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<b>TCM BRANCH LINE CIRCUIT .....</b>	<b>327</b>	<b>MAIN LINE BETWEEN BCM AND ABS CIR-</b>	<b>CUIT .....</b>
Diagnosis Procedure .....	327	Diagnosis Procedure .....	347
<b>A-BAG BRANCH LINE CIRCUIT .....</b>	<b>328</b>	<b>MAIN LINE BETWEEN RDR-L AND RDR-R</b>	<b>CIRCUIT .....</b>
Diagnosis Procedure .....	328	Diagnosis Procedure .....	349
<b>AV BRANCH LINE CIRCUIT .....</b>	<b>329</b>	<b>MAIN LINE BETWEEN RDR-R AND APA CIR-</b>	<b>CUIT .....</b>
Diagnosis Procedure .....	329	Diagnosis Procedure .....	350
<b>M&amp;A BRANCH LINE CIRCUIT .....</b>	<b>331</b>	<b>MAIN LINE BETWEEN APA AND LANE CIR-</b>	<b>CUIT .....</b>
Diagnosis Procedure .....	331	Diagnosis Procedure .....	352
<b>DLC BRANCH LINE CIRCUIT .....</b>	<b>332</b>	<b>ECM BRANCH LINE CIRCUIT .....</b>	<b>353</b>
Diagnosis Procedure .....	332	Diagnosis Procedure .....	353
<b>BCM BRANCH LINE CIRCUIT .....</b>	<b>333</b>	<b>TPMS BRANCH LINE CIRCUIT .....</b>	<b>355</b>
Diagnosis Procedure .....	333	Diagnosis Procedure .....	355
<b>STRG BRANCH LINE CIRCUIT .....</b>	<b>334</b>	<b>CGW BRANCH LINE CIRCUIT (CAN COM-</b>	<b>MUNICATION CIRCUIT 1) .....</b>
Diagnosis Procedure .....	334	Diagnosis Procedure .....	356
<b>RAS BRANCH LINE CIRCUIT .....</b>	<b>335</b>	<b>CGW BRANCH LINE CIRCUIT (CAN COM-</b>	<b>MUNICATION CIRCUIT 2) .....</b>
Diagnosis Procedure .....	335	Diagnosis Procedure .....	357
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Diagnosis Procedure .....	336	Diagnosis Procedure .....	359
<b>IPDM-E BRANCH LINE CIRCUIT .....</b>	<b>337</b>	<b>TCM BRANCH LINE CIRCUIT .....</b>	<b>360</b>
Diagnosis Procedure .....	337	Diagnosis Procedure .....	360
<b>ADP BRANCH LINE CIRCUIT .....</b>	<b>338</b>	<b>A-BAG BRANCH LINE CIRCUIT .....</b>	<b>361</b>
Diagnosis Procedure .....	338	Diagnosis Procedure .....	361
<b>CAN COMMUNICATION CIRCUIT .....</b>	<b>339</b>	<b>AV BRANCH LINE CIRCUIT .....</b>	<b>362</b>
Diagnosis Procedure .....	339	Diagnosis Procedure .....	362
<b>CAN SYSTEM (TYPE 7)</b>			
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<b>MAIN LINE BETWEEN TPMS AND HVAC</b>	<b>CIRCUIT .....</b>	Diagnosis Procedure .....	364
Diagnosis Procedure .....	341	<b>DLC BRANCH LINE CIRCUIT .....</b>	<b>365</b>
<b>MAIN LINE BETWEEN HVAC AND A-BAG</b>	<b>CIRCUIT .....</b>	Diagnosis Procedure .....	365
Diagnosis Procedure .....	342	<b>BCM BRANCH LINE CIRCUIT .....</b>	<b>366</b>
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Diagnosis Procedure .....	343	<b>STRG BRANCH LINE CIRCUIT .....</b>	<b>367</b>
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Diagnosis Procedure .....	344	<b>ABS BRANCH LINE CIRCUIT .....</b>	<b>368</b>
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Diagnosis Procedure .....	370	<b>MAIN LINE BETWEEN BCM AND RAS CIRCUIT</b> .....	<b>391</b>	A
<b>ADP BRANCH LINE CIRCUIT</b> .....	<b>371</b>	Diagnosis Procedure .....	391	
Diagnosis Procedure .....	371	<b>MAIN LINE BETWEEN RAS AND ABS CIRCUIT</b> .....	<b>392</b>	B
<b>ICC BRANCH LINE CIRCUIT</b> .....	<b>372</b>	Diagnosis Procedure .....	392	
Diagnosis Procedure .....	372	<b>MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT</b> .....	<b>394</b>	C
<b>PSB BRANCH LINE CIRCUIT</b> .....	<b>373</b>	Diagnosis Procedure .....	394	
Diagnosis Procedure .....	373	<b>MAIN LINE BETWEEN RDR-R AND APA CIRCUIT</b> .....	<b>395</b>	D
<b>RDR-L BRANCH LINE CIRCUIT</b> .....	<b>374</b>	Diagnosis Procedure .....	395	E
Diagnosis Procedure .....	374	<b>MAIN LINE BETWEEN APA AND LANE CIRCUIT</b> .....	<b>397</b>	F
<b>RDR-R BRANCH LINE CIRCUIT</b> .....	<b>375</b>	Diagnosis Procedure .....	397	
Diagnosis Procedure .....	375	<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>398</b>	G
<b>APA BRANCH LINE CIRCUIT</b> .....	<b>376</b>	Diagnosis Procedure .....	398	
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<b>LANE BRANCH LINE CIRCUIT</b> .....	<b>377</b>	Diagnosis Procedure .....	400	
Diagnosis Procedure .....	377	<b>CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)</b> .....	<b>401</b>	I
<b>LASER BRANCH LINE CIRCUIT</b> .....	<b>378</b>	Diagnosis Procedure .....	401	
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<b>CAN COMMUNICATION CIRCUIT 1</b> .....	<b>379</b>	Diagnosis Procedure .....	402	
Diagnosis Procedure .....	379	<b>HVAC BRANCH LINE CIRCUIT</b> .....	<b>404</b>	K
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<b>ITS COMMUNICATION CIRCUIT</b> .....	<b>383</b>	Diagnosis Procedure .....	405	
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<b>MAIN LINE BETWEEN AV AND M&amp;A CIRCUIT</b> .....	<b>388</b>	Diagnosis Procedure .....	411	
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<b>AFS BRANCH LINE CIRCUIT</b> .....	415	<b>MAIN LINE BETWEEN DLC AND BCM CIR- CUIT</b> .....	436
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<b>ADP BRANCH LINE CIRCUIT</b> .....	417	<b>MAIN LINE BETWEEN 4WD AND ABS CIR- CUIT</b> .....	438
Diagnosis Procedure .....	417	Diagnosis Procedure .....	438
<b>ICC BRANCH LINE CIRCUIT</b> .....	418	<b>ECM BRANCH LINE CIRCUIT</b> .....	440
Diagnosis Procedure .....	418	Diagnosis Procedure .....	440
<b>PSB BRANCH LINE CIRCUIT</b> .....	419	<b>TPMS BRANCH LINE CIRCUIT</b> .....	442
Diagnosis Procedure .....	419	Diagnosis Procedure .....	442
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Diagnosis Procedure .....	420	Diagnosis Procedure .....	443
<b>RDR-R BRANCH LINE CIRCUIT</b> .....	421	<b>TCM BRANCH LINE CIRCUIT</b> .....	444
Diagnosis Procedure .....	421	Diagnosis Procedure .....	444
<b>APA BRANCH LINE CIRCUIT</b> .....	422	<b>A-BAG BRANCH LINE CIRCUIT</b> .....	445
Diagnosis Procedure .....	422	Diagnosis Procedure .....	445
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<b>CAN COMMUNICATION CIRCUIT 1</b> .....	425	<b>DLC BRANCH LINE CIRCUIT</b> .....	449
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<b>CAN COMMUNICATION CIRCUIT 2</b> .....	427	<b>BCM BRANCH LINE CIRCUIT</b> .....	450
Diagnosis Procedure .....	427	Diagnosis Procedure .....	450
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Diagnosis Procedure .....	429	Diagnosis Procedure .....	451
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<b>MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT</b> .....	431	Diagnosis Procedure .....	452
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<b>MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT</b> .....	432	Diagnosis Procedure .....	453
Diagnosis Procedure .....	432	<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	454
<b>MAIN LINE BETWEEN A-BAG AND AV CIR- CUIT</b> .....	433	Diagnosis Procedure .....	454
Diagnosis Procedure .....	433	<b>ADP BRANCH LINE CIRCUIT</b> .....	455
<b>MAIN LINE BETWEEN AV AND M&amp;A CIR- CUIT</b> .....	434	Diagnosis Procedure .....	455
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Diagnosis Procedure .....	460	Diagnosis Procedure .....	482	B
<b>MAIN LINE BETWEEN AV AND M&amp;A CIRCUIT</b> .....	<b>461</b>	<b>DLC BRANCH LINE CIRCUIT</b> .....	<b>483</b>	
Diagnosis Procedure .....	461	Diagnosis Procedure .....	483	C
<b>MAIN LINE BETWEEN M&amp;A AND DLC CIRCUIT</b> .....	<b>462</b>	<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>484</b>	
Diagnosis Procedure .....	462	Diagnosis Procedure .....	484	D
<b>MAIN LINE BETWEEN DLC AND BCM CIRCUIT</b> .....	<b>463</b>	<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>485</b>	
Diagnosis Procedure .....	463	Diagnosis Procedure .....	485	E
<b>MAIN LINE BETWEEN BCM AND 4WD CIRCUIT</b> .....	<b>464</b>	<b>4WD BRANCH LINE CIRCUIT</b> .....	<b>486</b>	
Diagnosis Procedure .....	464	Diagnosis Procedure .....	486	F
<b>MAIN LINE BETWEEN 4WD AND ABS CIRCUIT</b> .....	<b>465</b>	<b>ABS BRANCH LINE CIRCUIT</b> .....	<b>487</b>	
Diagnosis Procedure .....	465	Diagnosis Procedure .....	487	G
<b>MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT</b> .....	<b>467</b>	<b>AFS BRANCH LINE CIRCUIT</b> .....	<b>488</b>	
Diagnosis Procedure .....	467	Diagnosis Procedure .....	488	H
<b>MAIN LINE BETWEEN RDR-R AND APA CIRCUIT</b> .....	<b>468</b>	<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	<b>489</b>	
Diagnosis Procedure .....	468	Diagnosis Procedure .....	489	I
<b>MAIN LINE BETWEEN APA AND LANE CIRCUIT</b> .....	<b>470</b>	<b>ADP BRANCH LINE CIRCUIT</b> .....	<b>490</b>	
Diagnosis Procedure .....	470	Diagnosis Procedure .....	490	J
<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>471</b>	<b>ICC BRANCH LINE CIRCUIT</b> .....	<b>491</b>	
Diagnosis Procedure .....	471	Diagnosis Procedure .....	491	K
<b>TPMS BRANCH LINE CIRCUIT</b> .....	<b>473</b>	<b>PSB BRANCH LINE CIRCUIT</b> .....	<b>492</b>	
Diagnosis Procedure .....	473	Diagnosis Procedure .....	492	L
<b>CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)</b> .....	<b>474</b>	<b>RDR-L BRANCH LINE CIRCUIT</b> .....	<b>493</b>	
Diagnosis Procedure .....	474	Diagnosis Procedure .....	493	LAN
<b>CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)</b> .....	<b>475</b>	<b>RDR-R BRANCH LINE CIRCUIT</b> .....	<b>494</b>	
Diagnosis Procedure .....	475	Diagnosis Procedure .....	494	
<b>HVAC BRANCH LINE CIRCUIT</b> .....	<b>477</b>	<b>APA BRANCH LINE CIRCUIT</b> .....	<b>495</b>	
Diagnosis Procedure .....	477	Diagnosis Procedure .....	495	
<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>478</b>	<b>LANE BRANCH LINE CIRCUIT</b> .....	<b>496</b>	
Diagnosis Procedure .....	478	Diagnosis Procedure .....	496	
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	<b>479</b>	<b>LASER BRANCH LINE CIRCUIT</b> .....	<b>497</b>	
Diagnosis Procedure .....	479	Diagnosis Procedure .....	497	N
		<b>CAN COMMUNICATION CIRCUIT 1</b> .....	<b>498</b>	
		Diagnosis Procedure .....	498	O
		<b>CAN COMMUNICATION CIRCUIT 2</b> .....	<b>500</b>	
		Diagnosis Procedure .....	500	P
		<b>ITS COMMUNICATION CIRCUIT</b> .....	<b>502</b>	
		Diagnosis Procedure .....	502	
		<b>CAN SYSTEM (TYPE 11)</b>		
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<b>MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT</b> .....	<b>504</b>	<b>4WD BRANCH LINE CIRCUIT</b> .....	<b>525</b>
Diagnosis Procedure .....	504	Diagnosis Procedure .....	525
<b>MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT</b> .....	<b>505</b>	<b>ABS BRANCH LINE CIRCUIT</b> .....	<b>526</b>
Diagnosis Procedure .....	505	Diagnosis Procedure .....	526
<b>MAIN LINE BETWEEN A-BAG AND AV CIRCUIT</b> .....	<b>506</b>	<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	<b>527</b>
Diagnosis Procedure .....	506	Diagnosis Procedure .....	527
<b>MAIN LINE BETWEEN AV AND M&amp;A CIRCUIT</b> .....	<b>507</b>	<b>ADP BRANCH LINE CIRCUIT</b> .....	<b>528</b>
Diagnosis Procedure .....	507	Diagnosis Procedure .....	528
<b>MAIN LINE BETWEEN M&amp;A AND DLC CIRCUIT</b> .....	<b>508</b>	<b>CAN COMMUNICATION CIRCUIT</b> .....	<b>529</b>
Diagnosis Procedure .....	508	Diagnosis Procedure .....	529
<b>MAIN LINE BETWEEN DLC AND BCM CIRCUIT</b> .....	<b>509</b>	<b>CAN SYSTEM (TYPE 12)</b>	
Diagnosis Procedure .....	509	<b>DTC/CIRCUIT DIAGNOSIS</b> .....	<b>531</b>
<b>MAIN LINE BETWEEN BCM AND 4WD CIRCUIT</b> .....	<b>510</b>	<b>MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT</b> .....	<b>531</b>
Diagnosis Procedure .....	510	Diagnosis Procedure .....	531
<b>MAIN LINE BETWEEN 4WD AND ABS CIRCUIT</b> .....	<b>511</b>	<b>MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT</b> .....	<b>532</b>
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<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>513</b>	<b>MAIN LINE BETWEEN A-BAG AND AV CIRCUIT</b> .....	<b>533</b>
Diagnosis Procedure .....	513	Diagnosis Procedure .....	533
<b>TPMS BRANCH LINE CIRCUIT</b> .....	<b>515</b>	<b>MAIN LINE BETWEEN AV AND M&amp;A CIRCUIT</b> .....	<b>534</b>
Diagnosis Procedure .....	515	Diagnosis Procedure .....	534
<b>HVAC BRANCH LINE CIRCUIT</b> .....	<b>516</b>	<b>MAIN LINE BETWEEN M&amp;A AND DLC CIRCUIT</b> .....	<b>535</b>
Diagnosis Procedure .....	516	Diagnosis Procedure .....	535
<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>517</b>	<b>MAIN LINE BETWEEN DLC AND BCM CIRCUIT</b> .....	<b>536</b>
Diagnosis Procedure .....	517	Diagnosis Procedure .....	536
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	<b>518</b>	<b>MAIN LINE BETWEEN BCM AND 4WD CIRCUIT</b> .....	<b>537</b>
Diagnosis Procedure .....	518	Diagnosis Procedure .....	537
<b>AV BRANCH LINE CIRCUIT</b> .....	<b>519</b>	<b>MAIN LINE BETWEEN 4WD AND ABS CIRCUIT</b> .....	<b>538</b>
Diagnosis Procedure .....	519	Diagnosis Procedure .....	538
<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	<b>521</b>	<b>MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT</b> .....	<b>540</b>
Diagnosis Procedure .....	521	Diagnosis Procedure .....	540
<b>DLC BRANCH LINE CIRCUIT</b> .....	<b>522</b>	<b>MAIN LINE BETWEEN RDR-R AND APA CIRCUIT</b> .....	<b>541</b>
Diagnosis Procedure .....	522	Diagnosis Procedure .....	541
<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>523</b>	<b>MAIN LINE BETWEEN APA AND LANE CIRCUIT</b> .....	<b>543</b>
Diagnosis Procedure .....	523	Diagnosis Procedure .....	543
<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>524</b>		
Diagnosis Procedure .....	524		

<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>544</b>	<b>ABS BRANCH LINE CIRCUIT</b> .....	<b>560</b>	
Diagnosis Procedure .....	544	Diagnosis Procedure .....	560	A
<b>TPMS BRANCH LINE CIRCUIT</b> .....	<b>546</b>	<b>AFS BRANCH LINE CIRCUIT</b> .....	<b>561</b>	
Diagnosis Procedure .....	546	Diagnosis Procedure .....	561	B
<b>CGW BRANCH LINE CIRCUIT (CAN COM- MUNICATION CIRCUIT 1)</b> .....	<b>547</b>	<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	<b>562</b>	
Diagnosis Procedure .....	547	Diagnosis Procedure .....	562	C
<b>CGW BRANCH LINE CIRCUIT (CAN COM- MUNICATION CIRCUIT 2)</b> .....	<b>548</b>	<b>ADP BRANCH LINE CIRCUIT</b> .....	<b>563</b>	
Diagnosis Procedure .....	548	Diagnosis Procedure .....	563	D
<b>HVAC BRANCH LINE CIRCUIT</b> .....	<b>550</b>	<b>ICC BRANCH LINE CIRCUIT</b> .....	<b>564</b>	
Diagnosis Procedure .....	550	Diagnosis Procedure .....	564	E
<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>551</b>	<b>PSB BRANCH LINE CIRCUIT</b> .....	<b>565</b>	
Diagnosis Procedure .....	551	Diagnosis Procedure .....	565	F
<b>A-BAG BRANCH LINE CIRCUIT</b> .....	<b>552</b>	<b>RDR-L BRANCH LINE CIRCUIT</b> .....	<b>566</b>	
Diagnosis Procedure .....	552	Diagnosis Procedure .....	566	G
<b>AV BRANCH LINE CIRCUIT</b> .....	<b>553</b>	<b>RDR-R BRANCH LINE CIRCUIT</b> .....	<b>567</b>	
Diagnosis Procedure .....	553	Diagnosis Procedure .....	567	H
<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	<b>555</b>	<b>APA BRANCH LINE CIRCUIT</b> .....	<b>568</b>	
Diagnosis Procedure .....	555	Diagnosis Procedure .....	568	I
<b>DLC BRANCH LINE CIRCUIT</b> .....	<b>556</b>	<b>LANE BRANCH LINE CIRCUIT</b> .....	<b>569</b>	
Diagnosis Procedure .....	556	Diagnosis Procedure .....	569	J
<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>557</b>	<b>LASER BRANCH LINE CIRCUIT</b> .....	<b>570</b>	
Diagnosis Procedure .....	557	Diagnosis Procedure .....	570	K
<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>558</b>	<b>CAN COMMUNICATION CIRCUIT 1</b> .....	<b>571</b>	
Diagnosis Procedure .....	558	Diagnosis Procedure .....	571	L
<b>4WD BRANCH LINE CIRCUIT</b> .....	<b>559</b>	<b>CAN COMMUNICATION CIRCUIT 2</b> .....	<b>573</b>	
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		Diagnosis Procedure .....	575	

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PRECAUTION

PRECAUTIONS

Precautions for Trouble Diagnosis

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**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.

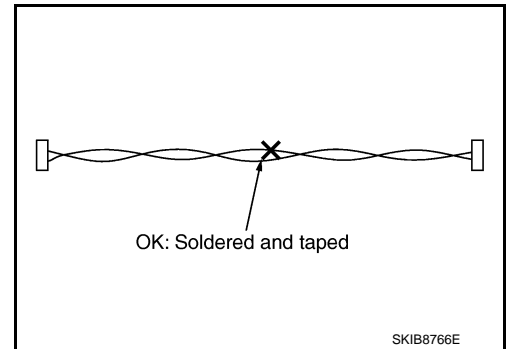
Precautions for Harness Repair

INFOID:000000006032376

- Solder the repaired area and wrap tape around the soldered area.

**NOTE:**

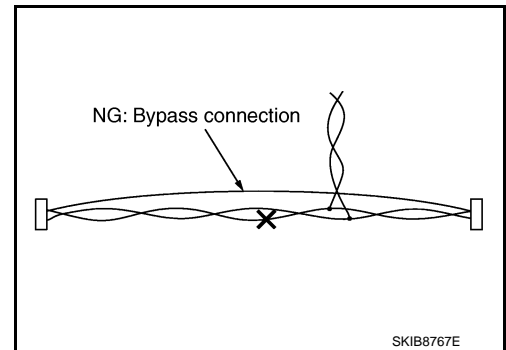
A fray of twisted lines must be within 110 mm (4.33 in).



- 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.

# SYSTEM DESCRIPTION

## SYSTEM

### CAN COMMUNICATION SYSTEM

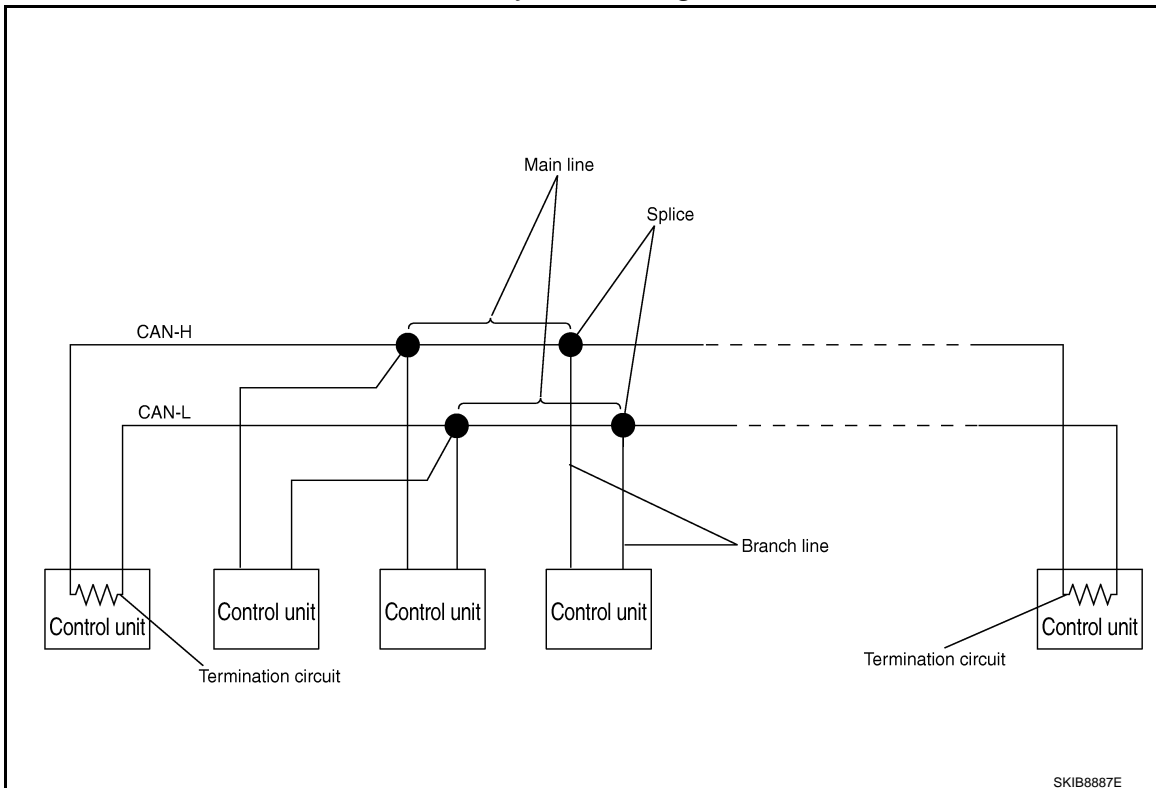
#### CAN COMMUNICATION SYSTEM : System Description

INFOID:000000006032377

- 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

INFOID:000000006032378



Each control unit passes an electric current to the termination circuits when transmitting CAN communication 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.

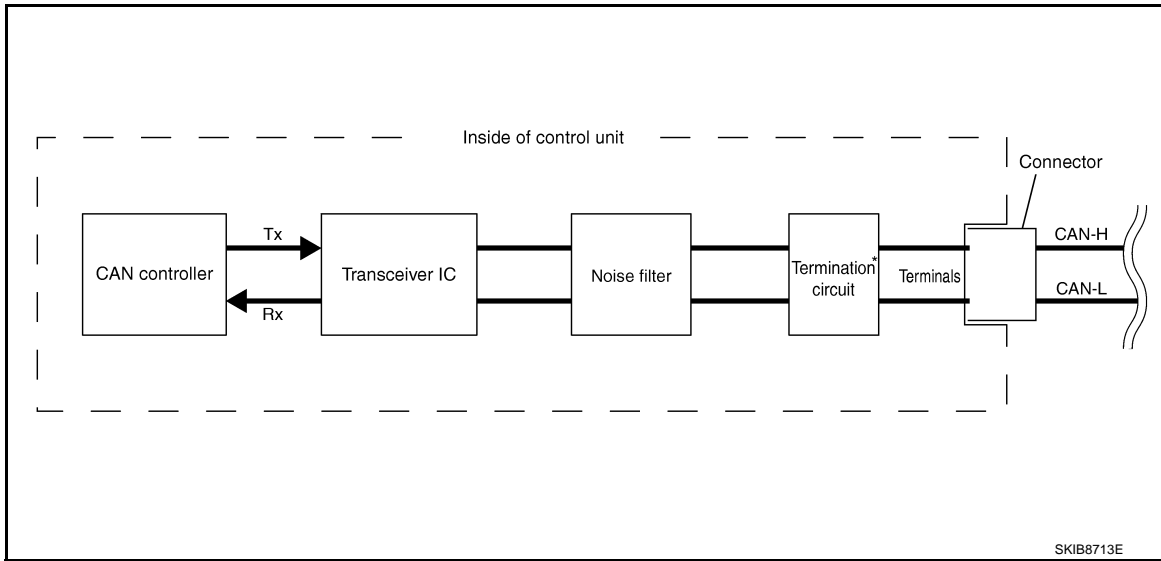
LAN

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 <a href="#">LAN-16, "CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit"</a> .

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## CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit

INFOID:000000006032379



Component	System description
CAN controller	It controls CAN communication signal transmission and reception, error detection, etc.
Transceiver IC	It converts digital signal into CAN communication signal, and CAN communication signal into digital signal.
Noise filter	It eliminates noise of CAN communication signal.
Termination circuit* (Resistance of approx. 120 Ω)	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

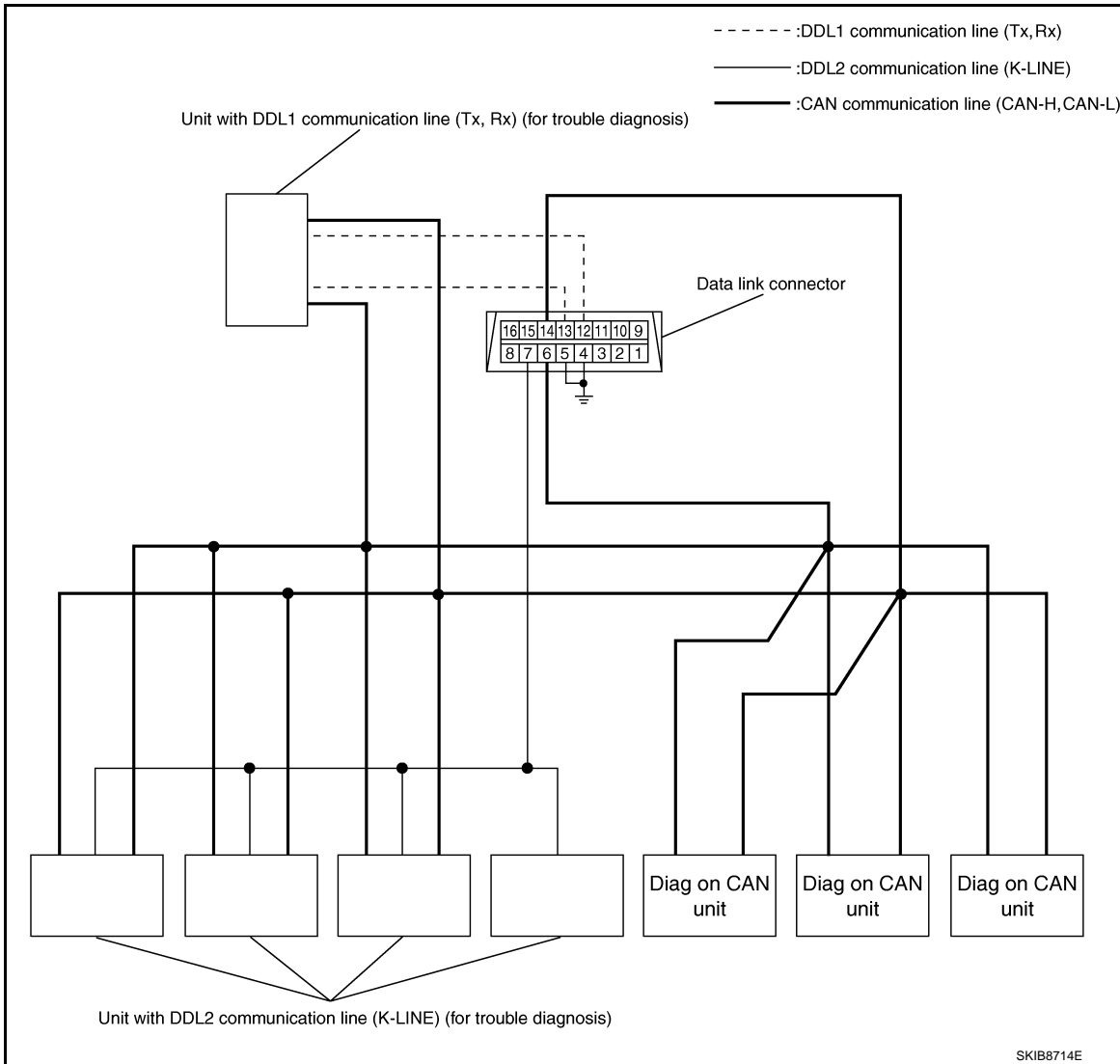
INFOID:000000006032380

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



## DIAG ON CAN : System Diagram

INFOID:000000006032381



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

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## TROUBLE DIAGNOSIS

### Condition of Error Detection

INFOID:000000006032382

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:**

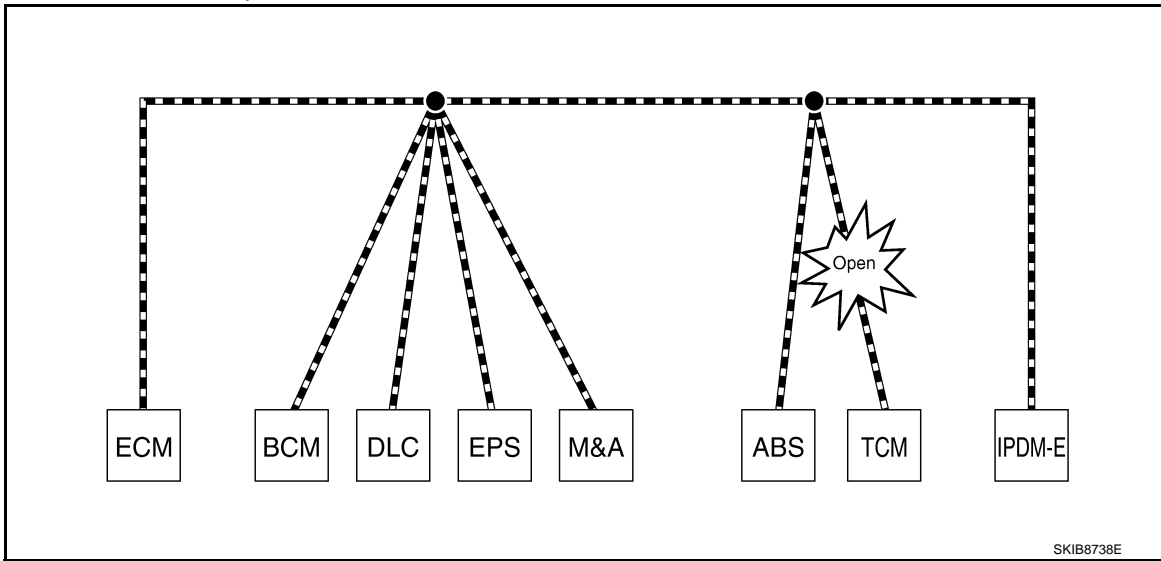
- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to [LAN-30, "Abbreviation List"](#) for the unit abbreviation.

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

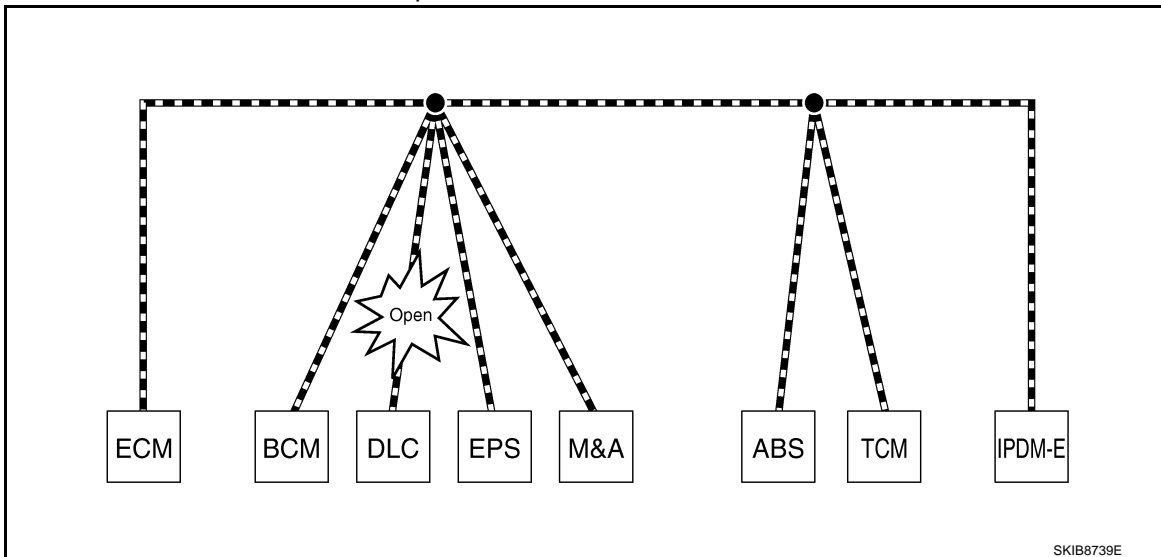
[CAN FUNDAMENTAL]

Example: TCM branch line open circuit



Unit name	Major symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	Reverse warning chime does not sound.
EPS control unit	Normal operation.
Combination meter	<ul style="list-style-type: none"> <li>• Shift position indicator and OD OFF indicator turn OFF.</li> <li>• Warning lamps turn ON.</li> </ul>
ABS actuator and electric unit (control unit)	Normal operation.
TCM	No impact on operation.
IPDM E/R	Normal operation.

Example: Data link connector branch line open circuit



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# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

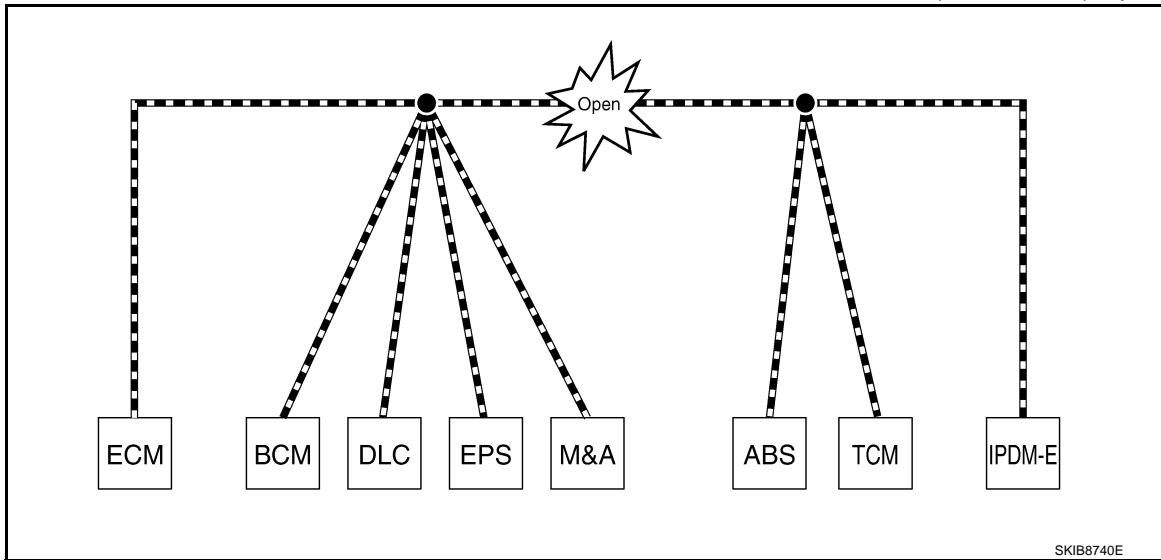
Unit name	Major symptom
ECM	Normal operation.
BCM	
EPS control unit	
Combination meter	
ABS actuator and electric unit (control unit)	
TCM	
IPDM E/R	

**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



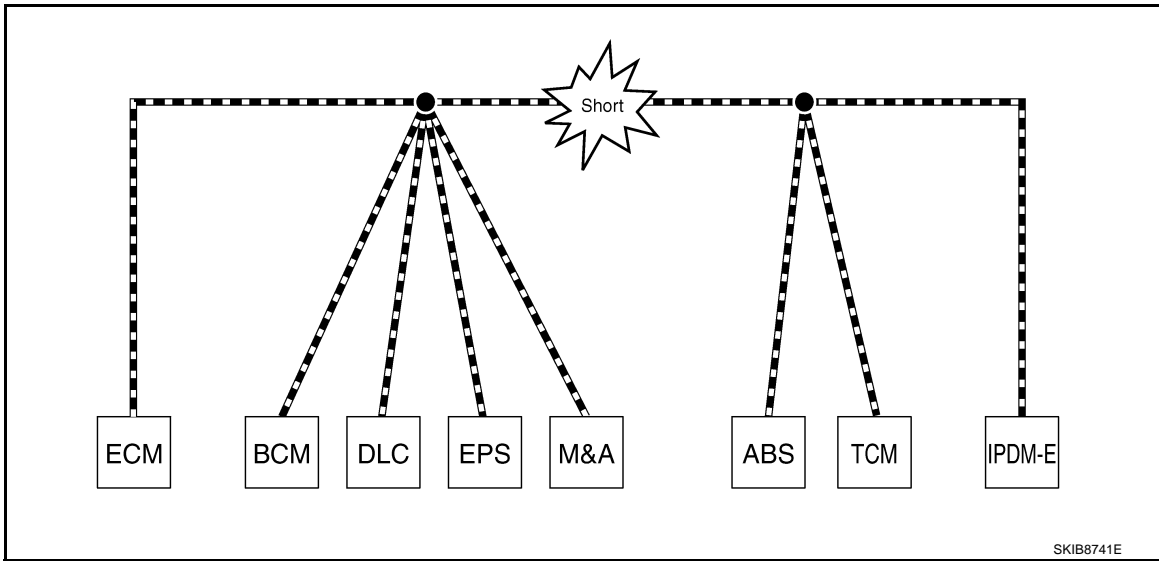
Unit name	Major symptom
ECM	Engine torque limiting is affected, and shift harshness increases.
BCM	<ul style="list-style-type: none"> <li>• Reverse warning chime does not sound.</li> <li>• The front wiper moves under continuous operation mode even though the front wiper switch being in the intermittent position.</li> </ul>
EPS control unit	The steering effort increases.
Combination meter	<ul style="list-style-type: none"> <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.
TCM	No impact on operation.
IPDM E/R	When the ignition switch is ON, <ul style="list-style-type: none"> <li>• The headlamps (Lo) turn ON.</li> <li>• The cooling fan continues to rotate.</li> </ul>

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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



Unit name	Major symptom
ECM	<ul style="list-style-type: none"> <li>Engine torque limiting is affected, and shift harshness increases.</li> <li>Engine speed drops.</li> </ul>
BCM	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <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.
TCM	No impact on operation.
IPDM E/R	When the ignition switch is ON, <ul style="list-style-type: none"> <li>The headlamps (Lo) turn ON.</li> <li>The cooling fan continues to rotate.</li> </ul>

## CAN Diagnosis with CONSULT-III

INFOID:000000006032384

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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

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

## Self-Diagnosis

INFOID:000000006032385

DTC	Self-diagnosis item (CONSULT-III indication)	DTC detection condition		Inspection/Action
U0101	LOST COMM (TCM)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) from TCM for 2 seconds or more.		Start the inspection. Refer to the applicable section of the indicated control unit.
U0140	LOST COMM (BCM)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) from BCM for 2 seconds or more.		
U0164	LOST COMM (HVAC)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) from A/C auto amp. or unified meter and A/C amp. for 2 seconds or more.		
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.	
		Except 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	When ECM is not transmitting or receiving CAN communication signal other than OBD (emission-related diagnosis) for 2 seconds or more.		
U1002	SYSTEM COMM	When a control unit is not transmitting or receiving CAN communication signal for 2 seconds or less.		
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diagnosis for CAN controller of each control unit.		Replace the control unit indicating "U1010" or "P0607".
P0607	ECM			
U1507	LOST COMM (SIDE RDR R)	When ADAS control unit is not receiving CAN communication signal from side radar RH for 2 seconds or more.		Start the inspection. Refer to the applicable section of the indicated control unit.
U1508	LOST COMM (SIDE RDR L)	When ADAS control unit is not receiving CAN communication signal from side radar LH for 2 seconds or more.		

## CAN Diagnostic Support Monitor

INFOID:000000006032386

### MONITOR ITEM (CONSULT-III)

Example: CAN DIAG SUPPORT MNTR indication

Without PAST			With PAST		
ECM			ECM		
	PRSENT	PAST		PRSENT	PAST
INITIAL DIAG	OK		TRANSMIT DIAG	OK	OK
TRANSMIT DIAG	OK		VDC/TCS/ABS	-	-
TCM	OK		METER/M&A	OK	OK
VDC/TCS/ABS	UNKWN		BCM/SEC	OK	OK
METER/M&A	OK		ICC	-	-
ICC	UNKWN		HVAC	-	-
BCM/SEC	OK		TCM	OK	OK
IPDM E/R	OK		EPS	-	-
			IPDM E/R	OK	OK
			e4WD	-	-
			AWD/4WD	OK	OK

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Without PAST

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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

With PAST

Item	PRSNT	PAST	Description
Transmission diagnosis	OK	OK	Normal at present and in the past
		1 – 39	Normal at present, but unable to transmit signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.)
	UNKWN	0	Unable to transmit signals for 2 seconds or more at present.
Control unit name (Reception diagnosis)	OK	OK	Normal at present and in the past
		1 – 39	Normal at present, but unable to receive signals for 2 seconds or more in the past. (The number indicates the number of ignition switch cycles from OFF to ON.)
	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 indicated	Error counter	Description
CAN_COMM (Initial diagnosis)	OK	0	Normal at present
	NG	1 – 50	Control unit error (The number indicates how many times diagnosis has been run.)
CAN_CIRC_1 (Transmission diagnosis)	OK	0	Normal at present
	UNKWN	1 – 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)
CAN_CIRC_2 – 9 (Reception diagnosis of each unit)	OK	0	Normal at present
	UNKWN	1 – 50	Unable to transmit for 2 seconds or more at present. (The number indicates how many times diagnosis has been run.)
			Diagnosis not performed.
		No control unit for receiving signals. (No applicable optional parts)	

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

## How to Use CAN Communication Signal Chart

INFOID:000000006032387

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.

Example: Tachometer does not move even though the engine rotates.

T: Transmit R: Receive

Signal name/Connecting unit	ECM	BCM	M&A	STRG	ABS	IPDM-E
A/C compressor feedback signal	T		R			
A/C compressor request signal	T					R
Accelerator pedal position signal	T				R	
Cooling fan motor operation signal	T					R
Engine coolant temperature signal	T		R			
Engine speed signal	T		R		R	
Fuel consumption monitor signal	T		R			
Malfunction indicator lamp signal	T		R			
A/C switch signal	R	T				
Ignition switch signal		T				R
Sleep/wake up signal		T	R			R

It indicates that an error occurs between ECM and M&A (Shaded area).

CAN-H, CAN-L

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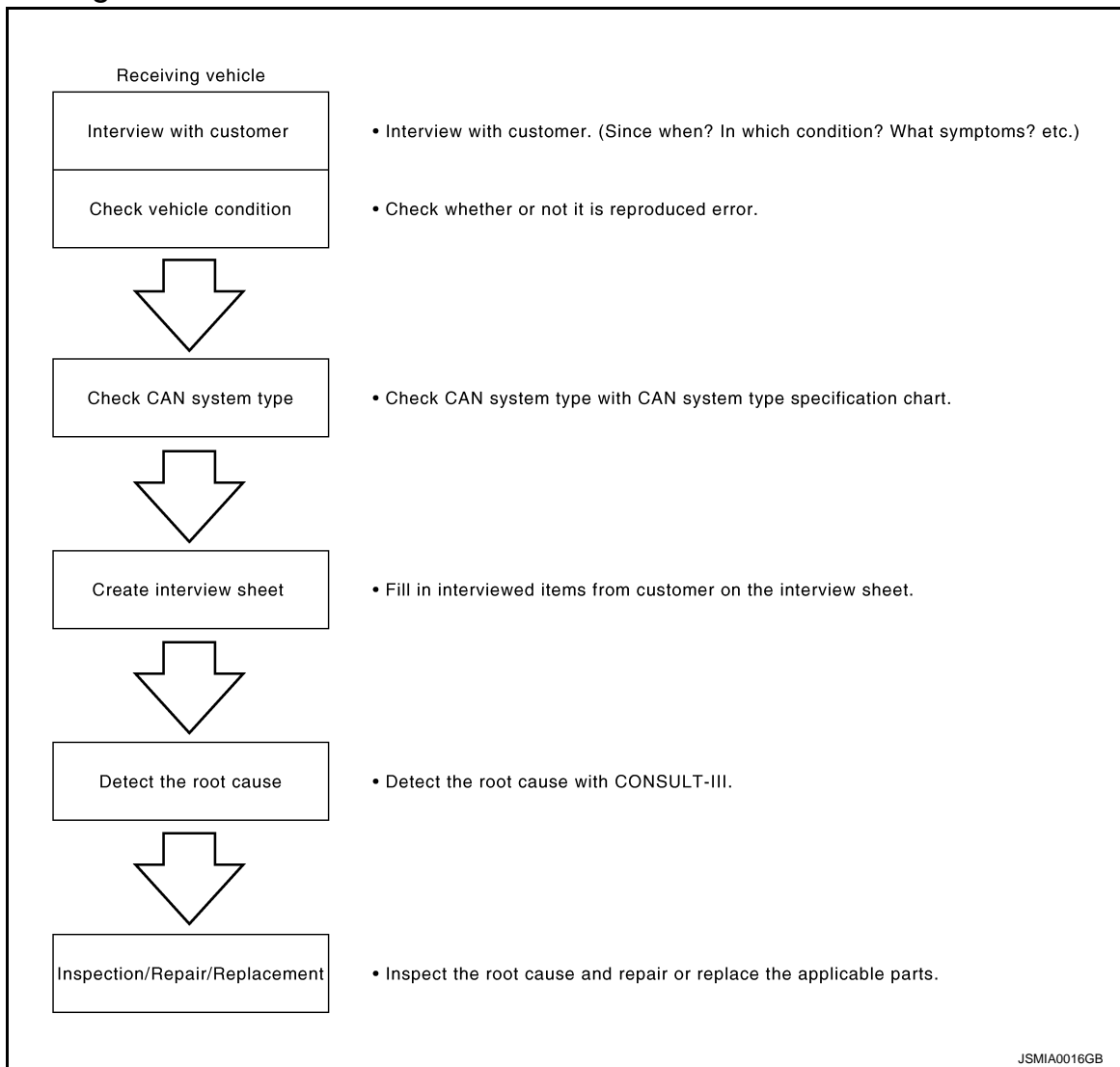


## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Trouble Diagnosis Flow Chart

INFOID:000000006032388



#### Trouble Diagnosis Procedure

INFOID:000000006032389

##### INTERVIEW WITH CUSTOMER

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 fail-safe mode.

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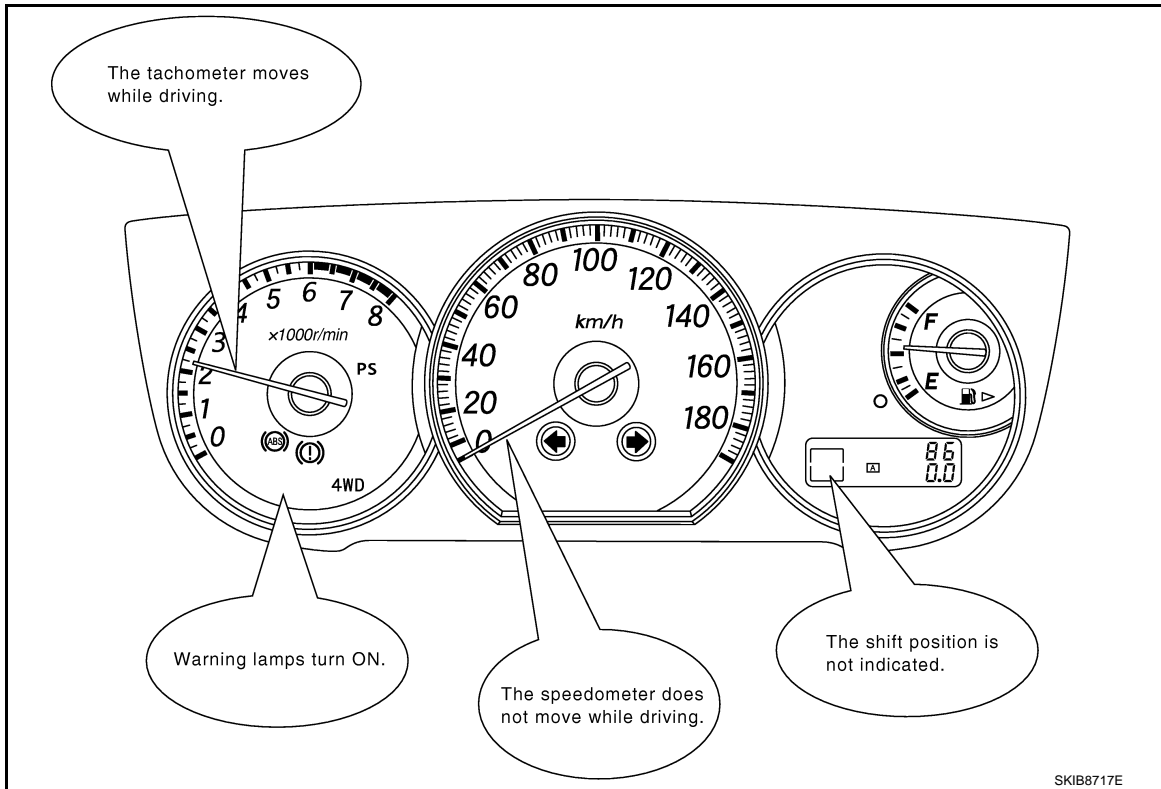
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# DIAGNOSIS AND REPAIR WORKFLOW

< 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:

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

Example:  
Vehicle is equipped as follows: Wagon, AWD, VQ35DE, CVT, VDC, and Intelligent Key system. (○ shows an example of CAN system type.)

**CAN System Specification Chart**  
Determine CAN system type from the following specification chart.

Body type	Wagon					
Axle	2WD			AWD		
Engine	QR25DE		VQ35DE			
Transmission	A/T			CVT		
Brake control	ABS			VDC		
Intelligent Key system		X		X		X
CAN system type	1	2	3	4	5	6
CAN communication signal chart	XX-XX. "TYPE 1/TYPE 2"		XX-XX. "TYPE 3/TYPE 4"		XX-XX. "TYPE 5/TYPE 6"	

X : Applicable

**VEHICLE EQUIPMENT IDENTIFICATION INFORMATION**  
**NOTE:**  
Check CAN system type from the vehicle shape and equipment.

With VDC

VDC OFF switch

With Intelligent Key system

Ignition knob

In the above example,  
 • Checking VDC OFF switch leads to judge whether or not VDC is equipped.  
 • Checking the ignition knob leads to judge whether or not Intelligent Key system is equipped.

[ For the above case, CAN system type is "6". ]

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CAN System Type Specification Chart (Style B)

**NOTE:**

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# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

CAN system type is easily checked with the vehicle equipment identification information shown in the chart.

Example:

Vehicle is equipped as follows: Sedan, 2WD, MR20DE, CVT, ABS, Active AFS, Intelligent Key system, Navigation system and Automatic drive positioner. (○ shows an example of CAN system type.)

### CAN System Specification Chart

Refer to the specification as shown in the chart.

Body type	Sedan		
Axle	2WD		AWD
Engine	HR15DE	MR20DE	HR15DE
Transmission	AT	CVT	AT
Brake control	ABS		
Specification chart	XXX SPECIFICATION CHART A	YYY SPECIFICATION CHART B	XXX SPECIFICATION CHART C

Check the vehicle equipment with the vehicle identification number plate.

Check the vehicle equipment.

Select the applicable vehicle equipment. Refer to the specification chart.

x: Applicable

### SPECIFICATION CHART B

Determine CAN system type from the following specification chart.

Body type	Sedan											
Axle	2WD											
Engine	MR20DE											
Transmission	CVT											
Brake control	ABS											
Active AFS	x			x	x			x	x	x	x	
Intelligent Key system		x		x		x	x	x	x	x	x	
Navigation system			x			x	x		x		x	
Automatic drive positioner									x	x	x	
CAN system type	9	10	11	12	13	14	15	16	17	18	19	20
CAN communication signal chart	XXX SPECIFICATION CHART A											

Check the vehicle equipment.

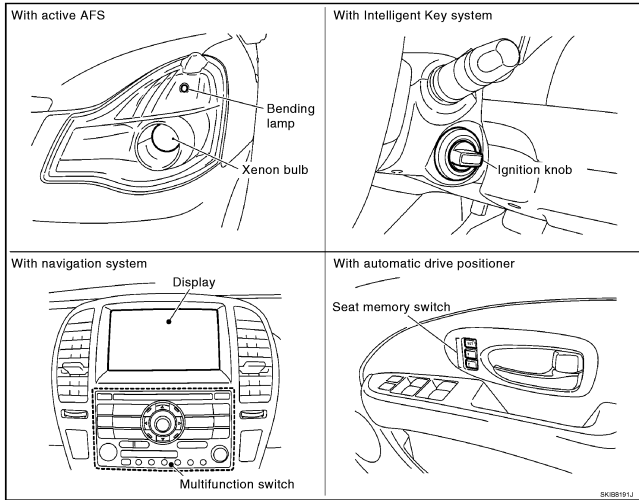
The number indicates the CAN system type of the vehicle.

x: Applicable

### VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

#### NOTE:

Check CAN system type from the vehicle shape and equipment.



In the above example,

- Checking Xenon bulb and bending lamp lead to judge whether or not Active AFS is equipped.
- Checking the ignition knob leads to judge whether or not Intelligent Key system is equipped.
- Checking display and multifunction switch lead to judge whether or not Navigation system is equipped.
- Checking seat memory switch leads to judge whether or not Automatic drive positioner is equipped.

[ For the above case, CAN system type is "20". ]

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## CREATE INTERVIEW SHEET

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

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN FUNDAMENTAL]

Interview Sheet (Example)

CAN Communication System Diagnosis Interview Sheet	
Date received:	3, Feb. 2006
Type: DBA-KG11	VIN No.: KG11-005040
Model: BDRARGZ397EDA-E-J-	
First registration: 10, Jan. 2001	Mileage: 62,140
CAN system type:	Type 19
Symptom (Results from interview with customer)	
<ul style="list-style-type: none"><li>• Headlamps suddenly turn ON while driving the vehicle.</li><li>• The engine does not restart after stopping the vehicle and turning the ignition switch OFF.</li><li>• The cooling fan continues rotating while turning the ignition switch ON.</li></ul>	
Condition at inspection	
Error Symptom: <u>Present</u> / Past	
<p>The engine does not start. While turning the ignition switch ON,</p> <ul style="list-style-type: none"><li>• The headlamps (Lo) turn ON, and the cooling fan continues rotating.</li><li>• The interior lamp does not turn ON.</li></ul>	

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## 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

INFOID:000000006032391

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to [LAN-25, "Trouble Diagnosis Procedure"](#).

#### Abbreviation List

INFOID:000000006032392

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	TCM
TPMS	Low tire pressure warning control unit

## PRECAUTION

### PRECAUTIONS

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

INFOID:000000006032393

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.

#### Precautions for Trouble Diagnosis

INFOID:000000006032398

#### **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.

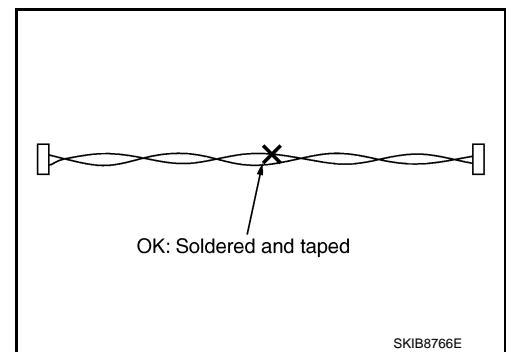
#### Precautions for Harness Repair

INFOID:000000006032399

- 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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## PRECAUTIONS

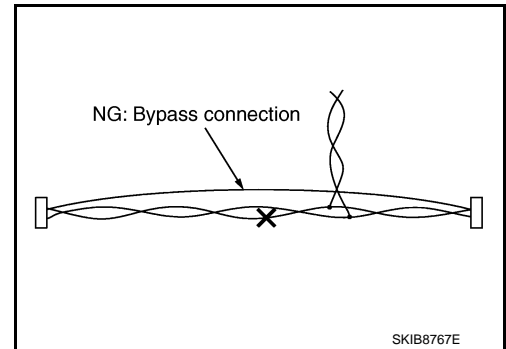
< PRECAUTION >

[CAN]

- 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.

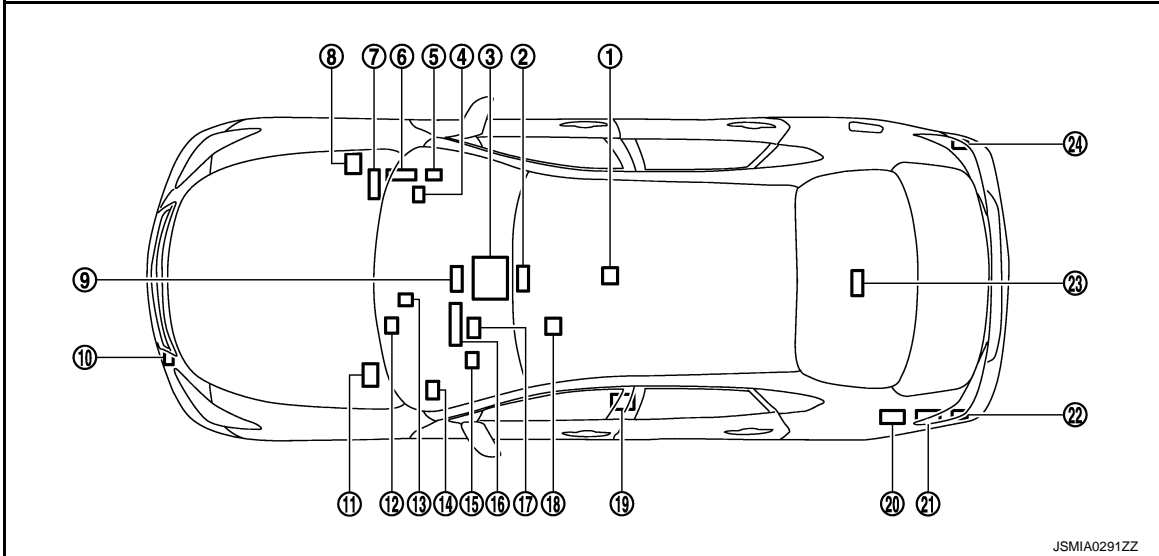


SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000006032400



- |  |   |                              |
|--|---|------------------------------|
| 1. Air bag diagnosis sensor unit                   | 2. Lane camera unit                               | 3. A/T assembly              |
| 4. CAN gateway                                     | 5. Low tire pressure warning control unit         | 6. A/C auto amp.             |
| 7. ECM   | 8. IPDM E/R                                       | 9. AV control unit           |
| 10. ICC sensor                                     | 11. ABS actuator and electric unit (control unit) | 12. BCM                      |
| 13. Accelerator pedal actuator                     | 14. AFS control unit                              | 15. Data link connector      |
| 16. Combination meter                              | 17. Steering angle sensor                         | 18. Driver seat control unit |
| 19. Pre-crash seat belt control unit (driver side) | 20. 4WAS main control unit                        | 21. AWD control unit         |
| 22. Side radar LH                                  | 23. ADAS control unit                             | 24. Side radar RH            |

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# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

## SYSTEM

### CAN COMMUNICATION SYSTEM

#### CAN COMMUNICATION SYSTEM : CAN System Specification Chart

INFOID:000000006032401

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.

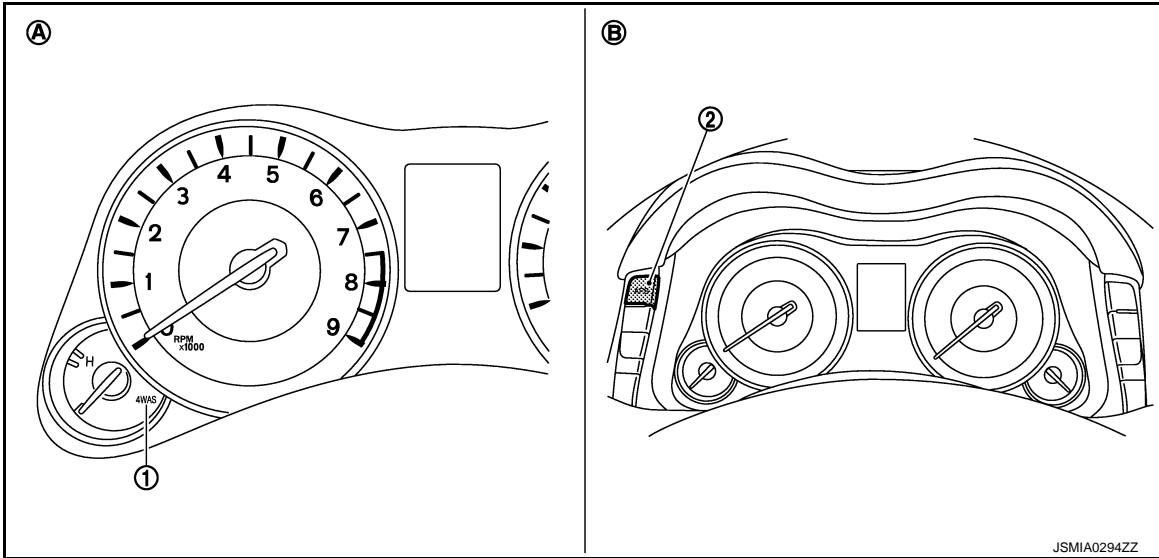
Body type	Sedan											
Axle	2WD						AWD					
Engine	VQ37VHR			VK56VD			VQ37VHR			VK56VD		
Transmission	A/T											
Brake control	VDC											
4WAS		×		×		×		×		×		×
Active AFS			×	×			×	×		×		×
CAN system type	1	2	3	4	5	6	7	8	9	10	11	12
<b>CAN communication unit</b>												
ECM	×	×	×	×	×	×	×	×	×	×	×	×
Low tire pressure warning control unit	×	×	×	×	×	×	×	×	×	×	×	×
CAN gateway			×	×			×	×		×		×
A/C auto amp.	×	×	×	×	×	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×	×	×	×	×	×
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)			×	×			×	×		×		×
<b>ITS communication unit</b>												
ADAS control unit			×	×			×	×		×		×
Side radar LH			×	×			×	×		×		×
Side radar RH			×	×			×	×		×		×
Accelerator pedal actuator			×	×			×	×		×		×
Lane camera unit			×	×			×	×		×		×
ICC sensor			×	×			×	×		×		×

×: Applicable

#### VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

**NOTE:**

Check CAN system type from the vehicle shape and equipment.



- 1. 4WAS warning lamp
- 2. AFS switch
- A. With 4WAS
- B. With active AFS

CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

INFOID:000000006032402

Refer to [LAN-24. "How to Use CAN Communication Signal Chart"](#) for how to use CAN communication signal chart.

**NOTE:**

Refer to [LAN-30. "Abbreviation List"](#) for the abbreviations of the connecting units.

T: Transmit R: Receive

Signal name	ECM	TPMS	CGW	HVAC	TCM	AV	M&A	BCM	STRG	4WD	RAS	ABS	AFS	IPDM-E	ADP	ICC	PSB
A/C compressor request signal	T													R			
Accelerator pedal position signal	T				R					R		R				R	
ASCD OD cancel request signal	T				R												
ASCD operation signal	T				R												
ASCD status signal	T						R										
Closed throttle position signal	T				R											R	
Cooling fan speed request signal	T													R			
ECO drive indicator control signal	T						R										
ECO pedal reaction force control signal	T															R	
ECO pedal reaction force setting signal	T					R											
	R					T											
Engine and A/T integrated control signal	T				R												
	R				T												
Engine coolant temperature signal	T			R			R										
Engine speed signal	T				R		R			R	R	R	R			R	
Engine status signal	T					R	R	R									
Fuel consumption monitor signal	T					R	R										
ICC brake switch signal	T															R	
ICC operation signal	T				R												
	R											R				T	

# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

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

# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

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

# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

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				T							R		
Low beam request signal								T						R			
Meter display signal							R	T									
Meter ring illumination request signal							R									T	
Oil pressure switch signal							R	T									
Position light request signal								R									
Rear window defogger control signal								T									
Sleep wake up signal	R					R									T		
Starter control relay signal			R				R	T							R	R	R
Starter relay status signal								T									
Starting mode signal								R									
Steering lock relay signal								T									
Steering lock unit status signal								R									
Theft warning horn request signal								T							R		
Trunk switch signal							R	T									
Turn indicator signal					R		R	T									R
Steering angle sensor malfunction signal									T								R
Steering angle sensor signal						R			T		R	R	R				R
Steering angle speed signal									T								R
Steering calibration signal									T								R
AWD signal										T		R					
AWD warning lamp signal							R			T							
4WAS signal											T	R					
4WAS warning lamp signal							R				T						
A/T shift schedule change demand signal					R							T					
ABS malfunction signal												T					R
ABS operation signal					R							T					R
ABS warning lamp signal							R					T					R
Brake warning lamp signal							R					T					
Decel G sensor signal					R							T					
Pressure sensor signal					R							T					
Side G sensor signal					R							T					R
TCS gear keep request signal					R							T					
TCS malfunction signal												T					R
TCS operation signal												T					R
VDC malfunction signal					R							T					R

# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

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

\*: 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 SYSTEM (WITH ICC)

[CAN]

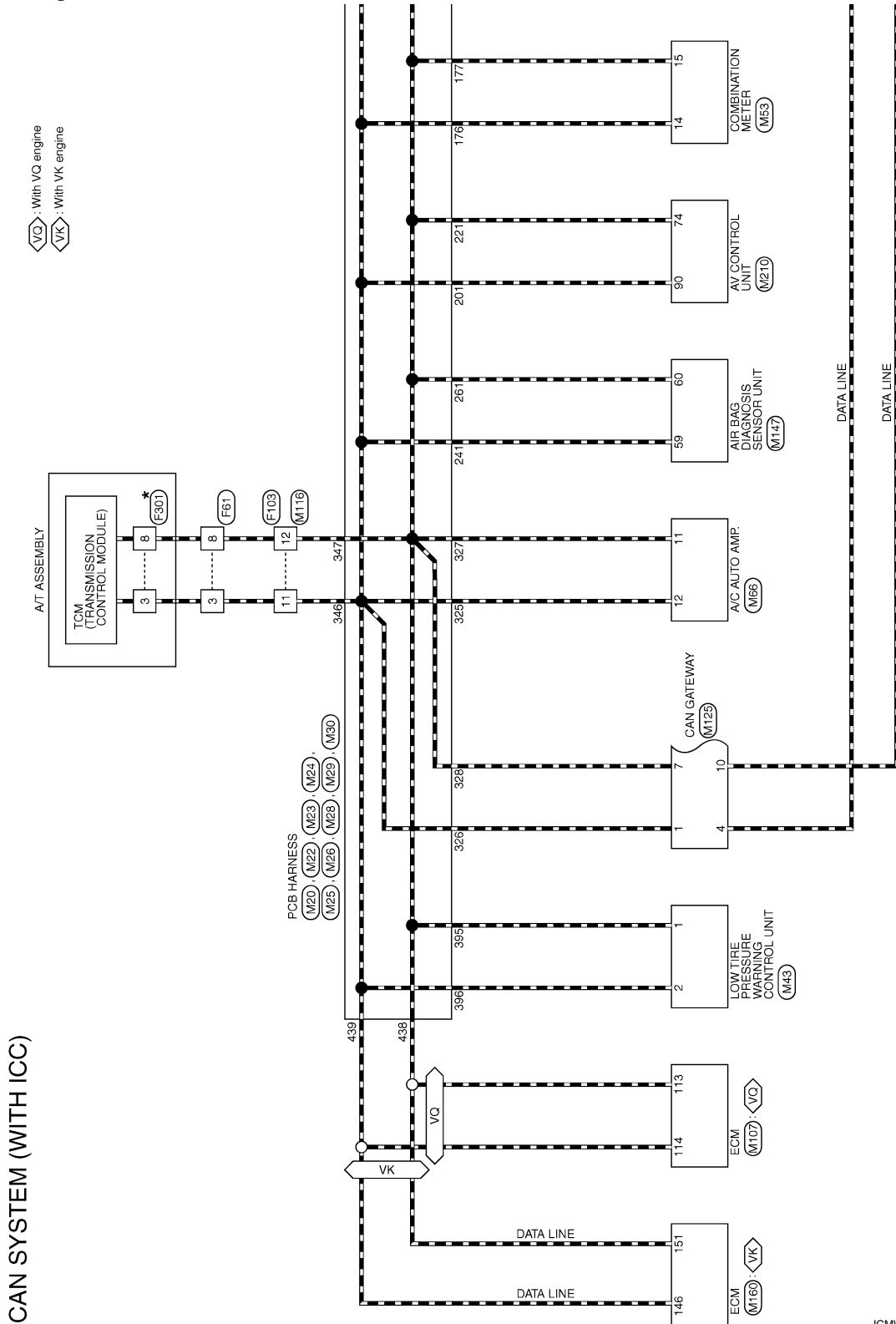
< WIRING DIAGRAM >

## WIRING DIAGRAM

### CAN SYSTEM (WITH ICC)

#### Wiring Diagram

INFOID:000000006032403



\*: This connector is not shown in "Harness Layout".

2010/02/03

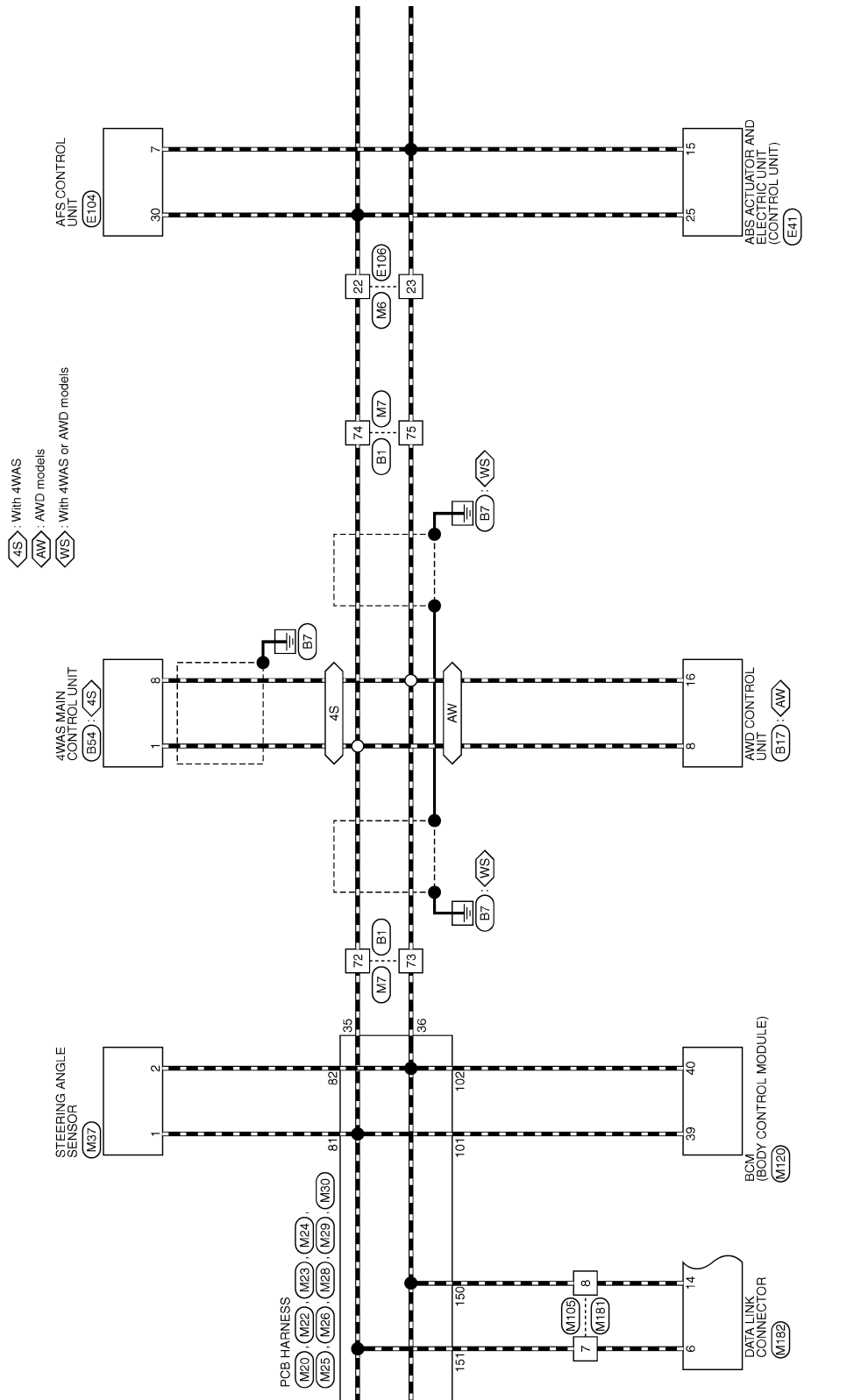
JCMWA5538GB



# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]



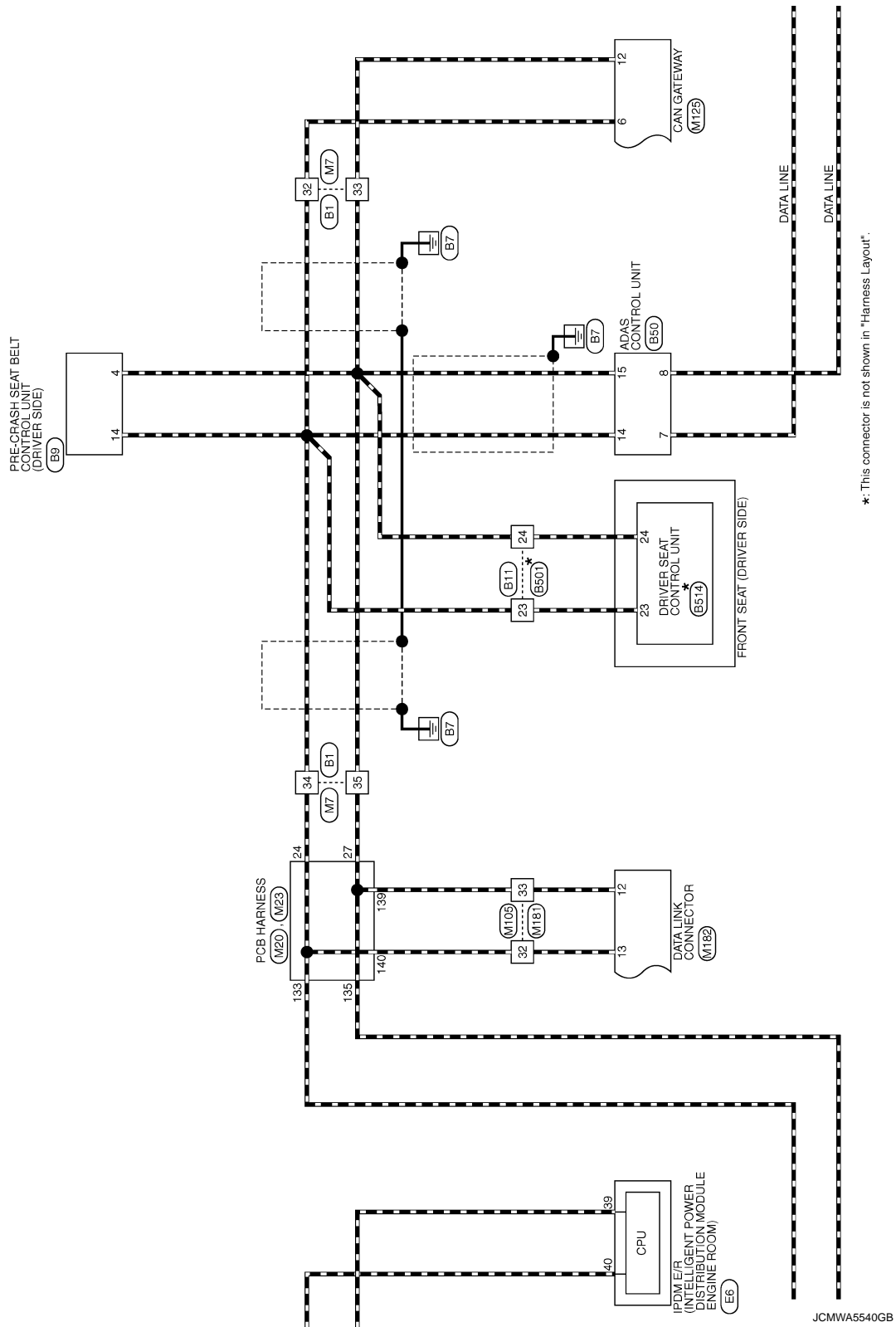
JCMWA5539GB

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# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]



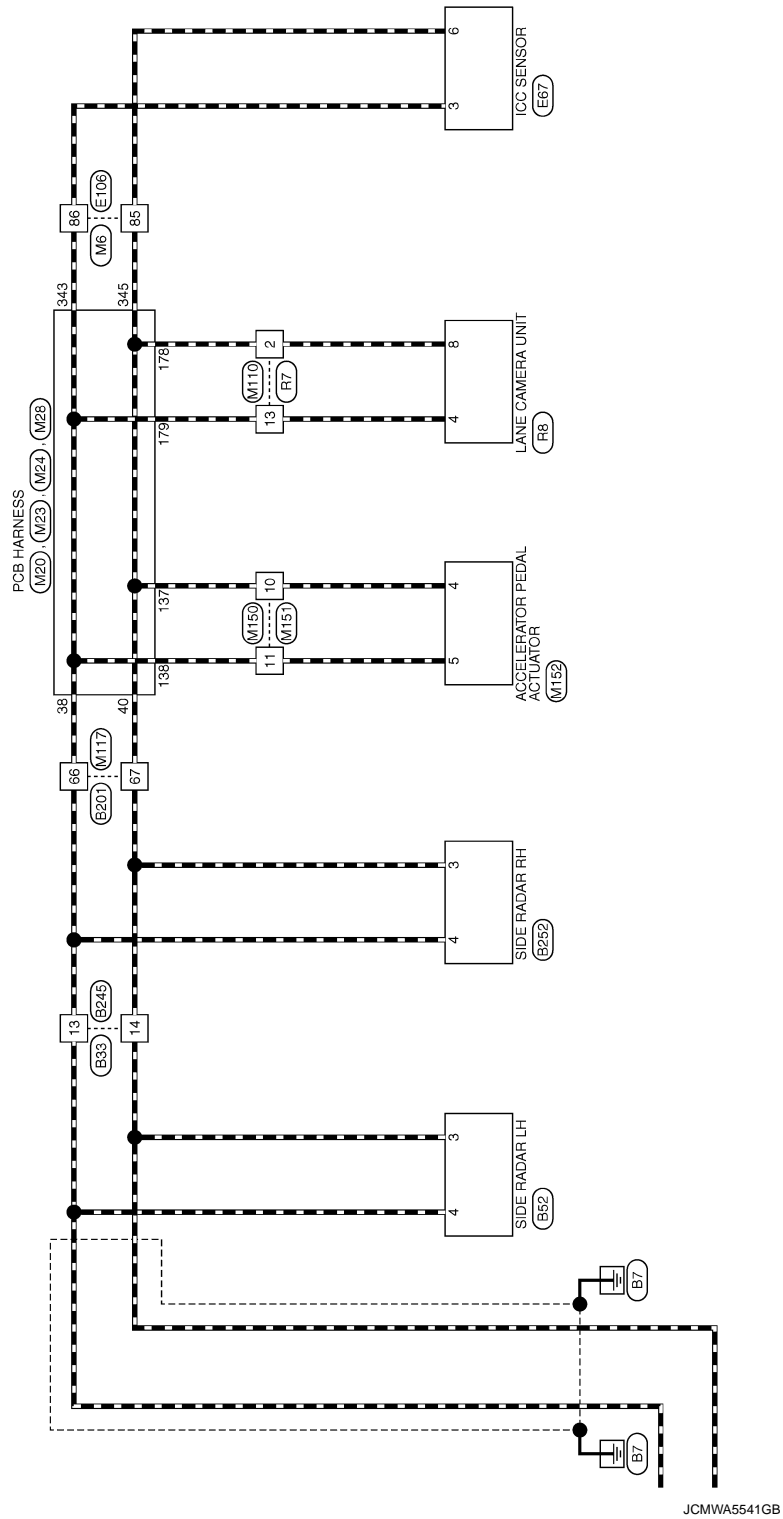
\*: This connector is not shown in "Harness Layout".

JCMWA5540GB

# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]



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# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITH ICC)

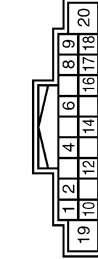
Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH06PW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	W	-
4	LG	-
5	P	-
6	V	-
7	GR	-
8	Y	-
9	LG	-
10	V	-
11	GR	- [With Climate controlled seat]
12	P	- [With heated seat]
13	GR	- [With Climate controlled seat]
14	BR	- [With heated seat]
15	R	-
16	V	-
17	B	-
18	R	-
19	W	-
20	R	-
21	B	-
22	LG	-
23	V	-
24	Y	-
25	G	-
26	GR	-
27	SB	-
28	P	- [With Pre-crash seat belt system]
29	L/O	- [Without Pre-crash seat belt system]
29	L	- [With Pre-crash seat belt system]
29	W/L	- [Without Pre-crash seat belt system]
30	SHIELD	- [Without Pre-crash seat belt system]
32	L	-
33	R	-
34	L	-
35	R	-
36	G	-

37	SB	-
40	SHIELD	-
41	GR/V	-
42	W/L	-
45	W	-
47	W	-
48	V	-
49	BR	-
50	SB	-
51	V	-
52	LG	-
53	G	-
56	P	-
57	BR	-
58	LG	-
59	Y	-
60	W	-
61	B	-
62	LG	-
63	BR	- [With ICC and 4WAS system]
63	V	- [Without ICC and 4WAS system]
65	O	-
66	BR	-
67	V	-
68	LG	-
69	GR	-
70	R	-
72	L	-
73	P	-
74	L	-
75	P	-
76	Y	-
77	R	-
78	W	-
79	G	-
81	LG	-
82	BR	-
83	SB	-
84	Y	-
85	W	-
86	R	-
87	G	-
88	GR	-
91	SB	-
92	G	-
96	Y	-
97	O	-
98	SB	-
99	LG	-

Connector No.	B9
Connector Name	PRE-CRASH SEAT BELT CONTROL UNIT (DRIVER SIDE)
Connector Type	TH18FW-CSZ



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	SIG BAT
2	G	OUT 1
4	P	CAN LO
6	LG	BUCKLE SW LH NO
8	BR	LOCAL COAM 2
9	SHIELD	SHIELD GND
10	R	SENS POWER 1
12	B	OUT 2
14	L	CAN HI
16	Y	LOCAL COAM 1
17	W	SENS GND 1
18	B	SIG GND
19	Y	MOTOR BAT
20	B	MOTOR GND

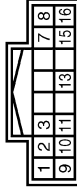
Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	-
2	B	-
23	L	-
24	P	-
25	BR	-
26	W	-
27	L	-
28	P	-

29	O	-
30	V	-
31	BR	-
32	LG	-
35	LG	-
40	O	-
41	B	-

Connector No.	B17
Connector Name	AWD CONTROL UNIT
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	AWD SOL (-)
2	R	AWD SOL (-)
3	W	OIL TEMP (-)
7	Y	IGN
8	L	CAN-H
9	SB	AWD SOL/BAT
10	B/Y	GND
11	B/Y	GND
13	LG	OIL TEMP (+)
15	G	VB
16	P	CAN-L

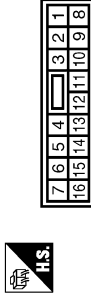
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

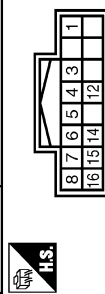
## CAN SYSTEM (WITH ICC)

Connector No.	B33
Connector Name	WIRE TO WIRE
Connector Type	HS18FY-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	-
2	L	-
3	O	-
4	GR	-
5	O	-
6	P	-
7	R/L	-
8	P/L	-
9	L	-
10	Y	-

Connector No.	B50
Connector Name	ADAS CONTROL UNIT
Connector Type	TH18FW-NH



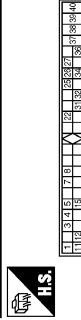
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	WARNING SYSTEMS SW
2	BR	IEA OFF SW
3	O	WARNING SYSTEMS ON IND
4	SB	BRAKE HOLD RLY DRIVE SIGNAL
5	B/R	GND
6	L	ITS COMM-H
7	P	ITS COMM-L
8	W	WARNING BUZZER
9	L	CAN-H
10	R	CAN-L
11	GR	IGNITION

Connector No.	B52
Connector Name	SIDE RADAR LH
Connector Type	AA038EB-WP-3P



Terminal No.	Color of Wire	Signal Name [Specification]
2	B/Y	GND
3	Y	ITS COMM-L
4	L	ITS COMM-H
5	GR	IGN
6	BR	BSW/BSI INDICATOR

Connector No.	B54
Connector Name	4WAS MAIN CONTROL UNIT
Connector Type	A38FY-M4



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	R	CAN-L
3	W/L	4WAS COMMUNICATION-H
4	GR/V	4WAS COMMUNICATION-L
5	B/Y	GND
6	SB	EPS SOL
7	P	RR-MTR PWR SUPPLY
8	F	RR-MTR (RH)
9	P	RR-MTR (LH)
10	B/Y	RR-MTR GND

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80MM-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
3	R	-
4	GR	-
5	LG	-
6	W	-
7	O	-
8	Y	-
9	BR	-
10	L	-
11	R	-
12	P	-
13	O	-
14	B/R	-
15	Y	-
16	SHIELD	-
17	W/R	-
18	V	-
19	P	-
20	SB	-
21	R	- [With Climate controlled seat]
22	Y	- [With heated seat]
23	G	- [With Climate controlled seat]
24	GR	- [With heated seat]
25	O	-
26	W	-
27	O	-
28	V	-
29	P	-
30	O	-
31	B/R	-
32	Y	-
33	SHIELD	-
34	W/R	-
35	V	-
36	P	-
37	SB	-
38	R	- [With Climate controlled seat]
39	Y	- [With heated seat]
40	G	- [With Climate controlled seat]
41	GR	- [With heated seat]
42	O	-
43	V	-
44	P	-
45	SB	-
46	R	- [With Climate controlled seat]
47	G	- [With heated seat]
48	GR	- [With Climate controlled seat]
49	O	-
50	R	-
51	GR	-
52	LG	-
53	P	-
54	P	-
55	W	-
56	O	-
57	Y	-
58	O	-
59	Y	-
60	SB	-
61	L	-

63	W	-
64	L	-
65	Y	-
66	SB	-
67	B	-
68	R	-
69	SHIELD	-
70	G	-
71	R	-
72	P	-
73	G	-
74	P	-
75	G	-
76	P	-
77	G	-
78	R	-
79	P	-
80	G	-
81	P	-
82	BR	-
83	GR	-
84	V	-
85	LG	-
86	W	-
87	O	-
88	Y	-
89	BR	-
90	L	-
91	BR	-
92	Y	- [With Climate controlled seat]
93	O	- [With heated seat]
94	GR	-
95	W	-
96	P	-
97	P	-
98	LG	-
99	LG	-
100	Y	-

A B C D E F G H I J K L N O P

LAN

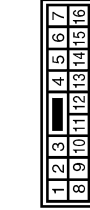
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

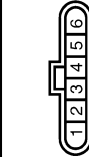
## CAN SYSTEM (WITH ICC)

Connector No.	B245
Connector Name	WIRE TO WIRE
Connector Type	HS16MGY-CS



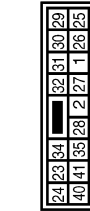
Terminal No.	Color of Wire	Signal Name [Specification]
1	P	
2	O	
3	Y	
8	G	
9	V	
10	P	
11	R/L	
12	P/L	
13	L	
14	Y	

Connector No.	B232
Connector Name	SIDE RADAR RH
Connector Type	AA20PFB-WP



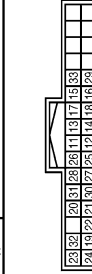
Terminal No.	Color of Wire	Signal Name [Specification]
1	B/R	RIGHT/LEFT SWITCHING SIGNAL
2	B/R	GND
3	Y	ITS COMM-L
4	L	ITS COMM-H
5	G	IGN
6	BR	BSW/BSI INDICATOR

Connector No.	B501
Connector Name	WIRE TO WIRE
Connector Type	HS16MMK-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	
2	B	
23	P	
24	P/L	
25	G/O	
26	L/O	
27	V	
28	V/W	
29	L	
30	BR	
31	BR/W	
32	W/L	
35	W/Y	
40	W/G	
41	GR	

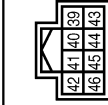
Connector No.	B514
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH32FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
11	G/B	SLIDE SW (BACKWARD)
12	G/W	SLIDE SW (FORWARD)
13	R/G	RECLINER SW (BACKWARD)
14	R/W	RECLINER SW (FORWARD)
15	Y/B	REAR LIFTER SW (DOWNWARD)
16	Y/R	REAR LIFTER SW (UPWARD)
17	LG/B	RECLINER SW (BACKWARD)

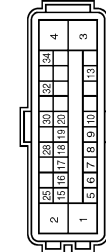
Terminal No.	LG/R	Signal Name [Specification]
18	G/Y	FRONT LIFTER SW (UPWARD)
19	R/Y	PULSE (SUIDE)
20	R/Y	PULSE (RECLINER)
21	Y	PULSE (REAR LIFTER)
22	P	PULSE (FRONT LIFTER)
23	B	CAN-H
24	P/L	CAN-L
25	G/O	IND 1
26	L/O	IND 2
27	V	ADDRESS 1
28	V/W	ADDRESS 2
29	L	SET SW
30	BR	PULSE(TILT)
31	BR/W	PULSE(TELESCOPIC)
32	W/L	UART (TX/RX)
33	W	POWER SUPPLY (ENCODER)

Connector No.	E6
Connector Name	POWER INTELLIGENT POWER DISTRIBUTION MODULE (PHONE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	
40	L	
41	B	
42	V	
43	SB	
44	GR	
45	G	
46	BR	

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SAZ20PFB-SJ24-U



Terminal No.	Color of Wire	Signal Name [Specification]
1	B/W	ECU(GND)
2	B	MOTOR(GND)
3	Y	SOLENOID(POWER)
4	G	MOTOR(POWER)
5	SB	STOP LAMP SW
6	Y	CANM2(-)
7	W	R-LH SEN(SIGNAL)
8	G	R-RH SEN(SIGNAL)
9	BR	F-RH SEN(SIGNAL)
10	B	F-RH SEN(POWER)
11	LG	YAC SEN(SIGNAL)
12	LG	CAN-L
13	P	CANM2(+)
14	Y	R-RH SEN(SIGNAL)
15	BR	R-RH SEN(POWER)
16	SB	F-LH SEN(SIGNAL)
17	L	F-LH SEN(POWER)
18	O	CAN-H
19	R	VAC SEN(POWER)
20	R	VAC SEN(GND)
21	R	VDC OFF SW
22	SHIELD	IGN(POWER)
23	G	

# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITH ICC)

Connector No.	E67
Connector Name	ICC SENSOR
Connector Type	RS08FB-PR



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	IGNITION
3	L	ITS COMM-H
4	B/Y	GND
6	Y	ITS COMM-L

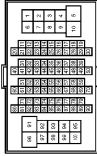
Connector No.	E104
Connector Name	AFS CONTROL UNIT
Connector Type	TH04PW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	IGN
2	O	PSG-R
3	GR	SW
4	BR	PSV-R
6	V	HSV-R
7	P	CAN-L
8	B	HSG-R
9	Y	PS-R
11	R	SMR-1(-)
13	B	SMR-2(-)
15	W	SML-1(+)
17	G	SML-2(+)
19	W	AMDS-R
24	LG	PSV-L
25	B	GND
27	BR	PSG-L
28	SB	HS-R
29	P	PS-L

30	L	CAN-H
32	W	SMR-2(+)
34	G	SMR-1(+)
36	R	SML-2(-)
38	B	SML-1(-)
40	GR	AMDS-L

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	-
2	W	-
3	SB	-
4	LG	-
5	GR	-
6	G	-
7	Y	-
8	BR	-
9	SB	-
10	BR	-
11	SB	-
12	V	-
13	GR	-
14	GR	-
15	V	-
16	Y	-
17	GR	-
18	V	-
20	BR	-
21	P	-
22	L	-
23	P	-
27	SHIELD	-
28	L/O	-
29	W/L	-
31	BR	-
32	G	-
33	O	-
34	Y	-
36	BR	-
41	BR	-

42	L	-
43	P	-
44	W	-
45	L	-
46	GR	-
47	V	-
48	G	-
49	O	-
50	LG	-
60	W	-
61	G	-
62	Y	-
63	BR	-
64	B	-
65	Y	-
66	R	-
67	SB	-
77	O	-
78	SB	-
80	G	-
81	R	-
82	SB	-
83	GR	-
84	Y	-
85	Y	-
86	L	-
87	V	-
88	BR	-
89	LG	-
90	W	-
91	W	-
92	P	-
93	LG	-
94	BR	-
95	W	-
96	R	-
97	R	-
98	Y	-
99	V	-
100	V	-

Connector No.	F81
Connector Name	A/T ASSEMBLY
Connector Type	FRK10FG-DGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	-
2	R	-
3	L	-
4	V	-
5	B	-
6	G	-
7	SB	-
8	P	-
9	LG	-
10	B	-

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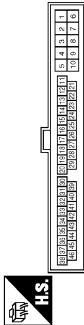
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITH ICC)

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK38FW-1S10



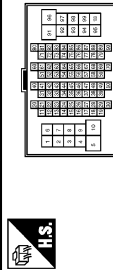
Connector No.	F301
Connector Name	TOM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



Terminal No.	Color of Wire	Signal Name [Specification]
2	L	-
3	G	-
4	B	- [With VK engine]
4	R	- [With VO engine]
5	GR	- [With VK engine]
5	B	- [With VO engine]
7	LG	-
8	Y	-
9	W	- [With VK engine]
9	SB	- [With VO engine]
10	BR	- [With VK engine]
10	Y	- [With VO engine]
11	L	-
12	P	-
13	V	-
14	SB	-
15	R	-
16	W	-
17	GR	-
18	LG	-
21	LG	-
22	B	-
23	G	-
24	BR	-
25	O	-

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	VIGN
2	B	BATT
3	R	CAN-H
4	O	K LINE
5	G	GND
6	GR	VIGN
7	L	REV LAMP RLY
8	BR	CAN-L
9	Y	START RLY
10	W/B	GND

Connector No.	IMS
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CSI-F-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	-
2	W	-
3	SB	-
4	LG	-
5	W	-
7	EG	-
8	G	-
9	Y	-
10	W	-
11	R	-
12	V	-
13	LG	-

95	W	-
96	R	-
97	SB	-
98	R	-
99	W	-
100	L	-

14	L	-
15	V	-
16	B	-
17	GR	-
18	V	-
20	SB	-
21	BR	-
22	L	-
23	P	-
27	SHIELD	-
28	V	-
29	SB	-
31	EG	-
32	P	-
33	R	-
34	EG	-
40	BR	-
41	BR	-
42	L	-
43	P	-
44	BR	-
45	Y	-
46	EG	-
47	V	-
48	G	-
49	EG	-
50	W	-
60	CB	-
81	B	-
82	LG	-
83	BR	-
84	L	-
85	R	-
86	P	-
67	L	-
77	B	-
78	V	-
80	G	-
81	L	-
82	B	-
83	EG	-
84	SB	-
85	Y	-
86	L	-
87	V	-
88	V	-
89	LG	-
90	EG	-
91	W	-
92	EG	-
93	G	-
94	Y	-

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# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITH ICC)

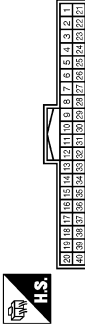
Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH8DMW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	Y	-
4	BR	-
5	P	-
6	W	-
7	G	-
8	Y	-
9	G	-
10	V	-
11	V	- [With Climate controlled seat]
11	L	- [With heated seat]
12	P	- [With Climate controlled seat]
12	GR	- [With heated seat]
13	BR	-
14	GR	-
15	BG	-
16	V	-
17	BG	- [With ICC]
17	B	- [Without ICC]
18	L	-
19	W	-
20	R	-
21	B	-
22	LG	-
23	W	-
24	V	-
25	G	-
26	BR	-
27	SB	-
28	P	-
29	L	-
30	SHIELD	-
32	P	-
33	P	-
34	L	-
38	P	-
36	BG	-
37	SB	-

40	SHIELD	-
41	SR	-
42	V	-
46	W	-
47	L	-
48	LG	-
49	BR	-
50	V	-
51	V	-
52	P	-
53	BG	-
56	SB	-
57	P	-
58	LG	-
59	Y	-
60	GR	-
61	B	-
62	LG	-
63	BR	-
65	W	-
66	R	-
67	V	-
68	LG	-
69	SB	-
70	V	-
72	L	-
73	P	-
74	L	-
75	P	-
76	G	-
77	Y	-
78	SB	-
79	W	-
81	LG	-
82	BR	-
83	BG	-
84	B	-
85	W	-
86	G	-
87	R	-
88	G	-
91	W	-
92	G	-
96	W	-
97	BG	-
98	Y	-
99	LG	-

Connector No.	M20
Connector Name	POB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
11	BR	-
12	R	-
14	L	-
15	B	-
17	R	-
19	W	-
20	R	-
21	B	-
22	R	-
23	L	-
24	L	-
27	P	-
30	SHIELD	-
31	V	-
33	V	-
35	L	-
36	P	-
38	L	-
40	Y	-

Connector No.	M22
Connector Name	POB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
81	L	-
82	P	-

83	B	-
84	B	-
85	B	-
86	B	-
87	B	-
88	B	-
89	Y	-
91	V	-
92	V	-
93	B	-
94	B	-
95	LG	-
96	BR	-
97	G	-
98	G	-
99	G	-
100	G	-
101	L	-
102	P	-
103	B	-
104	BR	-
105	R	-
107	Y	-
108	Y	-
109	BR	-
110	Y	-
112	B	-
113	P	-
114	L	-
116	B	-
117	B	- [With VK engine]
117	BG	- [With VQ engine]
118	B	-
119	G	-
120	V	-

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# CAN SYSTEM (WITH ICC)

[CAN]

< WIRING DIAGRAM >

## CAN SYSTEM (WITH ICC)

Connector No.	M23
Connector Name	POB HARNESS
Connector Type	TH40PW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
121	R	-
122	V	-
123	BG	-
124	BG	-
128	BR	-
130	B	-
131	SB	-
132	LG	-
133	L	-
135	P	-
137	Y	-
138	L	-
139	P	-
140	L	-
141	W	-
142	W	-
144	P	-
145	R	-
146	LG	-
147	B	-
148	L	-
149	B	-
150	P	-
151	L	-
152	B	-
153	W	-
154	W	-
155	W	-
157	W	-
158	R	-
159	R	-

Connector No.	M24
Connector Name	POB HARNESS
Connector Type	TH40PW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
161	BG	-
162	BG	-
163	G	-
164	V	-
165	V	-
166	R	-
167	LG	-
168	R	-
169	R	-
170	B	-
172	B	-
174	W	-
175	B	-
176	L	-
177	P	-
178	Y	-
179	L	-
180	LG	-
182	BR	-
183	G	-
184	V	-
185	P	- [With BOSE system]
185	V	- [Without BOSE system]
186	R	-
187	L	-
188	Y	-
189	B	-
190	V	-
191	G	-
192	B	-
193	SB	-
194	BR	-
198	R	-
199	B	-
200	SB	-

Connector No.	M25
Connector Name	POB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
201	L	-
208	G	-
209	L	- [With BOSE system]
209	G	- [Without BOSE system]
210	P	- [With BOSE system]
210	L	- [Without BOSE system]
211	SHIELD	-
212	G	- [With BOSE system]
212	BR	- [Without BOSE system]
213	R	-
214	SHIELD	-
215	V	- [With BOSE system]
215	GR	- [Without BOSE system]
216	LG	- [With BOSE system]
216	L	- [Without BOSE system]
219	G	-
217	SHIELD	-
218	BR	- [With BOSE system]
218	P	- [Without BOSE system]
219	GR	- [With BOSE system]
219	V	- [Without BOSE system]
220	SHIELD	-
221	P	-
222	LG	-
223	SB	-
224	SB	-
225	LG	-
226	R	-
230	BR	-
231	SB	-
232	V	-
233	L	-
234	P	-
235	B	-
239	V	-
240	W	-

Connector No.	M26
Connector Name	POB HARNESS
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
241	L	-
243	R	-
244	L	-
245	B	-
246	B	-
247	LG	- [With Climate controlled seat]
247	B	- [With heated seat]
249	SHIELD	-
250	SHIELD	-
253	P	- [With Climate controlled seat]
253	B	- [With heated seat]
254	W	- [With Climate controlled seat]
254	B	- [With heated seat]
255	B	-
258	SHIELD	-
257	SHIELD	-
258	R	-
259	L	-
260	BG	-
261	P	-
269	GR	-
270	Y	-
271	BR	-
272	G	-
273	R	-
274	R	-
275	Y	-
276	B	-
277	G	-
278	R	-
279	SB	- [With Climate controlled seat]
279	R	- [With heated seat]
280	Y	-

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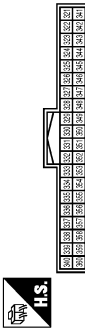
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

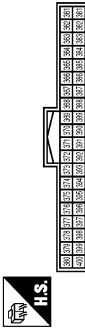
## CAN SYSTEM (WITH ICC)

Connector No.	M28
Connector Name	POB HARNESS
Connector Type	TH40FW-NH



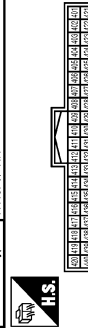
Terminal No.	Color of Wire	Signal Name [Specification]
321	V	-
322	V	-
324	B	-
325	L	-
326	L	-
327	P	-
328	P	-
330	B	-
331	V	-
332	V	-
335	B	-
337	W	-
338	W	-
343	L	-
344	B	-
345	Y	-
346	L	-
347	P	-
348	GR	-
349	V	-
350	LG	-
351	P	-
352	R	-
353	P	-
358	W	-
359	W	-
360	G	-

Connector No.	M29
Connector Name	POB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
361	W	-
362	W	-
363	Y	-
366	B	-
367	B	-
368	G	-
373	BR	-
374	BG	-
375	BG	-
376	V	-
377	V	-
378	B	-
379	R	-
380	R	-
381	G	-
382	V	-
383	GR	-
384	GR	-
395	P	-
396	L	-
397	R	-
398	L	-
400	V	-

Connector No.	M30
Connector Name	POB HARNESS
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
402	R	-
403	R	-
407	Y	-
408	B	-
409	B	-
410	B	-
411	B	-
413	Y	-
414	BR	-
416	LG	-
417	B	-
419	SB	-
420	SHIELD	-
422	P	-
427	P	-
428	V	-
429	P	-
430	LG	-
431	B	-
432	Y	-
435	V	-
438	BG	-
437	B	-
438	P	-
439	L	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
7	B	GND
8	G	IGN

Connector No.	M43
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH42FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	CAN-L
2	L	CAN-H
3	B	RR TUNER (SIG)
4	B	RL TUNER (SIG)
5	B	FR TUNER (SIG)
6	G	FL TUNER (SIG)
7	R	RR TUNER (VCG)
8	W	RL TUNER (VCG)
9	W	FR TUNER (VCG)
10	W	FL TUNER (VCG)
12	W	SW
15	Y	IGN
19	C	RR TUNER (RSS)
20	G	RL TUNER (RSS)
21	G	FR TUNER (RSS)
22	R	FL TUNER (RSS)
23	W	RR TUNER (GND)
24	R	RL TUNER (GND)
25	R	FR TUNER (GND)
26	B	FL TUNER (GND)
30	G	BOM FLASHER
32	B	GND

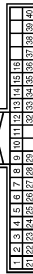
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LAN

# CAN SYSTEM (WITH ICC)

## CAN SYSTEM (WITH ICC)

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	TH40FW-RH



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY POWER SUPPLY
2	BG	IGNITION SIGNAL
3	GR	VEHICLE SPEED SIGNAL (2-PULSE)
4	R	VEHICLE SPEED SIGNAL (8-PULSE)
5	B	ILLUMINATION CONTROL SIGNAL
6	B	METER CONTROL SWITCH GROUND
7	SB	ENTER SWITCH SIGNAL
8	LG	SELECT SWITCH SIGNAL
9	G	ILLUMINATION CONTROL SWITCH SIGNAL (+)
10	GR	ILLUMINATION CONTROL SWITCH SIGNAL (-)
11	L	TRIP RESET SWITCH SIGNAL
12	B	GROUND
14	L	CAN-H
15	P	CAN-L
16	R	AIR BAG SIGNAL
23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	W	ALTERNATOR SIGNAL
26	V	PARKING BRAKE SWITCH SIGNAL
27	V	BRAKE FLUID LEVEL SWITCH SIGNAL
28	G	SECURITY SIGNAL
29	L	WASHER LEVEL SWITCH SIGNAL
32	G	PADDLE SHIFTER SHIFT DOWN SIGNAL
33	BG	PADDLE SHIFTER SHIFT UP SIGNAL
34	G	FUEL LEVEL SENSOR SIGNAL
35	W	SEAT BELT BRuckle SWITCH SIGNAL (DRIVER SIDE)
36	G	PASSENGER SEAT BELT WARNING SIGNAL
37	G	NON-MANUAL MODE SIGNAL
38	V	MANUAL MODE SHIFT DOWN SIGNAL
39	L	MANUAL MODE SHIFT UP SIGNAL
40	W	MANUAL MODE SIGNAL

Connector No.	M66
Connector Name	A/C AUTO AMP.
Connector Type	TH20FW-1B6



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	BATTERY POWER SUPPLY
2	W	IGNITION POWER SUPPLY
6	R	BLOWER MOTOR F/B SIGNAL
7	L	POWER TRANSISTOR CONTROL SIGNAL
10	B	GROUND
11	P	CAN-H
12	L	CAN-L
13	V	ACC POWER SUPPLY
17	BG	ECV CONTROL SIGNAL
20	R	HUMIDITY SENSOR (SCK) SIGNAL
21	Y	HUMIDITY SENSOR (DATA) SIGNAL
22	B	HUMIDITY SENSOR GROUND
23	W	DRIVE MODE SELECT SW (ECU)
24	L	DRIVE MODE SELECT SW (ECU)
25	G	DRIVE MODE SELECT SW (STANDARD)
26	Y	DRIVE MODE SELECT SW (SPORT)

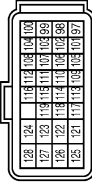
Connector No.	M105
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-RH



Terminal No.	Color of Wire	Signal Name [Specification]
2	R	-
3	B	-
5	LG	-
6	P	-
7	L	-
8	P	-

9	B	-
10	W	-
11	W	-
12	SB	-
14	SS	-
15	BR	-
16	V	-
18	G	-
19	B	-
20	V	-
22	BG	-
23	B	-
25	W	-
30	R	-
31	BR	-
32	L	-
33	P	-
34	LG	-
35	W	-
36	LG	-
37	L	-
38	R	-

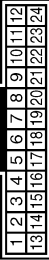
Connector No.	M107
Connector Name	ECM
Connector Type	RH24FGY-R25-R-RH-Z



Terminal No.	Color of Wire	Signal Name [Specification]
97	R	APSI
98	Y	APSZ
99	G	AVCC1-APSI
100	W	GND1-APSI
101	SB	ASCD SW
102	P	FTPRES
103	L	AVCC2-APSZ
104	BR	GND-APSZ [With ICC]
105	B	GND-APSZ [Without ICC]
106	LG	TF
107	P	TF
107	BG	AVCC2-PDPRES/FTPRES
108	Y	GND-ASCD SW
109	BR	NEU-H

110	V	TACHO
112	V	GMDA-PDPRES/FTPRES
113	P	VEHCAN-L1
114	L	VEHCAN-H1
117	V	K-LINE
121	G	CDU
122	P	BRAKE
123	B	GND
124	B	GND
125	SB	VBR
126	BR	BNC SW
127	B	GND
128	B	GND

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	Y	-
3	W	-
4	R	-
7	BR	-
8	R	-
9	B	-
13	L	-
14	B	-
15	LG	-
16	Y	-
17	W	-
18	R	-
19	B	-
20	V	-
21	R	-
22	G	-
23	L	-
24	LG	-

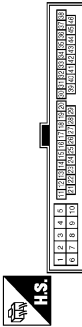
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITH ICC)

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK38MW-NS10



Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	-
3	Y	-
4	B	- [With VK engine]
4	SB	- [With VQ engine]
5	B	-
7	W	-
8	Y	-
9	W	- [With VK engine]
9	SB	- [With VQ engine]
10	SB	-
11	L	-
12	P	- [With Climate controlled seat]
12	B	- [With heated seat]
13	V	- [With Climate controlled seat]
13	V	- [With heated seat]
14	R	-
15	Y	-
16	SB	-
17	BR	-
18	LG	-
21	LG	-
22	B	-
23	W	-
24	W	-
25	BG	-

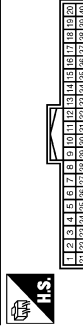
Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
3	Y	-
17	GR	-
18	SB	-
19	BR	-
20	GR	-
21	Y	-
22	LG	-
23	R	-
24	BG	-
25	LG	-
26	W	-
27	R	-
28	V	-
29	P	-
30	B	-
31	G	-
32	Y	-
40	SHIELD	-
41	R	-
42	V	-
44	W	-
45	SB	-
46	L	- [With Climate controlled seat]
46	BG	- [With heated seat]
47	G	- [With Climate controlled seat]
47	GR	- [With heated seat]
48	V	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	W	-
56	B	-
57	G	-
58	R	-
59	W	-
61	LG	-
62	V	-
63	R	-
66	L	-
67	Y	-
68	SB	-
69	B	-
70	R	-
76	SHIELD	-
77	G	-
78	R	-
78	L	-
80	G	-
81	BG	-

82	BR	-
83	GR	-
84	V	-
85	LG	-
86	V	-
87	R	-
88	Y	-
89	BR	-
90	L	-
91	Y	-
93	W	- [With Climate controlled seat]
93	G	- [With heated seat]
94	V	-
96	W	-
97	Y	-
98	BR	-
99	G	-
100	Y	-

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	RR WINDOW DEFGR RLY CONT
2	BG	COMBI SW INPUT 5
3	SB	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	P	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	P	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	W	OPTICAL SENSOR
16	SB	DIMMER SIGNAL
17	Y	SENSOR PWR SPLY
18	B	RECEIVER / SENSOR GND
19	R	RECEIVER PWR SPLY
20	BR	KYLS ENT RECEIVER COMM
21	D	MATS ANT AMP
22	GR	KYLS ENT RECEIVER PSSI
23	G	SECURITY IND CONT

24	L	DONGLE LINK
25	G	MATS ANT AMP
26	GR	I-KEY IDENTIFICATION
29	GR	HAZARD SW
30	BG	TR LID OPNR SW
31	W	DR DOOR UNLOCK SENSOR
32	BR	COMBI SW OUTPUT 5
33	R	COMBI SW OUTPUT 4
34	V	COMBI SW OUTPUT 3
35	Y	COMBI SW OUTPUT 2
36	LG	COMBI SW OUTPUT 1
37	R	P POSITION
39	L	CAN-H
40	P	CAN-L

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
3	GR	BATTERY
4	L	CAN-H
5	B	GND
6	L	CAN-H
7	P	CAN-L
9	W	IGNITION
10	P	CAN-L
11	B	GND
12	P	CAN-L

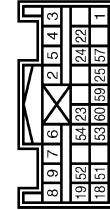
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# CAN SYSTEM (WITH ICC)

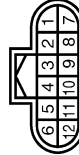
## CAN SYSTEM (WITH ICC)

Connector No.	M147
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	RH28FY-EX



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	IGN
2	B	GND
3	Y	DRI (+)
4	Y	DRI (-) DRZ (-)
5	Y	DRZ (+)
6	Y	ASI (+)
7	Y	ASI (-)
8	Y	ASZ (+)
9	Y	ASZ (-)
10	SB	EC2S (+)
11	V	EC2S (-)
12	SHIELD	GND
13	R	AIR BAG W/L
14	G	SEAT BELT
15	R	CUTOFF TELLTALE
16	G	SATELLITE RRZ (+)
17	R	SATELLITE RRZ (-)
18	P	SATELLITE RRZ (+)
19	L	SATELLITE RRZ (-)
20	L	IVCS
21	L	CAN-H
22	P	CAN-L

Connector No.	M150
Connector Name	WIRE TO WIRE
Connector Type	RH12FB



Terminal No.	Color of Wire	Signal Name [Specification]
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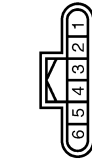
1	Y	-
2	BR	-
3	R	-
4	L	-
5	W	-
6	W	-
7	CG	-
8	CG	-
9	LG	-
10	Y	-
11	L	-
12	SHIELD	-

Connector No.	M151
Connector Name	WIRE TO WIRE
Connector Type	RH12MB



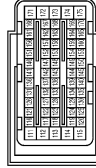
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	-
2	B	-
3	R	-
4	L	-
5	W	-
6	G	-
7	O	-
8	B	-
9	R	-
10	Y	-
11	L	-
12	SHIELD	-

Connector No.	M152
Connector Name	ACCELERATOR PEDAL ACTUATOR
Connector Type	RH06FLGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	BATTERY
2	B	GND
3	R	IGNITION
4	Y	ITS COMM-L
5	L	ITS COMM-H

Connector No.	M160
Connector Name	ECM
Connector Type	MA855FB-MEB10-LH



Terminal No.	Color of Wire	Signal Name [Specification]
111	W	FUEL INJECTOR DRIVER POWER SUPPLY
112	W	VIN/ZA
114	B	ECM GROUND
115	B	ECM GROUND
120	G	EVAP CANISTER VENT CONTROL VALVE
122	V	WHEEL ACTUATOR/RELAY/ABS/SPIN (WHEEL CONTROL MODULE)
123	BQ	THROTTLE CONTROL MOTOR RELAY
125	P	FUEL PUMP CONTROL MODULE (FPOM)
126	Y	ACCELERATOR PEDAL POSITION SENSOR 2
128	SB	ASC/D STEERING SWITCH
128	SB	ASC/D STEERING SWITCH
129	BR	ECM GROUND (WITH ICC)
129	B	SENSOR GROUND (WITHOUT ICC)
130	Y	SENSOR GROUND
131	L	SENSOR POWER SUPPLY
133	BQ	SENSOR POWER SUPPLY
134	P	FUEL TEMPERATURE SENSOR

136	R	ACCELERATOR PEDAL POSITION SENSOR 1
137	G	SENSOR POWER SUPPLY
138	P	BATTERY CURRENT SENSOR
139	BQ	BATTERY TEMPERATURE SENSOR
140	W	SENSOR GROUND
141	C	IGNITION SWITCH
142	GR	FUEL PUMP CONTROL MODULE (FPOM) CHECK
143	P	FUEL TANK PRESSURE SENSOR
144	LG	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	BR	ASC/D BRAKE SWITCH (WITHOUT ICC)
147	BR	ICC BRAKE SWITCH (WITH ICC)
150	V	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	W	POWER SUPPLY FOR ECM (BACK-UP)
158	P	STOP LAMP SWITCH
161	Y	ECM COMMUNICATION LINE
163	W	ECM RELAY (SELF SHUT-OFF)
166	BQ	ECM COMMUNICATION LINE
169	V	ENGINE SPEED SIGNAL OUTPUT
171	SB	POWER SUPPLY FOR ECM
172	SB	POWER SUPPLY FOR ECM
173	R	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

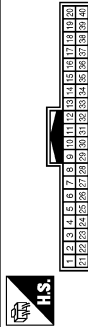
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

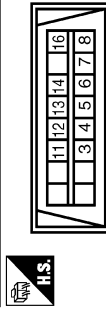
## CAN SYSTEM (WITH ICC)

Connector No.	M181
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH



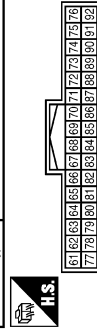
Terminal No.	Color of Wire	Signal Name [Specification]
2	R	-
3	B	-
5	R	-
6	BR	-
7	L	-
8	P	-
9	B	-
10	W	-
11	LG	-
12	SB	-
14	SB	-
15	BR	-
16	V	-
18	G	-
19	B	-
20	V	-
22	BG	-
23	B	-
25	W	-
30	R	-
31	BR	-
32	L	-
33	P	-
34	LG	-
35	W	-
36	LG	-
37	L	-
38	R	-

Connector No.	M182
Connector Name	DATA LINK CONNECTOR
Connector Type	BD18FW



Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	V	-
8	LG	-
11	SB	-
12	P	-
13	L	-
14	P	-
16	W	-

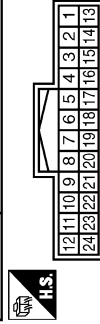
Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH2FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
65	V	PARKING BRAKE SIGNAL
67	R	COMPOSITE IMAGE SIGNAL GND
68	W	COMPOSITE IMAGE SIGNAL
69	G	L-KEY LINK OUTPUT
71	SHIELD	MICROPHONE SHIELD
72	G	MICROPHONE VCS
73	BR	COMM (CONT->DISP)
74	P	CAN-L
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	SB	DIMMER SIGNAL

80	W	IGNITION SIGNAL
81	EG	REVERSE SIGNAL
82	R	VEHICLE SPEED SIGNAL (6-PULSE)
83	SHIELD	SHIELD
84	B	COMPOSITE IMAGE SYNC SIGNAL
87	R	MICROPHONE SIGNAL
88	SHIELD	SHIELD
89	Y	COMM (DISP->CONT)
90	L	CAN-H
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	Y	-
3	W	-
4	R	-
7	R	-
8	P	-
9	B	-
13	L	-
14	L	-
15	LG	-
16	Y	-
17	W	-
18	R	-
19	B	-
20	R	-
21	R	-
22	G	-
23	L	-
24	LG	-

Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	GND
4	L	ITS COMM-H
5	B	GND
7	G	IGNITION
8	Y	ITS COMM-L

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# CAN SYSTEM (WITHOUT ICC)

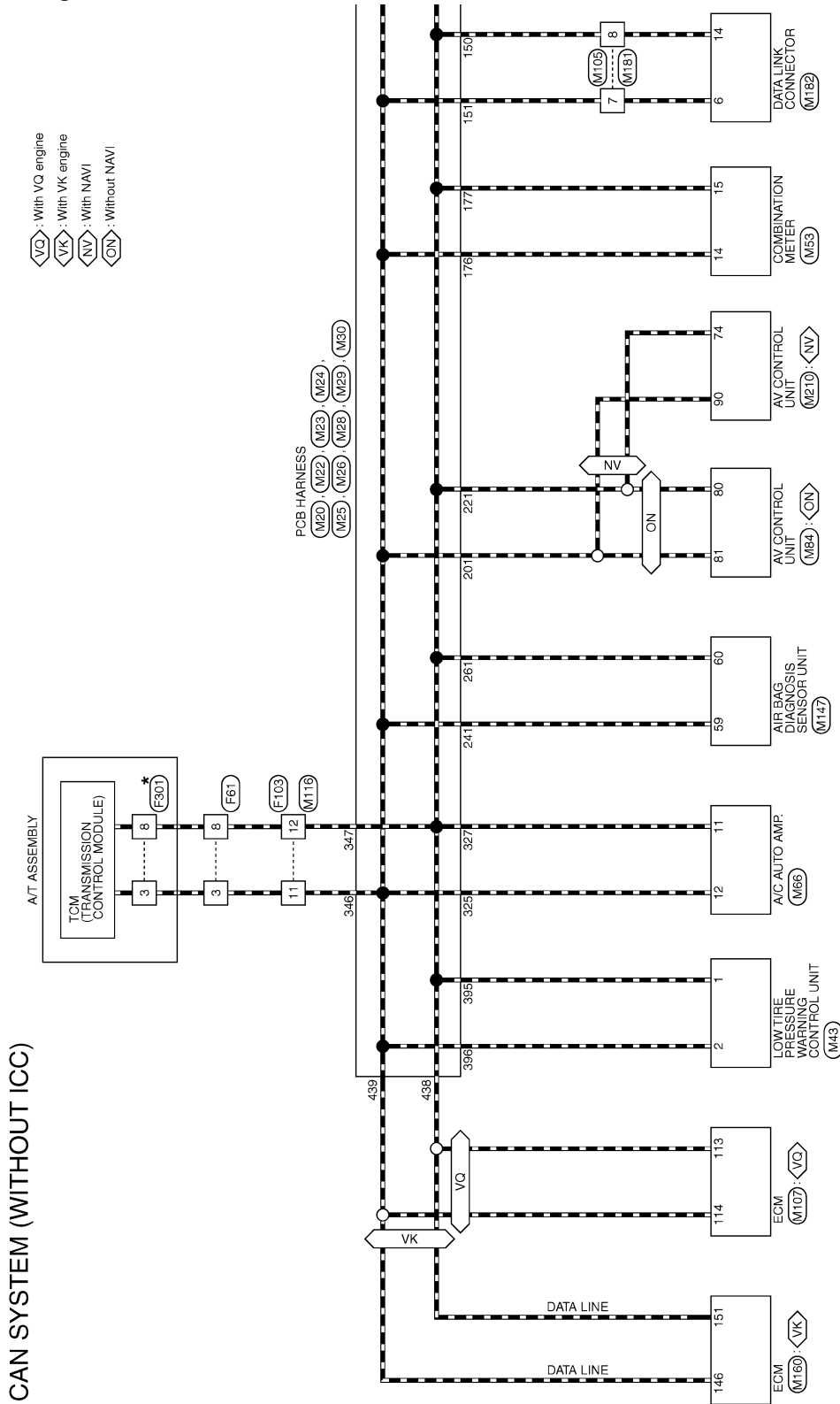
[CAN]

< WIRING DIAGRAM >

## CAN SYSTEM (WITHOUT ICC)

### Wiring Diagram

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\*: This connector is not shown in "Harness Layout".

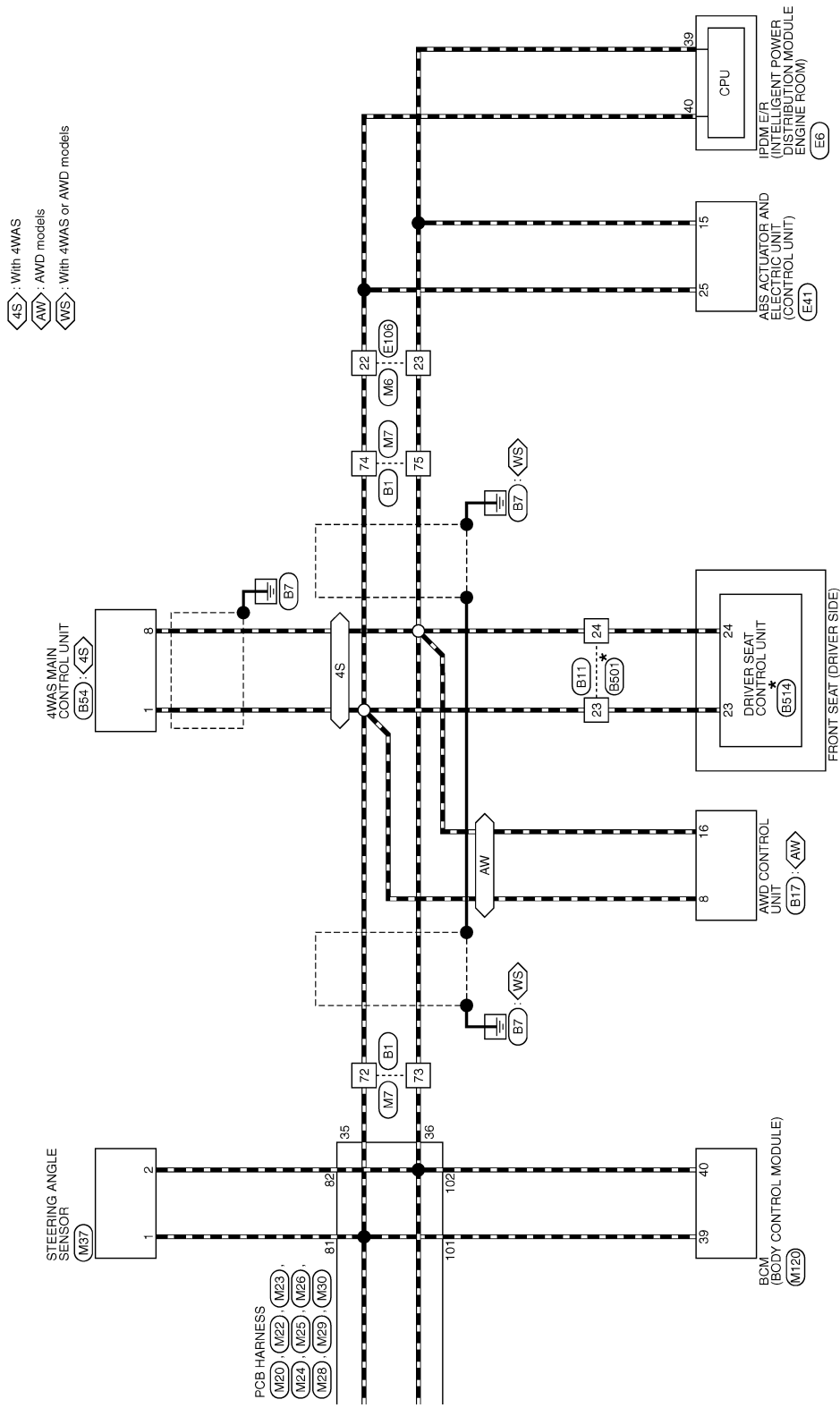
CAN SYSTEM (WITHOUT ICC)



# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]



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# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

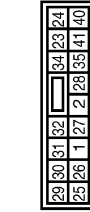
Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH08PW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	W	-
4	LG	-
5	P	-
6	V	-
7	GR	-
8	Y	-
9	LG	-
10	V	-
11	GR	- [With Climate controlled seat]
12	P	- [With heated seat]
13	GR	- [With Climate controlled seat]
14	BR	- [With heated seat]
15	R	-
16	V	-
17	B	-
18	R	-
19	W	-
20	R	-
21	B	-
22	LG	-
23	V	-
24	Y	-
25	G	-
26	GR	-
27	SB	-
28	P	- [With Pre-crash seat belt system]
29	L/O	- [Without Pre-crash seat belt system]
29	L	- [With Pre-crash seat belt system]
29	W/L	- [Without Pre-crash seat belt system]
30	SHIELD	- [Without Pre-crash seat belt system]
32	SHIELD	-
33	R	-
34	L	-
35	R	-
36	R	-
36	G	-

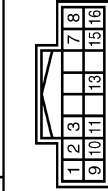
37	SB	-
40	SHIELD	-
41	GR/V	-
42	W/L	-
45	W	-
47	W	-
48	V	-
49	BR	-
50	SB	-
51	V	-
52	LG	-
53	G	-
56	P	-
57	BR	-
58	LG	-
59	Y	-
60	W	-
61	B	-
62	LG	-
63	BR	- [With ICC and 4WAS system]
63	V	- [Without ICC and 4WAS system]
65	O	-
66	BR	-
67	V	-
68	LG	-
69	GR	-
70	R	-
72	P	-
73	P	-
74	L	-
75	P	-
76	Y	-
77	R	-
78	W	-
79	G	-
81	LG	-
82	BR	-
83	SB	-
84	Y	-
85	W	-
86	R	-
87	G	-
88	GR	-
91	SB	-
92	G	-
96	Y	-
97	O	-
98	SB	-
98	LG	-
99	LG	-

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	-
2	B	-
23	L	-
24	P	-
25	BR	-
26	W	-
27	L	-
28	P	-
29	O	-
30	V	-
31	BR	-
32	LG	-
35	LG	-
40	O	-
41	B	-

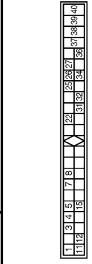
Connector No.	B17
Connector Name	AWD CONTROL UNIT
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	AWD SOL (+)
2	R	AWD SOL (-)
3	W	OIL TEMP (-)
7	Y	IGN
8	L	CAN-H
9	SB	AWD SOL BATT
10	B/Y	GND

11	B/Y	GND
13	LG	OIL TEMP (+)
15	G	VB
16	P	CAN-L

Connector No.	B54
Connector Name	4WAS MAIN CONTROL UNIT
Connector Type	JAS6FW-M4



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
4	R	RR-ANG SEN SIG (MAIN)
5	V	RR-ANG SEN SIG PWR SUPPLY
7	LG	RR-ANG SEN SIG (SUB)
8	P	CAN-L
15	W	RR-ANG SEN GND
22	P	STOP LAMP SW
25	C	RR-MTR RELAY
27	R	IGN
31	W/L	4WAS COMMUNICATION-H
32	GR/V	4WAS COMMUNICATION-L
34	B/Y	GND
36	SB	EPS SOL
37	L	RR-MTR PWR SUPPLY
38	R	RR-MTR (RH)
39	P	RR-MTR (LH)
40	B/Y	RR-MTR GND

# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

Connector No.	B501
Connector Name	WIRE TO WIRE
Connector Type	HS18MWF-CS



24	28	34	32	31	30	29
40	41	35	28	27	1	26
25	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	B	-
23	P	-
24	P/L	-
25	G/O	-
26	L/O	-
27	V	-
28	V/W	-
29	L	-
30	BR	-
31	BR/W	-
32	W/L	-
33	W/Y	-
40	W/G	-
41	GR	-

Connector No.	B514
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH92FV-NH



23	32	20	31	28	11	13	17	15	33
24	19	22	21	30	27	25	12	14	16
25	26	25	24	23	22	21	20	19	18

Terminal No.	Color of Wire	Signal Name [Specification]
11	G/B	SLIDE SW (BACKWARD)
12	G/W	SLIDE SW (FORWARD)
13	P/G	RECLINER SW (BACKWARD)
14	R/W	RECLINER SW (FORWARD)
15	Y/B	REAR LIFTER SW (DOWNWARD)
16	Y/R	REAR LIFTER SW (UPWARD)
17	L/G/B	RECLINER SW (BACKWARD)

18	L/G/R	FRONT LIFTER SW (UPWARD)
19	G/Y	PULSE (SLIDE)
20	R/Y	PULSE (RECLINER)
21	V	PULSE (REAR LIFTER)
22	R	PULSE (FRONT LIFTER)
23	P	CAN-H
24	P/L	CAN-L
25	G/O	IND 1
26	L/O	IND 2
27	V	ADDRESS 1
28	V/W	ADDRESS 2
29	L	SET SW
30	BR	PULSE(TILT)
31	BR/W	PULSE(TELESCOPIC)
32	W/L	UART (TX/RX)
33	W	POWER SUPPLY (ENCODER)

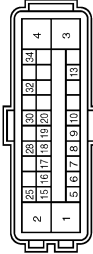
Connector No.	E6
Connector Name	POLE IN INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH08FV-NH



42	41	40	39
46	45	44	43

Terminal No.	Color of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	B	-
42	V	-
43	SB	-
44	GR	-
45	G	-
46	BR	-

Connector No.	E41
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SAZ20FB-SJZ4-U



Terminal No.	Color of Wire	Signal Name [Specification]
1	B/W	ECU(GND)
2	B	MOTOR(GND)
3	Y	SOLENOID(POWER)
4	G	MOTOR(POWER)
5	SB	STOP LAMP SW
6	Y	CANM2(-)
7	W	R-LH SENS(SIGNAL)
8	G	R-RH SENS(SIGNAL)
9	BR	F-LH SENS(SIGNAL)
10	B	F-RH SENS(SIGNAL)
13	L/G	VAG SENS(SIGNAL)
15	P	CAN-L
16	B	CANM2(+)
17	Y	R-RH SENS(SIGNAL)
18	BR	F-RH SENS(SIGNAL)
19	SB	F-LH SENS(SIGNAL)
20	O	F-LH SENS(POWER)
25	L	CAN-H
28	V	VAG SENS(POWER)
30	R	VDC OFF SW
32	SHIELD	VAG SENS(GND)
34	G	IGN(POWER)

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# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH8DFW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	-
2	W	-
3	SB	-
4	LG	-
5	O	-
7	GR	-
8	G	-
9	Y	-
10	BR	-
11	SB	-
12	V	-
13	GR	-
14	GR	-
15	V	-
16	Y	-
17	GR	-
18	V	-
20	BR	-
21	P	-
22	L	-
23	P	-
27	SHIELD	-
28	L/O	-
29	W/L	-
31	BR	-
32	G	-
33	O	-
34	Y	-
40	BR	-
41	BR	-
42	L	-
43	P	-
44	W	-
45	L	-
46	GR	-
47	V	-
48	G	-
49	O	-

50	LG	-
60	W	-
61	G	-
62	Y	-
63	BR	-
64	V	-
65	Y	-
66	R	-
67	SB	-
77	O	-
78	SB	-
80	G	-
81	R	-
82	SB	-
83	GR	-
84	Y	-
85	Y	-
86	L	-
87	V	-
88	BR	-
89	LG	-
90	W	-
91	W	-
92	P	-
93	LG	-
94	BR	-
95	W	-
96	R	-
97	R	-
98	Y	-
99	V	-
100	V	-

Connector No.	F91
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG-DGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	-
2	R	-
3	L	-
4	V	-

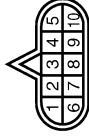
5	B	-
6	G	-
7	SB	-
8	P	-
9	LG	-
10	B	-

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK38FW-NS10



Terminal No.	Color of Wire	Signal Name [Specification]
2	L	-
3	G	-
4	B	- [With VK engine]
4	R	- [With V2 engine]
5	GR	- [With VK engine]
5	B	- [With V2 engine]
7	LG	-
8	Y	-
9	W	- [With VK engine]
9	SB	- [With V2 engine]
10	BR	- [With VK engine]
10	V	- [With V2 engine]
11	L	-
12	P	-
13	V	-
14	SB	-
15	R	-
16	W	-
17	GR	-
18	LG	-
21	LG	-
22	B	-
23	G	-
24	BR	-
25	O	-

Connector No.	F301
Connector Name	TGM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	VIGN
2	B	BATT
3	R	CAN-H
4	O	K LINE
5	G	GND
6	GR	VIGN
7	L	REV LAMP RLY
8	BR	CAN-L
9	Y	START RLY
10	W/B	GND

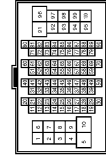
# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



50	W	-
60	GR	-
61	B	-
62	LG	-
63	BR	-
64	L	-
65	R	-
66	P	-
67	L	-
77	B	-
78	V	-
80	G	-
81	L	-
82	B	-
83	BG	-
84	SB	-
85	Y	-
86	L	-
87	V	-
88	V	-
89	LG	-
90	BG	-
91	W	-
92	BG	-
93	G	-
94	Y	-
95	W	-
96	R	-
97	SB	-
98	R	-
99	W	-
100	L	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	Y	-
4	BR	-
5	P	-

6	W	-
7	G	-
8	Y	-
9	G	-
10	V	-
11	V	- [With Climate controlled seat]
12	L	- [With heater seat]
13	GR	- [With Climate controlled seat]
14	BR	-
15	BR	-
16	EG	-
17	BG	- [With ICC]
18	B	- [Without ICC]
19	L	-
20	R	-
21	B	-
22	LG	-
23	W	-
24	V	-
25	G	-
26	BR	-
27	SB	-
28	P	-
29	L	-
30	SHIELD	-
32	L	-
33	P	-
34	L	-
35	P	-
36	EG	-
37	SB	-
40	SHIELD	-
41	SB	-
42	V	-
45	W	-
47	L	-
48	LG	-
49	BR	-
50	V	-
51	V	-
52	P	-
53	EG	-
56	SB	-
57	P	-
58	LG	-
59	V	-
60	GR	-
61	B	-
62	LG	-

63	BR	-
65	W	-
66	R	-
67	V	-
68	LG	-
69	SB	-
70	V	-
72	L	-
73	P	-
74	L	-
75	P	-
76	G	-
77	Y	-
78	SB	-
79	W	-
81	LG	-
82	BR	-
83	BG	-
84	B	-
85	W	-
86	G	-
87	R	-
88	G	-
91	W	-
92	G	-
96	W	-
97	EG	-
98	V	-
99	LG	-

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# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

Connector No.	M20
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
1	B	
11	BR	
12	R	
14	L	
15	B	
17	R	
19	W	
20	R	
21	B	
22	R	
23	L	
24	L	
27	P	
30	SHIELD	
31	V	
33	V	
35	L	
36	P	
38	L	
40	Y	

Connector No.	M22
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
32	P	
33	L	
34	P	

83	B		
84	B		
85	B		
86	B		
87	B		
88	V		
89	Y		
91	V		
92	V		
93	B		
94	B		
95	LG		
96	BR		
97	G		
98	G		
99	G		
100	G		
101	L		
102	P		
103	B		
104	BR		
105	R		
107	Y		
108	Y		
109	BR		
110	Y		
112	B		
113	P		
114	L		
116	B		
117	B		
117	RG		
118	B		
119	G		
120	V		



Connector No.	M23
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH



5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
121	R	

122	V		
124	EG		
126	BR		
130	B		
131	SB		
132	LG		
133	L		
135	P		
137	Y		
138	L		
139	P		
140	L		
141	W		
142	W		
144	P		
145	R		
146	LG		
147	B		
148	L		
149	B		
150	P		
151	L		
152	B		
153	W		
154	W		
155	W		
157	W		
158	R		
159	R		

Connector No.	M24
Connector Name	PCB HARNESS
Connector Type	TH40FW-NH



5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
161	EG	
162	EG	
163	G	
164	V	
165	Y	
166	R	

167	LG		
168	R		
169	R		
170	B		
172	B		
174	W		
175	B		
176	L		
177	P		
178	Y		
179	L		
180	LG		
182	BR		
183	G		
184	V		
185	P		
185	V		
186	R		
187	L		
188	Y		
189	B		
190	V		
191	G		
192	B		
193	SR		
194	BR		
198	P		
199	B		
200	SB		

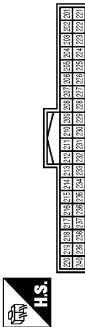
# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

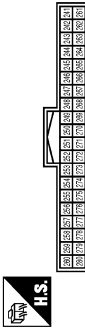
## CAN SYSTEM (WITHOUT ICC)

Connector No.	M25
Connector Name	POB HARNESS
Connector Type	TH40FB-NH



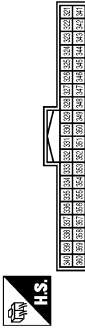
Terminal No.	Color of Wire	Signal Name [Specification]
201	L	-
208	G	-
209	L	- [With BOSE system]
209	G	- [Without BOSE system]
210	P	- [With BOSE system]
210	L	- [Without BOSE system]
211	SHIELD	-
212	G	- [With BOSE system]
212	BR	- [Without BOSE system]
213	R	-
214	SHIELD	-
215	V	- [With BOSE system]
216	GR	- [Without BOSE system]
216	LG	- [With BOSE system]
216	G	- [Without BOSE system]
217	SHIELD	-
218	BR	- [With BOSE system]
218	P	- [Without BOSE system]
219	GR	- [With BOSE system]
219	V	- [Without BOSE system]
220	SHIELD	-
221	P	-
222	LG	-
223	SB	-
224	SB	-
225	LG	-
226	R	-
230	BR	-
231	SB	-
232	V	-
233	L	-
234	P	-
235	B	-
239	V	-
240	W	-

Connector No.	M26
Connector Name	POB HARNESS
Connector Type	TH40FW-NH



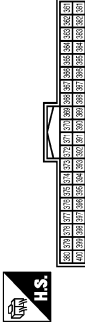
Terminal No.	Color of Wire	Signal Name [Specification]
241	L	-
243	R	-
244	L	-
245	B	-
246	B	-
247	LG	- [With Climate controlled seat]
247	B	- [With heated seat]
249	SHIELD	-
250	SHIELD	-
253	P	- [With Climate controlled seat]
253	B	- [With heated seat]
254	W	- [With Climate controlled seat]
254	B	- [With heated seat]
259	SHIELD	-
259	R	-
260	BG	-
261	P	-
269	GR	-
270	Y	-
271	BR	-
272	G	-
273	R	-
274	R	-
275	Y	-
276	B	-
277	G	-
278	R	-
279	SB	- [With Climate controlled seat]
279	R	- [With heated seat]
280	Y	-

Connector No.	M28
Connector Name	POB HARNESS
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
321	V	-
322	V	-
324	B	-
325	L	-
326	L	-
327	P	-
328	P	-
330	B	-
331	V	-
332	V	-
335	B	-
337	W	-
338	W	-
343	L	-
344	B	-
345	Y	-
346	L	-
347	P	-
348	GR	-
349	V	-
350	LG	-
351	P	-
352	R	-
353	P	-
358	W	-
359	W	-
360	G	-

Connector No.	M29
Connector Name	POB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
361	W	-
362	W	-
363	Y	-
366	B	-
367	B	-
368	G	-
373	BR	-
374	BG	-
375	BG	-
376	V	-
377	V	-
378	B	-
379	R	-
380	R	-
381	G	-
382	V	-
383	GR	-
384	GR	-
395	P	-
396	L	-
397	R	-
398	L	-
400	V	-

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# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

Connector No.	M30
Connector Name	POB HARNESS
Connector Type	TH40FW-NH



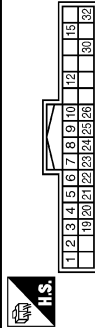
Terminal No.	Color of Wire	Signal Name [Specification]
402	R	-
403	R	-
407	V	-
408	B	-
409	B	-
410	B	-
411	B	-
413	Y	-
414	BR	-
416	LG	-
417	B	-
419	SB	-
420	S/SHIELD	-
422	V	-
427	P	-
428	V	-
429	P	-
430	LG	-
431	B	-
432	Y	-
435	V	-
436	BG	-
437	B	-
438	P	-
439	L	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
7	B	GND
8	G	IGN

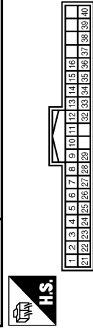
Connector No.	M43
Connector Name	LOW THE PRESSURE WARNING CONTROL UNIT
Connector Type	TH42FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	CAN-(L)
2	L	CAN-(H)
3	B	RR TUNER (SIG)
4	B	RL TUNER (SIG)
5	B	FR TUNER (SIG)
6	G	FL TUNER (SIG)
7	R	RR TUNER (VCC)
8	W	RL TUNER (VCC)
9	W	FR TUNER (VCC)
10	W	FL TUNER (VCC)
12	W	SW
15	Y	IGN
19	G	RR TUNER (RSSI)
20	G	RL TUNER (RSSI)
21	G	FR TUNER (RSSI)
22	R	FL TUNER (RSSI)
23	W	RR TUNER (GND)
24	R	RL TUNER (GND)

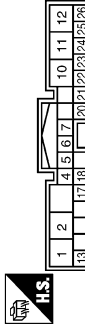
25	R	FR TUNER (GND)
26	B	FL TUNER (GND)
30	G	ECM FLASHER
32	B	GND

Connector No.	M35
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY POWER SUPPLY
2	BG	IGNITION SIGNAL
3	GR	VEHICLE SPEED SIGNAL (2-PULSE)
4	R	VEHICLE SPEED SIGNAL (6-PULSE)
5	B	ILLUMINATION CONTROL SIGNAL
6	B	METER CONTROL SWITCH GROUND
7	SB	ENTER SWITCH SIGNAL
8	LG	SELECT SWITCH SIGNAL
9	G	ILLUMINATION CONTROL SWITCH SIGNAL (2)
10	GR	ILLUMINATION CONTROL SWITCH SIGNAL (3)
11	L	TRIP RESET SWITCH SIGNAL
12	B	GROUND
14	L	CAN-H
15	P	CAN-L
16	R	AIR BAG SIGNAL
23	B	FUEL LEVEL SENSOR GROUND
24	B	GROUND
25	W	ALTERNATOR SIGNAL
26	V	PARKING BRAKE SWITCH SIGNAL
27	V	BRAKE FLUID LEVEL SWITCH SIGNAL
28	G	SECURITY SIGNAL
29	L	WASHER LEVEL SWITCH SIGNAL
32	G	PADDLE SHIFTER SHIFT DOWN SIGNAL
33	BG	PADDLE SHIFTER SHIFT UP SIGNAL
34	G	FUEL LEVEL SENSOR SIGNAL
35	W	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G	PASSENGER SEAT BELT WARNING SIGNAL
37	G	NON-MANUAL MODE SIGNAL
38	V	MANUAL MODE SHIF DOWN SIGNAL
39	L	MANUAL MODE SHIF UP SIGNAL
40	W	MANUAL MODE SIGNAL

Connector No.	M66
Connector Name	A/C AUTO AMP
Connector Type	TH40FW-TB6



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	BATTERY POWER SUPPLY
2	W	IGNITION POWER SUPPLY
6	R	BLOWER MOTOR F/B SIGNAL
7	L	POWER TRANSDUCER CONTROL SIGNAL
10	B	GROUND
11	P	CAN-L
12	L	CAN-H
13	V	ACC POWER SUPPLY
17	BG	ECV CONTROL SIGNAL
20	R	HUMIDITY SENSOR (SCK) SIGNAL
21	Y	HUMIDITY SENSOR (DATA) SIGNAL
22	B	HUMIDITY SENSOR GROUND
23	W	DRIVE MODE SELECT SW (SNOW)
24	L	DRIVE MODE SELECT SW (ECO)
25	G	DRIVE MODE SELECT SW (STANDARD)
26	Y	DRIVE MODE SELECT SW (SPORT)



# CAN SYSTEM (WITHOUT ICC)

[CAN]

< WIRING DIAGRAM >

## CAN SYSTEM (WITHOUT ICC)

Connector No.	M84
Connector Name	AV CONTROL UNIT
Connector Type	TH2ZTW-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
76	LG	AV COMM (L)
77	SB	AV COMM (H)
78	SB	AV COMM (H)
79	LG	AV COMM (L)
80	P	CAN-L
81	L	CAN-H
82	BR	SW GND
86	SHIELD	SHIELD
87	P	TEL VOICE SIGNAL (+)
88	L	TEL VOICE SIGNAL (-)
92	R	VEHICLE SPEED (8-FULSE)
93	V	PARKING BRAKE
94	RG	RELEASE
95	W	IGNITION
96	SB	DISK EJECT SIGNAL

Connector No.	M105
Connector Name	WIRE TO WIRE
Connector Type	TH40PW-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
2	R	-
3	B	-
5	LG	-
6	P	-
7	L	-
8	P	-
9	B	-

Terminal No.	Color of Wire	Signal Name [Specification]
10	W	-
11	W	-
12	SB	-
14	SB	-
15	BR	-
16	V	-
18	G	-
19	B	-
20	V	-
22	BG	-
23	B	-
25	W	-
30	R	-
31	BR	-
32	L	-
33	P	-
34	LG	-
35	W	-
36	LG	-
37	L	-
38	R	-

Connector No.	M107
Connector Name	ECM
Connector Type	RH24FCY-R26-R-R4-Z



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
97	R	APS1
98	Y	AP-SZ
99	G	AVCC1-APS1
100	W	GND-APS1
101	SB	ASOD SW
102	P	FTPRES
103	L	AVCC2-APS2
104	BR	GND-APS2 [With ICC]
104	B	GND-APS2 [Without ICC]
105	LG	PPRES
106	P	TF
107	BG	AVCC2 PDPRES/FTPRES
108	W	GND-ASOD SW
109	BR	NEUT-H
110	V	TACHO

Terminal No.	Color of Wire	Signal Name [Specification]
112	V	GND- PDPRES/FTPRES
113	P	VEHCAN-L1
114	L	VEHCAN-H1
117	V	C-LINE
121	G	GDSV
122	P	BRAKE
123	B	GND
124	B	GND
125	SB	VBR
126	BR	BNC SW
127	B	GND
128	B	GND

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK38MW-NS10



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	-
3	Y	-
4	B	- [With V6 engine]
4	SB	- [With V2 engine]
5	B	-
7	W	-
8	Y	-
9	W	- [With V6 engine]
9	SB	- [With V2 engine]
10	SB	-
11	L	-
12	P	-
13	V	-
14	R	-
15	Y	-
16	SB	-
17	BR	-
18	LG	-
21	LG	-
22	B	-
23	W	-
24	W	-
25	BG	-

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH4GFB-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
1	G	RR WINDOW DEFG RLY CONT
2	BG	COMBI SW INPUT 5
3	SB	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	P	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	P	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	W	OPTICAL SENSOR
16	SB	DIMMER SIGNAL
17	Y	SENSOR PWR SPLY
18	B	REVERSE / SENSOR GND
19	R	REVERSE PWR SPLY
20	BR	KYLS ENT RECEIVER COMM
21	P	NATS ANT AMP
22	GR	KYLS ENT RECEIVER RSSI
23	G	SECURITY IND CONT
24	L	DOINGLE LINK
25	G	NATS ANT AMP
26	GR	I-KEY IDENTIFICATION
29	G	HAZARD SW
30	BG	TR LID OPNR SW
31	W	DR DOOR UNLOCK SENSOR
32	BR	COMBI SW OUTPUT 5
33	R	COMBI SW OUTPUT 4
34	V	COMBI SW OUTPUT 3
35	Y	COMBI SW OUTPUT 2
36	LG	COMBI SW OUTPUT 1
37	R	P POSITION
39	L	CAN-H
40	P	CAN-L

A B C D E F G H I J K L N O P

LAN

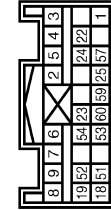
# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

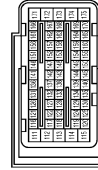
## CAN SYSTEM (WITHOUT ICC)

Connector No.	M147
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NH28FY-EX



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	IGN
2	B	GND
3	Y	DR1 (+)
4	Y	DR1 (-) DR2 (-)
5	Y	DR2 (+)
6	Y	AS1 (+)
7	Y	AS1 (-)
8	Y	AS2 (+)
9	Y	AS2 (-)
18	SB	EC2S (+)
19	V	EC2S (-)
22	SHIELD	GND
23	R	AIR BAG W/L
24	G	SEAT BELT
28	R	CUTOFF TAIL
31	G	SATELLITE RR2 (+)
32	R	SATELLITE RR2 (-)
53	P	SATELLITE RR2 (+)
54	L	SATELLITE RR2 (-)
57	L	IVCS
59	L	CAN-H
60	P	CAN-L

Connector No.	M160
Connector Name	ECM
Connector Type	MAB55FE-MEB10-LH



Terminal No.	Color of Wire	Signal Name [Specification]
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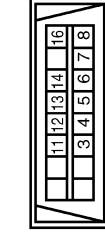
111	W	FUEL INJECTOR DRIVER POWER SUPPLY
112	W	VIN2A
114	B	ECM GROUND
115	B	ECM GROUND
120	G	EVAP CANISTER VENT CONTROL VALVE
122	V	EVAP CANISTER RELAY (WITH I/O) CHECK
123	BG	THROTTLE CONTROL MOTOR RELAY
125	P	FUEL PUMP CONTROL MODULE (FPCM)
126	Y	ACCELERATOR PEDAL POSITION SENSOR 2
128	SB	ASC STEERING SWITCH
128	SB	ICC STEERING SWITCH
129	BR	SENSOR GROUND [WITH ICC]
129	B	SENSOR GROUND [WITHOUT ICC]
130	Y	SENSOR GROUND
131	L	SENSOR POWER SUPPLY
133	BG	SENSOR POWER SUPPLY
134	P	FUEL TEMPERATURE SENSOR
136	R	ACCELERATOR PEDAL POSITION SENSOR 1
137	G	SENSOR POWER SUPPLY
138	P	BATTERY CURRENT SENSOR
139	BG	BATTERY TEMPERATURE SENSOR
140	W	SENSOR GROUND
141	G	IGNITION SWITCH
142	GR	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	P	FUEL TANK PRESSURE SENSOR
144	LG	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	BR	ASC BRAKE SWITCH [WITHOUT ICC]
147	BR	ICC BRAKE SWITCH [WITH ICC]
150	V	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	W	POWER SUPPLY FOR ECM (BACK-UP)
158	P	STOP LAMP SWITCH
161	Y	ECM COMMUNICATION LINE
163	W	ECM RELAY (SELF SHUT-OFF)
166	BG	ECM COMMUNICATION LINE
169	V	ENGINE SPEED SIGNAL OUTPUT
171	SB	POWER SUPPLY FOR ECM
172	SB	POWER SUPPLY FOR ECM
173	R	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	M181
Connector Name	WIRE TO WIRE
Connector Type	FH40MM-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	R	-
3	B	-
5	R	-
6	BR	-
7	L	-
8	P	-
9	B	-
10	W	-
11	LG	-
12	SB	-
14	SB	-
15	BR	-
16	V	-
18	G	-
19	B	-
20	V	-
22	BG	-
23	B	-
25	W	-
30	R	-
31	BR	-
33	P	-
32	L	-
34	LG	-
35	W	-
36	LG	-
37	L	-
38	R	-

Connector No.	M182
Connector Name	DATA LINK CONNECTOR
Connector Type	BD18FY



Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	V	-
8	LG	-
11	SB	-
12	P	-
13	L	-
14	P	-
16	W	-

# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	THZ2FW-14H



61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
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Terminal No.	Color of Wire	Signal Name (Specification)
65	V	PARKING BRAKE SIGNAL
67	R	COMPOSITE IMAGE SIGNAL GND
68	W	COMPOSITE IMAGE SIGNAL
69	G	L-KEY LINK OUTPUT
71	SHIELD	MICROPHONE SHIELD
72	G	MICROPHONE VCC
73	BR	COMM (CONT->DISP)
74	P	CAN-L
75	LG	AV COMM (L)
76	LG	AV COMM (L)
78	SB	DIMMER SIGNAL
80	W	IGNITION SIGNAL
81	RG	REVERSE SIGNAL
82	R	VEHICLE SPEED SIGNAL (3-PULSE)
83	SHIELD	SHIELD
84	B	COMPOSITE IMAGE SYNC SIGNAL
87	R	MICROPHONE SIGNAL
88	SHIELD	SHIELD
89	Y	COMM (DISP->CONT)
90	L	CAN-H
91	SB	AV COMM (H)
92	SB	AV COMM (H)

JCMWA5565GB

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LAN

# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORKFLOW

### Interview Sheet

INFOID:000000006032405

#### CAN Communication System Diagnosis Interview Sheet

Date received:

Type:

VIN No.:

Model:

First registration:

Mileage:

CAN system type:

Symptom (Results from interview with customer)

Condition at inspection

Error symptom : Present / Past

SKIB8898E

# MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

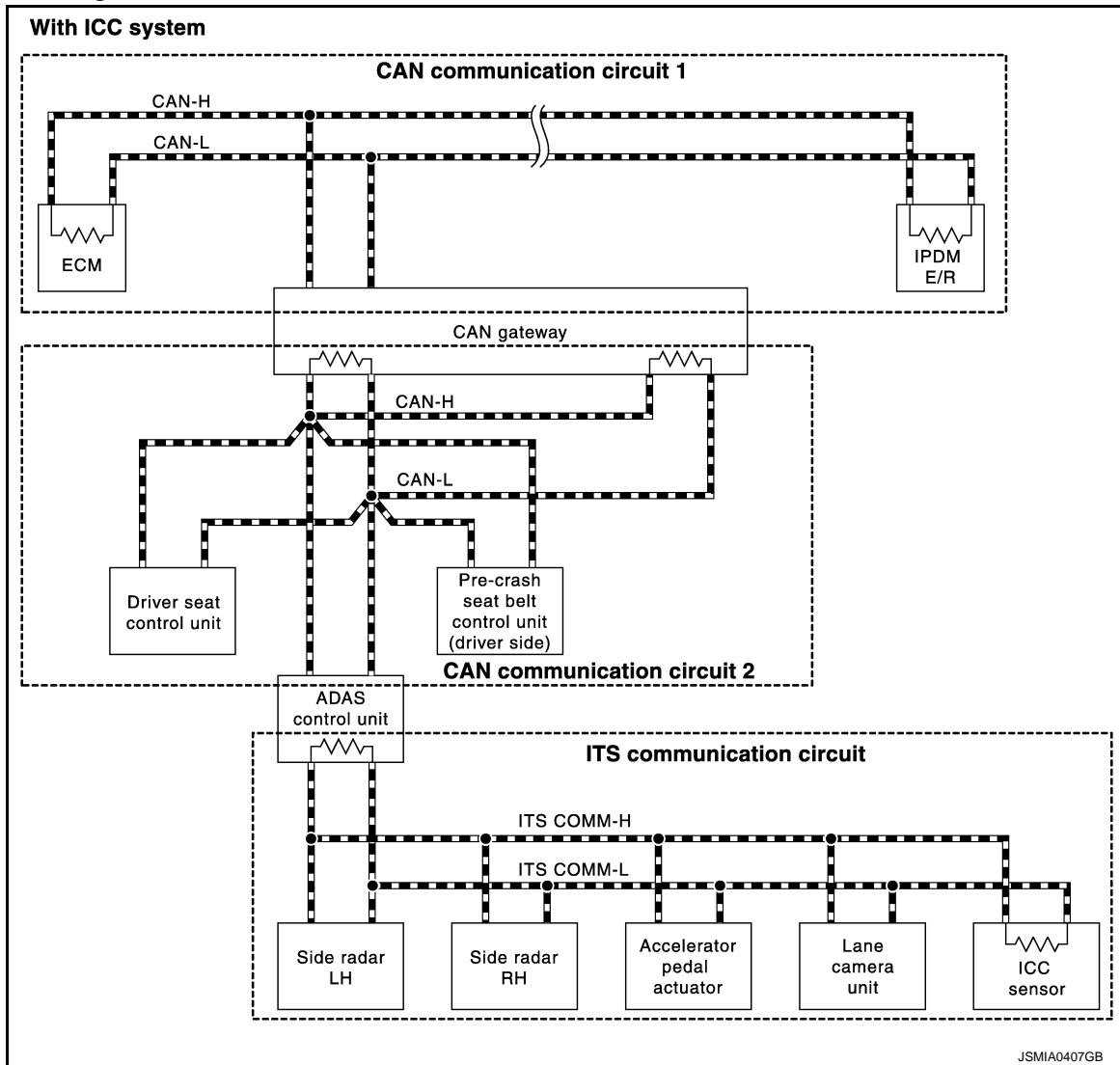
[CAN]

## DTC/CIRCUIT DIAGNOSIS

### MALFUNCTION AREA CHART

#### System Diagram

INFOID:000000006032406



#### CAN Communication Circuit

INFOID:000000006032407

#### MAIN LINE

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

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# MALFUNCTION AREA CHART

[CAN]

## < DTC/CIRCUIT DIAGNOSIS >

Malfunction area	Reference
Main line between BCM and AWD control unit	<a href="#">LAN-80, "Diagnosis Procedure"</a>
Main line between BCM and driver seat control unit	<a href="#">LAN-81, "Diagnosis Procedure"</a>
Main line between BCM and 4WAS main control unit	<a href="#">LAN-82, "Diagnosis Procedure"</a>
Main line between AWD control unit and ABS actuator and electric unit (control unit)	<a href="#">LAN-83, "Diagnosis Procedure"</a>
Main line between driver seat control unit and ABS actuator and electric unit (control unit)	<a href="#">LAN-85, "Diagnosis Procedure"</a>
Main line between 4WAS main control unit and ABS actuator and electric unit (control unit)	<a href="#">LAN-87, "Diagnosis Procedure"</a>

## BRANCH LINE

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

## SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit (Without ICC system)	<a href="#">LAN-121, "Diagnosis Procedure"</a>
CAN communication circuit 1 (With ICC system)	<a href="#">LAN-123, "Diagnosis Procedure"</a>
CAN communication circuit 2 (With ICC system)	<a href="#">LAN-125, "Diagnosis Procedure"</a>

## ITS Communication Circuit

INFOID:000000006032408

## MAIN LINE

Malfunction area	Reference
Main line between side radar LH and side radar RH	<a href="#">LAN-89, "Diagnosis Procedure"</a>

# MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
Main line between side radar RH and accelerator pedal actuator	<a href="#">LAN-90, "Diagnosis Procedure"</a>
Main line between accelerator pedal actuator and lane camera unit	<a href="#">LAN-92, "Diagnosis Procedure"</a>

A  
B

## BRANCH LINE

Malfunction area	Reference
Side radar LH branch line circuit	<a href="#">LAN-116, "Diagnosis Procedure"</a>
Side radar RH branch line circuit	<a href="#">LAN-117, "Diagnosis Procedure"</a>
Accelerator pedal actuator branch line circuit	<a href="#">LAN-118, "Diagnosis Procedure"</a>
Lane camera unit branch line circuit	<a href="#">LAN-119, "Diagnosis Procedure"</a>
ICC sensor branch line circuit	<a href="#">LAN-120, "Diagnosis Procedure"</a>

C  
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## SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	<a href="#">LAN-127, "Diagnosis Procedure"</a>

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# MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

### Diagnosis Procedure

INFOID:000000006032409

#### 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 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.



# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006032410

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

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# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006032411

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006032412

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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 >

[CAN]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006032413

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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 BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006032414

#### 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.	
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.

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# MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN BCM AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006092436

#### 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 harness connector		PCB harness connector		Continuity
Connector No.	Terminal No.	Terminal No.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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

**[CAN]**

**< DTC/CIRCUIT DIAGNOSIS >**

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

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

**Is the inspection result normal?**

- YES >> GO TO 6.  
 NO >> Repair the main line between the harness connectors M7 and M6.

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**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.

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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
	23		15	Existed

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**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

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### Diagnosis Procedure

INFOID:000000006032415

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 BCM AND ADP CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN BCM AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000006068657

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 >

[CAN]

## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

### Diagnosis Procedure

INFOID:000000006068661

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 4WD AND ABS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006068663

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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 AWD control unit and the ABS actuator and electric unit (control unit).

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## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

# MAIN LINE BETWEEN ADP AND ABS CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006068655

#### 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-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		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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.

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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- 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).

# MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006068662

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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]

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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]

## MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

### Diagnosis Procedure

INFOID:000000006068659

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

#### 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.	
B245	13	B252	4	Existed
	14		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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# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000006068660

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	Terminal No.	Connector No.	Terminal No.	
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 >

[CAN]

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN APA AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000006068658

#### 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.	
M150	11	M110	13	Existed
	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

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032416

#### 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.		
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.

#### 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: [EC-535. "Removal and Installation"](#)
  - VK56VD: [EC-535. "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

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## ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069161

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).  
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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

### Diagnosis Procedure

INFOID:000000006069162

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

CAN gateway harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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]

< DTC/CIRCUIT DIAGNOSIS >

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

### Diagnosis Procedure

INFOID:000000006069163

#### 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.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 [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 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 harness 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.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

[CAN]

< 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.		
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.	
M20	24	M7	34	Existed
	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.	Terminal No.		Continuity
B1	34	32	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069164

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032419

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032420

#### **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.

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# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032418

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032423

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032422

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032421

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032424

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

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# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069167

#### 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 (Ω)
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 [DLN-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the AWD control unit branch line.  
NO >> Repair the power supply and the ground circuit.

# RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## RAS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069177

#### 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.

4WAS main control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
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 [STC-171, "Diagnosis 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.

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LAN

# ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032428

#### 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.		
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 [BRC-119, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032417

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
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.

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032430

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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 CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032425

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

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# ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032429

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 [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 (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]

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069168

#### 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		Continuity	
Connector No.	Terminal No.		
M125	4	6	Existed
	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).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
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 [SBC-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

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.

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

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# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006032426

#### 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 [DAS-575, "SIDE RADAR LH : Diagnosis Procedure"](#).

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]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069169

#### 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 [DAS-578. "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.	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 [DAS-576. "SIDE RADAR RH: Diagnosis Procedure"](#).

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.

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# APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069171

#### 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.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 accelerator pedal actuator. Refer to [DAS-203, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation"](#).

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.	
M152	5	M23	138	Existed
	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.

# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069170

#### 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to [DAS-403, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

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.	
R8	4	M24	179	Existed
	8		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.

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# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006069172

#### 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		Resistance (Ω)
Connector No.	Terminal No.	
E67	3	Approx. 108 – 132
	6	

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 : Diagnosis 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006069173

#### 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		Continuity
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)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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 ( $\Omega$ )
Terminal No.		
114	113	Approx. 108 – 132

- VK56VD

ECM		Resistance ( $\Omega$ )
Terminal No.		
146	151	Approx. 108 – 132

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

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
40	39	Approx. 108 – 132

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# CAN COMMUNICATION CIRCUIT

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

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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 COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000006069174

#### 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"](#).

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.	
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
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.

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 COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000006069175

#### 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 [LAN-69. "System Diagram"](#).

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.	
M182	13	Not existed
	12	

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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	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)
Terminal 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.

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## CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

---

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.

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.

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006069176

#### 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 [LAN-69. "System Diagram"](#).

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
2. 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.	
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.	Terminal No.		
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.

#### 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	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.



# PRECAUTION

## PRECAUTIONS

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

INFOID:000000006086433

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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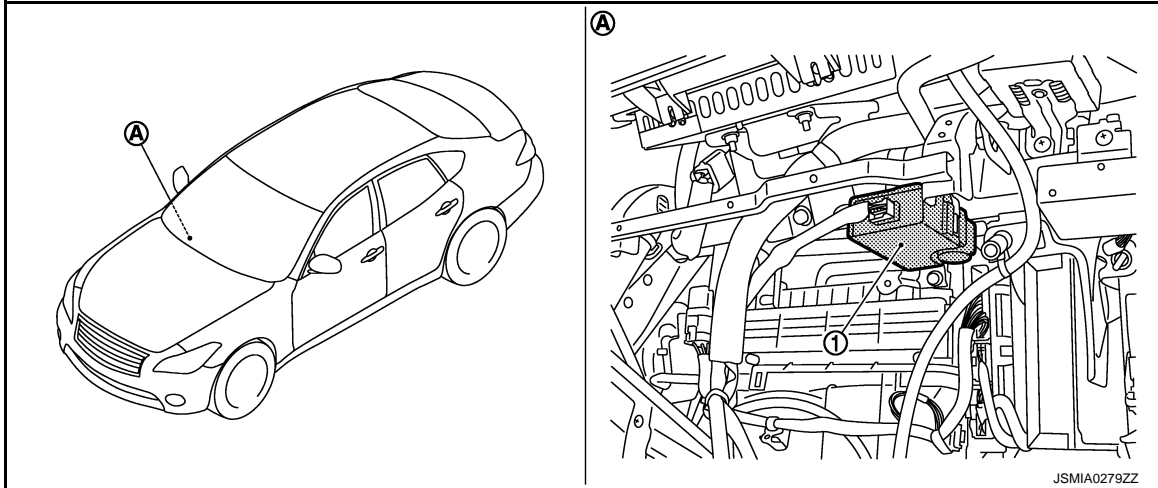
< SYSTEM DESCRIPTION >

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000005987020

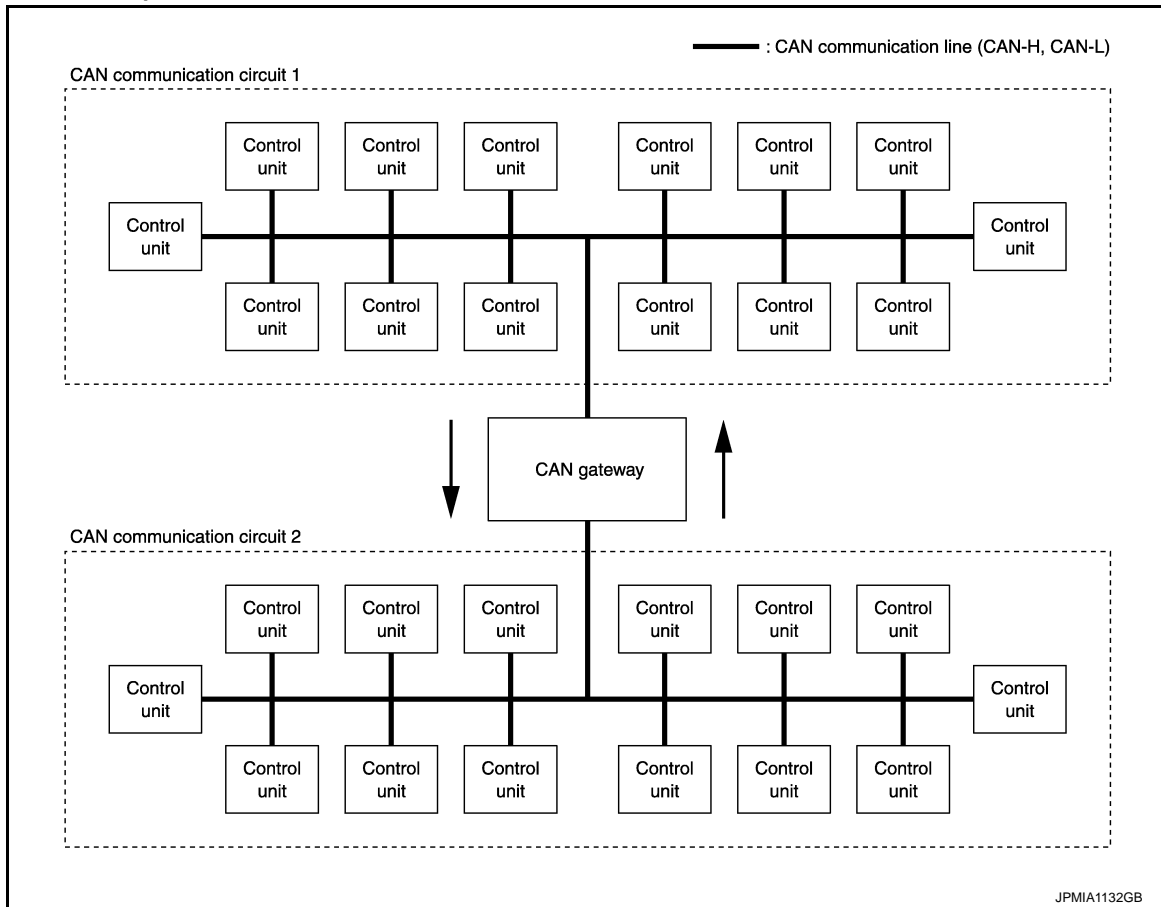


- 1. CAN gateway
- A. Over the glove box

## SYSTEM

### System Description

INFOID:000000006086782



- The CAN gateway system communicates between two CAN communication circuits.
- This system selects and transmits only necessary information.

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LAN

# DIAGNOSIS SYSTEM (CAN GATEWAY)

< SYSTEM DESCRIPTION >

[CAN GATEWAY]

## DIAGNOSIS SYSTEM (CAN GATEWAY)

### CONSULT-III Function

INFOID:000000006086783

#### 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 style="list-style-type: none"><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"](#).

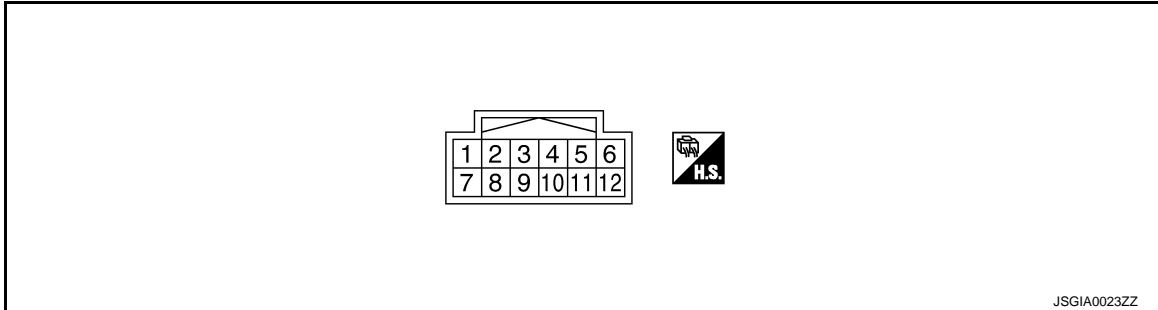
ECU DIAGNOSIS INFORMATION

CAN GATEWAY

Reference Value

INFOID:0000000006086784

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
1 (L)	—	CAN-H (CAN communication circuit 1)	Input/ Output	—	—
3 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
4 (L)	—	CAN-H (CAN communication circuit 2)	Input/ Output	—	—
5 (B)	Ground	Ground	—	Ignition switch ON	0 V
6 (L)	—	CAN-H (CAN communication circuit 2)	Input/ Output	—	—
7 (P)	—	CAN-L (CAN communication circuit 1)	Input/ Output	—	—
9 (W)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
10 (P)	—	CAN-L (CAN communication circuit 2)	Input/ Output	—	—
11 (B)	Ground	Ground	—	Ignition switch ON	0 V
12 (P)	—	CAN-L (CAN communication circuit 2)	Input/ Output	—	—

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DTC Inspection Priority Chart

INFOID:0000000006086785

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

Priority	DTC
1	<ul style="list-style-type: none"> <li>B2600: CONFIG ERROR</li> <li>U1010: CONTROL UNIT(CAN)</li> </ul>
2	U1000: CAN COMM CIRCUIT

DTC Index

INFOID:0000000006086786

NOTE:

# CAN GATEWAY

[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 → 2 ... 38 → 39 after returning to the normal condition whenever IGN OFF → 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. Further testing may be required.		—
U1000: CAN COMM CIRCUIT		<a href="#">LAN-140</a>
U1010: CONTROL UNIT(CAN)		<a href="#">LAN-141</a>
B2600: CONFIG ERROR	WRONG DATA	<a href="#">LAN-142</a>
	NOT CONFIGURED	

# CAN GATEWAY SYSTEM

< WIRING DIAGRAM >

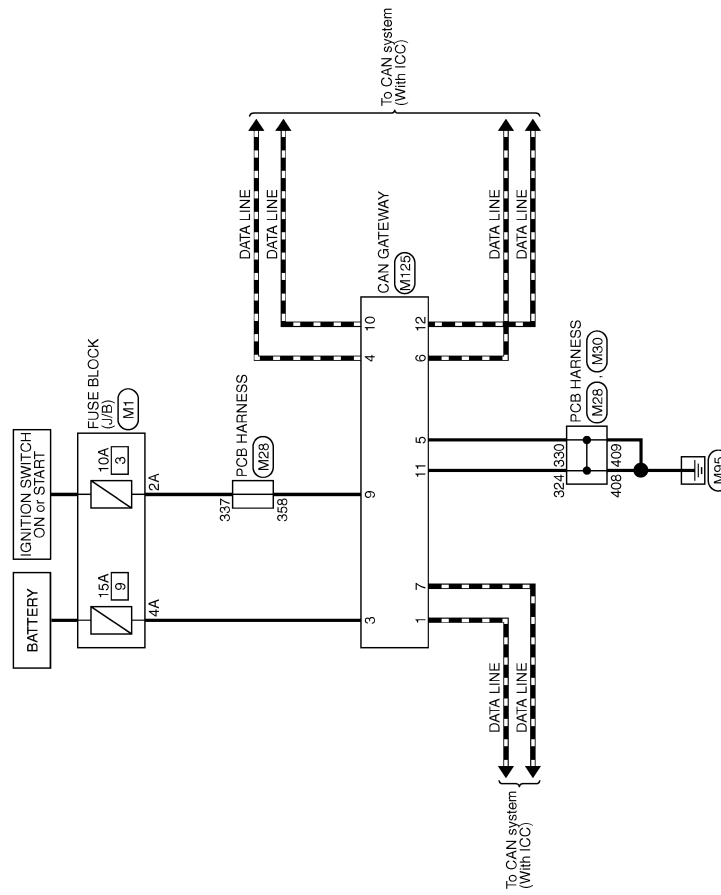
[CAN GATEWAY]

## WIRING DIAGRAM

### CAN GATEWAY SYSTEM

#### Wiring Diagram

INFOID:000000006086787



CAN GATEWAY SYSTEM

LAN

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JCMWA5566GB

# CAN GATEWAY SYSTEM

< WIRING DIAGRAM >

[CAN GATEWAY]

## CAN GATEWAY SYSTEM

Connector No.	M1
Connector Name	FUSE BLOCK (J/E)
Connector Type	HS08FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
1A	R	-
2A	W	-
3A	Y	-
4A	W	-
5A	V	-
6A	Y	-
8A	Y	-

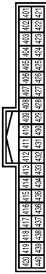
Connector No.	M28
Connector Name	POB HARNESS
Connector Type	TH40FW-1H1



Terminal No.	Color of Wire	Signal Name [Specification]
321	V	-
322	V	-
324	B	-
325	L	-
326	L	-
327	P	-
328	P	-
330	B	-
331	V	-
332	V	-
335	B	-
337	W	-
338	W	-
343	L	-
344	B	-

345	Y	-
346	L	-
347	P	-
348	GR	-
349	V	-
350	LG	-
351	P	-
352	R	-
353	P	-
358	W	-
359	W	-
360	G	-

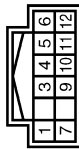
Connector No.	M30
Connector Name	PCB HARNESS
Connector Type	TH40FW-1H



Terminal No.	Color of Wire	Signal Name [Specification]
402	R	-
403	R	-
407	V	-
408	B	-
409	B	-
410	B	-
411	B	-
413	Y	-
414	BR	-
416	LG	-
417	B	-
419	SB	-
420	SHIELD	-
422	V	-
427	P	-
428	V	-
429	P	-
430	LG	-
431	B	-
432	Y	-
435	V	-
436	EG	-
437	B	-
438	P	-

439	L	-
-----	---	---

Connector No.	M125
Connector Name	CAN GATEWAY
Connector Type	TH12FW-1H



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
3	GR	BATTERY
4	L	CAN-H
5	B	GND
6	L	CAN-H
7	P	CAN-L
9	W	IGNITION
10	P	CAN-L
11	B	GND
12	P	CAN-L



# ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

< BASIC INSPECTION >

[CAN GATEWAY]

## BASIC INSPECTION

### ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

#### Description

INFOID:000000006086788

#### BEFORE REPLACEMENT

When replacing CAN gateway, save or print current vehicle specification with CONSULT-III configuration before replacement.

#### NOTE:

If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing CAN gateway.

#### AFTER REPLACEMENT

#### 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

INFOID:000000006086789

#### 1. SAVING VEHICLE SPECIFICATION

##### Ⓜ CONSULT-III Configuration

Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to [LAN-138, "Description"](#).

#### NOTE:

If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing CAN gateway.

>> GO TO 2.

#### 2. REPLACE CAN GATEWAY

Replace CAN gateway. Refer to [LAN-144, "Removal and Installation"](#).

>> GO TO 3.

#### 3. WRITING VEHICLE SPECIFICATION

##### Ⓜ CONSULT-III Configuration

Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write vehicle specification. Refer to [LAN-138, "Work Procedure"](#).

>> WORK END

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## CONFIGURATION (CAN GATEWAY)

### Description

INFOID:000000006086790

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 style="list-style-type: none"> <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

INFOID:000000006086791

#### 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

#### 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

# CONFIGURATION (CAN GATEWAY)

< BASIC INSPECTION >

[CAN GATEWAY]

- U1508

>> WORK END

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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 [LAN-35, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

#### DTC Logic

INFOID:000000005987023

#### DTC DETECTION LOGIC

DTC	CONSULT-III display description	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"](#).

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

## U1010 CONTROL UNIT (CAN)

### Description

INFOID:000000005987025

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 Signal Chart"](#).

### DTC Logic

INFOID:000000005987026

### DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1010	CONTROL UNIT(CAN)	When an error is detected during the initial diagnosis for CAN controller of CAN gateway.	CAN gateway

### Diagnosis Procedure

INFOID:000000005987027

#### 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"](#).

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# B2600 CONFIG ERROR

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

## B2600 CONFIG ERROR

### Description

INFOID:000000005987028

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

### DTC Logic

INFOID:000000005987029

### DTC DETECTION LOGIC

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

### 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 >

[CAN GATEWAY]

## POWER SUPPLY AND GROUND CIRCUIT

### Diagnosis Procedure

INFOID:000000005987031

#### 1.CHECK FUSE

Check that the following fuse are not blown.

Signal name	Fuse No.
Battery power supply	9
Ignition power supply	3

#### 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	Voltage (Approx.)	
(+)	(-)			
CAN gateway		Ignition switch	Ground	
Connector	Terminal			
M125	3	OFF		Battery voltage
	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		Ground	Continuity
Connector	Terminal		
M125	5	Ground	Existed
	11		

#### Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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## REMOVAL AND INSTALLATION

### CAN GATEWAY

#### Removal and Installation

INFOID:000000005987038

**CAUTION:**

Before replacing CAN gateway, perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to [LAN-137, "Description"](#).

**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 [LAN-137, "Description"](#).



# MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### Diagnosis Procedure

INFOID:000000006093494

#### 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 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.

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# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006093495

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006093496

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006093497

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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.

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006093498

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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.

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# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006093499

#### 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.	
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.

# MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN BCM AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000006093502

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006093505

#### 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-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		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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.



## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< 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).
- 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093510

#### 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.		
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.

#### 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: [EC-535, "Removal and Installation"](#)
- VK56VD: [EC-535, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093511

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).

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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093514

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093515

#### 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	Approx. 54 – 66
	8	

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 TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093516

#### **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.

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# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093517

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system



# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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:000000006093518

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093519

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

LAN

# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093520

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093521

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

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# ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093524

#### 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.		
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 [BRC-119. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-141. "Removal and Installation"](#).  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093526

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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.

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# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093527

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006093536

#### 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		Continuity
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)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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 ( $\Omega$ )
Terminal No.		
114	113	Approx. 108 – 132

- VK56VD

ECM		Resistance ( $\Omega$ )
Terminal No.		
146	151	Approx. 108 – 132

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

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
40	39	Approx. 108 – 132

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# CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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Is the measurement value within the specification?

YES >> GO TO 5.

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

## 5.CHECK SYMPTOM

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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

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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.

# MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094349

#### 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 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.

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# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094350

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094351

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094352

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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.

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094353

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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.

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# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094354

#### 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.	
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.



# MAIN LINE BETWEEN BCM AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094358

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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.

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# MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094361

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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)]

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094365

#### 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.		
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.

#### 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: [EC-535, "Removal and Installation"](#)
- VK56VD: [EC-535, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094366

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).

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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094369

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094370

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.



# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094371

#### **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.

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# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094372

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
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: [AV-298. "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094373

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094374

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094375

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094376

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

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## RAS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094378

#### 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.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 [STC-171, "Diagnosis 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094379

#### 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.		
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 [BRC-119, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094381

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094382

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

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# CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094391

#### 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			Continuity
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)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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 ( $\Omega$ )
Terminal No.		
114	113	Approx. 108 – 132

- VK56VD

ECM		Resistance ( $\Omega$ )
Terminal No.		
146	151	Approx. 108 – 132

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

IPDM E/R		Resistance ( $\Omega$ )
Terminal 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 “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.

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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 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.

# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094998

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

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# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094999

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.



# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006095000

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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 >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006095001

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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 BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006095002

#### 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.	
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.

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# MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN BCM AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006095003

#### 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 harness connector		PCB harness connector		Continuity
Connector No.	Terminal No.	Terminal No.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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.	
M7	74	M6	22	Existed
	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		ABS actuator and electric unit (control unit) 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 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 >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

### Diagnosis Procedure

INFOID:000000006095010

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

#### 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.	
B245	13	B252	4	Existed
	14		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 BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000006095011

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	Terminal No.	
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 >

[CAN SYSTEM (TYPE 3)]

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NO >> Replace the PCB harness.



# MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN APA AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095012

#### 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.	
M150	11	M110	13	Existed
	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.

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# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095013

#### 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.		
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.

#### 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: [EC-535, "Removal and Installation"](#)
- VK56VD: [EC-535, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095014

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).

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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

### Diagnosis Procedure

INFOID:000000006095015

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

CAN gateway harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

### Diagnosis Procedure

INFOID:000000006095016

#### 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.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 [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 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 harness 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.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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.		
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.	
M20	24	M7	34	Existed
	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.	Terminal No.		Continuity
B1	34	32	Existed
	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.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095017

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.

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



# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095018

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095019

#### **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

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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

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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

### Diagnosis Procedure

INFOID:000000006095020

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298. "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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 LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095021

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

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# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095022

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095023

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095024

#### 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 ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095027

#### 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.		
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 [BRC-119, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

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# AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095028

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095029

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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.

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# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095030

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

# ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095031

#### 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		Continuity	
Connector No.	Terminal No.		
M125	4	6	Existed
	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 [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 (Past error)>>Error was detected in the ADAS control unit branch line.

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

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PSB BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000006095032

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		Continuity	
Connector No.	Terminal No.		
M125	4	6	Existed
	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).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
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 [SBC-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095033

#### 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 [DAS-575, "SIDE RADAR LH: Diagnosis Procedure"](#).

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.

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# RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:00000006095035

#### 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 [DAS-578. "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.	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 [DAS-576. "SIDE RADAR RH : Diagnosis Procedure"](#).

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095037

#### 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.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 accelerator pedal actuator. Refer to [DAS-203, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation"](#).

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.	
M152	5	M23	138	Existed
	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.

# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095036

#### 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to [DAS-403, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

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.	
R8	4	M24	179	Existed
	8		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006095038

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 108 – 132

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 : Diagnosis 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	3	M28	343	Existed
	6		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.

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000006095040

#### 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"](#).

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.	
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
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.

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.

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# CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000006095041

#### 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 [LAN-69. "System Diagram"](#).

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.	
M182	13	Not existed
	12	

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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	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)
Terminal 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.

## CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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.

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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**ITS COMMUNICATION CIRCUIT**

**Diagnosis Procedure**

INFOID:000000006095042

**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 [LAN-69. "System Diagram"](#).

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
2. 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.	
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.	Terminal No.		
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.

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

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



# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

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B

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.

C

## 6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.
2. Check the resistance between the ADAS control unit terminals.

D

ADAS control unit		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

E  
F

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)
Terminal No.		
3	6	Approx. 108 – 132

G  
H

Is the inspection result normal?

YES >> GO TO 7.

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

I

## 7.CHECK SYMPTOM

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

J

Inspection result

Reproduced>>GO TO 8.

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

K

## 8.CHECK UNIT REPRODUCTION

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

L

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.

N

**NOTE:**

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

O

Inspection result

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

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

P

LAN

# 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.

Low tire pressure warning control unit 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.

# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094947

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

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# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094948

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094949

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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 >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094950

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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 BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094951

#### 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.	
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.

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# MAIN LINE BETWEEN BCM AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094955

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094958

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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).

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## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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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

### Diagnosis Procedure

INFOID:000000006094959

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

#### 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.	
B245	13	B252	4	Existed
	14		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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# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000006094960

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	Terminal No.	Connector No.	Terminal No.	
38	40	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 >

[CAN SYSTEM (TYPE 4)]

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN APA AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094961

#### 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.	
M150	11	M110	13	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094962

#### 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.		
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.

#### 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: [EC-535. "Removal and Installation"](#)
- VK56VD: [EC-535. "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

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## ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094963

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).  
 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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

### Diagnosis Procedure

INFOID:000000006094964

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

CAN gateway harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

### Diagnosis Procedure

INFOID:000000006094965

#### 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.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 [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 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 harness 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.

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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.		
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.	
M20	24	M7	34	Existed
	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.	Terminal No.		Continuity
B1	34	32	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094966

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094967

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094968

#### **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.

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# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094969

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system



# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094970

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094971

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094972

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094973

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

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# RAS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## RAS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094975

#### 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.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 [STC-171, "Diagnosis 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094976

#### 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.		
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 [BRC-119, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

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# AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094977

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094978

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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.

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# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094979

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

# ICC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094980

#### 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		Continuity	
Connector No.	Terminal No.		
M125	4	6	Existed
	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 [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 (Past error)>>Error was detected in the ADAS control unit branch line.  
NO >> Repair the power supply and the ground circuit.

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# PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094981

#### 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		Continuity	
Connector No.	Terminal No.		
M125	4	6	Existed
	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).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector		Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
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 [SBC-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

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.

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

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094982

#### 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 [DAS-575, "SIDE RADAR LH: Diagnosis Procedure"](#).

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.

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# RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094984

#### 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 [DAS-578. "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.	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 [DAS-576. "SIDE RADAR RH : Diagnosis Procedure"](#).

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094986

#### 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.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 accelerator pedal actuator. Refer to [DAS-203, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation"](#).

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.	
M152	5	M23	138	Existed
	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.

# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094985

#### 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to [DAS-403, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

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.	
R8	4	M24	179	Existed
	8		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094987

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 108 – 132

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 : Diagnosis 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	3	M28	343	Existed
	6		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.

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000006094989

#### 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"](#).

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.	
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
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.

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.

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# CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000006094990

#### 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 [LAN-69. "System Diagram"](#).

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.	
M182	13	Not existed
	12	

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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	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)
Terminal 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.

## 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

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.

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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# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094991

#### 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 [LAN-69. "System Diagram"](#).

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
2. 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.	
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.	Terminal No.		
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.

#### 5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	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.

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# 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 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.



# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094401

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

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# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094402

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094403

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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 >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094404

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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 BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094405

#### 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.	
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.

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# MAIN LINE BETWEEN BCM AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN BCM AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000006094408

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094411

#### 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-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		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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.

## MAIN LINE BETWEEN ADP AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

- 
- 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094416

#### 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.		
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.

#### 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: [EC-535. "Removal and Installation"](#)
- VK56VD: [EC-535. "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

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## ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094417

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).  
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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094420

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.

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

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094421

#### 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	Approx. 54 – 66
	8	

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 TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094422

#### **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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094423

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298. "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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 LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094424

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

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# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094425

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094426

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094427

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094430

#### 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.		
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 [BRC-119, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094432

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094433

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

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# CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094442

#### 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		Continuity
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)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

IPDM E/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.

## 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.

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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.

Low tire pressure warning control unit 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.

# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094452

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

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# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094453

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094454

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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 >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094455

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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 BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094456

#### 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.	
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.

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# MAIN LINE BETWEEN BCM AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094460

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094463

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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).

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## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094467

#### 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.		
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.

#### 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: [EC-535. "Removal and Installation"](#)
- VK56VD: [EC-535. "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

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## ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094468

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).  
 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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094471

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.

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

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094472

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

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## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094473

#### **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

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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

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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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094474

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298. "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

## AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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 LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094475

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

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# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094476

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094477

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094478

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## RAS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094480

#### 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.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 [STC-171, "Diagnosis 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.

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# ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094481

#### 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.		
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 [BRC-119. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-141. "Removal and Installation"](#).  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094483

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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.

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# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094484

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094493

#### 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		Continuity
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)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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 ( $\Omega$ )
Terminal No.		
114	113	Approx. 108 – 132

- VK56VD

ECM		Resistance ( $\Omega$ )
Terminal No.		
146	151	Approx. 108 – 132

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

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
40	39	Approx. 108 – 132

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# CAN COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 6)]

< 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.

# MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094895

#### 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 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.

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# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094896

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094897

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094898

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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.



# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094899

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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.

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# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094900

#### 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.	
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.

# MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN BCM AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094901

#### 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 harness connector		PCB harness connector		Continuity
Connector No.	Terminal No.	Terminal No.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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)

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# MAIN LINE BETWEEN BCM AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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.	
M7	74	M6	22	Existed
	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		ABS actuator and electric unit (control unit) 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 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

### Diagnosis Procedure

INFOID:000000006094908

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

#### 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.	
B245	13	B252	4	Existed
	14		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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# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000006094909

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	Terminal No.	Connector No.	Terminal No.	
38	40	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 >

[CAN SYSTEM (TYPE 7)]

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN APA AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094910

#### 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.	
M150	11	M110	13	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094911

#### 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.		
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.

#### 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: [EC-535. "Removal and Installation"](#)
- VK56VD: [EC-535. "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

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## ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094912

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).  
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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

### Diagnosis Procedure

INFOID:000000006094913

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

CAN gateway harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

### Diagnosis Procedure

INFOID:000000006094914

#### 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.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 [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 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 harness 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.

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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.		
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.	
M20	24	M7	34	Existed
	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.	Terminal No.		Continuity
B1	34	32	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094915

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094916

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.



# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094917

#### **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.

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# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094918

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094919

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094920

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094921

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094922

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

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# ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094925

#### 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.		
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 [BRC-119. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-141. "Removal and Installation"](#).  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094926

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
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.

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094927

#### 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 ( $\Omega$ )
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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094928

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

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## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094929

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 [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 (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 SYSTEM (TYPE 7)]

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094930

#### 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		Continuity	
Connector No.	Terminal No.		
M125	4	6	Existed
	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).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
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 [SBC-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

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.

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

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# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094931

#### 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 [DAS-575, "SIDE RADAR LH : Diagnosis Procedure"](#).

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:000000006094933

#### 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 [DAS-578. "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.	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 [DAS-576. "SIDE RADAR RH: Diagnosis Procedure"](#).

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.

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# APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094935

#### 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.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 accelerator pedal actuator. Refer to [DAS-203, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation"](#).

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.	
M152	5	M23	138	Existed
	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.



# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094934

#### 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to [DAS-403, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

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.	
R8	4	M24	179	Existed
	8		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.

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# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094936

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 108 – 132

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 : Diagnosis 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000006094938

#### 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"](#).

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.	
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
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.

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 COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000006094939

#### 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 [LAN-69, "System Diagram"](#).

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.	
M182	13	Not existed
	12	

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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	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)
Terminal 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.

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## CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

### 6.CHECK UNIT REPRODUCTION

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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.

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.

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094940

#### 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 [LAN-69. "System Diagram"](#).

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
2. 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.	
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.	Terminal No.		
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.

#### 5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	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.



# MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### Diagnosis Procedure

INFOID:0000000006094668

#### 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 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.

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# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094669

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094670

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094671

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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.

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094672

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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.

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# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094673

#### 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.	
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.

# MAIN LINE BETWEEN BCM AND RAS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN BCM AND RAS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094677

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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.

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# MAIN LINE BETWEEN RAS AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN RAS AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094680

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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 8)]

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 >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

### Diagnosis Procedure

INFOID:000000006094681

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

#### 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.	
B245	13	B252	4	Existed
	14		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 BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000006094682

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	Connector No.	
38	M150	11	M151	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 >

[CAN SYSTEM (TYPE 8)]

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NO >> Replace the PCB harness.

# MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## MAIN LINE BETWEEN APA AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094683

#### 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.	
M150	11	M110	13	Existed
	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.

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# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094684

#### 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.		
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.

#### 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: [EC-535, "Removal and Installation"](#)
- VK56VD: [EC-535, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094685

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).

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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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

### Diagnosis Procedure

INFOID:000000006094686

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

CAN gateway harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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

### Diagnosis Procedure

INFOID:000000006094687

#### 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.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 [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 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 harness 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.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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.		
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.	
M20	24	M7	34	Existed
	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.	Terminal No.		Continuity
B1	34	32	Existed
	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.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094688

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.

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

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094689

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094690

#### **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

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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

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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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094691

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298. "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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 LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094692

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

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# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094693

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094694

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094695

#### 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 ( $\Omega$ )
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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## RAS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094697

#### 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.

4WAS main control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 [STC-171, "Diagnosis 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.

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# ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094698

#### 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.		
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 [BRC-119. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-141. "Removal and Installation"](#).  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094699

#### 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			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
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.

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094700

#### 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 ( $\Omega$ )
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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094701

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

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## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094702

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 [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 (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 SYSTEM (TYPE 8)]

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094703

#### 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		Continuity	
Connector No.	Terminal No.		
M125	4	6	Existed
	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).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector		Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
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 [SBC-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

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LAN

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094704

#### 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 [DAS-575, "SIDE RADAR LH : Diagnosis Procedure"](#).

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 8)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094706

#### 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 [DAS-578. "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.	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 [DAS-576. "SIDE RADAR RH: Diagnosis Procedure"](#).

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.

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# APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094708

#### 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.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 accelerator pedal actuator. Refer to [DAS-203, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation"](#).

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.	
M152	5	M23	138	Existed
	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.

# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094707

#### 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to [DAS-403, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

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.	
R8	4	M24	179	Existed
	8		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.

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# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094709

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 108 – 132

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 : Diagnosis 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000006094711

#### 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"](#).

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.	
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
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.

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 COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000006094712

#### 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 [LAN-69. "System Diagram"](#).

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.	
M182	13	Not existed
	12	

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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	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)
Terminal 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.

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## CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

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

### 6.CHECK UNIT REPRODUCTION

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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.

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.

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094713

#### 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 [LAN-69. "System Diagram"](#).

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
2. 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.	
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.	Terminal No.		
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.

#### 5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

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# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 8)]

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		
	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.

# MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### Diagnosis Procedure

INFOID:000000006094502

#### 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 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.

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# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094503

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.



# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094504

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094505

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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.

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094506

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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.

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# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094507

#### 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.	
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.

# MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### Diagnosis Procedure

INFOID:000000006094509

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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.

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# MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094512

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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 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)]

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094518

#### 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.		
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.

#### 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: [EC-535, "Removal and Installation"](#)
- VK56VD: [EC-535, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD



# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094519

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).

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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094522

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094523

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094524

#### **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.

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# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094525

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094526

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094527

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094528

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094529

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

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# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094530

#### 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 (Ω)
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 [DLN-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094532

#### 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.		
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 [BRC-119, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094534

#### 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 ( $\Omega$ )
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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094535

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

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# CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 9)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094544

#### 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			Continuity
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)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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 ( $\Omega$ )
Terminal No.		
114	113	Approx. 108 – 132

- VK56VD

ECM		Resistance ( $\Omega$ )
Terminal No.		
146	151	Approx. 108 – 132

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

IPDM E/R		Resistance ( $\Omega$ )
Terminal 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.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.

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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 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.

# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094618

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

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# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094619

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094620

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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 >

[CAN SYSTEM (TYPE 10)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094621

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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 BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094622

#### 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.	
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.

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# MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### Diagnosis Procedure

INFOID:000000006094624

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 >

[CAN SYSTEM (TYPE 10)]

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094627

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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 AWD control unit and the ABS actuator and electric unit (control unit).

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## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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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

INFOID:000000006094630

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

#### 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.	
B245	13	B252	4	Existed
	14		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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# MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000006094631

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	Terminal No.	Connector No.	Terminal No.	
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 >

[CAN SYSTEM (TYPE 10)]

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN APA AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## 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		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M150	11	M110	13	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094633

#### 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.		
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.

#### 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: [EC-535. "Removal and Installation"](#)
- VK56VD: [EC-535. "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

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## ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094634

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).  
 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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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

### Diagnosis Procedure

INFOID:000000006094635

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

CAN gateway harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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

### Diagnosis Procedure

INFOID:000000006094636

#### 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.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 [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 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 harness 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.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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.		
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.	
M20	24	M7	34	Existed
	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.	Terminal No.		Continuity
B1	34	32	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094637

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094638

#### 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	Approx. 54 – 66
	8	

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 TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094639

#### **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.

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# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## 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

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298, "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094641

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094642

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094643

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094644

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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.

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# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094645

#### 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 [DLN-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094647

#### 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.		
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 [BRC-119, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

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# AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094648

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094649

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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.

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# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094650

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094651

#### 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		Continuity
Connector No.	Terminal No.	
M125	4	6
	10	12
		Existed
		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 [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 (Past error)>>Error was detected in the ADAS control unit branch line.  
 NO >> Repair the power supply and the ground circuit.

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## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094652

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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 [SBC-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094653

#### 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 [DAS-575, "SIDE RADAR LH : Diagnosis Procedure"](#).

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.

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# RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094655

#### 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 [DAS-578. "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.	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 [DAS-576. "SIDE RADAR RH : Diagnosis Procedure"](#).

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094657

#### 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.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 accelerator pedal actuator. Refer to [DAS-203, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation"](#).

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.	
M152	5	M23	138	Existed
	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.

# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094656

#### 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to [DAS-403, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

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.	
R8	4	M24	179	Existed
	8		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094658

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 108 – 132

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 : Diagnosis 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	3	M28	343	Existed
	6		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.

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000006094660

#### 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"](#).

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.	
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
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.

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.

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# CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000006094661

#### 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 [LAN-69. "System Diagram"](#).

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.	
M182	13	Not existed
	12	

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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	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)
Terminal 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.

## CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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.

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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# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094662

#### 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 [LAN-69. "System Diagram"](#).

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
2. 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.	
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.	Terminal No.		
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.

#### 5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 10)]

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

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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.

C

## 6.CHECK TERMINATION CIRCUIT

1. Remove the ADAS control unit and the ICC sensor.
2. Check the resistance between the ADAS control unit terminals.

D

ADAS control unit		Resistance (Ω)
Terminal No.		
7	8	Approx. 108 – 132

E  
F

3. Check the resistance between the ICC sensor terminals.

ICC sensor		Resistance (Ω)
Terminal No.		
3	6	Approx. 108 – 132

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Is the inspection result normal?

YES >> GO TO 7.

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

I

## 7.CHECK SYMPTOM

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

J

Inspection result

Reproduced>>GO TO 8.

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

K

## 8.CHECK UNIT REPRODUCTION

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

L

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.

N

**NOTE:**

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

O

Inspection result

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

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

P

LAN

# 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 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.



# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006094554

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

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# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006094555

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006094556

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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 >

[CAN SYSTEM (TYPE 11)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006094557

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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 BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006094558

#### 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.	
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.

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# MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### Diagnosis Procedure

INFOID:000000006094560

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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 >

[CAN SYSTEM (TYPE 11)]

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006094563

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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 AWD control unit and the ABS actuator and electric unit (control unit).

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## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

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



# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094569

#### 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.		
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.

#### 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: [EC-535. "Removal and Installation"](#)
- VK56VD: [EC-535. "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD

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## ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094570

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).  
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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094573

#### 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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.

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

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094574

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

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## 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

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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

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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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094576

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298. "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

## AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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 LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094577

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

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# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094578

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094579

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094580

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094581

#### 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 [DLN-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the AWD control unit branch line.  
NO >> Repair the power supply and the ground circuit.

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# ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094583

#### 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.		
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 [BRC-119, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094585

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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.

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## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006094586

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

## CAN COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006094595

#### 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		Continuity
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)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

IPDM E/R		Resistance (Ω)
Terminal No.		
40	39	Approx. 108 – 132

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# CAN COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 11)]

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Is the measurement value within the specification?

YES >> GO TO 5.

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

## 5.CHECK SYMPTOM

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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

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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.

# MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN TPMS AND HVAC CIRCUIT

#### Diagnosis Procedure

INFOID:000000006093545

#### 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 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.

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# MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN HVAC AND A-BAG CIRCUIT

### Diagnosis Procedure

INFOID:000000006093546

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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.

# MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN A-BAG AND AV CIRCUIT

### Diagnosis Procedure

INFOID:000000006093547

#### 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
4. 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. harness connector		AV control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M66	12	M210	90	Existed
	11		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.	
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 air bag diagnosis sensor unit and the AV control unit.

NO >> Replace the PCB harness.

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# MAIN LINE BETWEEN AV AND M&A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN AV AND M&A CIRCUIT

### Diagnosis Procedure

INFOID:000000006093548

#### 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 harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M53	14	Existed
	74		15	Existed

- Models without navigation system

AV control unit harness connector		Combination meter harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M53	14	Existed
	80		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.

# MAIN LINE BETWEEN M&A AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN M&A AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000006093549

#### 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 meter harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M105	7	Existed
	15		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.

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# MAIN LINE BETWEEN DLC AND BCM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN DLC AND BCM CIRCUIT

### Diagnosis Procedure

INFOID:000000006093550

#### 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.	
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.



# MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN BCM AND 4WD CIRCUIT

### Diagnosis Procedure

INFOID:000000006093552

#### 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.		
M120	39	35		Existed
	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.	
M20	35	M7	72	Existed
	36		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 (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.

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# MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN 4WD AND ABS CIRCUIT

### Diagnosis Procedure

INFOID:000000006093555

#### 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 connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M7	74	M6	22	Existed
	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) 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 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)]

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 >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN RDR-L AND RDR-R CIRCUIT

### Diagnosis Procedure

INFOID:000000006093558

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B52	4	B33	13	Existed
	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.

#### 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.	
B245	13	B252	4	Existed
	14		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 BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000006093559

#### 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B252	4	B201	66	Existed
	3		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.	
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.	Terminal No.	Connector No.	Terminal No.	
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.

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## MAIN LINE BETWEEN RDR-R AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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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
  - 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.	
M150	11	M110	13	Existed
	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.

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# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[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.		
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.

#### 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: [EC-535, "Removal and Installation"](#)
- VK56VD: [EC-535, "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.	
M107	114	M30	439	Existed
	113		438	Existed

- VK56VD



# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ECM harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
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.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093562

#### 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.

#### 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 [WT-53. "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-70. "Removal and Installation"](#).

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.
2. Check the continuity between the low tire pressure warning control unit harness connector and the harness connector.

Low tire pressure warning control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M43	2	M29	396	Existed
	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)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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

### Diagnosis Procedure

INFOID:000000006093563

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

CAN gateway harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M125	1	M28	326	Existed
	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.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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

### Diagnosis Procedure

INFOID:000000006093564

#### 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.

CAN gateway harness connector			Continuity
Connector No.	Terminal No.		
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 [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 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 harness 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.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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.		
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.	
M20	24	M7	34	Existed
	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.	Terminal No.		Continuity
B1	34	32	Existed
	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.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093565

#### 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.	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 [HAC-167, "A/C AUTO AMP. : Diagnosis Procedure"](#).

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. harness 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.

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

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093566

#### 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.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-156, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the control valve with TCM. Refer to [TM-8, "A/T CONTROL SYSTEM : Component 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.	
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.

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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## 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

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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

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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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093568

#### 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.	Terminal No.		
M210	90	74	Approx. 54 – 66

- Models without navigation system

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
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: [AV-298. "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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M210	90	M25	201	Existed
	74		221	Existed

- Models without navigation system

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

AV control unit harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M84	81	M25	201	Existed
	80		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 LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093569

#### 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.	Terminal 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 [MWI-70. "COMBINATION METER : Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M53	14	M24	176	Existed
	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.

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# DLC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## DLC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093570

#### 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.	Terminal 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.	
M182	6	M23	151	Existed
	14		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093571

#### 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 [BCS-73. "Diagnosis Procedure"](#).

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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M120	39	M22	101	Existed
	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.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093572

#### 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.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-54. "Wiring Diagram"](#).

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 sensor harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M37	1	M22	81	Existed
	2		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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093573

#### 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 [DLN-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AWD control unit. Refer to [DLN-59, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the AWD control unit branch line.  
NO >> Repair the power supply and the ground circuit.

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# ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093575

#### 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.		
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 [BRC-119. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-141. "Removal and Installation"](#).  
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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093576

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
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.

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093577

#### 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 [PCS-32, "Diagnosis Procedure"](#).

Is the inspection result normal?

- 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 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093578

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 (Ω)
Connector No.	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 [ADP-73, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

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.

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## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093579

#### 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			Continuity
Connector No.	Terminal No.		
M125	4	6	Existed
	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 [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 (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 SYSTEM (TYPE 12)]

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093580

#### 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		Continuity	
Connector No.	Terminal No.		
M125	4	6	Existed
	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).
3. Check the resistance between the pre-crash seat belt control unit (driver side) harness connector terminals.

Pre-crash seat belt control unit (driver side) harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
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 [SBC-47, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

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# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093581

#### 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 [DAS-575, "SIDE RADAR LH : Diagnosis Procedure"](#).

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 12)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093583

#### 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 [DAS-578. "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 ( $\Omega$ )
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 [DAS-576. "SIDE RADAR RH: Diagnosis Procedure"](#).

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.

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# APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093585

#### 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.

Accelerator pedal actuator harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M152	5	4	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 accelerator pedal actuator. Refer to [DAS-203, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the accelerator pedal assembly. Refer to [ACC-4, "MODELS WITH DISTANCE CONTROL ASSIST SYSTEM : Removal and Installation"](#).

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.	
M152	5	M23	138	Existed
	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.



# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093584

#### 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.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R8	4	8	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 lane camera unit. Refer to [DAS-403, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

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.	
R8	4	M24	179	Existed
	8		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.

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# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000006093586

#### 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			Resistance (Ω)
Connector No.	Terminal No.		
E67	3	6	Approx. 108 – 132

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 : Diagnosis 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 harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E67	3	M28	343	Existed
	6		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 COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## CAN COMMUNICATION CIRCUIT 1

### 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"](#).

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.	
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		Ground	Continuity
Connector No.	Terminal No.		
M182	6		Not existed
	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

ECM		Resistance (Ω)
Terminal No.		
146	151	Approx. 108 – 132

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

IPDM E/R		Resistance ( $\Omega$ )
Terminal No.		
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.

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 COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000006093589

#### 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 [LAN-69, "System Diagram"](#).

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.	
M182	13	Not existed
	12	

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		Ground	Continuity
Connector No.	Terminal No.		
M182	13		Not existed
	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)
Terminal 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.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L

LAN

N  
O  
P

## CAN COMMUNICATION CIRCUIT 2

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

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

### 6.CHECK UNIT REPRODUCTION

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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.

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.

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000006093590

#### 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 [LAN-69, "System Diagram"](#).

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
2. 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.	
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.	Terminal No.		
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.

#### 5. CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
N  
O  
P

LAN

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 12)]

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B50	7		Not existed
	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.