# SECTION SBC
# SEAT BELT CONTROL SYSTEM

## CONTENTS

# PRECAUTION

## PRECAUTIONS

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

INFOID:0000000008187312

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 SR and SB section of this Service Manual.

**WARNING:**

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

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

**WARNING:**

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

### Precaution for Seat Belt Service

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**CAUTION:**

- **Before removing the seat belt pre-tensioner assembly, turn the ignition switch OFF, disconnect both battery terminals and wait at least three minutes. For approximately three minutes after the battery terminals have been removed, it is still possible for the air bag and seat belt pre-tensioner to deploy. Therefore, do not attempt work on any SRS connectors or wires until at least three minutes have passed.**
- **After replacing or reinstalling seat belt pre-tensioner assembly, or reconnecting seat belt pre-tensioner assembly connector, make sure entire SRS operates properly. Refer to SRC-15, "SRS Operation Check".**
- **Do not disassemble 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 whole 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 attaching 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-tensioner**

**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, etc.)
- 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 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

### Component Parts Location

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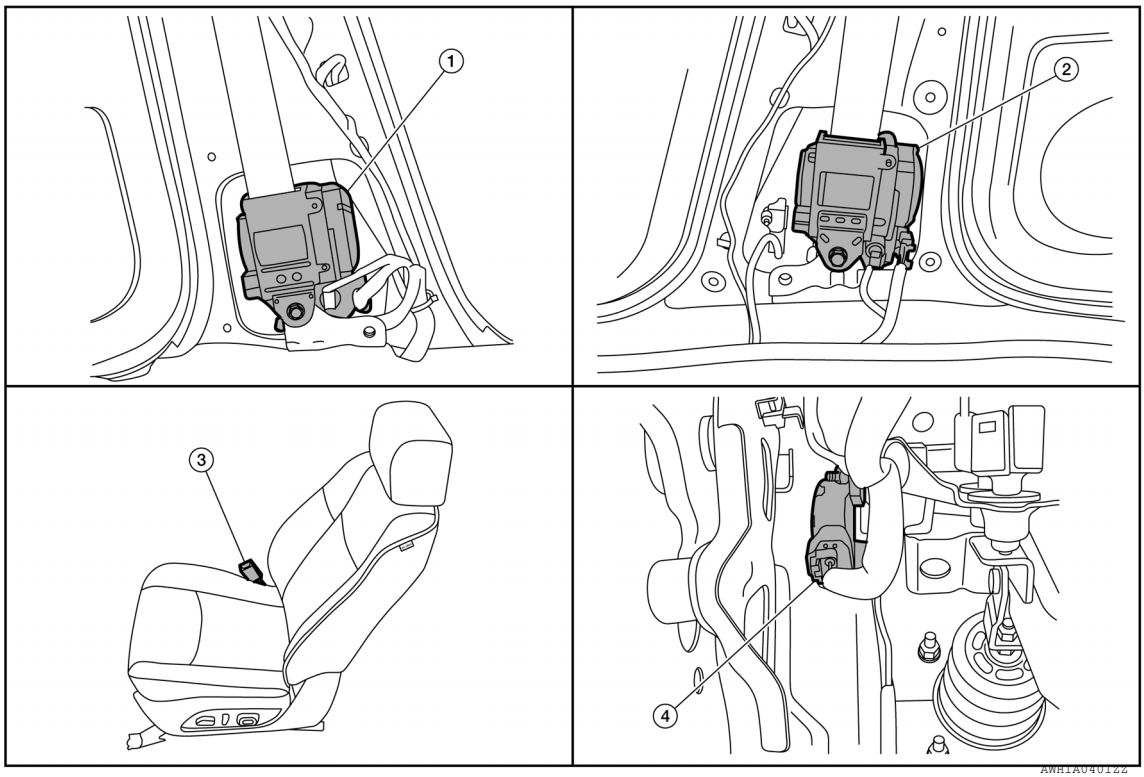



1. Pre-crash seat belt control unit (driver side) (View with center pillar lower garnish LH removed.)
2. Pre-crash seat belt control unit (passenger side) (View with center pillar lower garnish RH removed.)
3. Seat belt buckle switch (driver seat) (passenger seat similar)
4. Brake pedal stroke sensor (View with instrument lower panel LH removed.)

### Component Description

INFOID:0000000007883876

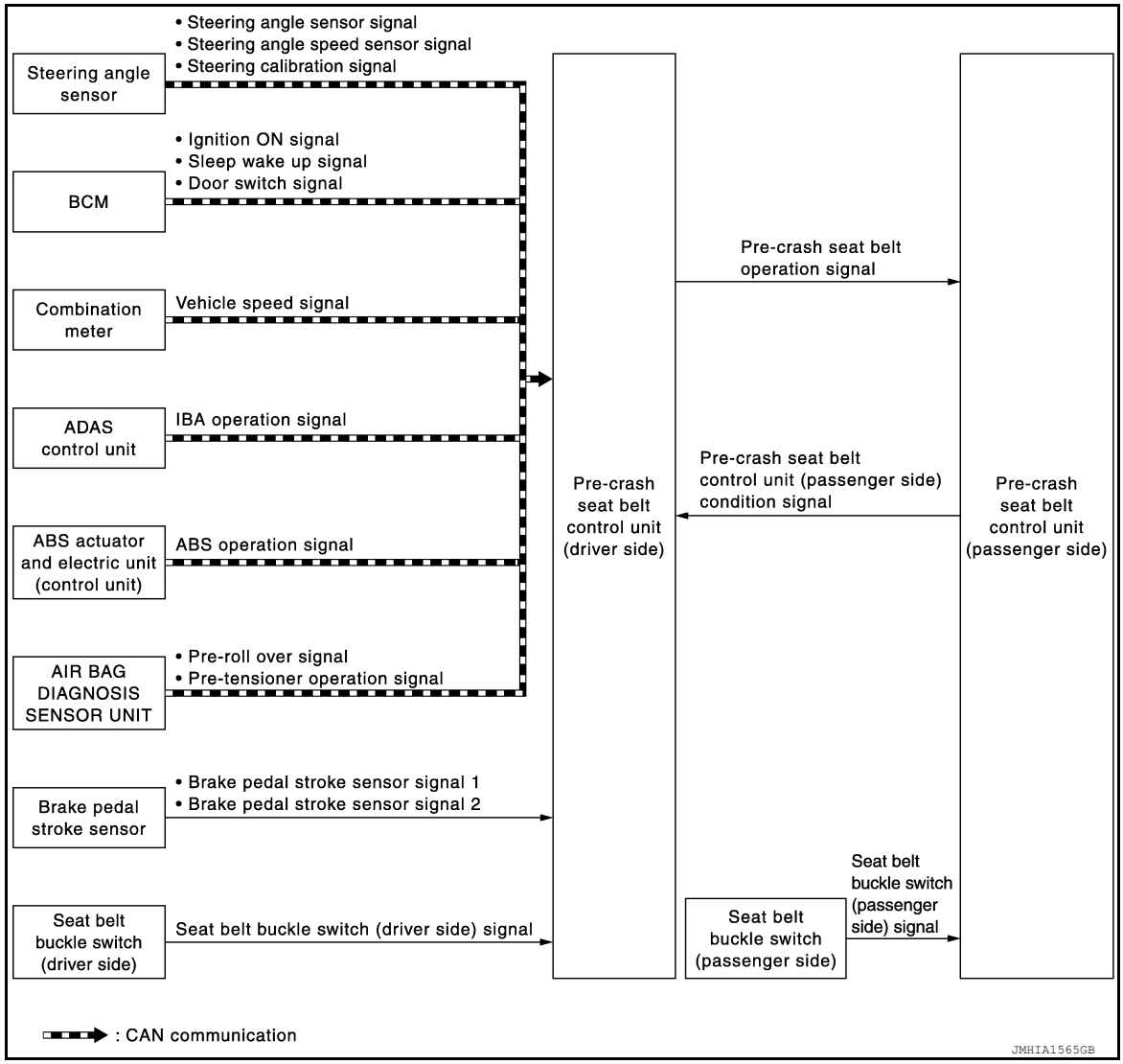
| Component | Function |
|---|---|
| Pre-crash seat belt control unit (driver side) | • Integrated front seat belt pre-tensioner, control unit and seat belt motor.<br>• Controls pre-crash seat belt control unit (passenger side) as slave control unit.<br>• Seat belt motor operates when belt is extended and retracted. |
| Pre-crash seat belt control unit (passenger side) | • Integrated front seat belt pre-tensioner, control unit and seat belt motor.<br>• Is controled by pre-crash seat belt control unit (driver side) as master control unit.<br>• Seat belt motor operates when belt is extended and retracted. |
| Brake pedal stroke sensor | • Varies voltage based on brake pedal position and sends the signal to pre-crash seat belt control unit (driver side).<br>• There are 2 signals sent from the brake pedal stroke sensor (brake pedal stroke sensor signal 1 and 2).<br>• Pre-crash seat belt control unit (driver side) judges the stroke distance and speed of the brake pedal based on the voltage signals sent by each side of the sensor. |

| Component | Function |
|---|---|
| Seat belt buckle switch (driver side) | Fastening of seat belt is judged. This signal is used for control of driver pre-crash seat belt system. |
| Seat belt buckle switch (passenger side) | Fastening of seat belt is judged. This signal is used for control of passenger pre-crash seat belt system. |
| BCM | The following signals are received from the BCM via CAN communication:<br>• ignition ON signal<br>• sleep/wake signal<br>• door switch signal |
| Air bag diagnosis sensor unit | The following signals are received from the air bag diagnosis sensor unit via CAN communication:<br>• pre-rollover signal<br>• collision signal |
| ABS actuator and electric unit (control unit) | ABS operation signal is received from ABS actuator and electric unit (control unit) via CAN communication. |
| ADAS control unit | Intelligent brake assist operation signal is received from ADAS control unit via CAN communication. |
| Combination meter | Vehicle speed signal is received from the combination meter via CAN communication. |
| Steering angle sensor | The following signals are received from the steering angle sensor via CAN communication:<br>• steering angle sensor signal<br>• steering angle sensor speed signal<br>• steering angle sensor neutral position adjustment completion signal<br>• steering angle sensor malfunction signal |

# SYSTEM

## System Diagram

INFOID:0000000007883877




## System Description

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The pre-crash seat belt system integrates a control unit and motor in the existing seat belt pre-tensioners for both the driver and front passenger. The motor retracts the seat belt and secures the occupant during non-collision operations. The system integrates various CAN signals from other safety systems to give the driver and passenger a sense of security during various driving conditions. The motor extracts and retracts the seat belts when fastening to reduce effort required.

### FUNCTIONS

Pre-crash seat belt system may operate under the following conditions:
- Emergency brake operation
- ABS operation (extended)
- Intelligent brake assist operation
- When lateral slippage during cornering occurs
- During emergency steering operations
- When the vehicle is inclined excessively
- When comfort function operates (refer to table below for more details)

### OPERATING CONDITIONS

| Operating condition | Operation starts | Operation stops |
|---|---|---|
| Emergency brake operation | • Vehicle speed is 15 km/h (9 MPH) or more<br>• Emergency braking status is detected | • During acceleration<br>• Vehicle stopped |
| ABS operation (extended) | • ABS operates continuously for 2 seconds or more<br>• Brake pedal is depressed | |
| Intelligent brake assist operation | System detects that intelligent brake assist is operating | 2 seconds after operation start |
| When lateral slippage during cornering occurs | • Vehicle speed is 30 km/h (19 MPH) or more<br>• System detects that the vehicle is in lateral slippage state<br>• System detects that the vehicle is driving on a curve | • Vehicle stopped<br>• 1 second or more after maintaining steering wheel angle in straight driving state |
| During emergency steering operations | • Vehicle speed is 60 km/h (36 MPH) or more<br>• Steering wheel angle is 90 degrees or more<br>• System detects that steering wheel is rotated for emergency | |
| When the vehicle is inclined excessively | • Vehicle speed is 30 km/h (19 MPH) or more<br>• System detects that the vehicle inclined excessively | • During acceleration<br>• Vehicle stopped |

## COMFORT FUNCTION

Seat belts are extracted and retracted as shown in the following table.

| Operating condition | Activation requirements | Comfort action | Deactivation requirements |
|---|---|---|---|
| Door is opened | • Vehicle stopped<br>• Seat belt is unbuckled | Seat belt motor retracts belt | Seat belt retract is complete (maximum 13 seconds) |
| Seat belt is buckled | Door is closed | Seat belt motor extracts belt | • Seat belt is unbuckled<br>• (maximum 1 second) |
| Seat belt is unbuckled | Seat belt is unbuckled | Seat belt motor retracts belt | Seat belt retract is complete (maximum 10 seconds) |

## CONDITIONS THAT PROHIBIT OPERATION

Pre-crash seat belt system will not operate if the following conditions are detected:

- Motor overheat due to prolonged operation*
- Fail-safe mode activation

* System operation is temporarily deactivated to avoid overheating if system is continuously activated (18 times or more) during a short period of time.

## MALFUNCTION WARNING

When system malfunction is detected a warning message is displayed in the color display.

# DIAGNOSIS SYSTEM (PRE-CRASH SEAT BELT)

## CONSULT Function

INFOID:0000000007883882

### APPLICATION ITEM

CONSULT can display each diagnostic item using the diagnostic test modes shown following.

| Diagnosis mode | Description |
|---|---|
| Self Diagnostic Results | Displays pre-crash seat belt control unit self-diagnosis results. |
| Data Monitor | Displays pre-crash seat belt control unit input/output data in real time. |
| Work Support | Pre-crash seat belt control unit can change system settings based on driver requirements. |
| Ecu Identification | Displays pre-crash seat belt control unit part number. |

### SELF DIAGNOSTIC PROCEDURE

CONSULT can be used to read and clear DTCs.

### ECU IDENTIFICATION

Displays the part number of the pre-crash seat belt control unit.

### SELF DIAGNOSTIC RESULTS

Refer to SBC-14, "DTC Index".

### DATA MONITOR

| CONSULT | Display | Description |
|---|---|---|
| BUCKLE SW RH | On | Seat belt buckle switch (passenger seat) is ON. |
| | Off | Seat belt buckle switch (passenger seat) is OFF. |
| BUCKLE SW LH | On | Seat belt buckle switch (driver seat) is ON. |
| | Off | Seat belt buckle switch (driver seat) is OFF. |
| VEHICLE DISTANCE | On | Intelligent brake assist signal ON. |
| | Off | Intelligent brake assist signal OFF. |
| IGN SW | On | Ignition switch ON. |
| | Off | Ignition switch OFF. |
| FR DOOR SW RH | Open | Front door switch (RH) closed. |
| | Close | Front door switch (RH) open. |
| FR DOOR SW LH | Open | Front door switch (LH) closed. |
| | Close | Front door switch (LH) open. |
| ABS ACTIVATING | On | ABS activation signal ON. |
| | Off | ABS activation signal OFF. |
| VHCL SPEED | [mph] | Indicates vehicle speed. |
| BRK PEDAL SNSR1 | [V] | Brake pedal stroke sensor 1 signal. |
| BRK PEDAL SNSR2 | [V] | Brake pedal stroke sensor 2 signal. |
| STRG ANGLE | [deg] | Steering angle signal. |
| STRG ACCL SPEED | [deg/s] | Steering angle speed signal. |
| INCLINATION JDMT | On | Pre roll over signal ON. |
| | Off | Pre roll over signal OFF. |
| PRE-TEN ACTIVTN | On | Pre-tensioner operation signal ON. |
| | Off | Pre-tensioner operation signal OFF. |
| HEAT PROTC RH | On | Heat protection (RH) ON. |
| | Off | Heat protection (RH) OFF. |

| CONSULT | Display | Description |
|---|---|---|
| HEAT PROTC LH | On | Heat protection (LH) ON. |
| | Off | Heat protection (LH) OFF. |

## WORK SUPPORT

| Work support item | Display | Function |
|---|---|---|
| DOOR OPENING RETRACT RETRY | UP | Sets the seat belt retractor counter to a higher trigger. |
| | STANDARD | Default seat belt retractor counter trigger. |
| | DOWN | Sets the seat belt retractor counter to a lower trigger. |

# ECU DIAGNOSIS INFORMATION

## PRE-CRASH SEAT BELT CONTROL UNIT (DRIVER SIDE)

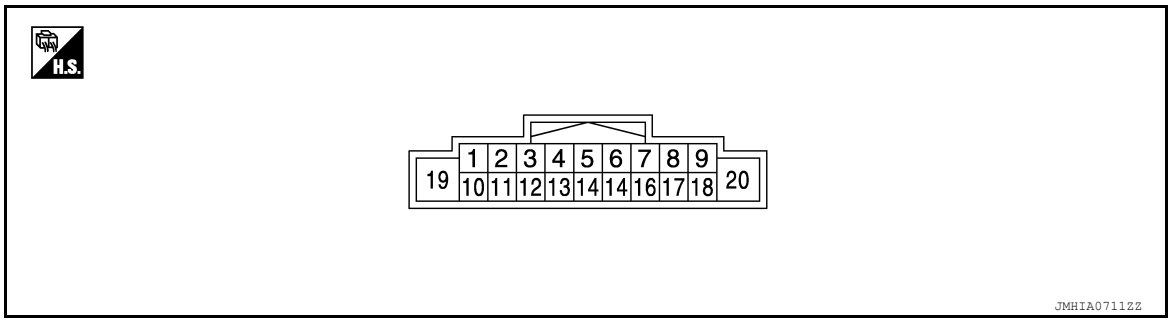
### Reference Value

INFOID:0000000007883883

VALUES ON THE DIAGNOSIS TOOL

| CONSULT | 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 | IBA not activated | OFF |
| | IBA activated | ON |
| IGN SW | Ignition switch OFF | OFF |
| | Ignition switch ON | ON |
| FR DOOR SW RH | RH door closed | CLOSE |
| | RH door open | OPEN |
| FR DOOR SW LH | LH door closed | CLOSE |
| | LH door open | OPEN |
| ABS ACTIVATING | ABS is inactive | OFF |
| | ABS is active | ON |
| VHCL SPEED | While driving | Equivalent speedometer reading (mph) |
| BRK PEDAL SNSR1 | Brake released → depressed | (1 V → 4 V) |
| BRK PEDAL SNSR2 | Brake released → depressed | (4 V → 1 V) |
| STRG ANGLE | Steering wheel: 0° (Neutral) | ±2.5 (deg) |
| | Steering wheel: 90° (Turned right) | +90 (deg) |
| | Steering wheel: 90° (Turned left) | -90 (deg) |
| STRG ACCL SPEED | Steering wheel: Being turned | Depending on steering acceleration speed (deg/s) |
| INCLINATION JDMT | Vehicle is level | OFF |
| | Vehicle is inclined | ON |
| PRE-TEN ACTIVTN | Seat belt pre-tensioner is not activated | OFF |
| | Seat belt pre-tensioner is activated | ON |
| HEAT PROTC RH | RH motor heat protection is not activated | OFF |
| | RH motor heat protection is activated | ON |
| HEAT PROTC LH | LH motor heat protection is not activated | OFF |
| | LH motor heat protection is activated | ON |

TERMINAL LAYOUT




PHYSICAL VALUES

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | |
| 1 (R) | Ground | Battery power supply | Input | — | Battery voltage |
| 2 (B) | Ground | Brake pedal stroke sensor signal 1 | Input | Brake released → depressed | 1 V - 4 V |
| 4 (P) | Ground | CAN-L | — | — | — |
| 6 (G) | Ground | Seat belt buckle switch signal (driver seat) | Input | Seat belt is fastened | 0 V |
| | | | | Seat belt is unfastened | 5 V |
| 8 (W) | Ground | Local Communication Line 2 | Input/ Output | IGN ON | 5 V |
| 9 (–) | Ground | Shield | — | — | — |
| 10 (W) | Ground | Brake pedal stroke sensor power circuit | Output | IGN ON | 5 V |
| 12 (G) | Ground | Brake pedal stroke sensor signal 2 | Input | Brake released → depressed | 4 V - 1 V |
| 14 (L) | Ground | CAN-H | — | — | — |
| 16 (B) | Ground | Local Communication Line 1 | Input/ Output | — | — |
| 17 (R) | Ground | Brake pedal stroke sensor ground circuit | — | — | 0 V |
| 18 (B) | Ground | Ground | — | — | 0 V |
| 19 (W) | Ground | Motor drive battery power supply circuit | Input | — | Battery voltage |
| 20 (B) | Ground | Motor drive ground circuit | — | — | 0 V |

## Fail Safe

INFOID:0000000007883884

- When a system malfunction is detected it 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.

| CONSULT | | Fail-safe |
|---|---|---|
| U0126 | STRG ANG SEN SIG | Stops the operation in the conditions as per the following:<br>• When lateral slippage during cornering occurs<br>• When steering wheel is rotated for emergency<br>• A part of comfort function |
| U0428 | STRG ANGL CAL | Stops the operation in the conditions as per the following:<br>• When lateral slippage during cornering occurs<br>• When steering wheel is rotated for emergency<br>• A part of comfort function |
| U1000 | CAN communication circuit | Stops the operation in the conditions as per the following: *1<br>• During emergency brake operation<br>• When ABS continuously operates<br>• When lateral slippage during cornering occurs<br>• When Intelligent brake assistance operates<br>• When steering wheel is rotated for emergency<br>• When the vehicle inclined excessively<br>• A part or the whole comfort function |
| 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:<br>• During emergency brake operation<br>• When ABS continuously operates<br>• A part of comfort function |
| B2454 | SEAT BLT PWR DR CIRC | Fully deactivates the whole operation. |
| B2455 | CONTROL UNIT DR | Stops the operation in the conditions as per the following: *1<br>• During emergency brake operation<br>• When ABS continuously operates<br>• When lateral slippage during cornering occurs<br>• When Intelligent brake assistance operates<br>• When steering wheel is rotated for emergency<br>• When the vehicle inclined excessively<br>• A part or the whole comfort function |
| B2456 | SEAT BLT PWR AS | Deactivates a part of 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:<br>• During emergency brake operation<br>• When ABS continuously operates<br>• When lateral slippage during cornering occurs<br>• When steering wheel is rotated for emergency<br>• When the vehicle inclined excessively<br>• When comfort function operates |
| B2463 | ROLLOVER SIGNAL | Stops the operation in the conditions as per the following:<br>• When the vehicle inclined excessively<br>• A part or the whole comfort function |
| B2466 | DR/AS CONTROL UNIT | Deactivates a part of comfort function. |
| B2470 | SYS HEAT PROTC DR | • Fully deactivates the whole operation.<br>• Operation return<br>- 1 time operation becomes possible after approximately 30 seconds<br>- Returns to the initial condition after approximately 8 minutes |

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

# DTC Index

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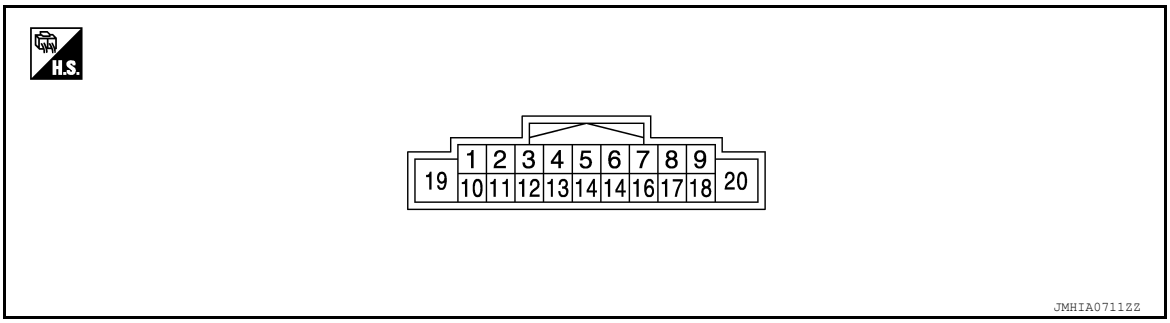
| DTC | Trouble diagnosis name (CONSULT display) | DTC detection condition | Reference |
|---|---|---|---|
| U0126 | STRG ANG SEN SIG | Steering angle sensor malfunction is received | SBC-27 |
| U0428 | STRG ANGL CAL | Steering angle sensor calibration incomplete signal is received | SBC-28 |
| U1000 | CAN COMM CIRCUIT | Pre-crash seat belt control unit cannot transmit and receive CAN communication signal for 2 seconds or more | SBC-29 |
| B2451 | SEAT BLT MTR DR CIRC | • Motor or control unit malfunction<br>• Seat belt motor circuit is open or shorted | SBC-30 |
| B2452 | SEAT BLT MTR AS CIRC | • Motor or control unit malfunction<br>• Seat belt motor circuit is open or shorted | SBC-31 |
| B2453 | BR STROKE SEN CIRC | • Brake pedal stroke sensor malfunction<br>• Brake pedal stroke sensor circuit is open or shorted | SBC-32 |
| B2454 | SEAT BLT PWR DR CIRC | Motor power supply circuit is open or shorted | SBC-35 |
| B2455 | CONTROL UNIT DR | Malfunction in pre-crash seat belt control unit | SBC-36 |
| B2456 | SEAT BLT PWR AS CIRC | Motor power supply circuit is open or shorted | SBC-37 |
| B2457 | CONTROL UNIT AS | Malfunction in pre-crash seat belt control unit (passenger side) | SBC-38 |
| B2458 | LOCAL COMM | Local communication line open or shorted | SBC-39 |
| B2461 | VHCL SPEED SIGNAL | Vehicle speed signal malfunction is received | SBC-41 |
| B2463 | ROLLOVER SIGNAL | Rollover signal malfunction is received | SBC-42 |
| B2466 | DR/AS CONTROL UNIT | Control unit is out of the vehicle specification | SBC-43 |
| B2470 | SYS HEAT PROTC DR | Deactivation for cooling to prevent system heating due to continuous operation | SBC-44 |
| B2471 | SYS HEAT PROTC AS | Deactivation for cooling to prevent system heating due to continuous operation | SBC-45 |

# PRE-CRASH SEAT BELT CONTROL UNIT (PASSENGER SIDE)

## Reference Value

INFOID:0000000007883886

### TERMINAL LAYOUT




### PHYSICAL VALUES

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | |
| 1 (P) | Ground | Battery power supply | Input | — | Battery voltage |
| 6 (Y) | Ground | Seat belt buckle switch signal (passenger seat) | Input | RH Seat belt is fastened | 0 V |
| | | | | RH Seat belt is unfastened | 5 V |
| 8 (W) | Ground | Local Communication Line 2 | Input/ Output | IGN ON | 5 V |
| 9 | Ground | Shield | — | — | — |
| 16 (B) | Ground | Local Communication Line 1 | Input/ Output | — | — |
| 18 (B) | Ground | Ground | — | — | 0 V |
| 19 (W) | Ground | Motor power supply circuit (passenger side) | Input | — | Battery voltage |
| 20 (GR) | Ground | Motor ground circuit (passenger side) | — | — | 0 V |

## Fail Safe

INFOID:0000000008227249

- When a system malfunction is detected it 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.

| CONSULT | | Fail-safe |
|---|---|---|
| U0126 | STRG ANG SEN SIG | Stops the operation in the conditions as per the following:<br>• When lateral slippage during cornering occurs<br>• When steering wheel is rotated for emergency<br>• A part of comfort function |
| U0428 | STRG ANGL CAL | Stops the operation in the conditions as per the following:<br>• When lateral slippage during cornering occurs<br>• When steering wheel is rotated for emergency<br>• A part of comfort function |

| CONSULT | | Fail-safe |
|---|---|---|
| U1000 | CAN communication circuit | Stops the operation in the conditions as per the following: *1<br>• During emergency brake operation<br>• When ABS continuously operates<br>• When lateral slippage during cornering occurs<br>• When Intelligent brake assistance operates<br>• When steering wheel is rotated for emergency<br>• When the vehicle inclined excessively<br>• A part or the whole comfort function |
| 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:<br>• During emergency brake operation<br>• When ABS continuously operates<br>• A part of comfort function |
| B2454 | SEAT BLT PWR DR CIRC | Fully deactivates the whole operation. |
| B2455 | CONTROL UNIT DR | Stops the operation in the conditions as per the following: *1<br>• During emergency brake operation<br>• When ABS continuously operates<br>• When lateral slippage during cornering occurs<br>• When Intelligent brake assistance operates<br>• When steering wheel is rotated for emergency<br>• When the vehicle inclined excessively<br>• A part or the whole comfort function |
| B2456 | SEAT BLT PWR AS | Deactivates a part of 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:<br>• During emergency brake operation<br>• When ABS continuously operates<br>• When lateral slippage during cornering occurs<br>• When steering wheel is rotated for emergency<br>• When the vehicle inclined excessively<br>• When comfort function operates |
| B2463 | ROLLOVER SIGNAL | Stops the operation in the conditions as per the following:<br>• When the vehicle inclined excessively<br>• A part or the whole comfort function |
| B2466 | DR/AS CONTROL UNIT | Deactivates a part of comfort function. |
| B2470 | SYS HEAT PROTC DR | • Fully deactivates the whole operation.<br>• Operation return<br>- 1 time operation becomes possible after approximately 30 seconds<br>- Returns to the initial condition after approximately 8 minutes |

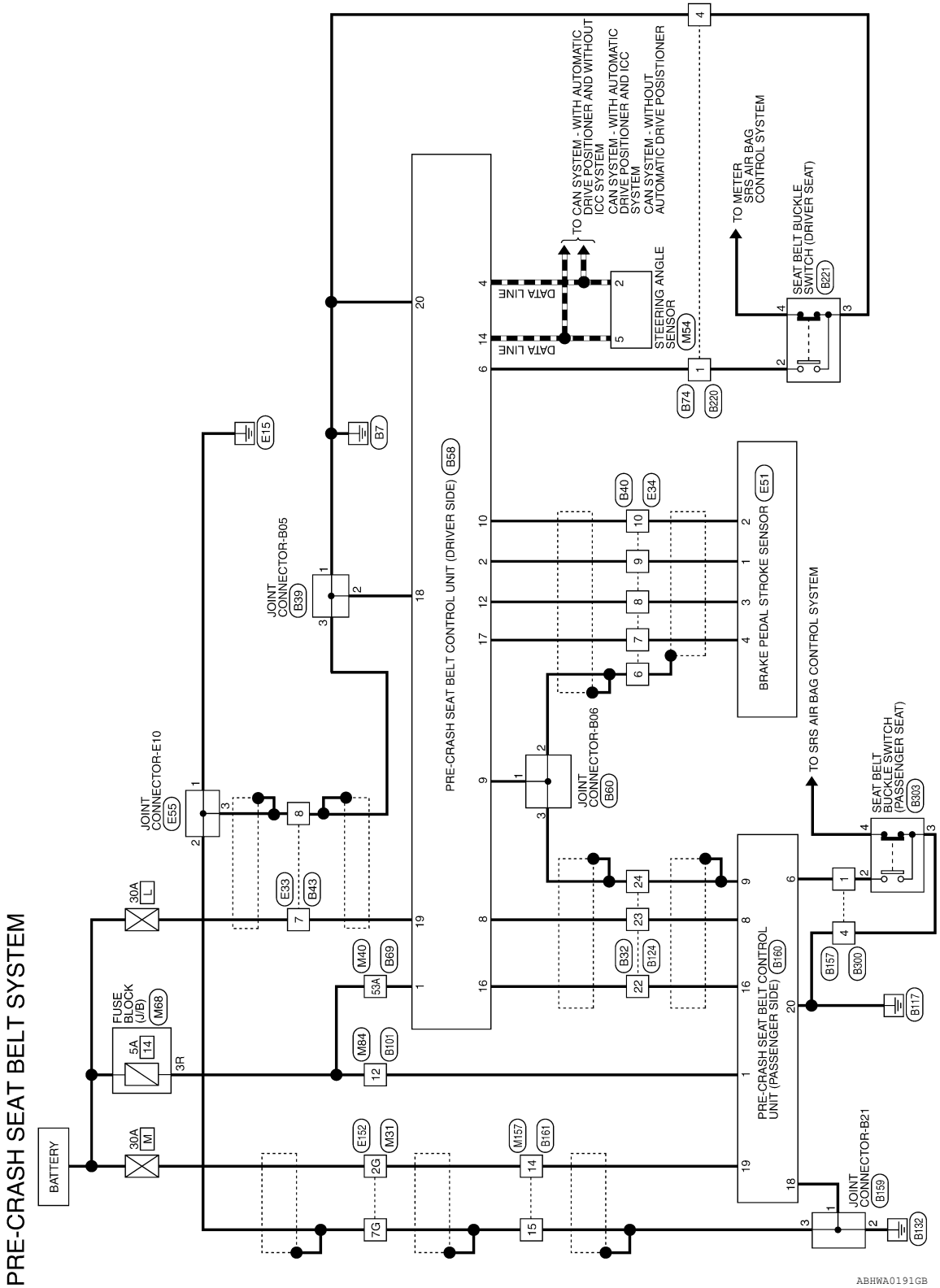
*1: The deactivation mode differs depending on the internal malfunctioning condition of control unit

# WIRING DIAGRAM

## PRE-CRASH SEAT BELT SYSTEM

### Wiring Diagram

INFOID:0000000007883888



## PRE-CRASH SEAT BELT SYSTEM CONNECTORS

| Connector No. | M31 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 1G | 2G | 3G | 4G | 5G |
|---|---|---|---|---|
| 6G | 7G | 8G | 9G | 10G |

| 11G | 12G | 13G | 14G | 15G | 16G | 17G | 18G | 19G | 20G | 21G |
|---|---|---|---|---|---|---|---|---|---|---|
| | 22G | 23G | 24G | 25G | 26G | 27G | 28G | 29G | 30G | |

| 31G | 32G | 33G | 34G | 35G | 36G | 37G | 38G | 39G | 40G | 41G |
|---|---|---|---|---|---|---|---|---|---|---|
| | 42G | 43G | 44G | 45G | 46G | 47G | 48G | 49G | 50G | |

| 51G | 52G | 53G | 54G | 55G | 56G | 57G | 58G | 59G | 60G | 61G |
|---|---|---|---|---|---|---|---|---|---|---|
| | 62G | 63G | 64G | 65G | 66G | 67G | 68G | 69G | 70G | |

| 71G | 72G | 73G | 74G | 75G | 76G | 77G | 78G | 79G | 80G | 81G |
|---|---|---|---|---|---|---|---|---|---|---|
| | 82G | 83G | 84G | 85G | 86G | 87G | 88G | 89G | 90G | |

| 91G | 92G | 93G | 94G | 95G |
|---|---|---|---|---|
| 96G | 97G | 98G | 99G | 100G |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2G | W | – |
| 7G | SHIELD | – |

| Connector No. | M40 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 1A | 2A | 3A | 4A | 5A |
|---|---|---|---|---|
| 6A | 7A | 8A | 9A | 10A |

| 11A | 12A | 13A | 14A | 15A | 16A | 17A | 18A | 19A | 20A | 21A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 22A | 23A | 24A | 25A | 26A | 27A | 28A | 29A | 30A | |

| 31A | 32A | 33A | 34A | 35A | 36A | 37A | 38A | 39A | 40A | 41A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 42A | 43A | 44A | 45A | 46A | 47A | 48A | 49A | 50A | |

| 51A | 52A | 53A | 54A | 55A | 56A | 57A | 58A | 59A | 60A | 61A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 62A | 63A | 64A | 65A | 66A | 67A | 68A | 69A | 70A | |

| 71A | 72A | 73A | 74A | 75A | 76A | 77A | 78A | 79A | 80A | 81A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 82A | 83A | 84A | 85A | 86A | 87A | 88A | 89A | 90A | |

| 91A | 92A | 93A | 94A | 95A |
|---|---|---|---|---|
| 96A | 97A | 98A | 99A | 100A |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 53A | G | – |

| Connector No. | M54 |
|---|---|
| Connector Name | STEERING ANGLE SENSOR |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| 5 | 6 | 7 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | P | – |
| 5 | L | – |

| Connector No. | M68 |
|---|---|
| Connector Name | FUSE BLOCK (J/B) |
| Connector Color | BROWN |

H.S.

| 7R | 6R | 5R | 4R | | 3R | 2R | 1R |
|---|---|---|---|---|---|---|---|
| 16R | 15R | 14R | 13R | 12R | 11R | 10R | 9R | 8R |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3R | G | – |

| Connector No. | M84 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 12 | G | – |

| Connector No. | M157 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 7 | 6 | 5 | 4 | | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 14 | W | – |
| 15 | SHIELD | – |

ABHIA0470GB

| Connector No. | E33 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | W | – |
| 8 | SHIELD | – |

| Connector No. | E34 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | SHIELD | – |
| 7 | W | – |
| 8 | G | – |
| 9 | R | – |
| 10 | B | – |

| Connector No. | E51 |
|---|---|
| Connector Name | BRAKE PEDAL STROKE SENSOR |
| Connector Color | BLACK |

H.S.

| 1 | 2 | 3 | 4 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | R | OUT_1 |
| 2 | B | VCC |
| 3 | G | OUT_2 |
| 4 | W | GND |

| Connector No. | E55 |
|---|---|
| Connector Name | JOINT CONNECTOR-E10 |
| Connector Color | WHITE |

H.S.

| 4 | 3 | 2 | 1 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | B | – |
| 2 | SHIELD | – |
| 3 | SHIELD | – |

| Connector No. | E152 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2G | W | – |
| 7G | SHIELD | – |

ABHIA0471GB

| Connector No. | B32 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 22 | B | – |
| 23 | W | – |
| 24 | SHIELD | – |

| Connector No. | B39 |
|---|---|
| Connector Name | JOINT CONNECTOR-B05 |
| Connector Color | WHITE |

H.S.

| 4 | 3 | 2 | 1 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | B | – |
| 2 | B | – |
| 3 | SHIELD | – |

| Connector No. | B40 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | SHIELD | – |
| 7 | R | – |
| 8 | G | – |
| 9 | B | – |
| 10 | W | – |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 8 | W | LOCAL COMM 2 |
| 9 | GR | SHIELD GND |
| 10 | W | SENS POWER 1 |
| 11 | – | – |
| 12 | G | OUT 2 |
| 13 | – | – |
| 14 | L | CAN-H |
| 15 | – | – |
| 16 | B | LOCAL COMM 1 |
| 17 | R | SENS GND 1 |
| 18 | B | SIG GND |
| 19 | W | MOTOR BAT |
| 20 | B | MOTOR GND |

| Connector No. | B43 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | W | – |
| 8 | SHIELD | – |

| Connector No. | B58 |
|---|---|
| Connector Name | PRE-CRASH SEAT BELT CONTROL UNIT (DRIVER SIDE) |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| 19 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | R | SIG BAT |
| 2 | B | OUT 1 |
| 3 | – | – |
| 4 | P | CAN-L |
| 5 | – | – |
| 6 | G | BUCKLE SW LH NO |
| 7 | – | – |

ABHIA0472GB

| Connector No. | B60 |
|---|---|
| Connector Name | JOINT CONNECTOR-B06 |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | GR | – |
| 2 | SHIELD | – |
| 3 | SHIELD | – |

| Connector No. | B74 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – |
| 4 | B | – |

| Connector No. | B69 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 53A | R | – |

| Connector No. | B101 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 12 | P | – |

| Connector No. | B124 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 22 | B | – |
| 23 | W | – |
| 24 | SHIELD | – |

ABHIA0473GB

| Connector No. | B157 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | Y | – |
| 4 | B | – |

| Connector No. | B159 |
|---|---|
| Connector Name | JONIT CONNECTOR-B21 |
| Connector Color | WHITE |

H.S.

| 4 | 3 | 2 | 1 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | B | – |
| 2 | B | – |
| 3 | SHIELD | – |

| Connector No. | B160 |
|---|---|
| Connector Name | PRE-CRASH SEAT BELT CONTROL UNIT (PASSENGER SIDE) |
| Connector Color | WHITE |

H.S.

| 19 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | P | SIG BAT |
| 2 | – | – |
| 3 | – | – |
| 4 | – | – |
| 5 | – | – |
| 6 | Y | BUCKLE SW RH NO |
| 7 | – | – |
| 8 | W | LOCAL COMM 2 |
| 9 | SHIELD | SHIELD GND |
| 10 | – | – |
| 11 | – | – |
| 12 | – | – |
| 13 | – | – |
| 14 | – | – |
| 15 | – | – |
| 16 | B | LOCAL COMM 1 |
| 17 | – | – |
| 18 | B | SIGNAL GND |
| 19 | W | MOTOR BAT |
| 20 | GR | MOTOR GND |

| Connector No. | B161 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 14 | W | – |
| 15 | SHIELD | – |

ABHIA0474GB

| Connector No. | B220 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L | – |
| 4 | GR | – |

| Connector No. | B221 |
|---|---|
| Connector Name | SEAT BELT BUCKLE SWITCH (DRIVER SEAT) |
| Connector Color | WHITE |

H.S.

| 4 | 3 | 2 | 1 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | L | – |
| 3 | GR | – |
| 4 | BG | – |

| Connector No. | B300 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L | – |
| 4 | GR | – |

| Connector No. | B303 |
|---|---|
| Connector Name | SEAT BELT BUCKLE SWITCH (PASSENGER SEAT) |
| Connector Color | WHITE |

H.S.

| 4 | 3 | 2 | 1 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | L | – |
| 3 | GR | – |
| 4 | BG | – |

AAHIA0064GB

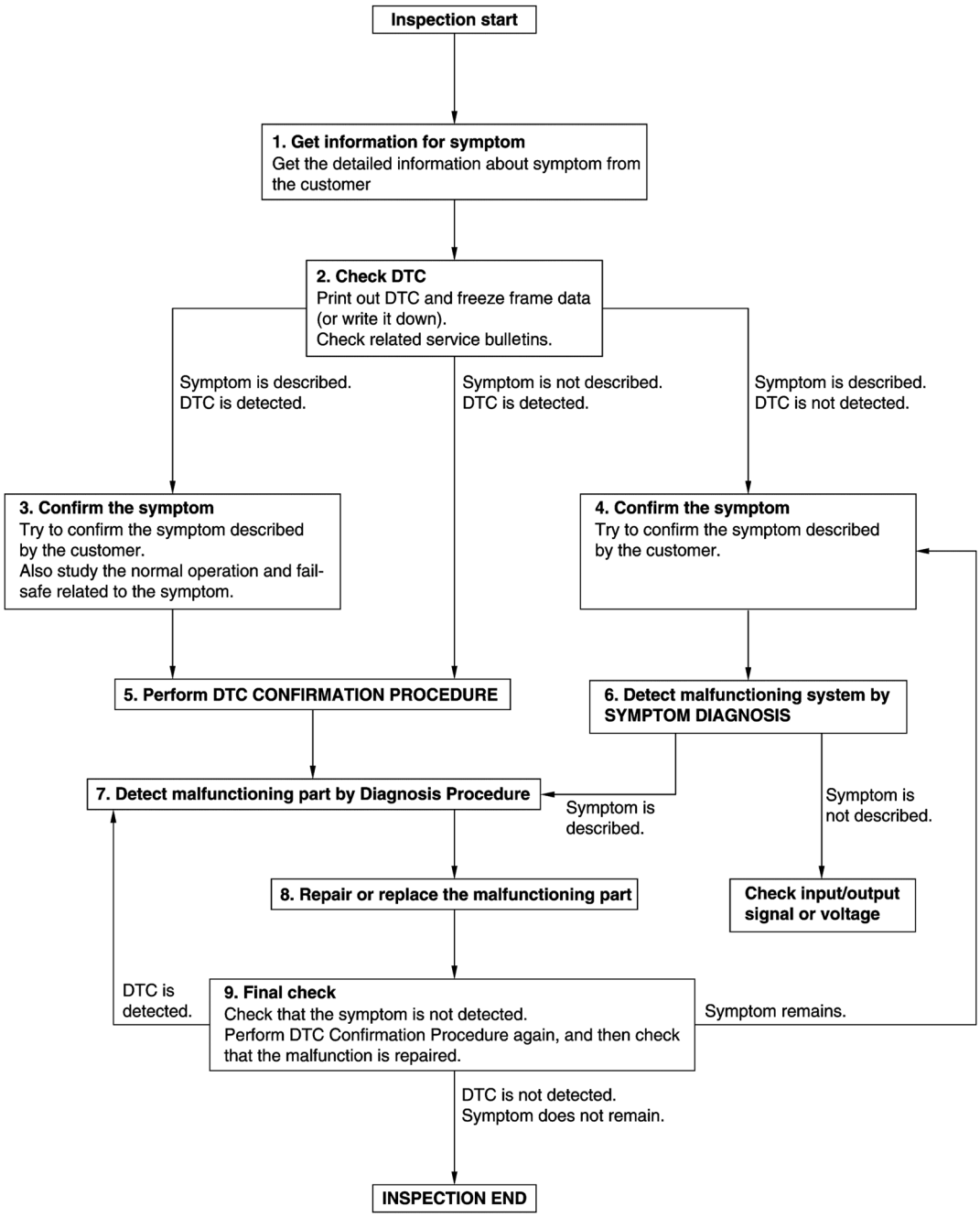
# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORKFLOW

### Work Flow

INFOID:0000000007883890

#### OVERALL SEQUENCE




AWHIA0406GB

#### 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-53, "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-53, "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

## U0126 ST ANG SEN SIG

### Description

INFOID:0000000007883891

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

### DTC Logic

INFOID:0000000007883892

#### DTC DETECTION LOGIC

**NOTE:**
If DTC U0126 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SBC-29, "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-27, "Diagnosis Procedure".
NO >> Inspection End.

### Diagnosis Procedure

INFOID:0000000007883893

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

Check Self-diagnostic result for ABS with CONSULT. Refer to BRC-36, "CONSULT Function".

Is DTC detected?

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

**2.** CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# U0428 STRG ANGL CAL

## Description

INFOID:0000000007883894

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

## DTC Logic

INFOID:0000000007883895

### DTC DETECTION LOGIC

**NOTE:**
If DTC U0428 is displayed with DTC U0126, first perform the trouble diagnosis for DTC U0126. Refer to SBC-27, "Diagnosis Procedure".

| 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-28, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883896

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

Check Self-diagnostic result for ABS with CONSULT. Refer to BRC-36, "CONSULT Function".

Is DTC detected?

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

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# U1000 CAN COMM CIRCUIT

## Description

INFOID:0000000007883897

- 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-37, "CAN COMMUNICATION SYSTEM : CAN System Specification Chart".

## DTC Logic

INFOID:0000000007883898

### 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-37, "CAN COMMUNICATION SYSTEM : CAN System Specification Chart".
NO >> CAN communication system is normal.

# B2451 SEAT BLT MTR DR CIRC

## DTC Logic

INFOID:0000000007883899

### 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-30, "Diagnosis Procedure".
NO >> Driver side pre-crash seat belt motor system is normal.

## Diagnosis Procedure

INFOID:0000000007883900

#### 1.INSPECTION START

1. Check Self-diagnostic result with CONSULT.
2. Touch ERASE.
3. Perform DTC Confirmation Procedure. Refer to SBC-30, "DTC Logic".

Is DTC B2451 displayed again?

YES >> Replace pre-crash seat belt control unit (driver side). Refer to SR-27, "Removal and Installation".
NO >> GO TO 2.

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2452 SEAT BLT MTR AS CIRC

## DTC Logic

INFOID:0000000007883901

### 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-31, "Diagnosis Procedure".
NO >> Passenger side pre-crash seat belt motor system is normal.

## Diagnosis Procedure

INFOID:0000000007883902

#### 1.INSPECTION START

1. Check Self-diagnostic result with CONSULT.
2. Touch ERASE.
3. Perform DTC Confirmation Procedure. Refer to SBC-31, "DTC Logic".

Is DTC B2452 displayed again?

YES >> Replace pre-crash seat belt control unit (passenger side). Refer to SR-27, "Removal and Installation".
NO >> GO TO 2.

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2453 BR STROKE SEN CIRC

## DTC Logic

INFOID:0000000007883903

### 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)<br>• Pre-crash seat belt control unit (driver side)<br>• 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-32, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883904

Regarding Wiring Diagram information, refer to SBC-17, "Wiring Diagram".

#### 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 harness connector.
3. Check voltage between brake pedal stroke sensor harness connector and ground.

| Brake pedal stroke sensor | | Ground | Voltage (V) (Approx.) |
|---|---|---|---|
| Connector | Terminal | | |
| E51 | 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) harness 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 | |
| B58 | 10 | E51 | 2 | Yes |

3. 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 | | |
| B58 | 10 | | No |

Is the inspection result normal?

YES >> Replace pre-crash seat belt control unit (driver side). Refer to SR-27, "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) harness 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 | |
| B58 | 2 | E51 | 1 | Yes |
| | 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 | | |
| B58 | 2 | | No |
| | 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-33, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace brake pedal stroke sensor. Refer to SBC-53, "Removal and Installation".

## 6. CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# Component Inspection

INFOID:0000000007883905

## 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-53, "Removal and Installation".

# B2454 SEAT BLT PWR DR CIRC

## DTC Logic

INFOID:0000000007883906

### DTC DETECTION LOGIC

| DTC No. | Self-diagnosis item | DTC Detection Condition | Possible causes |
|---|---|---|---|
| B2454 | SEAT BLT PWR DR CIRC | Seat belt motor (driver side) power supply circuit is open or shorted | • Harness or connectors [Pre-crash seat belt control unit (driver side) circuit 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-35, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883907

Regarding Wiring Diagram information, refer to SBC-17, "Wiring Diagram".

#### 1.CHECK FUSIBLE LINK

1. Turn ignition switch OFF.
2. Check 30 A fusible link (L).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace the blown fusible link after repairing the affected circuit.

#### 2.CHECK PRE-CRASH SEAT BELT MOTOR POWER SUPPLY

1. Disconnect pre-crash seat belt control unit (driver side) harness connector.
2. Check voltage between pre-crash seat belt control unit (driver side) harness connector and ground.

| Pre-crash seat belt control unit (driver side) | | Ground | Voltage (V) |
|---|---|---|---|
| Connector | Terminal | | Battery voltage |
| B58 | 19 | | |

Is the inspection result normal?

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

#### 3.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2455 CONTROL UNIT DR

## DTC Logic

INFOID:0000000007883908

### 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-36, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883909

#### 1..INSPECTION START

1. Check Self-diagnostic result with CONSULT.
2. Touch ERASE.
3. Perform DTC Confirmation Procedure.

Is DTC B2455 displayed again?

YES >> Replace pre-crash seat belt control unit (driver side). Refer to SR-27, "Removal and Installation".
NO >> GO TO 2.

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2456 SEAT BLT PWR AS

## DTC Logic

INFOID:0000000007883910

### DTC DETECTION LOGIC

| DTC No. | Self-diagnosis item | DTC Detection Condition | Possible causes |
|---|---|---|---|
| B2456 | SEAT BLT PWR AS CIRC | Pre-crash seat belt control unit (passenger side) power supply circuit is open or shorted | • Harness or connectors [Pre-crash seat belt control unit (passenger side) circuit is open or shorted]<br>• 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-37, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883911

Regarding Wiring Diagram information, refer to SBC-17, "Wiring Diagram".

#### 1.CHECK FUSIBLE LINK

1. Turn ignition switch OFF.
2. Check 30 A fusible link (M).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace the blown fusible link after repairing the affected circuit.

#### 2.CHECK PRE-CRASH SEAT BELT MOTOR POWER SUPPLY

1. Disconnect pre-crash seat belt control unit (passenger side) harness connector.
2. Check voltage between pre-crash seat belt control unit (passenger side) harness connector and ground.

| Pre-crash seat belt control unit (passenger side) | | Ground | Voltage (V) (Approx.) |
|---|---|---|---|
| Connector | Terminal | | |
| B160 | 19 | | Battery voltage |

Is the inspection result normal?

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

#### 3.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2457 CONTROL UNIT AS

## DTC Logic

INFOID:0000000007883912

### 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-38, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883913

#### 1.INSPECTION START

1. Check Self-diagnostic result with CONSULT.
2. Touch ERASE.
3. Perform DTC Confirmation Procedure.

Is DTC B2457 displayed again?

YES >> Replace pre-crash seat belt control unit (passenger side). Refer to SR-27, "Removal and Installation".
NO >> GO TO 2.

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2458 LOCAL COMM

## DTC Logic

INFOID:0000000007883914

### 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]<br>• Pre-crash seat belt control unit (driver side)<br>• 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-39, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883915

Regarding Wiring Diagram information, refer to SBC-17, "Wiring Diagram".

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

Check pre-crash seat belt control unit power supply and ground circuit. Refer to SBC-46, "Diagnosis Procedure".

Is the inspection result normal?

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

#### 2.CHECK LOCAL COMMUNICATION LINE CIRCUIT

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

| Pre-crash seat belt control unit (driver side) | | Pre-crash seat belt control unit (passenger side) | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| B58 | 8 | B160 | 8 | Yes |
| | 16 | | 16 | |

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 | | |
| B58 | 8 | | No |
| | 16 | | |

Is the inspection result normal?

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

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

1. Replace pre-crash seat belt control unit (passenger side). Refer to SR-27, "Removal and Installation".
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). Refer to SR-27, "Removal and Installation".
2. Check Self-diagnostic result with CONSULT.

Is DTC detected?

YES >> GO TO 5.
NO >> Inspection End.

## 5. CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2461 VHCL SPEED SIGNAL

## Description

INFOID:0000000007883916

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

## DTC Logic

INFOID:0000000007883917

### DTC DETECTION LOGIC

**NOTE:**
If DTC B2461 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SBC-29, "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-41, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883918

**1.** CHECK COMBINATION METER

Check combination meter self-diagnostics. Refer to MWI-17, "Description".

Is the inspection result normal?

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

**2.** CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2463 ROLLOVER SIGNAL

## Description

INFOID:0000000007883919

Inputs the rollover signal from air bag diagnosis sensor unit via CAN communication.

## DTC Logic

INFOID:0000000007883920

### DTC DETECTION LOGIC

**NOTE:**
If DTC B2463 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SBC-29, "DTC Logic".

| DTC No. | Self-diagnosis item | DTC Detection Condition | Possible causes |
|---|---|---|---|
| B2463 | ROLLOVER SIGNAL | Receipt of a malfunction signal of the rollover signal | Air bag diagnosis sensor unit |

### 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:0000000007883921

#### 1.CHECK DTC WITH AIR BAG DIAGNOSIS SENSOR UNIT

Check “self-diagnostic result” for “AIR BAG DIAGNOSIS SENSOR UNIT” with CONSULT. Refer to SRC-17, "CONSULT Function (AIR BAG)".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace air bag diagnosis sensor unit. Refer to SR-25, "Removal and Installation".

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2466 DR/AS CONTROL UNIT

## DTC Logic

INFOID:0000000007883922

### 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)<br>• 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-43, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883923

#### 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-53, "Intermittent Incident".

>> Inspection End.

# B2470 SYS HEAT PROTC DR

## Description

INFOID:0000000007883924

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:0000000007883925

### DTC DETECTION LOGIC

| DTC No. | Self-diagnosis item | DTC Detection Condition | Possible causes |
|---|---|---|---|
| B2470 | SYS HEAT PROTC DR | Deactivates to prevent excessive heating | Comfort 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-44, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883926

#### 1.CHECK THE VEHICLE CONDITION WITH CONSULT DATA MONITOR

1. Check HEAT PROTC LH in DATA MONITOR with CONSULT.
2. Wait until OFF appears.
3. Perform the self-diagnosis result with CONSULT, after performing the check.
4. Touch ERASE.
5. Perform DTC Confirmation Procedure. Refer to SBC-44, "DTC Logic".

Is DTC B2470 displayed again?

YES >> GO TO 2.
NO >> Inspection End.

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# B2471 SYS HEAT PROTC AS

## Description

INFOID:0000000007883927

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:0000000007883928

### 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-45, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000007883929

#### 1.CHECK THE VEHICLE CONDITION WITH CONSULT DATA MONITOR

1. Check HEAT PROTC RH in DATA MONITOR with CONSULT.
2. Wait until OFF appears.
3. Perform the self-diagnosis results with CONSULT, after performing the check.
4. Touch ERASE.
5. Perform DTC Confirmation Procedure. Refer to SBC-45, "DTC Logic".

Is DTC B2471 displayed again?

YES >> GO TO 2.
NO >> Inspection End.

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-53, "Intermittent Incident".

>> Inspection End.

# POWER SUPPLY AND GROUND CIRCUIT

## Diagnosis Procedure

INFOID:0000000007883930

Regarding Wiring Diagram information, refer to SBC-17, "Wiring Diagram".

### 1.CHECK POWER SUPPLY CIRCUIT - 1

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

| Pre-crash seat belt control unit | | Ground | Voltage (Approx.) |
|---|---|---|---|
| Connector | Terminal | | |
| B58 (Driver side) | 1 | | Battery voltage |
| B160 (Passenger side) | | | |

Is the inspection result normal?

YES >> GO TO 3
NO >> GO TO 2

### 2.CHECK POWER SUPPLY CIRCUIT - 2

1. Disconnect fuse block (J/B) harness connector.
2. Check continuity between pre-crash seat belt control unit (driver side and passenger side) harness connector and fuse block (J/B) harness connector.

| Pre-crash seat belt control unit | | Fuse block (J/B) | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| B58 (Driver side) | 1 | M68 | 3R | Yes |
| B160 (Passenger side) | | | | |

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

| Pre-crash seat belt control unit | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| B58 (Driver side) | 1 | | No |
| B160 (Passenger side) | | | |

Is the inspection result normal?

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

### 3.CHECK GROUND CIRCUIT

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

| Pre-crash seat belt control unit | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| B58 (Driver side) | 18 | | Yes |
| | 20 | | |
| B160 (Passenger side) | 18 | | |
| | 20 | | |

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair harness or connector.

# SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

## Component Function Check

INFOID:0000000007883931

### 1.CHECK SEAT BELT BUCKLE SWITCH CIRCUIT (DRIVER SEAT)

Check BUCKLE SW LH on DATA MONITOR.

| Data Monitor Item | Condition | CONSULT |
|---|---|---|
| BUCKLE SW LH | Seat belt buckle (LH) fastened | ON |
| | Seat belt buckle (LH) unfastened | OFF |

Is the inspection result normal?

YES >> Inspection End.
NO >> Check seat belt buckle switch (driver seat). Refer to SBC-48, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000007883932

Regarding Wiring Diagram information, refer to SBC-17, "Wiring Diagram".

### 1.CHECK PRE-CRASH SEAT BELT CONTROL UNIT (DRIVER SIDE) OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch (driver seat) harness connector.
3. Turn ignition switch ON.
4. Check voltage between seat belt buckle switch (driver seat) harness connector and ground.

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| Seat belt buckle switch (driver seat) | | | |
| Connector | Terminal | | |
| B221 | 2 | Ground | 5 |

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

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

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

| Pre-crash seat belt control unit (driver side) | | Seat belt buckle switch (driver seat) | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| B58 | 6 | B221 | 2 | Yes |

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 | | |
| B58 | 6 | | No |

Is the inspection result normal?

YES >> Replace pre-crash seat belt control unit (driver side). Refer to SR-27, "Removal and Installation".
NO >> Repair or replace harness or connector.

### 3.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SEAT) GROUND CIRCUIT

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

| Seat belt buckle switch (driver seat) | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| B221 | 3 | | Yes |

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connector.

## 4. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SEAT)

Check seat belt buckle switch (driver seat). Refer to SBC-49, "Component Inspection".

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace seat belt buckle switch (driver seat). Refer to SR-28, "Removal and Installation".

# Component Inspection

INFOID:0000000007883933

## 1. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SEAT)

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

| Seat belt belt buckle switch (driver seat) | | Condition | Continuity |
|---|---|---|---|
| Terminal | | | |
| 3 | 4 | Seat belt buckle (driver seat) is fastened | No |
| | | Seat belt buckle (driver seat) is not fastened | Yes |
| | 2 | Seat belt buckle (driver seat) is fastened | Yes |
| | | Seat belt buckle (driver seat) is not fastened | No |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace seat belt belt buckle switch (driver seat). Refer to SR-28, "Removal and Installation".

# SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)

## Component Function Check

INFOID:0000000008233643

### 1.CHECK SEAT BELT BUCKLE SWITCH CIRCUIT (PASSENGER SEAT)

Check BUCKLE SW RH on DATA MONITOR.

| Data Monitor Item | Condition | CONSULT |
|---|---|---|
| BUCKLE SW RH | Seat belt buckle (passenger seat) fastened | ON |
| | Seat belt buckle (passenger seat) unfastened | OFF |

Is the inspection result normal?

YES >> Inspection End.
NO >> Check seat belt buckle switch (passenger seat). Refer to SBC-50, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000008233644

Regarding Wiring Diagram information, refer to SBC-17, "Wiring Diagram".

### 1.CHECK PRE-CRASH SEAT BELT CONTROL UNIT (PASSENGER SEAT) OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch (passenger seat) harness connector.
3. Turn ignition switch ON.
4. Check voltage between seat belt buckle switch (passenger seat) harness connector and ground.

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| Seat belt buckle switch (passenger seat) | | | |
| Connector | Terminal | | |
| B303 | 2 | Ground | 5 |

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 2.

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

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

| Pre-crash seat belt control unit (passenger side) | | Seat belt buckle switch (passenger seat) | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| B160 | 6 | B303 | 2 | Yes |

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

| Pre-crash seat belt control unit (passenger side) | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| B160 | 6 | | No |

Is the inspection result normal?

YES >> Replace pre-crash seat belt control unit (passenger side). Refer to SR-27, "Removal and Installation".
NO >> Repair or replace harness or connector.

## 3.CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SEAT) GROUND CIRCUIT

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

| Seat belt buckle switch (passenger seat) | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| B303 | 3 | | Yes |

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness or connector.

## 4.CHECK SEAT BELT BUCKLE SWITCH (PASSENGER SEAT)

Check seat belt buckle switch (passenger seat). Refer to SBC-51, "Component Inspection".

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace seat belt buckle switch (passenger seat). Refer to SR-28, "Removal and Installation".

# Component Inspection

INFOID:0000000008233645

## 1.CHECK SEAT BELT BUCKLE SWITH (PASSENGER SEAT)

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

| Seat belt belt buckle switch (passenger seat) | | Condition | Continuity |
|---|---|---|---|
| Terminal | | | |
| 3 | 4 | Seat belt buckle (passenger seat) is fastened | No |
| | | Seat belt buckle (passenger seat) is not fastened | Yes |
| | 2 | Seat belt buckle (passenger seat) is fastened | Yes |
| | | Seat belt buckle (passenger seat) is not fastened | No |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace seat belt belt buckle switch (passenger seat). Refer to SR-28, "Removal and Installation".

# SYMPTOM DIAGNOSIS

## PRE-CRASH SEAT BELT DOES NOT OPERATE

### Diagnosis Procedure

INFOID:0000000007883940

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

Check power supply and ground circuit. Refer to SBC-46, "Diagnosis Procedure".

Is the inspection result normal?

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

**2.** CHECK SEAT BELT BUCKLE SWITCH (LH)

Check seat belt buckle switch (LH). Refer to SBC-48, "Component Function Check".

Is the inspection result normal?

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

**3.** CHECK SEAT BELT BUCKLE SWITCH (RH)

Check seat belt buckle switch (RH). Refer to SBC-50, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the malfunctioning parts.

# REMOVAL AND INSTALLATION

## BRAKE PEDAL STROKE SENSOR

### Exploded View

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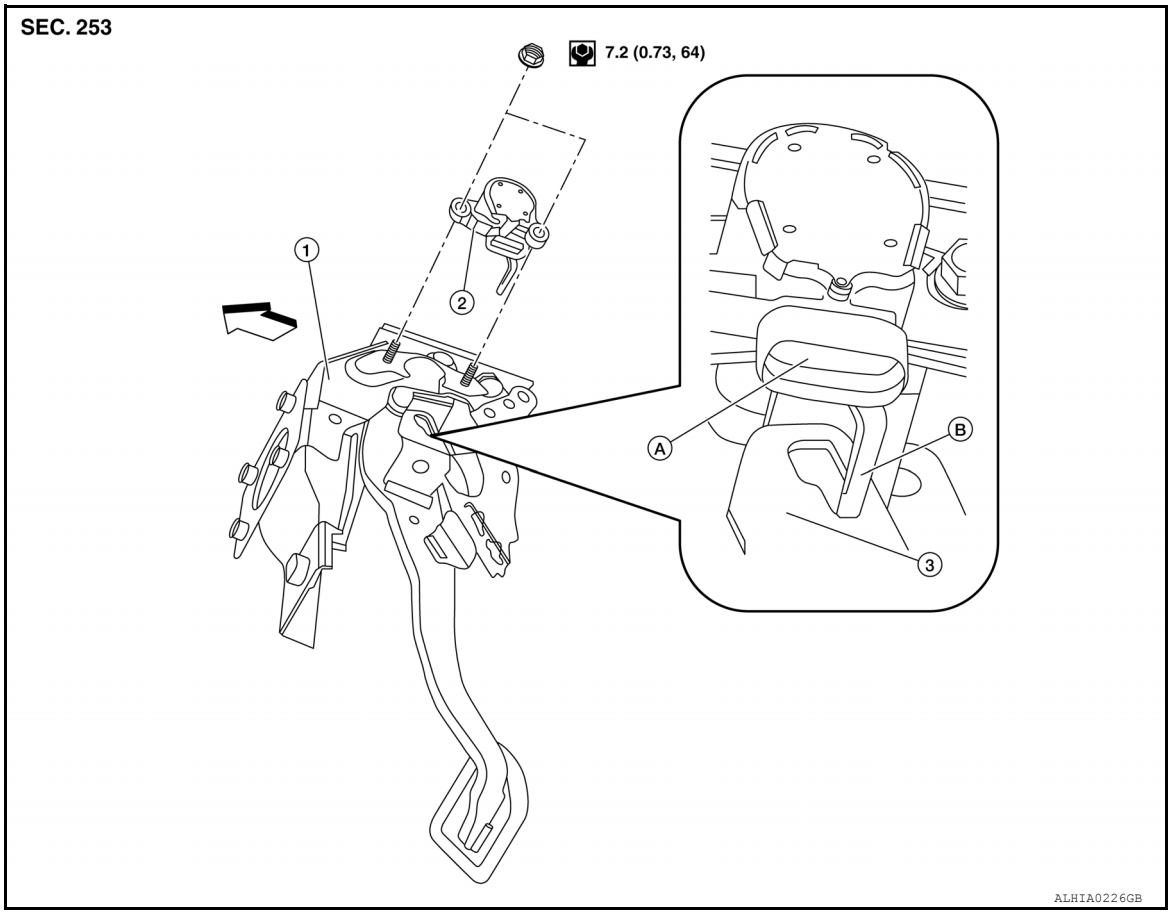


1. Brake pedal assembly
2. Brake pedal stroke sensor
3. Brake pedal sensor bracket
A. Brake pedal stroke sensor connector
B. Stroke sensor lever
⇦ Front

### Removal and Installation

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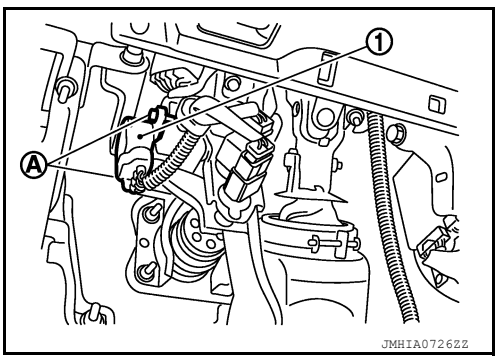
**CAUTION:**
- **Replace the brake pedal stroke sensor if it has been dropped or sustained an impact.**
- **Do not use air tools or electric tools for servicing.**

REMOVAL

1. Remove the instrument lower panel LH. Refer to IP-23, "Removal and Installation".
2. Disconnect the harness connector from brake pedal stroke sensor.
3. Remove brake booster rod cotter pin and clevis pin.
4. Remove the two brake pedal stroke sensor nuts (A).
5. Remove the brake pedal stroke sensor (1).



## INSTALLATION

Installation is in the reverse order of removal.

**CAUTION:**

1. **Align stroke sensor lever with the slot in brake pedal sensor bracket, or damage may occur.**
2. **Confirm output voltage of brake pedal stroke signal 1 and 2 using CONSULT. Refer to SBC-11, "Reference Value".**

**NOTE:**

After installation, press the brake pedal approximately 10 mm to break the stroke sensor pin.