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LAN SYSTEM

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Diagnosis Procedure .....	277	<b>SONAR BRANCH LINE CIRCUIT</b> .....	297	
<b>ECM BRANCH LINE CIRCUIT</b> .....	278	Diagnosis Procedure .....	297	
Diagnosis Procedure .....	278	<b>ADP BRANCH LINE CIRCUIT</b> .....	298	
<b>4WD BRANCH LINE CIRCUIT</b> .....	279	Diagnosis Procedure .....	298	
Diagnosis Procedure .....	279	<b>E-SUS BRANCH LINE CIRCUIT</b> .....	299	
		Diagnosis Procedure .....	299	

<b>ICC BRANCH LINE CIRCUIT</b> .....	<b>300</b>	Diagnosis Procedure .....	320
Diagnosis Procedure .....	300		
<b>PWBD BRANCH LINE CIRCUIT</b> .....	<b>301</b>	<b>4WD BRANCH LINE CIRCUIT</b> .....	<b>321</b>
Diagnosis Procedure .....	301	Diagnosis Procedure .....	321
<b>RDR-R BRANCH LINE CIRCUIT</b> .....	<b>302</b>	<b>ABS BRANCH LINE CIRCUIT</b> .....	<b>322</b>
Diagnosis Procedure .....	302	Diagnosis Procedure .....	322
<b>RDR-L BRANCH LINE CIRCUIT</b> .....	<b>303</b>	<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>323</b>
Diagnosis Procedure .....	303	Diagnosis Procedure .....	323
<b>BSW/BUZZER BRANCH LINE CIRCUIT</b> .....	<b>304</b>	<b>AFS BRANCH LINE CIRCUIT</b> .....	<b>324</b>
Diagnosis Procedure .....	304	Diagnosis Procedure .....	324
<b>APA BRANCH LINE CIRCUIT</b> .....	<b>305</b>	<b>AV BRANCH LINE CIRCUIT</b> .....	<b>325</b>
Diagnosis Procedure .....	305	Diagnosis Procedure .....	325
<b>LASER BRANCH LINE CIRCUIT</b> .....	<b>306</b>	<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>326</b>
Diagnosis Procedure .....	306	Diagnosis Procedure .....	326
<b>CAN COMMUNICATION CIRCUIT 1</b> .....	<b>307</b>	<b>CGW BRANCH LINE CIRCUIT (CAN COM-</b>	<b>327</b>
Diagnosis Procedure .....	307	<b>MUNICATION CIRCUIT 1)</b> .....	<b>327</b>
<b>CAN COMMUNICATION CIRCUIT 2</b> .....	<b>309</b>	Diagnosis Procedure .....	327
Diagnosis Procedure .....	309	<b>CGW BRANCH LINE CIRCUIT (CAN COM-</b>	<b>328</b>
<b>ITS COMMUNICATION CIRCUIT</b> .....	<b>311</b>	<b>MUNICATION CIRCUIT 2)</b> .....	<b>328</b>
Diagnosis Procedure .....	311	Diagnosis Procedure .....	328
<b>CAN SYSTEM (TYPE 6)</b>			
<b>DTC/CIRCUIT DIAGNOSIS</b> .....	<b>313</b>	<b>DLC BRANCH LINE CIRCUIT (CAN COMMU-</b>	<b>329</b>
<b>MAIN LINE BETWEEN ABS AND DLC CIR-</b>	<b>313</b>	<b>UNICATION CIRCUIT 1)</b> .....	<b>329</b>
<b>CUIT</b> .....	<b>313</b>	Diagnosis Procedure .....	329
Diagnosis Procedure .....	313	<b>DLC BRANCH LINE CIRCUIT (CAN COMMU-</b>	<b>330</b>
<b>MAIN LINE BETWEEN DLC AND ADP CIR-</b>	<b>314</b>	<b>UNICATION CIRCUIT 2)</b> .....	<b>330</b>
<b>CUIT</b> .....	<b>314</b>	Diagnosis Procedure .....	330
Diagnosis Procedure .....	314	<b>HBA BRANCH LINE CIRCUIT</b> .....	<b>331</b>
<b>MAIN LINE BETWEEN ADP AND PWBD CIR-</b>	<b>315</b>	Diagnosis Procedure .....	331
<b>CUIT</b> .....	<b>315</b>	<b>HVAC BRANCH LINE CIRCUIT</b> .....	<b>332</b>
Diagnosis Procedure .....	315	Diagnosis Procedure .....	332
<b>MAIN LINE BETWEEN RDR-R AND RDR-L</b>	<b>316</b>	<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	<b>333</b>
<b>CIRCUIT</b> .....	<b>316</b>	Diagnosis Procedure .....	333
Diagnosis Procedure .....	316	<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>334</b>
<b>MAIN LINE BETWEEN RDR-L AND LANE</b>	<b>317</b>	Diagnosis Procedure .....	334
<b>CIRCUIT</b> .....	<b>317</b>	<b>TPMS BRANCH LINE CIRCUIT</b> .....	<b>335</b>
Diagnosis Procedure .....	317	Diagnosis Procedure .....	335
<b>MAIN LINE BETWEEN LANE AND AVM CIR-</b>	<b>318</b>	<b>IPDM-E BRANCH LINE CIRCUIT</b> .....	<b>336</b>
<b>CUIT</b> .....	<b>318</b>	Diagnosis Procedure .....	336
Diagnosis Procedure .....	318	<b>A-BAG BRANCH LINE CIRCUIT</b> .....	<b>337</b>
<b>MAIN LINE BETWEEN AVM AND APA CIR-</b>	<b>319</b>	Diagnosis Procedure .....	337
<b>CUIT</b> .....	<b>319</b>	<b>AVM BRANCH LINE CIRCUIT</b> .....	<b>338</b>
Diagnosis Procedure .....	319	Diagnosis Procedure .....	338
<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>320</b>	<b>SONAR BRANCH LINE CIRCUIT</b> .....	<b>339</b>
		Diagnosis Procedure .....	339



<b>ADP BRANCH LINE CIRCUIT</b> .....	<b>340</b>	Diagnosis Procedure .....	361	
Diagnosis Procedure .....	340			A
<b>PSB BRANCH LINE CIRCUIT</b> .....	<b>341</b>	<b>MAIN LINE BETWEEN LANE AND AVM CIR-</b>	<b>362</b>	
Diagnosis Procedure .....	341	<b>CUIT</b> .....	362	B
<b>E-SUS BRANCH LINE CIRCUIT</b> .....	<b>342</b>	Diagnosis Procedure .....	362	
Diagnosis Procedure .....	342	<b>MAIN LINE BETWEEN AVM AND APA CIR-</b>	<b>363</b>	
<b>ICC BRANCH LINE CIRCUIT</b> .....	<b>343</b>	<b>CUIT</b> .....	363	C
Diagnosis Procedure .....	343	Diagnosis Procedure .....	363	
<b>PWBD BRANCH LINE CIRCUIT</b> .....	<b>344</b>	<b>ECM BRANCH LINE CIRCUIT</b> .....	<b>364</b>	
Diagnosis Procedure .....	344	Diagnosis Procedure .....	364	D
<b>RDR-R BRANCH LINE CIRCUIT</b> .....	<b>345</b>	<b>4WD BRANCH LINE CIRCUIT</b> .....	<b>365</b>	
Diagnosis Procedure .....	345	Diagnosis Procedure .....	365	E
<b>RDR-L BRANCH LINE CIRCUIT</b> .....	<b>346</b>	<b>ABS BRANCH LINE CIRCUIT</b> .....	<b>366</b>	
Diagnosis Procedure .....	346	Diagnosis Procedure .....	366	F
<b>LANE BRANCH LINE CIRCUIT</b> .....	<b>347</b>	<b>TCM BRANCH LINE CIRCUIT</b> .....	<b>367</b>	
Diagnosis Procedure .....	347	Diagnosis Procedure .....	367	G
<b>BSW/BUZZER BRANCH LINE CIRCUIT</b> .....	<b>348</b>	<b>AFS BRANCH LINE CIRCUIT</b> .....	<b>368</b>	
Diagnosis Procedure .....	348	Diagnosis Procedure .....	368	H
<b>APA BRANCH LINE CIRCUIT</b> .....	<b>349</b>	<b>AV BRANCH LINE CIRCUIT</b> .....	<b>369</b>	
Diagnosis Procedure .....	349	Diagnosis Procedure .....	369	I
<b>LASER BRANCH LINE CIRCUIT</b> .....	<b>350</b>	<b>BCM BRANCH LINE CIRCUIT</b> .....	<b>370</b>	
Diagnosis Procedure .....	350	Diagnosis Procedure .....	370	J
<b>CAN COMMUNICATION CIRCUIT 1</b> .....	<b>351</b>	<b>CGW BRANCH LINE CIRCUIT (CAN COM-</b>	<b>371</b>	
Diagnosis Procedure .....	351	<b>MUNICATION CIRCUIT 1)</b> .....	371	K
<b>CAN COMMUNICATION CIRCUIT 2</b> .....	<b>353</b>	Diagnosis Procedure .....	371	
Diagnosis Procedure .....	353	<b>CGW BRANCH LINE CIRCUIT (CAN COM-</b>	<b>372</b>	
<b>ITS COMMUNICATION CIRCUIT</b> .....	<b>355</b>	<b>MUNICATION CIRCUIT 2)</b> .....	372	L
Diagnosis Procedure .....	355	Diagnosis Procedure .....	372	
<b>CAN SYSTEM (TYPE 7)</b>				
<b>DTC/CIRCUIT DIAGNOSIS</b> .....	<b>357</b>	<b>DLC BRANCH LINE CIRCUIT (CAN COMMU-</b>	<b>373</b>	
<b>MAIN LINE BETWEEN ABS AND DLC CIR-</b>	<b>357</b>	<b>UNICATION CIRCUIT 2)</b> .....	373	LAN
<b>CUIT</b> .....	357	Diagnosis Procedure .....	373	
Diagnosis Procedure .....	357	<b>HBA BRANCH LINE CIRCUIT</b> .....	<b>375</b>	
<b>MAIN LINE BETWEEN DLC AND ADP CIR-</b>	<b>358</b>	Diagnosis Procedure .....	375	N
<b>CUIT</b> .....	358	<b>HVAC BRANCH LINE CIRCUIT</b> .....	<b>376</b>	
Diagnosis Procedure .....	358	Diagnosis Procedure .....	376	O
<b>MAIN LINE BETWEEN ADP AND PWBD CIR-</b>	<b>359</b>	<b>M&amp;A BRANCH LINE CIRCUIT</b> .....	<b>377</b>	
<b>CUIT</b> .....	359	Diagnosis Procedure .....	377	P
Diagnosis Procedure .....	359	<b>STRG BRANCH LINE CIRCUIT</b> .....	<b>378</b>	
<b>MAIN LINE BETWEEN RDR-R AND RDR-L</b>	<b>360</b>	Diagnosis Procedure .....	378	
<b>CIRCUIT</b> .....	360	<b>TCU BRANCH LINE CIRCUIT</b> .....	<b>379</b>	
Diagnosis Procedure .....	360	Diagnosis Procedure .....	379	
<b>MAIN LINE BETWEEN RDR-L AND LANE</b>	<b>361</b>	<b>TPMS BRANCH LINE CIRCUIT</b> .....	<b>380</b>	
<b>CIRCUIT</b> .....	361			

Diagnosis Procedure .....	380	<b>RDR-R BRANCH LINE CIRCUIT .....</b>	<b>390</b>
<b>IPDM-E BRANCH LINE CIRCUIT .....</b>	<b>381</b>	Diagnosis Procedure .....	390
Diagnosis Procedure .....	381	<b>RDR-L BRANCH LINE CIRCUIT .....</b>	<b>391</b>
<b>A-BAG BRANCH LINE CIRCUIT .....</b>	<b>382</b>	Diagnosis Procedure .....	391
Diagnosis Procedure .....	382	<b>LANE BRANCH LINE CIRCUIT .....</b>	<b>392</b>
<b>AVM BRANCH LINE CIRCUIT .....</b>	<b>383</b>	Diagnosis Procedure .....	392
Diagnosis Procedure .....	383	<b>BSW/BUZZER BRANCH LINE CIRCUIT .....</b>	<b>393</b>
<b>SONAR BRANCH LINE CIRCUIT .....</b>	<b>384</b>	Diagnosis Procedure .....	393
Diagnosis Procedure .....	384	<b>APA BRANCH LINE CIRCUIT .....</b>	<b>394</b>
<b>ADP BRANCH LINE CIRCUIT .....</b>	<b>385</b>	Diagnosis Procedure .....	394
Diagnosis Procedure .....	385	<b>LASER BRANCH LINE CIRCUIT .....</b>	<b>395</b>
<b>PSB BRANCH LINE CIRCUIT .....</b>	<b>386</b>	Diagnosis Procedure .....	395
Diagnosis Procedure .....	386	<b>CAN COMMUNICATION CIRCUIT 1 .....</b>	<b>396</b>
<b>E-SUS BRANCH LINE CIRCUIT .....</b>	<b>387</b>	Diagnosis Procedure .....	396
Diagnosis Procedure .....	387	<b>CAN COMMUNICATION CIRCUIT 2 .....</b>	<b>398</b>
<b>ICC BRANCH LINE CIRCUIT .....</b>	<b>388</b>	Diagnosis Procedure .....	398
Diagnosis Procedure .....	388	<b>ITS COMMUNICATION CIRCUIT .....</b>	<b>400</b>
<b>PWBD BRANCH LINE CIRCUIT .....</b>	<b>389</b>	Diagnosis Procedure .....	400
Diagnosis Procedure .....	389		

# PRECAUTION

## PRECAUTIONS

### Precautions for Trouble Diagnosis

INFOID:000000010261032

**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.

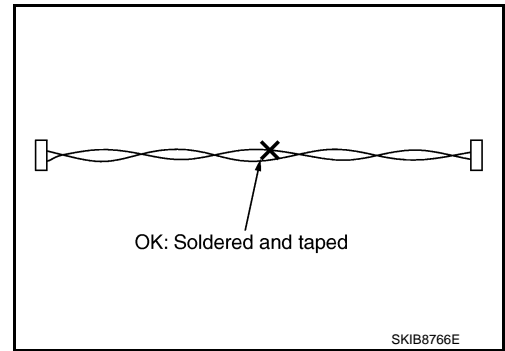
### Precautions for Harness Repair

INFOID:000000010261033

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

**NOTE:**

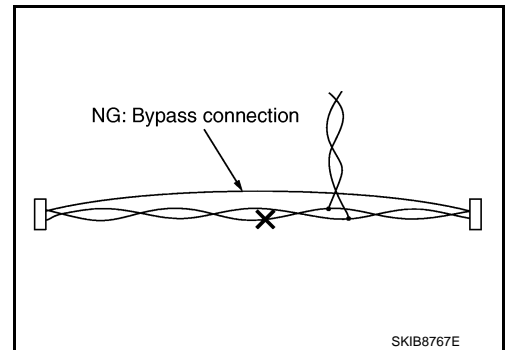
A fray of twisted lines must be within 110 mm (4.33 in).



- 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.

A  
B  
C  
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G  
H  
I  
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K  
L

LAN

# SYSTEM DESCRIPTION

## SYSTEM

### CAN COMMUNICATION SYSTEM

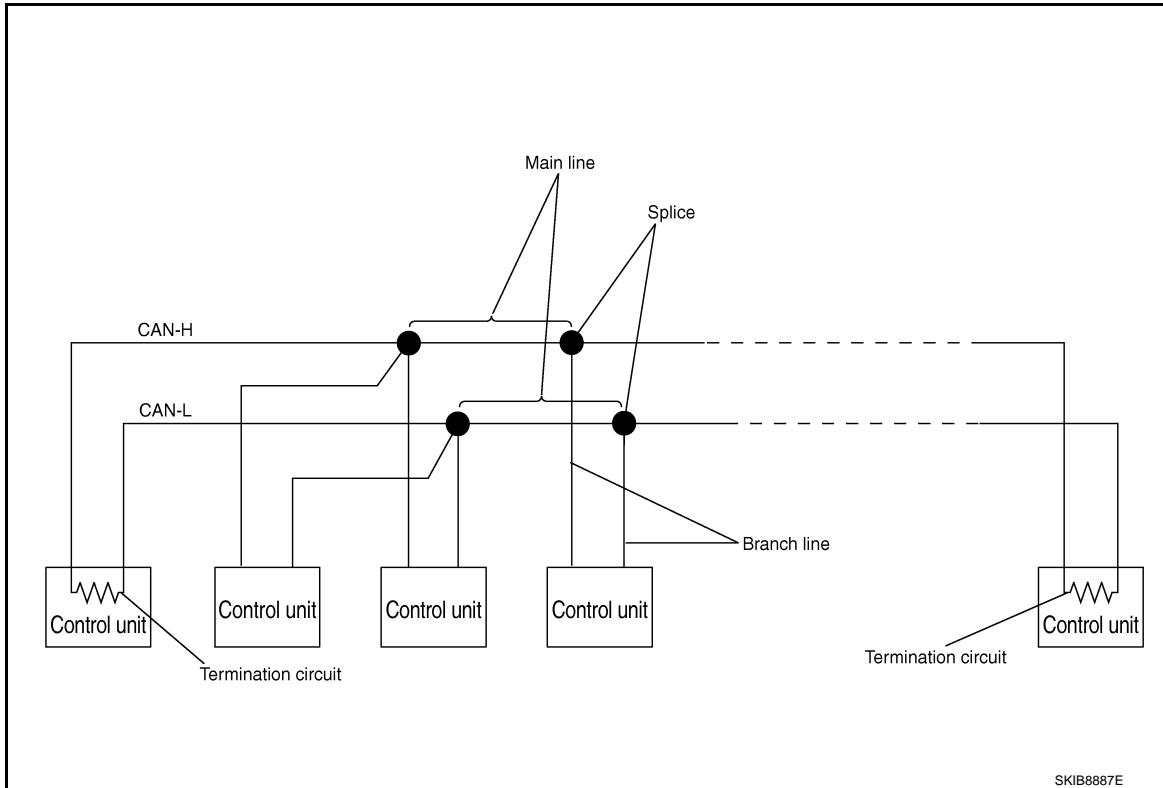
#### CAN COMMUNICATION SYSTEM : System Description

INFOID:000000010261034

- 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:000000010261035

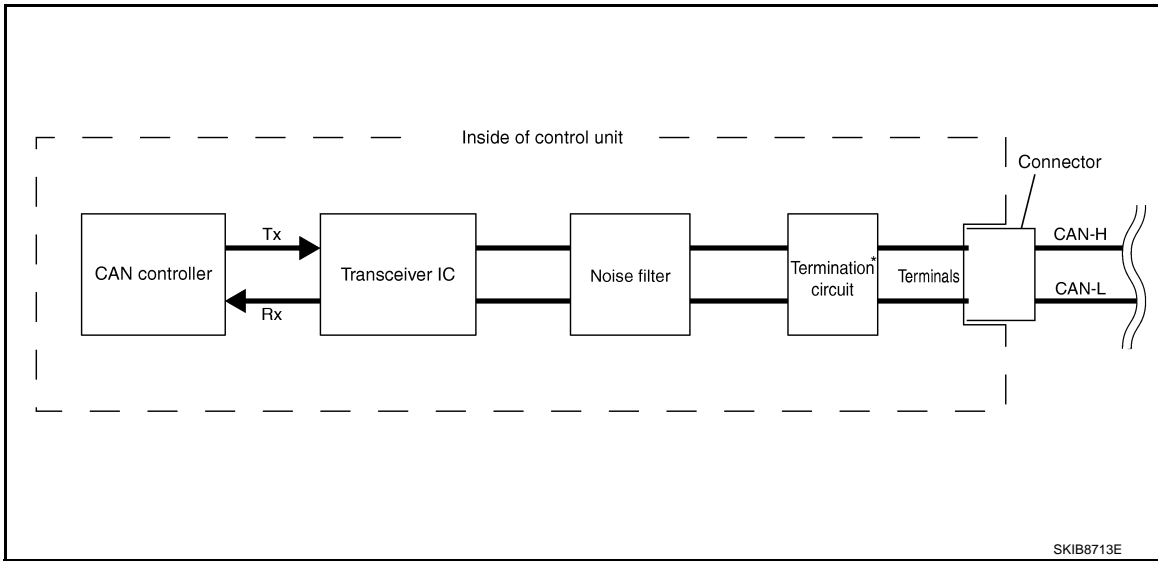


Each control unit passes an electric current to the termination circuits when transmitting CAN communication signal. The termination circuits produce an electrical potential difference between CAN-H and CAN-L. CAN communication system transmits and receives CAN communication signals by the potential difference.

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-13, "CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit"</a> .

CAN COMMUNICATION SYSTEM : CAN Communication Control Circuit

INFOID:000000010261036



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:000000010261037

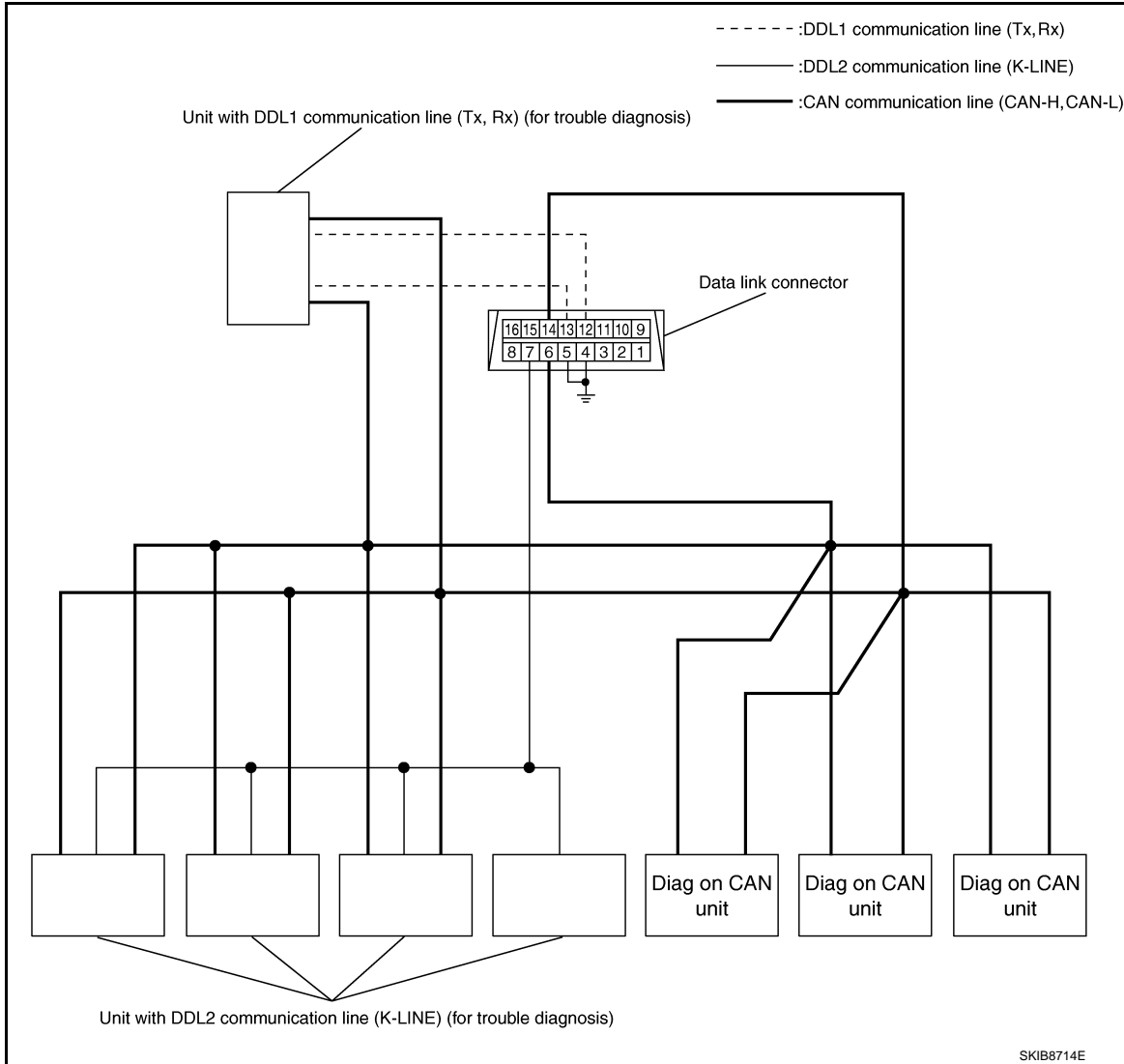
“Diag on CAN” is a diagnosis using CAN communication instead of previous DDL1 and DDL2 communication lines, between control units and diagnosis unit.

A  
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D  
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H  
I  
J  
K  
L

LAN

## DIAG ON CAN : System Diagram

INFOID:000000010261038



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.

## TROUBLE DIAGNOSIS

### Condition of Error Detection

INFOID:000000010261039

DTC (e.g. U1000 and U1001) of CAN communication is indicated on SELF-DIAG RESULTS on CONSULT if a CAN communication signal is not transmitted or received between units for 2 seconds or more.

#### 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 under the above conditions. Erase the memory of the self-diagnosis of each unit.**

### Symptom When Error Occurs in CAN Communication System

INFOID:000000010261040

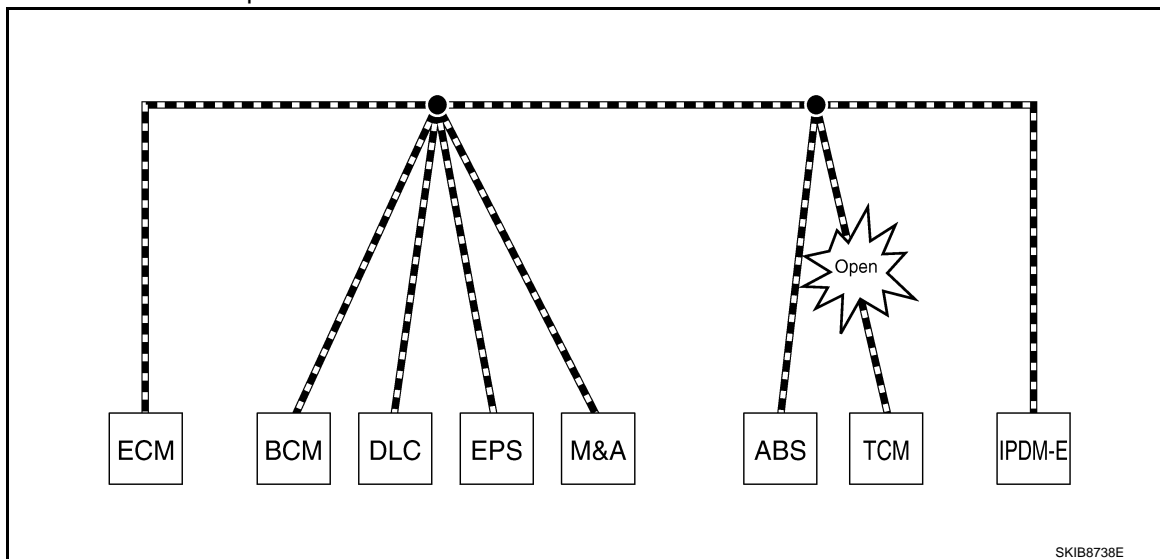
In CAN communication system, multiple units mutually transmit and receive signals. Each unit cannot transmit and receive signals if any error occurs on CAN communication line. Under this condition, multiple control units related to the root cause malfunction or go into fail-safe mode.

#### ERROR EXAMPLE

**NOTE:**

- Each vehicle differs in symptom of each unit under fail-safe mode and CAN communication line wiring.
- Refer to [LAN-26, "Abbreviation List"](#) for the unit abbreviation.

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.

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J  
K  
L

LAN

N  
O  
P

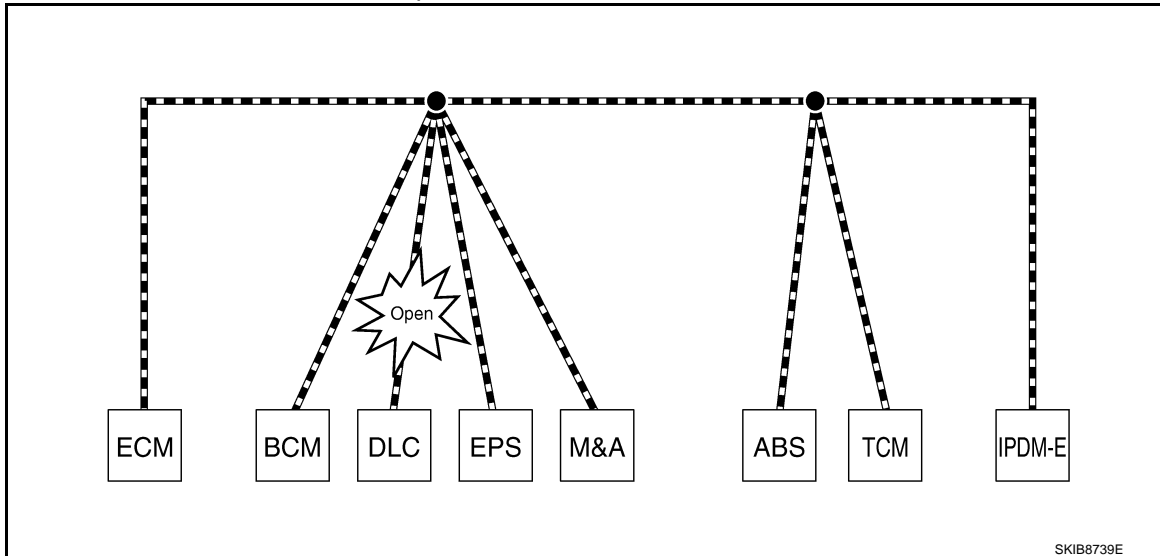
# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Unit name	Major symptom
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



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 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.

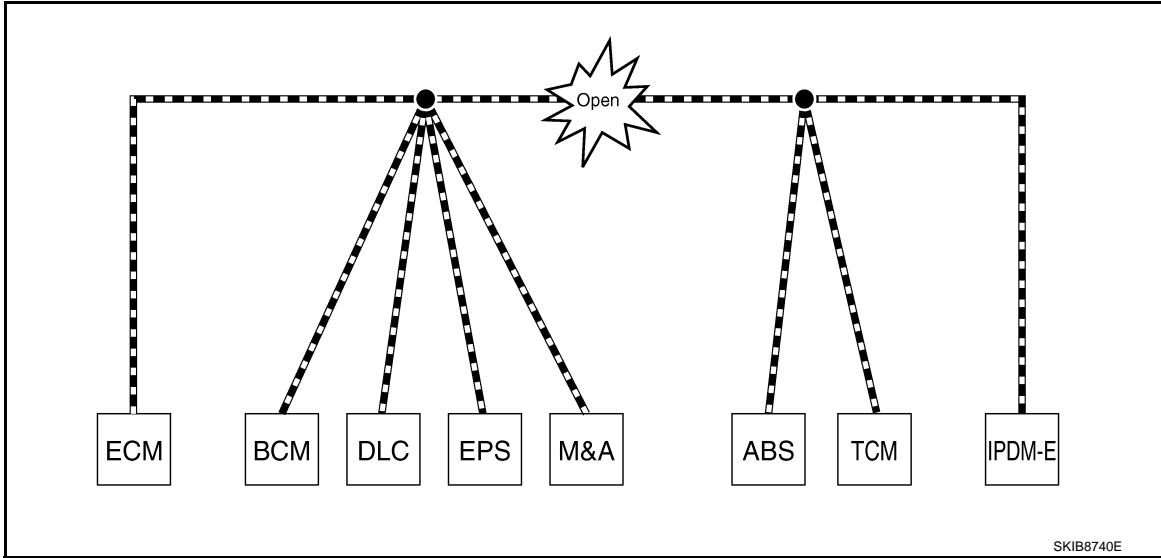


# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

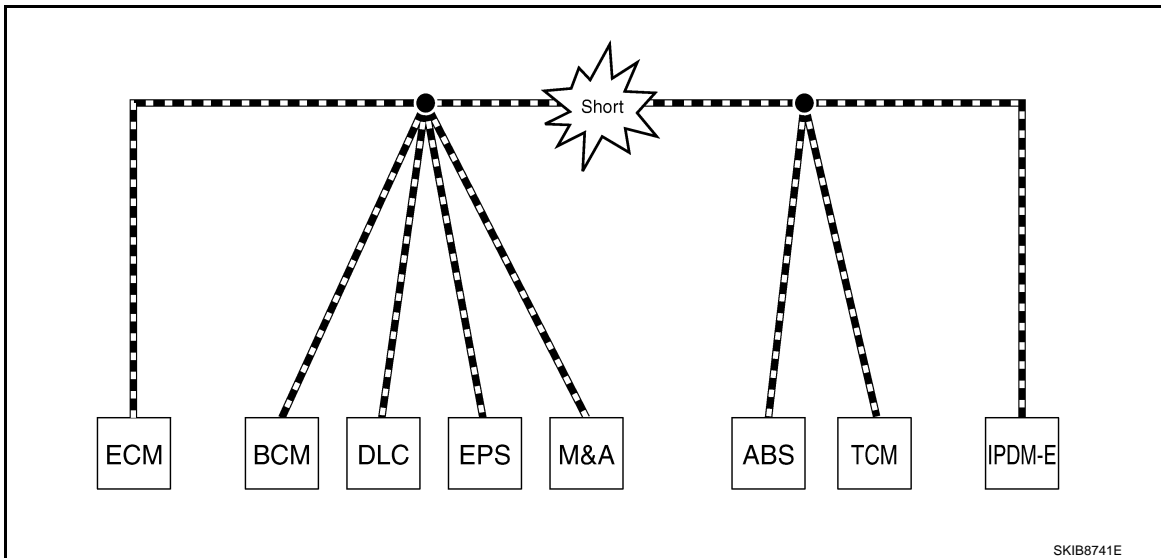
[CAN FUNDAMENTAL]

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>

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



A  
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K  
L  
N  
O  
P

LAN

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

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

INFOID:000000010261041

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

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

## Self-Diagnosis

INFOID:000000010261042

If communication signals cannot be transmitted or received among units communicating via CAN communication line, CAN communication-related DTC is displayed on the CONSULT "Self Diagnostic Result" screen.

### NOTE:

The following table shows examples of CAN communication-related DTC. For other DTC, refer to the applicable sections.

DTC	Self-diagnosis item (CONSULT indication)	DTC detection condition		Inspection/Action
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.	Start the inspection. Refer to the applicable section of the indicated control unit.
		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.		

## CAN Diagnostic Support Monitor

INFOID:000000010261043

### MONITOR ITEM (CONSULT)

# TROUBLE DIAGNOSIS

< SYSTEM DESCRIPTION >

[CAN FUNDAMENTAL]

Example: CAN DIAG SUPPORT MNTR indication

Without PAST			With PAST		
<b>BCM</b>			<b>ENGINE</b>		
MONITOR ITEM	PRESENT	PAST	MONITOR ITEM	PRESENT	PAST
INITIAL DIAG	OK	-	TRANSMIT DIAG	OK	OK
TRANSMIT DIAG	OK	-	VDC/TCS/ABS	OK	5
ECM	OK	-	METER/M&A	Not diagnosed	-
METER/M&A	OK	-	BCM/SEC	OK	OK
TCM	OK	-	ICC	Not diagnosed	-
IPDM E/R	OK	-	HVAC	Not diagnosed	-
I-KEY	OK	-	TCM	OK	OK
			EPS	OK	OK
			IPDM E/R	OK	5
			e4WD	Not diagnosed	-
			AWD/4WD	Not diagnosed	-

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Without PAST

Item	PRESENT	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	PRESENT	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.
	Not diagnosed	-	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.

# TROUBLE DIAGNOSIS

[CAN FUNDAMENTAL]

< SYSTEM DESCRIPTION >

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)

## How to Use CAN Communication Signal Chart

INFOID:000000010261044

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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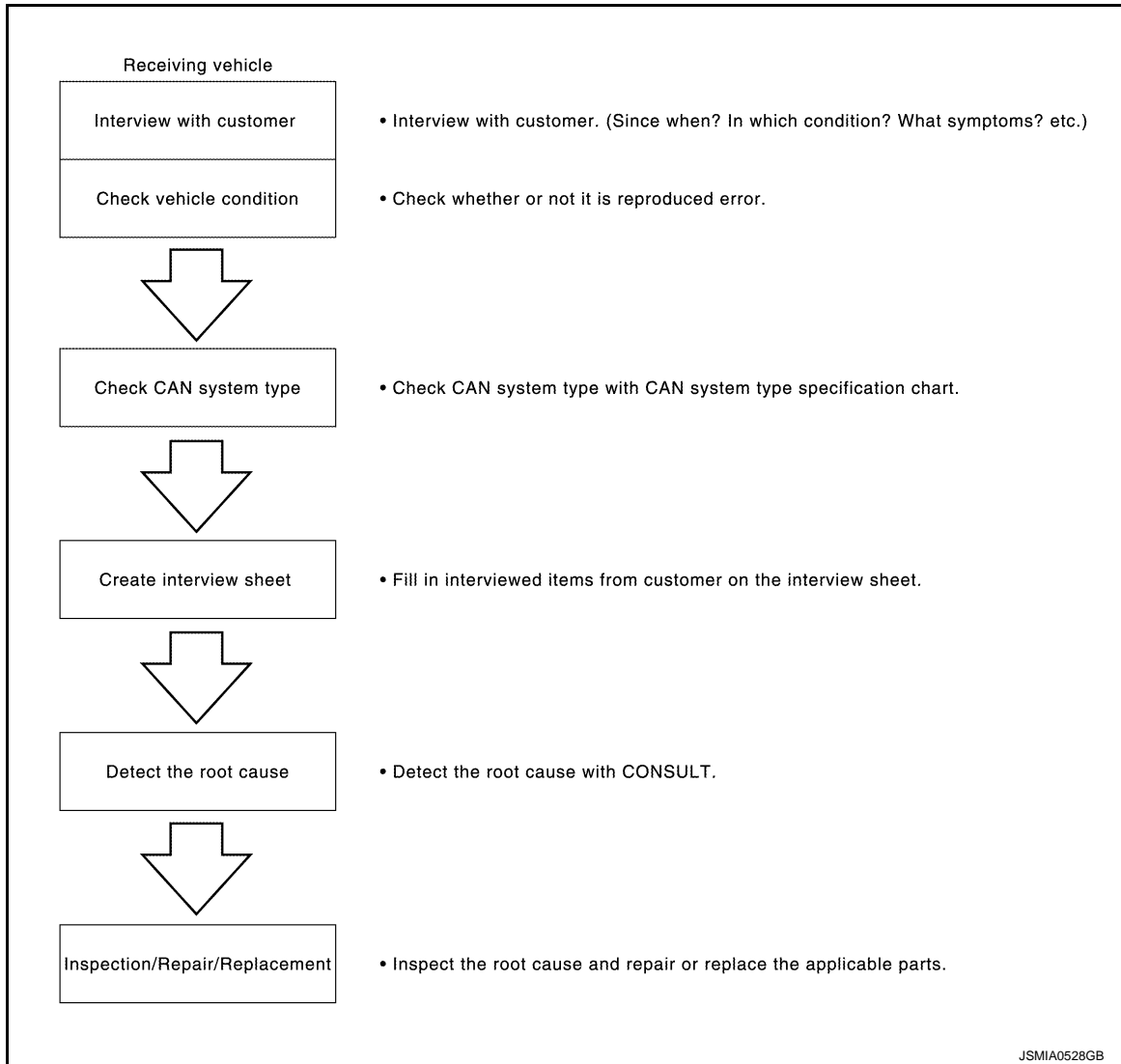
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Trouble Diagnosis Flow Chart

INFOID:0000000010261045

#### DESCRIPTION



#### DETAIL OF TROUBLE DIAGNOSIS FLOW CHART

##### 1. 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

##### Notes for checking error symptoms:

- 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.

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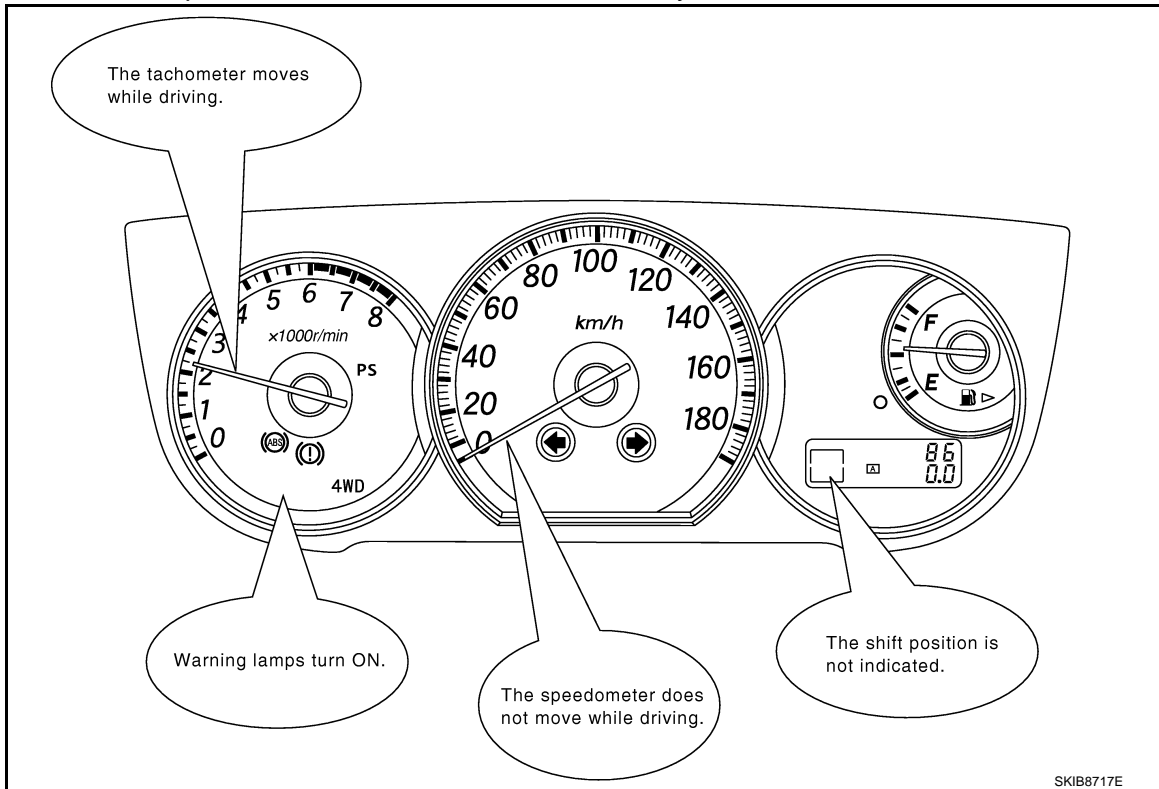
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# DIAGNOSIS AND REPAIR WORKFLOW

[CAN FUNDAMENTAL]

## < BASIC INSPECTION >

- When a CAN communication system error is present, multiple control units may malfunction or go into fail-safe mode.
- 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.



>> GO TO 2.

## 2. INSPECTION OF VEHICLE CONDITION

Check whether the symptom is reproduced or not.

### NOTE:

Do not turn the ignition switch OFF or disconnect the 12V battery cable while reproducing the error. The error may temporarily correct itself, making it difficult to determine the root cause.

>> GO TO 3.

## 3. 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 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.)

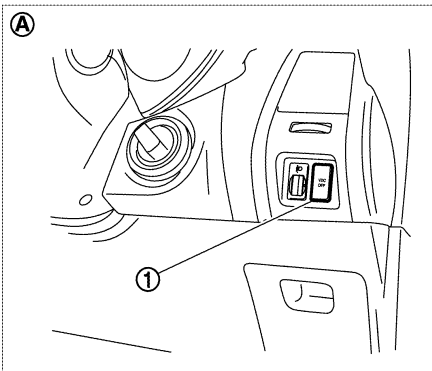
**CAN System Specification Chart**  
Determine CAN system type from the following specification chart.

Body type	Wagon					
Axle	2WD			AWD		
Engine	QR25DE			VQ35DE		
Transmission	A/T			CVT		
Brake control	ABS			VDC		
Intelligent Key system		×		×		×
CAN system type	1	2	3	4	5	6
CAN communication control unit						
ECM	×	×	×	×	×	×
AWD control unit					×	×
Air bag diagnosis sensor unit	×	×	×	×	×	×
BCM	×	×	×	×	×	×
Intelligent Key unit		×		×		×
Steering angle sensor					×	×
EPS control unit	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×
TCM	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×

× : Applicable

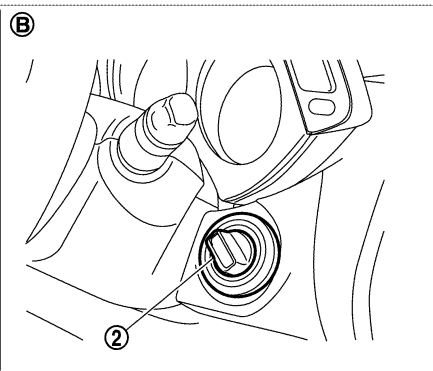
**VEHICLE EQUIPMENT IDENTIFICATION INFORMATION**  
**NOTE:**  
Check CAN system type from the vehicle shape and equipment.

**A**



1. VDC OFF switch  
A. With VDC

**B**



2. Ignition knob  
B. With Intelligent Key system

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

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• CAN System Type Specification Chart (Style B)

**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: 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	A/T	CVT	A/T
Brake control	ABS		
Specification chart	XX.XX... SPECIFICATION CHART A.	XX.XX... SPECIFICATION CHART B.	XX.XX... SPECIFICATION CHART C.

×: Applicable

Check the vehicle equipment with the vehicle identification number plate.  
Check the vehicle equipment.  
Select the applicable vehicle equipment. Refer to the specification chart.

**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		×			×	×		×	×	×		
Intelligent Key system			×		×		×	×	×	×		
Navigation system				×		×		×		×		
Automatic drive positioner								×	×	×		
CAN system type	9	10	11	12	13	14	15	16	17	18	19	20
CAN communication control unit												
ECM	×	×	×	×	×	×	×	×	×	×	×	×
AFS control unit		×			×	×			×	×		×
BCM	×	×	×	×	×	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×	×	×	×	×	×

×: Applicable

Check the vehicle equipment.  
The number indicates the CAN system type of the vehicle.

**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.

1. Bending lamp      2. Xenon bulb      3. Ignition knob  
4. Display            5. Multifunction switch      6. Seat memory switch  
A. With active AFS      B. With Intelligent Key system      C. With navigation system  
D. With automatic drive positioner

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

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>> GO TO 4.

## 4. CREATE INTERVIEW SHEET

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

**NOTE:**



# 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: BDRARGZG11EDA-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: Present / Past	
<p>The engine does not start.</p> <p>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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>> GO TO 5.

## 5. DETECT THE ROOT CAUSE

CAN diagnosis function of CONSULT detects a root cause.

>> GO TO 6.

## 6. REPAIR OR REPLACE MALFUNCTIONING PART

Repair or replace malfunctioning parts identified by CAN diagnosis function of CONSULT.

CAN communication circuit>> Refer to [LAN-65, "CAN Communication Circuit"](#).  
ITS communication circuit>> Refer to [LAN-66, "ITS Communication Circuit"](#).

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# HOW TO USE THIS SECTION

< HOW TO USE THIS MANUAL >

[CAN]

## HOW TO USE THIS MANUAL

### HOW TO USE THIS SECTION

#### Caution

INFOID:0000000010261047

- This section describes information peculiar to a vehicle and inspection procedures.
- For trouble diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

#### Abbreviation List

INFOID:0000000010261048

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

Abbreviation	Unit name
4WD	Transfer 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
AVM	Around view monitor control unit
BCM	BCM
BSW/BUZZER	Driver assistance buzzer control module
CGW	CAN gateway
DLC	Data link connector
E-SUS	Air levelizer control module
ECM	ECM
HBA	High beam assist control module
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)
PWBD	Automatic back door control module
RDR-L	Side radar LH
RDR-R	Side radar RH
SONAR	Sonar control unit
STRG	Steering angle sensor
TCM	TCM
TCU	TCU
TPMS	Low tire pressure warning control unit

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000010261049

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. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

**WARNING:**

Always observe the following items for preventing accidental activation.

- 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 "SRS AIR BAG".
- Never 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:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 Removing Battery Terminal

INFOID:000000010261050

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

**NOTE:**

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

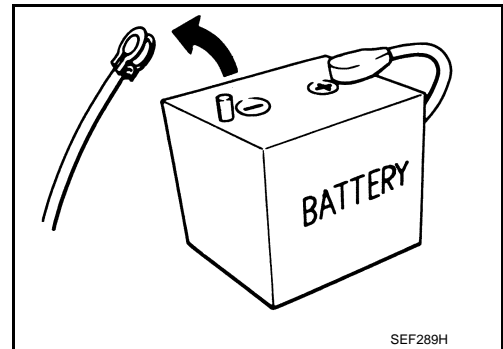
**NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

**NOTE:**

The removal of 12V battery may cause a DTC detection error.



Precautions for Trouble Diagnosis

INFOID:000000010261051

**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.

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# PRECAUTIONS

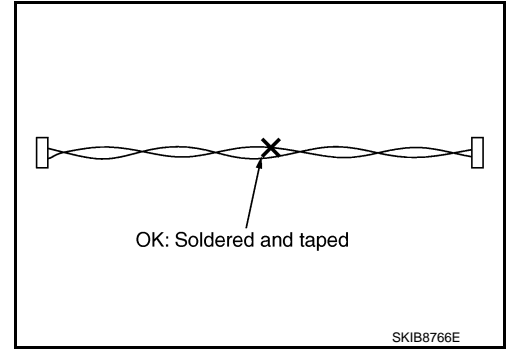
< PRECAUTION >

[CAN]

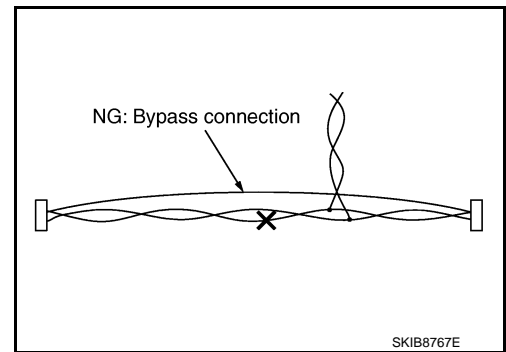
## Precautions for Harness Repair

INFOID:000000010261052

- 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.



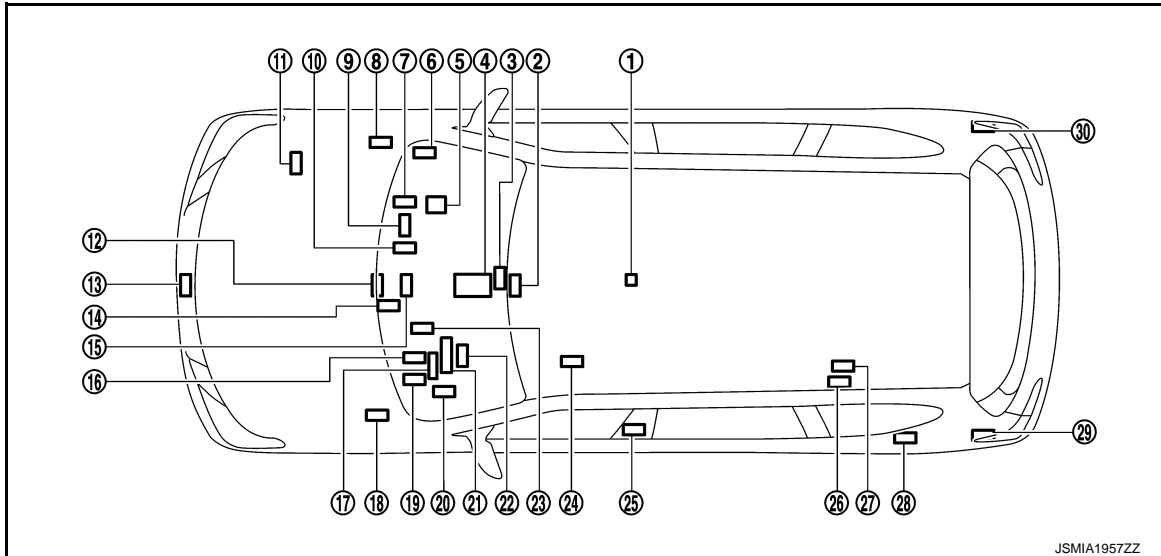
- Replace the applicable harness as an assembly if error is detected on the shield lines of CAN communication line.

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:0000000010261053



- |  |   |   |
|--|---|---|
| 1. Air bag diagnosis sensor unit                   | 2. Lane camera unit                         | 3. High beam assist control module                |
| 4. A/T assembly                                    | 5. AFS control unit                         | 6. Transfer control unit                          |
| 7. Low tire pressure warning control unit          | 8. IPDM E/R                                 | 9. TCU  |
| 10. CAN gateway                                    | 11. ECM                                     | 12. A/C auto amp.                                 |
| 13. ICC sensor                                     | 14. Around view monitor control unit        | 15. AV control unit                               |
| 16. BCM  | 17. Driver assistance buzzer control module | 18. ABS actuator and electric unit (control unit) |
| 19. Sonar control unit                             | 20. Data link connector                     | 21. Combination meter                             |
| 22. Steering angle sensor                          | 23. Accelerator pedal actuator              | 24. Driver seat control unit                      |
| 25. Pre-crash seat belt control unit (driver side) | 26. Air levelizer control module            | 27. ADAS control unit                             |
| 28. Automatic back door control module             | 29. Side radar LH                           | 30. Side radar RH                                 |

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# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

## SYSTEM

### CAN COMMUNICATION SYSTEM

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

INFOID:0000000010261054

Determine CAN system type from the following specification chart.

**NOTE:**

Refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#) for how to use CAN system specification chart.

Body type	Wagon						
Axle	2WD			4WD			
Engine	VK56VD						
Transmission	A/T						
Brake control	VDC						
Telematics system	×	×	×	×	×		×
ICC system		×	×		×	×	×
Active AFS			×			×	×
CAN system type	1	2	3	4	5	6	7
CAN communication unit							
ECM	×	×	×	×	×	×	×
Transfer control unit				×	×	×	×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×	×
TCM	×	×	×	×	×	×	×
AFS control unit			×			×	×
AV control unit	×	×	×	×	×	×	×
BCM	×	×	×	×	×	×	×
CAN gateway	×	×	×	×	×	×	×
Data link connector	×	×	×	×	×	×	×
High beam assist control module	×	×	×	×	×	×	×
A/C auto amp.	×	×	×	×	×	×	×
Combination meter	×	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×	×
TCU	×	×	×	×	×		×
Low tire pressure warning control unit	×	×	×	×	×	×	×
IPDM E/R	×	×	×	×	×	×	×
Air bag diagnosis sensor unit	×	×	×	×	×	×	×
Around view monitor control unit	×			×			
Sonar control unit	×			×			
Driver seat control unit	×	×	×	×	×	×	×
Pre-crash seat belt control unit (driver side)			×			×	×
Air levelizer control module	×	×	×	×	×	×	×
ADAS control unit		×	×		×	×	×
Automatic back door control module	×	×	×	×	×	×	×
ITS communication unit							
ADAS control unit		×	×		×	×	×
Side radar RH		×	×		×	×	×
Side radar LH		×	×		×	×	×

# SYSTEM

[CAN]

< SYSTEM DESCRIPTION >

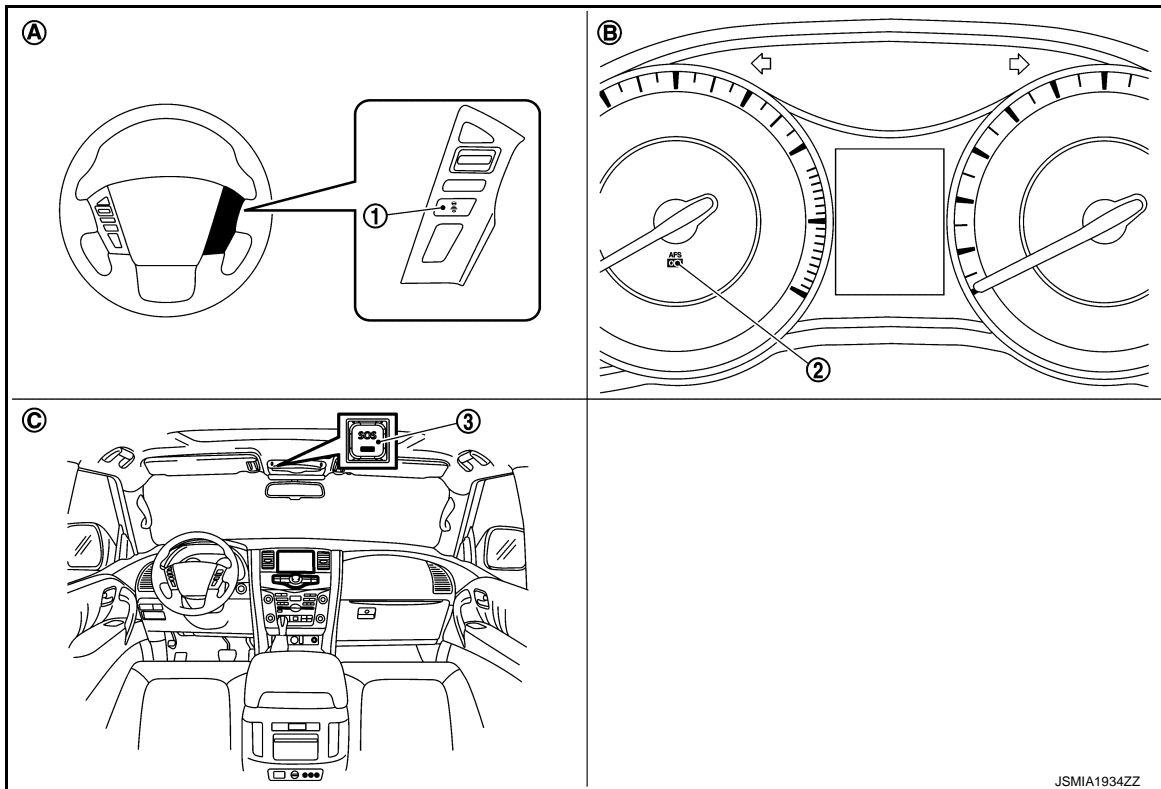
Body type	Wagon						
Axle	2WD			4WD			
Engine	VK56VD						
Transmission	A/T						
Brake control	VDC						
Telematics system	×	×	×	×	×	×	×
ICC system		×	×		×	×	×
Active AFS			×			×	×
CAN system type	1	2	3	4	5	6	7
Lane camera unit			×			×	×
Driver assistance buzzer control module		×	×		×	×	×
Around view monitor control unit		×	×		×	×	×
Sonar control unit		×	×		×	×	×
Accelerator pedal actuator		×	×		×	×	×
ICC sensor		×	×		×	×	×

×: Applicable

## VEHICLE EQUIPMENT IDENTIFICATION INFORMATION

### NOTE:

Check CAN system type from the vehicle shape and equipment.



- |                    |                           |                           |
|--------------------|---------------------------|---------------------------|
| 1. ICC sensor      | 2. AFS OFF indicator lamp | 3. Telematics switch      |
| A. With ICC system | B. With active AFS        | C. With telematics system |

## CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart

INFOID:0000000010261055

Refer to [LAN-20, "How to Use CAN Communication Signal Chart"](#) for how to use CAN communication signal chart.

T: Transmit R: Receive

# SYSTEM

## < SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR	
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								
Engine and A/T integrated control signal	T			R																				
	R			T																				
Engine coolant temperature signal	T										R	R												
Engine restart request signal	T							R								R								
								T								R								
Engine speed signal	T	R	R	R		R						R									R	R		
Engine status signal	T						R	R				R		R										
Engine torque signal	T	R																						
Fuel consumption monitor signal	T						R					R												
ICC brake switch signal	T																					R		
ICC prohibition signal	T																					R		
ICC steering switch signal	T																					R		
Malfunctioning indicator lamp signal	T											R		R										
N idle instruction signal	T			R																				
	R			T																				
Power generation command value signal	T															R								
Snow mode switch signal	T																					R		
Stop lamp switch signal	T																					R		
				R				T																
		R	T																			R		



# SYSTEM

## < SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR	A
Wide open throttle position signal	T			R																				B
4WD malfunction signal		T	R																					C
4WD mode indicator signal		T										R												D
4WD warning lamp signal		T										R												E
ATP warning lamp signal		T										R												F
Current 4WD mode signal		T	R																			R		G
A/T shift schedule change demand signal			T	R																				H
ABS malfunction signal		R	T																			R		I
ABS operation signal		R	T	R															R			R		J
ABS warning lamp signal			T									R		R								R		K
Brake warning lamp signal			T									R		R										L
Decel G sensor signal			T	R																				LAN
Pressure sensor signal			T	R																				N
Rear LH wheel speed signal			T															R						O
Rear RH wheel speed signal			T															R						P
Side G sensor signal			T	R																		R		LAN
Target throttle position signal	R		T																					LAN
TCS malfunction signal		R	T																			R		N
TCS operation signal		R	T																				R	O
VDC malfunction signal		R	T																			R		P
VDC OFF indicator lamp signal			T									R												LAN
VDC OFF switch signal			T																			R		LAN
VDC operation signal		R	T																			R		LAN
VDC warning lamp signal			T									R		R										LAN
Vehicle speed signal	R			R		R	R	R		R	R	T				R	R		R			R		LAN
	R	R	T					R				R			R	R	R		R	R	R	R	R	R

# SYSTEM

## < SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR	
Yaw rate signal			T							R											R			
A/T CHECK indicator lamp signal				T		R						R												
Current gear position signal		R	R	T																		R		
Input speed signal	R			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	R		T																		R		
P range signal				T				R									R							
R range signal				T				R									R							
Shift position signal		R	R	T		R		R				R						R				R	R	R
Tow mode indicator lamp signal				T								R												
Pre-roll over signal					T															R				
Pre-tensioner operation signal					T															R				
AFS warning lamp signal						T						R												
A/C switch operation signal							T				R													
Rear window defogger switch signal							T	R																
System selection signal							T															R		
System setting signal							T	R																
Automatic back door request signal								T															R	
Back door lock status signal								T															R	
Buzzer output signal								T				R												
Buzzer request signal								T				R												
Daytime running light request signal								R								T								
Dimmer signal								T				R					R					R		

# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR			
Door lock status signal								T						R											A	
Door switch signal								T				R				R	R	R	R							B
Door unlock signal								T									R									C
Front fog light request signal								T								R		R								D
Front wiper request signal								T								R						R				E
Handle position signal								T									R									F
Headlamp washer request signal								T								R										G
High beam assist indicator lamp signal								T				R														H
High beam request signal								T				R				R		R								I
Horn reminder signal								T								R										J
Ignition switch ON signal								T								R	R		R							K
								R								T										L
Ignition switch signal								T									R									LAN
Interlock/PNP switch signal								T								R										N
								R								T										O
Key ID signal								T			R						R									P
Key switch signal								T									R									
Key warning lamp signal								T				R														
Low beam request signal								T								R		R								
Meter display signal								T				R														
												R										T				
Oil pressure switch signal								T				R		R												
Position light request signal								T				R				R		R								
																T										
Rear window defogger control signal								T								R										
	R															T										
Sleep wake up signal								T	R			R		R		R	R		R				R			
Starter control relay signal								T								R										
Starter relay status signal								T				R				R										
								R								T										

# SYSTEM

## < SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR
Starting mode signal								T									R						
Theft warning horn request signal								T								R							
Turn indicator signal				R				T				R									R		
High beam assist request signal								R		T													
High beam assist system status signal								R		T													
A/C display signal							R				T												
A/C ON signal	R										T												
Ambient temperature signal											T										R		
Blower fan ON signal	R										T												
Distance to empty signal							R					T											
Fuel level low warning signal							R					T											
Fuel level sensor signal	R											T											
Manual mode shift down signal				R								T											
Manual mode shift up signal				R								T											
Manual mode signal				R								T											
Non-manual mode signal				R								T											
Odometer signal						R		R		R		T											
Parking brake switch signal			R					R				T					R				R		
Seat belt buckle switch signal (driver side)								R				T											
Sleep-ready signal								R				T											
								R								T							
								R														T	
Tow mode switch signal				R							T												
Wake up signal								R				T											
								R						T									
								R								T							
								R														T	

# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR			
Steering angle sensor malfunction signal		R	R			R							T						R		R				A	
Steering angle sensor signal		R	R			R	R						T					R	R		R				B	
Steering angle speed signal			R										T						R		R				C	
Steering calibration signal			R			R							T						R						D	
Hazard request signal								R							T											E
								R															T			
Horn request signal								R							T											F
Low tire pressure warning lamp signal							R	R				R			T											G
								T				R														
Tire pressure data signal						R									T											
A/C compressor feedback signal	R										R					T										H
Detention switch signal								R								T	R									I
Engine restart control signal								R								T										J
Front wiper stop position signal								R								T										K
High beam status signal	R									R						T										L
Hood switch signal								R								T										
Low beam status signal	R					R				R						T										
Push-button ignition switch status signal								R								T										
Starter control relay signal								R								T										LAN
Sonar setting change signal																		T					R			N
CK SUSP indicator lamp signal												R									T					
Blind Spot Intervention ON indicator signal													R									T				O
Blind Spot Warning/Blind Spot Intervention warning lamp signal												R										T				P
Brake fluid pressure control signal			R																			T				

# SYSTEM

< SYSTEM DESCRIPTION >

[CAN]

Signal name	ECM	4WD	ABS	TCM	A-BAG	AFS	AV	BCM	CGW	HBA	HVAC	M&A	STRG	TCU	TPMS	IPDM-E	ADP	AVM	PSB	E-SUS	ICC	PWBD	SONAR	
FEB warning lamp signal												R										T		
ICC operation signal	R																					T		
ICC warning lamp signal												R										T		
Lane departure warning lamp signal												R										T		
LDPON indicator lamp signal												R										T		
Target yaw moment signal			R																			T		
Sonar status signal																		R						T

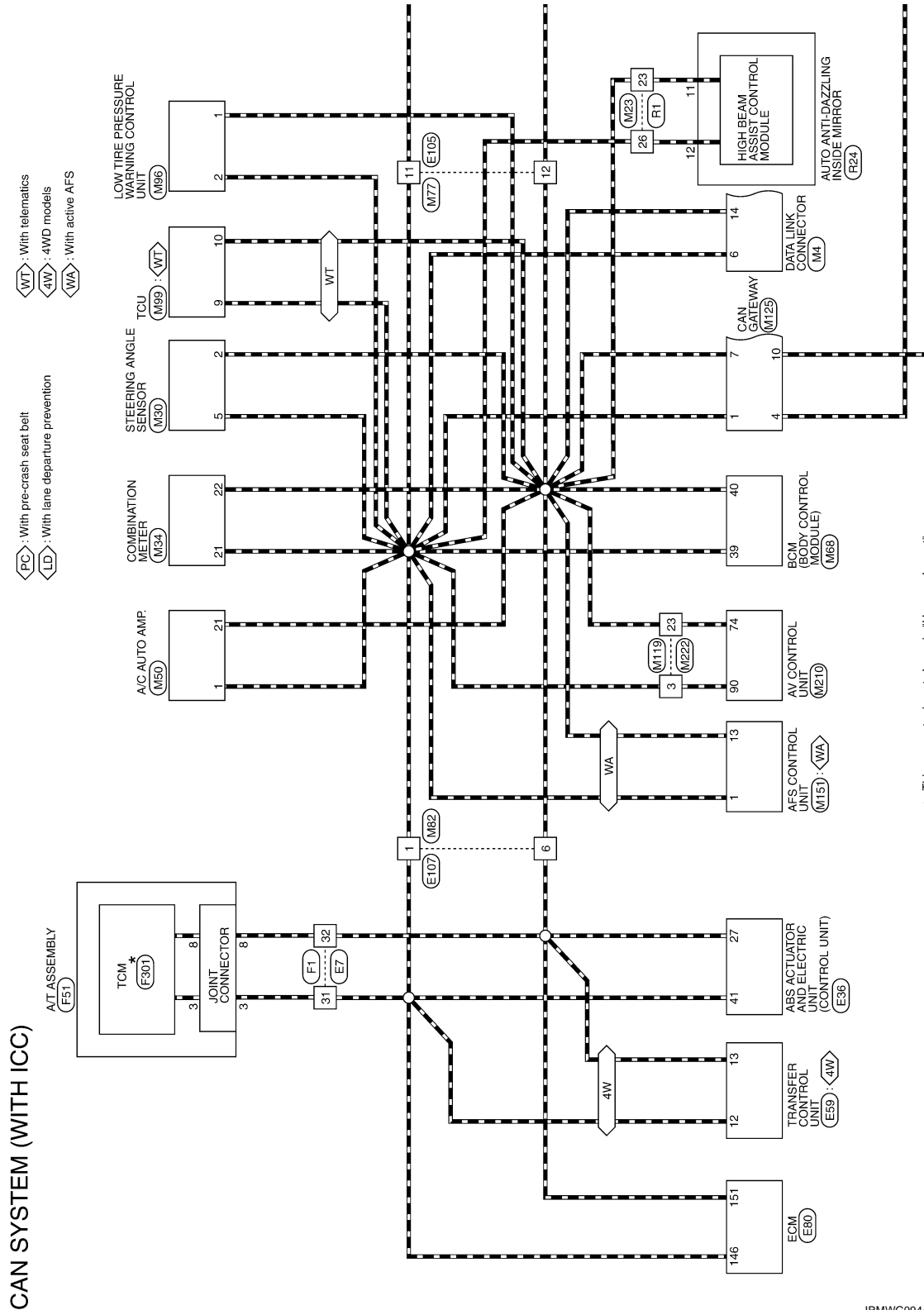
< WIRING DIAGRAM >

# WIRING DIAGRAM

## CAN SYSTEM (WITH ICC)

### Wiring Diagram

INFOID:000000010261056



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

2014/07/11

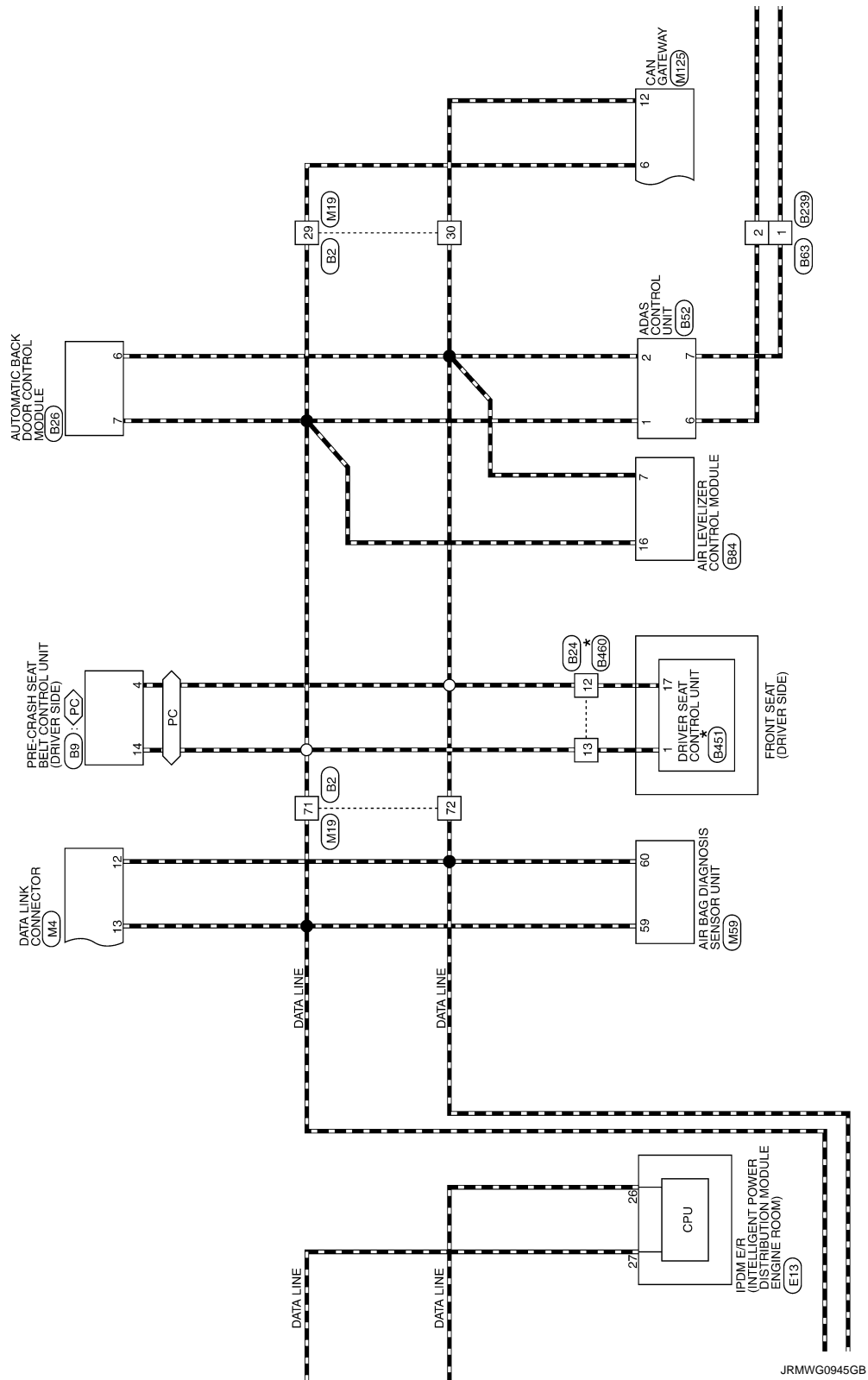
JRMWG0944GB

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# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]



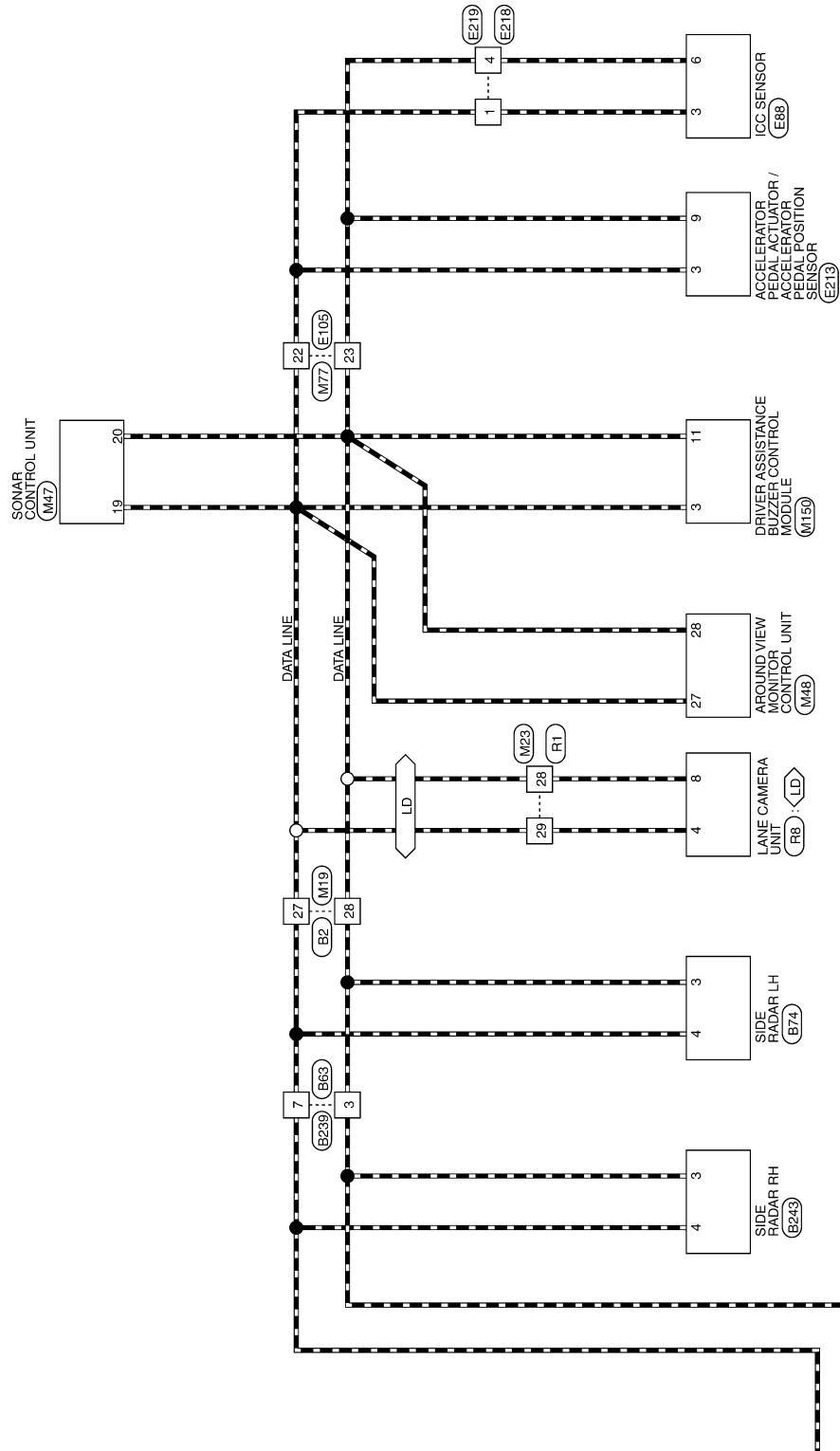
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# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]



JRMWG0946GB

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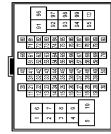
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

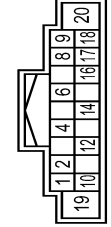
## CAN SYSTEM (WITH ICC)

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



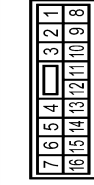
Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	
3	BR	
5	R/W	
6	L	
7	V	
9	G	
11	W/B	
12	BR	
13	G/R	
14	B/Y	
15	W/R	
16	GR/R	
18	G/W	
19	V	
20	W/G	
21	B/W	
22	V	
24	G	
25	O	
26	Y	
27	L/O	
28	Y/R	
29	L	
30	R	
31	G/Y	
32	B/SB	
33	LG/R	
34	BR/W	
35	GR/R	
36	SB	
37	LG	
38	L	
39	P	
40	W/G	
41	O	

Connector No.	B9
Connector Name	WIRE-CHASSIS (ELECT. CONTROL UNIT DRIVER SIDE)
Connector Type	TH18FW-CS2



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

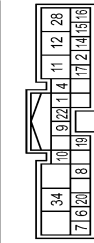
Connector No.	B24
Connector Name	WIRE TO WIRE
Connector Type	NS18FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/R	
2	Y/G	
3	P/L	
4	GR/R	
5	LG/B	

7	B	
8	G/O	
9	L	
10	R/B	
11	LG/R	
12	P	
13	L	
14	V/W	
15	BR	

Connector No.	B26
Connector Name	AUTOMATIC BACK DOOR CONTROL MODULE
Connector Type	TH20FW-TB6



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	BUZZER
2	Y/B	ABD SW
4	GR	ABD CLOSE SW
6	P	CAN-L
7	L	CAN-H
8	L/W	HALF LATCH SW
9	GR/L	IGN
10	Y	BAT
11	R	CLOSURE MTR (CLOSE)
12	V	CLOSURE MTR (OPEN)
14	G/W	TOUCH SENS LH
15	L/R	TOUCH SENS GND
16	LG	TOUCH SENS RH
17	O	MAIN SW
19	L/Y	CLOSE SW
20	G/Y	OPEN SW
22	B	GND
23	P/W	BAT
34	B	GND

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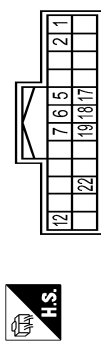
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

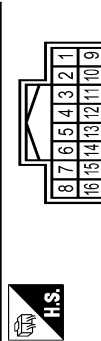
## CAN SYSTEM (WITH ICC)

Connector No.	B82
Connector Name	ADAS CONTROL UNIT
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
5	B	GROUND
6	L	ITS COMM-H
7	Y	ITS COMM-L
12	W/G	IGNITION
17	R	BRAKE HOLD RLY DRIVE SIGNAL
18	V/W	WARNING SYSTEMS SW
19	LG/B	WARNING SYSTEMS ON/IND
22	O	BCI SW

Connector No.	B83
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y/R	-
4	SB	-
5	LG	-
6	Y	-
7	L/O	-
8	G	-
13	R/L	-
14	G	-

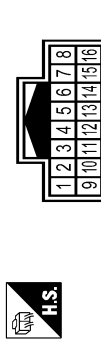
Terminal No.	16	W	-
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Connector No.	B74
Connector Name	SIDE RADAR LH
Connector Type	AAC08FB-WP-5P



Terminal No.	Color Of Wire	Signal Name [Specification]
2	B	GROUND
3	Y	ITS COMM-L
4	L	ITS COMM-H
5	W/G	IGNITION
6	BR	BLIND SPOT WARNING BLIND SPOT INTERVENTION INDICATOR

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH



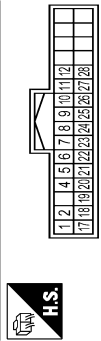
Terminal No.	Color Of Wire	Signal Name [Specification]
2	Y	-
3	L	-
4	SB	-
5	LG	-
6	Y	-
7	L	-
8	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B243
Connector Name	SIDE RADAR RH
Connector Type	AAC08FB-WP



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/Y	RIGHT/LEFT SWITCHING SIGNAL
2	B	GROUND
3	Y	ITS COMM-L
4	L	ITS COMM-H
5	W/G	IGNITION
6	L/R	BLIND SPOT WARNING BLIND SPOT INTERVENTION INDICATOR

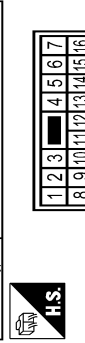
Connector No.	B451
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/Y	CAN-H
2	R	UART (TX/RX)
4	R/L	PULSE (RECLINER)
5	R/W	TELESCOPIIC SENSOR ADDRESS 2
6	R/G	IND-2
8	SB	SLIDE SW (BACKWARD)
9	L	RECLINER SW (BACKWARD)
10	L/B	FRONT LIFTER SW (DOWNWARD)
11	L/W	REAR LIFTER SW (DOWNWARD)
12	L/R	SENSOR POWER SUPPLY
17	V	CAN-L
18	B/W	PULSE (SLIDE)
19	B/R	PULSE (FRONT LIFTER)

Terminal No.	20	B/L	PULSE (REAR LIFTER)
Terminal No.	21	W/B	TILT SENSOR ADDRESS 1
Terminal No.	22	W/L	IND-1
Terminal No.	23	W/R	SLIDE SW (FORWARD)
Terminal No.	24	V/W	RECLINER SW (FORWARD)
Terminal No.	25	Y/B	FRONT LIFTER SW (UPWARD)
Terminal No.	26	Y/R	REAR LIFTER SW (UPWARD)
Terminal No.	27	Y/L	SET SW
Terminal No.	28	G	-

Connector No.	B460
Connector Name	WIRE TO WIRE
Connector Type	INS16MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	R/G	-
3	R/W	-
4	W/R	-
5	W/L	-
7	LG	-
8	W/B	-
9	-	-
10	R/B	-
11	R	-
12	V	-
13	R/Y	-
14	G	-
15	-	-

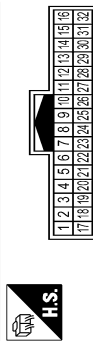
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# CAN SYSTEM (WITH ICC)

## CAN SYSTEM (WITH ICC)

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH



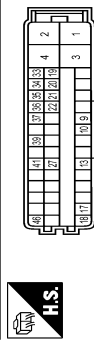
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	G	-
3	L/O	-
4	LG	-
5	W/L	-
6	G/O	-
7	L/R	-
8	LG/R	-
14	R	-
16	SB	-
17	R/W	-
18	Y/G	-
19	BR/Y	-
20	P/B	-
21	R/B	-
22	Y	-
23	BR	-
24	P/L	-
29	P	-
30	BR	-
31	L	-
32	P	-

Connector No.	E13
Connector Name	IPW L/R INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Type	TH12FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
23	GR/R	-
24	W/G	-
25	L/Y	-
26	P	-
27	L	-
28	V	-
30	R/W	-
32	LG	-
33	R	-
34	G	-

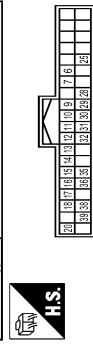
Connector No.	E36
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT CONTROL UNIT
Connector Type	SAZ42FB-SJ24



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	BAT
2	B	GND
3	B	GND
4	W	MOTOR SUPPLY
9	R/B	V/W RATE / SBE / DECEL G SENSOR COMMUNICATION-L
10	P/B	V/W RATE / SBE / DECEL G SENSOR COMMUNICATION-R
13	GR	BRAKE FLUID LEVEL SW
17	L/R	IGN
18	W/B	IGN
19	O	DS FR

20	SB	DP FL
21	R/O	DS RR
22	V	DP RL
27	P	CAN-L
33	LG	DP FR
34	G	DS FL
35	BR	DP RR
36	P	DS RL
37	R	STP
39	L/W	VOC OFF SW
41	L	CAN-H
46	W	STOP LAMP SW ON

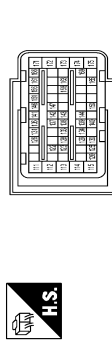
Connector No.	E59
Connector Name	TRANSFER CONTROL UNIT
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
6	BR	HI-LO POSITION SEN 1
7	Y	TRANSFER FLUID TEMP SEN PWR SUPPLY
9	G	INTERNAL SPEED SEN GND
10	Y/G	INTERNAL SPEED SEN IMP
11	V	4L SW
12	L	CAN-H
13	P	CAN-L
14	W/R	AUTO SW
15	P/B	ROTARY POSITION SEN PWM
16	LG	ROTARY POSITION SEN GND
17	W/L	LOCK POSITION SEN PWR SUPPLY
18	BR/Y	ROTARY POSITION SEN PWR SUPPLY
20	GR	TRANSFER G/UPWR SUPPLY
23	P/L	HI-LO POSITION SEN 3
28	W	MOTOR TEMP SEN PWR SUPPLY
29	LG/R	HI-LO POSITION SEN 2
30	R/B	LOCK POSITION SEN GND
31	L/O	INTERNAL SPEED SEN DIR
32	BR/R	IGN
35	R	4H SW
36	L/R	TRANSFER FLUID TEMP SEN GND
38	G/O	LOCK POSITION SEN SIGNAL

39	R/W	INTERNAL SPEED SEN PWR SUPPLY
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Connector No.	E80
Connector Name	ECM
Connector Type	MA855FB-MEB10-LH



Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	EVAP CANISTER VENT CONTROL VALVE
123	V/R	THROTTLE CONTROL MOTOR RELAY
125	GR	FUEL PUMP CONTROL MODULE (FPCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASC/D/ICC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASC/D/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
161	R/W	STOP LAMP SWITCH
166	R/W	ENG COMMUNICATION LINE
163	L/G	ECM RELAY (SELF SHUT-OFF)

# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITH ICC)

165	GR/R	-
166	W	ENG COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	E88
Connector Name	ICC SENSOR
Connector Type	IAZ08FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	IGN
3	L	ITS COMM-H
6	Y	ITS COMM-L
8	B	GND

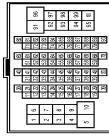
Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
7	W/G	-

8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	L/B	-
16	SB	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	Y/V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-
29	R/W	-
30	L/B	-
31	Y	-
32	GR/R	-
34	Y	-
35	R	-
36	B/R	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-
54	GR/L	-
91	BR	-
92	L/W	-
94	Y/B	-
95	G/R	-
97	R	-
98	C/B	-
100	W/R	-

Connector No.	E107
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
4	V/W	-
5	G/R	-
6	P	-
9	GR/L	-
10	Y/R	-
11	L/R	-
12	W/G	-
13	BR/Y	-
14	LG	-
15	BR/W	-
16	B/Y	-
17	W/B	-
18	GR/R	-
20	W/R	-
21	B	-
22	R/L	-
23	G/R	-
24	R/W	-
25	W/L	-
26	R	-
27	L	-
28	G/B	-
33	Y	-
37	R	-
38	O	-
39	G/Y	-
40	W	-
41	R	-
42	B	-
43	G	-
44	SHIELD	-
46	B	-
47	W	-
48	SHIELD	-

49	W	-
50	SHIELD	-
52	GR	-
53	LG/B	-
54	LG/R	-
55	R/G	-
56	B/R	-
57	SB	-
66	Y	-
91	G/R	-
92	GR	-
93	O	-
95	SB	-
96	G/R	-
97	GR/L	-
98	G/W	-
99	R/Y	-
100	L	-

Connector No.	EZ13
Connector Name	ACCELERATOR PEDAL ACTUATOR/ACCELERATOR PEDAL POSITION SENSOR
Connector Type	RH1ZF8



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/O	BATTERY
2	W/G	IGNITION
3	L	ITS COMM-H
4	W/G	SENSOR POWER SUPPLY
5	R/Y	SENSOR GROUND
6	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
7	B	GROUND
9	Y	ITS COMM-L
10	L/W	SENSOR POWER SUPPLY
11	P/L	SENSOR GROUND
12	O	ACCELERATOR PEDAL POSITION SENSOR 2

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# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITH ICC)

Connector No.	E218
Connector Name	WIRE TO WIRE
Connector Type	RS08MB



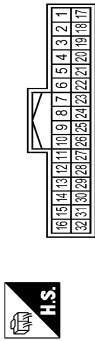
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
3	W/G	-
4	Y	-
6	B	-

Connector No.	E219
Connector Name	WIRE TO WIRE
Connector Type	RS06FE-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
3	W/G	-
4	Y	-
6	B	-

Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	G	-
3	L/O	-
4	LG	-
5	W/L	-
6	G/O	-
7	L/R	-
8	LG/R	-
14	R	-
16	SB	-
17	R/W	-
18	Y/G	-
19	BR/Y	-
20	P/B	-
21	R/B	-
22	Y	-
23	BR/W	-
24	P/L	-
29	P	-
30	BR	-
31	L	-
32	P	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG



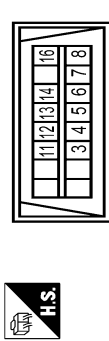
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY
3	L	CAN-H
4	SB	K-LINE
5	B	GROUND
6	V	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CAN-L
9	BR	STARTER RELAY
10	B	GROUND

Connector No.	F301
Connector Name	TCM
Connector Type	SP10FG



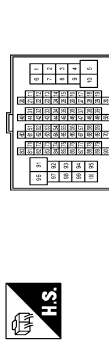
Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY
3	-	CAN-H
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CAN-L
9	-	STARTER RELAY
10	-	GROUND

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	SB	-
8	GR	-
11	SB	-
12	R	-
13	L	-
14	P	-
16	Y	-

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	G/R	-

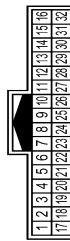
# CAN SYSTEM (WITH ICC)

## CAN SYSTEM (WITH ICC)

14	B/Y	-	-	-	-
15	W/R	-	-	-	-
16	GR/R	-	-	-	-
18	G/W	-	-	-	-
19	V	-	-	-	-
20	W/G	-	-	-	-
21	B/W	-	-	-	-
22	V	-	-	-	-
24	G	-	-	-	-
25	O	-	-	-	-
26	Y	-	-	-	-
27	L	-	-	-	-
28	Y	-	-	-	-
29	L	-	-	-	-
30	R	-	-	-	-
31	G/Y	-	-	-	-
32	B/SB	-	-	-	-
33	LG/R	-	-	-	-
34	BR/W	-	-	-	-
35	GR/R	-	-	-	-
36	SB	-	-	-	-
37	LG	-	-	-	-
38	L	-	-	-	-
39	P	-	-	-	-
40	W/G	-	-	-	-
41	O	-	-	-	-
43	V/W	-	-	-	-
44	LG/B	-	-	-	-
46	B	-	-	-	-
47	BR/W	-	-	-	-
48	GR	-	-	-	-
50	R/B	-	-	-	-
51	W/R	-	-	-	-
52	BR/Y	-	-	-	-
53	O/B	-	-	-	-
54	G/O	-	-	-	-
55	R/B	-	-	-	-
56	LG/R	-	-	-	-
57	GR/R	-	-	-	-
58	Y/G	-	-	-	-
59	V/W	-	-	-	-
60	R	-	-	-	-
63	B	-	-	-	-
64	R	-	-	-	-
65	W	-	-	-	-
66	G	-	-	-	-
67	SHIELD	-	-	-	-
69	LG/B	-	-	-	-
70	P/L	-	-	-	-
71	L	-	-	-	-

72	R	-	-	-	-
77	Y/B	-	-	-	-
78	Y/L	-	-	-	-
79	Y	-	-	-	-
80	W/R	-	-	-	-
81	Y/L	-	-	-	-
84	L/O	-	-	-	-
86	O	-	-	-	-
87	W/R	-	-	-	-
88	O	-	-	-	-
89	W/L	-	-	-	-
90	GR/L	-	-	-	-
91	W	-	-	-	-
92	G	-	-	-	-
94	W/R	-	-	-	-
96	L/W	-	-	-	-
97	R	-	-	-	-
98	V	-	-	-	-
99	L/W	-	-	-	-
100	P/B	-	-	-	-

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	GR	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
14	Y	-
15	W/R	-
16	L/O	-

17	Y	-	-	-	-
18	L/O	-	-	-	-
20	W	-	-	-	-
21	O	-	-	-	-
22	SB	-	-	-	-
23	P	-	-	-	-
24	SHIELD	-	-	-	-
25	Y/G	-	-	-	-
26	W/G	-	-	-	-
27	W/G	-	-	-	-
28	Y	-	-	-	-
29	B/SB	-	-	-	-
30	B	-	-	-	-
31	BR	-	-	-	-
32	GR/L	-	-	-	-

Connector No.	M30
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	P	-
4	GR	-
5	L	-

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	ILL GND
5	B	ILL CONTROL OUTPUT
6	GR	LED HEADLAMP (RH) WARNING SIGNAL
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
9	O	LED HEADLAMP (LH) WARNING SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	A/C AUTO AMP CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CAN-H
22	P	CAN-L
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
33	W	SNOW MODE SIGNAL
34	BR/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G/Y	PASSENGER SEAT BELT WARNING SIGNAL
37	R/Y	NON-MANUAL MODE SIGNAL
38	L/W	MANUAL MODE SHIFT DOWN SIGNAL
39	Y/B	MANUAL MODE SHIFT UP SIGNAL
40	G/W	MANUAL MODE SIGNAL

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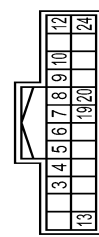
# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

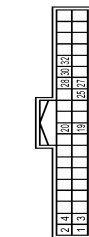
## CAN SYSTEM (WITH ICC)

Connector No.	M47
Connector Name	SOMAR CONTROL UNIT
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	CENTER SENSOR REAR LH
8	Y	CENTER SENSOR REAR RH
9	G	CENTER SENSOR FRONT LH
10	Y	CENTER SENSOR FRONT RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CAN-H
20	R	CAN-L [Without ADAS]
20	Y	ITS-CAN L [With ADAS]
24	B	GND

Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH4QFW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COMM (H)
20	LG	AV COMM (L)

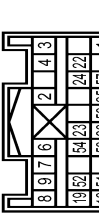
25	P	REVERSE
27	L	CAN-H
28	R	CAN-L [Without ADAS]
28	Y	CAN-L [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Type	SB4QFW



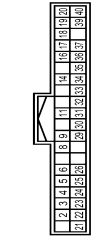
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	B	GROUND
3	Y/G	BATTERY POWER SUPPLY
4	V	ACC POWER SUPPLY
5	W	IGNIZER CONTROL SIGNAL
6	V/W	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
7	W/R	AMBIENT SENSOR SIGNAL
8	GR/L	RR IN-VEHICLE SENSOR SIGNAL
9	BR	SUNLOAD SENSOR (DR) SIGNAL
10	V/W	EXH. GAS / OUTSIDE DOOR REJECTING SENSOR SIGNAL
11	W	COMM. A/C AUTO AMP.-RR A/C CONT.
14	O/L	FR BLOWER MOTOR CONTROL SIGNAL
16	R/G	EACH DOOR MOTOR LIN SIGNAL
17	L/Y	EACH DOOR MOTOR POWER SUPPLY
21	P	CAN-L
22	B	GROUND
23	GR/L	IGNITION POWER SUPPLY
26	R	SENSOR GROUND
27	GR	FR IN-VEHICLE SENSOR SIGNAL
28	R	INTAKE SENSOR SIGNAL
29	O	SUNLOAD SENSOR (PASS) SIGNAL
31	O/L	COMM. (RR A/C CONT.-A/C AUTO AMP.)
34	L/O	RR BLOWER MOTOR CONTROL SIGNAL
37	B	GROUND
38	G/W	RR A/C RELAY CONTROL SIGNAL

Connector No.	M59
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NF28FY-EX



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/L	IGN
2	B	GND
3	Y	DR1 (+)
4	Y/R	DR1 (-) DR2 (-)
6	Y/L	AST (+)
7	Y/B	AST (-)
8	B/Y	AS 2 (+)
9	Y	AS 2 (-)
18	O	EGZS (+)
19	W	EGZS (-)
22	SHIELD	GND
23	R/W	AIRBAG W/L
24	G/Y	SEATBELT W/L
25	R	CUTOFF TELLTALE
51	Y/G	SIDE SENSZ RH+
52	Y/L	SIDE SENSZ LH-
53	W	SIDE SENSZ LH+
54	R	SIDE SENSZ LH-
57	R/W	DEPLOYMENT INFORMATION
59	L	CAN-H
60	R	CAN LO

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/Y	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	B/Y	RECEIVER/SENSOR GND
19	G/Y	TURN SIG RH OUTPUT (FRONT)
20	G	TURN SIG LH OUTPUT (FRONT)
21	P	NATS ANT AMP.
22	W/B	KYLS ENT RECEIVER RSSI
23	GR/R	SECURITY IND CONT
24	SB	DOUBLE LINK
25	LG/R	NATS ANT AMP.
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	BK DOOR OPNR SW
31	W/G	DR DOOR LINK LOCK SENSOR
32	LG	COMBI SW OUTPUT 3
33	Y	COMBI SW OUTPUT 2
34	W	COMBI SW OUTPUT 4
35	R/W	COMBI SW OUTPUT 3
36	SB	COMBI SW OUTPUT 1
37	G/Y	SHIF-T P
39	L	CAN-H
40	P	CAN-L




# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITH ICC)

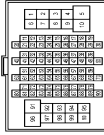
Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CSS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
6	W/G	-
7	P/B	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	O/L	-
16	SB	-
17	Y/G	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	V	-
22	L	-
23	Y	-
24	L/W	-
25	O	-
26	R/W	-
27	O/L	-
28	R/W	-
29	O/L	-
30	O/L	-
31	BR/R	-
32	GR/R	-
34	Y	-
35	R	-
36	B/O	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-

54	GR/L	-
91	BR	-
92	L/W	-
94	Y/B	-
95	L/R	-
97	P	-
98	O/L	-
100	W/B	-

Connector No.	M82
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CSS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
4	V/W	-
5	G/R	-
6	P	-
9	GR/L	-
10	Y/R	-
11	L/R	-
12	W/G	-
13	BR/Y	-
14	L/G	-
15	BR/W	-
16	B/Y	-
17	W/B	-
18	GR/R	-
20	W/R	-
21	B	-
22	R/L	-
23	G/R	-
24	R/W	-
25	W/L	-
26	R	-
27	L	-
28	B/SB	-
35	G	-
36	Y	-
37	R	-

38	G/Y	-
39	O	-
40	W	-
41	R	-
42	B	-
43	G	-
44	SHIELD	-
46	B	-
47	W	-
48	SHIELD	-
49	W	-
50	SHIELD	-
52	GR	-
53	LG/B	-
54	LG/R	-
55	R/G	-
56	B/O	-
57	SB	-
66	V	-
91	G/R	-
92	GR	-
93	O	-
95	SB	-
96	G/R	-
97	GR/L	-
98	G/W	-
99	P	-
100	L	-

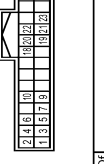
Connector No.	M86
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	CAN-L
2	L	CAN-H
3	O/L	RR TIRE PRESSURE RECEIVER SIGNAL
4	L	RL TIRE PRESSURE RECEIVER SIGNAL
5	R/L	FR TIRE PRESSURE RECEIVER SIGNAL
6	W/G	FL TIRE PRESSURE RECEIVER SIGNAL

7	SB	RR TIRE PRESSURE RECEIVER POWER SUPPLY
8	GR	RL TIRE PRESSURE RECEIVER POWER SUPPLY
9	R/W	FR TIRE PRESSURE RECEIVER POWER SUPPLY
10	LG	FL TIRE PRESSURE RECEIVER POWER SUPPLY
15	GR	IGN
19	L/R	RR TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)
20	P	RL TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)
21	G/R	FR TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)
22	BR/Y	FL TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)
23	V/W	RR TIRE PRESSURE RECEIVER GND
24	R/B	RL TIRE PRESSURE RECEIVER GND
25	W/L	FR TIRE PRESSURE RECEIVER GND
26	BR/W	FL TIRE PRESSURE RECEIVER GND
32	B	GND

Connector No.	M89
Connector Name	TOU
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y/R	BAT
2	B	GND
3	BR	ACC
4	GR/L	IGN
5	V	ACC OUT
6	BR	-
7	B	GND
9	B	Y-CAN H
10	P	Y-CAN L
18	Y/G	MICROPHONE VCC
19	Y/L	MICROPHONE SIGNAL
20	SHIELD	MICROPHONE GND
21	Y	MICROPHONE VCC
22	BR	SOUND SIGNAL
23	SHIELD	MICROPHONE GND
34	G	SOS CALL SWITCH SIGNAL
35	O	SOS SWITCH LED SIGNAL

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LAN

JRMWG0954GB

# CAN SYSTEM (WITH ICC)

## CAN SYSTEM (WITH ICC)

Connector No.	M119
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	SB	-
3	L	-
4	W/B	-
5	SHIELD	-
6	LG	-
7	V	-
8	W	-
9	O	-
10	SHIELD	-
11	W/L	-
12	L	-
13	P	-
14	SHIELD	-
15	G	-
16	V	-
17	W	-
18	G/R	-
19	Y	-
20	BR	-
21	LG	-
22	LG	-
23	P	-
24	R/W	-
25	L/O	-
26	GR/L	-
27	GR/L	-
28	BR	- [Without DCM]
29	V	- [With DCM]
30	BR/W	-
31	Y/L	-
32	B	-
33	R	-
34	W	-
35	SHIELD	-

36	SHIELD	-
37	SHIELD	-
38	GR/R	-
39	BR	-
40	SHIELD	-

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



1	2	3	4	5	6
7	8	9	10	11	12

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

Connector No.	M150
Connector Name	DRIVER ASSISTANCE BUZZER CONTROL MODULE
Connector Type	TH18FW-NH



8	9	10	11	12
13	14	15	16	17

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/G	IGN
2	L	ITS COMM-H
3	L	ITS COMM-H
4	B	GROUND

8	BR	SPEAKER OUT(+)
11	Y	ITS COMM-L
13	B	GROUND
16	Y	SPEAKER OUT(-)

Connector No.	M151
Connector Name	AFS CONTROL UNIT
Connector Type	TH12FW-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
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Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN H
2	L	CAN H
3	V	FRONT HEIGHT SENSOR SIGNAL
4	R/G	REAR HEIGHT SENSOR SIGNAL
5	R/G	REAR HEIGHT SENSOR SIGNAL
6	GR	SWIVEL ACTUATOR LIN SIGNAL
7	B	GROUND
8	B	GROUND
9	GR	IGNITION POWER SUPPLY
10	L	CAN-L
11	P	CAN-L
12	P	CAN-L
13	P	CAN-L
14	LG/B	SWIVEL ACTUATOR GROUND
15	LG/B	SWIVEL ACTUATOR GROUND
16	LG/R	HEIGHT SENSOR POWER SUPPLY
17	LG/R	HEIGHT SENSOR DRIVE SIGNAL
18	SB	AIMING MOTOR GROUND
19	B/O	HEIGHT SENSOR GROUND
20	GR/L	AIMING MOTOR GROUND
21	GR/L	AIMING MOTOR GROUND
22	GR/L	AIMING MOTOR GROUND
23	GR/L	AIMING MOTOR GROUND
24	GR/L	AIMING MOTOR GROUND

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH182FW-NH



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	W	PARKING BRAKE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL
68	R	COMPOSITE IMAGE SIGNAL
69	O	INTELLIGENT KEY IDENTIFICATION SIGNAL
70	BR	-
71	SHIELD	MICROPHONE SHIELD
72	Y	MICROPHONE VCC [With DCM]
73	Y/G	MICROPHONE VCC [Without DCM]
74	Y/G	COMM. COAT-DISP?
75	P	AV COMM (L)
76	LG	AV COMM (L)
79	L/O	DIMMER SIGNAL
80	GR/L	IGNITION SIGNAL
81	R/Y	REVERSE SIGNAL
82	BR/W	VEHICLE SPEED SIGNAL (3-PULSE)
83	SHIELD	SHIELD
84	W/B	COMPOSITE IMAGE SYNC SIGNAL
87	BR	MICROPHONE SIGNAL [With DCM]
88	SHIELD	SHIELD
89	Y/L	COMM. (DISP-COAT)
90	L	CAN-H
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M222
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH



40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	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	93	94	95	96	97	98	99	100
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Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	SB	-
3	L	-
4	W/B	-
5	SHIELD	-
6	LG	-
7	V	-

# CAN SYSTEM (WITH ICC)

< WIRING DIAGRAM >

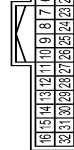
[CAN]

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## CAN SYSTEM (WITH ICC)

Terminal No.	Color Of Wire	Signal Name [Specification]
8	W	-
9	O	-
10	SHIELD	-
11	W/L	-
12	L	-
13	P	-
14	SHIELD	-
15	G	-
16	Y	-
17	W	-
18	G/R	-
19	V	-
20	BR	-
21	LG	-
22	LG	-
23	P	-
24	R/W	-
25	L/O	-
26	GR/L	-
27	W	-
28	V	-
29	BR/W	-
30	Y/G	-
31	Y/L	-
32	B	-
33	R	-
34	W	-
35	SHIELD	-
36	SHIELD	-
37	SHIELD	-
38	GR/R	-
39	BR	-
40	SHIELD	-

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TR32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	B/R	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
14	B/Y	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	B	-
24	SHIELD	-
25	Y/G	-
26	B/SB	-
27	W/G	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	B/R	-

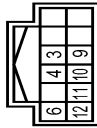
Connector No.	R8
Connector Name	LANE CAMERA UNIT
Connector Type	TR08FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
4	L	ITS COMM-H
5	B	GND

7	W/G	IGNITION
8	Y	ITS COMM-L

Connector No.	R24
Connector Name	AUTO ANTI-DAZZLING INSIDE MIRROR
Connector Type	TR12FW-NH B



Terminal No.	Color Of Wire	Signal Name [Specification]
3	B	GROUND
4	B/R	AUTO ANTI-DAZZLING OUTSIDE MIRROR CONTROL SIGNAL
6	B/R	IGNITION POWER SUPPLY
9	B/Y	AUTO ANTI-DAZZLING OUTSIDE MIRROR GROUND
10	B/Y	BATTERY POWER SUPPLY
11	B	CAN-L
12	B/SB	CAN-H

# CAN SYSTEM (WITHOUT ICC)

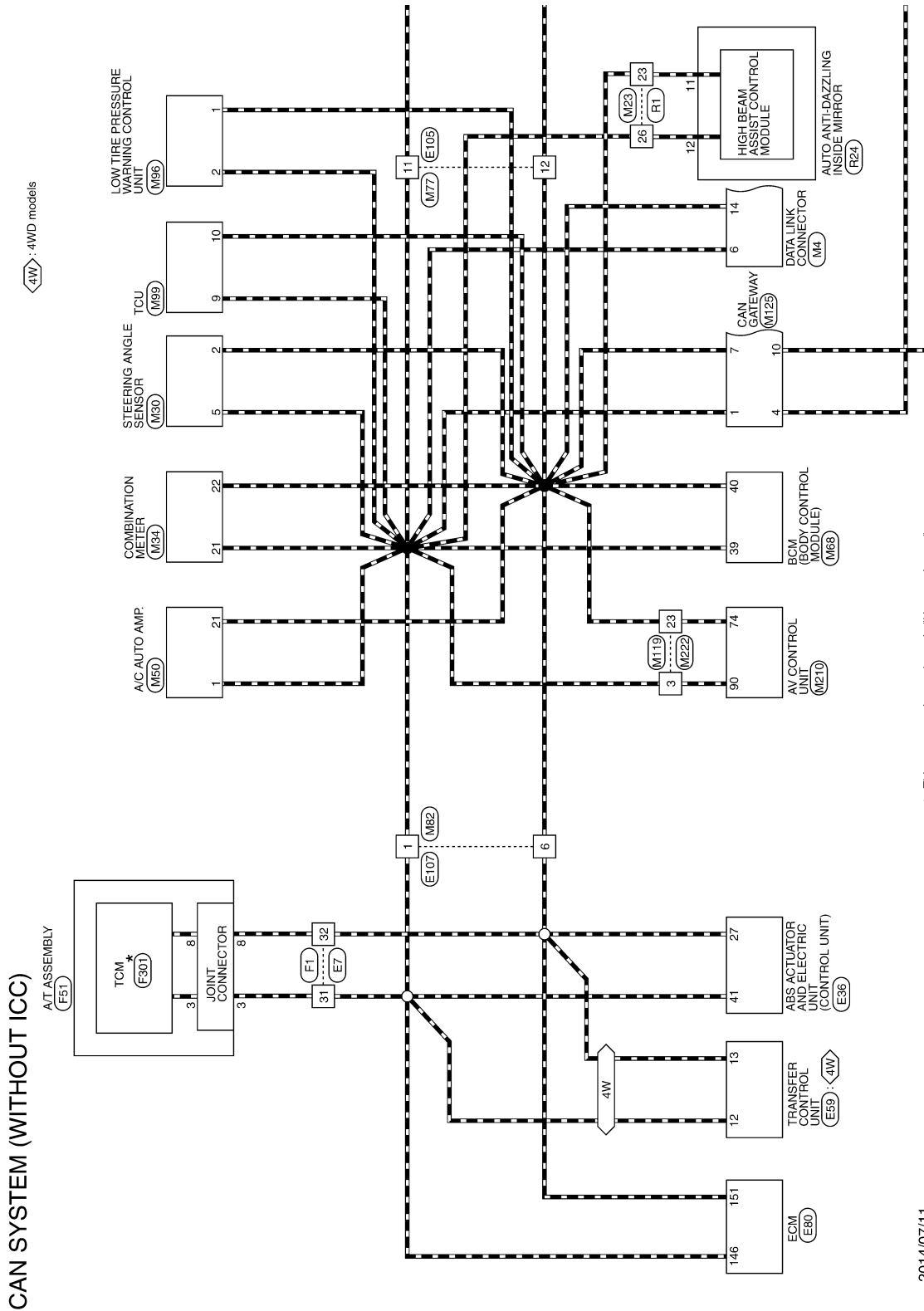
[CAN]

< WIRING DIAGRAM >

## CAN SYSTEM (WITHOUT ICC)

### Wiring Diagram

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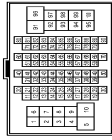
# CAN SYSTEM (WITHOUT ICC)

[CAN]

< WIRING DIAGRAM >

## CAN SYSTEM (WITHOUT ICC)

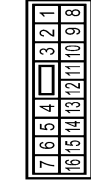
Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	
2	BR	
3	R/W	
4	L	
5	V	
6	W	
7	G	
8	W/B	
9	BR	
10	G/R	
11	B/Y	
12	W/R	
13	GR/R	
14	G/W	
15	W/G	
16	B/W	
17	V	
18	L/O	
19	G	
20	O	
21	Y	
22	W	
23	BR	
24	R	
25	W	
26	Y	
27	L/O	
28	Y/R	
29	L	
30	R	
31	G/Y	
32	B/SB	
33	LG/R	
34	BR/W	
35	GR/R	
36	SB	
37	LG	
38	L	
39	P	
40	W/G	
41	O	

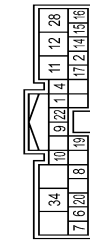
43	V/W	
44	LG/B	
45	B	
46	BR	
47	GR	
48	R/B	
49	W/R	
50	BR/Y	
51	O/B	
52	G/O	
53	R/B	
54	GR/R	
55	W	
56	G	
57	SHIELD	
58	LG/B	
59	P/L	
60	L	
61	R/B	
62	Y/B	
63	R	
64	P	
65	L	
66	W	
67	Y	
68	V/W	
69	W/R	
70	L/O	
71	O	
72	W/R	
73	O	
74	W/L	
75	GR/L	
76	W	
77	G	
78	W/R	
79	L/W	
80	R	
81	LG/R	
82	BR/W	
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Connector No.	B24
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/R	
2	Y/G	
3	P/L	
4	GR/R	
5	LG/B	
6	B	
7	G/O	
8	L	
9	R/B	
10	LG/R	
11	P	
12	L	
13	V/W	
14	BR	
15		

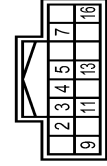
Connector No.	B26
Connector Name	AUTOMATIC BACK DOOR CONTROL MODULE
Connector Type	TH40FW-TB6



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	BUZZER
2	Y/B	ABD SW
3	GR	ABD CLOSE SW
4	P	CAN-L
5	L	CAN-H

8	L/W	HALF LATCH SW
9	GR/L	IGN
10	Y	BAT
11	R	CLOSURE MTR (CLOSE)
12	R	CLOSURE MTR (OPEN)
13	G/W	TOUCH SENS LH
14	L/R	TOUCH SENS RH
15	LG	MAIN SW
16	L/Y	CLOSE SW
17	O	OPEN SW
18	G/Y	GND
19	B	BAT
20	R/W	GND
21	B	GND

Connector No.	B84
Connector Name	AIR LEVELIZER CONTROL MODULE
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	B	GND
3	V	AIR COMPRESSOR RELAY
4	L/W	VEHICLE HEIGHT SENSOR GND
5	W	VEHICLE HEIGHT SENSOR SIGNAL
6	P	CAN-L
7	P/L	IGN
8	V/W	EXHAUST SOLENOID
9	R	VEHICLE HEIGHT SENSOR POWER SUPPLY
10	L	CAN-H

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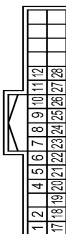
# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]



## CAN SYSTEM (WITHOUT ICC)

Connector No.	B451
Connector Name	DRIVER SEAT CONTROL UNIT
Connector Type	TH432FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/Y	CAN-H
2	R	UART (TX/RX)
4	R/L	PULSE (RECLINER)
5	R/B	TELESCOPIC SENSOR
6	R/W	ADDRESS 2
7	R/G	IND-2
8	SB	SLIDE SW (BACKWARD)
9	L	RECLINER SW (BACKWARD)
10	L/B	FRONT LIFTER SW (DOWNWARD)
11	L/W	REAR LIFTER SW (DOWNWARD)
12	L/R	SENSOR POWER SUPPLY
17	V	CAN-L
18	B/W	PULSE (SLIDE)
19	B/R	PULSE (FRONT LIFTER)
20	B/L	PULSE (REAR LIFTER)
21	W/B	TILT SENSOR
22	W/L	ADDRESS 1
23	W/R	IND-1
24	V/W	SLIDE SW (FORWARD)
25	V/B	RECLINER SW (FORWARD)
26	V/R	FRONT LIFTER SW (UPWARD)
27	V/L	REAR LIFTER SW (UPWARD)
28	G	SET SW

Connector No.	B460
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	R/G	-
3	R/W	-
4	W/R	-
5	W/L	-
7	LG	-
8	W/B	-
9	-	-
10	R/B	-
11	R	-
12	V	-
13	R/Y	-
14	G	-
15	-	-



Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Type	TH432MW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	G	-
3	L/O	-
4	LG	-
5	W/L	-
6	G/O	-



7	L/R	-
8	LG/R	-
14	R	-
16	SB	-
17	R/W	-
18	V/G	-
19	BR/Y	-
20	R/B	-
21	R/B	-
22	-	-
23	BR	-
24	P/L	-
29	P	-
30	BR	-
31	L	-
32	P	-

Connector No.	E13
Connector Name	FRONT INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Type	TH12FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
23	GR/R	-
24	W/G	-
25	L/Y	-
26	P	-
27	L	-
28	V	-
30	R/W	-
32	LG	-
33	R	-
34	G	-

Connector No.	E36
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SAZ42FB-SLZ4

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	BAT
2	B	GND
3	B	GND
4	W	MOTOR SUPPLY
9	R/B	YAW RATE / SIDE / DECEL G SENSOR COMMUNICATION-H
10	P/B	YAW RATE / SIDE / DECEL G SENSOR COMMUNICATION-L
13	GR	BRAKE FLUID LEVEL SW
17	L/R	STP2
18	W/B	IGN
19	O	DS FR
20	SB	DP FL
21	R/O	DS RR
22	V	DP RL
27	P	CAN-L
33	LG	DP FR
34	G	DS FL
35	BR	DP RR
36	P	DS RL
37	R	STP
39	L/W	VDC OFF SW
41	L	CAN-H
46	W	STOP LAMP SW ON

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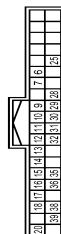
# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

Connector No.	E59
Connector Name	TRANSFER CONTROL UNIT
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
6	BR	HI-LO POSITION SEN 1
7	Y	TRANSFER FLUID TEMP-SEN PWR SUPPLY
9	G	INTERNAL SPEED SEN GND
10	Y/G	INTERNAL SPEED SEN IMP
11	V	4L SW
12	L	CAN-H
13	P	CAN-L
14	W/R	AUTO SW
15	P/B	ROTALY POSITION SEN PWM
16	LG	ROTALY POSITION SEN GND
17	W/L	LOCK POSITION SEN PWR SUPPLY
18	BR/Y	ROTAY POSITION SEN PWR SUPPLY
20	GR	TRANSFER C/U PWR SUPPLY
25	P/L	HI-LO POSITION SEN 3
28	W	MOTOR TEMP SEN PWR SUPPLY
29	LG/R	HI-LO POSITION SEN 2
30	R/B	LOCK POSITION SEN GND
31	L/O	INTERNAL SPEED SEN DIR
32	BR/R	IGN
35	R	4H SW
36	L/R	TRANSFER FLUID TEMP SEN GND
38	G/O	LOCK POSITION SEN SIGNAL
39	R/W	INTERNAL SPEED SEN PWR SUPPLY


Connector No.	E60
Connector Name	ECM
Connector Type	MAB55FB-MEB1D-LH



Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	ECM GROUND
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	VEHICLE MOTOR-RELAY (RIGHT SIGNAL LEVEL CONTROL MODULE)
123	V/R	THROTTLE CONTROL MOTOR RELAY
125	GR	FUEL PUMP CONTROL MODULE (FPCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASC/D/CC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
145	G/Y	CAN COMMUNICATION LINE
146	G/Y	ASC/D/CC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ENG COMMUNICATION LINE
163	L/G	ECM RELAY (SELF SHUT-OFF)
165	GR/R	ECM RELAY (SELF SHUT-OFF)
166	W	ENG COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT

Terminal No.	171	W	POWER SUPPLY FOR ECM
Terminal No.	172	W	POWER SUPPLY FOR ECM
Terminal No.	173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
Terminal No.	174	B	ECM GROUND
Terminal No.	175	B	ECM GROUND

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MM-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	
2	L/W	
3	R/B	
4	L	
5	Y	
7	W/G	
8	P/B	
9	W/B	
10	G	
11	L	
12	P	
13	P/B	
14	BR	
15	L/B	
16	SB	
18	BR	
19	Y/G	
20	BR/Y	
21	Y/V	
22	L	
23	L	
24	L/W	
28	O	
29	R/W	
30	L/B	
31	Y	
32	GR/R	
34	Y	
35	R	

Terminal No.	36	B/R	
Terminal No.	37	G/Y	
Terminal No.	38	G	
Terminal No.	40	SB	
Terminal No.	41	W/R	
Terminal No.	42	R	
Terminal No.	43	V	
Terminal No.	54	GR/L	
Terminal No.	81	BR	
Terminal No.	82	L/W	
Terminal No.	84	Y/B	
Terminal No.	85	G/R	
Terminal No.	98	R	
Terminal No.	98	G/B	
Terminal No.	100	W/R	

Connector No.	E107
Connector Name	WIRE TO WIRE
Connector Type	TH80MM-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	
4	V/W	
5	G/R	
6	P	
9	GR/L	
10	Y/R	
11	L/R	
12	W/G	
13	BR/Y	
14	LG	
15	BR/W	
16	B/Y	
17	W/B	
18	GR/R	
20	W/R	
21	B	
22	R/L	
23	G/R	
24	R/W	



# CAN SYSTEM (WITHOUT ICC)

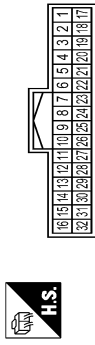
< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

25	W/L	-
26	R	-
27	L	-
28	G/B	-
35	G	-
36	Y	-
37	R	-
38	G/Y	-
39	O	-
40	W	-
41	R	-
42	B	-
43	G	-
44	SHIELD	-
46	B	-
47	W	-
48	SHIELD	-
49	W	-
50	SHIELD	-
52	GR	-
53	LG/B	-
54	LG/R	-
55	R/G	-
56	B/R	-
57	SB	-
66	V	-
91	G/R	-
92	GR	-
93	O	-
95	SB	-
96	G/R	-
97	GR/L	-
98	G/W	-
99	R/Y	-
100	L	-

Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	G	-
3	L/O	-
4	LG	-
5	W/L	-
6	G/O	-
7	L/R	-
8	LG/R	-
14	R	-
16	SB	-
17	R/W	-
18	Y/G	-
19	BR/Y	-
20	P/B	-
21	R/B	-
22	Y	-
23	BR/W	-
24	P/L	-
29	P	-
30	BR	-
31	L	-
32	P	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	RK10FG



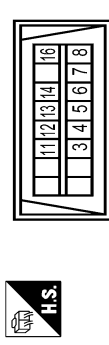
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	IGNITION POWER SUPPLY
2	P	BATTERY POWER SUPPLY
3	L	CAN-H
4	SE	K-LINE
5	B	GROUND
6	V	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CAN-L
9	BR	STARTER RELAY
10	B	GROUND

Connector No.	F301
Connector Name	TCM
Connector Type	SP10FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	IGNITION POWER SUPPLY
2	-	BATTERY POWER SUPPLY
3	-	CAN-H
4	-	K-LINE
5	-	GROUND
6	-	IGNITION POWER SUPPLY
7	-	BACK-UP LAMP RELAY
8	-	CAN-L
9	-	STARTER RELAY
10	-	GROUND

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	SB	-
8	GR	-
11	SB	-
12	R	-
13	L	-
14	P	-
16	Y	-

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	G/R	-

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LAN

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# CAN SYSTEM (WITHOUT ICC)

[CAN]

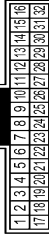
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## CAN SYSTEM (WITHOUT ICC)

14	B/Y	-	-	-	-
15	W/R	-	-	-	-
16	GR/R	-	-	-	-
18	G/W	-	-	-	-
19	V	-	-	-	-
20	W/G	-	-	-	-
21	B/W	-	-	-	-
22	V	-	-	-	-
24	G	-	-	-	-
25	O	-	-	-	-
26	Y	-	-	-	-
27	L	-	-	-	-
28	L	-	-	-	-
29	L	-	-	-	-
30	R	-	-	-	-
31	G/Y	-	-	-	-
32	B/SB	-	-	-	-
33	LG/R	-	-	-	-
34	BR/W	-	-	-	-
35	GR/R	-	-	-	-
36	SB	-	-	-	-
37	LG	-	-	-	-
38	L	-	-	-	-
39	P	-	-	-	-
40	W/G	-	-	-	-
41	O	-	-	-	-
43	V/W	-	-	-	-
44	LG/B	-	-	-	-
46	B	-	-	-	-
47	BR/W	-	-	-	-
49	GR	-	-	-	-
50	R/B	-	-	-	-
51	W/R	-	-	-	-
52	BR/Y	-	-	-	-
53	O/B	-	-	-	-
54	G/O	-	-	-	-
55	R/B	-	-	-	-
56	LG/R	-	-	-	-
57	GR/R	-	-	-	-
58	Y/G	-	-	-	-
59	V/W	-	-	-	-
60	R	-	-	-	-
63	B	-	-	-	-
64	R	-	-	-	-
65	W	-	-	-	-
66	G	-	-	-	-
67	SHIELD	-	-	-	-
69	LG/B	-	-	-	-
70	P/L	-	-	-	-
71	L	-	-	-	-

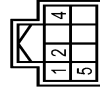
72	R	-	-	-	-
77	Y/B	-	-	-	-
78	Y/L	-	-	-	-
79	Y	-	-	-	-
80	W/R	-	-	-	-
81	Y/L	-	-	-	-
84	L/O	-	-	-	-
86	O	-	-	-	-
87	W/R	-	-	-	-
88	O	-	-	-	-
89	W/L	-	-	-	-
90	GR/L	-	-	-	-
91	W	-	-	-	-
92	G	-	-	-	-
94	W/R	-	-	-	-
96	L/W	-	-	-	-
97	R	-	-	-	-
98	V	-	-	-	-
99	L/W	-	-	-	-
100	P/B	-	-	-	-

Connector No.	M23
Connector Name	WIPE TO WIRE
Connector Type	TH32MW-NH



17	Y	-	-	-	-
18	L/O	-	-	-	-
20	W	-	-	-	-
21	O	-	-	-	-
22	SB	-	-	-	-
23	P	-	-	-	-
24	SHIELD	-	-	-	-
25	Y/G	-	-	-	-
26	L	-	-	-	-
27	W/G	-	-	-	-
28	Y	-	-	-	-
29	L	-	-	-	-
30	B/SB	-	-	-	-
31	BR	-	-	-	-
32	GR/L	-	-	-	-

Connector No.	M30
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	P	-
4	GR	-
5	L	-

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	ILL.GND
5	B	ILL CONTROL OUTPUT
6	GR	LED HEADLAMP (RH) WARNING SIGNAL
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
9	O	LED HEADLAMP (LH) WARNING SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CAN-H
22	P	GROUND
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (3-PULSE)
33	W	SNOW MODE SIGNAL
34	BR/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G/Y	PASSENGER SEAT BELT WARNING SIGNAL
37	R/Y	NON-MANUAL MODE SIGNAL
38	L/W	MANUAL MODE SHIFT DOWN SIGNAL
39	Y/B	MANUAL MODE SHIFT UP SIGNAL
40	G/W	MANUAL MODE SIGNAL

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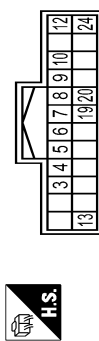
# CAN SYSTEM (WITHOUT ICC)

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[CAN]

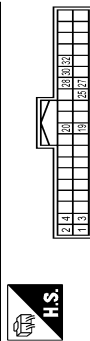
## CAN SYSTEM (WITHOUT ICC)

Connector No.	M47
Connector Name	SOMAR CONTROL UNIT
Connector Type	TH24FW-NH



Terminal No.	Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	CENTER SENSOR REAR LH
8	Y	CENTER SENSOR REAR RH
9	G	CENTER SENSOR FRONT LH
10	Y	CENTER SENSOR FRONT RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CAN-H
20	R	CAN-L [Without ADAS]
20	Y	ITS-CAN L [With ADAS]
24	B	GND

Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH4QFW-NH



Terminal No.	Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COMM (H)
20	LG	AV COMM (L)

25	P	REVERSE
27	L	CAN-H
28	R	CAN-L [Without ADAS]
28	Y	CAN-L [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Type	SB40FW



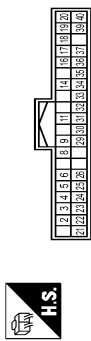
Terminal No.	Wire	Signal Name [Specification]
1	L	CAN-H
2	B	GROUND
3	Y/G	BATTERY POWER SUPPLY
4	V	ACC POWER SUPPLY
5	W	IGNITION CONTROL SIGNAL
6	V/W	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
7	W/R	AMBIENT SENSOR SIGNAL
8	GR/L	RR IN-VEHICLE SENSOR SIGNAL
9	BR	SUNLOAD SENSOR (DR) SIGNAL
10	V/W	FR IN-VEHICLE SENSOR SIGNAL
11	W	COMM (A/C AUTO AMP.-RR A/C CONT)
14	O/L	FR BLOWER MOTOR CONTROL SIGNAL
16	R/G	EACH DOOR MOTOR LIM SIGNAL
17	L/Y	EACH DOOR MOTOR POWER SUPPLY
21	P	CAN-L
22	B	GROUND
23	GR/L	IGNITION POWER SUPPLY
26	R	SENSOR GROUND
27	GR	FR IN-VEHICLE SENSOR SIGNAL
28	R	INTAKE SENSOR SIGNAL
29	O	SUNLOAD SENSOR (PASS) SIGNAL
31	O/L	COMM (RR A/C CONT.-A/C AUTO AMP.)
34	L/O	RR BLOWER MOTOR CONTROL SIGNAL
37	B	GROUND
38	G/W	RR A/C RELAY CONTROL SIGNAL

Connector No.	M59
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NH28FY-EX



Terminal No.	Wire	Signal Name [Specification]
1	R/L	IGN
2	B	GND
3	Y	DR1 (+)
4	Y/R	DR1 (-) DR2 (-)
6	Y/L	ASI (+)
7	Y/B	ASI (-)
8	B/Y	AS 2 (+)
9	Y	AS 2 (-)
18	O	ECZS (+)
19	W	ECZS (-)
22	SHIELD	GND
23	R/W	AIRBAG W/L
24	G/Y	SEATBELT W/L
25	R	CUTOFF TELLTALE
51	Y/G	SIDE SENSZ RH+
52	Y/L	SIDE SENSZ RH-
53	W	SIDE SENSZ LH+
54	R	SIDE SENSZ LH-
57	R/W	DEPLOYMENT INFORMATION
59	L	CAN-H
60	R	CAN LO

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Wire	Signal Name [Specification]
2	BR/Y	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	B/Y	RECEIVER/SENSOR GND
19	G/Y	TURN SIG RH OUTPUT (FRONT)
20	G	TURN SIG LH OUTPUT (FRONT)
21	P	NATS ANT AMP.
22	W/B	KYLS ENT RECEIVER RSSI
23	GR/R	SECURITY IND CONT
24	SB	DOUBLE LINK
25	LG/R	NATS ANT AMP
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	BK DOOR GRIP SW
31	W/G	DR DOOR LINK CKL SENSOR
32	LG	COMBI SW OUTPUT 5
34	W	COMBI SW OUTPUT 3
35	R/W	COMBI SW OUTPUT 2
36	SB	COMBI SW OUTPUT 1
37	G/Y	SHIF T P
39	L	CAN-H
40	P	CAN-L

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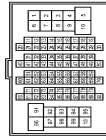
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[CAN]

## CAN SYSTEM (WITHOUT ICC)

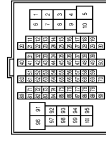
Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L/W	-
3	R/B	-
4	L	-
5	Y	-
7	W/G	-
8	P/B	-
9	W/B	-
10	G	-
11	L	-
12	P	-
13	P/B	-
14	BR	-
15	O/L	-
16	SB	-
18	BR	-
19	Y/G	-
20	BR/Y	-
21	V	-
22	L	-
23	Y	-
24	L/W	-
28	O	-
28	R/W	-
30	O/L	-
31	Y	-
32	GR/R	-
34	r	-
35	R	-
36	B/O	-
37	G/Y	-
38	G	-
40	SB	-
41	W/R	-
42	R	-
43	V	-

54	GR/L	-
91	BR	-
92	L/W	-
94	Y/B	-
95	L/R	-
97	R	-
98	O/L	-
100	W/B	-

Connector No.	M82
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
4	V/W	-
5	G/R	-
6	P	-
9	GR/L	-
10	Y/R	-
11	L/R	-
12	W/G	-
13	BR/Y	-
14	LG	-
15	BR/W	-
16	B/Y	-
17	W/B	-
18	GR/R	-
20	W/R	-
21	B	-
22	R/L	-
23	G/R	-
24	R/W	-
25	W/L	-
26	R	-
27	L	-
28	B/SB	-
35	G	-
36	Y	-
37	R	-

38	G/Y	-
39	O	-
40	W	-
41	R	-
42	B	-
43	G	-
44	SHIELD	-
46	B	-
47	W	-
48	SHIELD	-
49	W	-
50	SHIELD	-
52	GR	-
53	LG/R	-
54	LG/R	-
55	R/G	-
56	B/O	-
57	SB	-
66	V	-
91	G/R	-
92	GR	-
93	O	-
95	SB	-
96	G/R	-
97	GR/L	-
98	G/W	-
99	P	-
100	L	-

Connector No.	M86
Connector Name	LOW TIRE PRESSURE WARNING CONTROL UNIT
Connector Type	TH432FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	CAN-L
2	L	CAN-H
3	O/L	RR TIRE PRESSURE RECEIVER SIGNAL
4	L	RL TIRE PRESSURE RECEIVER SIGNAL
5	R/L	FR TIRE PRESSURE RECEIVER SIGNAL
6	W/G	FL TIRE PRESSURE RECEIVER SIGNAL

7	SB	RR TIRE PRESSURE RECEIVER POWER SUPPLY
8	GR	RL TIRE PRESSURE RECEIVER POWER SUPPLY
9	R/W	FR TIRE PRESSURE RECEIVER POWER SUPPLY
10	LG	FL TIRE PRESSURE RECEIVER POWER SUPPLY
15	GR	IGN
19	L/R	RR TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)
20	P	RL TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)
21	G/R	FR TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)
22	BR/Y	FL TIRE PRESSURE RECEIVER SIGNAL (SENSITIVITY)
53	V/W	RR TIRE PRESSURE RECEIVER GND
54	R/B	RL TIRE PRESSURE RECEIVER GND
55	W/L	FR TIRE PRESSURE RECEIVER GND
28	BR/W	FL TIRE PRESSURE RECEIVER GND
32	B	GND

Connector No.	M89
Connector Name	TCU
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y/R	BAT
2	B	GND
3	BR	ACC
4	GR/L	IGN
5	V	ACC OUT
6	BR	-
7	B	GND
9	L	V-CAN H
10	P	V-CAN L
18	Y/G	MICROPHONE VCC
19	Y/L	MICROPHONE SIGNAL
20	SHIELD	MICROPHONE GND
21	Y	MICROPHONE VCC
22	BR	SOUND SIGNAL
23	SHIELD	MICROPHONE GND
34	G	SOS CALL SWITCH SIGNAL
35	O	SOS SWITCH LED SIGNAL

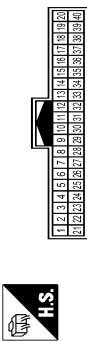
# CAN SYSTEM (WITHOUT ICC)

< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

Connector No.	M119
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH



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

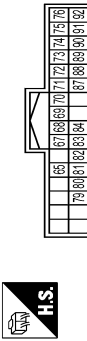
36	SHIELD	
37	SHIELD	
38	GR/R	
39	BR	
40	SHIELD	

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



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

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH22FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
65	W	PARKING BRAKE SIGNAL
67	W	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL

Terminal No.	Color Of Wire	Signal Name [Specification]
69	O	INTELLIGENT KEY IDENTIFICATION SIGNAL
70	BR	
71	SHIELD	MICROPHONE SHIELD
72	Y	MICROPHONE VCC [With DCM]
73	Y/G	MICROPHONE VCC [Without DCM]
74	P	CAN-L
75	LG	AV COMM (L)
76	LG	AV COMM (L)
77	L/O	DIMMER SIGNAL
78	GR/L	IGNITION SIGNAL
79	R/Y	REVERSE SIGNAL
80	BR/W	VEHICLE SPEED SIGNAL (3-PULSE)
81	SHIELD	SHIELD
82	W/B	COMPOSITE IMAGE SYNC SIGNAL
83	BR	MICROPHONE SIGNAL [With DCM]
84	Y/L	MICROPHONE SIGNAL [Without DCM]
85	SHIELD	SHIELD
86	Y/L	COMM (DISP-COMT)
87	L	CAN-H
88	SB	AV COMM (H)
89	SE	AV COMM (H)

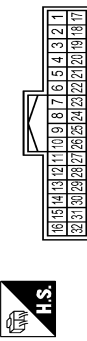
Connector No.	M222
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	
2	SB	
3	L	
4	W/B	
5	SHIELD	
6	LG	
7	V	
8	W	
9	O	
10	SHIELD	
11	W/L	
12	L	

Terminal No.	Color Of Wire	Signal Name [Specification]
13	P	
14	SHIELD	
15	G	
16	V	
17	W	
18	G/R	
19	Y	
20	BR	
21	LG	
22	LG	
23	P	
24	R/W	
25	L/O	
26	GR/L	
27	W	
28	V	
29	BR/W	
30	Y/G	
31	Y/L	
32	B	
33	R	
34	W	
35	SHIELD	
36	SHIELD	
37	SHIELD	
38	GR/R	
39	BR	
40	SHIELD	

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	
2	V	
3	B	
4	Y	
5	B/R	
6	B/Y	

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JRMWG0966GB

# CAN SYSTEM (WITHOUT ICC)

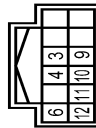
< WIRING DIAGRAM >

[CAN]

## CAN SYSTEM (WITHOUT ICC)

7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
14	B/Y	-
15	W/R	-
18	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	B	-
24	SHIELD	-
25	Y/G	-
26	B/SB	-
27	W/G	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	B/R	-

Connector No.	R24
Connector Name	AUTO ANTI-SKIDDING INSIDE MIRROR
Connector Type	TH12FW-NH-B



Terminal No.	Color Of Wire	Signal Name [Specification]
3	B	GROUND
4	B/R	AUTO ANTI-SKIDDING OUTSIDE MIRROR CONTROL SIGNAL
6	B/R	IGNITION POWER SUPPLY
9	B/Y	AUTO ANTI-SKIDDING OUTSIDE MIRROR GROUND
10	B/Y	BATTERY POWER SUPPLY
11	B	CAN-L
12	B/SB	CAN-H

JRMWG0967GB

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CAN]

## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Interview Sheet

INFOID:0000000010261057

#### 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

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# MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

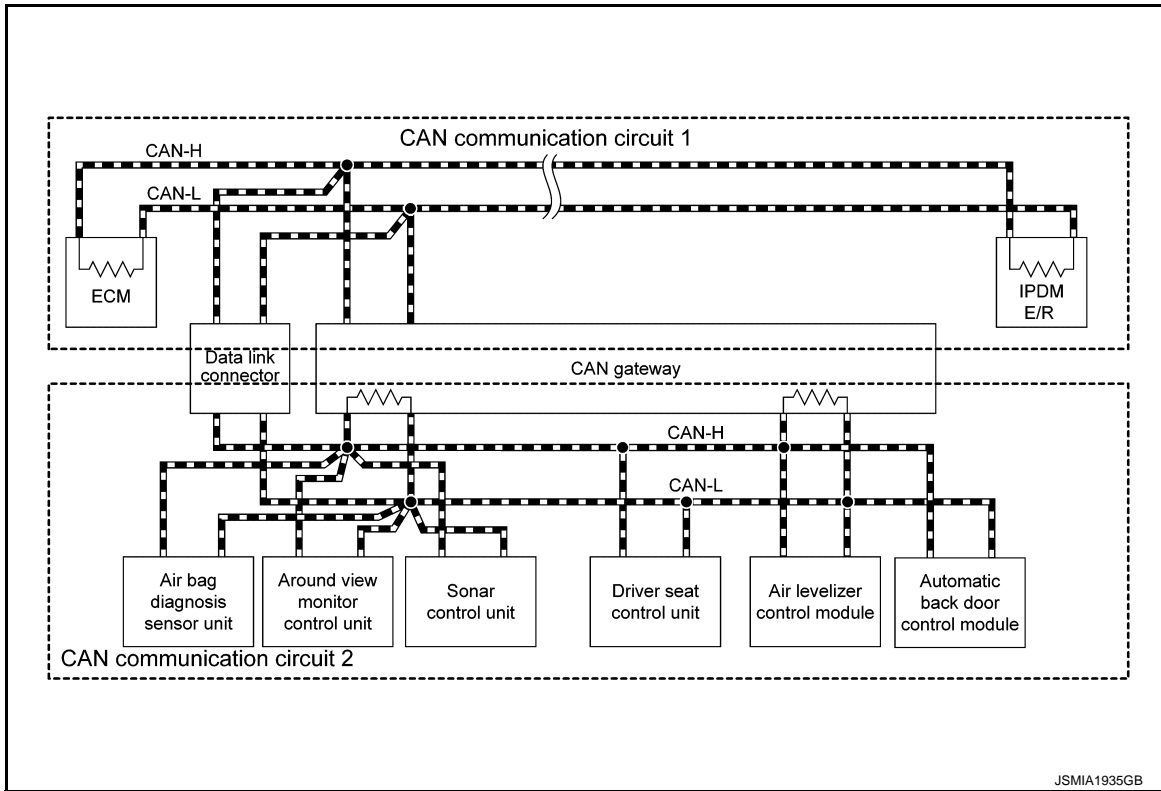
## DTC/CIRCUIT DIAGNOSIS

### MALFUNCTION AREA CHART

#### System Diagram

INFOID:000000010261058

#### WITHOUT ICC SYSTEM



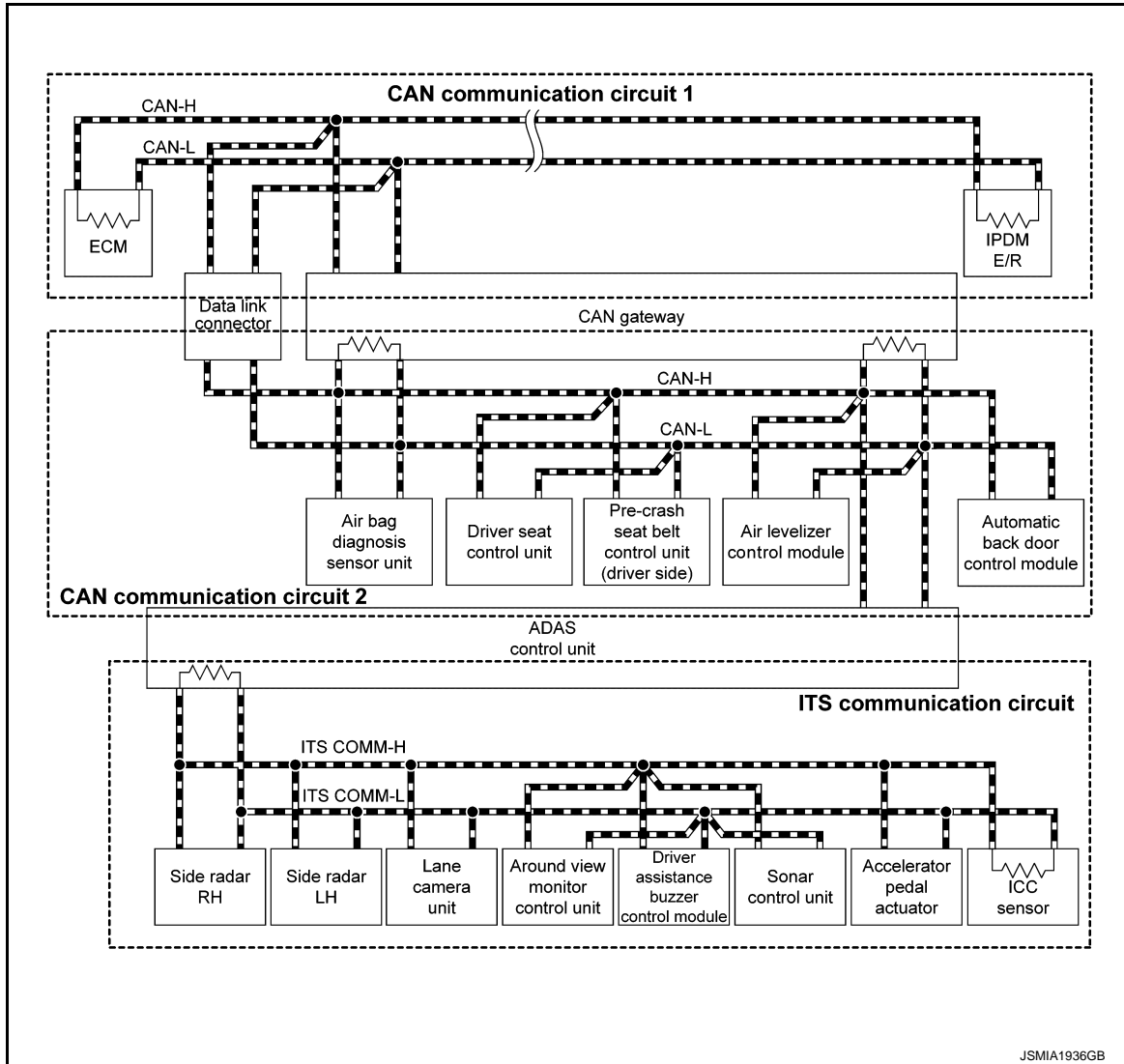


# MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

WITH ICC SYSTEM



JSMIA1936GB

## CAN Communication Circuit

INFOID:000000010261059

### MAIN LINE

Malfunction area	Reference
Main line between ABS actuator and electric unit (control unit) and data link connector	<a href="#">LAN-68. "Diagnosis Procedure"</a>
Main line between data link connector and driver seat control unit	<a href="#">LAN-69. "Diagnosis Procedure"</a>
Main line between driver seat control unit and automatic back door control module	<a href="#">LAN-70. "Diagnosis Procedure"</a>

### BRANCH LINE

Malfunction area	Reference
ECM branch line circuit	<a href="#">LAN-76. "Diagnosis Procedure"</a>
Transfer control unit branch line circuit	<a href="#">LAN-77. "Diagnosis Procedure"</a>
ABS actuator and electric unit (control unit) branch line circuit	<a href="#">LAN-78. "Diagnosis Procedure"</a>
TCM branch line circuit	<a href="#">LAN-79. "Diagnosis Procedure"</a>
AFS control unit branch line circuit	<a href="#">LAN-80. "Diagnosis Procedure"</a>
AV control unit branch line circuit	<a href="#">LAN-81. "Diagnosis Procedure"</a>

# MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
BCM branch line circuit	<a href="#">LAN-82, "Diagnosis Procedure"</a>
CAN gateway branch line circuit (CAN communication circuit 1)	<a href="#">LAN-83, "Diagnosis Procedure"</a>
CAN gateway branch line circuit (CAN communication circuit 2)	<a href="#">LAN-84, "Diagnosis Procedure"</a>
Data link connector branch line circuit (CAN communication circuit 1)	<a href="#">LAN-85, "Diagnosis Procedure"</a>
Data link connector branch line circuit (CAN communication circuit 2)	<a href="#">LAN-86, "Diagnosis Procedure"</a>
High beam assist control module branch line circuit	<a href="#">LAN-87, "Diagnosis Procedure"</a>
A/C auto amp. branch line circuit	<a href="#">LAN-88, "Diagnosis Procedure"</a>
Combination meter branch line circuit	<a href="#">LAN-89, "Diagnosis Procedure"</a>
Steering angle sensor branch line circuit	<a href="#">LAN-90, "Diagnosis Procedure"</a>
TCU branch line circuit	<a href="#">LAN-91, "Diagnosis Procedure"</a>
Low tire pressure warning control unit branch line circuit	<a href="#">LAN-92, "Diagnosis Procedure"</a>
IPDM E/R branch line circuit	<a href="#">LAN-93, "Diagnosis Procedure"</a>
Air bag diagnosis sensor unit branch line circuit	<a href="#">LAN-94, "Diagnosis Procedure"</a>
Around view monitor control unit	<a href="#">LAN-95, "Diagnosis Procedure"</a>
Sonar control unit	<a href="#">LAN-96, "Diagnosis Procedure"</a>
Driver seat control unit branch line circuit	<a href="#">LAN-97, "Diagnosis Procedure"</a>
Pre-crash seat belt control unit (driver side) branch line circuit	<a href="#">LAN-98, "Diagnosis Procedure"</a>
Air levelizer control module branch line circuit	<a href="#">LAN-99, "Diagnosis Procedure"</a>
ADAS control unit branch line circuit	<a href="#">LAN-100, "Diagnosis Procedure"</a>
Automatic back door control module branch line circuit	<a href="#">LAN-101, "Diagnosis Procedure"</a>

## SHORT CIRCUIT

Malfunction area	Reference
CAN communication circuit 1	<a href="#">LAN-108, "Diagnosis Procedure"</a>
CAN communication circuit 2	<a href="#">LAN-110, "Diagnosis Procedure"</a>

## ITS Communication Circuit

INFOID:000000010261060

## MAIN LINE

Malfunction area	Reference
Main line between side radar RH and side radar LH	<a href="#">LAN-71, "Diagnosis Procedure"</a>
Main line between side radar LH and around view monitor control unit	<a href="#">LAN-72, "Diagnosis Procedure"</a>
Main line between side radar LH and lane camera unit	<a href="#">LAN-73, "Diagnosis Procedure"</a>
Main line between lane camera unit and around view monitor control unit	<a href="#">LAN-74, "Diagnosis Procedure"</a>
Main line between around view monitor control unit and accelerator pedal actuator	<a href="#">LAN-75, "Diagnosis Procedure"</a>

## BRANCH LINE

Malfunction area	Reference
Side radar RH branch line circuit	<a href="#">LAN-102, "Diagnosis Procedure"</a>
Side radar LH branch line circuit	<a href="#">LAN-103, "Diagnosis Procedure"</a>
Lane camera unit branch line circuit	<a href="#">LAN-104, "Diagnosis Procedure"</a>

# MALFUNCTION AREA CHART

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

Malfunction area	Reference
Driver assistance buzzer control module branch line circuit	<a href="#">LAN-105. "Diagnosis Procedure"</a>
Around view monitor control unit branch line circuit	<a href="#">LAN-95. "Diagnosis Procedure"</a>
Sonar control unit branch line circuit	<a href="#">LAN-96. "Diagnosis Procedure"</a>
Accelerator pedal actuator branch line circuit	<a href="#">LAN-106. "Diagnosis Procedure"</a>
ICC sensor branch line circuit	<a href="#">LAN-107. "Diagnosis Procedure"</a>

## SHORT CIRCUIT OR OPEN CIRCUIT

Malfunction area	Reference
ITS communication circuit	<a href="#">LAN-112. "Diagnosis Procedure"</a>

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# MAIN LINE BETWEEN ABS AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN ABS AND DLC CIRCUIT

### Diagnosis Procedure

INFOID:000000010261061

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 E107
  - Harness connector M82

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.
  - ABS actuator and electric unit (control unit)
  - Harness connectors E107 and M82
2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

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

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

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M82	1	M4	6	Existed
	6		14	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 ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000010261062

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 M19
  - Harness connector B2

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 M19 and B2.
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.	
M4	13	M19	71	Existed
	12		72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

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

1. Disconnect the harness connectors B24 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B2	71	B24	13	Existed
	72		12	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 driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

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# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### Diagnosis Procedure

INFOID:000000010261063

#### 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.
  - CAN gateway
  - Harness connectors B460 and B24
  - Automatic back door control module
4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	B26	7	Existed
	12		6	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 driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

### Diagnosis Procedure

INFOID:000000010261064

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 B239
  - Harness connector B63

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 B239 and B63
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.	
B243	4	B239	7	Existed
	3		3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

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

1. Disconnect the connector of side radar LH.
2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness connector		Side radar LH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B63	7	B74	4	Existed
	3		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 RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.

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# MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:000000011508505

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 B2
  - Harness connector M19

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 B2 and M19
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.	
B74	4	B2	27	Existed
	3		28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

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

1. Disconnect the connector of around view monitor control unit.
2. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M19	27	B48	27	Existed
	28		28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M19 and the around view monitor control unit.



# MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261065

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 B2
  - Harness connector M19

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 B2 and M19
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.	
B74	4	B2	27	Existed
	3		28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

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

1. Disconnect the harness connectors M23 and R1.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M19	27	M23	29	Existed
	28		28	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 lane camera unit.

NO >> Repair the main line between the harness connectors M19 and M23.

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# MAIN LINE BETWEEN LANE AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN LANE AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:000000010261067

#### 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 R1 and M23.
  - Around view monitor control unit
4. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M23	29	M48	27	Existed
	28		28	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 lane camera unit and the around view monitor control unit.

NO >> Repair the main line between the harness connector M23 and the around view monitor control unit.

# MAIN LINE BETWEEN AVM AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## MAIN LINE BETWEEN AVM AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000010261068

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 M77
  - Harness connector E105

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.
  - Around view monitor control unit
  - Harness connectors M77 and E105.
2. Check the continuity between the around view monitor control unit harness connector and the harness connector.

Around view monitor control unit		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M48	27	M77	22	Existed
	28		23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the around view monitor control unit and the harness connector M77.

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

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

Harness connector		Accelerator pedal actuator harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E213	3	Existed
	23		9	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 lane camera unit and the accelerator pedal actuator.

NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261069

#### 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 ECM 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 ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the ECM branch line.

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

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

- VK56VD FOR USA AND CANADA: [EC-190, "Diagnosis Procedure"](#)
- VK56VD FOR MEXICO: [EC-743, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VK56VD FOR USA AND CANADA: [EC-581, "Removal and Installation"](#)
  - VK56VD FOR MEXICO: [EC-1043, "Removal and Installation"](#)

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

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

# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010261070

#### 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 transfer 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 transfer control unit.
2. Check the resistance between the transfer control unit harness connector terminals.

Transfer control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E59	12	13	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the transfer control unit branch line.

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

Check the power supply and the ground circuit of the transfer control unit. Refer to [DLN-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the transfer control unit. Refer to [DLN-112, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the transfer 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]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261071

#### 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.	
E36	41                      27	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-122. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-146. "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.

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000010261072

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 F1
  - Harness connector E7

Is the 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.	
F51	3 8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCM branch line.

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-190, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace the joint connector.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-153, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-190, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCM branch line.  
NO >> Repair the power supply and the ground circuit.

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# AFS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261074

#### 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.		
M151	1	13	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-111, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-163, "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.



# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261075

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 M222
  - Harness connector M119

Is the 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.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to [AV-232, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to [AV-282, "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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261076

#### 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 BCM 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 BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to [BCS-88. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-95. "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

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

### Diagnosis Procedure

INFOID:0000000010261077

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 terminals and connectors of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

### Diagnosis Procedure

INFOID:000000010261078

#### 1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

### Diagnosis Procedure

INFOID:000000010261079

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	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 (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).  
NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

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

### Diagnosis Procedure

INFOID:000000010261080

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M4	13	12	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 (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

# HBA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## HBA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011401796

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Auto anti- dazzling inside mirror (high beam assist control module)
  - Harness connector R1
  - Harness connector M23

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of auto anti - dazzling inside mirror (high beam assist control module).
2. Check the resistance between the auto anti - dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R24	12	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to [EXL-111, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to [MIR-34, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the high beam assist control module branch line.  
NO >> Repair the power supply and the ground circuit.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261081

#### 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 A/C auto amp. 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 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.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to [HAC-116, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-153, "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.



# M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261082

#### 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 combination meter 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 combination meter.
2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M34	21	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to [MWI-67, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-88, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the combination meter branch line.  
NO >> Repair the power supply and the ground circuit.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261083

#### 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 steering angle sensor 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 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.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-52, "Wiring Diagram"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-148, "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.

# TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## TCU BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261084

#### 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 TCU 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M99	9	10	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCU branch line.

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

Check the power supply and the ground circuit of the TCU. Refer to [AV-381, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-390, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCU branch line.  
NO >> Repair the power supply and the ground circuit.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261085

#### 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 low tire pressure warning 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 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the low tire pressure warning control unit branch line.

#### 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-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-63, "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.

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261086

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - IPDM E/R
  - Harness connector E105
  - Harness connector M77

Is the 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.	
E13	27	Approx. 108 – 132
	26	

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-33, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "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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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261073

#### **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 terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Replace the main harness.

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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Check the air bag diagnosis sensor unit. Refer to [SRC-37, "Work Flow"](#).

Is the inspection result normal?

- YES >> Replace the main harness.  
NO >> Replace parts whose air bag system has a malfunction.

# AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261087

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Around view monitor control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of around view monitor control unit.
3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

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

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-236. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-304. "Removal and Installation"](#).

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

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

# SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261088

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Sonar control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

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

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-237, "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-309, "Removal and Installation"](#).

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

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



# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261089

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
  - Harness connector B24
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
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.		
B451	1	17	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-67. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-135. "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.

# PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261090

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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)		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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (LH side). Refer to [SB-6, "SEAT BELT RETRACTOR : Removal and Installation"](#).

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

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

# E-SUS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## E-SUS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261091

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 levelizer control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of air levelizer control module.
3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
NO >> Repair the air levelizer control module branch line.

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

Check the power supply and the ground circuit of the air levelizer control module. Refer to [SCS-89, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the air levelizer control module. Refer to [SCS-94, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the air levelizer control module 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:000000010261092

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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.		
B52	1	2	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the ADAS control unit branch line.

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

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-159, "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.

# PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## PWBD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261093

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Automatic back door control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of automatic back door control module.
3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the automatic back door control module branch line.

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

Check the power supply and the ground circuit of the automatic back door control module. Refer to [DLK-120, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control module. Refer to [DLK-268, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the automatic back door control module branch line.

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

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# RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261094

#### 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-341. "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.		
B243	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-339. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-384. "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.

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261095

#### 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.		
B74	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-338, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-384, "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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# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261096

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 R1
  - Harness connector M23

Is the 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 >> Repair the lane camera unit branch line.

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

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-337, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-383, "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.



# BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## BSW/BUZZER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011401800

#### 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 drive assistance buzzer control module 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 drive assistance buzzer control module.
2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M150	3	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to [DAS-339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the drive assistance buzzer control module. Refer to [DAS-388, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the drive assistance buzzer control module 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:000000010261097

#### 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 accelerator pedal actuator 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 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.		
E213	3	9	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the accelerator pedal actuator branch line.

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

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-337, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal assembly. Refer to [DAS-381, "Exploded View"](#).  
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
NO >> Repair the power supply and the ground circuit.

# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000010261098

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 E218
  - Harness connector E219

Is the 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.	
E88	3	Approx. 108 – 132
	6	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to [CCS-116, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-133, "Removal and Installation"](#).

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

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000010261099

#### 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-64. "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.	
M4	6 14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN]

## 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

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:0000000010261100

#### 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-64. "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.	
M4	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	13	Ground	Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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

[CAN]

< DTC/CIRCUIT DIAGNOSIS >

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

### 6.CHECK UNIT REPRODUCTION

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

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

**NOTE:**

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

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]

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:0000000010261101

#### 1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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-64. "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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - ADAS control unit
  - Harness connector B63
  - Harness connector B239

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.	
B52	6	E88	3	Existed
	7		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ADAS control unit branch line. (ITS communication circuit side). Refer to [LAN-64. "System Diagram"](#).

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

1. Disconnect the following harness connectors.
  - Side radar RH
  - Side radar LH
  - Lane camera unit
  - Around view monitor control unit
  - Driver assistance buzzer control module
  - Sonar control 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.		
B52	6	7	Not existed



# ITS COMMUNICATION CIRCUIT

[CAN]

## < DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Check the harness and repair the root cause.

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

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

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B52	6		Not existed
	7		Not existed

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Check the harness and repair 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.		
6	7	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 circuit.  
**NOTE:**  
ADAS control unit and ICC sensor have a termination circuit. Check other units first.
4. Connect the battery cable to the negative terminal. Check if the symptoms described in the “Symptom (Results from interview with customer)” are reproduced.  
**NOTE:**  
Although unit-related error symptoms occur, do not confuse them with other symptoms.

Inspection result

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

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## PRECAUTION

### PRECAUTIONS

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

INFOID:000000010261102

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. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

**WARNING:**

**Always observe the following items for preventing accidental activation.**

- 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 "SRS AIR BAG".
- Never 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:**

**Always observe the following items for preventing accidental activation.**

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 Removing Battery Terminal

INFOID:000000011402135

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

**NOTE:**

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

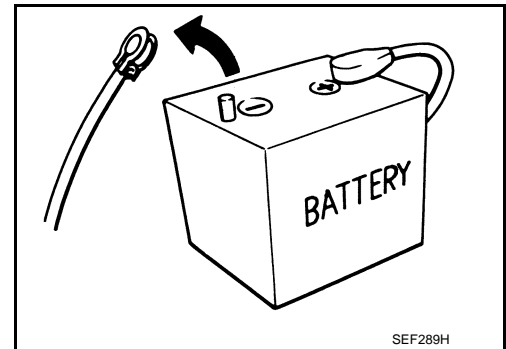
**NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

**NOTE:**

The removal of 12V battery may cause a DTC detection error.



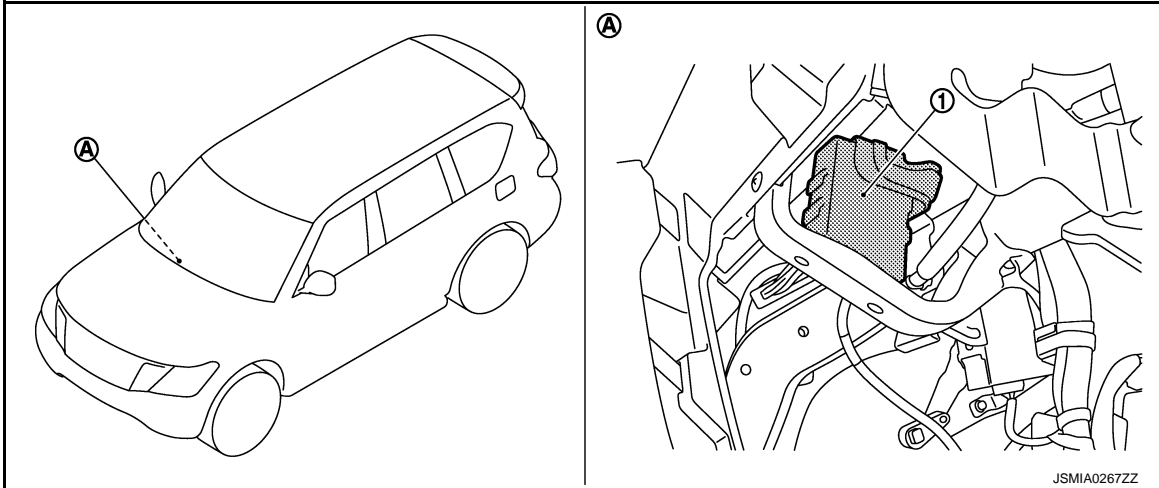
< SYSTEM DESCRIPTION >

# SYSTEM DESCRIPTION

## COMPONENT PARTS

### Component Parts Location

INFOID:0000000010261103



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

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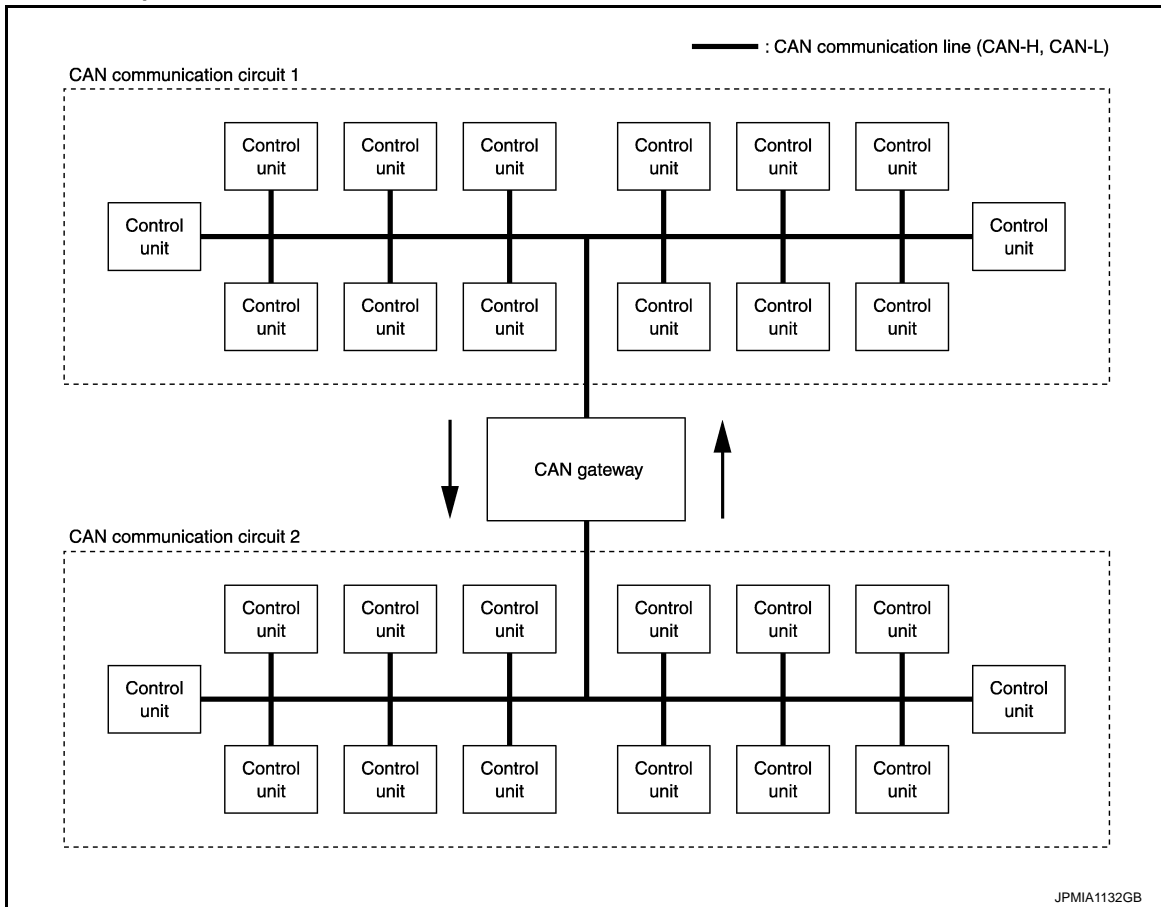
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## SYSTEM

### System Description

INFOID:000000010261104



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

# DIAGNOSIS SYSTEM (CAN GATEWAY)

< SYSTEM DESCRIPTION >

[CAN GATEWAY]

## DIAGNOSIS SYSTEM (CAN GATEWAY)

### CONSULT Function

INFOID:000000010261105

### APPLICATION ITEM

CONSULT 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-118, "DTC Index"](#).

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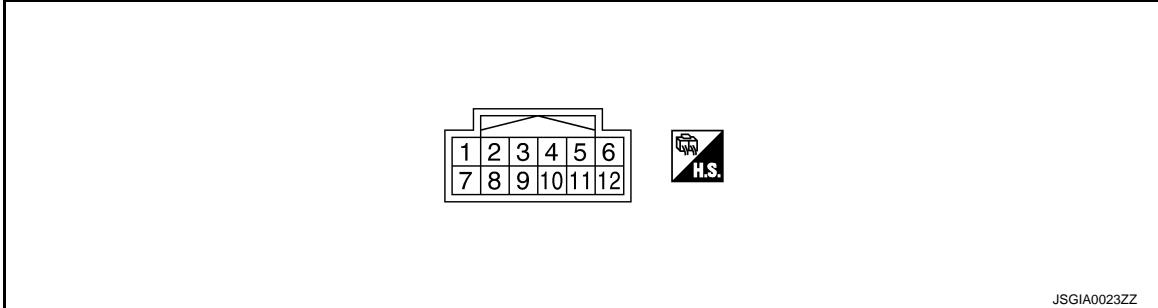
# ECU DIAGNOSIS INFORMATION

## CAN GATEWAY

### Reference Value

INFOID:000000010261106

### 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 (Y)	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 (GR)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
10 (R)	—	CAN-L (CAN communication circuit 2)	Input/ Output	—	—
11 (B)	Ground	Ground	—	Ignition switch ON	0 V
12 (R)	—	CAN-L (CAN communication circuit 2)	Input/ Output	—	—

### DTC Inspection Priority Chart

INFOID:000000010261107

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:000000010261108

#### NOTE:

# CAN GATEWAY

## < ECU DIAGNOSIS INFORMATION >

[CAN GATEWAY]

- 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-124</a>
U1010: CONTROL UNIT(CAN)		<a href="#">LAN-125</a>
B2600: CONFIG ERROR	WRONG DATA	<a href="#">LAN-126</a>
	NOT CONFIGURED	

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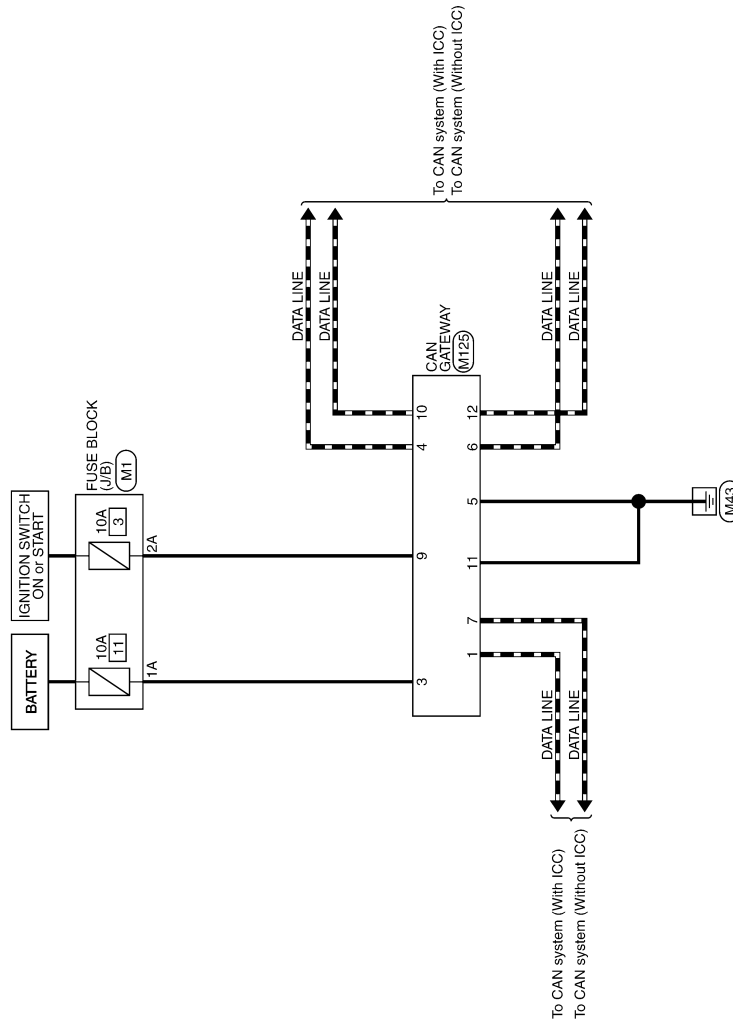
# WIRING DIAGRAM

## CAN GATEWAY SYSTEM

### Wiring Diagram

INFOID:000000010261109

CAN GATEWAY SYSTEM



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# CAN GATEWAY SYSTEM

< WIRING DIAGRAM >

[CAN GATEWAY]

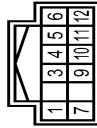
## CAN GATEWAY SYSTEM

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	Y	-
2A	GR	-
3A	W	-
4A	Y/G	-
5A	V	-
6A	L/W	-
7A	LG	-
8A	W	-

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



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

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## BASIC INSPECTION

### ADDITIONAL SERVICE WHEN REPLACING CAN GATEWAY

#### Description

INFOID:0000000010261110

#### BEFORE REPLACEMENT

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

**NOTE:**

If “Before Replace ECU” of “Read / Write Configuration” Can not be used, use the “Manual Configuration” after replacing CAN gateway.

#### AFTER REPLACEMENT

**CAUTION:**

Follow the instructions listed below. Failure to do this may cause malfunctions to the CAN gateway.:

- When replacing CAN gateway, you must perform “Read / Write Configuration” or “Manual Configuration” with CONSULT.
- Complete the procedure of “Read / Write Configuration” or “Manual Configuration” in order.
- If you set incorrect “Read / Write Configuration” or “Manual Configuration”, incidents might occur.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.
- Never perform “Read / Write Configuration” or “Manual Configuration” except for new CAN gateway.

#### Work Procedure

INFOID:0000000010261111

### 1.SAVING VEHICLE SPECIFICATION

ⓅCONSULT Configuration

Perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [LAN-123. "Description"](#).

**NOTE:**

If “Before Replace ECU” of “Read / Write Configuration” can not be used, use the “Manual Configuration” after replacing CAN gateway.

>> GO TO 2.

### 2.REPLACE CAN GATEWAY

Replace CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).

>> GO TO 3.

### 3.WRITING VEHICLE SPECIFICATION

ⓅCONSULT Configuration

Perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” to write vehicle specification. Refer to [LAN-123. "Work Procedure"](#).

>> WORK END

## CONFIGURATION (CAN GATEWAY)

### Description

INFOID:0000000010261112

Vehicle specification needs to be written with CONSULT because it is not written after replacing CAN gateway. Configuration has three functions as follows

Function		Description
Read / Write Configuration	Before replace ECU	<ul style="list-style-type: none"> <li>• Reads the vehicle configuration of current CAN gateway.</li> <li>• Saves the read vehicle configuration.</li> </ul>
	After replace ECU	Writes the vehicle configuration with saved data.
Manual Configuration		Writes the vehicle configuration with manual selection.

**CAUTION:**

- Follow the instructions listed below. Failure to do this may cause malfunctions to the CAN gateway.:**
- **When replacing CAN gateway, you must perform “Read / Write Configuration” or “Manual Configuration” with CONSULT.**
  - **Complete the procedure of “Read / Write Configuration” or “Manual Configuration” in order.**
  - **If you set incorrect “Read / Write Configuration” or “Manual Configuration”, incidents might occur.**
  - **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**
  - **Never perform “Read / Write Configuration” or “Manual Configuration” except for new CAN gateway.**

### Work Procedure

INFOID:0000000010261113

#### 1. WRITING MODE SELECTION

CONSULT Configuration

Select “Re/programming, Configuration” of CAN gateway.

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

#### 2. PERFORM “AFTER REPLACE ECU” OF “READ / WRITE CONFIGURATION”

CONSULT Configuration

Perform “After Replace ECU” of “Read / Write Configuration”.

>> GO TO 4.

#### 3. PERFORM “MANUAL CONFIGURATION”

CONSULT Configuration

1. Select “Manual Configuration”.
2. Touch “Next”.
3. Touch “OK”.
4. Check that the configuration has been successfully written and touch “End”.

>> GO TO 4.

#### 4. CHECK ALL ECU SELF DIAGNOSTIC RESULT

1. Erase all ECU self-diagnosis results using CONSULT.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON and wait for 2 seconds or more.
4. Check that all ECU self-diagnosis results have no DTC (e.g. U1000 and U1001) of CAN communication.

>> WORK END

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# DTC/CIRCUIT DIAGNOSIS

## U1000 CAN COMM CIRCUIT

### Description

INFOID:0000000010261114

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-31, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

### DTC Logic

INFOID:0000000010261115

#### DTC DETECTION LOGIC

DTC	CONSULT 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:0000000010261116

#### 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-21, "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to [GI-43, "Intermittent Incident"](#).

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

## U1010 CONTROL UNIT (CAN)

### Description

INFOID:0000000010261117

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-31. "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

### DTC Logic

INFOID:0000000010261118

#### DTC DETECTION LOGIC

DTC	CONSULT 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:0000000010261119

#### 1. REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).

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# B2600 CONFIG ERROR

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

## B2600 CONFIG ERROR

### Description

INFOID:0000000010261120

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

### DTC Logic

INFOID:0000000010261121

### DTC DETECTION LOGIC

DTC	CONSULT 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:0000000010261122

#### 1. REPLACE CAN GATEWAY

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

>> Replace CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN GATEWAY]

## POWER SUPPLY AND GROUND CIRCUIT

### Diagnosis Procedure

INFOID:0000000010261123

#### 1.CHECK FUSE

Check that the following fuse are not blown.

Signal name	Fuse No.
Battery power supply	11
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:000000010261124

**CAUTION:**

Before replacing CAN gateway, perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification. Refer to [LAN-122, "Description"](#).

**REMOVAL**

1. Remove glove box assembly. Refer to [IP-14, "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:**

To prevent malfunction, Be sure to perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” when replacing CAN gateway. Refer to [LAN-122, "Description"](#).



# MAIN LINE BETWEEN ABS AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402149

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 E107
  - Harness connector M82

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.
  - ABS actuator and electric unit (control unit)
  - Harness connectors E107 and M82
2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

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

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

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M82	1	M4	6	Existed
	6		14	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 ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

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# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011402151

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 M19
  - Harness connector B2

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 M19 and B2.
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.	
M4	13	M19	71	Existed
	12		72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

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

1. Disconnect the harness connectors B24 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B2	71	B24	13	Existed
	72		12	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 driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### Diagnosis Procedure

INFOID:000000011402152

#### 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.
  - CAN gateway
  - Harness connectors B460 and B24
  - Automatic back door control module
4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	B26	7	Existed
	12		6	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 driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

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# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402158

#### 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 ECM 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 ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the ECM branch line.

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

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

- VK56VD FOR USA AND CANADA: [EC-190, "Diagnosis Procedure"](#)
- VK56VD FOR MEXICO: [EC-743, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VK56VD FOR USA AND CANADA: [EC-581, "Removal and Installation"](#)
  - VK56VD FOR MEXICO: [EC-1043, "Removal and Installation"](#)

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

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

# ABS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402160

#### 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.		
E36	41	27	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-122, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-146, "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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# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402161

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 F1
  - Harness connector E7

Is the 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.	
F51	3                      8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCM branch line.

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-190, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace the joint connector.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-153, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-190, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCM branch line.  
NO >> Repair the power supply and the ground circuit.

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402164

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 M222
  - Harness connector M119

Is the 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.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to [AV-232, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to [AV-282, "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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402165

#### 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 BCM 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 BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to [BCS-88. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-95. "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.



# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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

### Diagnosis Procedure

INFOID:000000011402166

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 terminals and connectors of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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

### Diagnosis Procedure

INFOID:000000011402167

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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

### Diagnosis Procedure

INFOID:000000011402168

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	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 (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).  
NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

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

### Diagnosis Procedure

INFOID:000000011402169

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M4	13	12	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 (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

# HBA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## HBA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402170

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Auto anti- dazzling inside mirror (high beam assist control module)
  - Harness connector R1
  - Harness connector M23

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of auto anti - dazzling inside mirror (high beam assist control module).
2. Check the resistance between the auto anti - dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R24	12	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to [EXL-111, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to [MIR-34, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the high beam assist control module branch line.  
NO >> Repair the power supply and the ground circuit.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402171

#### 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 A/C auto amp. 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 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.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to [HAC-116, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-153, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011402172

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 combination meter 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 combination meter.
2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M34	21	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
 NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to [MWI-67, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-88, "Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the combination meter branch line.  
 NO >> Repair the power supply and the ground circuit.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402173

#### 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 steering angle sensor 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 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.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-52, "Wiring Diagram"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-148, "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.



# TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## TCU BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402174

#### 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 TCU 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M99	9	10	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCU branch line.

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

Check the power supply and the ground circuit of the TCU. Refer to [AV-381, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-390, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCU branch line.  
NO >> Repair the power supply and the ground circuit.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402175

#### 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 low tire pressure warning 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 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the low tire pressure warning control unit branch line.

#### 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-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-63, "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.

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402176

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - IPDM E/R
  - Harness connector E105
  - Harness connector M77

Is the 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.	
E13	27	Approx. 108 – 132
	26	

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-33, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "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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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402162

#### **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 terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Replace the main harness.

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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Check the air bag diagnosis sensor unit. Refer to [SRC-37, "Work Flow"](#).

Is the inspection result normal?

- YES >> Replace the main harness.  
NO >> Replace parts whose air bag system has a malfunction.

## AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402177

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Around view monitor control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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
	10	12
		Existed
		Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of around view monitor control unit.
3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M48	27	28
	28	
		Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

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

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-236. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-304. "Removal and Installation"](#).

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

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

# SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402178

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Sonar control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

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

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-237, "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-309, "Removal and Installation"](#).

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

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

# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402179

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
  - Harness connector B24
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
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.		
B451	1	17	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-67. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-135. "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.

# E-SUS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## E-SUS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402181

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 levelizer control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of air levelizer control module.
3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

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

Check the power supply and the ground circuit of the air levelizer control module. Refer to [SCS-89, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to [SCS-94, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the air levelizer control module branch line.

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



PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011402183

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Automatic back door control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of automatic back door control module.
3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the automatic back door control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control module. Refer to [DLK-120, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control module. Refer to [DLK-268, "Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the automatic back door control module branch line.  
 NO >> Repair the power supply and the ground circuit.

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000011402190

#### 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-64. "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.	
M4	6 14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 1)]

## 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 1)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000011402191

#### 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-64. "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.	
M4	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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 1)]

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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# MAIN LINE BETWEEN ABS AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402252

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 E107
  - Harness connector M82

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.
  - ABS actuator and electric unit (control unit)
  - Harness connectors E107 and M82
2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

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

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

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M82	1	M4	6	Existed
	6		14	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 ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011402254

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 M19
  - Harness connector B2

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 M19 and B2.
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.	
M4	13	M19	71	Existed
	12		72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

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

1. Disconnect the harness connectors B24 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B2	71	B24	13	Existed
	72		12	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 driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

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# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### Diagnosis Procedure

INFOID:000000011402255

#### 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.
  - CAN gateway
  - Harness connectors B460 and B24
  - Automatic back door control module
4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	B26	7	Existed
	12		6	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 driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.



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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

### Diagnosis Procedure

INFOID:000000011402256

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 B239
  - Harness connector B63

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 B239 and B63
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.	
B243	4	B239	7	Existed
	3		3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

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

1. Disconnect the connector of side radar LH.
2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness connector		Side radar LH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B63	7	B74	4	Existed
	3		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 RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.

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# MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:000000011508700

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 B2
  - Harness connector M19

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 B2 and M19
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.	
B74	4	B2	27	Existed
	3		28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

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

1. Disconnect the connector of around view monitor control unit.
2. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M19	27	B48	27	Existed
	28		28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M19 and the around view monitor control unit.

# MAIN LINE BETWEEN AVM AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## MAIN LINE BETWEEN AVM AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000011402260

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 M77
  - Harness connector E105

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.
  - Around view monitor control unit
  - Harness connectors M77 and E105.
2. Check the continuity between the around view monitor control unit harness connector and the harness connector.

Around view monitor control unit		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M48	27	M77	22	Existed
	28		23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the around view monitor control unit and the harness connector M77.

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

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

Harness connector		Accelerator pedal actuator harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E213	3	Existed
	23		9	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 lane camera unit and the accelerator pedal actuator.

NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

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# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402261

#### 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 ECM 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 ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the ECM branch line.

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

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

- VK56VD FOR USA AND CANADA: [EC-190, "Diagnosis Procedure"](#)
- VK56VD FOR MEXICO: [EC-743, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VK56VD FOR USA AND CANADA: [EC-581, "Removal and Installation"](#)
  - VK56VD FOR MEXICO: [EC-1043, "Removal and Installation"](#)

YES (Past error)>>Error was detected in the ECM 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:000000011402263

#### 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.		
E36	41	27	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-122, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-146, "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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# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402264

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 F1
  - Harness connector E7

Is the 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.	
F51	3                      8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCM branch line.

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-190, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace the joint connector.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-153, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-190, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCM branch line.  
NO >> Repair the power supply and the ground circuit.

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402267

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 M222
  - Harness connector M119

Is the 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.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to [AV-232, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to [AV-282, "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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402268

#### 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 BCM 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 BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to [BCS-88. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-95. "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.



# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

### Diagnosis Procedure

INFOID:000000011402269

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 terminals and connectors of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

### Diagnosis Procedure

INFOID:000000011402270

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

### Diagnosis Procedure

INFOID:000000011402271

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	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 (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

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

### Diagnosis Procedure

INFOID:000000011402272

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M4	13	12	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 (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

# HBA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## HBA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402273

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Auto anti- dazzling inside mirror (high beam assist control module)
  - Harness connector R1
  - Harness connector M23

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of auto anti - dazzling inside mirror (high beam assist control module).
2. Check the resistance between the auto anti - dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector		Resistance (Ω)
Connector No.	Terminal No.	
R24	12	11
		Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to [EXL-111, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to [MIR-34, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the high beam assist control module branch line.  
NO >> Repair the power supply and the ground circuit.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402274

#### 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 A/C auto amp. 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 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.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to [HAC-116, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-153, "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.



# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402276

#### 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 steering angle sensor 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 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.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-52, "Wiring Diagram"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-148, "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.



# TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## TCU BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402277

#### 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 TCU 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M99	9	10	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCU branch line.

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

Check the power supply and the ground circuit of the TCU. Refer to [AV-381, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-390, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCU branch line.  
NO >> Repair the power supply and the ground circuit.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402278

#### 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 low tire pressure warning 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 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the low tire pressure warning control unit branch line.

#### 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-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-63, "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.

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402279

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - IPDM E/R
  - Harness connector E105
  - Harness connector M77

Is the 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.	
E13	27	Approx. 108 – 132
	26	

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-33, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "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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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402265

#### **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 terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

#### **2.** CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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Check the air bag diagnosis sensor unit. Refer to [SRC-37, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

# AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402280

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Around view monitor control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of around view monitor control unit.
3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector		Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

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

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-236. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-304. "Removal and Installation"](#).

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

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

# SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402281

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Sonar control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

- YES-1 >> Models without ICC: GO TO 2.  
YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
NO >> Repair the sonar control unit branch line.

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

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-237, "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the sonar control unit. Refer to [AV-309, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the sonar control unit 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:000000011402282

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
  - Harness connector B24
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
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.		
B451	1	17	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-67. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-135. "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.

# E-SUS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## E-SUS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402284

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 levelizer control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of air levelizer control module.
3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

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

Check the power supply and the ground circuit of the air levelizer control module. Refer to [SCS-89, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to [SCS-94, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the air levelizer control module branch line.

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



## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402285

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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.	
B52	1	2
		Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the ADAS control unit branch line.

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

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-159, "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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LAN

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011402286

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Automatic back door control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of automatic back door control module.
3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the automatic back door control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control module. Refer to [DLK-120, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control module. Refer to [DLK-268, "Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the automatic back door control module branch line.  
 NO >> Repair the power supply and the ground circuit.

# RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402287

#### 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-341, "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.		
B243	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-339, "SIDE RADAR RH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-384, "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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# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402288

#### 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.		
B74	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-338, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-384, "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.

# BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## BSW/BUZZER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402290

#### 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 drive assistance buzzer control module 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 drive assistance buzzer control module.
2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M150	3	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to [DAS-339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the drive assistance buzzer control module. Refer to [DAS-388, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.  
NO >> Repair the power supply and the ground circuit.

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**APA BRANCH LINE CIRCUIT**

**Diagnosis Procedure**

INFOID:000000011402291

**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 accelerator pedal actuator 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 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.		
E213	3	9	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
 NO >> Repair the accelerator pedal actuator branch line.

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

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-337, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal assembly. Refer to [DAS-381, "Exploded View"](#).  
 YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
 NO >> Repair the power supply and the ground circuit.

# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402292

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 E218
  - Harness connector E219

Is the 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.	
E88	3                      6	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to [CCS-116, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-133, "Removal and Installation"](#).

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

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000011402293

#### 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-64. "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.	
M4	6 14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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



# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

## 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 2)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000011402294

#### 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-64. "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.	
M4	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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 2)]

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 2)]

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000011402295

#### 1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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-64. "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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - ADAS control unit
  - Harness connector B63
  - Harness connector B239

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.	
B52	6	E88	3	Existed
	7		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ADAS control unit branch line. (ITS communication circuit side). Refer to [LAN-64. "System Diagram"](#).

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

1. Disconnect the following harness connectors.
  - Side radar RH
  - Side radar LH
  - Lane camera unit
  - Around view monitor control unit
  - Driver assistance buzzer control module
  - Sonar control 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.		
B52	6	7	Not existed

# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 2)]

Is the inspection result normal?

- YES >> GO TO 5.  
NO >> Check the harness and repair the root cause.

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B52	6		Not existed
	7		Not existed

Is the inspection result normal?

- YES >> GO TO 6.  
NO >> Check the harness and repair 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.		
6	7	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 circuit.  
**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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LAN

# MAIN LINE BETWEEN ABS AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402301

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 E107
  - Harness connector M82

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.
  - ABS actuator and electric unit (control unit)
  - Harness connectors E107 and M82
2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

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

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

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M82	1	M4	6	Existed
	6		14	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 ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011402303

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 M19
  - Harness connector B2

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 M19 and B2.
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.	
M4	13	M19	71	Existed
	12		72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

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

1. Disconnect the harness connectors B24 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B2	71	B24	13	Existed
	72		12	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 driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

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LAN

# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### Diagnosis Procedure

INFOID:000000011402304

#### 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.
  - CAN gateway
  - Harness connectors B460 and B24
  - Automatic back door control module
4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	B26	7	Existed
	12		6	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 driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.



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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

### Diagnosis Procedure

INFOID:000000011402305

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 B239
  - Harness connector B63

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 B239 and B63
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.	
B243	4	B239	7	Existed
	3		3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

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

1. Disconnect the connector of side radar LH.
2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness connector		Side radar LH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B63	7	B74	4	Existed
	3		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 RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.

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LAN

# MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402306

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 B2
  - Harness connector M19

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 B2 and M19
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.	
B74	4	B2	27	Existed
	3		28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

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

1. Disconnect the harness connectors M23 and R1.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M19	27	M23	29	Existed
	28		28	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 lane camera unit.

NO >> Repair the main line between the harness connectors M19 and M23.

# MAIN LINE BETWEEN LANE AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN LANE AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:000000011402308

#### 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 R1 and M23.
  - Around view monitor control unit
4. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M23	29	M48	27	Existed
	28		28	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 lane camera unit and the around view monitor control unit.

NO >> Repair the main line between the harness connector M23 and the around view monitor control unit.

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# MAIN LINE BETWEEN AVM AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## MAIN LINE BETWEEN AVM AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000011402309

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 M77
  - Harness connector E105

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.
  - Around view monitor control unit
  - Harness connectors M77 and E105.
2. Check the continuity between the around view monitor control unit harness connector and the harness connector.

Around view monitor control unit		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M48	27	M77	22	Existed
	28		23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the around view monitor control unit and the harness connector M77.

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

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

Harness connector		Accelerator pedal actuator harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E213	3	Existed
	23		9	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 lane camera unit and the accelerator pedal actuator.

NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402310

#### 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 ECM 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 ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the ECM branch line.

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

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

- VK56VD FOR USA AND CANADA: [EC-190, "Diagnosis Procedure"](#)
- VK56VD FOR MEXICO: [EC-743, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VK56VD FOR USA AND CANADA: [EC-581, "Removal and Installation"](#)
  - VK56VD FOR MEXICO: [EC-1043, "Removal and Installation"](#)

- YES (Past error)>>Error was detected in the ECM 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 3)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402312

#### 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.		
E36	41	27	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-122, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-146, "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.

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402313

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 F1
  - Harness connector E7

Is the 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.	
F51	3 8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCM branch line.

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-190, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace the joint connector.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-153, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-190, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCM branch line.  
NO >> Repair the power supply and the ground circuit.

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## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402315

#### 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.		
M151	1	13	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-111, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-163, "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.



# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402316

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 M222
  - Harness connector M119

Is the 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.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to [AV-232, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to [AV-282, "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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402317

#### 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 BCM 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 BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to [BCS-88. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-95. "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

# 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:000000011402318

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 terminals and connectors of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

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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:000000011402319

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

### Diagnosis Procedure

INFOID:000000011402320

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	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 (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).  
NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

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

### Diagnosis Procedure

INFOID:000000011402321

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	13	12	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 (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).  
NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

# HBA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## HBA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402322

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Auto anti- dazzling inside mirror (high beam assist control module)
  - Harness connector R1
  - Harness connector M23

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of auto anti - dazzling inside mirror (high beam assist control module).
2. Check the resistance between the auto anti - dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R24	12	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to [EXL-111, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to [MIR-34, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the high beam assist control module branch line.  
NO >> Repair the power supply and the ground circuit.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402323

#### 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 A/C auto amp. 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 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.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to [HAC-116, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-153, "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.



M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011402324

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 combination meter 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 combination meter.
2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M34	21                      22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
 NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to [MWI-67, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-88, "Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the combination meter branch line.  
 NO >> Repair the power supply and the ground circuit.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:0000000011402325

#### 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 steering angle sensor 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 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.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-52, "Wiring Diagram"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-148, "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.

# TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## TCU BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402326

#### 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 TCU 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M99	9	10	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCU branch line.

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

Check the power supply and the ground circuit of the TCU. Refer to [AV-381, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-390, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCU branch line.  
NO >> Repair the power supply and the ground circuit.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402327

#### 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 low tire pressure warning 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 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the low tire pressure warning control unit branch line.

#### 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-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-63, "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.

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402328

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - IPDM E/R
  - Harness connector E105
  - Harness connector M77

Is the 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.	
E13	27	Approx. 108 – 132
	26	

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-33, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "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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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402314

#### **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 terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

#### **2**.CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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Check the air bag diagnosis sensor unit. Refer to [SRC-37, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

# AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402329

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Around view monitor control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of around view monitor control unit.
3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

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

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-236. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-304. "Removal and Installation"](#).

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

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

# SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402330

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Sonar control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

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

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-237, "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-309, "Removal and Installation"](#).

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

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



# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402331

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
  - Harness connector B24
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
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.		
B451	1	17	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-67. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-135. "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.

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402332

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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)		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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the seat belt pre-tensioner retractor (LH side). Refer to [SB-6, "SEAT BELT RETRACTOR : Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the sonar control unit branch line.  
 NO >> Repair the power supply and the ground circuit.

# E-SUS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## E-SUS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402333

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 levelizer control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of air levelizer control module.
3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
NO >> Repair the air levelizer control module branch line.

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

Check the power supply and the ground circuit of the air levelizer control module. Refer to [SCS-89, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the air levelizer control module. Refer to [SCS-94, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the air levelizer control module branch line.  
NO >> Repair the power supply and the ground circuit.

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## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402334

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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.		
B52	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the ADAS control unit branch line.

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

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-159, "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.

PWBD BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011402335

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Automatic back door control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of automatic back door control module.
3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the automatic back door control module branch line.

4.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the automatic back door control module. Refer to [DLK-120, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control module. Refer to [DLK-268, "Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the automatic back door control module 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:000000011402336

#### 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-341. "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.		
B243	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-339. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-384. "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.

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402337

#### 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.		
B74	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-338, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-384, "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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# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402338

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 R1
  - Harness connector M23

Is the 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 >> Repair the lane camera unit branch line.

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

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-337, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-383, "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.



# BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## BSW/BUZZER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402339

#### 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 drive assistance buzzer control module 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 drive assistance buzzer control module.
2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M150	3	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to [DAS-339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the drive assistance buzzer control module. Refer to [DAS-388, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the drive assistance buzzer control module 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 3)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402340

#### 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 accelerator pedal actuator 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 accelerator pedal actuator.
2. Check the resistance between the accelerator pedal actuator harness connector terminals.

Accelerator pedal actuator harness connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
E213	3	9	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the accelerator pedal actuator branch line.

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

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-337, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal assembly. Refer to [DAS-381, "Exploded View"](#).  
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
NO >> Repair the power supply and the ground circuit.

# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402341

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 E218
  - Harness connector E219

Is the 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.	
E88	3	Approx. 108 – 132
	6	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to [CCS-116, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-133, "Removal and Installation"](#).

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

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000011402342

#### 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-64. "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.		
M4	6	14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## 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:000000011402343

#### 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-64. "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.	
M4	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000011402344

#### 1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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-64. "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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - ADAS control unit
  - Harness connector B63
  - Harness connector B239

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.	
B52	6	E88	3	Existed
	7		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ADAS control unit branch line. (ITS communication circuit side). Refer to [LAN-64. "System Diagram"](#).

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

1. Disconnect the following harness connectors.
  - Side radar RH
  - Side radar LH
  - Lane camera unit
  - Around view monitor control unit
  - Driver assistance buzzer control module
  - Sonar control 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.		
B52	6	7	Not existed



# ITS COMMUNICATION CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 3)]

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair the root cause.

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B52	6		Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair 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.		
6	7	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 circuit.

**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 ABS AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402351

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 E107
  - Harness connector M82

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.
  - ABS actuator and electric unit (control unit)
  - Harness connectors E107 and M82
2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

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

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

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M82	1	M4	6	Existed
	6		14	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 ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011402353

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 M19
  - Harness connector B2

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 M19 and B2.
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.	
M4	13	M19	71	Existed
	12		72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

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

1. Disconnect the harness connectors B24 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B2	71	B24	13	Existed
	72		12	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 driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

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# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### Diagnosis Procedure

INFOID:000000011402354

#### 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.
  - CAN gateway
  - Harness connectors B460 and B24
  - Automatic back door control module
4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	B26	7	Existed
	12		6	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 driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402360

#### 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 ECM 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 ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the ECM branch line.

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

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

- VK56VD FOR USA AND CANADA: [EC-190, "Diagnosis Procedure"](#)
- VK56VD FOR MEXICO: [EC-743, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VK56VD FOR USA AND CANADA: [EC-581, "Removal and Installation"](#)
  - VK56VD FOR MEXICO: [EC-1043, "Removal and Installation"](#)

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

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# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402361

#### 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 transfer 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 transfer control unit.
2. Check the resistance between the transfer control unit harness connector terminals.

Transfer control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E59	12	13	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the transfer control unit branch line.

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

Check the power supply and the ground circuit of the transfer control unit. Refer to [DLN-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the transfer control unit. Refer to [DLN-112, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the transfer 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:000000011402362

#### 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.		
E36	41	27	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-122, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-146, "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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# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402363

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 F1
  - Harness connector E7

Is the 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.	
F51	3                      8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCM branch line.

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-190, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace the joint connector.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-153, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-190, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCM branch line.  
NO >> Repair the power supply and the ground circuit.



# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402366

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 M222
  - Harness connector M119

Is the 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.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to [AV-232, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to [AV-282, "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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402367

#### 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 BCM 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 BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to [BCS-88. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-95. "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

# 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:000000011402368

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 terminals and connectors of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

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# 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:000000011402369

#### 1.CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

### Diagnosis Procedure

INFOID:000000011402370

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	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 (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).  
NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

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

### Diagnosis Procedure

INFOID:000000011402371

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	13	12	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 (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

# HBA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## HBA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402372

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Auto anti- dazzling inside mirror (high beam assist control module)
  - Harness connector R1
  - Harness connector M23

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of auto anti - dazzling inside mirror (high beam assist control module).
2. Check the resistance between the auto anti - dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R24	12	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to [EXL-111, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to [MIR-34, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the high beam assist control module branch line.  
NO >> Repair the power supply and the ground circuit.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402373

#### 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 A/C auto amp. 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 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.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to [HAC-116, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-153, "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.



# M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402374

#### 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 combination meter 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 combination meter.
2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M34	21	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to [MWI-67, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-88, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the combination meter branch line.  
NO >> Repair the power supply and the ground circuit.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402375

#### 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 steering angle sensor 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 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.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-52, "Wiring Diagram"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-148, "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.

# TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## TCU BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402376

#### 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 TCU 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M99	9	10	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCU branch line.

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

Check the power supply and the ground circuit of the TCU. Refer to [AV-381, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-390, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCU branch line.  
NO >> Repair the power supply and the ground circuit.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402377

#### 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 low tire pressure warning 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 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the low tire pressure warning control unit branch line.

#### 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-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-63, "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.

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402378

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - IPDM E/R
  - Harness connector E105
  - Harness connector M77

Is the 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.	
E13	27	Approx. 108 – 132
	26	

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-33, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "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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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402364

#### **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 terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

#### **2.** CHECK AIR BAG DIAGNOSIS SENSOR UNIT

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Check the air bag diagnosis sensor unit. Refer to [SRC-37, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

# AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402379

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Around view monitor control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of around view monitor control unit.
3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

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

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-236. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-304. "Removal and Installation"](#).

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

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

# SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402380

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Sonar control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

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

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-237, "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-309, "Removal and Installation"](#).

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

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



# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402381

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
  - Harness connector B24
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
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.		
B451	1	17	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-67. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-135. "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.

# E-SUS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## E-SUS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402383

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 levelizer control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of air levelizer control module.
3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

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

Check the power supply and the ground circuit of the air levelizer control module. Refer to [SCS-89, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to [SCS-94, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the air levelizer control module branch line.

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

# PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## PWBD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402385

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Automatic back door control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of automatic back door control module.
3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
NO >> Repair the automatic back door control module branch line.

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

Check the power supply and the ground circuit of the automatic back door control module. Refer to [DLK-120, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control module. Refer to [DLK-268, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the automatic back door control module branch line.  
NO >> Repair the power supply and the ground circuit.

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000011402392

#### 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-64. "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.	
M4	6 14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 4)]

## 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:000000011402393

#### 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-64. "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.	
M4	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	13	Ground	Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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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# MAIN LINE BETWEEN ABS AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402399

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 E107
  - Harness connector M82

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.
  - ABS actuator and electric unit (control unit)
  - Harness connectors E107 and M82
2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

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

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

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M82	1	M4	6	Existed
	6		14	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 ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.



# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011402401

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 M19
  - Harness connector B2

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 M19 and B2.
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.	
M4	13	M19	71	Existed
	12		72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

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

1. Disconnect the harness connectors B24 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B2	71	B24	13	Existed
	72		12	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 driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

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# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### Diagnosis Procedure

INFOID:000000011402402

#### 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.
  - CAN gateway
  - Harness connectors B460 and B24
  - Automatic back door control module
4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	B26	7	Existed
	12		6	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 driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

### Diagnosis Procedure

INFOID:000000011402403

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 B239
  - Harness connector B63

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 B239 and B63
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.	
B243	4	B239	7	Existed
	3		3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

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

1. Disconnect the connector of side radar LH.
2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness connector		Side radar LH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B63	7	B74	4	Existed
	3		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 RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.

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# MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN RDR-L AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:000000011508701

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 B2
  - Harness connector M19

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 B2 and M19
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.	
B74	4	B2	27	Existed
	3		28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

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

1. Disconnect the connector of around view monitor control unit.
2. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M19	27	B48	27	Existed
	28		28	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 around view monitor control unit.

NO >> Repair the main line between the harness connector M19 and the around view monitor control unit.

# MAIN LINE BETWEEN AVM AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## MAIN LINE BETWEEN AVM AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000011402407

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 M77
  - Harness connector E105

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.
  - Around view monitor control unit
  - Harness connectors M77 and E105.
2. Check the continuity between the around view monitor control unit harness connector and the harness connector.

Around view monitor control unit		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M48	27	M77	22	Existed
	28		23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the around view monitor control unit and the harness connector M77.

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

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

Harness connector		Accelerator pedal actuator harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E213	3	Existed
	23		9	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 lane camera unit and the accelerator pedal actuator.

NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

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# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402408

#### 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 ECM 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 ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the ECM branch line.

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

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

- VK56VD FOR USA AND CANADA: [EC-190, "Diagnosis Procedure"](#)
- VK56VD FOR MEXICO: [EC-743, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VK56VD FOR USA AND CANADA: [EC-581, "Removal and Installation"](#)
  - VK56VD FOR MEXICO: [EC-1043, "Removal and Installation"](#)

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

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

# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402409

#### 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 transfer 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 transfer control unit.
2. Check the resistance between the transfer control unit harness connector terminals.

Transfer control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E59	12	13	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the transfer control unit branch line.

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

Check the power supply and the ground circuit of the transfer control unit. Refer to [DLN-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the transfer control unit. Refer to [DLN-112, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the transfer 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 5)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402410

#### 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.		
E36	41	27	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-122. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-146. "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.



# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402411

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 F1
  - Harness connector E7

Is the 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.	
F51	3                      8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCM branch line.

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-190, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace the joint connector.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-153, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-190, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCM branch line.  
NO >> Repair the power supply and the ground circuit.

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# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402414

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 M222
  - Harness connector M119

Is the 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.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to [AV-232. "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the AV control unit. Refer to [AV-282. "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.

# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402415

#### 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 BCM 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 BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to [BCS-88, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-95, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

### Diagnosis Procedure

INFOID:000000011402416

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 terminals and connectors of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

### Diagnosis Procedure

INFOID:000000011402417

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

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# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

### Diagnosis Procedure

INFOID:000000011402418

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	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 (CAN communication circuit 1 side). Refer to [LAN-64. "System Diagram"](#).  
NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64. "System Diagram"](#).

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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

### Diagnosis Procedure

INFOID:000000011402419

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	13	12	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 (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).  
NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

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# HBA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## HBA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402420

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Auto anti- dazzling inside mirror (high beam assist control module)
  - Harness connector R1
  - Harness connector M23

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of auto anti - dazzling inside mirror (high beam assist control module).
2. Check the resistance between the auto anti - dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R24	12	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to [EXL-111, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to [MIR-34, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the high beam assist control module branch line.

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



# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402421

#### 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 A/C auto amp. 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 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.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to [HAC-116, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-153, "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.

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## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402422

#### 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 combination meter 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 combination meter.
2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M34	21	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to [MWI-67, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-88, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the combination meter branch line.  
NO >> Repair the power supply and the ground circuit.

# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402423

#### 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 steering angle sensor 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 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.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-52, "Wiring Diagram"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-148, "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.

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# TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## TCU BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402424

#### 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 TCU 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M99	9	10	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCU branch line.

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

Check the power supply and the ground circuit of the TCU. Refer to [AV-381, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-390, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCU branch line.  
NO >> Repair the power supply and the ground circuit.

# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402425

#### 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 low tire pressure warning 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 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the low tire pressure warning control unit branch line.

#### 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-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-63, "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.

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402426

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - IPDM E/R
  - Harness connector E105
  - Harness connector M77

Is the 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.	
E13	27	Approx. 108 – 132
	26	

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-33, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "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.

# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402412

#### **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 terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Replace the main harness.

#### 2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-37, "Work Flow"](#).

Is the inspection result normal?

- YES >> Replace the main harness.  
NO >> Replace parts whose air bag system has a malfunction.

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# AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402427

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Around view monitor control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of around view monitor control unit.
3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

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

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-236. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-304. "Removal and Installation"](#).

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

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



# SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402428

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Sonar control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

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

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-237. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-309. "Removal and Installation"](#).

YES (Past error)>>Error was detected in the sonar control unit 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 5)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402429

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
  - Harness connector B24
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
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.		
B451	1	17	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-67, "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-135, "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.

# E-SUS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## E-SUS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402431

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 levelizer control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of air levelizer control module.
3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
NO >> Repair the air levelizer control module branch line.

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

Check the power supply and the ground circuit of the air levelizer control module. Refer to [SCS-89, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the air levelizer control module. Refer to [SCS-94, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the air levelizer control module branch line.  
NO >> Repair the power supply and the ground circuit.

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## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402432

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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.		
B52	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the ADAS control unit branch line.

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

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-159, "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.

# PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## PWBD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402433

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Automatic back door control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of automatic back door control module.
3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
NO >> Repair the automatic back door control module branch line.

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

Check the power supply and the ground circuit of the automatic back door control module. Refer to [DLK-120, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control module. Refer to [DLK-268, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the automatic back door control module 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 5)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402434

#### 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-341. "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.		
B243	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-339. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-384. "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.

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402435

#### 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.		
B74	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-338, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-384, "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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# BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## BSW/BUZZER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402437

#### 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 drive assistance buzzer control module 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 drive assistance buzzer control module.
2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M150	3	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to [DAS-339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the drive assistance buzzer control module. Refer to [DAS-388, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.  
NO >> Repair the power supply and the ground circuit.



# APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402438

#### 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 accelerator pedal actuator 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 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.		
E213	3	9	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the accelerator pedal actuator branch line.

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

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-337, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal assembly. Refer to [DAS-381, "Exploded View"](#).  
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
NO >> Repair the power supply and the ground circuit.

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# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402439

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 E218
  - Harness connector E219

Is the 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.	
E88	3	Approx. 108 – 132
	6	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to [CCS-116, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-133, "Removal and Installation"](#).

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

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000011402440

#### 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-64, "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.	
M4	6 14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 5)]

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## 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

---

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 5)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000011402441

#### 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-64, "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.	
M4	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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 5)]

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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

### Diagnosis Procedure

INFOID:000000011402442

#### 1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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-64, "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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - ADAS control unit
  - Harness connector B63
  - Harness connector B239

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.	
B52	6	E88	3	Existed
	7		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ADAS control unit branch line. (ITS communication circuit side). Refer to [LAN-64, "System Diagram"](#).

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

1. Disconnect the following harness connectors.
  - Side radar RH
  - Side radar LH
  - Lane camera unit
  - Around view monitor control unit
  - Driver assistance buzzer control module
  - Sonar control 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.		
B52	6	7	Not existed



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# ITS COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 5)]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair the root cause.

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B52	6		Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair 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.		
6	7	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 circuit.

**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 ABS AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:000000011402447

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 E107
  - Harness connector M82

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.
  - ABS actuator and electric unit (control unit)
  - Harness connectors E107 and M82
2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

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

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

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M82	1	M4	6	Existed
	6		14	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 ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

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# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011402449

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 M19
  - Harness connector B2

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 M19 and B2.
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.	
M4	13	M19	71	Existed
	12		72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

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

1. Disconnect the harness connectors B24 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B2	71	B24	13	Existed
	72		12	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 driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### Diagnosis Procedure

INFOID:000000011402450

#### 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.
  - CAN gateway
  - Harness connectors B460 and B24
  - Automatic back door control module
4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	B26	7	Existed
	12		6	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 driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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

### Diagnosis Procedure

INFOID:000000011402451

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 B239
  - Harness connector B63

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 B239 and B63
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.	
B243	4	B239	7	Existed
	3		3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

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

1. Disconnect the connector of side radar LH.
2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness connector		Side radar LH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B63	7	B74	4	Existed
	3		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 RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.

# MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402452

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 B2
  - Harness connector M19

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 B2 and M19
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.	
B74	4	B2	27	Existed
	3		28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

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

1. Disconnect the harness connectors M23 and R1.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M19	27	M23	29	Existed
	28		28	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 lane camera unit.

NO >> Repair the main line between the harness connectors M19 and M23.

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# MAIN LINE BETWEEN LANE AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN LANE AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:000000011402454

#### 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 R1 and M23.
  - Around view monitor control unit
4. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M23	29	M48	27	Existed
	28		28	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 lane camera unit and the around view monitor control unit.

NO >> Repair the main line between the harness connector M23 and the around view monitor control unit.

# MAIN LINE BETWEEN AVM AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## MAIN LINE BETWEEN AVM AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000011402455

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 M77
  - Harness connector E105

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.
  - Around view monitor control unit
  - Harness connectors M77 and E105.
2. Check the continuity between the around view monitor control unit harness connector and the harness connector.

Around view monitor control unit		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M48	27	M77	22	Existed
	28		23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the around view monitor control unit and the harness connector M77.

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

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

Harness connector		Accelerator pedal actuator harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E213	3	Existed
	23		9	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 lane camera unit and the accelerator pedal actuator.

NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

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# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402456

#### 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 ECM 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 ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the ECM branch line.

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

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

- VK56VD FOR USA AND CANADA: [EC-190, "Diagnosis Procedure"](#)
- VK56VD FOR MEXICO: [EC-743, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VK56VD FOR USA AND CANADA: [EC-581, "Removal and Installation"](#)
  - VK56VD FOR MEXICO: [EC-1043, "Removal and Installation"](#)

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

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



# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402457

#### 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 transfer 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 transfer control unit.
2. Check the resistance between the transfer control unit harness connector terminals.

Transfer control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E59	12	13	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the transfer control unit branch line.

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

Check the power supply and the ground circuit of the transfer control unit. Refer to [DLN-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the transfer control unit. Refer to [DLN-112, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the transfer 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:000000011402458

#### 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.		
E36	41	27	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-122. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-146. "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.

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402459

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 F1
  - Harness connector E7

Is the 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.	
F51	3                      8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCM branch line.

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-190, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace the joint connector.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-153, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-190, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCM branch line.  
NO >> Repair the power supply and the ground circuit.

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## AFS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402461

#### 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.		
M151	1	13	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-111, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-163, "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.

# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402462

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 M222
  - Harness connector M119

Is the 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.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to [AV-232, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to [AV-282, "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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402463

#### 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 BCM 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 BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to [BCS-88. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-95. "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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

### Diagnosis Procedure

INFOID:000000011402464

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 terminals and connectors of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

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# CGW BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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

### Diagnosis Procedure

INFOID:000000011402465

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.



# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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

### Diagnosis Procedure

INFOID:000000011402466

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	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 (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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

### Diagnosis Procedure

INFOID:000000011402467

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	13	12	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 (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

# HBA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## HBA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402468

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Auto anti- dazzling inside mirror (high beam assist control module)
  - Harness connector R1
  - Harness connector M23

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of auto anti - dazzling inside mirror (high beam assist control module).
2. Check the resistance between the auto anti - dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R24	12	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to [EXL-111, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to [MIR-34, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the high beam assist control module branch line.  
NO >> Repair the power supply and the ground circuit.

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402469

#### 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 A/C auto amp. 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 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.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to [HAC-116, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-153, "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.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:000000011402470

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 combination meter 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 combination meter.
2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector		Resistance (Ω)
Connector No.	Terminal No.	
M34	21                      22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
 NO >> Repair the combination meter branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the combination meter. Refer to [MWI-67, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-88, "Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the combination meter branch line.  
 NO >> Repair the power supply and the ground circuit.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402471

#### 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 steering angle sensor 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 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.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-52, "Wiring Diagram"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-148, "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.

# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402473

#### 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 low tire pressure warning 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 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the low tire pressure warning control unit branch line.

#### 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-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-63, "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.

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# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402474

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - IPDM E/R
  - Harness connector E105
  - Harness connector M77

Is the 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.	
E13	27	Approx. 108 – 132
	26	

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-33, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "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.



# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402460

#### **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 terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> Replace the main harness.

#### 2. CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-37, "Work Flow"](#).

Is the inspection result normal?

- YES >> Replace the main harness.  
NO >> Replace parts whose air bag system has a malfunction.

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## AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402475

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Around view monitor control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

- YES-1 >> Models without ICC: GO TO 2.  
 YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of around view monitor control unit.
3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the around view monitor control unit branch line.

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

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-236. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-304. "Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the around view monitor control unit branch line.  
 NO >> Repair the power supply and the ground circuit.

# SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402476

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Sonar control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

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

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-237. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-309. "Removal and Installation"](#).

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

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

# ADP BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ADP BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402477

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
  - Harness connector B24
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
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.		
B451	1	17	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-67. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-135. "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.

# PSB BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402478

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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)		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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the seat belt pre-tensioner retractor (LH side). Refer to [SB-6, "SEAT BELT RETRACTOR : Removal and Installation"](#).

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

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

# E-SUS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## E-SUS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402479

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 levelizer control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of air levelizer control module.
3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

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

Check the power supply and the ground circuit of the air levelizer control module. Refer to [SCS-89, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to [SCS-94, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the air levelizer control module branch line.

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

## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402480

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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.	
B52	1	2
		Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the ADAS control unit branch line.

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

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-159, "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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# PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## PWBD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402481

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Automatic back door control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of automatic back door control module.
3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the automatic back door control module branch line.

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

Check the power supply and the ground circuit of the automatic back door control module. Refer to [DLK-120, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the automatic back door control module. Refer to [DLK-268, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the automatic back door control module branch line.

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



# RDR-R BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402482

#### 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-341, "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.		
B243	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-339, "SIDE RADAR RH: Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-384, "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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# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402483

#### 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.		
B74	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-338, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-384, "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.

# LANE BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402484

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 R1
  - Harness connector M23

Is the 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 >> Repair the lane camera unit branch line.

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

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-337, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to [DAS-383, "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.

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# BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## BSW/BUZZER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402485

#### 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 drive assistance buzzer control module 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 drive assistance buzzer control module.
2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M150	3	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to [DAS-339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the drive assistance buzzer control module. Refer to [DAS-388, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the drive assistance buzzer control module branch line.  
NO >> Repair the power supply and the ground circuit.

# APA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## APA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402486

#### 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 accelerator pedal actuator 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 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.		
E213	3	9	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the accelerator pedal actuator branch line.

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

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-337, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal assembly. Refer to [DAS-381, "Exploded View"](#).  
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
NO >> Repair the power supply and the ground circuit.

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# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402487

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 E218
  - Harness connector E219

Is the 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.	
E88	3	Approx. 108 – 132
	6	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to [CCS-116, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-133, "Removal and Installation"](#).

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

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000011402488

#### 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-64, "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.	
M4	6 14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

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## 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 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 6)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000011402489

#### 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-64, "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.	
M4	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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 6)]

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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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 6)]

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000011402490

#### 1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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-64, "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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - ADAS control unit
  - Harness connector B63
  - Harness connector B239

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.	
B52	6	E88	3	Existed
	7		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ADAS control unit branch line. (ITS communication circuit side). Refer to [LAN-64, "System Diagram"](#).

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

1. Disconnect the following harness connectors.
  - Side radar RH
  - Side radar LH
  - Lane camera unit
  - Around view monitor control unit
  - Driver assistance buzzer control module
  - Sonar control 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.		
B52	6	7	Not existed

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# ITS COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 6)]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

NO >> Check the harness and repair the root cause.

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B52	6		Not existed
	7		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Check the harness and repair 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.		
6	7	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 circuit.

**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 ABS AND DLC CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## DTC/CIRCUIT DIAGNOSIS

### MAIN LINE BETWEEN ABS AND DLC CIRCUIT

#### Diagnosis Procedure

INFOID:0000000011402496

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 E107
  - Harness connector M82

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.
  - ABS actuator and electric unit (control unit)
  - Harness connectors E107 and M82
2. Check the continuity between the ABS actuator and electric unit (control unit) harness connector and the harness connector.

ABS actuator and electric unit (control unit) harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E36	41	E107	1	Existed
	27		6	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the ABS actuator and electric unit (control unit) and the harness connector E107.

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

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

Harness connector		Data link connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M82	1	M4	6	Existed
	6		14	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 ABS actuator and electric unit (control unit) and the data link connector.

NO >> Repair the main line between the harness connector M82 and the data link connector.

# MAIN LINE BETWEEN DLC AND ADP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN DLC AND ADP CIRCUIT

### Diagnosis Procedure

INFOID:000000011402498

#### 1. CHECK CONNECTOR

1. Turn the ignition 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 M19
  - Harness connector B2

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 M19 and B2.
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.	
M4	13	M19	71	Existed
	12		72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the data link connector and the harness connector M19.

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

1. Disconnect the harness connectors B24 and B460.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B2	71	B24	13	Existed
	72		12	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 driver seat control unit.

NO >> Repair the main line between the harness connectors B2 and B24.

# MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN ADP AND PWBD CIRCUIT

### Diagnosis Procedure

INFOID:000000011402499

#### 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.
  - CAN gateway
  - Harness connectors B460 and B24
  - Automatic back door control module
4. Check the continuity between the harness connector and the automatic back door control module harness connector.

Harness connector		Automatic back door control module harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B24	13	B26	7	Existed
	12		6	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 driver seat control unit and the automatic back door control module.

NO >> Repair the main line between the harness connector B24 and the automatic back door control module.

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

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

### Diagnosis Procedure

INFOID:000000011402500

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 B239
  - Harness connector B63

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 B239 and B63
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.	
B243	4	B239	7	Existed
	3		3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar RH and the harness connector B239.

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

1. Disconnect the connector of side radar LH.
2. Check the continuity between the harness connector and the side radar LH harness connector.

Harness connector		Side radar LH harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
B63	7	B74	4	Existed
	3		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 RH and the side radar LH.

NO >> Repair the main line between the harness connector B63 and the side radar LH.



# MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN RDR-L AND LANE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402501

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 B2
  - Harness connector M19

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 B2 and M19
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.	
B74	4	B2	27	Existed
	3		28	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the side radar LH and the harness connector B2.

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

1. Disconnect the harness connectors M23 and R1.
2. Check the continuity between the harness connectors.

Harness connector		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M19	27	M23	29	Existed
	28		28	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 lane camera unit.

NO >> Repair the main line between the harness connectors M19 and M23.

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# MAIN LINE BETWEEN LANE AND AVM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN LANE AND AVM CIRCUIT

### Diagnosis Procedure

INFOID:000000011402503

#### 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 R1 and M23.
  - Around view monitor control unit
4. Check the continuity between the harness connector and the around view monitor control unit harness connector.

Harness connector		Around view monitor control unit harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M23	29	M48	27	Existed
	28		28	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 lane camera unit and the around view monitor control unit.

NO >> Repair the main line between the harness connector M23 and the around view monitor control unit.

# MAIN LINE BETWEEN AVM AND APA CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## MAIN LINE BETWEEN AVM AND APA CIRCUIT

### Diagnosis Procedure

INFOID:000000011402504

#### 1.CHECK CONNECTOR

1. Turn the ignition 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 M77
  - Harness connector E105

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.
  - Around view monitor control unit
  - Harness connectors M77 and E105.
2. Check the continuity between the around view monitor control unit harness connector and the harness connector.

Around view monitor control unit		Harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
M48	27	M77	22	Existed
	28		23	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the main line between the around view monitor control unit and the harness connector M77.

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

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

Harness connector		Accelerator pedal actuator harness connector		Continuity
Connector No.	Terminal No.	Connector No.	Terminal No.	
E105	22	E213	3	Existed
	23		9	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 lane camera unit and the accelerator pedal actuator.

NO >> Repair the main line between the harness connector E105 and the accelerator pedal actuator.

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# ECM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## ECM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402505

#### 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 ECM 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 ECM.
2. Check the resistance between the ECM harness connector terminals.

ECM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E80	146	151	Approx. 108 – 132

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the ECM branch line.

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

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

- VK56VD FOR USA AND CANADA: [EC-190, "Diagnosis Procedure"](#)
- VK56VD FOR MEXICO: [EC-743, "Diagnosis Procedure"](#)

Is the inspection result normal?

- YES (Present error)>>Replace the ECM. Refer to the following.
- VK56VD FOR USA AND CANADA: [EC-581, "Removal and Installation"](#)
  - VK56VD FOR MEXICO: [EC-1043, "Removal and Installation"](#)

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

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

# 4WD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## 4WD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402506

#### 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 transfer 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 transfer control unit.
2. Check the resistance between the transfer control unit harness connector terminals.

Transfer control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
E59	12	13	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the transfer control unit branch line.

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

Check the power supply and the ground circuit of the transfer control unit. Refer to [DLN-97, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the transfer control unit. Refer to [DLN-112, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the transfer 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 7)]

## ABS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402507

#### 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.		
E36	41	27	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-122. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ABS actuator and electric unit (control unit). Refer to [BRC-146. "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.

# TCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## TCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402508

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 F1
  - Harness connector E7

Is the 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.	
F51	3                      8	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCM branch line.

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Remove the joint connector. Refer to [TM-190, "Removal and Installation"](#).
2. Check the continuity between the A/T assembly harness connector side and the TCM harness connector side of the joint connector.

A/T assembly harness connector side	TCM harness connector side	Continuity
Terminal No.	Terminal No.	
3	3	Existed
8	8	Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace the joint connector.

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

Check the power supply and the ground circuit of the TCM. Refer to [TM-153, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the control valve & TCM. Refer to [TM-190, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCM branch line.  
NO >> Repair the power supply and the ground circuit.

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**AFS BRANCH LINE CIRCUIT**

**Diagnosis Procedure**

INFOID:000000011402510

**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.		
M151	1	13	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-111, "AFS CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AFS control unit. Refer to [EXL-163, "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.



# AV BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## AV BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402511

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 M222
  - Harness connector M119

Is the 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.

AV control unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M210	90	74	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the AV control unit branch line.

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

Check the power supply and the ground circuit of the AV control unit. Refer to [AV-232, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the AV control unit. Refer to [AV-282, "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.

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# BCM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## BCM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402512

#### 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 BCM 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 BCM.
2. Check the resistance between the BCM harness connector terminals.

BCM harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M68	39	40	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the BCM branch line.

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

Check the power supply and the ground circuit of the BCM. Refer to [BCS-88. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the BCM. Refer to [BCS-95. "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the BCM branch line.  
NO >> Repair the power supply and the ground circuit.

# 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:000000011402513

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 terminals and connectors of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128, "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

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# 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:000000011402514

#### 1. CHECK DTC

Check DTC of the CAN gateway with CONSULT.

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 of the CAN gateway 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 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 >> Repair the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

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

Check the power supply and the ground circuit of the CAN gateway. Refer to [LAN-127. "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the CAN gateway. Refer to [LAN-128. "Removal and Installation"](#).
- YES (Past error)>>Error was detected in the CAN gateway branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).
- NO >> Repair the power supply and the ground circuit.

# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 1)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

### Diagnosis Procedure

INFOID:000000011402515

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

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.		
M4	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 (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).  
NO >> Repair the data link connector branch line (CAN communication circuit 1 side). Refer to [LAN-64, "System Diagram"](#).

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# DLC BRANCH LINE CIRCUIT (CAN COMMUNICATION CIRCUIT 2)

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

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

### Diagnosis Procedure

INFOID:000000011402516

#### 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 data link connector for damage, bend and loose connection (connector side and harness side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

Check the resistance between the data link connector terminals.

Data link connector			Resistance ( $\Omega$ )
Connector No.	Terminal No.		
M4	13	12	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 (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

NO >> Repair the data link connector branch line (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

# HBA BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## HBA BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402517

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Auto anti- dazzling inside mirror (high beam assist control module)
  - Harness connector R1
  - Harness connector M23

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

#### 2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of auto anti - dazzling inside mirror (high beam assist control module).
2. Check the resistance between the auto anti - dazzling inside mirror (high beam assist control module) harness connector terminals.

Auto anti - dazzling inside mirror (high beam assist control module) harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R24	12	11	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the high beam assist control module branch line.

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

Check the power supply and the ground circuit of the high beam assist control module. Refer to [EXL-111, "HIGH BEAM ASSIST CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the inside mirror assembly (high beam assist control module). Refer to [MIR-34, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the high beam assist control module branch line.

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

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# HVAC BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## HVAC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402518

#### 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 A/C auto amp. 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 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.		
M50	1	21	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the A/C auto amp. branch line.

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

Check the power supply and the ground circuit of the A/C auto amp. Refer to [HAC-116, "A/C AUTO AMP. : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the A/C auto amp. Refer to [HAC-153, "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.



# M&A BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## M&A BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402519

#### 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 combination meter 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 combination meter.
2. Check the resistance between the combination meter harness connector terminals.

Combination meter harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M34	21	22	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the combination meter branch line.

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

Check the power supply and the ground circuit of the combination meter. Refer to [MWI-67, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the combination meter. Refer to [MWI-88, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the combination meter branch line.  
NO >> Repair the power supply and the ground circuit.

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# STRG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## STRG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402520

#### 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 steering angle sensor 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 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.		
M30	5	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the steering angle sensor branch line.

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

Check the power supply and the ground circuit of the steering angle sensor. Refer to [BRC-52, "Wiring Diagram"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the steering angle sensor. Refer to [BRC-148, "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.

# TCU BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## TCU BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402521

#### 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 TCU 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 TCU.
2. Check the resistance between the TCU harness connector terminals.

TCU harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M99	9	10	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the TCU branch line.

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

Check the power supply and the ground circuit of the TCU. Refer to [AV-381, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the TCU. Refer to [AV-390, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the TCU branch line.  
NO >> Repair the power supply and the ground circuit.

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# TPMS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## TPMS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402522

#### 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 low tire pressure warning 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 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.		
M96	2	1	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the low tire pressure warning control unit branch line.

#### 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-50, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the low tire pressure warning control unit. Refer to [WT-63, "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.

# IPDM-E BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## IPDM-E BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402523

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - IPDM E/R
  - Harness connector E105
  - Harness connector M77

Is the 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.	
E13	27	Approx. 108 – 132
	26	

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-33, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the IPDM E/R. Refer to [PCS-34, "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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# A-BAG BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## A-BAG BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402509

#### **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 terminals and connectors of the air bag diagnosis sensor unit for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the main harness.

#### **2.** CHECK AIR BAG DIAGNOSIS SENSOR UNIT

Check the air bag diagnosis sensor unit. Refer to [SRC-37, "Work Flow"](#).

Is the inspection result normal?

YES >> Replace the main harness.

NO >> Replace parts whose air bag system has a malfunction.

# AVM BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## AVM BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402524

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Around view monitor control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of around view monitor control unit.
3. Check the resistance between the around view monitor control unit harness connector terminals.

Around view monitor control unit harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
M48	27	28	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the around view monitor control unit branch line.

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

Check the power supply and the ground circuit of the around view monitor control unit. Refer to [AV-236. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the around view monitor control unit. Refer to [AV-304. "Removal and Installation"](#).

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

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

# SONAR BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## SONAR BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402525

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Sonar control unit
  - CAN gateway (Models without ICC)

Is the inspection result normal?

YES-1 >> Models without ICC: GO TO 2.

YES-2 >> Models with ICC: 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway. (Models without ICC)
2. Disconnect the connector of sonar control unit.
3. Check the resistance between the sonar control unit harness connector terminals.

Sonar control unit harness connector		Resistance ( $\Omega$ )	
Connector No.	Terminal No.		
M47	19	20	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the sonar control unit branch line.

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

Check the power supply and the ground circuit of the sonar control unit. Refer to [AV-237. "SONAR CONTROL UNIT \(WITH AROUND VIEW MONITOR\) : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the sonar control unit. Refer to [AV-309. "Removal and Installation"](#).

YES (Past error)>>Error was detected in the sonar control unit 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:000000011402526

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 B460
  - Harness connector B24
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64. "System Diagram"](#).

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
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.		
B451	1	17	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-67. "DRIVER SEAT CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the driver seat control unit. Refer to [ADP-135. "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.

## PSB BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402527

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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
	10	12
		Existed
		Existed

Is the inspection result normal?

- YES >> GO TO 3.  
 NO >> Check the harness and repair the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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)		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-54, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the seat belt pre-tensioner retractor (LH side). Refer to [SB-6, "SEAT BELT RETRACTOR : Removal and Installation"](#).  
 YES (Past error)>>Error was detected in the sonar control unit branch line.  
 NO >> Repair the power supply and the ground circuit.

# E-SUS BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## E-SUS BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402528

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 levelizer control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3. CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of air levelizer control module.
3. Check the resistance between the air levelizer control module harness connector terminals.

Air levelizer control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B84	16	7	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 4.

NO >> Repair the air levelizer control module branch line.

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

Check the power supply and the ground circuit of the air levelizer control module. Refer to [SCS-89, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the air levelizer control module. Refer to [SCS-94, "Removal and Installation"](#).

YES (Past error)>>Error was detected in the air levelizer control module branch line.

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

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## ICC BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402529

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 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.		
B52	1	2	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
 NO >> Repair the ADAS control unit branch line.

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

Check the power supply and the ground circuit of the ADAS control unit. Refer to [DAS-158, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the ADAS control unit. Refer to [DAS-159, "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.

# PWBD BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## PWBD BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402530

#### 1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - Automatic back door control module
  - 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 the root cause (CAN communication circuit 2 side). Refer to [LAN-64, "System Diagram"](#).

#### 3.CHECK HARNESS FOR OPEN CIRCUIT

1. Connect the connector of CAN gateway.
2. Disconnect the connector of automatic back door control module.
3. Check the resistance between the automatic back door control module harness connector terminals.

Automatic back door control module harness connector		Resistance (Ω)	
Connector No.	Terminal No.		
B26	7	6	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 4.  
NO >> Repair the automatic back door control module branch line.

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

Check the power supply and the ground circuit of the automatic back door control module. Refer to [DLK-120, "AUTOMATIC BACK DOOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the automatic back door control module. Refer to [DLK-268, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the automatic back door control module 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 7)]

## RDR-R BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402531

#### 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-341. "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.		
B243	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-339. "SIDE RADAR RH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar RH. Refer to [DAS-384. "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.

# RDR-L BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## RDR-L BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402532

#### 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.		
B74	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-338, "SIDE RADAR LH : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the side radar LH. Refer to [DAS-384, "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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## LANE BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402533

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 R1
  - Harness connector M23

Is the 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 >> Repair the lane camera unit branch line.

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

Check the power supply and the ground circuit of the lane camera unit. Refer to [DAS-337, "LANE CAMERA UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the lane camera unit. Refer to [DAS-383, "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.



# BSW/BUZZER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## BSW/BUZZER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402534

#### 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 drive assistance buzzer control module 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 drive assistance buzzer control module.
2. Check the resistance between the drive assistance buzzer control module harness connector terminals.

Drive assistance buzzer control module harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M150	3	11	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the drive assistance buzzer control module branch line.

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

Check the power supply and the ground circuit of the drive assistance buzzer control module. Refer to [DAS-339, "DRIVER ASSISTANCE BUZZER CONTROL MODULE : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the drive assistance buzzer control module. Refer to [DAS-388, "Removal and Installation"](#).  
YES (Past error)>>Error was detected in the drive assistance buzzer control module 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:000000011402535

#### 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 accelerator pedal actuator 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 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.		
E213	3	9	Approx. 54 – 66

Is the measurement value within the specification?

- YES >> GO TO 3.  
NO >> Repair the accelerator pedal actuator branch line.

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

Check the power supply and the ground circuit of the accelerator pedal actuator. Refer to [DAS-337, "ACCELERATOR PEDAL ACTUATOR : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES (Present error)>>Replace the accelerator pedal assembly. Refer to [DAS-381, "Exploded View"](#).  
YES (Past error)>>Error was detected in the accelerator pedal actuator branch line.  
NO >> Repair the power supply and the ground circuit.

# LASER BRANCH LINE CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## LASER BRANCH LINE CIRCUIT

### Diagnosis Procedure

INFOID:000000011402536

#### 1. CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the 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 E218
  - Harness connector E219

Is the 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.	
E88	3	Approx. 108 – 132
	6	

Is the measurement value within the specification?

YES >> GO TO 3.

NO >> Repair the ICC sensor branch line.

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

Check the power supply and the ground circuit of the ICC sensor. Refer to [CCS-116, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES (Present error)>>Replace the ICC sensor. Refer to [CCS-133, "Removal and Installation"](#).

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

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

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# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## CAN COMMUNICATION CIRCUIT 1

### Diagnosis Procedure

INFOID:000000011402537

#### 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-64. "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.	
M4	6 14	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	6		Not existed
	14		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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.

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.		
27	26	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.

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

# CAN COMMUNICATION CIRCUIT 1

< DTC/CIRCUIT DIAGNOSIS >

[CAN SYSTEM (TYPE 7)]

## 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 7)]

## CAN COMMUNICATION CIRCUIT 2

### Diagnosis Procedure

INFOID:000000011402538

#### 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-64. "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.	
M4	13	Not existed
	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the harness and repair 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.		
M4	13	Ground	Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check the harness and repair 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 7)]

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 7)]

## ITS COMMUNICATION CIRCUIT

### Diagnosis Procedure

INFOID:000000011402539

#### 1. CHECK CAN DIAGNOSIS

Check the CAN diagnosis results from CONSULT 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-64. "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 following terminals and connectors for damage, bend and loose connection (unit side and connector side).
  - ADAS control unit
  - Harness connector B63
  - Harness connector B239

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.	
B52	6	E88	3	Existed
	7		6	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the ADAS control unit branch line. (ITS communication circuit side). Refer to [LAN-64. "System Diagram"](#).

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

1. Disconnect the following harness connectors.
  - Side radar RH
  - Side radar LH
  - Lane camera unit
  - Around view monitor control unit
  - Driver assistance buzzer control module
  - Sonar control 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.		
B52	6	7	Not existed



# ITS COMMUNICATION CIRCUIT

[CAN SYSTEM (TYPE 7)]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 5.  
NO >> Check the harness and repair the root cause.

## 5.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

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

ADAS control unit harness connector		Ground	Continuity
Connector No.	Terminal No.		
B52	6		Not existed
	7		Not existed

Is the inspection result normal?

- YES >> GO TO 6.  
NO >> Check the harness and repair 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.		
6	7	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 circuit.  
**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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