SECTION SBC
SEAT BELT CONTROL SYSTEM

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000013010570

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

WARNING:

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.**

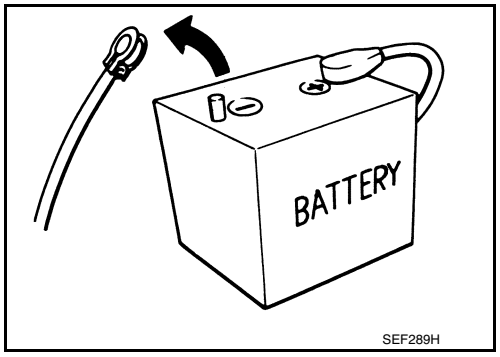
Precautions for Removing Battery Terminal

INFOID:0000000013010572

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		
YD25DDTi	: 2 minutes		



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.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:

- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
  - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
  - Driving for 30 minutes or more on a steep slope.

- 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.

Precaution for Procedure without Cowl Top Cover

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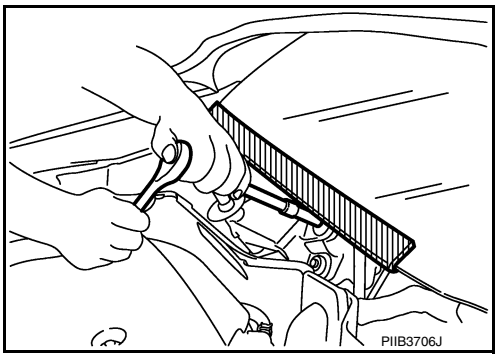
When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Precaution for Seat Belt Service

INFOID:0000000012349780

CAUTION:

- **Before removing the front seat belt pre-tensioner assembly, turn the ignition switch off, disconnect battery negative terminal and wait at least 3 minutes.**
- **Do not use electrical test equipment for front seat belt pre-tensioner connector.**
- **After replacing or reinstalling front seat belt pre-tensioner assembly, or reconnecting front seat belt pre-tensioner connector, check the system function. Refer to SRC-12, "Description".**
- **Do not use disassembled buckle or seat belt assembly.**
- **Replace anchor bolts if they are deformed or worn out.**
- **Never oil tongue and buckle.**
- **If any component of seat belt assembly is questionable, do not repair. Replace the entire seat belt assembly.**
- **If webbing is cut, frayed or damaged, replace seat belt assembly.**
- **When replacing seat belt assembly, use a genuine NISSAN seat belt assembly.**

AFTER A COLLISION

WARNING:

Inspect all seat belt assemblies including retractors and attached hardware after any collision. NISSAN recommends that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show no damage and continue to operate properly. Failure to do so could result in serious personal injury in an accident. Seat belt assemblies not in use during a collision should also be replaced if either damage or improper operation is noted. Seat belt pre-tensioners should be replaced even if the seat belts are not in use during a frontal collision in which the air bags are deployed.

Replace any seat belt assembly (including anchor bolts) if:

- The seat belt was in use at the time of a collision (except for minor collisions and the belts, retractors and buckles show no damage and continue to operate properly).
- The seat belt was damaged in an accident (i.e. torn webbing, bent retractor or guide).
- The seat belt attaching point was damaged in an accident. Inspect the seat belt attaching area for damage or distortion and repair as necessary before installing a new seat belt assembly.
- Anchor bolts are deformed or worn out.
- The front seat belt pre-tensioner should be replaced even if the seat belts are not in use during the collision in which the air bags are deployed.

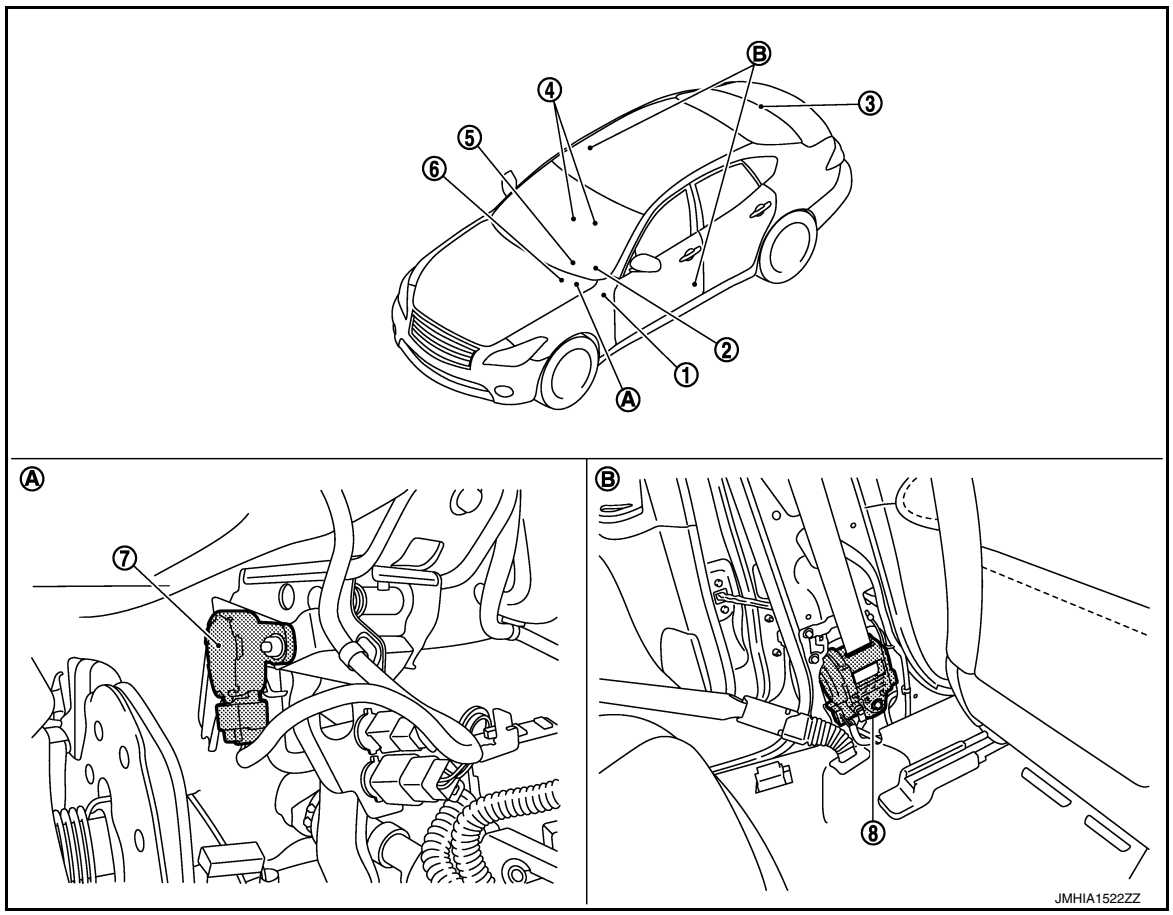
SYSTEM DESCRIPTION

COMPONENT PARTS

PRE-CRASH SEAT BELT SYSTEM

PRE-CRASH SEAT BELT SYSTEM : Component Parts Location

INFOID:0000000012349781



1. BCM
2. Combination meter
3. ADAS control unit
4. Seat belt buckle switch
5. Steering angle sensor
6. ABS actuator and electric unit (control unit)
7. Brake pedal stroke sensor
8. Pre-crash seat belt control unit (driver side)

A. View with instrument driver lower cover removed
B. View with center pillar lower garnish removed (driver side)

PRE-CRASH SEAT BELT SYSTEM : Component Description

INFOID:0000000012349782

Component	Function
Pre-crush seat belt control unit (driver side)	• Total control of pre-crash seat belt system is operated according to transmit signal. • Driver seat belt retractor integrates pre-crash seat belt control unit (driver side), driver seat belt motor, and tension reducer. • Seat belt motor operates each operation of pull, return, and hold.
Pre-crush seat belt control unit (passenger side)	• Control of passenger pre-crash seat belt is operated according to transmit signal. • Passenger seat belt retractor integrates pre-crash seat belt control unit (driver seat), driver seat belt motor, and tension reducer. • Seat belt motor operates each operation of pull, return, and hold.

Component	Function
Brake pedal stroke sensor	• It changes voltage according to brake pedal depressed amount and sends the signal to pre-crash seat belt control unit. • There are 2 signals (brake pedal stroke sensor 1 and 2) sent from the brake pedal stroke sensor. Pre-crash seat belt control unit judges the stroke amount and the speed of the brake pedal according to the voltage of the signal sent by each side.
Seat belt buckle switch (driver side)	• Fastening or not fastening of seat belt is judged. This judgment is used for control of driver pre-crash seat belt system. • Seat belt warning lamp on combination meter turns ON when seat belt is not fastened while ignition switch is ON. • The seat belt buckle switch is installed in the seat belt buckle.
Seat belt buckle switch (passenger side)	• Fastening or not fastening of seat belt is judged. This judgment is used to control passenger pre-crash seat belt system. • Control of passenger seat tension reducer is operated by ON/OFF of seat belt buckle switch. • The seat belt buckle switch is installed in the seat belt buckle.
Combination meter	• Transmits vehicle speed signal to pre-crash seat belt control unit (driver side). • Turns the seat belt warning lamp ON when the seat belt is unfastened.
ADAS control unit	Intelligent brake assistance operation signal is received from ADAS control unit via CAN communication.
Steering angle sensor	Steering angle sensor signal, steering angle speed signal, steering angle sensor neutral position adjustment completion signal, and steering angle sensor malfunction signal are received via CAN communication.
BCM	Ignition ON signal, sleep/wakeup signal, and door switch signal are received from BCM via CAN communication.
ABS actuator and electric unit (control unit)	ABS operation signal is received from ABS actuator and electric unit (control unit) via CAN communication.

SEAT BELT WARNING LAMP SYSTEM

SEAT BELT WARNING LAMP SYSTEM : Component Parts Location

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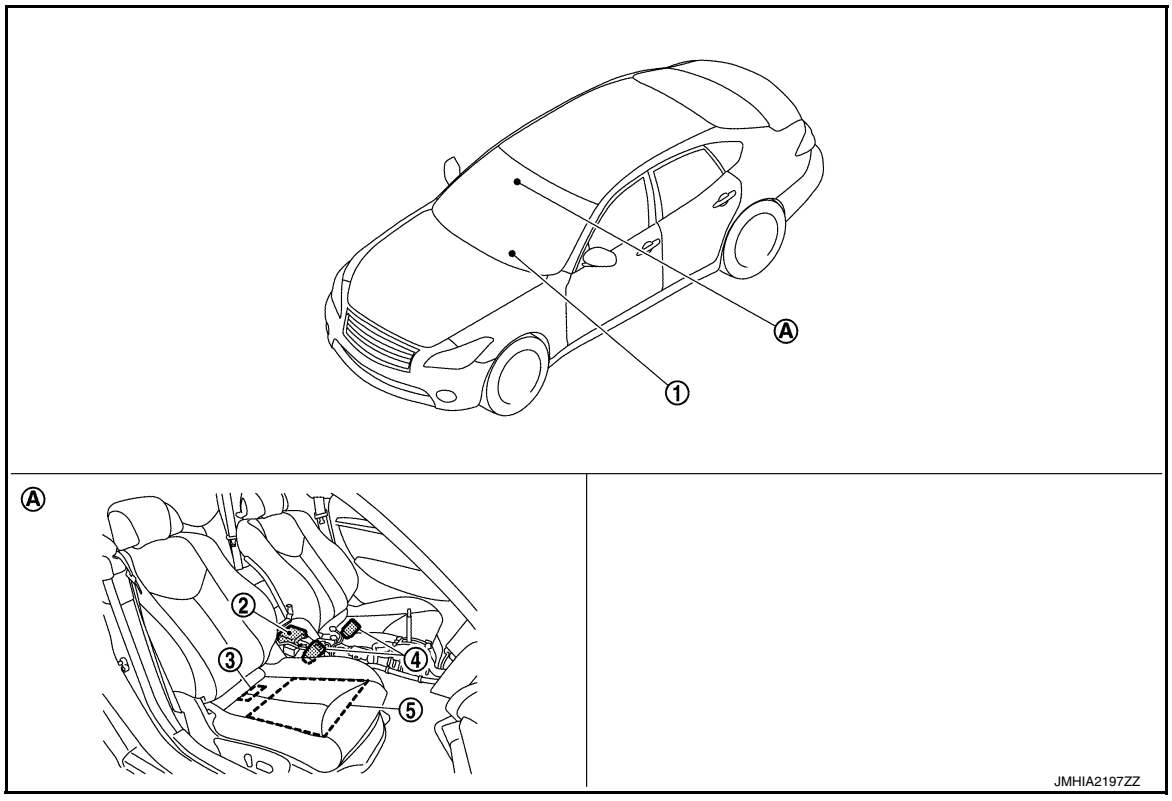

1. Combination meter
   Refer to MWI-7, "METER SYSTEM : Component Parts Location".
2. Air bag diagnosis sensor unit
3. Occupant classification system control unit
4. Seat belt buckle switch LH/RH
5. Occupant classification system sensor

A. View with center console assembly removed

SEAT BELT WARNING LAMP SYSTEM : Component Description

INFOID:0000000012349784

Component parts	Outline of function
Seat belt buckle switch (Driver side)	Detects if the seat belt buckle switch (driver side) is fastened or unfastened
Seat belt buckle switch (Passenger side)	Detects if the seat belt buckle switch (passenger side) is fastened or unfastened
Seat belt warning lamp	Turns the seat belt warning lamp ON when the seat belt is unfastened
Occupant Classification System control unit	Judges the passenger seat condition based on the information from Occupant Classification System control unit
Occupant Classification System seat sensor	Detects if the passenger seat is empty or occupied
Air bag diagnosis sensor unit	Turns ON seat belt warning lamp based on the information from Occupant Classification System control unit

SYSTEM

PRE-CRASH SEAT BELT SYSTEM

PRE-CRASH SEAT BELT SYSTEM : System Diagram

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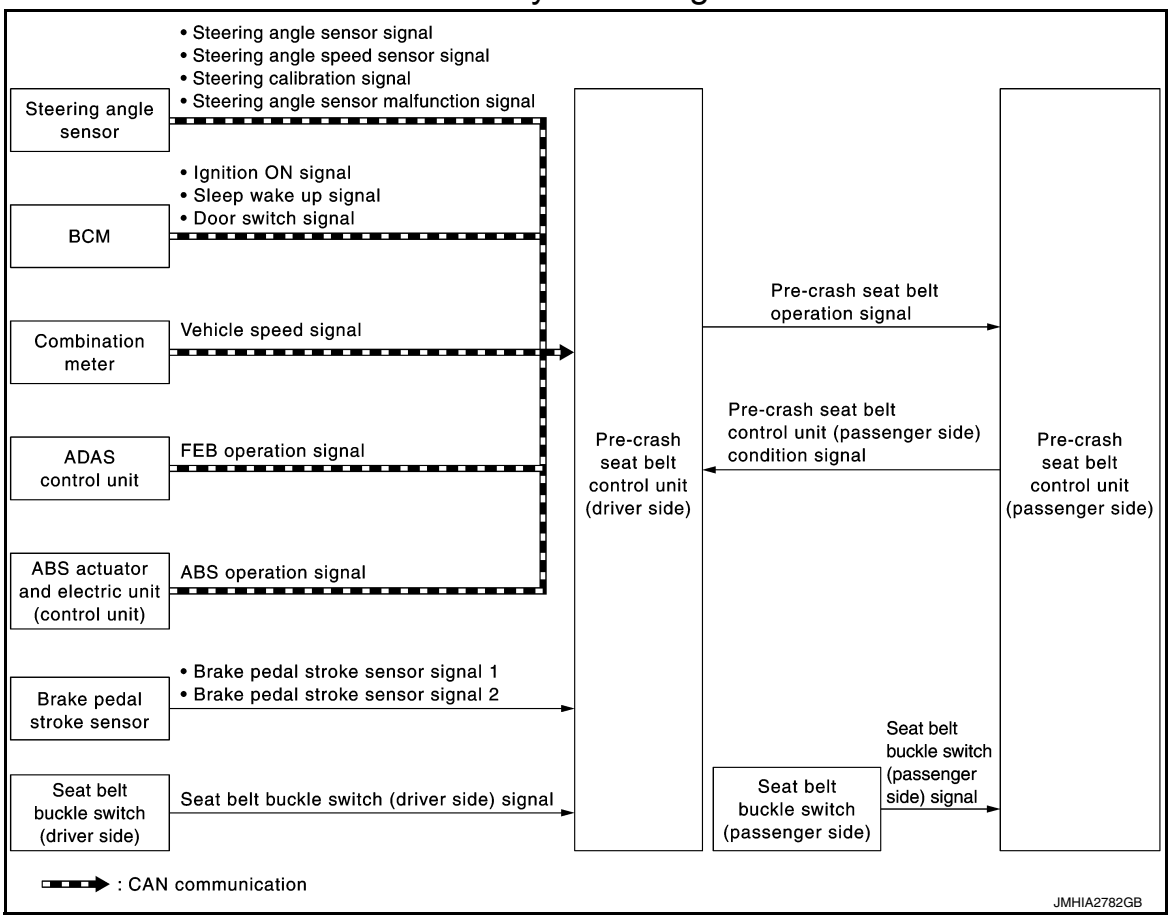


PRE-CRASH SEAT BELT SYSTEM : System Description

INFOID:0000000012349786

- Pre-crash seat belt system integrates control unit and motor in driver and passenger seat belt retractors.
- Provides a sense of ease when pre-crash seat belt control unit judges the emergency braking operation, the forward emergency braking operating status, the continuous ABS operating status, the emergency steering wheel operation, or the lateral slippage status during cornering. The motor immediately retracts the seat belt and suppresses change in occupant posture.
- Even in a situation where a collision is unavoidable, effects of other safety devices, like the air bag, are maximized and damages are reduced.
- Motor retracts seat belt when unfastening and extracts seat belt when fastening to reduce the feeling of pressure. (comfort function)

FUNCTION DESCRIPTION

Pre-crash seat belt system operates under the following conditions.

- During emergency brake operation
- When ABS continuously operates
- When forward emergency braking operates
- When lateral slippage during cornering occurs
- When steering wheel is rotated for emergency
- When comfort function operates

OPERATION CONDITION

Operation while driving

- Operation start and stop conditions of pre-crash seat belt system are as shown in the following table.
- The activation and deactivation conditions of pre-crush seat belt are as per the following.

Operation item	Operation start condition	Operation stop condition
During emergency brake operation	• Vehicle speed is 15 km/h (9 MPH) or more • Emergency braking status is detected	• During acceleration • When stopped
When ABS continuously operates	• ABS continuously operates for 2 seconds or more • Brake pedal is in depressed state	
When forward emergency braking operates	System detects that forward emergency braking is in operating status	2 seconds after operation start
When lateral slippage during cornering occurs	• Vehicle speed is 30 km/h (19 MPH) or more • System detects that the vehicle is in lateral slippage state • System detects that the vehicle is driving on a curve	• Vehicle stopped • 1 second or more after maintaining steering wheel angle in straight driving state
When steering wheel is rotated for emergency	• Vehicle speed is 60 km/h (36 MPH) or more • Steering wheel angle is 90 degrees or more • System detects that steering wheel is rotated for emergency	

NOTE:
For details of forward emergency braking system.Refer to BRC-175, "System Description".

Comfort function

- Seat belt is retracted and the looseness is reduced in the state as shown in the following table.
- Operation start and stop conditions of pre-crash seat belt system are as shown in the following table.

Operation item	Activating condition	Deactivating condition
Door open	• Seat belt is in not fastened state • Door is operated to open from closed • Vehicle stopped	• Seat belt retract is complete • 13 seconds after start retracting
Seat belt is fastened	• When door is closed • Seat belt is fastened	• Seat belt is unfastened • 1 second after operation
Seat belt is release	Seat belt is unfastened	• Seat belt retract is complete • 10 seconds after start retracting

Operation Prohibition Condition

Pre-crash seat belt system does not operate in the following conditions.

- When seat belt is not fastened (only the seat belt that is not fastened does not operate)
- When motor is overheat due to contentious operation*1
- When the system is in fail-safe mode

*1: System operation is temporarily deactivated to avoid overheating, when comfort function is continuously operated (30 times or more) during a short period of time by fastening and unfastening seat belts or opening and closing doors.

MALFUNCTION WARNING

When system malfunction is detected, comfort function is deactivated to warn customer of system malfunction.

PRE-CRASH SEAT BELT SYSTEM : Fail Safe

INFOID:0000000013010461

When a system malfunction is detected, deactivates a part of the system or all functions depending on the malfunctioning part.
When the malfunction condition recovers to the normal condition, the system returns to the normal operation.

Display contents of CONSULT	Fail-safe
B2451:SEAT BLT MTR DR CIRC	Fully deactivates the whole operation.
B2452:SEAT BLT MTR AS CIRC	Deactivates a part of comfort function.

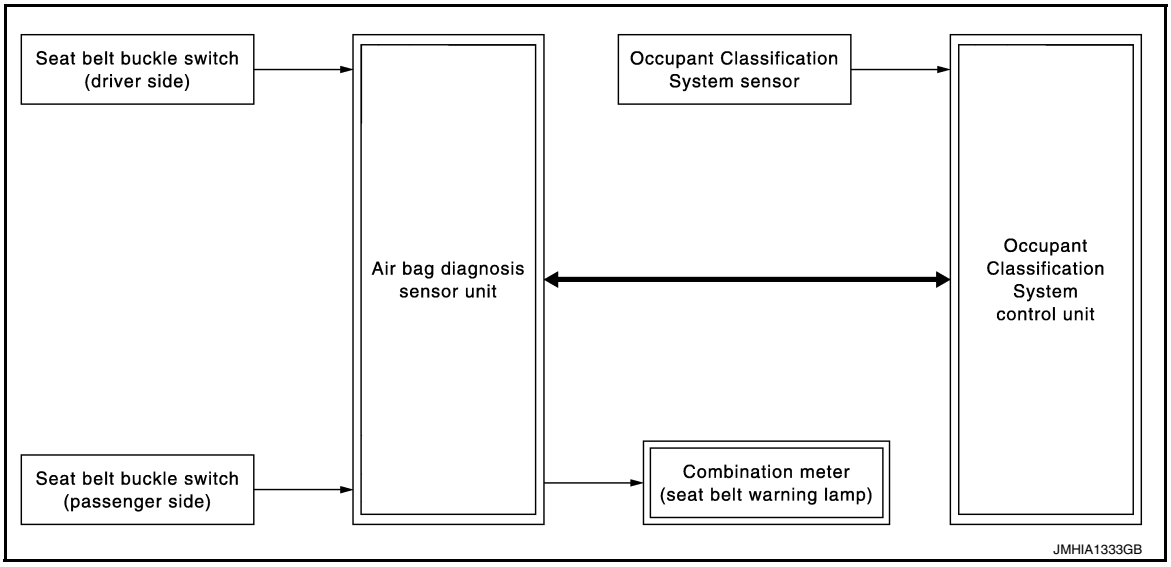
Display contents of CONSULT	Fail-safe
B2453:BR_STROKE_SEN_CIRC	Stops the operation in the conditions as per the following. • During emergency brake operation • When ABS continuously operates • A part of comfort function
B2455:CONTROL UNIT DR	Stops the operation in the conditions as per the following. *1 • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • Whenforward emergency braking operates • When steering wheel is rotated for emergency • A part or the whole comfort function
B2457:CONTROL UNIT AS	Deactivates a part of comfort function.
B2458:LOCAL COMM	Deactivates a part of comfort function.
B2461:VHCL SPEED SIGNAL	Stops the operation in the conditions as per the following. • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency • When comfort function operates
B2466:DR/AS CONTROL UNIT	Deactivates a part of comfort function.
B2470:SYS HEAT PROTC DR	• Fully deactivates the whole operation. • Operation return - 1 time operation becomes possible after approximately 15 seconds - Returns to the initial condition after approximately 8 minutes
U0126:STRG ANG SEN SIG	Stops the operation in the conditions as per the following. • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency • A part of comfort function
U0428:STRG ANGL CAL	Stops the operation in the conditions as per the following. • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency • A part of comfort function
U1000:CAN communication circuit	Stops the operation in the conditions as per the following. *1 • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • Whenforward emergency braking operates • When steering wheel is rotated for emergency • A part or the whole comfort function

*1: The deactivation mode differs depending on the internal malfunctioning condition of control unit

SEAT BELT WARNING LAMP SYSTEM

SEAT BELT WARNING LAMP SYSTEM : System Diagram

INFOID:0000000012349788



SEAT BELT WARNING LAMP SYSTEM : System Description

INFOID:0000000012349789

- Turns ON seat belt warning lamp, when the Occupant Classification System judges adult or child in the front passenger seat and the passenger seat belt buckle switch is OFF.
- Operation of air bag diagnosis sensor unit when air bag diagnosis sensor unit receives information from Occupant Classification System.
- In addition, seat belt warning lamp illuminates, when the driver side seat belt is not fasten. This does not relate to the air bag diagnosis sensor unit.
- For driver seat belt function, refer to MWI-37, "Reference Value".

Status (front passenger seat)	**Seat belt warning lamp (When front passenger seat is unbuckled)**
Empty	OFF
An object	OFF
Child/ child-seat	ON
Adult	ON
Malfunction	OFF

DIAGNOSIS SYSTEM (PRE-CRASH SEAT BELT)

CONSULT Function

INFOID:0000000012349790

Diagnosis for pre-crash seat belt system can be performed using CONSULT.

APPLICATION ITEM

Part to be diagnosed	Diagnosis Mode	Function description
Pre-crash seat belt	Self-diagnosis Results	• Displays data recorded when a malfunction is detected. • Can print out the display. • Erases DTC recorded in memory.
	Data Monitor	Displays input data for pre-crash seat belt control unit in real time.
	Work Support	Changes the setting for each system function.
	CAN DIAG SUPPORT MNTR	Monitors communication status of CAN communication.
	ECU Identification	Displays pre-crash seat belt control unit part number.

SELF-DIAGNOSIS RESULTS

Refer to SBC-16, "DTC Index".

CAUTION:

When malfunctions are detected in several systems, including the CAN communication [U1000], troubleshoot the CAN communication [U1000].

ERASING SELF-DIAGNOSIS RESULTS

- SELF-DIAGNOSIS RESULTS
  Current “SELF-DIAG RESULTS” are displayed. (If all suspect circuits have been repaired, “NO DTC” is displayed.)
- SELF-DIAG RESULTS [MEMORY]
  Resume trouble diagnosis item selection screen, confirm “SELF-DIAG RESULTS”, and then touch ERASE MEMORY.

DATA MONITOR

Monitor item	Contents
BUCKLE SW RH	Indicates [ON/OFF] condition of seat belt buckle switch (RH).
BUCKLE SW LH	Indicates [ON/OFF] condition of seat belt buckle switch (LH).
VEHICLE DISTANCE	Indicates [ON/OFF] condition of intelligent brake assist signal.
IGN SW	Indicates [ON/OFF] condition of ignition switch.
FR DOOR SW RH	Indicates [Close/Open] condition of front door switch (RH).
FR DOOR SW LH	Indicates [Close/Open] condition of front door switch (LH).
ABS ACTIVATING	Indicates [ON/OFF] condition of ABS activating.
VHCL SPEED	Indicates [Km/h] vehicle speed signal.
BRK PEDAL SNSR1	Indicates [V] voltage of brake pedal stroke sensor 1 signal.
BRK PEDAL SNSR2	Indicates [V] voltage of brake pedal stroke sensor 2 signal.
STRG ANGLE	Indicates [deg] steering angle signal.
STRG ANGLE SPEED	Indicates [deg/s] steering angle speed signal.
HEAT PROTC RH	Indicates [ON/OFF] condition of heat protection (RH).
HEAT PROTC LH	Indicates [ON/OFF] condition of heat protection (LH).

WORK SUPPORT

Monitor item	Description
DOOR OPENING RETRACT RETRY	Changes the number of times for the seat belt retract retry when the door opens.

ECU DIAGNOSIS INFORMATION

PRE-CRASH SEAT BELT CONTROL UNIT (DRIVER SIDE)

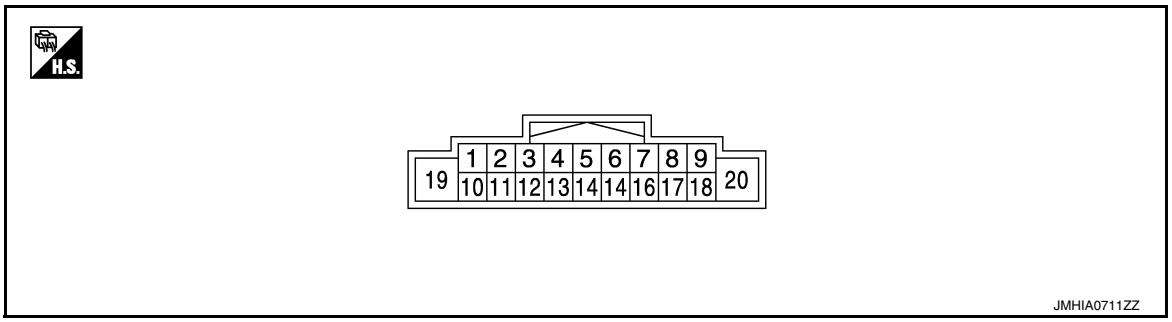
Reference Value

INFOID:0000000012349791

VALUES ON THE DIAGNOSIS TOOL
CONSULT MONITOR ITEM

Monitor item	Condition	Value/Status (Approx.)
BUCKLE SW RH	RH seat belt is not fastened	OFF
	RH seat belt is fastened	ON
BUCKLE SW LH	RH seat belt is not fastened	OFF
	RH seat belt is fastened	ON
VEHICLE DISTANCE	Not activated	OFF
	Activated	ON
IGN SW	Ignition switch OFF	OFF
	Ignition switch ON	ON
FR DOOR SW RH	LH door close	CLOSE
	LH door open	OPEN
FR DOOR SW LH	RH door close	CLOSE
	RH door open	OPEN
ABS ACTIVATING	ABS not activating	OFF
	ABS activating	ON
VHCL SPEED	While driving	Equivalent speedometer reading (km/h)
BRK PEDAL SNSR1	Brake released → depressed	(1 V → 4 V)
BRK PEDAL SNSR2	Brake released → depressed	(4 V → 1V)
STRG ANGLE	Steering wheel: 0° (Neutral)	±2.5 (deg)
	Steering wheel: 90° (Turned right)	+90 (deg)
	Steering wheel: 90° (Turned left)	-90 (deg)
STRG ANGLE SPEED	Ignition switch ON	Depending on steering angle speed (deg/s)
HEAT PROTC RH	RH heat protection is not activated	OFF
	RH heat protection is activated	ON
HEAT PROTC LH	LH heat protection is not activated	OFF
	LH heat protection is activated	ON

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value*1 (Approx.)
+	–	Signal name	Input/ Output		
2 (G)	Ground	Brake pedal stroke sensor signal 1	Input	Brake released → depressed	1V→4V
4 (R)	Ground	CAN-L	Input/ Output	—	—
6 (LG)	Ground	Seat belt buckle switch signal	Input	Seat belt is fastened	0 V
				Seat belt is unfastened	5 V
9 (–)	Ground	Shield	—	—	—
10 (R)	Ground	Brake pedal stroke sensor power circuit	Output	IGN ON	5 V
12 (B)	Ground	Brake pedal stroke sensor signal 2	Input	Brake released → depressed	4V→1V
14 (L)	Ground	CAN-H	Input/ Output	—	—
16 (Y)	Ground	Local Communication Line 1	Input/ Output	—	—
17 (W)	Ground	Brake pedal stroke sensor ground circuit	Input	—	0 V
19 (Y)	Ground	Motor drive circuit power supply	Input	—	Battery voltage
20 (B)	Ground	Motor drive circuit ground	Output	—	0 V

*1: Perform the measurement while connecting the control unit and the harness.

Fail Safe

INFOID:0000000012349792

When a system malfunction is detected, deactivates a part of the system or all functions depending on the malfunctioning part.
When the malfunction condition recovers to the normal condition, the system returns to the normal operation.

Display contents of CONSULT	Fail-safe
B2451:SEAT BLT MTR DR CIRC	Fully deactivates the whole operation.
B2452:SEAT BLT MTR AS CIRC	Deactivates a part of comfort function.
B2453:BR_STROKE_SEN_CIRC	Stops the operation in the conditions as per the following. • During emergency brake operation • When ABS continuously operates • A part of comfort function
B2455:CONTROL UNIT DR	Stops the operation in the conditions as per the following. *1 • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • Whenforward emergency braking operates • When steering wheel is rotated for emergency • A part or the whole comfort function
B2457:CONTROL UNIT AS	Deactivates a part of comfort function.
B2458:LOCAL COMM	Deactivates a part of comfort function.

Display contents of CONSULT	Fail-safe
B2461:VHCL SPEED SIGNAL	Stops the operation in the conditions as per the following. • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency • When comfort function operates
B2466:DR/AS CONTROL UNIT	Deactivates a part of comfort function.
B2470:SYS HEAT PROTC DR	• Fully deactivates the whole operation. • Operation return - 1 time operation becomes possible after approximately 15 seconds - Returns to the initial condition after approximately 8 minutes
U0126:STRG ANG SEN SIG	Stops the operation in the conditions as per the following. • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency • A part of comfort function
U0428:STRG ANGL CAL	Stops the operation in the conditions as per the following. • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency • A part of comfort function
U1000:CAN communication circuit	Stops the operation in the conditions as per the following. *1 • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • Whenforward emergency braking operates • When steering wheel is rotated for emergency • A part or the whole comfort function

*1: The deactivation mode differs depending on the internal malfunctioning condition of control unit

DTC Index

INFOID:0000000012349793

DISPLAY ITEM LIST (PRE-CRASH SEAT BELT)

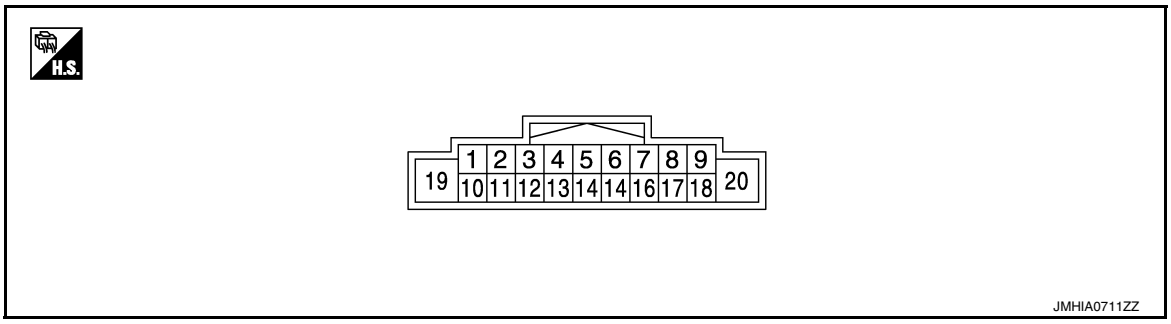
DTC	Trouble diagnosis name (CONSULT display)	DTC detection condition	Reference
U1000	CAN COMM CIRCUIT	Pre-crash seat belt control unit cannot transmit and receive CAN communication signal for 2 seconds or more	SBC-37
B2451	SEAT BLT MTR DR CIRC	• Motor or control unit malfunction • Seat belt motor circuit is shorted or open	SBC-40
B2452	SEAT BLT MTR AS CIRC	• Motor or control unit malfunction • Seat belt motor circuit is shorted or open	SBC-41
B2453	BR_STROKE_SEN_CIRC	• Brake pedal stroke sensor malfunction • Brake pedal stroke sensor circuit is short	SBC-42
B2455	CONTROL UNIT DR	Malfunction in pre-crash seat belt control unit	SBC-45
B2457	CONTROL UNIT AS	Malfunction in pre-crash seat belt control unit	SBC-46
B2458	LOCAL COMM	Local communication line shorted or open	SBC-47
B2461	VHCL SPEED SIGNAL	Vehicle speed signal malfunction is received	SBC-49
B2466	DR/AS CONTROL UNIT	Control unit is out of the vehicle specification	SBC-50
B2470	SYS HEAT PROTC DR	Deactivation for cooling to prevent system heating due to continuous operation	SBC-51
B2471	SYS HEAT PROTC AS	Deactivation for cooling to prevent system heating due to continuous operation	SBC-52
U0126	STRG ANG SEN SIG	Steering angle sensor malfunction is received	SBC-38
U0428	STRG ANGL CAL	Steering angle sensor calibration incomplete signal is received	SBC-39

PRE-CRASH SEAT BELT CONTROL UNIT (PASSENGER SIDE)

Reference Value

INFOID:0000000012349794

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value*1 (Approx.)
+	–	Signal name	Input/ Output		
6 (G)	Ground	Seat belt buckle switch signal	Input	Seat belt is fastened	0 V
				Seat belt is unfastened	5 V
16 (LG)	Ground	Local Communication Line 1	Input/ Output	—	—
19 (W)	Ground	Motor passenger circuit power supply	Input	—	Battery voltage
20 (B)	Ground	Motor passenger circuit ground	Output	—	0 V

*1: Perform the measurement while connecting the control unit and the harness.

Fail Safe

INFOID:0000000012349795

When a system malfunction is detected, deactivates a part of the system or all functions depending on the malfunctioning part.
When the malfunction condition recovers to the normal condition, the system returns to the normal operation.

Display contents of CONSULT	Fail-safe
B2452:SEAT BLT MTR DR CIRC	Fully deactivates the whole operation.
B2453:BR_STROKE_SEN_CIRC	Stops the operation in the conditions as per the following. • During emergency brake operation • When ABS continuously operates
B2455:CONTROL UNIT DR	Stops the operation in the conditions as per the following. *1 • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • When forward emergency braking operates • When steering wheel is rotated for emergency • A part or the whole comfort function
B2457:CONTROL UNIT AS	Fully deactivates the whole operation. *1
B2458:LOCAL COMM	Fully deactivates the whole operation. *1

Display contents of CONSULT	Fail-safe
B2461:VHCL SPEED SIGNAL	Stops the operation in the conditions as per the following. • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency • A part or the whole comfort function
B2466:DR/AS CONTROL UNIT	Stops the operation in the conditions as per the following. *1 • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • When forward emergency braking operates • When steering wheel is rotated for emergency • A part or the whole comfort function
B2471:SYS HEAT PROTC AS	• Fully deactivates the whole operation. • Operation return - 1 time operation becomes possible after approximately 15 seconds - Returns to the initial condition after approximately 8 minutes
U0126:STRG ANG SEN SIG	Stops the operation in the conditions as per the following. • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency
U0428:STRG ANGL CAL	Stops the operation in the conditions as per the following. • When lateral slippage during cornering occurs • When steering wheel is rotated for emergency
U1000:CAN communication circuit	Stops the operation in the conditions as per the following. *1 • During emergency brake operation • When ABS continuously operates • When lateral slippage during cornering occurs • When forward emergency braking operates • When steering wheel is rotated for emergency • A part or the whole comfort function

*1: The deactivation mode differs depending on the internal malfunctioning condition of control unit

DIAGNOSIS SENSOR UNIT

List of ECU Reference

INFOID:0000000012349796

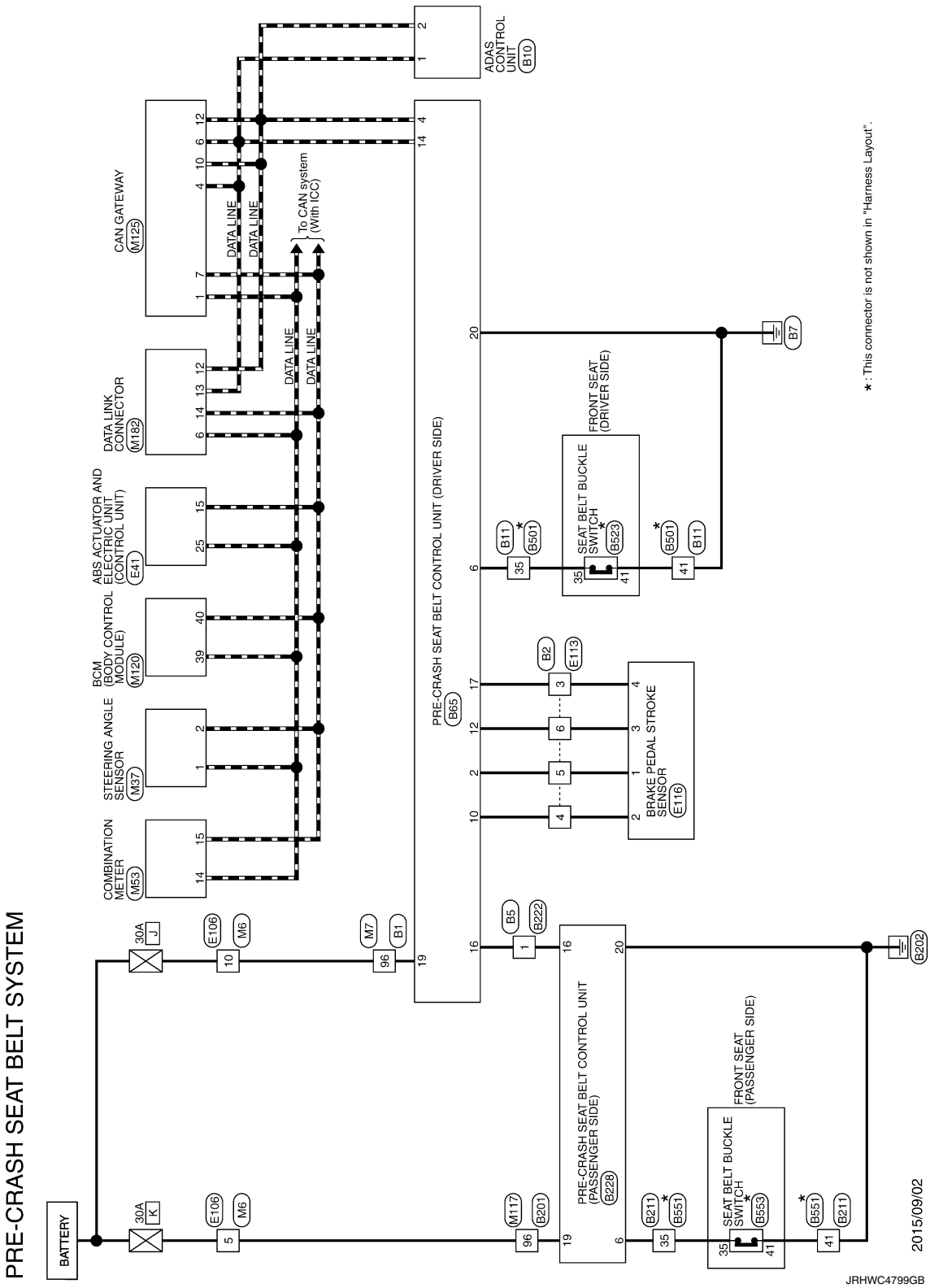
ECU	Reference
AIR BAG DIAGNOSIS SENSOR UNIT	SRC-18, "DTC Index"

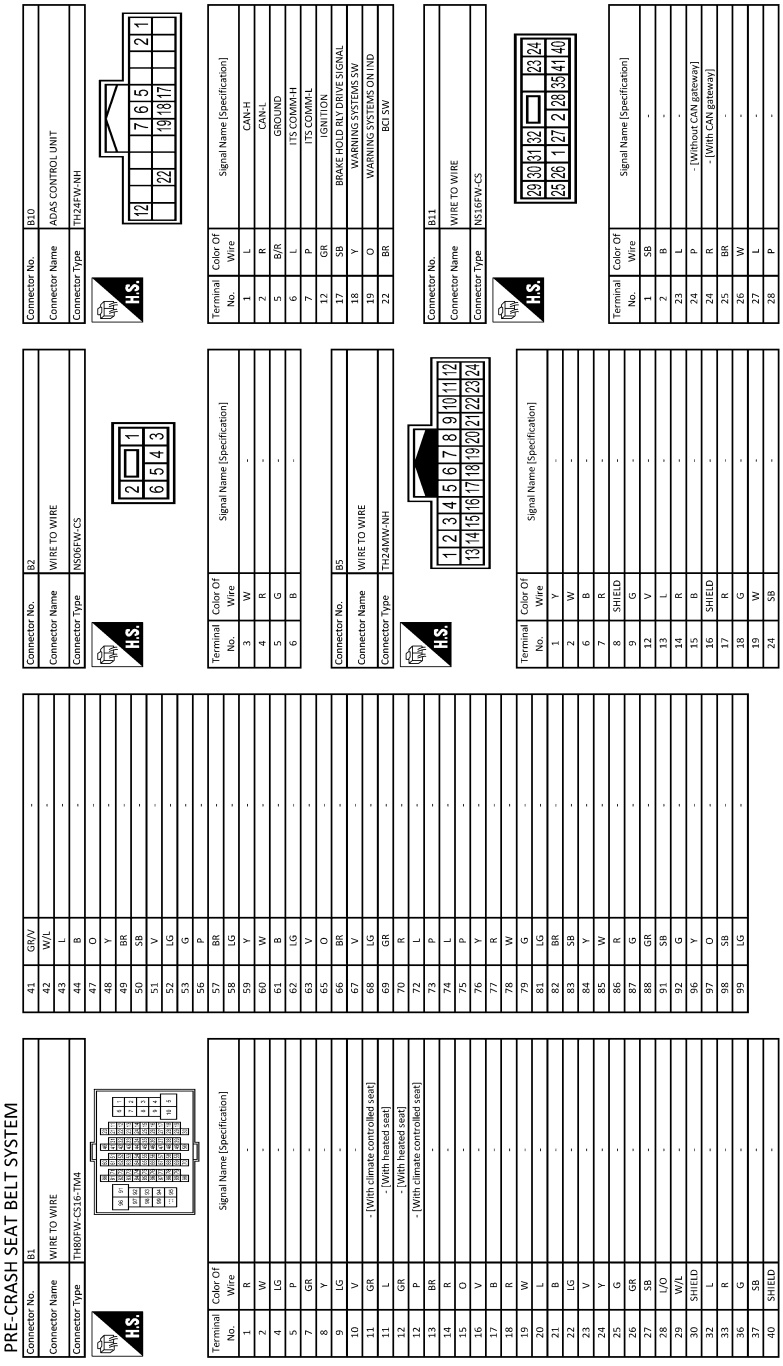
WIRING DIAGRAM

PRE-CRASH SEAT BELT CONTROL UNIT

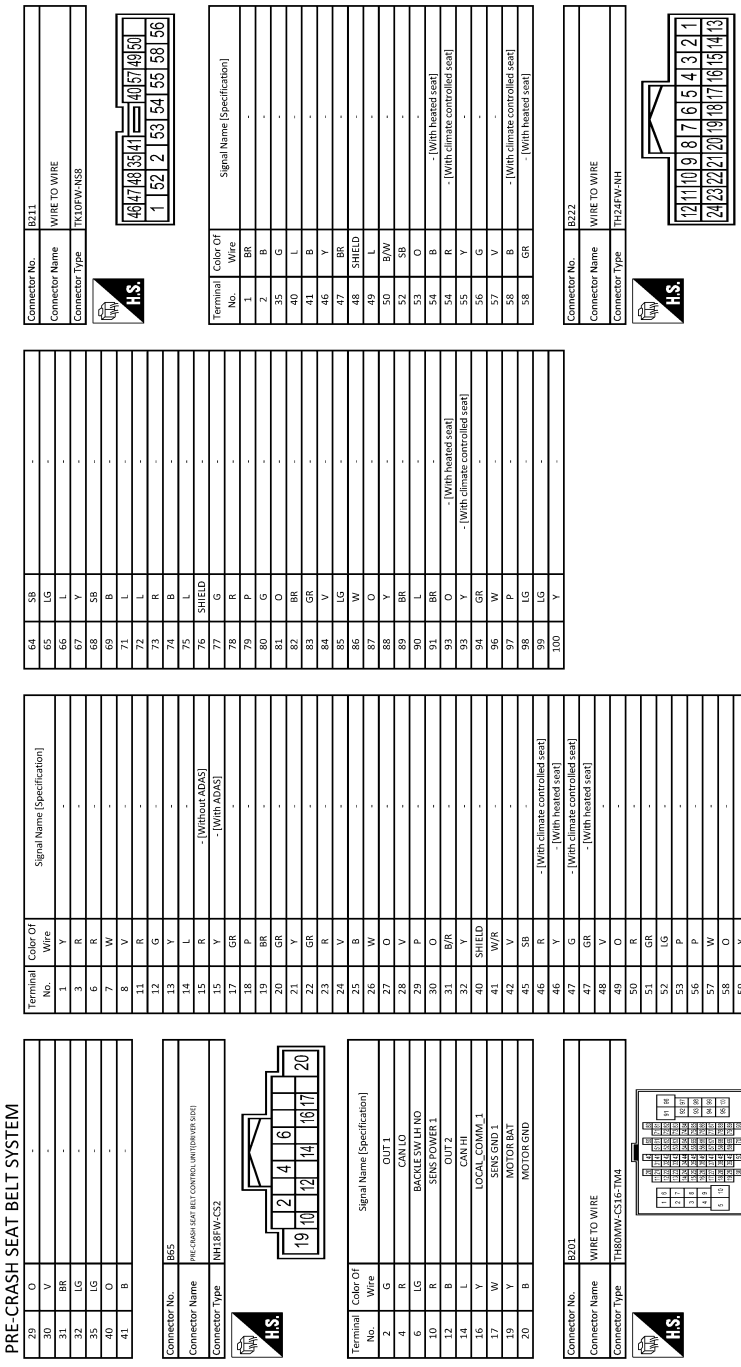
Wiring Diagram

INFOID:0000000012349797





JRHWC4800GB



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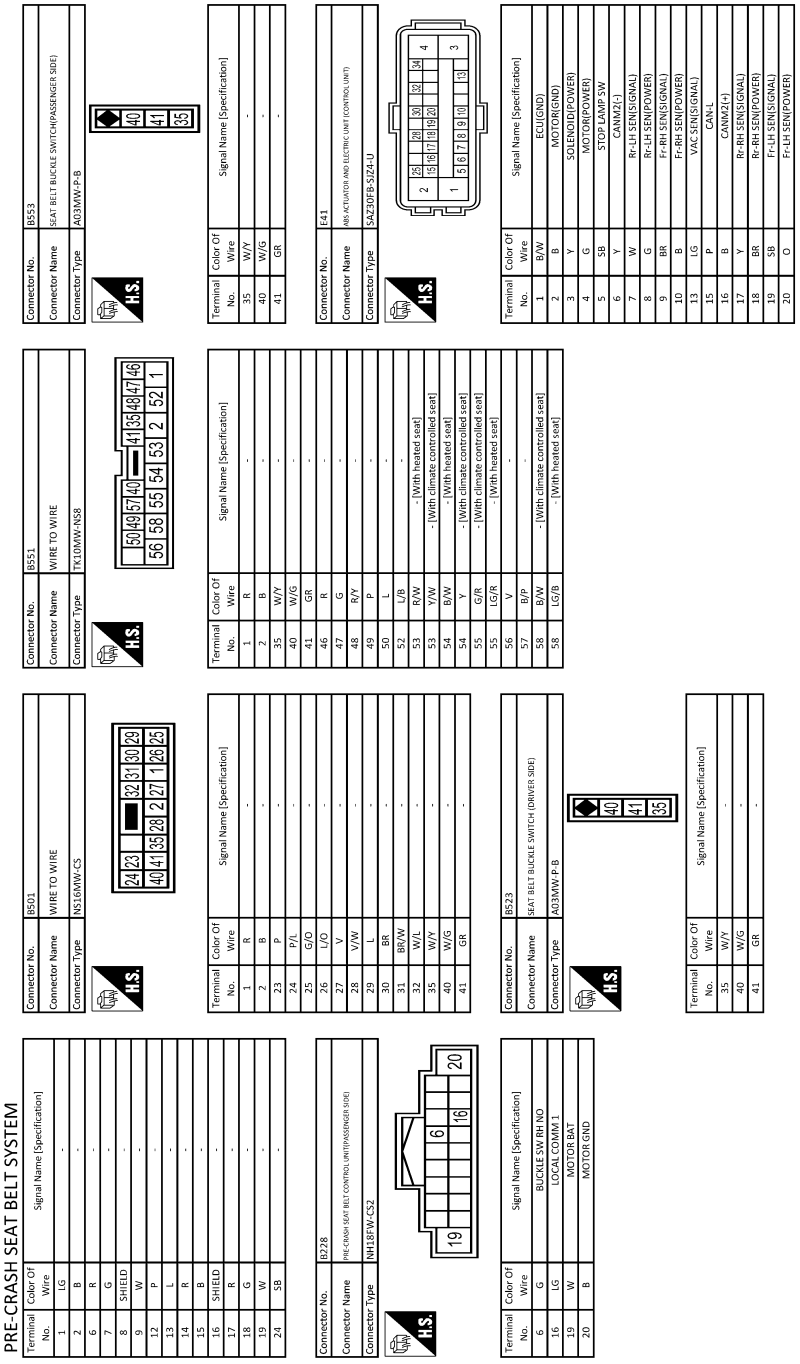

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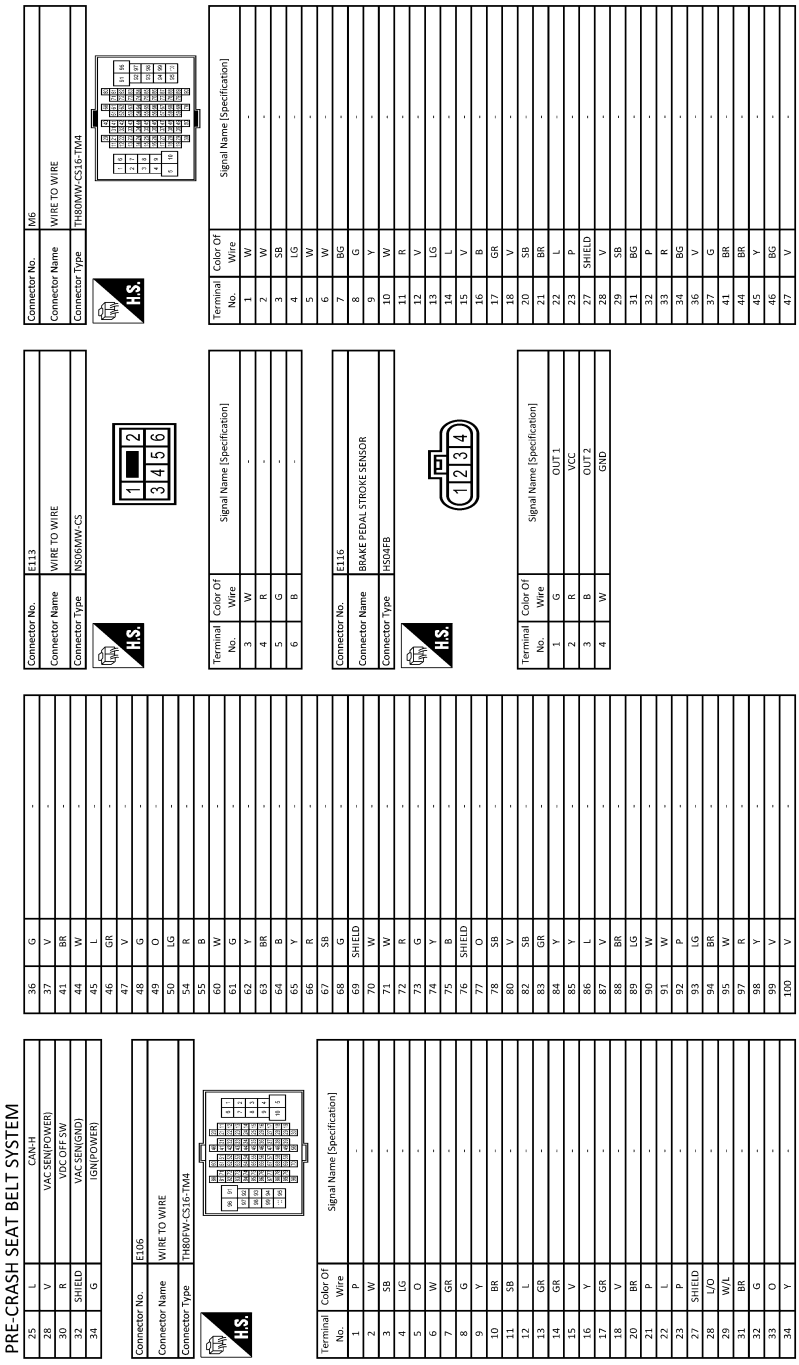

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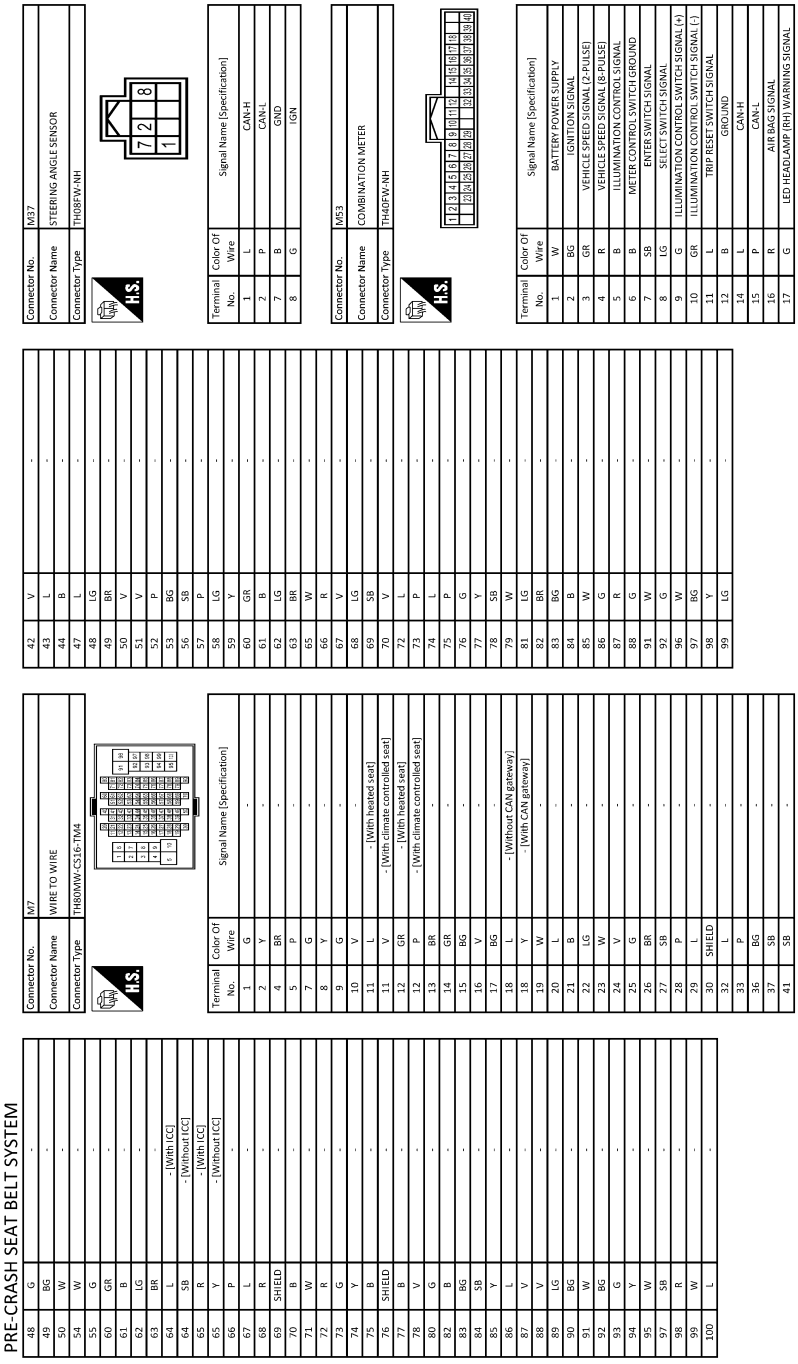

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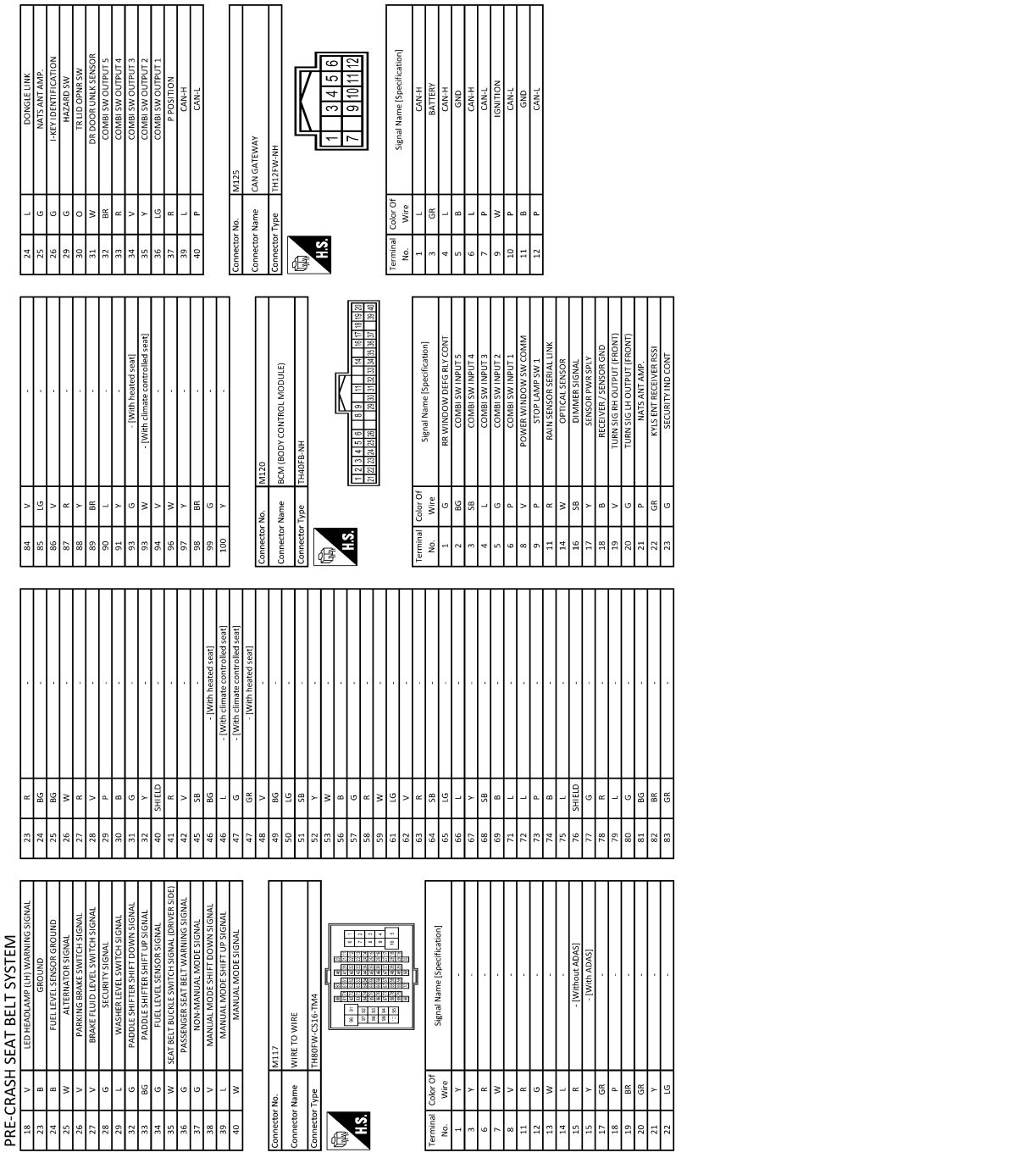
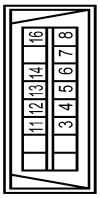


JRHWC4805GB

PRE-CRASH SEAT BELT SYSTEM

Connector No.	M182
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



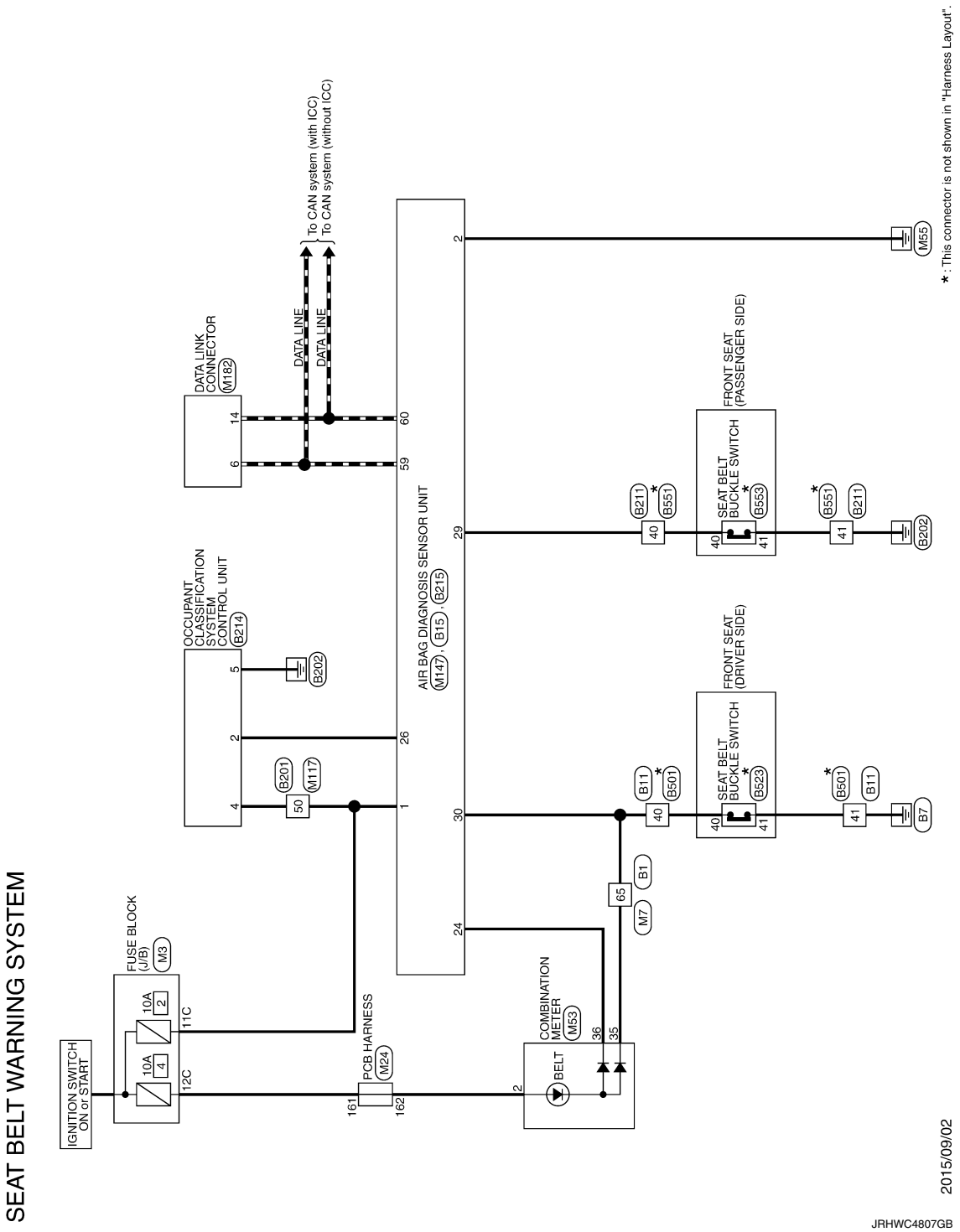
Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	M-CAN_L
4	B	EARTH
5	B	EARTH
6	L	CAN-H
7	V	K-LINE
8	LG	IGN_SW
11	SB	M-CAN_H
12	P	CAN-L
13	L	CAN-H
14	P	CAN-L
16	W	POWER

JRHWC4806GB

SEAT BELT WARNING SYSTEM

Wiring Diagram

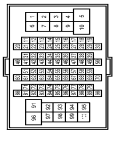
INFOID:0000000013055859



SEATBELT WARNING SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

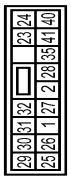
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
4	LG	-
5	P	-
7	GR	-
8	Y	-
9	LG	-
10	V	-
11	GR	- [With climate controlled seat]
11	L	- [With heated seat]
12	GR	- [With heated seat]
12	P	- [With climate controlled seat]
13	BR	-
14	R	-
15	O	-
16	V	-
17	B	-
18	R	-
19	W	-
20	L	-
21	B	-
22	LG	-
23	V	-
24	Y	-
25	G	-
26	GR	-
27	SB	-
28	L/O	-
29	W/L	-
30	SHIELD	-
32	L	-
33	R	-
36	G	-
37	SB	-
40	SHIELD	-
41	GR/V	-
42	W/L	-
43	L	-
44	B	-
47	O	-
48	Y	-
49	BR	-
50	SB	-
51	V	-
52	LG	-
53	G	-
56	P	-
57	BR	-
58	LG	-
59	Y	-
60	W	-
61	B	-
62	LG	-
63	V	-
65	O	-
66	BR	-
67	V	-
68	LG	-
69	GR	-
70	R	-
72	L	-
73	P	-
74	L	-
75	P	-
76	Y	-
77	R	-
78	W	-
79	G	-
81	LG	-
82	BR	-
83	SB	-
84	Y	-
85	W	-
86	R	-
87	G	-
88	GR	-
91	SB	-
92	G	-
96	Y	-
97	O	-
98	SB	-
99	LG	-

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

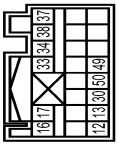
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	B	-
23	L	- [Without CAN gateway]
24	P	- [With CAN gateway]
24	R	- [Without CAN gateway]
25	BR	-
26	W	-
27	L	-
28	P	-
29	O	-
30	V	-
31	BR	-
32	LG	-
35	LG	-
40	O	-
41	B	-

Connector No.	B15
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	NH22FW-2V-EX

H.S.



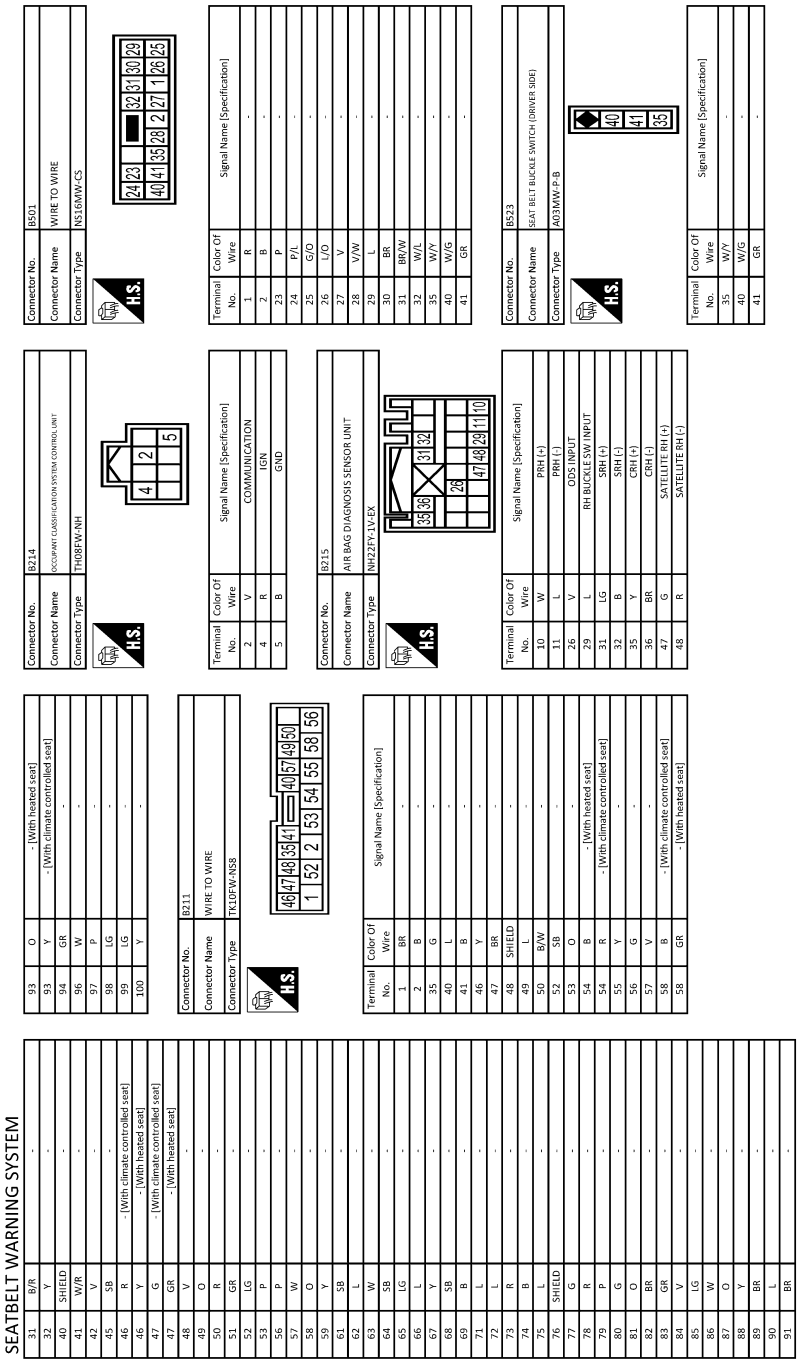
Terminal No.	Color Of Wire	Signal Name [Specification]
12	P	PLH (+)
13	G	PLH (-)
16	SB	PLH2 (+)
17	V	PLH2 (-)
30	O	LH BUCKLE SW INPUT
33	R	SLH (+)
34	L	SLH (-)
37	Y	CLH (+)
38	BR	CLH (-)
49	LG	SATELLITE LH (+)
50	GR	SATELLITE LH (-)

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

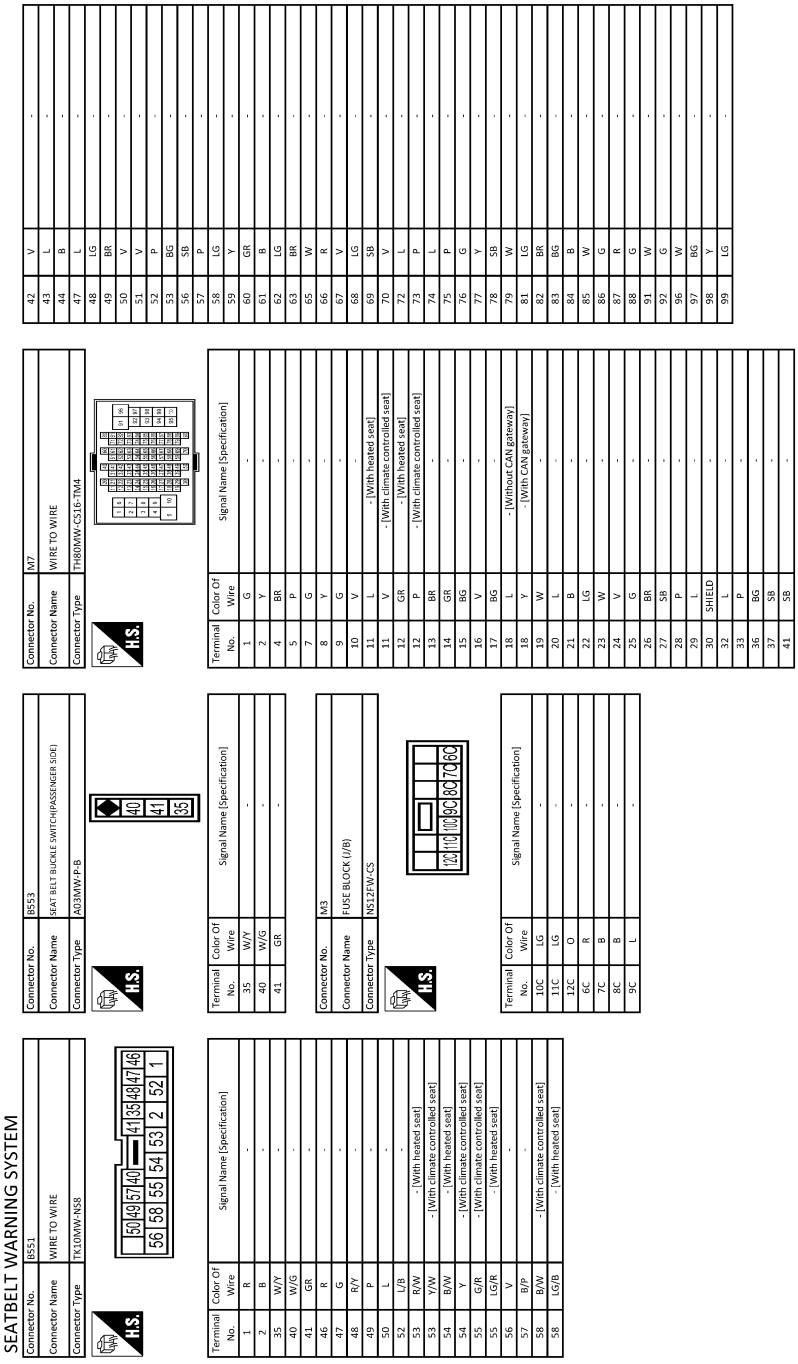
H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	R	-
6	R	-
7	W	-
8	V	-
11	R	-
12	G	-
13	Y	-
14	L	-
15	R	- [Without ADAS]
15	Y	- [With ADAS]
17	GR	-
18	P	-
19	BR	-
20	GR	-
21	Y	-
22	GR	-
23	R	-
24	V	-
25	B	-
26	W	-
27	O	-
28	V	-
29	P	-
30	O	-

JRHWC4808GB



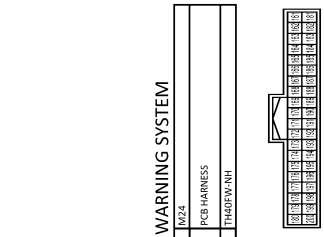
JRHWC4809GB



JRHWC4810GB

SEATBELT WARNING SYSTEM

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

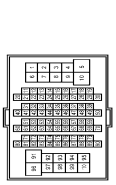


Terminal No.	Color Of Wire	Signal Name [Specification]
161	BG	-
162	BG	-
164	V	-
165	V	-
166	R	-
167	LG	-
169	R	-
171	BG	-
172	B	-
174	W	-
176	L	-
177	P	-
178	Y	-
179	L	-
180	LG	-
182	BR	- [With VQ37 engine or with VK56 engine without ICC]
182	R	- [With VK56 engine with ICC]
183	G	-
184	V	-
185	P	-
186	R	-
187	L	- [Without CAN gateway]
187	Y	- [With CAN gateway]
188	L	-
189	B	-
190	V	-
191	LG	-
192	B	-
193	SB	-
194	BR	-
195	SB	-
198	R	-
199	B	-
200	SB	-

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

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

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

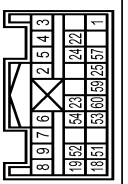


Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
3	Y	-
6	R	-
7	W	-
8	V	-
11	R	-
12	G	-
13	W	-
14	L	-
15	R	- [Without ADAS]
15	Y	- [With ADAS]
17	GR	-
18	P	-
19	BR	-
20	GR	-
21	Y	-
22	LG	-
23	R	-
24	BG	-
25	BG	-
26	W	-
27	R	-
28	V	-
29	P	-
30	B	-
31	G	-
32	Y	-
40	SHIELD	-
41	R	-
42	V	-
45	SB	-
46	BG	- [With heated seat]
46	L	- [With climate controlled seat]
47	G	- [With climate controlled seat]
47	GR	- [With heated seat]
48	V	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	W	-
56	B	-
57	G	-
58	R	-
59	W	-
61	LG	-
62	V	-
63	R	-
64	SB	-
65	LG	-
66	L	-
67	Y	-
68	SB	-
69	B	-
71	L	-
72	L	-
73	P	-
74	B	-
75	L	-
76	SHIELD	-
77	G	-
78	R	-
79	L	-
80	G	-
81	BG	-
82	BR	-
83	GR	-
84	V	-
85	LG	-
86	V	-
87	R	-
88	Y	-
89	BR	-
90	L	-
91	Y	- [With heated seat]
93	G	- [With climate controlled seat]
93	W	-
94	V	-
96	W	-
97	Y	-
98	BR	-
99	G	-
100	Y	-

JRHWC4811GB

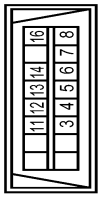
SEATBELT WARNING SYSTEM

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



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	IGN
2	B	GND
3	Y	DR1 (+)
4	Y	DR1 (-) DR2 (-)
5	Y	DR2 (+)
6	Y	AS1 (+)
7	Y	AS1 (-)
8	Y	AS2 (+)
9	Y	AS2 (-)
18	SB	ECZS (+)
19	V	ECZS (-)
22	SHIELD	GND
23	R	AIR BAG W/L
24	G	SEAT BELT
25	R	CUTOFF TELLTALE
51	G	SATELLITE RH2 (+)
52	R	SATELLITE RH2 (-)
53	P	SATELLITE RH2 (+)
54	L	SATELLITE RH2 (-)
57	L	IVCS
59	L	CAN-H
60	P	CAN-L

Connector No.	M182
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	M-CAN_L
4	B	EARTH
5	B	EARTH
6	L	CAN-H
7	V	KLINE
8	LG	IGN_SW
11	SB	M-CAN_H
12	P	CAN-L
13	L	CAN-H
14	P	CAN-L
16	W	POWER

JRHWC4812GB

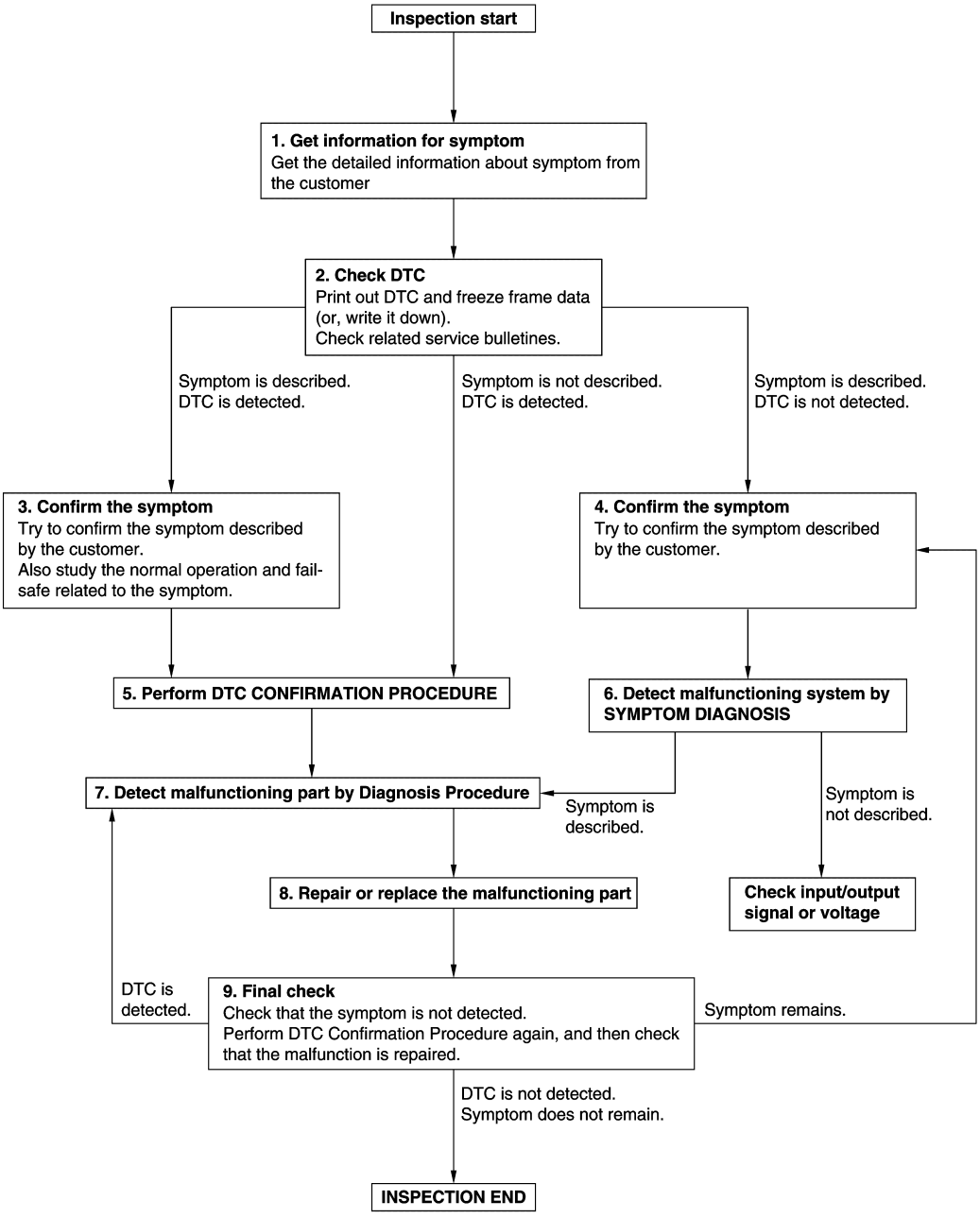
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000012349798

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.

- Record DTC and freeze frame data (Print them out using CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.
Symptom is described, DTC is not detected>>GO TO 4.
Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-45, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-45, "Intermittent Incident".

8.REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
3. Check DTC. If DTC is detected, erase it.

>> GO TO 9.

9.FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.
When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.
YES-2 >> Symptom remains: GO TO 4.
NO >> Before returning the vehicle to the customer, always erase DTC.

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000012349799

- CAN (Controller Area Network) is a serial communication line for real time applications. It is an on board multiplex communication line with high data communication speed and excellent error detection ability. A modern vehicle is equipped with many ECMs, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, two control units are connected with two communication lines (CAN H-line, CAN L-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
- It transmits the vehicle status to pre-crash seat belt control unit using the CAN communication system.
- It consists of CAN system (unified meter and A/C amp., ICC sensor, BCM, steering angle sensor).
- Refer to LAN-36, "CAN COMMUNICATION SYSTEM : CAN System Specification Chart" in LAN section for CAN communication unit (2WD).

DTC Logic

INFOID:0000000012349800

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
U1000	CAN communication circuit	Pre-crash seat belt control unit cannot transmit and receive CAN communication system for 2 seconds or more.	• Harness or connectors (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self-diagnostic result” with CONSULT.

Is any DTC detected?

YES >> Refer to LAN-36, "CAN COMMUNICATION SYSTEM : CAN System Specification Chart" in LAN section for CAN communication or CAN system.

NO >> CAN communication system is normal.

U0126 ST ANG SEN SIG

Description

INFOID:0000000012349801

Inputs the steering angle signal from steering angle sensor via CAN communication.

DTC Logic

INFOID:0000000012349802

DTC DETECTION LOGIC

NOTE:
If DTC U0126 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SBC-37, "DTC Logic".

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
U0126	ST ANG SEN SIG	Receipt of a malfunction signal of Steering angle signal	Steering angle sensor

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-38, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349803

1.CHECK DTC WITH “ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)”

Check “Self-diagnostic result” for “ABS” with CONSULT. Refer to BRC-38, "CONSULT Function".

Is DTC detected?

YES >> Repair or replace malfunctioning parts.
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

U0428 STRG ANGL CAL

Description

INFOID:0000000012349804

Inputs the steering calibration incomplete signal from steering angle sensor via CAN communication.

DTC Logic

INFOID:0000000012349805

DTC DETECTION LOGIC

NOTE:
If DTC U0428 is displayed with DTC U0126, first perform the trouble diagnosis for DTC U0126. Refer to SBC-38, "DTC Logic".

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
U0428	STRG ANGL CAL	Receipt of the calibration incomplete signal	Steering angle sensor calibration incomplete

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-39, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349806

1.CHECK DTC WITH “ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)”

Check “Self-diagnostic result” for “ABS” with CONSULT. Refer to BRC-38, "CONSULT Function".

Is DTC detected?

YES >> Repair or replace malfunctioning parts.
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2451 SEAT BLT MTR DR CIRC

DTC Logic

INFOID:0000000012349807

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2451	SEAT BLT MTR DR CIRC	Circuit of seat belt motor (driver side) is open or shorted	Pre-crash seat belt control unit (driver side)

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-40, "Diagnosis Procedure".
NO >> Driver side pre-crash seat belt motor system is normal.

Diagnosis Procedure

INFOID:0000000012349808

1.INSPECTION START

1. Check “Self-diagnostic result” with CONSULT.
2. Touch “ERASE”.
3. Perform DTC Confirmation Procedure.
   See SBC-40, "DTC Logic".

Is DTC B2451 displayed again?

YES >> Replace pre-crash seat belt control unit (driver side).
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2452 SEAT BLT MTR AS CIRC

DTC Logic

INFOID:0000000012349809

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2452	SEAT BLT MTR AS CIRC	Circuit of seat belt motor (passenger side) is open or shorted	Pre-crash seat belt control unit (passenger side)

DTC REPRODUCTION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-41, "Diagnosis Procedure".
NO >> Passenger side pre-crash seat belt motor system is normal.

Diagnosis Procedure

INFOID:0000000012349810

1.INSPECTION START

1. Check “Self-diagnostic result” with CONSULT.
2. Touch “ERASE”.
3. Perform DTC Confirmation Procedure.
   See SBC-41, "DTC Logic".

Is DTC B2452 displayed again?

YES >> Replace pre-crash seat belt control unit (passenger side).
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2453 BR STROKE SEN CIRC

DTC Logic

INFOID:0000000012349811

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2453	BR STROKE SEN CIRC	Circuit of brake pedal stroke sensor output is open or shorted	• Harness or connectors (The sensor circuit is open or shorted) • Pre-crash seat belt control unit (driver side) • Brake pedal stroke sensor

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-42, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349812

1.CHECK PRE-CRASH SEAT BELT CONTROL UNIT INPUT SIGNAL

1. Turn ignition switch ON.
2. Select “BRK PEDAL SNSR1” and “BRK PEDAL SNSR2” in “DATA MONITOR” mode with CONSULT.
3. Check “BRK PEDAL SNSR1” and “BRK PEDAL SNSR2” indication under the following conditions.

Monitor item	Condition	Voltage (V) (Approx.)
BRK PEDAL SNSR1	Brake released → depressed	1 → 4
BRK PEDAL SNSR2		4 → 1

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 2.

2.CHECK BRAKE PEDAL STROKE SENSOR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect brake pedal stroke sensor connector.
3. Check voltage between brake pedal stroke sensor harness connector and ground.

Brake pedal stroke sensor		Ground	Voltage (V) (Approx.)
Connector	Terminal		
E116	2		5

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 3.

3.CHECK BRAKE PEDAL STROKE SENSOR POWER SUPPLY CIRCUIT

1. Disconnect pre-crash seat belt control unit (driver side) connector.
2. Check continuity between pre-crash seat belt control unit (driver side) harness connector and brake pedal stroke sensor harness connector.

Pre-crash seat belt control unit (driver side)		Brake pedal stroke sensor		Continuity
Connector	Terminal	Connector	Terminal	
B65	10	E116	2	Existed

3. Check continuity between pre-crash seat belt control unit (driver side) and ground.

Pre-crash seat belt control unit (driver side)		Ground	Continuity
Connector	Terminal		
B65	10		Not existed

Is the inspection result normal?

YES >> Replace pre-crash seat belt control unit (driver side). Refer to SBC-65, "Removal and Installation".
NO >> Repair or replace harness or connector.

4.CHECK BRAKE PEDAL STROKE SENSOR CIRCUIT

1. Disconnect pre-crash seat belt control unit (driver side) connector.
2. Check continuity between pre-crash seat belt control unit (driver side) harness connector and brake pedal stroke sensor harness connector.

Pre-crash seat belt control unit (driver side)		Brake pedal stroke sensor		Continuity
Connector	Terminal	Connector	Terminal	
B65	2	E116	1	Existed
	12		3	
	17		4	

3. Check continuity between pre-crash seat belt control unit harness connector (driver side) and ground.

Pre-crash seat belt control unit (driver side)		Ground	Continuity
Connector	Terminal		
B65	2		Not existed
	12		
	17		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness or connector.

5.CHECK BRAKE PEDAL STROKE SENSOR

Refer to SBC-43, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace brake pedal stroke sensor. Refer to SBC-64, "Removal and Installation".

6.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000012349813

COMPONENT PARTS INSPECTION

1.CHECK BRAKE PEDAL STROKE SENSOR

1. Turn ignition switch OFF.
2. Disconnect brake pedal stroke sensor connector.
3. Check resistance between brake pedal stroke sensor terminal as per the following.

Brake pedal stroke sensor		Condition	Resistance (kΩ) (Approx.)
Terminal			
2	1	Brake released → depressed	1.0 → 0.2
	3		0.2 → 1.0

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace brake pedal stroke sensor. Refer to SBC-64, "Removal and Installation".

B2455 CONTROL UNIT DR

DTC Logic

INFOID:0000000012349814

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2455	CONTROL UNIT DR	Pre-crash seat belt control unit (driver side) internal circuit malfunction	Pre-crash seat belt control unit (driver side)

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-45, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349815

1..INSPECTION START

1. Check “Self-diagnostic result” with CONSULT.
2. Touch “ERASE”.
3. Perform DTC Confirmation Procedure.
   See SBC-45, "DTC Logic".

Is DTC B2455 displayed again?

YES >> Replace pre-crash seat belt control unit (driver side).
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2457 CONTROL UNIT AS

DTC Logic

INFOID:0000000012349816

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2457	CONTROL UNIT AS	Pre-crash seat belt control unit (passenger side) internal circuit malfunction	Pre-crash seat belt control unit (passenger side)

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-46, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349817

1..INSPECTION START

1. Check “Self-diagnostic result” with CONSULT.
2. Touch “ERASE”.
3. Perform DTC Confirmation Procedure.
   See SBC-46, "DTC Logic".

Is DTC B2457 displayed again?

YES >> Replace pre-crash seat belt control unit (passenger side).
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2458 LOCAL COMM

DTC Logic

INFOID:0000000012349818

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2458	LOCAL COMM	Receipt of a malfunction signal between pre-crash seat belt control unit (driver side) and pre-crash seat belt control unit (passenger side)	• Harness or connectors [The pre-crash seat belt control unit (driver side) and pre-crash seat belt (passenger side) circuit is open or shorted] • Pre-crash seat belt control unit (driver side) • Pre-crash seat belt control (passenger side)

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-47, "Diagnosis Procedure".
NO >> INSPECTIN END

Diagnosis Procedure

INFOID:0000000012349819

1.CHECK PRE-CRASH-SEAT BELT CONTROL UNIT (PASSENGER SIDE)

Check pre-crash seat belt control unit (passenger side) power supply. Refer to SBC-53, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness between pre-crash seat belt control unit (passenger side) connector and fusible link.

2.CHECK LOCAL COMMUNICATION LINE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect pre-crash seat belt control unit (driver side and passenger side) connectors.
3. Check continuity between local communication line harness connectors.

Pre-crash seat belt control unit (driver side)		Pre-crash seat belt control unit (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B65	16	B228	16	Existed

4. Check continuity between pre-crash seat belt control unit (driver side) harness connector and ground.

Pre-crash seat belt control unit (driver side)		Ground	Continuity
Connector	Terminal		
B65	16		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace local communication line.

3.REPLACE PRE-CRASH SEAT BELT CONTROL UNIT (PASSENGER SIDE)

1. Replace pre-crash seat belt control unit (passenger side)
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4. REPLACE PRE-CRASH SEAT BELT CONTROL UNIT (DRIVER SIDE)

1. Replace pre-crash seat belt control unit (driver side)
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> GO TO 5.
NO >> INSPECTION END

5. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2461 VHCL SPEED SIGNAL

Description

INFOID:0000000012349820

Inputs the vehicle speed signal from combination meter via CAN communication.

DTC Logic

INFOID:0000000012349821

DTC DETECTION LOGIC

NOTE:
If DTC B2461 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SBC-37, "DTC Logic".

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2461	VHCL SPEED SIGNAL	Receipt of a malfunction signal of the vehicle speed signal	Combination meter

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-49, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349822

1.CHECK DTC WITH “UNIFIED METER AND A/C AMP.”

Check “Self-diagnostic result” for “METER/M&A” with CONSULT. Refer to MWI-32, "CONSULT Function".

Is DTC detected?

YES >> Repair or replace malfunctioning parts.
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2466 DR/AS CONTROL UNIT

DTC Logic

INFOID:0000000012349823

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2466	DR/AS CONTROL UNIT	Pre-crash seat belt control unit is out of the vehicle specification	• Pre-crash seat belt control unit (driver side) • Pre-crash seat belt control unit (passenger side)

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-50, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349824

1.CHECK THE VEHICLE SPECIFICATION

Check the part number.

Does the part application fit to the vehicle specification?

YES >> GO TO 2.
NO >> Replace the malfunction parts.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2470 SYS HEAT PROTC DR

Description

INFOID:0000000012349825

When fastening and unfastening seat belt or opening and closing door is repeated continuously for a short period of time, the system temporarily deactivates the retracting function of seat belt to prevent excessive heating. The system recovers automatically.

DTC Logic

INFOID:0000000012349826

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2470	SYS HEAT PROTC DR	Deactivates to prevent excessive heating	Belt retracting function activates continuously in a short period of time.

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-51, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349827

1.CHECK THE VEHICLE CONDITION WITH CONSULT DATA MONITOR

1. Check “HEAT PROTC LH” of DATA MONITOR.
2. Wait until “OFF” appears.
3. Perform the self-diagnosis, after performing the check.
4. Touch “ERASE”.
5. Perform DTC Confirmation Procedure.
   See SBC-51, "DTC Logic".

Is DTC B2470 displayed again?

YES >> GO TO 2.
NO >> INSPECTION END

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

B2471 SYS HEAT PROTC AS

Description

INFOID:0000000012349828

When fastening and unfastening seat belt or opening and closing door is repeated continuously for a short period of time, the system temporarily deactivates the retracting function of seat belt to prevent excessive heating. The system recovers automatically.

DTC Logic

INFOID:0000000012349829

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2471	SYS HEAT PROTC AS	Deactivates to prevent excessive heating	Belt retracting function activates continuously in the short period of time

DTC CONFIRMATION PROCEDURE

1.SELF-DIAGNOSIS WITH PRE-CRASH SEAT BELT CONTROL UNIT

1. Turn ignition switch ON.
2. Check “Self-diagnostic result” with CONSULT.

Is DTC detected?

YES >> Refer to SBC-52, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012349830

1.CHECK THE VEHICLE CONDITION WITH CONSULT DATA MONITOR

1. Check “HEAT PROTC RH” of DATA MONITOR.
2. Wait until “OFF” appears.
3. Perform the self-diagnosis, after performing the check.
4. Touch “ERASE”.
5. Perform DTC Confirmation Procedure.
   See SBC-52, "DTC Logic".

Is DTC B2471 displayed again?

YES >> GO TO 2.
NO >> INSPECTION END

2.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000012349831

1.CHECK FUSE AND FUSIBLE LINK

Check that the following fuse is not blown (open).

Terminal No.		Signal name	Fuse No.
Driver side	19	Battery power supply	J
Passenger side			K

Is the fuse blown (open)?

YES >> Replace the blown (open) fuse after repairing the affected circuit if a fuse is blown (open).
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect pre-crash seat belt control unit (driver side and passenger side) connectors.
3. Check voltage between harness pre-crash seat belt control unit (driver side and passenger side) connector and ground.

Pre-crash seat belt control unit (driver side and passenger side)		Ground	Voltage (V) (Approx.)
Connector	Terminal		
B65	19		Battery voltage
B228			

Is the measurement value normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK GROUND CIRCUIT

Check continuity between pre-crash seat belt control unit (driver side and passenger side) harness connector and ground.

Pre-crash seat belt control unit (driver side and passenger side)		Ground	Continuity
Connector	Terminal		
B65	20		Existed
B228	20		

Does continuity exist?

YES >> INSPECTION END
NO >> Repair or replace harness.

SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Description

INFOID:0000000012349832

- Performs the control of tension reducer according to the seat belt buckle switch ON/OFF.
- Detects whether or not the seat belt is fastened when the ignition switch turns ON. If the seat belt is not fastened, illuminates the seat belt warning lamp on the combination meter.
- The seat belt buckle switch is installed in the seat belt buckle.

Component Function Check

INFOID:0000000012349833

1.CHECK PRE-CRASH SEAT BELT CONTROL UNIT INPUT SIGNAL

With CONSULT

When checking “BUCKLE SW LH” on DATA MONITOR screen, check that ON/OFF display changes synchronized with the insertion operation to the seat belt buckle.

Monitor item	Condition
BUCKLE SW LH	When driver side seat belt is not fastened: OFF
	When driver side seat belt is fastened: ON

Is the inspection result normal?

YES >> Seat belt buckle switch (driver side) circuit is normal.

NO >> Refer to SBC-54, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012349834

1.CHECK PRE-CRASH SEAT BELT CONTROL UNIT INPUT SIGNAL

Check that voltage between seat belt buckle switch (driver side) and ground.

(+)		(–)	Condition	Voltage (V) (Approx.)
Seat belt buckle switch (driver side)				
Connector	Terminal			
B523	35	Ground	When driver side seat belt is not fastened	5
			When driver side seat belt is fastened	0

Is the inspection result normal?

YES >> Seat belt buckle switch (driver side) circuit is normal.

NO >> GO TO 2.

2.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect pre-crash seat belt control unit (driver side) connector and seat belt buckle switch (driver side) connector.
3. Check continuity between pre-crash seat belt control unit (driver side) and seat belt buckle switch (driver side).

Pre-crash seat belt control unit (driver side)		Seat belt buckle switch (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
B65	6	B523	35	Existed

4. Check continuity between pre-crash seat belt control unit (driver side) and ground.

Pre-crash seat belt control unit (driver side)		Ground	Continuity
Connector	Terminal		
B65	6		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness between pre-crash seat belt control unit (driver side) and seat belt buckle switch (driver side).

3.CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check continuity between seat belt buckle switch (driver side) and ground.

Seat belt buckle switch (driver side)		Ground	Continuity
Connector	Terminal		
B523	41		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness between seat belt buckle switch and ground.

4.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Check seat belt buckle switch (driver side). Refer to SBC-55, "Component Inspection (Belt Buckle Switch)".

Is the inspection result normal?

YES >> Replace pre-crash seat belt control unit (driver side).
NO >> Replace seat belt buckle switch (driver side).

Component Inspection (Belt Buckle Switch)

INFOID:0000000012349835

1.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch connector.
3. Check continuity of seat belt buckle (driver side).

Seat belt buckle switch (driver side)		Condition	Continuity
Terminal			
35	41	When driver side seat belt is not fastened	Not existed
		When driver side seat belt is fastened	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace seat belt buckle switch (driver side).

SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

Description

INFOID:0000000012349836

- Performs the control of tension reducer according to the seat belt buckle switch ON/OFF.
- Detects whether or not the seat belt is fastened when the ignition switch turns ON. If the seat belt switch is not fastened, illuminates the seat belt warning lamp on the combination meter.
- The seat belt buckle switch is installed in the seat belt buckle.

Component Function Check

INFOID:0000000012349837

1.CHECK PRE-CRASH SEAT BELT CONTROL UNIT INPUT SIGNAL

With CONSULT

When checking “BUCKLE SW RH” on DATA MONITOR screen, check that ON/OFF display changes are synchronized with the insertion operation to the seat belt buckle.

Monitor item	Condition
BUCKLE SW RH	When driver side seat belt is not fastened: OFF
	When driver side seat belt is fastened: ON

Is the inspection result normal?

YES >> Seat belt buckle switch (passenger side) circuit is normal.
NO >> Refer to SBC-56, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012349838

1.CHECK PRE-CRASH SEAT BELT CONTROL UNIT INPUT SIGNAL

Check that voltage between seat belt buckle switch (passenger side) and ground.

(+)		(–)	Condition	Voltage (V) (Approx.)
Seat belt buckle switch (passenger side)				
Connector	Terminal			
B553	35	Ground	When driver side seat belt is not fastened	5
			When driver side seat belt is fastened	0

Is the inspection result normal?

YES >> Seat belt buckle switch (passenger side) circuit is normal.
NO >> GO TO 2.

2.CHECK SEAT BELT BUCKLE (PASSENGER SIDE) SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect pre-crash seat belt control unit (passenger side) connector and seat belt buckle switch (passenger side) connector.
3. Check continuity between pre-crash seat belt control unit (passenger side) and seat belt buckle switch (passenger side).

Pre-crash seat belt control unit (passenger side)		Seat belt buckle switch (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B228	6	B553	35	Existed

4. Check continuity between pre-crash seat belt control unit (passenger side) and ground.

Pre-crash seat belt control unit (passenger side)		Ground	Continuity
Connector	Terminal		
B228	6		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness between pre-crash seat belt control unit (passenger side) and seat belt buckle switch (passenger side).

3.CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check continuity between seat belt buckle switch (passenger side) and ground.

Seat belt buckle switch (passenger side)		Ground	Continuity
Connector	Terminal		
B553	41		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness between seat belt buckle switch and ground.

4.CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

Check seat belt buckle switch (passenger side). Refer to SBC-57, "Component Inspection (Belt Buckle Switch)".

Is the inspection result normal?

YES >> Replace pre-crash seat belt control unit (passenger side).
NO >> Replace seat belt buckle switch (passenger side).

Component Inspection (Belt Buckle Switch)

INFOID:0000000012349839

1.CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch connector.
3. Check continuity of seat belt buckle (passenger side).

Seat belt buckle switch (passenger side)		Condition	Continuity
Terminal			
35	41	When driver side seat belt is not fastened	Not existed
		When driver side seat belt is fastened	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace seat belt buckle switch (passenger side).

SEAT BELT WARNING LAMP CIRCUIT

Component Function Check

INFOID:0000000012349840

1.CHECK SEAT BELT WARNING LAMP FUNCTION-I

1. Turn ignition switch ON.
2. Check seat belt warning lamp function.

Condition	Seat belt warning lamp
Seat belt (driver side) is fastened	Not illuminated
Seat belt (driver side) is unfastened	Illuminated

Is the inspection results normal?

YES >> GO TO 2.
NO >> Check combination meter circuit. Refer to MWI-67, "Work flow".

2.CHECK SEAT BELT WARNING LAMP FUNCTION-II

1. Sits in the passenger seat.
2. Fasten the seat belt (passenger side).
3. Check seat belt warning lamp function.

Condition	Seat belt warning lamp
Seat belt (passenger side) is fastened	Not illuminated
Seat belt (passenger side) is unfastened	Illuminated

Is the inspection results normal?

YES >> Seat belt warning lamp circuit is normal.
NO >> Check seat belt warning lamp circuit. Refer to SBC-58, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000012349841

WARNING:

- **Before servicing, turn ignition switch OFF, disconnect battery negative terminal and wait at least 3 minutes. (To discharge backup capacitor.)**
- **Never use unspecified tester or other measuring device.**

1.CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE) CIRCUIT-I

1. Turn ignition switch OFF.
2. Disconnect air bag diagnosis sensor unit harness connector and seat belt buckle switch (passenger side) harness connector.
3. Check continuity between air bag diagnosis sensor unit harness connector and seat belt buckle switch (passenger side) harness connector.

Air bag diagnosis sensor unit		Seat belt buckle switch (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B215	29	B553	40	Existed

4. Check continuity between air bag diagnosis sensor unit harness connector and ground.

Air bag diagnosis sensor unit		Ground	Continuity
Connector	Terminal		
B215	29		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace harness or connector.

2.CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE) CIRCUIT-II

Check continuity between seat belt buckle switch (passenger side) harness connector and ground.

Seat belt buckle switch (passenger side)		Ground	Continuity
Connector	Terminal		
B553	41		Existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness or connector.

3.CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

Check seat belt buckle switch (passenger side).
Refer to SBC-59, "Component Inspection [Seat Belt Buckle Switch (Passenger Side)]".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace seat belt buckle (passenger side). Refer to SE-125, "Removal and Installation".

4.CHECK SEAT BELT WARNING LAMP CIRCUIT

1. Disconnect combination meter harness connector.
2. Check continuity between air bag diagnosis sensor unit harness connector and combination meter harness connector.

Air bag diagnosis sensor unit		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M147	24	M53	36	Existed

3. Check continuity between seat belt warning unit and ground.

Air bag diagnosis sensor unit		Ground	Continuity
Connector	Terminal		
M147	24		Not existed

Is the inspection results normal?

YES >> GO TO 5.
NO >> Replace harness or connector.

5.CHECK COMBINATION METER POWER SUPPLY AND GROUND CIRCUIT

Check combination meter power supply and ground circuit.
Refer to MWI-75, "COMBINATION METER : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness or connector.

6.REPLACE COMBINATION METER

Replace combination meter.
Refer to MWI-95, "Removal and Installation".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace air bag diagnosis sensor unit. Refer to SR-25, "Removal and Installation".

Component Inspection [Seat Belt Buckle Switch (Passenger Side)]

INFOID:0000000012349842

1.CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch (passenger side) harness connector.
3. Check continuity between seat belt buckle switch (passenger side) terminals.

Seat belt buckle switch (passenger side)		Condition	Continuity
Terminal			
40	41	When passenger side seat belt is fastened	Not existed
		When passenger side seat belt is not fastened	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace seat belt buckle (passenger side). Refer to SE-125, "Removal and Installation".

SYMPTOM DIAGNOSIS

PRE-CRASH SEAT BELT DOSE NOT OPERATE

BOTH SIDES

BOTH SIDES : Diagnosis Procedure

INFOID:0000000012349843

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to SBC-53, "Diagnosis Procedure"

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".
NO >> GO TO 1.

DRIVER SIDE

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000012349844

1. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Check seat belt buckle switch (driver side). Refer to SBC-54, "Component Function Check"

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".
NO >> GO TO 1.

PASSENGER SIDE

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000012349845

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to SBC-53, "Diagnosis Procedure"

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2. CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

Check seat belt buckle switch (passenger side). Refer to SBC-56, "Component Function Check"

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3. CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".
NO >> GO TO 1.

SEAT BELT WARNING LAMP DOES NOT TURN OFF

Diagnosis Procedure

INFOID:0000000012349846

1.CHECK SEAT BELT WARNING LAMP CIRCUIT

Check seat belt warning lamp circuit. Refer to SBC-58, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".
NO >> GO TO 1.

SEAT BELT WARNING LAMP DOES NOT TURN ON

Diagnosis Procedure

INFOID:0000000012349847

1.CHECK SEAT BELT WARNING LAMP CIRCUIT

Check seat belt warning lamp circuit. Refer to SBC-58, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

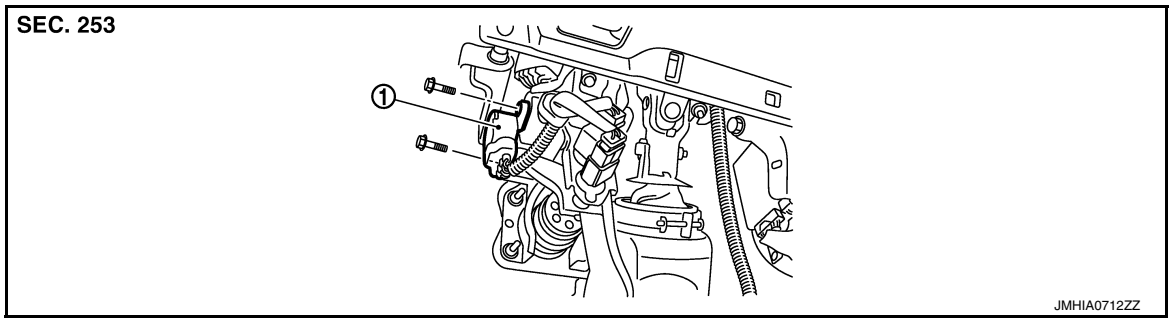
YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".
NO >> GO TO 1.

REMOVAL AND INSTALLATION

BRAKE PEDAL STROKE SENSOR

Exploded View

INFOID:0000000012349848



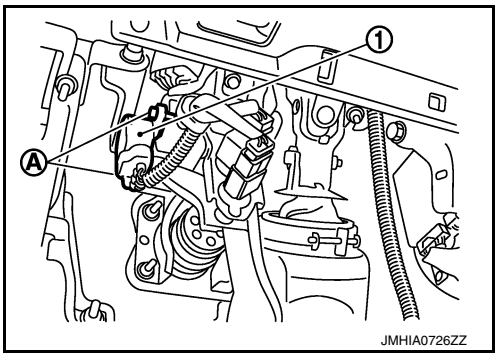
1. Brake pedal stroke sensor

Removal and Installation

INFOID:0000000012349849

REMOVAL

1. Remove the instrument panel lower cover LH. Refer to IP-13, "Removal and Installation".
2. Disconnect the brake pedal stroke sensor connector.
3. Remove the screws (A).
4. Remove the brake pedal stroke sensor (1).



INSTALLATION

Install in the reverse order of removal.

PRE-CRASH SEAT BELT CONTROL UNIT

Exploded View

INFOID:0000000012349850

Refer to SB-7, "SEAT BELT RETRACTOR : Exploded View".

Removal and Installation

INFOID:0000000012349851

For removal and installation procedures, refer to SB-8, "SEAT BELT RETRACTOR : Removal and Installation".