIRCUIT)        |                      |                          |  |  |
| <ul> <li>3. Disconnect the for</li> <li>ECM</li> <li>A/C auto amp.</li> <li>AV control unit</li> </ul> | ittery cable from the n<br>llowing harness conne<br>lity between the A/C a | ectors.           | nnector and the AV c | ontrol unit harness con- |  |  |
| A/C auto amp. ł  | narness connector  | AV control unit h | arness connector     | - Continuity             |  |  |
| Connector No.  | Terminal No.   | Connector No.     | Terminal No.         | Continuity               |  |  |
| Mee  | 12   | M210              | 90                   | Existed                  |  |  |
| Ινιοο  | M66 M210 74 Existed  |                   |                      |                          |  |  |
| - Models without na  | avigation system   |                   |                      |                          |  |  |
| A/C auto amp. h  | narness connector  | AV control unit h | arness connector     | Questionaite             |  |  |

Connector No.

M84

YES (Past error)>>Error was detected in the main line between the air bag diagnosis sensor unit and the AV

Terminal No.

81

80

MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

Connector No.

M66

NO

Is the inspection result normal?

control unit.

>> Replace the PCB harness.

Terminal No.

12

11

YES (Present error)>>Check CAN system type decision again.

Continuity

Existed

Existed

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### < DTC/CIRCUIT DIAGNOSIS >

MAIN LINE BETWEEN AV AND M&A CIRCUIT

## Diagnosis Procedure

INFOID:000000006093548

[CAN SYSTEM (TYPE 12)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- AV control unit
- Combination meter
- 4. Check the continuity between the AV control unit harness connector and the combination meter harness connector.
- Models with navigation system

| AV control unit h | arness connector | Combination meter harness connector |              | Continuity |
|-------------------|------------------|-------------------------------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No.                       | Terminal No. | Continuity |
| M210              | 90               | M53                                 | 14           | Existed    |
| WZ 10             | 74               |                                     | 15           | Existed    |

#### Models without navigation system

| AV control unit h | rness connector Combination meter harness connector |               | tor Combination meter harness connector |              |
|-------------------|---|---------------|---|--------------|
| Connector No.     | Terminal No.  | Connector No. | Terminal No.                            | - Continuity |
| M84               | 81  | MEQ           | 14                                      | Existed      |
|                   | 80  | M53           | 15                                      | Existed      |

### Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AV control unit and the combination meter.

NO >> Replace the PCB harness.

| <pre>&lt; DTC/CIRCUIT DIAC</pre> MAIN LINE BET  | GNOSIS >  | ND DLC CIRC   | [CAN S                 | SYSTEM (TYPE 12)]      | ٥ |
|---|---|---------------|------------------------|------------------------|---|
| Diagnosis Proced  | ure   |               |                        | INFOID:00000006093549  | А |
| 1.CHECK HARNESS   | CONTINUITY (OPEI  | N CIRCUIT)    |                        |                        | В |
| <ul> <li>3. Disconnect the fol</li> <li>ECM</li> <li>Combination mete</li> <li>Harness connector</li> </ul> | ttery cable from the n<br>lowing harness conne<br>r<br>rs M105 and M181 | ectors.       | s connector and the ha | irness connector.      | C |
| Combination mete  | r harness connector   | Harness       | connector              | Continuity             | _ |
| Connector No.   | Terminal No.  | Connector No. | Terminal No.           | Continuity             | Е |
| M53   | 14  | - M105        | 7                      | Existed                |   |
| ND2   | 15  | - 10105       | 8                      | Existed                | F |
| nector.   | >Check CAN system   |               | the combination meter  | and the data link con- | G |

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### MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### **Diagnosis** Procedure

INFOID:000000006093550

[CAN SYSTEM (TYPE 12)]

# 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect the following harness connectors.
- ECM
- Harness connectors M181 and M105
- BCM
- 4. Check the continuity between the harness connector and the BCM harness connector.

| Harness connector BCM harness connector |              | Continuity    |              |            |
|---|--------------|---------------|--------------|------------|
| Connector No.                           | Terminal No. | Connector No. | Terminal No. | Continuity |
| M105                                    | 7            | M120          | 39           | Existed    |
|   | 8            |               | 40           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the data link connector and the BCM.

NO >> Replace the PCB harness.

| < DTC/CIRCUIT DIAG  |   | WEEN BCM A   | ND 4WD CIRCUI         | T<br>I SYSTEM (TYPE 12)] |
|---|---|--|-----------------------|--------------------------|
| MAIN LINE BET   |   | ND 4WD CIF   | -                     |                          |
| Diagnosis Proced  | ure   |  |                       | INFOID:000000006093552   |
| 1.CHECK CONNECT   | OR  |  |                       |                          |
| <ol> <li>Check the followir<br/>and harness side)</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Harness connecto</li> <li>Is the inspection result<br/>YES &gt;&gt; GO TO 2.<br/>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the fol</li> <li>BCM</li> <li>Harness connecto</li> </ol> | ttery cable from the non-<br>ng terminals and conn<br>r M20 and PCB harned<br>r M7<br>r B1<br><u>normal?</u><br>e terminal and connect<br>CONTINUITY (OPEN<br>lowing harness connect<br>r M20 | nectors for damag<br>ess side connector<br>tor.<br>N CIRCUIT)<br>ectors. | e, bend and loose con | nection (connector side  |
|   | ss connector  |  | mess connector        |                          |
| Connector No.   | Terminal No.  |  | rminal No.            | - Continuity             |
|   | 39  |  | 35                    | Existed                  |
| M120  | 40  |  | 36                    | Existed                  |
| <ul> <li>3.CHECK HARNESS</li> <li>1. Disconnect the ha</li> <li>2. Check the continu</li> <li>Harness</li> </ul>  | ne PCB harness.<br>CONTINUITY (OPEN<br>rness connectors M7<br>ity between the harne   | and B1.<br>ss connectors.<br>Hame  | ess connector         | Continuity               |
| Connector No.   | Terminal No.  | Connector No.  | Terminal No.          |                          |
| M20   | 35  | M7   | 72                    | Existed                  |
| le the inerestion result  | 36  |  | 73                    | Existed                  |
| Is the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>4.CHECK HARNESS<br>Check the continuity b  | e main line between th<br>CONTINUITY (OPEN  | N CIRCUIT)   |                       |                          |
| Connector No.   |   | Terminal No.   |                       | Continuity               |
| B1  | 72  |  | 74                    | Existed                  |
|   | 73  |  | 75                    | Existed                  |

Is the inspection result normal?

73

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the BCM and the AWD control unit. NO >> Replace the body harness.

75

Existed

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006093555

[CAN SYSTEM (TYPE 12)]

### **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B1
- Harness connector M7
- Harness connector M6
- Harness connector E106

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors B1 and M7.

2. Check the continuity between the harness connector terminals.

| Connector No. | Terminal No. |    | Continuity |
|---------------|--------------|----|------------|
| B1            | 72           | 74 | Existed    |
|               | 73           | 75 | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the body harness.

### **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connectors M6 and E106.

2. Check the continuity between the harness connectors.

| Harness       | Harness connector Harness connector |               | Continuity   |            |
|---------------|-------------------------------------|---------------|--------------|------------|
| Connector No. | Terminal No.                        | Connector No. | Terminal No. | Continuity |
| M7            | 74                                  | M6            | 22           | Existed    |
| 1017          | 75                                  |               | 23           | Existed    |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the main line between the harness connectors M7 and M6.

### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the continuity between the harness connector and the ABS actuator and electric unit (control unit) harness connector.

| Harness       | connector    | ABS actuator and electric unit (control unit)<br>harness connector |              | Continuity |
|---------------|--------------|--|--------------|------------|
| Connector No. | Terminal No. | Connector No.  | Terminal No. | -          |
| F400          | 22           | E 44   | 25           | Existed    |
| E106 -        | 23           | E41  | 15           | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the AWD control unit and the ABS actuator and electric unit (control unit).

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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NO >> Repair the main line between the harness connector E106 and the ABS actuator and electric unit (control unit).

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## MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

### Diagnosis Procedure

INFOID:000000006093558

[CAN SYSTEM (TYPE 12)]

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (connector side and harness side).
- Harness connector B33
- Harness connector B245

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the following harness connectors.

- Side radar LH
- Harness connectors B33 and B245
- 2. Check the continuity between the side radar LH harness connector and the harness connector.

| Side radar LH I | Side radar LH harness connector Harness connector |               | Continuity   |            |
|-----------------|---|---------------|--------------|------------|
| Connector No.   | Terminal No.                                      | Connector No. | Terminal No. | Continuity |
| B52             | 4   | B33           | 13           | Existed    |
| D02             | 3   |               | 14           | Existed    |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B33.

## ${\it 3.}$ CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of side radar RH.
- 2. Check the continuity between the harness connector and the side radar RH harness connector.

| Harness connector Side radar RH harness connector |              | Continuity    |              |            |
|---|--------------|---------------|--------------|------------|
| Connector No.                                     | Terminal No. | Connector No. | Terminal No. | Continuity |
| B245  | 13           | B252          | 4            | Existed    |
| D243  | 14           | - BZJZ        | 3            | Existed    |

Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the side radar LH and the side radar RH.

NO >> Repair the main line between the harness connector B245 and the side radar RH.

| MAIN LINE BE   | TWEEN RDR-R  | AND APA CIRC  | CUIT  |                        |
|--|--|---|---|------------------------|
| Diagnosis Procec   | lure   |   |   | INFOID:000000006093555 |
|  | OR   |   |   |                        |
| <ol> <li>Check the following and harness side)</li> <li>Harness connectore</li> <li>Harness connectore</li> <li>Harness connectore</li> <li>Harness connectore</li> <li>Harness connectore</li> <li>Sthe inspection result</li> <li>YES &gt;&gt; GO TO 2.</li> <li>NO &gt;&gt; Repair the</li> <li>CHECK HARNESS</li> <li>Disconnect the following</li> <li>Side radar RH</li> <li>Harness connectore</li> </ol> | attery cable from the neing terminals and conru-<br>or B201<br>or M117<br>or M20 and PCB harne<br><u>t normal?</u><br>e terminal and connect<br>S CONTINUITY (OPEN<br>llowing harness conner<br>ors B201 and M117            | nectors for damage, b<br>ss side connector<br>or.<br>I CIRCUIT)<br>ctors.   |   |                        |
|  | hity between the side ra   | adar RH harness conn<br>Harness c   |   | s connector.           |
| Connector No.  | Terminal No.   | Connector No.   | Terminal No.  | Continuity             |
|  | 4  | Door  | 66  | Existed                |
| B252   | 3  | B201 –  | 67  | Existed                |
| YES >> GO TO 3.  | e main line between the  | e side radar RH and th  | ne harness connector                                  | B201.                  |
| NO >> Repair the<br><b>3.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu  | CONTINUITY (OPEN<br>Irness connector M20.<br>Ity between the harne   |   |   |                        |
| NO >> Repair the<br><b>3.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu  | CONTINUITY (OPEN<br>arness connector M20.  | ss connectors.  |   | Continuity             |
| NO >> Repair the<br>3.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>Harness<br>Connector No.  | CONTINUITY (OPEN<br>arness connector M20.<br>hity between the harnes   | ss connectors.<br>Harness c<br>Connector No.  | onnector  | Continuity             |
| NO >> Repair the<br><b>3.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>Harness<br>Connector No.<br>M117  | CONTINUITY (OPEN<br>arness connector M20.<br>hity between the harnes<br>connector<br>Terminal No.<br>66<br>67  | ss connectors.<br>Harness c   | onnector<br>Terminal No.                              |                        |
| NO >> Repair the<br><b>3.</b> CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>Harness<br>Connector No.<br>M117<br>Is the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br><b>4.</b> CHECK HARNESS<br>1. Disconnect the ha  | CONTINUITY (OPEN<br>arness connector M20.<br>hity between the harnes<br>connector<br>Terminal No.<br>66<br>67  | ss connectors.<br>Harness c<br>Connector No.<br>M20<br>e harness connectors<br>I CIRCUIT)<br>50 and M151.                                       | onnector<br>Terminal No.<br>38<br>40<br>M117 and M20. | Existed                |
| NO >> Repair the<br>3.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>Harness<br>Connector No.<br>M117<br>Is the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu  | CONTINUITY (OPEN<br>arness connector M20.<br>hity between the harnes<br>connector<br>Terminal No.<br>66<br>67<br>t normal?<br>e main line between the<br>CONTINUITY (OPEN<br>arness connectors M15                           | ss connectors.<br>Harness c<br>Connector No.<br>M20<br>e harness connectors<br>I CIRCUIT)<br>50 and M151.                                       | onnector<br>Terminal No.<br>38<br>40<br>M117 and M20. | Existed<br>Existed     |
| NO >> Repair the<br>3.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>Harness<br>Connector No.<br>M117<br>Is the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>PCB harne   | CONTINUITY (OPEN<br>arness connector M20.<br>hity between the harnes<br>connector<br>Terminal No.<br>66<br>67<br>t normal?<br>e main line between the<br>CONTINUITY (OPEN<br>arness connectors M15<br>hity between the PCB h | ss connectors.<br>Harness c<br>Connector No.<br>M20<br>e harness connectors<br>I CIRCUIT)<br>50 and M151.<br>harness connector and              | onnector<br>Terminal No.<br>38<br>40<br>M117 and M20. | Existed                |
| NO >> Repair the<br>3.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>Harness<br>Connector No.<br>M117<br>Is the inspection result<br>YES >> GO TO 4.<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu<br>PCB harne<br>Termi  | CONTINUITY (OPEN<br>arness connector M20.<br>hity between the harnes<br>connector<br>Terminal No.<br>66<br>67<br>t normal?<br>e main line between the<br>CONTINUITY (OPEN<br>arness connectors M15<br>hity between the PCB h | ss connectors.<br>Harness c<br>Connector No.<br>M20<br>e harness connectors<br>I CIRCUIT)<br>50 and M151.<br>harness connector and<br>Harness c | onnector<br>Terminal No.<br>38<br>40<br>M117 and M20. | Existed<br>Existed     |

YES (Present error)>>Check CAN system type decision again. YES (Past error)>>Error was detected in the main line between the side radar RH and the accelerator pedal actuator.

# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace the PCB harness.

| MAIN LINE BETWEEN APA AND LANE CIRCUIT                                 |                        |  |  |  |  |  |
|--|------------------------|--|--|--|--|--|
| < DTC/CIRCUIT DIAGNOSIS > [CAN SYSTEM (TYPE 12)]                       |                        |  |  |  |  |  |
| MAIN LINE BETWEEN APA AND LANE CIRCUIT                                 |                        |  |  |  |  |  |
| Diagnosis Procedure  | INFOID:000000006093560 |  |  |  |  |  |
| 1. CHECK HARNESS CONTINUITY (OPEN CIRCUIT)                             |                        |  |  |  |  |  |
| 1. Turn the ignition switch OFF.                                       |                        |  |  |  |  |  |
| 2. Disconnect the battery cable from the negative terminal.            |                        |  |  |  |  |  |
| 3. Disconnect the following harness connectors.                        |                        |  |  |  |  |  |
| - ADAS control unit  |                        |  |  |  |  |  |
| <ul> <li>Harness connectors M151 and M150</li> </ul>                   |                        |  |  |  |  |  |
| <ul> <li>Harness connectors M110 and R7</li> </ul>                     |                        |  |  |  |  |  |
| <ol><li>Check the continuity between the harness connectors.</li></ol> |                        |  |  |  |  |  |

| Harness       | Harness connector |               | Harness connector |            | _ |
|---------------|-------------------|---------------|-------------------|------------|---|
| Connector No. | Terminal No.      | Connector No. | Terminal No.      | Continuity | E |
| M150          | 11                | M110          | 13                | Existed    |   |
| 101150        | 10                | INTTO         | 2                 | Existed    | F |

## Is the inspection result normal?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the main line between the accelerator pedal actuator and the lane G camera unit.

NO >> Replace the PCB harness.

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# [CAN SYSTEM (TYPE 12)]

# ECM BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093561

## 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ECM
- Harness connector M30 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ECM.
- 2. Check the resistance between the ECM harness connector terminals.

- VQ37VHR

| ECM harness connector |              |     | Resistance (Ω)    |
|-----------------------|--------------|-----|-------------------|
| Connector No.         | Terminal No. |     | Resistance (22)   |
| M107                  | 114          | 113 | Approx. 108 – 132 |

VK56VD

|               | ECM harness connector |     |                   |
|---------------|-----------------------|-----|-------------------|
| Connector No. | Terminal No.          |     | Resistance (Ω)    |
| M160          | 146                   | 151 | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the ECM. Refer to the following.

• VQ37VHR: EC-180, "Diagnosis Procedure"

VK56VD: EC-716, "Diagnosis Procedure"

#### Is the inspection result normal?

YES (Present error)>>Replace the ECM. Refer to the following.

- VQ37VHR: <u>EC-535</u>, "Removal and Installation"
- VK56VD: <u>EC-535</u>, "Removal and Installation"

YES (Past error)>>Error was detected in the ECM branch line.

NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M30.
- 2. Check the continuity between the ECM harness connector and the harness connector.

- VQ37VHR

| ECM harness connector |              | Harness connector          |     | Continuity |  |
|-----------------------|--------------|----------------------------|-----|------------|--|
| Connector No.         | Terminal No. | Connector No. Terminal No. |     | Continuity |  |
| M107                  | 114          | - M30                      | 439 | Existed    |  |
| MITO7                 | 113          |                            | 438 | Existed    |  |

- VK56VD

# ECM BRANCH LINE CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

## [CAN SYSTEM (TYPE 12)]

| ECM harne     | ss connector | Harness connector |              | Continuity | A |
|---------------|--------------|-------------------|--------------|------------|---|
| Connector No. | Terminal No. | Connector No.     | Terminal No. | Continuity |   |
| M160          | 146          | M30               | 439          | Existed    |   |
| MITOO         | 151          | MSO               | 438          | Existed    | В |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO (VQ37VHR)>>Repair the harness between the ECM harness connector M107 and the harness connector M30.

NO (VK56VD)>>Repair the harness between the ECM harness connector M160 and the harness connector M30.

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# TPMS BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093562

[CAN SYSTEM (TYPE 12)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Low tire pressure warning control unit
- Harness connector M29 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of low tire pressure warning control unit.
- 2. Check the resistance between the low tire pressure warning control unit harness connector terminals.

| Low tire pro  | essure warning control unit harnes | Resistance (Ω) |                 |
|---------------|------------------------------------|----------------|-----------------|
| Connector No. | Termi                              | nal No.        |                 |
| M43           | 2                                  | 1              | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

# $\mathbf{3}$ . Check power supply and ground circuit

Check the power supply and the ground circuit of the low tire pressure warning control unit. Refer to <u>WT-53.</u> <u>"Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to <u>WT-70, "Removal and</u> <u>Installation"</u>.

YES (Past error)>>Error was detected in the low tire pressure warning control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M29.
- Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

| Low tire pressure warning control unit<br>harness connector |              | Harness connector          |     | Continuity |  |
|---|--------------|----------------------------|-----|------------|--|
| Connector No.   | Terminal No. | Connector No. Terminal No. |     |            |  |
| M43   | 2            | M29                        | 396 | Existed    |  |
| 10145   | 1            | 10129                      | 395 | Existed    |  |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the low tire pressure warning control unit harness connector M43 and the harness connector M29.

## **CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)** [CAN SYSTEM (TYPE 12)]

# < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

| Diagnosis Proced  | ure   |  |   | INFOID:00000000609356                                     |
|---|---|--|---|---|
| 1.снеск отс   |   |  |   |   |
| Check DTC of the CAN  | gateway with CONS   | SULT-III.  |   |   |
| <u>Is U1010 or B2600 indi</u>   | cated?  |  |   |   |
| NO >> GO TO 2.  | diagnosis of the indic  | ated DTC.  |   |   |
| 2. CHECK CONNECT  | ЭR  |  |   |   |
| <ol> <li>Check the following<br/>nector side).</li> <li>CAN gateway</li> <li>Harness connector<br/>Is the inspection result<br/>YES &gt;&gt; GO TO 3.</li> </ol>                            | tery cable from the ne<br>g terminals and conne<br>M28 and PCB harne<br>normal?<br>terminal and connect   | ectors for damage, be<br>ess side connector<br>tor.  | end and loose conne   | ction (unit side and con                                  |
|   | nector of CAN gatew   |  |   |   |
|   |   | gateway harness cor  | nector terminals.   |   |
|   |   |  |   |   |
|   | CAN gateway harne   |  |   | Resistance ( $\Omega$ )                                   |
| Connector No.   |   | Terminal No.   | -   | A   |
| M125  | 1   |  | 7   | Approx. 54 – 66   |
| Is the measurement va<br>YES >> GO TO 4.<br>NO >> GO TO 5.  | ·   |  |   |   |
| 4.CHECK POWER SU  | JPPLY AND GROUN   | D CIRCUIT  |   |   |
| Chook the newer curr  | ly and the ground ci  | ircuit of the CAN date   | eway Refer to I AN  | 142 "Diagnosis Proce                                      |
|   |   | four of the of the gate  |   | -143, Diagnosis Floce                                     |
| dure".  | normal?   |  |   | -143, Diagnosis Floce                                     |
| <u>dure"</u> .<br><u>Is the inspection result</u>   |   | -  |   |   |
| <u>dure"</u> .<br><u>Is the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Er  | Replace the CAN ga<br>ror was detected in the contract of the | ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran  | 144, "Removal and I   | Installation".  |
| <u>dure"</u> .<br><u>Is the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the  | Replace the CAN ga<br>ror was detected in th<br>power supply and the  | ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit.                                       | 144, "Removal and I   | Installation".  |
| <u>dure"</u> .<br><u>Is the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Er  | Replace the CAN ga<br>ror was detected in th<br>power supply and the  | ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit.                                       | 144, "Removal and I   | Installation".  |
| dure".<br><u>Is the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br><b>5.</b> CHECK HARNESS<br>1. Disconnect the har                          | Replace the CAN ga<br>for was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.  | ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran<br>e ground circuit.<br>N CIRCUIT)                         | 144, "Removal and l<br>ch line (CAN commu                         | Installation".<br>unication circuit 1).                   |
| dure".<br><u>Is the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br><b>5.</b> CHECK HARNESS<br>1. Disconnect the har                          | Replace the CAN gate<br>for was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.<br>ty between the CAN g  | ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran-<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con | 144, "Removal and l<br>ch line (CAN commu                         | Installation".<br>unication circuit 1).<br>ess connector. |
| dure".<br><u>Is the inspection result</u><br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br><b>5.</b> CHECK HARNESS<br>1. Disconnect the har<br>2. Check the continui | Replace the CAN gate<br>for was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>ness connector M28.<br>ty between the CAN g  | ateway. Refer to <u>LAN-</u><br>ne CAN gateway bran-<br>e ground circuit.<br>N CIRCUIT)<br>gateway harness con | 144, "Removal and I<br>ch line (CAN commu<br>nector and the harne | Installation".<br>unication circuit 1).                   |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

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NO >> Repair the harness between the CAN gateway harness connector M125 and the harness connector M28.

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Existed

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

## < DTC/CIRCUIT DIAGNOSIS >

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

## Diagnosis Procedure

INFOID:000000006093564

[CAN SYSTEM (TYPE 12)]

# 1.CHECK DTC

Check DTC of the CAN gateway with CONSULT-III.

## Is U1010 or B2600 indicated?

YES >> Perform a diagnosis of the indicated DTC.

NO >> GO TO 2.

# 2. CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- CAN gateway
- Harness connector M23 and PCB harness side connector
- Harness connector M20 and PCB harness side connector
- Harness connector M7
- Harness connector B1

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the terminal and connector.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | Continuity |            |         |
|---------------|------------|------------|---------|
| Connector No. | Termi      | Continuity |         |
| M125          | 4          | 6          | Existed |
| 101125        | 10         | 12         | Existed |

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

## **4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the CAN gateway. Refer to <u>LAN-143</u>, "Diagnosis Procedure".

#### Is the inspection result normal?

YES (Present error)>>Replace the CAN gateway. Refer to LAN-144, "Removal and Installation".

YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2).

# NO >> Repair the power supply and the ground circuit.

# **5.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

#### 1. Disconnect the harness connector M23.

2. Check the continuity between the CAN gateway harness connector and the harness connector.

| CAN gateway h | CAN gateway harness connector |               | Harness connector |            |
|---------------|-------------------------------|---------------|-------------------|------------|
| Connector No. | Terminal No.                  | Connector No. | Terminal No.      | Continuity |
| M125          | 4                             | M23           | 133               | Existed    |
| 1123          | 10                            | IVIZ5         | 135               | Existed    |

#### Is the inspection result normal?

YES >> GO TO 6.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

[CAN SYSTEM (TYPE 12)]

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#### < DTC/CIRCUIT DIAGNOSIS >

| NO | >> Repair the harness between the CAN gateway harness connector M125 and the harness connec- |  |
|----|--|--|
|    | tor M23.   |  |

# **6.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M20.
- 2. Check the continuity between the PCB harness connectors.

| antinuit <i>i</i> | PCB harness connector | PCB harness connector |
|-------------------|-----------------------|-----------------------|
| ontinuity C       | Terminal No.          | Terminal No.          |
| Existed           | 24                    | 133                   |
| Existed           | 27                    | 135                   |

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the PCB harness.

## **7.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connectors M7 and B1.

2. Check the continuity between the harness connectors.

| _   | Continuity | Harness connector |               | Harness connector |               |
|-----|------------|-------------------|---------------|-------------------|---------------|
| G   | Continuity | Terminal No.      | Connector No. | Terminal No.      | Connector No. |
| _   | Existed    | 34                | MZ            | 24                | M20           |
| - н | Existed    | 35                | M7            | 27                | IVIZU         |

#### Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair the harness between the harness connectors M20 and M7.

## **8.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

Check the continuity between the harness connector terminals.

| - | Connector No. | Termi | Continuity | -       |   |
|---|---------------|-------|------------|---------|---|
| - | D4            | 34    | 32         | Existed | ĸ |
|   | B1            | 35    | 33         | Existed |   |

#### Is the inspection result normal?

YES >> Repair the harness between the harness connector M7 and the CAN gateway harness connector M125.

NO >> Replace the body harness.

# HVAC BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093565

[CAN SYSTEM (TYPE 12)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- A/C auto amp.
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of A/C auto amp.
- 2. Check the resistance between the A/C auto amp. harness connector terminals.

| A/C auto amp. harness connector |        | Resistance ( $\Omega$ ) |  |
|---------------------------------|--------|-------------------------|--|
| Connector No. Termina           | al No. |                         |  |
| M66 12                          | 12 11  |                         |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

# **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the A/C auto amp. Refer to <u>HAC-167, "A/C AUTO AMP. :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the A/C auto amp. Refer to HAC-201, "Removal and Installation".

- YES (Past error)>>Error was detected in the A/C auto amp. branch line.
- NO >> Repair the power supply and the ground circuit.

## **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the harness connector M28.
- 2. Check the continuity between the A/C auto amp. harness connector and the harness connector.

| A/C auto amp. h | arness connector | Harness connector |              | Continuity |
|-----------------|------------------|-------------------|--------------|------------|
| Connector No.   | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| M66             | M66 12 M28       | 325               | Existed      |            |
| MOO             | 11               | IVIZO             | 327          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the A/C auto amp. harness connector M66 and the harness connector M28.

| -  | ure   |  |   | INFOID:000000006093566                             |
|--|---|--|---|--|
| .CHECK CONNECT   | OR  |  |   |  |
| Check the following<br>nector side).<br>A/T assembly<br>Harness connector<br>Harness connector<br>the inspection result<br>YES >> GO TO 2.<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the cor                    | tery cable from the ne<br>g terminals and conne<br>• F103<br>• M116<br>• M28 and PCB harne<br>normal?<br>terminal and connect<br>FOR OPEN CIRCUIT                                   | ectors for damage, bei<br>ss side connector<br>or.<br>-<br>bly.  |   | ction (unit side and con-                          |
| Check the resistan   | ce between the A/T a  | ssembly harness con  | nector terminals.                               |  |
| Connector No.  | A rassensity namess connector     Resistance (Ω)       Terminal No.     Γεινιαι Νο.   |  |   |  |
| F61  | 3   |  | 8   | Approx. 54 – 66                                    |
| YES >> GO TO 3.<br>NO >> GO TO 4.  | JPPLY AND GROUN   | D CIRCUIT  |   |  |
| heck the power suppl<br>the inspection result<br>YES (Present error)>><br>ponent Par<br>parts list.)<br>YES (Past error)>>Err<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har                                 | normal?<br>Replace the control was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.  | uit of the TCM. Refer to<br>valve with TCM. Refer<br>e A/T assembly if con-<br>e TCM branch line.<br>e ground circuit.<br>I CIRCUIT)                   | to <u>TM-8, "A/T CON</u><br>trol valve with TCM | ITROL SYSTEM : Com-<br>is not listed in the latest |
| heck the power suppl<br>the inspection result<br>YES (Present error)>><br>ponent Par<br>parts list.)<br>YES (Past error)>>Error)>>Error<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continui | normal?<br>Replace the control v<br>rts Location". (Replace<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ty between the A/T as | uit of the TCM. Refer<br>valve with TCM. Refer<br>e A/T assembly if con<br>e TCM branch line.<br>ground circuit.<br>I CIRCUIT)<br>ssembly harness conn | to <u>TM-8, "A/T CON</u><br>trol valve with TCM | ITROL SYSTEM : Com-<br>is not listed in the latest |
| heck the power suppl<br>the inspection result<br>YES (Present error)>><br>ponent Par<br>parts list.)<br>YES (Past error)>>Err<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har                                 | normal?<br>Replace the control v<br>rts Location". (Replace<br>ror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>rness connector M28.<br>ty between the A/T as | uit of the TCM. Refer to<br>valve with TCM. Refer<br>e A/T assembly if con-<br>e TCM branch line.<br>e ground circuit.<br>I CIRCUIT)                   | to <u>TM-8, "A/T CON</u><br>trol valve with TCM | ITROL SYSTEM : Com-<br>is not listed in the latest |

NO >> Repair the harness between the A/T assembly harness connector F61 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

# A-BAG BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093567

## WARNING:

- Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait 3 minutes or more. (To discharge backup capacitor.)
- Never use unspecified tester or other measuring device.

1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Air bag diagnosis sensor unit
- Harness connector M26 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness and/or the PCB harness.

2.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to SRC-32, "Work Flow".

Is the inspection result normal?

- YES >> Replace the main harness and/or the PCB harness.
- NO >> Replace parts whose air bag system has a malfunction.

# **AV BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 12)]

| AV BRANCH L  | INE CIRCUIT  |  |   |                          |
|--|--|--|---|--------------------------|
| Diagnosis Proce  | dure   |  |   | INFOID:000000006093568   |
| 1.CHECK CONNEC   | TOR  |  |   |                          |
| <ol> <li>Check the followin nector side).</li> <li>AV control unit</li> <li>Harness connect</li> <li>Is the inspection resurve YES &gt;&gt; GO TO 2 NO &gt;&gt; Repair th</li> <li>CHECK HARNES</li> <li>Disconnect the control of the con</li></ol> | attery cable from the n<br>ng terminals and conn<br>or M25 and PCB harne<br><u>It normal?</u><br>e terminal and connec<br>S FOR OPEN CIRCUI<br>onnector of AV control<br>unce between the AV c | ectors for damage, be<br>ess side connector<br>tor.<br>T<br>unit.  |   | tion (unit side and con- |
|  | AV control unit harn   | ess connector  |   |                          |
| Connector No.  |  | Terminal No.   |   | Resistance ( $\Omega$ )  |
| M210   | 90   |  | 74  | Approx. 54 – 66          |
| - Models without n   | avigation system   |  |   |                          |
|  | AV control unit harn   | ess connector  |   | Decistance (O)           |
| Connector No.  |  | Terminal No.   |   | Resistance ( $\Omega$ )  |
| M84  | 81   |  | 80  | Approx. 54 – 66          |
| YES >> GO TO 3<br>NO >> GO TO 4<br><b>3.</b> CHECK POWER 5<br>Check the power sup<br>• Base audio without<br>• BOSE audio with na<br>Is the inspection result<br>YES (Present error)<br>• Base a<br>• BOSE a<br>YES (Past error)<br>>> Repair th   | SUPPLY AND GROUN<br>ply and the ground circ<br>navigation system: <u>AV</u><br>avigation system: <u>AV-2</u>   | D CIRCUIT<br>cuit of the AV control u<br>-90, "AV CONTROL U<br>72, "AV CONTROL U<br>trol unit. Refer to the f<br>a system: <u>AV-120, "Rem</u><br>ystem: <u>AV-298, "Rem</u><br>he AV control unit bran<br>e ground circuit. | JNIT : Diagnosis Proc<br>NIT : Diagnosis Proce<br>following.<br>emoval and Installation<br>loval and Installation | edure"<br>edure"         |
| 1. Disconnect the h  | arness connector M25<br>uity between the AV co   | · ·  | nnector and the harne   | ss connector.            |
|  | harness connector  |  | connector   | Continuity               |
| Connector No.  | Terminal No.<br>90   | Connector No.  | Terminal No.<br>201   | Existed                  |
| M210   | 74   | M25  | 201   | Existed                  |
|  | 14   |  | 221   | LAISIGU                  |

Models without navigation system

< DTC/CIRCUIT DIAGNOSIS >

# **AV BRANCH LINE CIRCUIT**

## < DTC/CIRCUIT DIAGNOSIS >

| AV control unit h | arness connector | Harness connector |              | Continuity |
|-------------------|------------------|-------------------|--------------|------------|
| Connector No.     | Terminal No.     | Connector No.     | Terminal No. | Continuity |
| <br>M84           | 81               | M25               | 201          | Existed    |
|                   | 80               | IVI25             | 221          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO (With navigation system)>>Repair the harness between the AV control unit harness connector M210 and the harness connector M25.

NO (Without navigation system)>>Repair the harness between the AV control unit harness connector M84 and the harness connector M25.

< DTC/CIRCUIT DIAGNOSIS >

| M&A BRANCH LI   |   |  |   |  |  |  |
|---|---|--|---|--|--|--|
| Diagnosis Procedur  | e   |  |   | INFOID:000000006093569                     |  |  |
| 1. CHECK CONNECTOR  | र   |  |   |  |  |  |
| <ol> <li>Turn the ignition swite</li> <li>Disconnect the batter</li> <li>Check the following to<br/>nector side).</li> <li>Combination meter</li> <li>Harness connector N<br/>Is the inspection result no<br/>YES &gt;&gt; GO TO 2.</li> </ol>  | ry cable from the ne<br>erminals and conne<br>124 and PCB harne   | ectors for damage, be  | nd and loose conr   | nection (unit side and con-                |  |  |
| NO >> Repair the ter  | rminal and connect  |  |   |  |  |  |
| 2. CHECK HARNESS FOR  |   | Г  |   |  |  |  |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance</li> </ol>  |   | n meter.<br>vination meter harness   | s connector termin  | als.                                       |  |  |
| Combination meter harness connector   |   |  |   |  |  |  |
|   | Terminal No. Resistance (Ω)   |  |   |  |  |  |
| Connector No.   |   | Terminal No.   |   |  |  |  |
| M53   | 14  |  | 15  | Approx. 54 – 66                            |  |  |
| M53<br>s the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.   | e within the specific   | ation?   | 15  | Approx. 54 – 66                            |  |  |
| $\frac{M53}{\text{Is the measurement value}}$ $\frac{\text{YES}}{\text{YES}} \Rightarrow \text{GO TO 3.}$ $\frac{\text{NO}}{\text{NO}} \Rightarrow \text{GO TO 4.}$ $3.\text{CHECK POWER SUP}$  | e within the specific<br>PLY AND GROUNI<br>and the ground cire  | cation?<br>D CIRCUIT   |   | Approx. 54 – 66<br>MWI-70, "COMBINATION    |  |  |
| M53<br>Is the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SUP<br>Check the power supply<br>METER : Diagnosis Proce<br>Is the inspection result no<br>YES (Present error)>>R<br>YES (Past error)>>Error  | PLY AND GROUNI<br>and the ground circe<br>edure".<br>ormal?<br>eplace the combina   | ation?<br>D CIRCUIT<br>cuit of the combinatio<br>ation meter. Refer to <u>N</u><br>the combination meter b   | n meter Refer to<br>//WI-90, "Removal   | MWI-70. "COMBINATION                       |  |  |
| M53<br>Is the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SUP<br>Check the power supply<br>METER : Diagnosis Proce<br>Is the inspection result no<br>YES (Present error)>>R<br>YES (Past error)>>Error<br>NO >> Repair the po   | PLY AND GROUNI<br>and the ground cirred<br>edure".<br>ormal?<br>eplace the combination<br>was detected in the   | ation?<br>D CIRCUIT<br>cuit of the combinatio<br>ation meter. Refer to <u>N</u><br>e combination meter b<br>ground circuit.  | n meter Refer to<br>//WI-90, "Removal   | MWI-70. "COMBINATION                       |  |  |
| M53<br>s the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SUP<br>Check the power supply<br>METER : Diagnosis Proce<br>s the inspection result no<br>YES (Present error)>>R<br>YES (Past error)>>Error<br>NO >> Repair the po<br>4.CHECK HARNESS CO<br>1. Disconnect the harne  | e within the specific<br>PLY AND GROUNI<br>and the ground cirred<br>edure".<br>ormal?<br>eplace the combina<br>was detected in th<br>ower supply and the<br>ONTINUITY (OPEN<br>ess connector M24.                               | ation?<br>D CIRCUIT<br>cuit of the combinatio<br>ation meter. Refer to <u>N</u><br>the combination meter to<br>a ground circuit.<br>N CIRCUIT)   | n meter Refer to<br>//WI-90, "Removal<br>oranch line.                             | MWI-70, "COMBINATION<br>and Installation". |  |  |
| M53<br>Is the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SUP<br>Check the power supply<br>METER : Diagnosis Proce<br>Is the inspection result no<br>YES (Present error)>>R<br>YES (Past error)>>Error<br>NO >> Repair the po<br>4.CHECK HARNESS CO<br>1. Disconnect the harne  | e within the specific<br>PLY AND GROUN<br>and the ground circedure".<br>ormal?<br>eplace the combina<br>was detected in th<br>ower supply and the<br>ONTINUITY (OPEN<br>ess connector M24.<br>between the combi                 | ation?<br>D CIRCUIT<br>cuit of the combinatio<br>ation meter. Refer to <u>N</u><br>the combination meter b<br>a ground circuit.<br>N CIRCUIT)  | n meter Refer to<br><u>/WI-90, "Removal</u><br>oranch line.<br>connector and the  | MWI-70. "COMBINATION<br>and Installation". |  |  |
| M53<br>Is the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SUP<br>Check the power supply<br>METER : Diagnosis Proce<br>Is the inspection result no<br>YES (Present error)>>R<br>YES (Past error)>>Error<br>NO >> Repair the po<br>4.CHECK HARNESS CO<br>1. Disconnect the harne<br>2. Check the continuity                           | e within the specific<br>PLY AND GROUN<br>and the ground circedure".<br>ormal?<br>eplace the combina<br>was detected in th<br>ower supply and the<br>ONTINUITY (OPEN<br>ess connector M24.<br>between the combi                 | Exation?<br>D CIRCUIT<br>cuit of the combination<br>ation meter. Refer to <u>N</u><br>the combination meter to<br>a ground circuit.<br>N CIRCUIT)<br>Ination meter harness             | n meter Refer to<br><u>/WI-90, "Removal</u><br>oranch line.<br>connector and the  | MWI-70, "COMBINATION<br>and Installation". |  |  |
| M53<br>Is the measurement value<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER SUP<br>Check the power supply<br>METER : Diagnosis Proce<br>Is the inspection result no<br>YES (Present error)>>R<br>YES (Present error)>>R<br>YES (Past error)>>Error<br>NO >> Repair the po<br>4.CHECK HARNESS CO<br>1. Disconnect the harne<br>2. Check the continuity | e within the specific<br>PLY AND GROUNI<br>and the ground cirred<br>edure".<br>ormal?<br>eplace the combinator<br>was detected in the<br>ower supply and the<br>ONTINUITY (OPEN<br>ess connector M24.<br>between the combinator | Eation?<br>D CIRCUIT<br>cuit of the combination<br>ation meter. Refer to <u>N</u><br>be combination meter to<br>a ground circuit.<br>N CIRCUIT)<br>Ination meter harness<br>Harness of | n meter Refer to<br><u>//WI-90, "Removal</u><br>oranch line.<br>connector and the | MWI-70. "COMBINATION<br>and Installation". |  |  |

NO >> Repair the harness between the combination meter harness connector M53 and the harness con nector M24.

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# DLC BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093570

[CAN SYSTEM (TYPE 12)]

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Data link connector
- Harness connector M181
- Harness connector M105
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

|               | Data link connector |              | Resistance ( $\Omega$ ) |  |
|---------------|---------------------|--------------|-------------------------|--|
| Connector No. | Termi               | Terminal No. |                         |  |
| M182          | 6                   | 6 14         |                         |  |

#### Is the measurement value within the specification?

YES (Present error)>>Check CAN system type decision again.

YES (Past error)>>Error was detected in the data link connector branch line circuit.

NO >> GO TO 3.

# **3.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the data link connector and the harness connector.

| Data link connector |              | Harness connector |              | Continuity |  |
|---------------------|--------------|-------------------|--------------|------------|--|
| Connector No.       | Terminal No. | Connector No.     | Terminal No. | Continuity |  |
| M182                | 6            | M23               | 151          | Existed    |  |
| IVI I OZ            | 14           | IVIZ5             | 150          | Existed    |  |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the data link connector M182 and the harness connector M23.

# **BCM BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 12)]

| BCM BRANCH   | LINE CIRCUIT   |   |                         |                           |
|--|--|---|-------------------------|---------------------------|
| Diagnosis Proced   | lure   |   |                         | INFOID:000000060935       |
| 1.CHECK CONNECT  | TOR  |   |                         |                           |
| <ol> <li>Check the followin nector side).</li> <li>BCM</li> <li>Harness connector side inspection result YES &gt;&gt; GO TO 2. NO &gt;&gt; Repair the COM Source CHECK HARNESS</li> <li>Disconnect the communication of the second se</li></ol> | attery cable from the neightery cable from the neighterminals and connect<br>or M22 and PCB harne<br><u>t normal?</u><br>te terminal and connect<br>FOR OPEN CIRCUIT                                   | ectors for damage, b<br>ess side connector<br>or.   |                         | ection (unit side and con |
| 2. Check the resistar  | BCM harness c  |   | terminais.              |                           |
| Connector No.  |  | Terminal No.  |                         | Resistance ( $\Omega$ )   |
| M120   | 39   |   | 40                      | Approx. 54 – 66           |
| s the measurement va   | alue within the specific   | ation?  |                         |                           |
| Check the power support of the inspection result (Present error) > YES (Past error) >> E NO >> Repair the <b>4.</b> CHECK HARNESS 1. Disconnect the hat the the terror of the terror) and the terror of the terror of the terror of the terror of  | UPPLY AND GROUNI<br>oly and the ground circ<br>t normal?<br>>Replace the BCM. R<br>rror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>trness connector M22.                        | D CIRCUIT<br>uit of the BCM. Refe<br>efer to <u>BCS-79, "Re</u><br>e BCM branch line.<br>e ground circuit.<br>I CIRCUIT)                                  | emoval and Installation | <u>on"</u> .              |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER S<br>Check the power supply<br>the inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu  | UPPLY AND GROUN<br>by and the ground circ<br>t normal?<br>>Replace the BCM. R<br>rror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>inness connector M22.                          | D CIRCUIT<br>uit of the BCM. Refe<br>efer to <u>BCS-79, "Re</u><br>e BCM branch line.<br>e ground circuit.<br>I CIRCUIT)<br>harness connector a           | moval and Installation  | on".<br>nector.           |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER S<br>Check the power supply<br>the inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continu  | UPPLY AND GROUNI<br>oly and the ground circ<br>t normal?<br>>Replace the BCM. R<br>rror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>trness connector M22.                        | D CIRCUIT<br>uit of the BCM. Refe<br>efer to <u>BCS-79, "Re</u><br>e BCM branch line.<br>e ground circuit.<br>I CIRCUIT)<br>harness connector a           | emoval and Installation | <u>on"</u> .              |
| YES >> GO TO 3.<br>NO >> GO TO 4.<br>3.CHECK POWER S<br>Check the power supply<br>the inspection result<br>YES (Present error)><br>YES (Past error)>>E<br>NO >> Repair the<br>4.CHECK HARNESS<br>1. Disconnect the ha<br>2. Check the continue<br>BCM harme  | UPPLY AND GROUN<br>by and the ground circ<br>t normal?<br>>Replace the BCM. R<br>rror was detected in the<br>power supply and the<br>CONTINUITY (OPEN<br>inness connector M22.<br>by between the BCM I | D CIRCUIT<br>uit of the BCM. Refe<br>efer to <u>BCS-79, "Re</u><br>e BCM branch line.<br>e ground circuit.<br>I CIRCUIT)<br>harness connector a<br>Harnes | emoval and Installation | on".<br>nector.           |

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace the PCB harness.

NO >> Repair the harness between the BCM harness connector M120 and the harness connector M22.

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# STRG BRANCH LINE CIRCUIT

## Diagnosis Procedure

INFOID:000000006093572

[CAN SYSTEM (TYPE 12)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Steering angle sensor
- Harness connector M22 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of steering angle sensor.
- 2. Check the resistance between the steering angle sensor harness connector terminals.

|               | Resistance (Ω) |              |  |
|---------------|----------------|--------------|--|
| Connector No. | Termi          | Terminal No. |  |
| M37           | 1              | 1 2          |  |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

# **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the steering angle sensor. Refer to <u>BRC-54, "Wiring Dia-gram"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the steering angle sensor. Refer to BRC-144, "Removal and Installation".

- YES (Past error)>>Error was detected in the steering angle sensor branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M22.

2. Check the continuity between the steering angle sensor harness connector and the harness connector.

| Steering angle sens | or harness connector | Harness connector |              | Continuity |
|---------------------|----------------------|-------------------|--------------|------------|
| Connector No.       | Terminal No.         | Connector No.     | Terminal No. | Continuity |
| M37                 | 1                    | M22               | 81           | Existed    |
| W37                 | 2                    | IVIZZ             | 82           | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the steering angle sensor harness connector M37 and the harness connector M22.

# **4WD BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 12)]

| Diagnosis Procedure  |  |  | INFOID:00000006093573                        |
|--|--|--|--|
| 1.CHECK CONNECTOR  |  |  |  |
|  | able from the negative terr<br>connectors of the AWD co  |  | d and loose connection (unit                 |
| s the inspection result norm<br>YES >> GO TO 2.<br>NO >> Repair the termi  | nal and connector.   |  |  |
| 2. CHECK HARNESS FOR   | OPEN CIRCUIT   |  |  |
| <ol> <li>Disconnect the connect</li> <li>Check the resistance be</li> </ol>  |  | it harness connector termin  | als.   |
|  | WD control unit harness connected  | or   | Resistance ( $\Omega$ )                      |
|  |  |  |  |
| Connector No.  |  | nal No.  |  |
| B17  | 8  | nal No.<br>16  | Approx. 54 – 66                              |
| B17<br><u>s the measurement value w</u><br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>3.CHECK POWER SUPPL  | 8<br>ithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCUIT   | 16   | Approx. 54 – 66                              |
| B17<br>S the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>3.CHECK POWER SUPPL<br>Check the power supply and<br>dure".   | 8<br>ithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the  | 16   | Approx. 54 – 66                              |
| B17<br>Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>3.CHECK POWER SUPPL<br>Check the power supply and<br>dure".<br>Is the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error wa | 8<br>ithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the<br>al?<br>ace the AWD control unit.                                | 16<br>AWD control unit. Refer to<br>Refer to <u>DLN-59, "Remova</u><br>ntrol unit branch line. | Approx. 54 – 66<br>DLN-47, "Diagnosis Proce- |
| B17<br>Is the measurement value w<br>YES >> GO TO 3.<br>NO >> Repair the AWD<br>3.CHECK POWER SUPPL<br>Check the power supply and<br>dure".<br>Is the inspection result norm<br>YES (Present error)>>Rep<br>YES (Past error)>>Error wa | 8<br>ithin the specification?<br>control unit branch line.<br>Y AND GROUND CIRCUIT<br>d the ground circuit of the<br>al?<br>lace the AWD control unit.<br>as detected in the AWD con | 16<br>AWD control unit. Refer to<br>Refer to <u>DLN-59, "Remova</u><br>ntrol unit branch line. | Approx. 54 – 66<br>DLN-47, "Diagnosis Proce- |

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< DTC/CIRCUIT DIAGNOSIS >

# ABS BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093575

[CAN SYSTEM (TYPE 12)]

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the ABS actuator and electric unit (control unit) for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

# 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of ABS actuator and electric unit (control unit).
- 2. Check the resistance between the ABS actuator and electric unit (control unit) harness connector terminals.

| ABS actuator and electric unit (control unit) harness connector |       |  | Resistance ( $\Omega$ ) |
|---|-------|--|-------------------------|
| Connector No.   | Termi |  |                         |
| E41   | 25 15 |  | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ABS actuator and electric unit (control unit) branch line.

## **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ABS actuator and electric unit (control unit). Refer to <u>BRC-119, "Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to <u>BRC-141, "Removal</u> <u>and Installation"</u>.

YES (Past error)>>Error was detected in the ABS actuator and electric unit (control unit) branch line.

NO >> Repair the power supply and the ground circuit.

# **AFS BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 12)]

| Diagnosis Procedure  |   |  | INFOID:000000006093576     |
|--|---|--|----------------------------|
| 1.CHECK CONNECTOR  |   |  |                            |
|  | cable from the negative term<br>d connectors of the AFS cor |  | and loose connection (unit |
| s the inspection result norm<br>YES >> GO TO 2.<br>NO >> Repair the termi<br>2.CHECK HARNESS FOR   | inal and connector.   |  |                            |
| 1. Disconnect the connect  |   | harness connector termina  | als.                       |
|  | AFS control unit harness connector                          | r  | Posistance (O)             |
| Connector No.  | Termina   | al No.   | Resistance ( $\Omega$ )    |
| E104   | 30  | 7  | Approx. 54 – 66            |
| <b>B.</b> CHECK POWER SUPPL<br>Check the power supply an<br><u>JNIT : Diagnosis Procedure</u><br><u>s the inspection result norm</u><br>YES (Present error)>>Rep<br>YES (Past error)>>Error wa | <u>"</u>  | AFS control unit. Refer to<br>efer to <u>EXL-126, "Remova</u><br>rol unit branch line. | EXL-84, "AFS CONTROL       |
|  | i supply and the ground of                                  |  |                            |
|  |   |  |                            |

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< DTC/CIRCUIT DIAGNOSIS >

# **IPDM-E BRANCH LINE CIRCUIT**

## Diagnosis Procedure

INFOID:000000006093577

[CAN SYSTEM (TYPE 12)]

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the IPDM E/R for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of IPDM E/R.

2. Check the resistance between the IPDM E/R harness connector terminals.

|               | IPDM E/R harness connector |    |                         |
|---------------|----------------------------|----|-------------------------|
| Connector No. | Terminal No.               |    | Resistance ( $\Omega$ ) |
| E6            | 40                         | 39 | Approx. 108 – 132       |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the IPDM E/R branch line.

**3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the IPDM E/R. Refer to <u>PCS-32, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES (Present error)>>Replace the IPDM E/R. Refer to PCS-33, "Removal and Installation".

YES (Past error)>>Error was detected in the IPDM E/R branch line.

NO >> Repair the power supply and the ground circuit.

| agnosis Procedure   |   |  | INFOID:000000006093578       |
|---|---|--|------------------------------|
| .CHECK CONNECTOR  |   |  |                              |
| Check the following terr<br>nector side).<br>Driver seat control unit<br>Harness connector B50<br>Harness connector B11<br>CAN gateway (With ICC<br>the inspection result norm<br>(ES (With ICC system)>>0<br>(ES (Without ICC system)<br>NO >> Repair the term | cable from the negative term<br>ninals and connectors for c<br>1<br>C system)<br><u>nal?</u><br>GO TO 2.<br>>>GO TO 3.  | lamage, bend and loose co                              | nnection (unit side and con- |
| Disconnect the connect<br>Check the continuity be   | tween the CAN gateway ha  | arness connector terminals.                            |                              |
|   | CAN gateway harness connecto  |  | Continuity                   |
| Connector No.   |   | nal No.  |                              |
| M125  | 4 10  | 6<br>12  | Existed                      |
| · · · · · · · · · · · · · · · · · · ·   | nal?  |  |                              |
| YES >> GO TO 3.<br>NO >> Check the harn<br>tion circuit 2).<br>• CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connect   | ess and repair or replace (<br>OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni   | system)<br>t.  | ot cause (CAN communica-     |
| YES >> GO TO 3.<br>NO >> Check the harn<br>tion circuit 2).<br>• CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connect<br>Check the resistance be  | ess and repair or replace (<br>OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat cont  | system)<br>t.<br>rol unit harness connector t          |                              |
| YES >> GO TO 3.<br>NO >> Check the harn<br>tion circuit 2).<br>• CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connect<br>Check the resistance be  | ess and repair or replace (<br>OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat cont<br>rer seat control unit harness conn                | system)<br>t.<br>rol unit harness connector t<br>ector |                              |
| NO >> Check the harn<br>tion circuit 2).<br>CHECK HARNESS FOR<br>Connect the connector<br>Disconnect the connect<br>Check the resistance be   | ess and repair or replace (<br>OPEN CIRCUIT<br>of CAN gateway. (With ICC<br>or of driver seat control uni<br>etween the driver seat cont<br>rer seat control unit harness conn<br>Termi<br>23 | system)<br>t.<br>rol unit harness connector t          | erminals.                    |

< DTC/CIRCUIT DIAGNOSIS >

# ICC BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093579

[CAN SYSTEM (TYPE 12)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ADAS control unit
- CAN gateway

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

**2.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

- 1. Disconnect the connector of CAN gateway.
- 2. Check the continuity between the CAN gateway harness connector terminals.

|               | CAN gateway harness connector |            |         |  |  |
|---------------|-------------------------------|------------|---------|--|--|
| Connector No. | Termi                         | Continuity |         |  |  |
| M125          | 4 6                           |            | Existed |  |  |
| 123           | 10                            | 12         | Existed |  |  |

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2).

# **3.**CHECK HARNESS FOR OPEN CIRCUIT

- 1. Connect the connector of CAN gateway.
- 2. Disconnect the connector of ADAS control unit.
- 3. Check the resistance between the ADAS control unit harness connector terminals.

| AD/           | Resistance (Ω) |  |                 |
|---------------|----------------|--|-----------------|
| Connector No. | Termir         |  |                 |
| B50           | 14 15          |  | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Replace the body harness.

**4.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ADAS control unit. Refer to <u>DAS-66, "Diagnosis Proce-</u> dure".

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to DAS-67, "Removal and Installation".

YES (Past error)>>Error was detected in the ADAS control unit branch line.

NO >> Repair the power supply and the ground circuit.

#### **PSB BRANCH LINE CIRCUIT** А Diagnosis Procedure INFOID:000000006093580 1.CHECK CONNECTOR 1. Turn the ignition switch OFF. Disconnect the battery cable from the negative terminal. 2. 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and con-С nector side). Pre-crash seat belt control unit (driver side) CAN gateway D Is the inspection result normal? YES >> GO TO 2. >> Repair the terminal and connector. NO Е 2.CHECK HARNESS CONTINUITY (OPEN CIRCUIT) 1. Disconnect the connector of CAN gateway. F Check the continuity between the CAN gateway harness connector terminals. 2. CAN gateway harness connector Continuity Connector No. Terminal No. 4 6 Existed M125 10 12 Existed Н Is the inspection result normal? YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line is open) the root cause (CAN communication circuit 2). **3.**CHECK HARNESS FOR OPEN CIRCUIT Connect the connector of CAN gateway. 1. Disconnect the connector of pre-crash seat belt control unit (driver side). 2. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector termi-3. nals. Κ Pre-crash seat belt control unit (driver side) harness connector Resistance $(\Omega)$ Connector No. Terminal No. R9 4 14 Approx. 54 - 66 Is the measurement value within the specification? LAN YES >> GO TO 4. NO >> Repair the pre-crash seat belt control unit (driver side) branch line. ${f 4}$ . CHECK POWER SUPPLY AND GROUND CIRCUIT Ν Check the power supply and the ground circuit of the pre-crash seat belt control unit (driver side). Refer to SBC-47, "Diagnosis Procedure". Is the inspection result normal? C YES (Present error)>>Replace the pre-crash seat belt control unit (driver side). Refer to SBC-54, "Removal and Installation". YES (Past error)>>Error was detected in the pre-crash seat belt control unit (driver side) branch line. Ρ NO >> Repair the power supply and the ground circuit.

< DTC/CIRCUIT DIAGNOSIS >

# **RDR-L BRANCH LINE CIRCUIT**

# Diagnosis Procedure

INFOID:000000006093581

[CAN SYSTEM (TYPE 12)]

# 1.CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the terminals and connectors of the side radar LH for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

## 2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of side radar LH.
- 2. Check the resistance between the side radar LH harness connector terminals.

|               | Side radar LH harness connector |                         |                 |
|---------------|---------------------------------|-------------------------|-----------------|
| Connector No. | Termi                           | Resistance ( $\Omega$ ) |                 |
| B52           | 4                               | 3                       | Approx. 54 – 66 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the side radar LH branch line.

# **3.**CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the side radar LH. Refer to <u>DAS-575, "SIDE RADAR LH :</u> <u>Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the side radar LH. Refer to DAS-592, "Removal and Installation".

YES (Past error)>>Error was detected in the side radar LH branch line.

NO >> Repair the power supply and the ground circuit.

## **RDR-R BRANCH LINE CIRCUIT**

# [CAN SYSTEM (TYPE 12)]

| DIC/CIRCUIT DIAGNUS  | >>>  |   |                             |
|--|--|---|-----------------------------|
| RDR-R BRANCH L   | NE CIRCUIT   |   |                             |
| Diagnosis Procedure  |  |   | INFOID:0000000609358        |
| CHECK CONNECTOR  |  |   |                             |
|  | cable from the negative tern<br>d connectors of the side ra<br>e). |   | nd and loose connection (un |
| NO >> Repair the term  | inal and connector.  |   |                             |
| CHECK RIGHT/LEFT SV  | VITCHING SIGNAL CIRCU  | IT  |                             |
| YES >> GO TO 3.<br>NO >> Repair the root<br>CHECK HARNESS FOR<br>Disconnect the connect<br>Check the resistance be   | OPEN CIRCUIT   | arness connector termina  | als.                        |
|  | Side radar RH harness connector                                    |   | Resistance (Ω)              |
| Connector No.  | Termir   | al No.  |                             |
| B252   | 4  | 3   | Approx. 54 – 66             |
| <b>1.</b> CHECK POWER SUPPL<br>Check the power supply and<br>Diagnosis Procedure".<br><u>s the inspection result norm</u><br>YES (Present error)>>Rep<br>YES (Past error)>>Error w |  | side radar RH. Refer to <u>[</u><br>er to <u>DAS-592, "Remova</u><br>ar RH branch line. | DAS-576, "SIDE RADAR RH     |
|  |  |   |                             |
|  |  |   |                             |

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< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRCUIT DIAGNOSIS >

# APA BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093585

[CAN SYSTEM (TYPE 12)]

## **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- Accelerator pedal actuator
- Harness connector M151
- Harness connector M150
- Harness connector M23 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect the connector of accelerator pedal actuator.
- 2. Check the resistance between the accelerator pedal actuator harness connector terminals.

| Accel         | Accelerator pedal actuator harness connector |         |                         |
|---------------|--|---------|-------------------------|
| Connector No. | Termi  | nal No. | Resistance ( $\Omega$ ) |
| M152          | 5  | 4       | Approx. 54 – 66         |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 ${
m 3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to <u>DAS-203, "ACCEL-</u> <u>ERATOR PEDAL ACTUATOR : Diagnosis Procedure"</u>.

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to <u>ACC-4, "MODELS WITH DIS-</u> <u>TANCE CONTROL ASSIST SYSTEM : Removal and Installation"</u>.

- YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.
- NO >> Repair the power supply and the ground circuit.

**4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M23.

2. Check the continuity between the accelerator pedal actuator harness connector and the harness connector.

| Accelerator pedal actu | tor harness connector Harness connector |               | Continuity   |            |
|------------------------|---|---------------|--------------|------------|
| Connector No.          | Terminal No.                            | Connector No. | Terminal No. | Continuity |
| M152                   | 5                                       | M23           | 138          | Existed    |
| W152                   | 4                                       | IVI25         | 137          | Existed    |

#### Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the accelerator pedal actuator harness connector M152 and the harness connector M23.

| iagnosis Proced  | ure  |  |   | INFOID:00000000609358   |
|--|--|--|---|---|
| .CHECK CONNECT   | OR   |  |   |   |
| Check the followin<br>nector side).<br>Lane camera unit<br>Harness connecto<br>Harness connecto<br>Harness connecto<br>the inspection result<br>YES >> GO TO 2.<br>NO >> Repair the  | tery cable from the ne<br>g terminals and conne<br>r R7<br>r M110<br>r M24 and PCB harne   | ectors for damage, ber<br>ess side connector<br>or.  | nd and loose conr   | nection (unit side and con                                    |
| Disconnect the cor   | nnector of lane camer  | a unit.  |   |   |
| Check the resistan   | ce between the lane  | camera unit harness c  | connector terminal  | S.  |
|  |  |  |   |   |
|  | Lane camera unit har   | ness connector   |   | Resistance ( $\Omega$ )                                       |
| Connector No.  |  | Terminal No.   |   | Resistance (Ω)  |
| R8<br>the measurement va   | Lane camera unit han<br>4<br>Ilue within the specific  | Terminal No.   | 8   | Resistance (Ω)<br>Approx. 54 – 66                             |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SI<br>heck the power supp<br>NIT : Diagnosis Proce<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har   | 4<br>JPPLY AND GROUNI<br>ly and the ground circ<br>edure".<br>normal?<br>>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.                          | Terminal No.<br>Eation?<br>D CIRCUIT<br>cuit of the lane camera<br>mera unit. Refer to DA<br>e lane camera unit bra<br>ground circuit.<br>I CIRCUIT)   | a unit. Refer to <u>D</u><br>S-419, "Removal<br>anch line.          | Approx. 54 – 66<br>AS-403, "LANE CAMERA<br>and Installation". |
| R8<br>the measurement va<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SI<br>heck the power supp<br>NIT : Diagnosis Proce<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har   | 4<br>JPPLY AND GROUN<br>ly and the ground circ<br>edure".<br>Normal?<br>>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.<br>ty between the lane c  | Terminal No.<br>Eation?<br>D CIRCUIT<br>cuit of the lane camera<br>mera unit. Refer to DA<br>the lane camera unit bra<br>a ground circuit.<br>I CIRCUIT)   | a unit. Refer to <u>D</u> .<br><u>S-419, "Removal</u><br>anch line. | Approx. 54 – 66<br>AS-403, "LANE CAMERA<br>and Installation". |
| R8<br>the measurement vary<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SI<br>heck the power supp<br>NIT : Diagnosis Proce<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the han<br>Check the continuit                      | 4<br>JPPLY AND GROUN<br>ly and the ground circ<br>edure".<br>Normal?<br>>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.<br>ty between the lane c  | Terminal No.<br>ation?<br>D CIRCUIT<br>cuit of the lane camera<br>mera unit. Refer to DA<br>e lane camera unit bra<br>e ground circuit.<br>I CIRCUIT)<br>camera unit harness co                  | a unit. Refer to <u>D</u> .<br><u>S-419, "Removal</u><br>anch line. | Approx. 54 – 66<br>AS-403, "LANE CAMERA<br>and Installation". |
| R8<br>The measurement var<br>YES >> GO TO 3.<br>NO >> GO TO 4.<br>CHECK POWER SU<br>heck the power supp<br>NIT : Diagnosis Process<br>the inspection result<br>YES (Present error)>><br>YES (Past error)>>Er<br>NO >> Repair the<br>CHECK HARNESS<br>Disconnect the har<br>Check the continuit<br>Lane camera unit | 4<br>JPPLY AND GROUNI<br>ly and the ground circ<br>adure".<br>normal?<br>>Replace the lane car<br>ror was detected in th<br>power supply and the<br>CONTINUITY (OPEN<br>mess connector M24.<br>ty between the lane c | Terminal No.<br>Eation?<br>D CIRCUIT<br>cuit of the lane camera<br>mera unit. Refer to DA<br>e lane camera unit bra<br>e ground circuit.<br>I CIRCUIT)<br>camera unit harness con<br>Harness con | a unit. Refer to <u>D</u><br>S-419, "Removal<br>anch line.          | Approx. 54 – 66<br>AS-403, "LANE CAMERA<br>and Installation". |

< DTC/CIRCUIT DIAGNOSIS >

# LASER BRANCH LINE CIRCUIT

# Diagnosis Procedure

INFOID:000000006093586

[CAN SYSTEM (TYPE 12)]

# **1.**CHECK CONNECTOR

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
- ICC sensor
- Harness connector E106
- Harness connector M6
- Harness connector M28 and PCB harness side connector

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of ICC sensor.

2. Check the resistance between the ICC sensor harness connector terminals.

|               | ICC sensor harness connector |         |                   |
|---------------|------------------------------|---------|-------------------|
| Connector No. | Termi                        | nal No. | Resistance (Ω)    |
| E67           | 3                            | 6       | Approx. 108 – 132 |

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> GO TO 4.

 $\mathbf{3.}$  CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the ICC sensor. Refer to <u>CCS-162, "ICC SENSOR : Diagno-</u> sis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to CCS-180, "Removal and Installation".

YES (Past error)>>Error was detected in the ICC sensor branch line.

NO >> Repair the power supply and the ground circuit.

## **4.**CHECK HARNESS CONTINUITY (OPEN CIRCUIT)

1. Disconnect the harness connector M28.

2. Check the continuity between the ICC sensor harness connector and the harness connector.

| ICC sensor ha | rness connector | Harness       | connector    | Continuity |
|---------------|-----------------|---------------|--------------|------------|
| Connector No. | Terminal No.    | Connector No. | Terminal No. | Continuity |
| E67           | 3               | M28           | 343          | Existed    |
|               | 6               | ινίζο         | 345          | Existed    |

Is the inspection result normal?

YES >> Replace the PCB harness.

NO >> Repair the harness between the ICC sensor harness connector E67 and the harness connector M28.

< DTC/CIRCUIT DIAGNOSIS >

# **CAN COMMUNICATION CIRCUIT 1**

А **Diagnosis** Procedure INFOID:000000006093588 **1**.CONNECTOR INSPECTION 1. Turn the ignition switch OFF. 2. Disconnect the battery cable from the negative terminal. 3. Disconnect all the unit connectors on CAN communication circuit 1. NOTE: For identification of CAN communication circuit 1, CAN communication circuit 2, and ITS communication circuit, refer to LAN-69, "System Diagram". D 4. Check terminals and connectors for damage, bend and loose connection. Is the inspection result normal? YES >> GO TO 2. Е NO >> Repair the terminal and connector. 2.check harness continuity (short circuit) F Check the continuity between the data link connector terminals. Data link connector Continuity Connector No. Terminal No. M182 6 14 Not existed Is the inspection result normal? Н YES >> GO TO 3. NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. **3.**CHECK HARNESS CONTINUITY (SHORT CIRCUIT) Check the continuity between the data link connector and the ground. Data link connector Continuity Connector No. Terminal No. Ground 6 Not existed M182 Κ 14 Not existed Is the inspection result normal? YES >> GO TO 4. L NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause. 4.CHECK ECM AND IPDM E/R TERMINATION CIRCUIT LAN Remove the ECM and the IPDM E/R. 1 2. Check the resistance between the ECM terminals. VQ37VHR Ν ECM Resistance  $(\Omega)$ Terminal No. 113 Approx. 108 - 132 114 VK56VD Ρ ECM Resistance  $(\Omega)$ Terminal No. 146 151 Approx. 108 - 132

3 Check the resistance between the IPDM E/R terminals.

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

| IPDN                            | / E/R              |                   |  |
|---------------------------------|--------------------|-------------------|--|
| Termin                          | nal No.            | Resistance (Ω)    |  |
| 40 39                           |                    | Approx. 108 – 132 |  |
| Is the measurement value within | the specification? |                   |  |

YES >> GO TO 5.

NO >> Replace the ECM and/or the IPDM E/R.

## 5. CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 6.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

## **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- Turn the ignition switch OFF. 1.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 1. NOTE:

ECM and IPDM E/R have a termination circuit. Check other units first.

4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

## NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure.

Non-reproduced>>Replace the unit whose connector was disconnected.

< DTC/CIRCUIT DIAGNOSIS >

# **CAN COMMUNICATION CIRCUIT 2**

| Diagnosis Procedure   |   |                          | INFOID:000000006093589       |
|---|---|--------------------------|------------------------------|
| CONNECTOR INSPECT   | TION  |                          |                              |
| <ol> <li>Disconnect all the unit on NOTE:</li> </ol>                                    | cable from the negative terr<br>connectors on CAN commu | nication circuit 2.      | t 2 and ITS communication    |
| circuit, refer to LAN-69.   |   |                          | t 2, and ITS communication   |
| the inspection result norn  | nal?  |                          |                              |
| YES >> GO TO 2.<br>NO >> Repair the term  | ninal and connector.                                    |                          |                              |
|   | TINUITY (SHORT CIRCUI                                   | Т)                       |                              |
|   | en the data link connector te                           |                          |                              |
|   | Dete liele en enten                                     |                          |                              |
| Connector No.   | Data link connector                                     | nal No.                  | Continuity                   |
|   | 13  | 12                       | Not existed                  |
| s the inspection result norn  | ∩al?  |                          |                              |
| Check the continuity betwee   | NTINUITY (SHORT CIRCUI<br>en the data link connector a  |                          |                              |
| Connector No.   | connector<br>Terminal No.                               |                          | Continuity                   |
|   | 13  | Ground                   | Not existed                  |
| M182  | 12  |                          | Not existed                  |
| 4.CHECK CAN GATEWAY   | ess and repair or replace (if<br>/ TERMINATION CIRCUIT  |                          | s is short) the root cause.  |
|   | CAN gateway   |                          | Resistance (Ω)               |
|   | Terminal No.  |                          |                              |
| 4   | 10  |                          | prox. 108 – 132              |
| 6   | 12  | Ар                       | prox. 108 – 132              |
| s the measurement value v<br>YES >> GO TO 5.<br>NO >> Replace the CA<br>D.CHECK SYMPTOM | AN gateway.   |                          |                              |
| Connect all the connectors<br>customer)" are reproduced.                                |   | escribed in the "Symptom | (Results from interview with |

Inspection result

Reproduced>>GO TO 6.

#### < DTC/CIRCUIT DIAGNOSIS >

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

## **6.**CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of CAN communication circuit 2. **NOTE:**

CAN gateway has two termination circuits. Check other units first.

 Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
 NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.

# **ITS COMMUNICATION CIRCUIT**

# ICAN SYSTEM (TYPE 12)1

| DTC/CIRCUIT DIA  | GNOSIS >   |   |  | SYSTEM (TYPE 12)]                   |
|--|--|---|--|-------------------------------------|
| S COMMUNI  | CATION CIRCL   | JIT   |  |                                     |
| agnosis Proced   | ure  |   |  | INFOID:000000006093590              |
| CHECK CAN DIAG   | NOSIS  |   |  |                                     |
| mmunication circuit  | osis results from CON<br>2 have no malfunctior   |   | the CAN communica                        | tion circuit 1 and CAN              |
| <b>OTE:</b><br>or identification of C/<br>iit, refer to <u>LAN-69, "</u>   |  | cuit 1, CAN communio  | cation circuit 2, and I                  | TS communication cir-               |
|  | cation 1 and CAN cor   | mmunication 2 circuits  | normal?                                  |                                     |
| YES >> GO TO 2.<br>NO >> Check and   | d repair CAN commun  | nication circuit 1 and/or   | · CAN communication                      | n circuit 2.                        |
| .CONNECTOR INS   | •  |   |  |                                     |
|  | ttery cable from the neals and connectors of   |   | it for damage, bend                      | and loose connection                |
| the inspection result<br>ES >> GO TO 3.  | normal?  |   |  |                                     |
| IO >> Repair the   | terminal and connect   | tor   |  |                                     |
| CHECK HARNESS  | e terminal and connect<br>CONTINUITY (OPEN<br>lowing harness conne   | N CIRCUIT)  |  |                                     |
| CHECK HARNESS<br>Disconnect the fol<br>ADAS control unit<br>ICC sensor   | CONTINUITY (OPEN<br>lowing harness conne   | N CIRCUIT)<br>ectors.   | connector and the IC                     | C sensor harness con-               |
| CHECK HARNESS<br>Disconnect the fol<br>ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.   | CONTINUITY (OPEN<br>lowing harness conne   | N CIRCUIT)<br>ectors.   |  |                                     |
| CHECK HARNESS<br>Disconnect the fol<br>ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.   | CONTINUITY (OPEN<br>lowing harness conne<br>ity between the ADAS   | N CIRCUIT)<br>ectors.<br>S control unit harness o   |  | C sensor harness con-<br>Continuity |
| CHECK HARNESS<br>Disconnect the fol<br>ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.<br>ADAS control unit<br>Connector No.   | CONTINUITY (OPEN<br>lowing harness conne<br>ity between the ADAS   | N CIRCUIT)<br>ectors.<br>S control unit harness of<br>ICC sensor har<br>Connector No.   | ness connector                           |                                     |
| CHECK HARNESS<br>Disconnect the fol<br>ADAS control unit<br>ICC sensor<br>Check the continu<br>nector.<br>ADAS control unit<br>Connector No.<br>B50  | CONTINUITY (OPEN<br>lowing harness conne<br>ity between the ADAS<br>harness connector<br>Terminal No.<br>7<br>8  | N CIRCUIT)<br>ectors.<br>S control unit harness of<br>ICC sensor harr   | ness connector<br>Terminal No.           | Continuity                          |
| CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace the  | CONTINUITY (OPEN<br>lowing harness conne<br>ity between the ADAS<br>harness connector<br>Terminal No.<br>7<br>8  | N CIRCUIT)<br>ectors.<br>5 control unit harness of<br>ICC sensor harn<br>Connector No.<br>E67   | ness connector<br>Terminal No.<br>3      | - Continuity<br>Existed             |
| CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result (ES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the fol Side radar LH Side radar RH Lane camera unit Accelerator pedal | CONTINUITY (OPEN<br>lowing harness connector<br>ity between the ADAS<br>harness connector<br>Terminal No.<br>7<br>8<br>contral?<br>ne body harness.<br>CONTINUITY (SHOP<br>lowing harness connector<br>actuator                  | N CIRCUIT)<br>ectors.<br>S control unit harness of<br>ICC sensor har<br>Connector No.<br>E67  | ness connector<br>Terminal No.<br>3<br>6 | - Continuity<br>Existed             |
| CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the fol Side radar LH Side radar RH Lane camera unit Accelerator pedal | CONTINUITY (OPEN<br>lowing harness connector<br>ity between the ADAS<br>harness connector<br>Terminal No.<br>7<br>8<br>contral?<br>ne body harness.<br>CONTINUITY (SHOP<br>lowing harness connector<br>actuator                  | N CIRCUIT)<br>ectors.<br>S control unit harness of<br>ICC sensor har<br>Connector No.<br>E67<br>RT CIRCUIT)<br>ectors.<br>S control unit harness of | ness connector<br>Terminal No.<br>3<br>6 | Continuity<br>Existed<br>Existed    |
| CHECK HARNESS Disconnect the fol ADAS control unit ICC sensor Check the continu nector. ADAS control unit Connector No. B50 the inspection result YES >> GO TO 4. NO >> Replace th CHECK HARNESS Disconnect the fol Side radar LH Side radar RH Lane camera unit Accelerator pedal | CONTINUITY (OPEN<br>lowing harness conne<br>ity between the ADAS<br>harness connector<br>Terminal No.<br>7<br>8<br>c.normal?<br>he body harness.<br>CONTINUITY (SHOP<br>lowing harness conne<br>actuator<br>ity between the ADAS | N CIRCUIT)<br>ectors.<br>S control unit harness of<br>ICC sensor har<br>Connector No.<br>E67<br>RT CIRCUIT)<br>ectors.<br>S control unit harness of | ness connector<br>Terminal No.<br>3<br>6 | - Continuity<br>Existed             |

YES >> GO TO 5.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the ADAS control unit harness connector and the ground.

# LAN-575

# ITS COMMUNICATION CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

## [CAN SYSTEM (TYPE 12)]

| ADAS control unit | ADAS control unit harness connector |        | Continuity  |
|-------------------|-------------------------------------|--------|-------------|
| Connector No.     | Terminal No.                        | Ground | Continuity  |
| B50               | 7                                   | Ground | Not existed |
| 600               | 8                                   |        | Not existed |

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair or replace (if shield line or PCB harness is short) the root cause.

#### **6.**CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.

2. Check the resistance between the ADAS control unit terminals.

| ADAS control unit |         | Resistance (Ω)    |  |
|-------------------|---------|-------------------|--|
| Termi             | nal No. |                   |  |
| 7                 | 8       | Approx. 108 – 132 |  |

3. Check the resistance between the ICC sensor terminals.

| ICC sensor |         | Resistance (Ω)    |
|------------|---------|-------------------|
| Termi      | nal No. |                   |
| 3          | 6       | Approx. 108 – 132 |

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace the ADAS control unit and/or the ICC sensor.

## 7.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.

#### Inspection result

Reproduced>>GO TO 8.

Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

## 8. CHECK UNIT REPRODUCTION

Perform the reproduction test as per the following procedure for each unit.

- 1. Turn the ignition switch OFF.
- 2. Disconnect the battery cable from the negative terminal.
- 3. Disconnect one of the unit connectors of ITS communication system. **NOTE:**

ADAS control unit and ICC sensor have a termination circuit. Check other units first.

- 4. Connect the battery cable to the negative terminal. Check if the symptoms described in the "Symptom (Results from interview with customer)" are reproduced.
  - NOTE:

Although unit-related error symptoms occur, do not confuse them with other symptoms.

#### Inspection result

Reproduced>>Connect the connector. Check other units as per the above procedure. Non-reproduced>>Replace the unit whose connector was disconnected.