SECTION SBC
SEAT BELT CONTROL SYSTEM

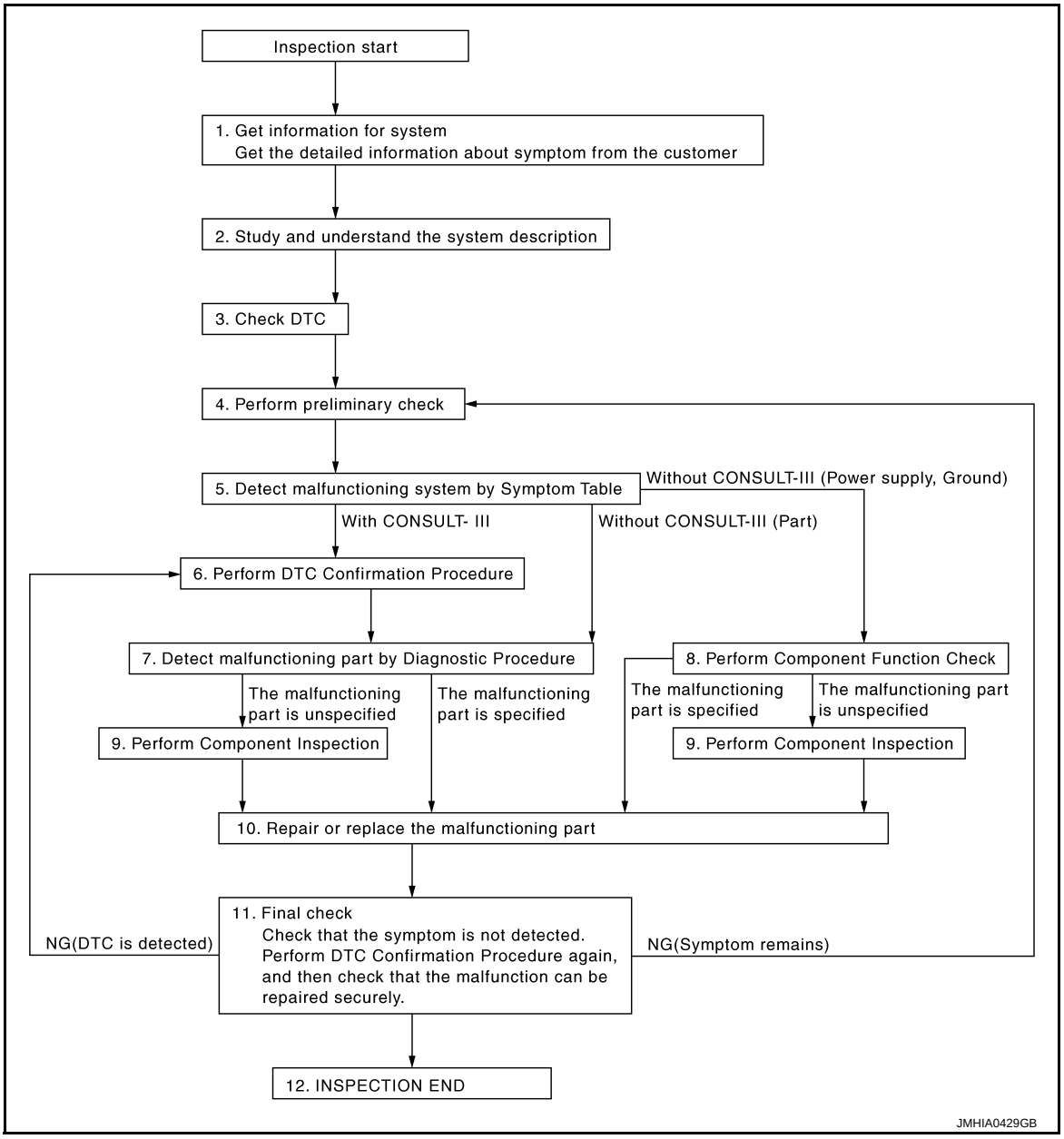
CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000003857986



1.GET INFORMATION FOR SYSTEM

Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred) as much as possible when the customer brings the vehicles in.

>> GO TO 2.

2.STUDY AND UNDERSTAND THE SYSTEM DESCRIPTION

Understand the operation condition or non-operation condition of pre-crash seat belt. Refer to SBC-7, "System Description".

>> GO TO 3.

3.CHECK DTC

Perform “Self-diagnosis procedure” of appropriate DTC to check if DTC is detected again.
At this time, always connect CONSULT-III to the vehicle, and then check the diagnosis results in real time on “DATA MONITOR (AUTO RECORD)”.
There is no priority for each DTC. Record them based on the following rules.
Current malfunction: Record all DTCs detected.
Past malfunction: Record up to 5 DTCs. When the 6th DTC is detected, it is overwritten to the first recorded DTC.

Is DTC detected?

YES >> GO TO 4.
NO >> Follow the diagnosis simulation test to check. Refer to GI-35, "Intermittent Incident".

4.PERFORM PRELIMINARY CHECK

Perform Pre-Diagnosis Inspection. Refer to SBC-69, "Description".

>> GO TO 5.

5.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.

With CONSULT-III>>GO TO 6.
Without CONSULT-III>>GO TO 7 (Parts system).
Without CONSULT-III>>GO TO 8 (Power supply, ground system).

6.PERFORM DTC CONFIRMATION PROCEDURE

Perform the inspection with “DTC REPRODUCTION PROCEDURE” of the applicable system.

>> GO TO 7.

7.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Identify the malfunctioning part with “Diagnosis Procedure”.

Are malfunctioning parts detected?

YES >> GO TO 10.
NO >> GO TO 9.

8.PERFORM COMPONENT FUNCTION CHECK

Identify the malfunctioning part with “Component Parts Function Inspection”.

Are malfunctioning parts detected?

YES >> GO TO 10.
NO >> GO TO 9.

9.PERFORM COMPONENT INSPECTION

Perform the inspection with “Component Parts Inspection”.

>> GO TO 10.

10.REPAIR OR REPLACE THE MALFUNCTIONING PART

Repair or replace the specified malfunctioning parts.

>> GO TO 11.

11.FINAL CHECK

Perform “CONSULT-III function” again to check that the repair is performed correctly.
Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 4.

Are all malfunctions corrected?

YES >> • Before delivering the vehicle to the customer, check that DTC is erased.
• INSPECTION END

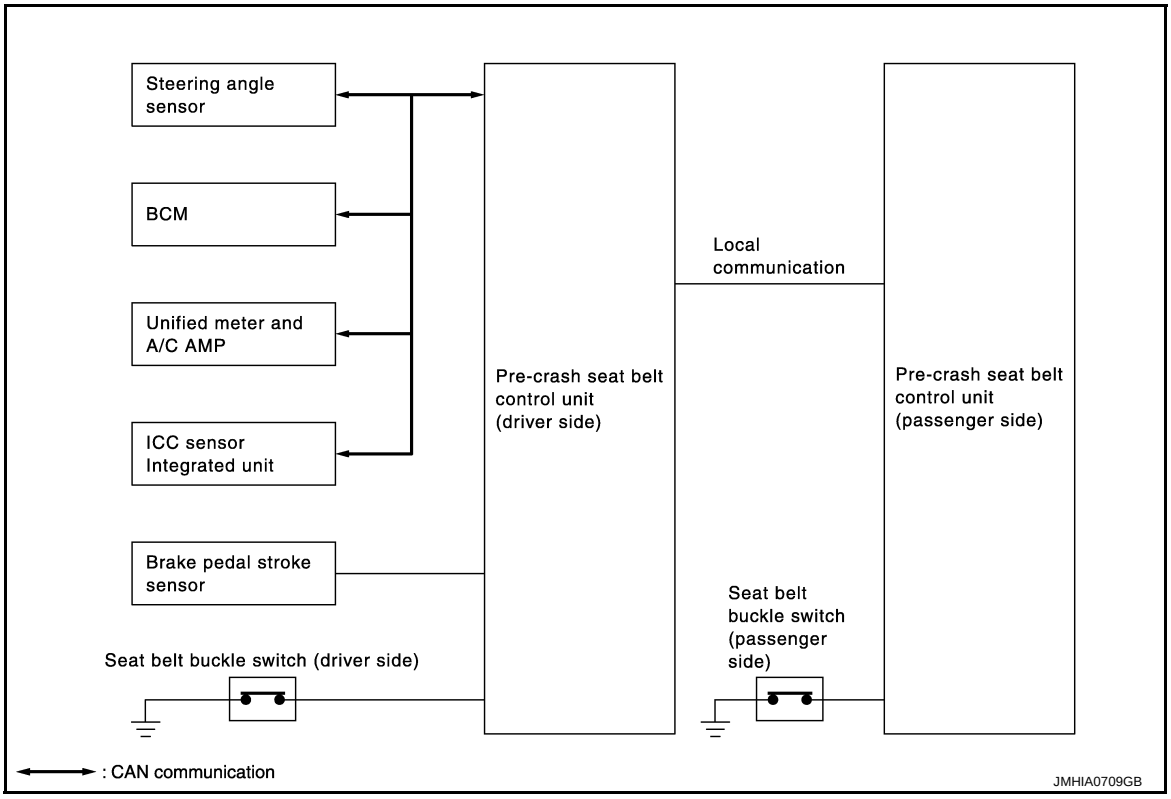
NO >> DTC is reproduced: GO TO 6.

SYSTEM DESCRIPTION

PRE-CRASH SEAT BELT SYSTEM

System Diagram

INFOID:0000000003857991



System Description

INFOID:0000000003857992

- Pre-crash seat belt is adopted to RH/LH seat belts
- Pre-crush seat belt retracts shoulder webbing by a motor in pre-tensioner seat belt with control unit built in motor
- Facilitates an emergency operation by restraining change in occupant posture while emergency braking is being applied, intelligent brake is being activated, or steering wheel is being steered sharply
- Restrains occupant faster and firmly, maximizes the effect of other devices like air bag, and reduces possible damage if a collision is unavoidable
- Provides occupant a sense of ease by pulling occupants body to seat during braking that does not result a collision
- Retracts shoulder webbing and rewinds excessive seat belt slack when occupant is getting in or out of the vehicle, or fastening or unfastening seat belt

FUNCTION DESCRIPTION

Pre-crush seat belt is activated in the conditions as per the following.

- Emergency braking is applied
- Intelligent brake assist is activated
- Steering wheel is turned sharply

OPERATION CONDITION

The activation and deactivation conditions of pre-crush seat belt are as per the following.

	Activating condition	Deactivating condition
When emergency braking is applied	• Judges that emergency braking is applied • Vehicle speed is 15 km/h (9 MPH) or more	• When the vehicle accelerates • The vehicle stays stopped

	Activating condition	Deactivating condition
When intelligent brake assist is activated	Judges that intelligent brake assist is activating	2 seconds passed after activation
When the vehicle is driven around a sharp curve	• Judges that steering wheel is steered sharply • Vehicle speed is 30 km/h (19 MPH) or more	• The vehicle stays stopped • Steering angle is 10 degrees or less

Retracts shoulder webbing and rewinds excessive seat belt slack in the conditions as per the following.

- Excessive seat belt slack is completely rewound or rewound for 13 seconds after rewinding starts, which ever comes first, when door opens while the vehicle is stopped
- For 1 second after seat belt is fastened while the door is closed
- Excessive seat belt slack is completely rewound or rewound for 10 seconds after rewinding starts, which ever comes first, after seat belt is unfastened
- Door is closed after seat belt is fastened

NOTE:
Intelligent brake assist. Refer to BRC-146, "System Description".

OPERATION PROHIBITION CONDITION

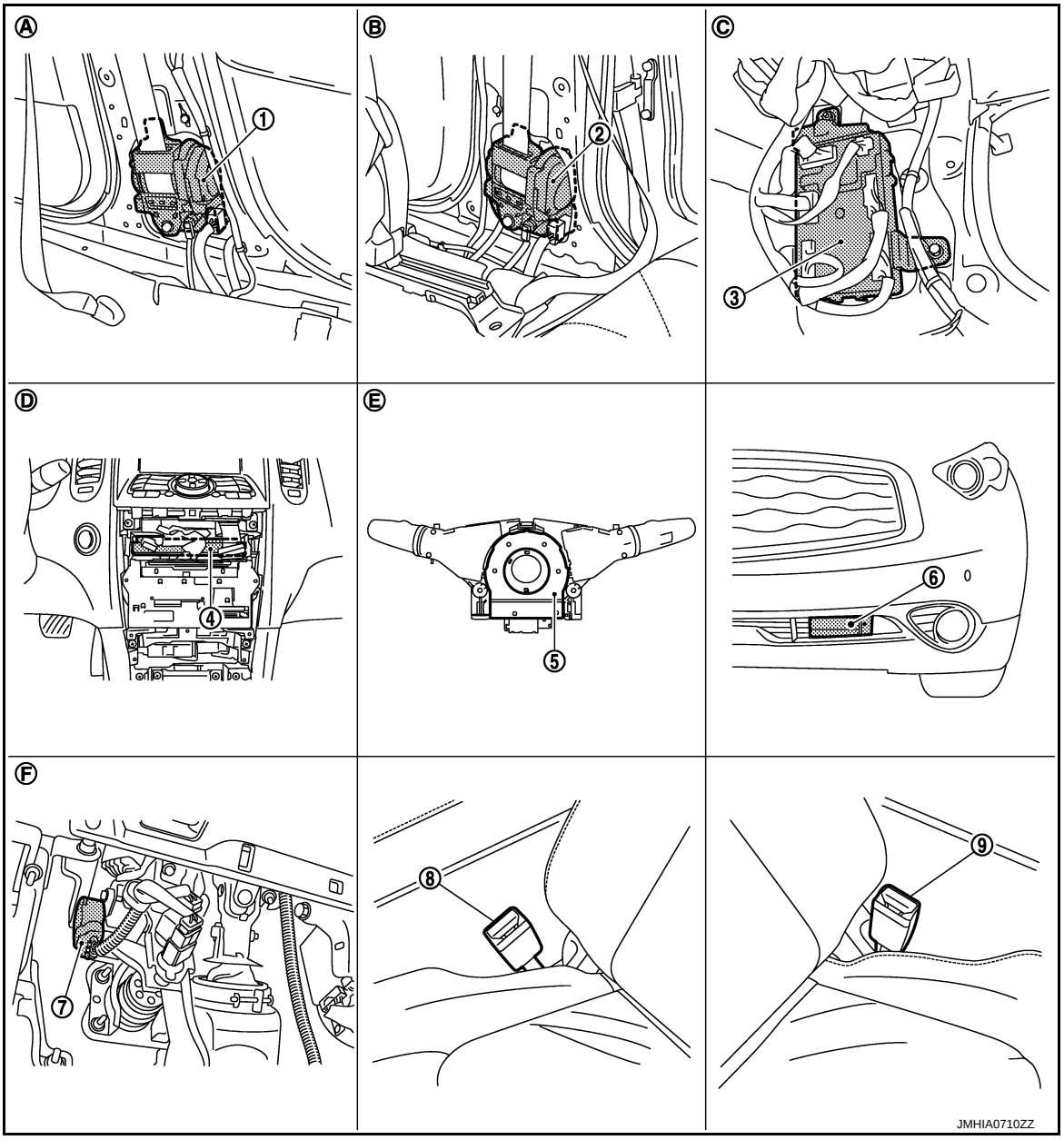
- Seat belt is not fastened (Only the seat belt that is not fastened does not operate)
- At fail-safe condition

MALFUNCTION WARNING

If a system malfunction is detected, it warns the customer by deactivating the retracting function when the seat belt is fastened or unfastened.

Component Parts Location

INFOID:0000000003857993



1. Pre-crash seat belt control unit (driver side) B9	2. Pre-crash seat belt control unit (passenger side) B221	3. BCM M122
4. Unified meter and A/C amp. M67	5. Steering angle sensor M37	6. ICC sensor integrated unit E67
7. Brake pedal stroke sensor E111	8. Seat belt buckle switch (driver side) B503	9. Seat belt buckle switch (passenger side) B513
A. View with center pillar lower garnish removed (driver side)	B. View with center pillar lower garnish removed (passenger side)	C. Dash side lower (passenger side)
D. Behind cluster lid C	E. Combination switch	F. View with instrument driver lower cover removed

Component Description

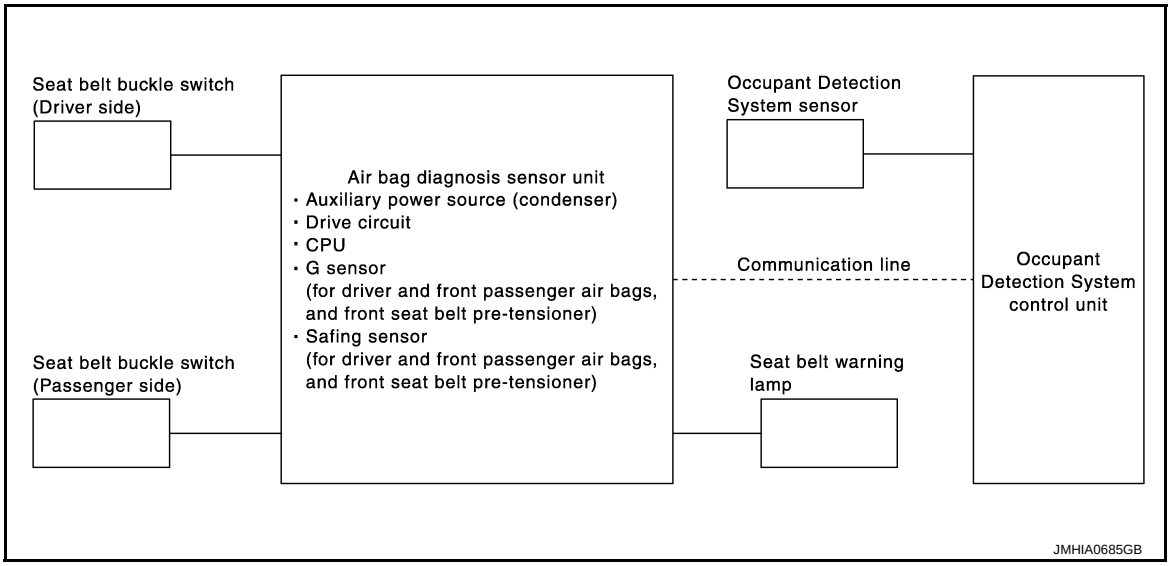
INFOID:0000000003857994

Component	Function
Pre-tensioner seat belt with pre-crush control unit built in motor	• It controls pre-crash seat belt motor according to input signal. • It is built into seat belt retractor, and it pulls, returns, and maintains according to the motor rotation.
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	It is arranged in the seat belt buckle and judges whether the seat belt is fastened or not fastened.
CAN system • Unified meter and A/C amp • BCM • Steering angle sensor	It transmits the vehicle status to pre-crash seat belt control unit using the CAN communication system.

SEAT BELT WARNING SYSTEM

System Diagram

INFOID:0000000003992731



System Description

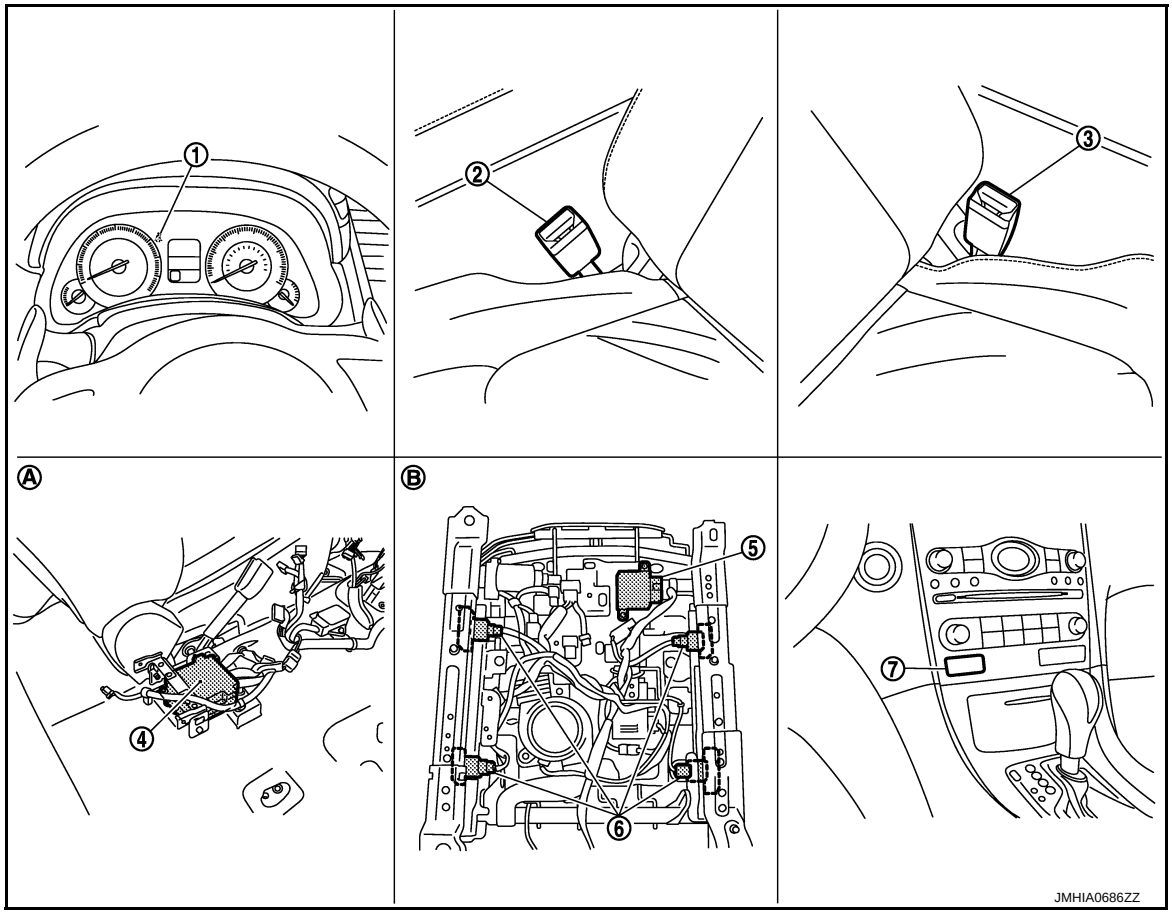
INFOID:0000000003992732

- Turns ON seat belt warning lamp, when the Occupant Detection 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 Detection 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-6, "METER SYSTEM : System Diagram"

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
Zero point reset Not yet performed (service parts only)	OFF

Component Parts Location

INFOID:0000000003992733



1. Combination meter (seat belt warning lamp) M53
2. Seat belt buckle switch (driver side)
   - OS: B13
   - WS: B503
3. Seat belt buckle switch (passenger side)
   - OS: B213
   - WS: B513
4. Air bag diagnosis sensor unit B15, B215, M147
5. Occupant Detection Sensor unit B214
6. Occupant Detection Sensor sensor
7. Passenger air bag OFF indicator M73

A. View with center console assembly removed
B. Backside of the seat cushion

- OS: Without climate controlled seat
- WS: With climate controlled seat

Component Description

INFOID:0000000003992734

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 Detection System control unit	Judges the passenger seat condition based on the information from Occupant Detection System control unit
Occupant Detection System sensor	Detects if the passenger seat is empty or occupied

Component parts	Outline of function
Air bag diagnosis sensor unit	Turns ON seat belt warning lamp based on the information from Occupant Detection System control unit
Front passenger air bag OFF indicator	Turns the front passenger air bag OFF indicator lamp ON when the front passenger seat is occupied by a child or a chile seat

DIAGNOSIS SYSTEM (PRE-CRASH SEAT BELT)

CONSULT-III Function

INFOID:0000000003857996

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

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

Check self-diagnosis results.

CAUTION:

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

DTC	Trouble diagnosis name (CONSULT-III 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-16
B2451	SEAT BLT MTR DR CIRC	• Motor or control unit malfunction • Seat belt motor circuit is shorted or open	SBC-17
B2452	SEAT BLT MTR DR CIRC	• Motor or control unit malfunction • Seat belt motor circuit is shorted or open	SBC-18
B2453	BR_STROKE_SEN_CIRC	• Brake pedal stroke sensor malfunction • Brake pedal stroke sensor circuit is short	SBC-19
B2454	SEAT BLT PWR DR CIRC	Motor power supply circuit is shorted or open	SBC-22
B2455	CONTROL UNIT DR	Malfunction in pre-crash seat belt control unit	SBC-24
B2456	SEAT BLT PWR AS	Motor power supply circuit is shorted or open	SBC-25
B2457	CONTROL UNIT AS	Malfunction in pre-crash seat belt control unit	SBC-27
B2458	LOCAL COMM	Local communication line shorted or open	SBC-28
B2461	VHCL SPEED SIGNAL	Vehicle speed signal malfunction is received	SBC-30
B2462	VHCL DISTANCE SIGNAL	ACC signal malfunction is received	SBC-31
B2466	DR/AS CONTROL UNIT	Control unit is out of the vehicle specification	SBC-32
B2470	SYS HEAT PROTC DR	Deactivation for cooling to prevent system heating due to continuous operation	SBC-33
B2471	SYS HEAT PROTC AS	Deactivation for cooling to prevent system heating due to continuous operation	SBC-34
U0126	STRG ANG SEN SIG	Steering angle sensor malfunction is received	SBC-35
U0428	STRG ANGL CAL	Steering angle sensor calibration incomplete signal is received	SBC-36

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).
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 ACCL SPEED	Indicates [deg/s] steering acceleration speed signal.
HEAT PROTC RH	Indicates [ON/OFF] condition of heat protection (RH).
HEAT PROTC LH	Indicates [ON/OFF] condition of heat protection (RH).

WORK SUPPORT

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

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000003857997

- 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-31, "CAN System Specification Chart" in LAN section for CAN communication unit (2WD).

DTC Logic

INFOID:0000000003857998

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
U1000	CAN communi-cation circuit	Pre-crash seat belt control unit cannot transmit and receive CAN communication system for 2 seconds or more.	CAN message reception malfunction

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-III.

Is any DTC detected?

YES >> Refer to LAN-31, "CAN System Specification Chart" in LAN section for CAN communication or CAN system.

NO >> CAN communication system is normal.

B2451 SEAT BLT MTR DR CIRC

Description

INFOID:0000000003857999

- It pulls, returns, and maintains according to the motor rotation.
- It is built into the seat belt retractor.
- It is installed to back of driver side center pillar garnish.

DTC Logic

INFOID:0000000003858000

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	Control unit internal malfunction

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-III.

Is DTC detected?

YES >> Refer to SBC-17, "Diagnosis Procedure".
NO >> Driver side pre-crash seat belt motor system is normal.

Diagnosis Procedure

INFOID:0000000004024939

1.INSPECTION START

1. Check “Self-diagnostic result” with CONSULT-III.
2. Touch “ERASE”.
3. Perform DTC Confirmation Procedure.
   See SBC-17, "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-35, "Intermittent Incident".

>> INSPECTION END

B2452 SEAT BLT MTR AS CIRC

Description

INFOID:0000000003858003

- It pulls, returns, and maintains according to the motor rotation.
- It is built into the seat belt retractor.
- It is installed to the back of passenger side center pillar garnish.

DTC Logic

INFOID:0000000003858004

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	Control unit internal malfunction

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-III.

Is DTC detected?

YES >> Refer to SBC-18, "Diagnosis Procedure".
NO >> Passenger side pre-crash seat belt motor system is normal.

Diagnosis Procedure

INFOID:0000000004024944

1.INSPECTION START

1. Check “Self-diagnostic result” with CONSULT-III.
2. Touch “ERASE”.
3. Perform DTC Confirmation Procedure.
   See SBC-18, "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-35, "Intermittent Incident".

>> INSPECTION END

B2453 BR STROKE SEN CIRC

Description

INFOID:0000000003858007

- 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.
- It is installed to back of driver instrument panel (lower).

DTC Logic

INFOID:0000000003858008

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	• Open circuit, short circuit to battery, and short circuit to ground in brake pedal stroke sensor harness • Control unit internal malfunction • Brake pedal stroke sensor malfunction

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-III.

Is DTC detected?

YES >> Refer to SBC-19, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003858009

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-III.
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 5.
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		
E111	2		5

Is the inspection result normal?

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

3.CHECK BRAKE PEDAL STROKE SENSOR CIRCUIT

1. Disconnect pre-crash seat belt control unit connector.
2. Check continuity between pre-crash seat belt control unit 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	
B9	2	E111	1	Existed
	12		3	
	17		4	

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

Pre-crash seat belt control unit (driver side)		Ground	Continuity
Connector	Terminal		
B9	2		Not existed
	10		
	12		
	17		

Is the inspection result normal?

YES >> Refer to SBC-20, "Component Inspection".
NO >> Repair or replace harness between pre-crash seat belt control unit and brake pedal stroke sensor.

4.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	
B9	10	E111	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		
B9	10		Not existed

Is the inspection result normal?

YES >> Replace pre-crash seat belt control unit (driver side).
NO >> Repair or replace harness between pre-crash seat belt control unit and brake pedal stroke sensor.

5.CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000003858010

COMPONENT PARTS INSPECTION

1.CHECK BRAKE PEDAL STROKE SENSOR

Check that continuity between brake pedal stroke sensor terminal 2 and terminals 1 and 3 is normal when performing the brake operation.

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 >> Brake pedal stroke sensor system is normal.
NO >> Replace brake pedal stroke sensor.

B2454 SEAT BLT PWR DR CIRC

Description

INFOID:0000000003858011

- When control unit activates pre-crush seat belt system, it retracts the shoulder belt with the electric motor and reduces seat belt slack.
- Power supply is supplied constantly from battery power supply.

DTC Logic

INFOID:0000000003858012

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2454	SEAT BLT PWR DR CIRC	Motor power supply circuit is open or shorted **CAUTION:** **Malfunction is judged when 30A (F/L-J) fusible link blows out even if motor power supply circuit is not malfunctioning.**	• Open circuit and short circuit to ground in drive circuit power supply harness • Control unit internal malfunction

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-III.

Is DTC detected?

YES >> Refer to SBC-22, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000004024997

1.CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown.

Terminal No.	Signal name	Fuse and fusible link No.
19	Battery power supply	J

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.

2.CHECK PRE-CRASH SEAT BELT MOTOR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect pre-crash seat belt control unit (driver side) connector.
3. 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) (Approx.)
Connector	Terminal		Battery voltage
B9	19		

Is the inspection result normal?

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

3.CHECK SELF DIAGNOSTIC RESULT

1. Connect pre-crash seat belt control unit (driver side) connector.
2. Turn ignition switch ON.
3. Check “Self-diagnostic result” with CONSULT-III.

4. Touch “ERASE”.
5. Perform DTC Confirmation Procedure.
   See SBC-22, "DTC Logic".

Is DTC B2454 displayed again?

YES >> Replace pre-crash seat belt control unit (driver side).
NO >> GO TO 4.

4.CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

B2455 CONTROL UNIT DR

Description

INFOID:0000000003858014

- It controls pre-crash seat belt motor according to input signal
- Built in driver side seat belt retractor

DTC Logic

INFOID:0000000003858015

DTC DETECTION LOGIC

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

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-III.

Is DTC detected?

YES >> Refer to SBC-24, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000004024998

1..INSPECTION START

1. Check “Self-diagnostic result” with CONSULT-III.
2. Touch “ERASE”.
3. Perform DTC Confirmation Procedure.
   See SBC-24, "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-35, "Intermittent Incident".

>> INSPECTION END

B2456 SEAT BLT PWR AS

Description

INFOID:0000000003980520

- When control unit activates pre-crash seat belt system, it retracts the shoulder belt with the electric motor and reduces the seat belt slack.
- Power supply is supplied constantly from battery power supply.

DTC Logic

INFOID:0000000003980521

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2456	SEAT BLT PWR AS	Pre-crash seat belt control unit power supply circuit is open or shorted **CAUTION:** **Malfunction is judged when 30A (F/L-K) fusible link blows out even if motor power supply circuit is not malfunctioning.**	• Open circuit and short circuit to ground in drive circuit power supply harness • Control unit internal malfunction

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-III.

Is DTC detected?

YES >> Refer to SBC-25, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003980525

1.CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown.

Terminal No.	Signal name	Fuse and fusible link No.
19	Battery power supply	K

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.

2.CHECK PRE-CRASH SEAT BELT MOTOR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect pre-crash seat belt control unit (passenger side) connector.
3. 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		
B221	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 SELF DIAGNOSTIC RESULT

1. Connect pre-crash seat belt control unit (passenger side) connector.

2. Turn ignition switch ON.
3. Check “Self-diagnostic result” with CONSULT-III.
4. Touch “ERASE”.
5. Perform DTC Confirmation Procedure.
   See SBC-25, "DTC Logic".

Is DTC B2456 displayed again?

YES >> Replace pre-crash seat belt control unit (passenger side).
NO >> GO TO 4.

4. CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

B2457 CONTROL UNIT AS

Description

INFOID:0000000003980523

- It controls pre-crash seat belt motor according to input signal
- Built in passenger side seat belt retractor

DTC Logic

INFOID:0000000003980524

DTC DETECTION LOGIC

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

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-III.

Is DTC detected?

YES >> Refer to SBC-27, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000004024999

1..INSPECTION START

1. Check “Self-diagnostic result” with CONSULT-III.
2. Touch “ERASE”.
3. Perform DTC Confirmation Procedure.
   See SBC-27, "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-35, "Intermittent Incident".

>> INSPECTION END

B2458 LOCAL COMM

Description

INFOID:0000000003980531

Consists of driver seat side control unit and passenger seat side control unit.

DTC Logic

INFOID:0000000003980532

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2458	LOCAL COMM	Receipt of a malfunction signal between driver seat side control unit and passenger seat side control unit	• Local communication line between driver side control unit and passenger side control unit is open circuit, short, short to power supply, or short to ground • Driver side pre-crash seat belt control unit internal circuit malfunction • Passenger side pre-crash seat belt control unit internal circuit malfunction • Power supply is not supplied to 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-III.

Is DTC detected?

YES >> Refer to SBC-28, "Diagnosis Procedure".
NO >> INSPECTIN END

Diagnosis Procedure

INFOID:0000000003980530

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

Check pre-crash seat belt control unit (passenger side) power supply. Refer to SBC-25, "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) connector.
3. Check continuity between local communication line harness connector.

Pre-crash seat belt control unit (driver side)		Pre-crash seat belt control unit (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B9	8	B211	8	Existed
	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		
B9	8		Not existed
	16		

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-III.

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-III.

Is DTC detected?

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

5. CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

B2461 VHCL SPEED SIGNAL

Description

INFOID:0000000003980553

Inputs the vehicle speed signal from UNIFIDE METER AND A/C AMP. via CAN communication.

DTC Logic

INFOID:0000000003980554

DTC DETECTION LOGIC

NOTE:
If DTC B2461 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SBC-16, "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	UNIFIDE METER AND A/C AMP.

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-III.

Is DTC detected?

YES >> Refer to SBC-30, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003980555

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

Check “Self-diagnostic result” for “METER/M&A” with CONSULT-III. Refer to MWI-45, "CONSULT-III Function (METER/M&A)".

Is DTC detected?

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

2.CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

B2462 VHCL DISTANCE SIGNAL

Description

INFOID:0000000003980647

Inputs the distance signal of two vehicles from ICC sensor integrated unit via CAN communication.

DTC Logic

INFOID:0000000003980648

DTC DETECTION LOGIC

NOTE:
If DTC B2462 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SBC-16, "DTC Logic".

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2462	VHCL DISTANCE SIGNAL	Receipt of a malfunction signal of the distance signal between two vehicles	ICC sensor integrated 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-III.

Is DTC detected?

YES >> Refer to SBC-31, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003980649

1.CHECK DTC WITH “ICC SENSOOR INTEGRATED UNIT”

Check “Self-diagnostic result” for “ICC” with CONSULT-III. Refer to CCS-45, "CONSULT-III Function (ICC)".

Is DTC detected?

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

2.CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

B2466 DR/AS CONTROL UNIT

Description

INFOID:0000000003980644

Consists of driver seat side control unit and passenger seat side control unit.

DTC Logic

INFOID:0000000003980645

DTC DETECTION LOGIC

DTC No.	Self-diagnosis item	DTC Detection Condition	Possible causes
B2466	DR/AS CONTROL UNIT	Driver seat side control unit or passenger seat side control unit is out of the vehicle specification	Driver seat side control unit or passenger side control unit that is installed is out of the vehicle specification

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-III.

Is DTC detected?

YES >> Refer to SBC-32, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003980646

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-35, "Intermittent Incident".

>> INSPECTION END

B2470 SYS HEAT PROTC DR

Description

INFOID:0000000003980641

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:0000000003980642

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-III.

Is DTC detected?

YES >> Refer to SBC-33, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003980643

1.CHECK THE VEHICLE CONDITION WITH CONSULT-III 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-33, "DTC Logic".

Is DTC B2470 displayed again?

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

2.CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

B2471 SYS HEAT PROTC AS

Description

INFOID:0000000003980635

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:0000000003980636

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-III.

Is DTC detected?

YES >> Refer to SBC-34, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003980637

1.CHECK THE VEHICLE CONDITION WITH CONSULT-III 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-34, "DTC Logic".

Is DTC B2471 displayed again?

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

2.CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

U0126 ST ANG SEN SIG

Description

INFOID:0000000003976907

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

DTC Logic

INFOID:0000000003976908

DTC DETECTION LOGIC

NOTE:
If DTC U0126 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SBC-16, "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-III.

Is DTC detected?

YES >> Refer to SBC-35, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003980729

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

Check “Self-diagnostic result” for “ABS” with CONSULT-III. Refer to BRC-44, "CONSULT-III Function".

Is DTC detected?

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

2.CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

U0428 STRG ANGL CAL

Description

INFOID:0000000003976901

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

DTC Logic

INFOID:0000000003976902

DTC DETECTION LOGIC

NOTE:
If DTC U0428 is displayed with DTC U0126, first perform the trouble diagnosis for DTC U0126. Refer to SBC-35, "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-III.

Is DTC detected?

YES >> Refer to SBC-36, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000003980730

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

Check “Self-diagnostic result” for “ABS” with CONSULT-III. Refer to BRC-44, "CONSULT-III Function".

Is DTC detected?

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

2.CHECK INTERMITTENT INCIDENT

Refer to GI-35, "Intermittent Incident".

>> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000003980808

1.CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown.

Terminal No.		Signal name	Fuse and fusible link No.
Driver side	1	Battery power supply	11
Passenger side			

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
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		
B9	1		Battery voltage
B221			

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		
B9	18		Existed
	20		
B221	18		
	20		

Does continuity exist?

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

SEAT BELT BUCKLE SWITCH (DRIVER SIDE)
PRE-CRASH SEAT BELT SYSTEM

PRE-CRASH SEAT BELT SYSTEM : Description

INFOID:0000000003858018

- 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.

PRE-CRASH SEAT BELT SYSTEM : Component Function Check

INFOID:0000000003858019

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

With CONSULT-III
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-38, "PRE-CRASH SEAT BELT SYSTEM : Diagnosis Procedure".

PRE-CRASH SEAT BELT SYSTEM : Diagnosis Procedure

INFOID:0000000004055025

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			
B503	59	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	
B9	6	B503	59	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		
B9	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		
B503	60		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-39, "PRE-CRASH SEAT BELT SYSTEM : 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).

PRE-CRASH SEAT BELT SYSTEM : Component Inspection (Belt Buckle Switch)

INFOID:0000000003858020

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			
59	60	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 WARNING LAMP SYSTEM

SEAT BELT WARNING LAMP SYSTEM : Description

INFOID:0000000004066290

- 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.

SEAT BELT WARNING LAMP SYSTEM : Component Function Check

INFOID:0000000004066291

1.CHECK SEAT BELT BUCKLE SWITCH

With CONSULT-III
When checking “BUCKLE SW” on DATA MONITOR of METER/M&A, check that ON/OFF display changes synchronized with the insertion operation to the seat belt buckle.

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

Is the inspection result normal?

YES >> Seat belt buckle switch (driver side) circuit is normal.
NO >> Refer to SBC-40, "SEAT BELT WARNING LAMP SYSTEM : Diagnosis Procedure".

SEAT BELT WARNING LAMP SYSTEM : Diagnosis Procedure

INFOID:0000000004066292

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

1. Turn the ignition switch ON.
2. Check that voltage between seat belt buckle switch (driver side) harness connector and ground.

(+)		(–)	Condition	Voltage (V) (Approx.)
Seat belt buckle switch (driver side)				
Connector	Terminal			
B13*1	1*1	Ground	When driver side seat belt is fastened	8.5
			When driver side seat belt is not fastened	0
B503*2	61*2		When driver side seat belt is fastened	8.5
			When driver side seat belt is not fastened	0

*1: With climate controlled seat

*2: Without climate controlled seat

Is the inspection result normal?

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

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

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

Combination meter		Seat belt buckle switch (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
M53	29	B13*1	1*1	Existed
		B503*2	61*2	

*1: With climate controlled seat

*2: Without climate controlled seat

4. Check continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	29		Not existed

Is the inspection result normal?

YES >> Repair or replace combination meter.
NO >> Repair or replace harness between combination meter and seat belt buckle switch (driver side).

3. CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

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

Seat belt buckle switch (driver side)		Ground	Continuity
Connector	Terminal		
B13*1	2*1		Existed
B503*2	60*2		

*1: With climate controlled seat

*2: Without climate controlled seat

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-41, "SEAT BELT WARNING LAMP SYSTEM : Component Inspection (Belt Buckle Switch)".

Is the inspection result normal?

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

SEAT BELT WARNING LAMP SYSTEM : Component Inspection (Belt Buckle Switch)

INFOID:0000000004066293

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
Connector	Terminal			
B13*1	1	2	When driver side seat belt is not fastened	Existed
			When driver side seat belt is fastened	Not existed
B503*2	61	60	When driver side seat belt is not fastened	Existed
			When driver side seat belt is fastened	Not existed

*1: With climate controlled seat

*2: Without climate controlled seat

Is the inspection result normal?

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

SEAT BELT BUCKLE SWITCH (PASSENGER SIDE)
PRE-CRASH SEAT BELT SYSTEM

PRE-CRASH SEAT BELT SYSTEM : Description

INFOID:0000000003858022

- 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.

PRE-CRASH SEAT BELT SYSTEM : Component Function Check

INFOID:0000000003858023

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

With CONSULT-III
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-42, "PRE-CRASH SEAT BELT SYSTEM : Diagnosis Procedure".

PRE-CRASH SEAT BELT SYSTEM : Diagnosis Procedure

INFOID:0000000004055027

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			
B513	59	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	
B221	6	B513	59	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		
B221	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		
B513	60		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-43, "PRE-CRASH SEAT BELT SYSTEM : 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).

PRE-CRASH SEAT BELT SYSTEM : Component Inspection (Belt Buckle Switch)

INFOID:0000000003858024

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			
59	60	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 SYSTEM

SEAT BELT WARNING LAMP SYSTEM : Description

INFOID:0000000004066294

- 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.

SEAT BELT WARNING LAMP SYSTEM : Component Function Check

INFOID:0000000004066295

1.CHECK SEAT BELT WARNING FUNCTION

1. Sit down to passenger seat.
2. Check that seat belt warning lamp turns OFF when passenger seat belt is fastened, and then turns ON when passenger seat belt is unfastened.

Is the inspection result normal?

YES >> Seat belt buckle switch (passenger side) circuit is normal.
NO >> Refer to SBC-44, "SEAT BELT WARNING LAMP SYSTEM : Diagnosis Procedure".

SEAT BELT WARNING LAMP SYSTEM : Diagnosis Procedure

INFOID:0000000004066296

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

1. Turn the ignition switch ON.
2. Check that voltage between seat belt buckle switch (passenger side) harness connector and ground.

(+)		(–)	Condition	Voltage (V) (Approx.)
Seat belt buckle switch (passenger side)				
Connector	Terminal			
B213*1	1*1	Ground	When passenger side seat belt is fastened	8.5
			When passenger side seat belt is not fastened	0
B513*2	61*2		When passenger side seat belt is fastened	8.5
			When passenger side seat belt is not fastened	0

*1: With climate controlled seat

*2: Without climate controlled seat

Is the inspection result normal?

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

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

1. Turn the ignition switch OFF.
2. Disconnect air bag diagnosis sensor unit connector and seat belt buckle switch (passenger side) 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	25	B213*1	1*1	Existed
		B513*2	61*2	

*1: With climate controlled seat

*2: Without climate controlled seat

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

Air bag diagnosis sensor unit		Ground	Continuity
Connector	Terminal		
B215	25		Not existed

Is the inspection result normal?

YES >> INSPECTION END
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) harness connector and ground.

Seat belt buckle switch (passenger side)		Ground	Continuity
Connector	Terminal		
B213*1	2*1		Existed
B513*2	60*2		

*1: With climate controlled seat

*2: Without climate controlled seat

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-45, "SEAT BELT WARNING LAMP SYSTEM : Component Inspection (Belt Buckle Switch)".

Is the inspection result normal?

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

SEAT BELT WARNING LAMP SYSTEM : Component Inspection (Belt Buckle Switch)

INFOID:0000000004066297

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
Connector	Terminal			
B213*1	1	2	When passenger side seat belt is not fastened	Existed
			When passenger side seat belt is fastened	Not existed
B513*2	61	60	When passenger side seat belt is not fastened	Existed
			When passenger side seat belt is fastened	Not existed

*1: With climate controlled seat

*2: Without climate controlled seat

Is the inspection result normal?

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

SEAT BELT WARNING LAMP CIRCUIT

Diagnosis Procedure

INFOID:0000000004022697

1.CHECK SEAT BELT WARNING LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect air bag diagnosis sensor unit connector.
3. Turn ignition switch ON.
4. Check that voltage between air bag diagnosis sensor unit harness connector and ground.

Air bag diagnosis sensor unit		Ground	Voltage (V) (Approx.)
Connector	Terminal		
M147	24		Battery voltage

Is the inspection result normal?

YES >> Replace air bag diagnosis sensor unit.
NO >> GO TO 2.

2.CHECK SEAT BELT WARNING LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector and air bag diagnosis sensor unit harness connector.

Combination meter		Air bag diagnosis sensor unit		Continuity
Connector	Terminal	Connector	Terminal	
B53	30	M147	24	Existed

4. Check continuity between combination meter and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
B53	30		Not existed

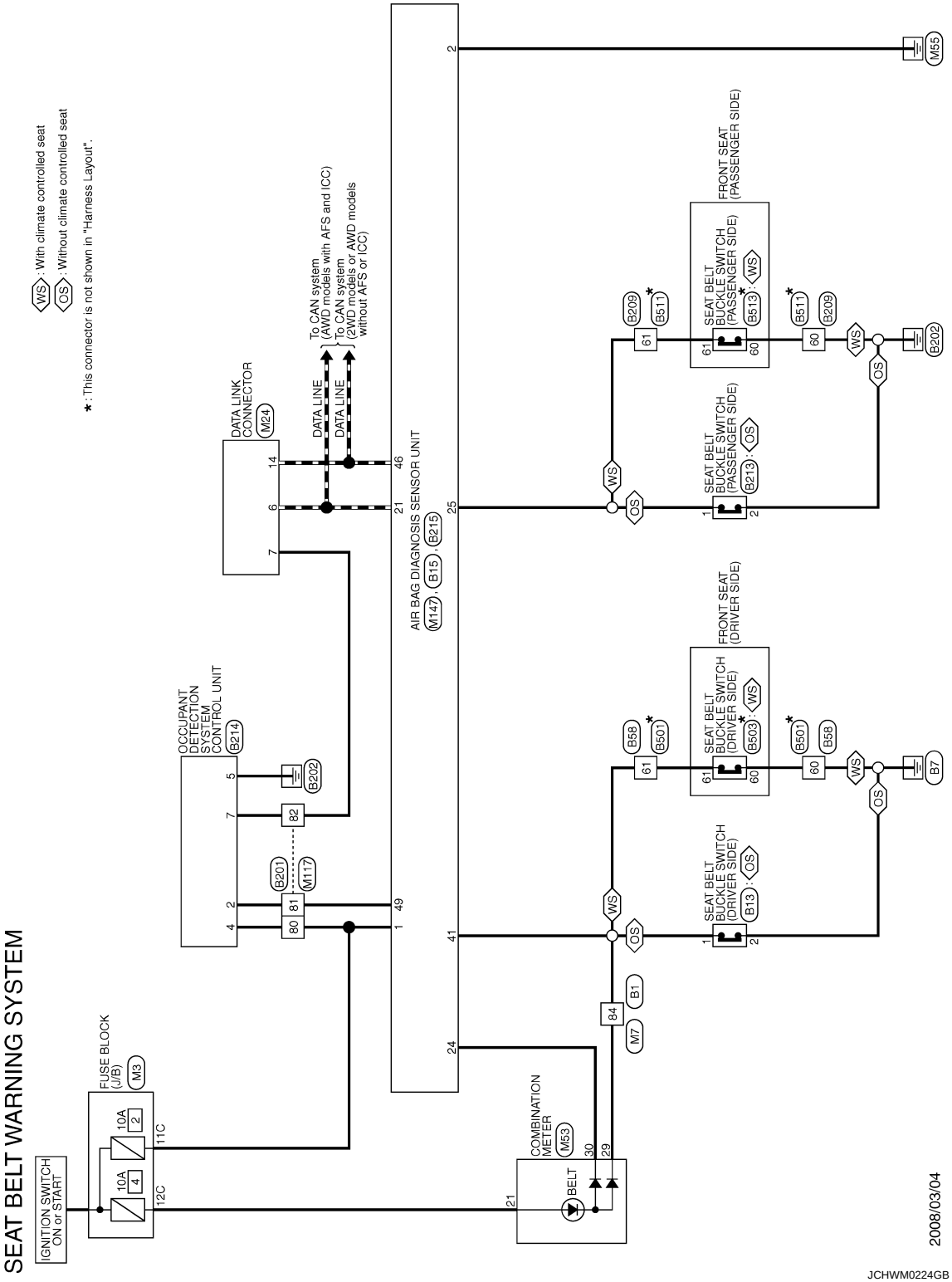
Is the inspection result normal?

YES >> Repair or replace combination meter.
NO >> Repair or replace harness between combination meter and air bag diagnosis sensor unit.

SEAT BELT WARNING SYSTEM

Wiring Diagram - SEAT BELT WARNING SYSTEM -

INFOID:0000000004162766

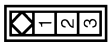


SEAT BELT WARNING SYSTEM

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

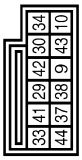
Terminal No.	Color of Wire	Signal Name [Specification]
84	SB	–

Connector No.	B13
Connector Name	SEAT BELT BUCKLE SWITCH (DRIVER SIDE) (WITHOUT CLIMATE CONTROLLED SEAT)
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	–
2	B	–

Connector No.	B15
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	TK12FY-2Y-EX



Terminal No.	Color of Wire	Signal Name [Specification]
41	SB	LH BUCKLE SW INPUT

Connector No.	B58
Connector Name	WIRE TO WIRE
Connector Type	NS10FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
60	B	–
61	SB	–

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
80	O	–
81	G	–
82	Y	–

Connector No.	B209
Connector Name	WIRE TO WIRE
Connector Type	NS10FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
60	B	–
61	LG	–

Connector No.	B213
Connector Name	SEAT BELT BUCKLE SWITCH (PASSENGER SIDE) (WITHOUT CLIMATE CONTROLLED SEAT)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	B	–

Connector No.	B214
Connector Name	OCCUPANT DETECTION SYSTEM CONTROL UNIT
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G	COMMUNICATION
4	O	IGN
5	B	GND
7	P	K LINE

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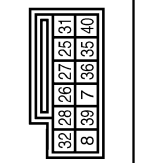
SEAT BELT WARNING SYSTEM

Connector No.	B215
Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT
Connector Type	TK12FY-1V-EX



Terminal No.	Color of Wire	Signal Name [Specification]
25	LG	RH BUCKLE SW INPUT

Connector No.	B501
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
60	R/Y	–
61	B/Y	–

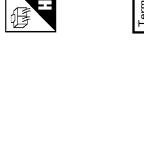
Connector No.	B503
Connector Name	SEAT BELT BUCKLE SWITCH (DRIVER SIDE) (WITH CLIMATE CONTROLLED SEAT)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
60	R/Y	–
61	B/Y	–

Connector No.	B511
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
60	R/Y	–
61	B/Y	–

Connector No.	B513
Connector Name	SEAT BELT BUCKLE SWITCH (PASSENGER SIDE) (WITH CLIMATE CONTROLLED SEAT)
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
60	R/Y	–
61	B/Y	–

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
11C	LG	–
12C	R	–

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

Terminal No.	Color of Wire	Signal Name [Specification]
84	SB	–

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
7	GR	–
14	P	–

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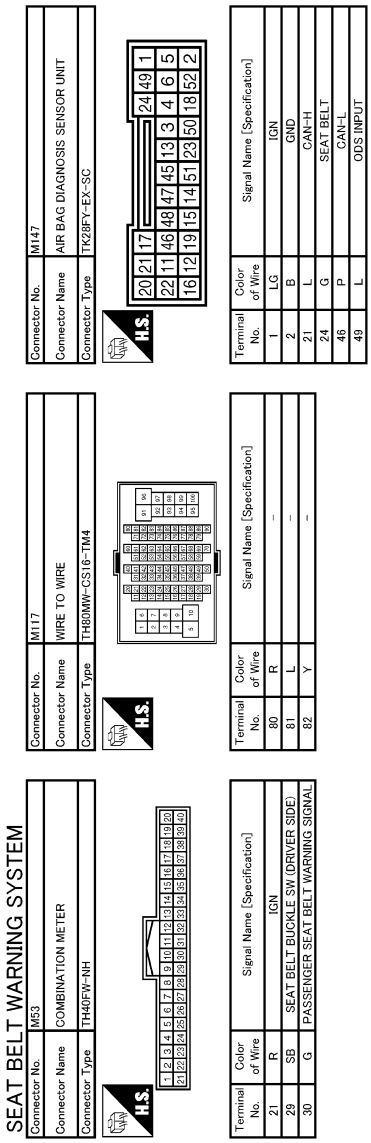

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ECU DIAGNOSIS INFORMATION

PRE-CRASH SEAT BELT CONTROL UNIT

Reference Value

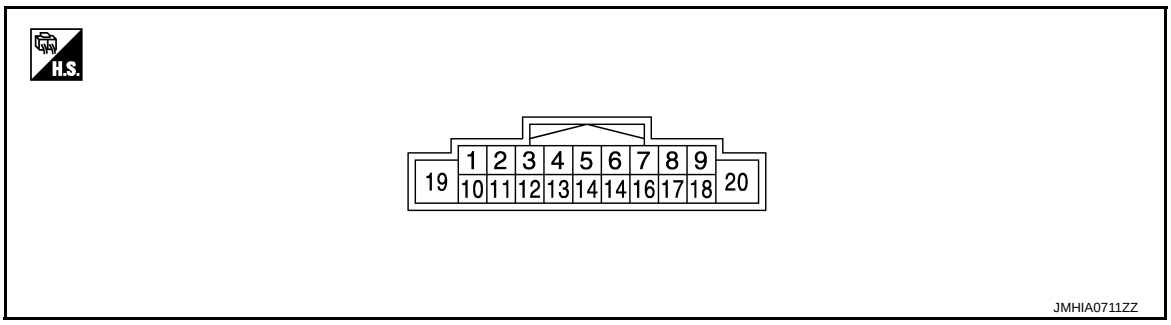
INFOID:0000000003858030

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III 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
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	Ignition switch ON	Depending on steering angle (deg)
STRG ACCL SPEED	Ignition switch ON	Depending on steering acceleration 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 (DRIVER SIDE)

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

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

PHYSICAL VALUES (PASSENGER SIDE)

Terminal No. (Wire color)		Description		Condition	Value*1 (Approx.)
+	–	Signal name	Input/ Output		
1 (Y)	GND	Power supply	Input	—	Battery voltage
6 (V)	GND	Seat belt buckle switch signal	Input	Seat belt is fastened	0 V
				Seat belt is unfastened	5 V
8 (G)	GND	Local Communication Line 2	Input/ Output	—	—
9 (B)	GND	Shield	—	—	—
16 (W)	GND	Local Communication Line 1	Input/ Output	—	—
18 (B)	GND	GND	Output	—	0 V

Terminal No. (Wire color)		Description		Condition	Value*1 (Approx.)
+	–	Signal name	Input/ Output		
19 (W)	GND	Motor passenger circuit power supply	Input	—	Battery voltage
20 (B)	GND	Motor passenger circuit ground	Output	—	0 V

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

Fail Safe

INFOID:0000000003858031

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.

DRIVER SIDE

Display contents of CONSULT-III	Fail-safe
B2451:SEAT BLT MTR DR CIRC	Stop the operation in the conditions as per the following. • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
B2452:SEAT BLT MTR AS CIRC	Stops the operation in the conditions as per the following. • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened
B2453:BR_STROKE_SEN_CIRC	Stops the operation in the conditions as per the following. • Emergency braking is applied • Seat belt unfastened
B2454:SEAT BLT PWR DR CIRC	Stops the operation in the conditions as per the following. • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
B2455:CONTROL UNIT DR	Stops the operation in the conditions as per the following. *1 • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
B2456:SEAT BLT PWR AS	Stops the operation in the conditions as per the following. Seat belt unfastened
B2457:CONTROL UNIT AS	Stops the operation in the conditions as per the following. Seat belt unfastened
B2458:LOCAL COMM	Stops the operation in the conditions as per the following. Seat belt unfastened
B2461:VHCL SPEED SIGNAL	Stops the operation in the conditions as per the following. • Emergency braking is applied • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened

Display contents of CONSULT-III	Fail-safe
B2462:B2462:VHCL DISTANCE SIGNAL	Stops the operation in the conditions as per the following. • Intelligent brake assist is activated • Seat belt unfastened
B2466:DR/AS CONTROL UNIT	Stops the operation in the conditions as per the following. Seat belt unfastened
B2470:SYS HEAT PROTC DR	Stops the operation in the conditions as per the following. • 1 time operation becomes possible after approximately 30 seconds • Returns to the initial condition after approximately 8 minutes • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
U0126:STRG ANG SEN SIG	Stops the operation in the conditions as per the following. • Steering wheel is steered sharply • Seat belt unfastened
U0428:STRG ANGL CAL	Stops the operation in the conditions as per the following. • Steering wheel is steered sharply • Seat belt unfastened

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

PASSENGER SIDE

Display contents of CONSULT-III	Fail-safe
B2452:SEAT BLT MTR DR CIRC	Stops the operation in the conditions as per the following. • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
B2453:BR_STROKE_SEN_CIRC	Stops the operation in the conditions as per the following. Emergency braking is applied
B2455:CONTROL UNIT DR	Stops the operation in the conditions as per the following. *1 • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
B2456:SEAT BLT PWR AS	Stops the operation in the conditions as per the following. • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
B2457:CONTROL UNIT AS	Stops the operation in the conditions as per the following. *1 • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens

Display contents of CONSULT-III	Fail-safe
B2458:LOCAL COMM	Stops the operation in the conditions as per the following. *1 • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
B2461:VHCL SPEED SIGNAL	Stops the operation in the conditions as per the following. • Emergency braking is applied • Steering wheel is steered sharply • Seat belt fastened • Door opens
B2462:VHCL DISTANCE SIGNAL	Stops the operation in the conditions as per the following. Seat belt unfastened
B2466:DR/AS CONTROL UNIT	Stops the operation in the conditions as per the following. • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Door opens
B2471:SYS HEAT PROTC AS	Stops the operation in the conditions as per the following. • 1 time operation becomes possible after approximately 30 seconds. • Returns to the initial condition after approximately 8 minutes. • Emergency braking is applied • Intelligent brake assist is activated • Steering wheel is steered sharply • Seat belt fastened • Seat belt unfastened • Door opens
U0126:STRG ANG SEN SIG	Stops the operation in the conditions as per the following. Steering wheel is steered sharply
U0428:STRG ANGL CAL	Stops the operation in the conditions as per the following. Steering wheel is steered sharply

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

DTC Index

INFOID:0000000003858032

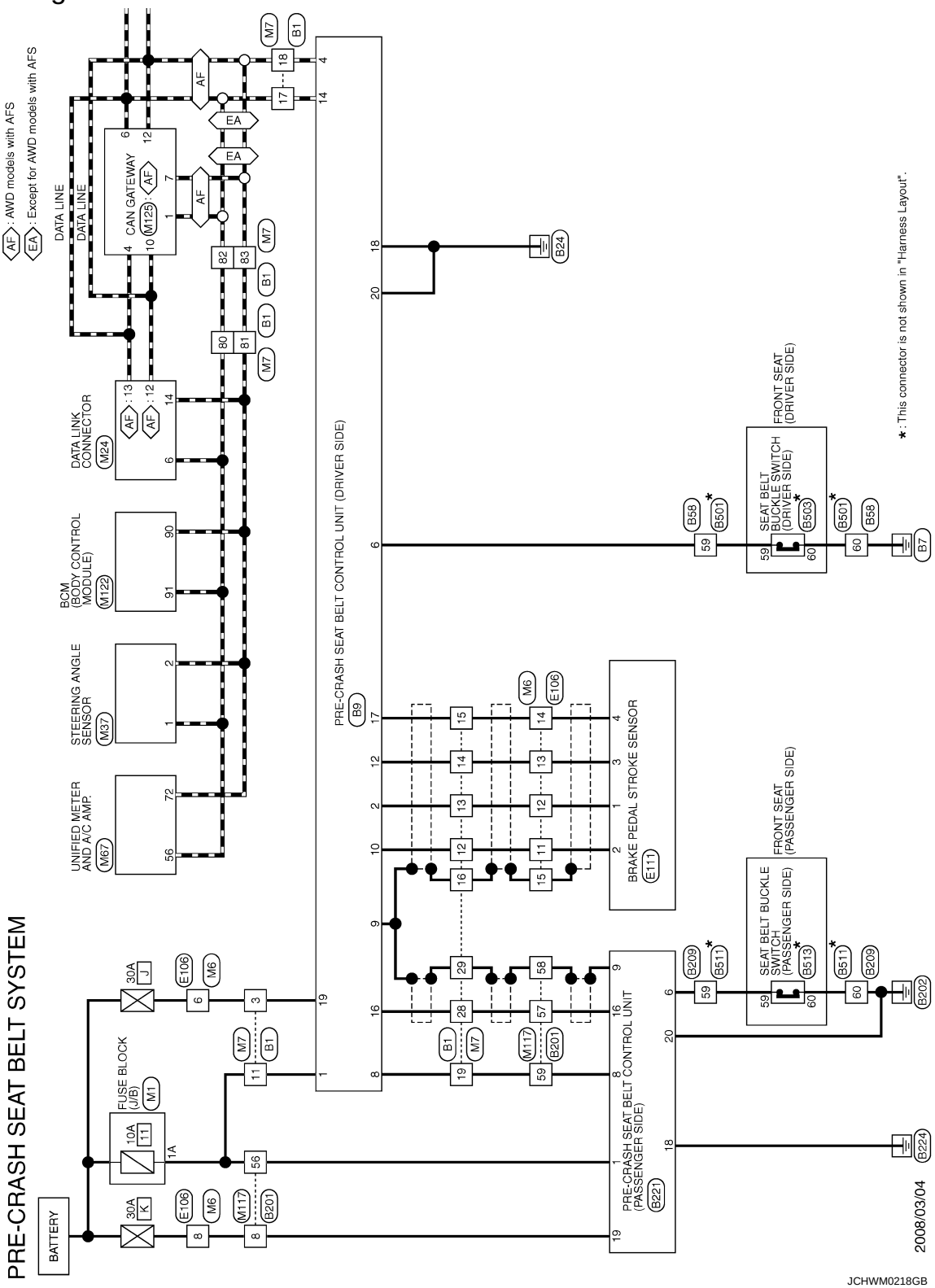
DISPLAY ITEM LIST (PRE-CRASH SEAT BELT)

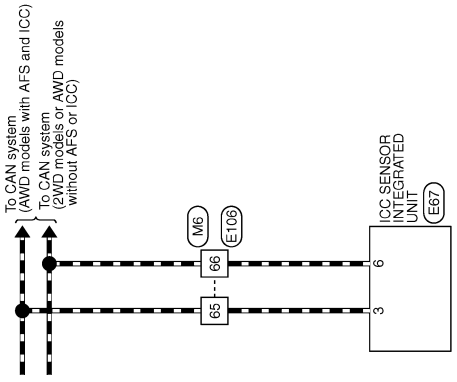
DTC	Trouble diagnosis name (CONSULT-III display)	DTC detection condition	Reference
U1000	CAN COMM CIRCUIT	Pre-crash seat belt control unit cannot transmit and receive CAN communication signal for 2 seconds or more	SBC-16
B2451	SEAT BLT MTR DR CIRC	• Motor or control unit malfunction • Seat belt motor circuit is shorted or open	SBC-17
B2452	SEAT BLT MTR DR CIRC	• Motor or control unit malfunction • Seat belt motor circuit is shorted or open	SBC-18
B2453	BR_STROKE_SEN_CIRC	• Brake pedal stroke sensor malfunction • Brake pedal stroke sensor circuit is short	SBC-19
B2454	SEAT BLT PWR DR CIRC	Motor power supply circuit is shorted or open	SBC-22
B2455	CONTROL UNIT DR	Malfunction in pre-crash seat belt control unit	SBC-24
B2456	SEAT BLT PWR AS	Motor power supply circuit is shorted or open	SBC-25
B2457	CONTROL UNIT AS	Malfunction in pre-crash seat belt control unit	SBC-27
B2458	LOCAL COMM	Local communication line shorted or open	SBC-28
B2461	VHCL SPEED SIGNAL	Vehicle speed signal malfunction is received	SBC-30
B2462	VHCL DISTANCE SIGNAL	ACC signal malfunction is received	SBC-31

DTC	Trouble diagnosis name (CONSULT-III display)	DTC detection condition	Reference
B2466	DR/AS CONTROL UNIT	Control unit is out of the vehicle specification	SBC-32
B2470	SYS HEAT PROTC DR	Deactivation for cooling to prevent system heating due to continuous operation	SBC-33
B2471	SYS HEAT PROTC AS	Deactivation for cooling to prevent system heating due to continuous operation	SBC-34
U0126	STRG ANG SEN SIG	Steering angle sensor malfunction is received	SBC-35
U0428	STRG ANGL CAL	Steering angle sensor calibration incomplete signal is received	SBC-36

Wiring Diagram - PRE-CRASH SEAT BELT SYSTEM -

INFOID:0000000003858033





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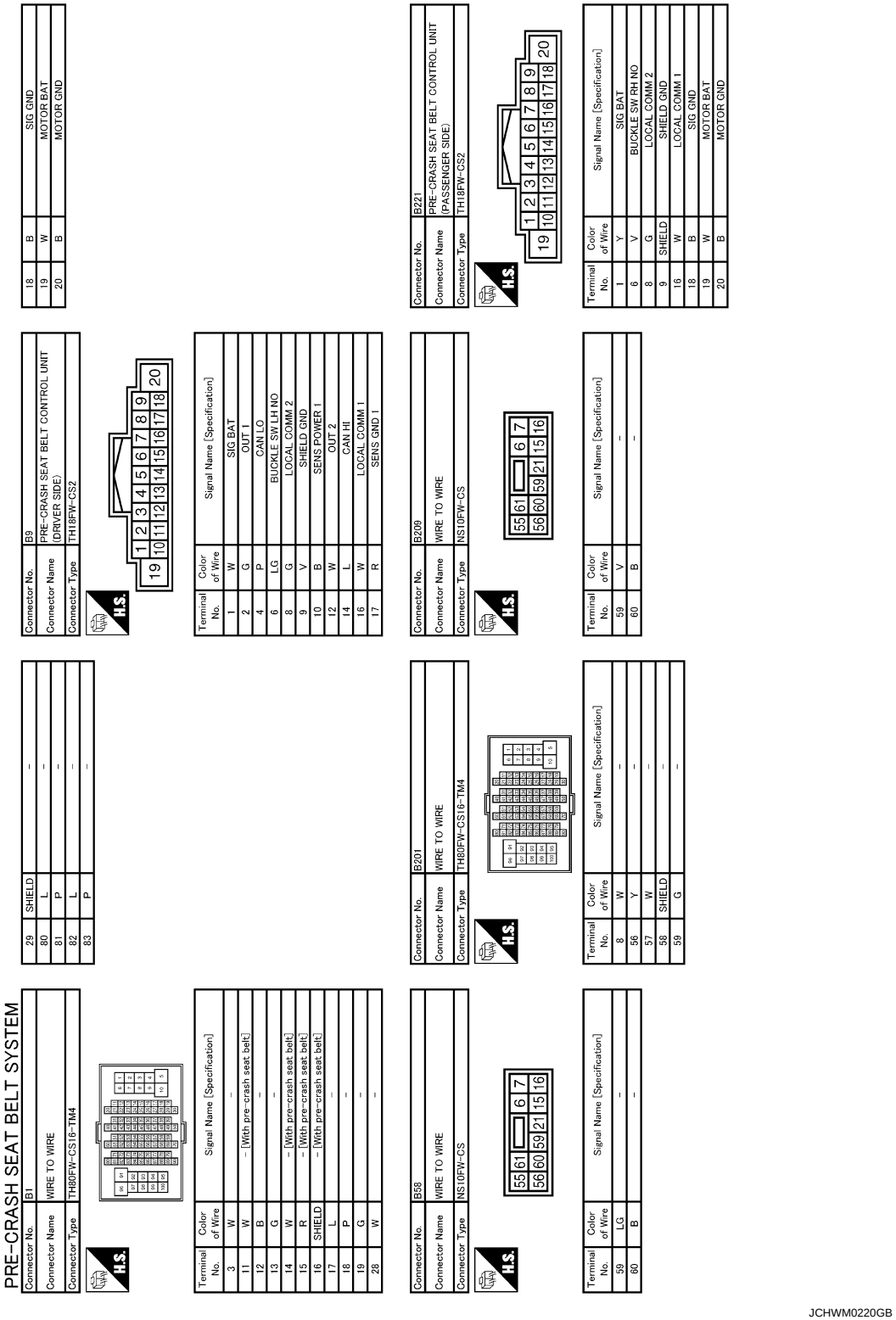

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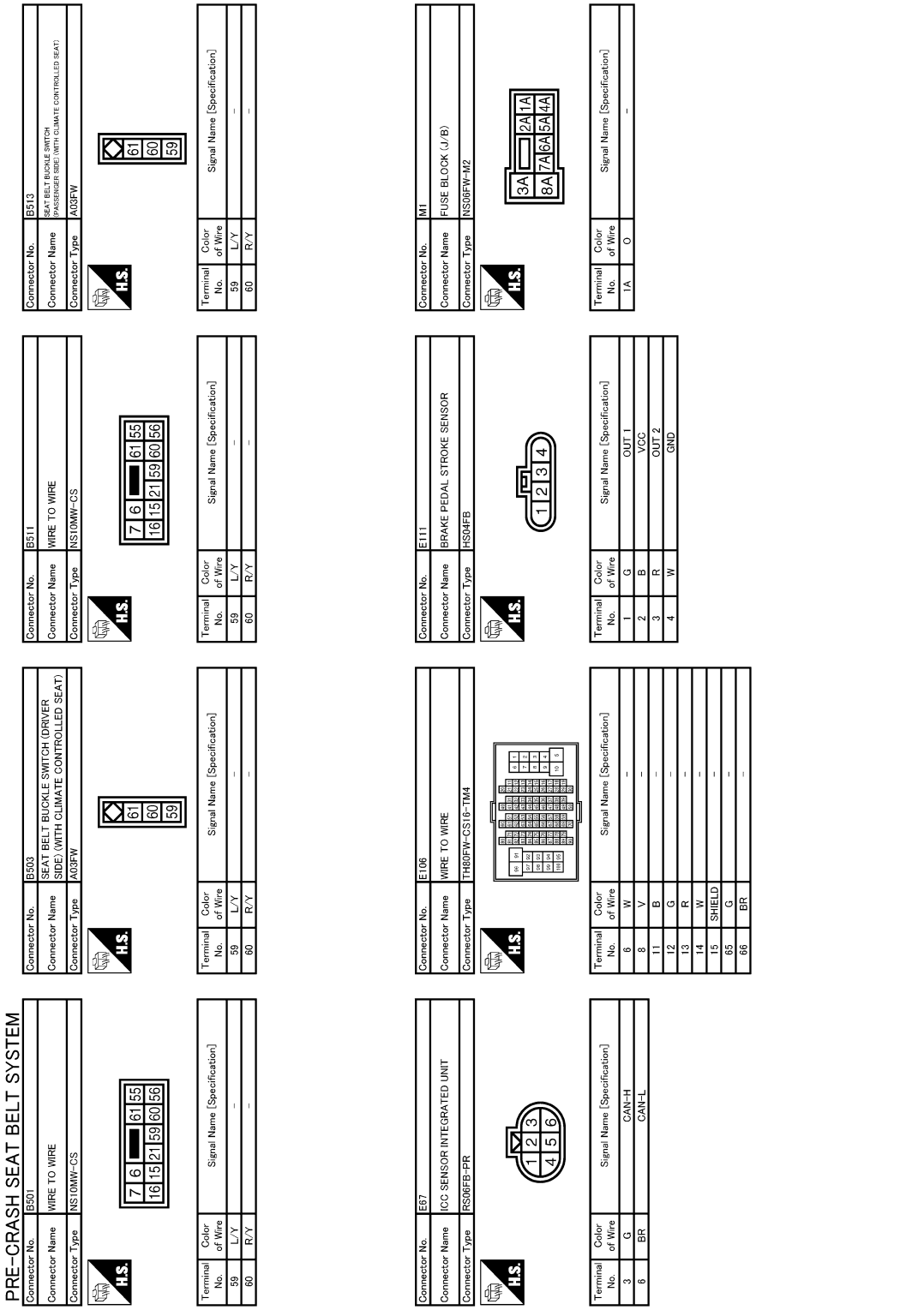

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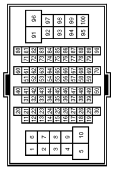
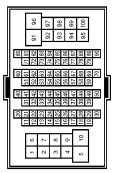
PRE-CRASH SEAT BELT SYSTEM

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



Terminal No.	Color of Wire	Signal Name [Specification]
6	W	–
8	W	–
11	B	–
12	G	–
13	R	–
14	W	–
15	SHIELD	–
65	L	–
66	P	–

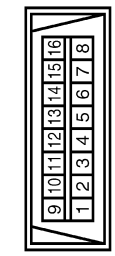
Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
3	W	–
11	R	– [With pre-crash seat belt]
12	B	– [With pre-crash seat belt]
13	G	– [With pre-crash seat belt]
14	R	– [With pre-crash seat belt]
15	W	– [With pre-crash seat belt]
16	SHIELD	– [With pre-crash seat belt]
17	L	– [With pre-crash seat belt]
18	P	– [With pre-crash seat belt]
19	G	–
28	W	–

29	SHIELD	–
80	L	–
81	P	–
82	L	–
83	P	–

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
12	P	–
13	L	–
14	P	–

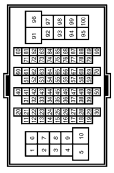
Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FW-NH

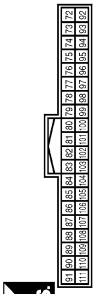
Terminal No.	Color of Wire	Signal Name [Specification]
56	L	CAN-H
72	P	CAN-L

Connector No.	M117
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
8	W	–
56	G	–
57	W	–
58	SHIELD	–
59	G	–

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
90	P	CAN-L
91	L	CAN-H

JCHWM0222GB

PRE−CRASH SEAT BELT SYSTEM

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

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	CAN−H
4	L	CAN−H
6	L	CAN−H
7	P	CAN−L
10	P	CAN−L
12	P	CAN−L

JCHWM0223GB

SYMPTOM DIAGNOSIS

PRE-CRASH SEAT BELT DOSE NOT OPERATE

BOTH SIDES

BOTH SIDES : Diagnosis Procedure

INFOID:0000000004022349

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to SBC-37, "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-35, "Intermittent Incident".
NO >> GO TO 1.

DRIVER SIDE

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000004022350

1. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Check seat belt buckle switch (driver side). Refer to SBC-38, "PRE-CRASH SEAT BELT SYSTEM : 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-35, "Intermittent Incident".
NO >> GO TO 1.

PASSENGER SIDE

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000004022351

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to SBC-37, "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-42, "PRE-CRASH SEAT BELT SYSTEM : 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-35, "Intermittent Incident".
NO >> GO TO 1.

SEAT BELT WARNING LAMP DOES NOT TURN OFF

Diagnosis Procedure

INFOID:0000000004022352

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

Check seat belt buckle switch circuit (driver side). Refer to SBC-43, "SEAT BELT WARNING LAMP SYSTEM : Component Function Check"

Is the inspection result normal?

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

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

Check seat belt buckle switch circuit (passenger side). Refer to SBC-39, "SEAT BELT WARNING LAMP SYSTEM : Component Function Check"

Is the inspection result normal?

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

3.CHECK SEAT BELT WARNING LAMP CIRCUIT

Check seat belt warning lamp circuit. Refer to SBC-46, "Diagnosis Procedure"

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-35, "Intermittent Incident".
NO >> GO TO 1.

SEAT BELT WARNING LAMP DOES NOT TURN ON

Diagnosis Procedure

INFOID:0000000004022353

1.CHECK SELF DIAGNOSIS RESULT

Perform “COMBINATION METER” self diagnostic result. Refer to MWI-45, "CONSULT-III Function (METER/M&A)"

Is DTC detected?

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

2.CHECK POWER SUPPLY

Check fuse are not blown.
Check ignition power supply of combination meter. Refer to MWI-58, "COMBINATION METER : Diagnosis Procedure"

Is the inspection result normal?

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

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

Check seat belt buckle switch circuit (driver side). Refer to SBC-43, "SEAT BELT WARNING LAMP SYSTEM : Component Function Check"

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

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

Check seat belt buckle switch circuit (passenger side). Refer to SBC-39, "SEAT BELT WARNING LAMP SYSTEM : Component Function Check"

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5.CHECK SEAT BELT WARNING LAMP CIRCUIT

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

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace the malfunctioning parts.

6.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-35, "Intermittent Incident".
NO >> GO TO 1.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000003858123

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision 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 “SRS AIR BAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

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

Precaution for Seat Belt Service

INFOID:0000000003858037

CAUTION:

- **Before removing the seat belt pre-tensioner assembly, turn the ignition switch off, disconnect the both battery cables and wait at least 3 minutes.**
- **Do not use electrical test equipment for seat belt pre-tensioner connector.**
- **After replacing or reinstalling seat belt pre-tensioner assembly, or reconnecting front seat belt pre-tensioner connector, check the system function. Refer to SRC-16, "Diagnosis Description".**
- **Do not use 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).
- 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.

Precaution for Battery Service

INFOID:0000000003858038

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

PERIODIC MAINTENANCE

PRE-INSPECTION FOR DIAGNOSTIC

Description

INFOID:0000000003858034

WARNING:

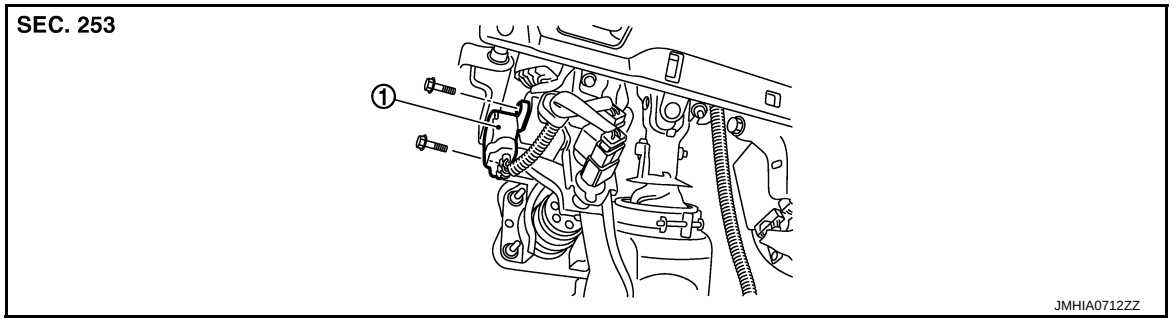
- **The following tests should be performed in a safe, open place that is free of traffic and obstacles.**
- **The tests should be performed on a dry, paved road. Never attempt to perform the tests on a wet or unpaved road, open road, or highway. (This may cause an accident or personal injury.)**
- **Driver and passenger should assume seat belt may operate and prepare themselves accordingly.**

1. Fasten driver and passenger seat belts.
2. Drive at approximately 25 km/h (16 MPH).
3. Notify passenger of a sudden stop. Driver and passenger prepare themselves for the possibility of system not operating. Then, driver fully depresses the brake pedal to stop suddenly.
4. Check that the shoulder of the seat belt is pulled while braking.

BRAKE PEDAL STROKE SENSOR

Exploded View

INFOID:0000000003858039



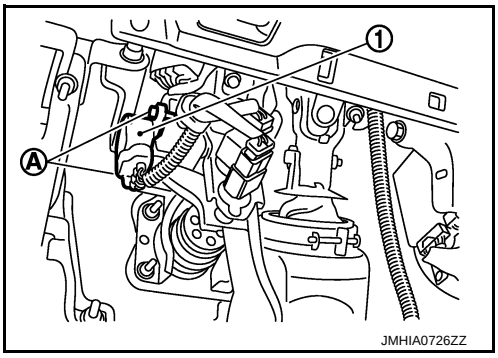
1. Brake pedal stroke sensor

Removal and Installation

INFOID:0000000003858040

REMOVAL

1. Remove the instrument panel lower cover LH. Refer to IP-12, "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:0000000003858041

Refer to SB-6, "SEAT BELT RETRACTOR : Exploded View".

Removal and Installation

INFOID:0000000003858042

For removal and installation procedures, refer to SB-6, "SEAT BELT RETRACTOR : Removal and Installation".