# SEAT BELTS

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# < SERVICE INFORMATION > SERVICE INFORMATION DTC INDEX

U1000

INFOID:000000005348300

CONSULT display	DTC detection condition	Reference page
U1000: CAN COMM CIRCUIT	When pre-crash seat belt control unit is not transmitting or receiv- ing CAN communication signal for 2 seconds or more.	SB-16, "Check CAN Commu- nication Circuit [U1000]".

### B2451 - B2455

INFOID:000000005348301

CONSULT display	DTC detection condition	Reference page
B2451: SB MOTOR RH CIRCUIT	Circuit of seat belt motor (RH) is open or shorted.	SB-24, "Check Pre-Crash Seat Belt Motor RH Circuit [B2451]".
B2452: SB MOTOR LH CIRCUIT	Circuit of seat belt motor (LH) is open or shorted.	SB-23, "Check Pre-Crash Seat Belt Motor LH Circuit [B2452]".
B2453: BR STROKE SEN CIRC	Circuit of brake pedal stroke sensor is open or shorted.	SB-21, "Check Brake Pedal Stroke Sensor Circuit [B2453]".
B2454: MOTOR PWR SUP CIRC	Circuit of motor power supply is open or shorted.	SB-17, "Check Motor Power Supply and Ground Circuit [B2454]".
B2455: PSB C/U INT SIRC	ECU circuit internal abnormality.	_

# PRECAUTIONS

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

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INFOID:000000005348303

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 "SUPPLEMENTAL RESTRAINT SYS-TEM" and "SEAT BELTS" 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 "SUPPLEMENTAL RESTRAINT SYSTEM".
- 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

**CAUTION:** 

- Before removing the front seat belt pre-tensioner assembly, turn the ignition switch off, disconnect Κ the both battery cables and wait at least 3 minutes.
- Do not use electrical test equipment for front seat belt pre-tensioner connector.
- After replacing or reinstalling front seat belt pre-tensioner assembly, or reconnecting front seat belt pre-tensioner connector, check the system function. Refer to SRS-22, "SRS Operation Check (USER MODE)".
- 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).

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# PRECAUTIONS

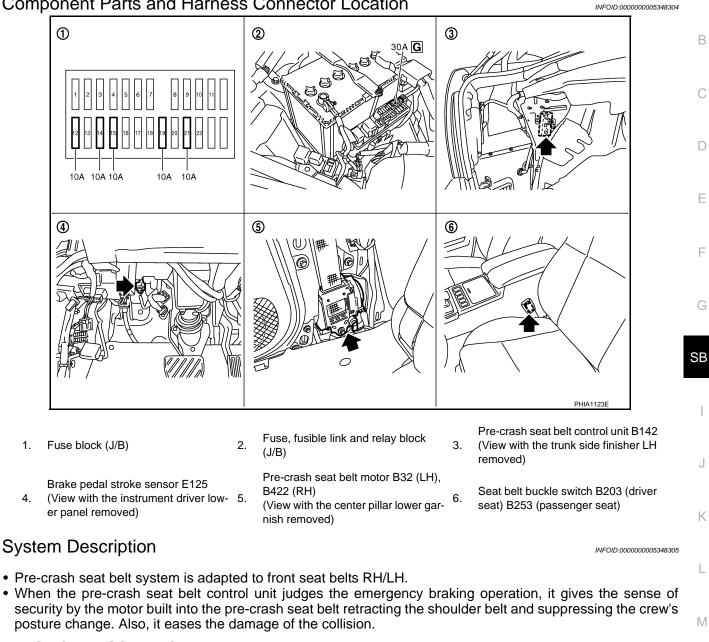
### < SERVICE INFORMATION >

- The seat belt was damaged in an accident. (i.e. torn webbing, bent retractor or guide).
- The seat belt attaching point was damaged in an accident. Inspect the seat belt attaching area for damage or distortion and repair as necessary before installing a new seat belt assembly.
- Anchor bolts are deformed or worn out.
- The front seat belt pre-tensioner should be replaced even if the seat belts are not in use during the collision in which the air bags are deployed.

< SERVICE INFORMATION >

# PRE-CRASH SEAT BELT





### FUNCTION DESCRIPTION

### Operation condition

1.

4.

Pre-crash seat belt operates under the following conditions.

Condition	<ul><li>When the brake pedal is depressed more than a certain extent</li><li>When operation prohibition condition is not satisfied</li></ul>	0
Operation pr	abibition condition	

### Operation prohibition condition

If operation condition is satisfied, pre-crash seat belt does not operate under the following conditions.

Condition	<ul> <li>When seat belt is not fastened (Only the seat belt that is not fastened does not operate.)</li> <li>When vehicle is moving backwards</li> <li>When the vehicle speed is 15 km/h (9 MPH) or less</li> <li>When pre-crash seat belt continuously operates 3 times or more *<sup>1</sup></li> <li>At fail-safe condition *<sup>2</sup></li> </ul>	
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### < SERVICE INFORMATION >

\*<sup>1</sup>: When pre-crash seat belt doesn't operate after it continuously operates 3 times or more, operation can be performed again by stopping operation for approximately 7 minutes.

\*2: Refer to "FAIL-SAFE MODE" for details of fail-safe mode.

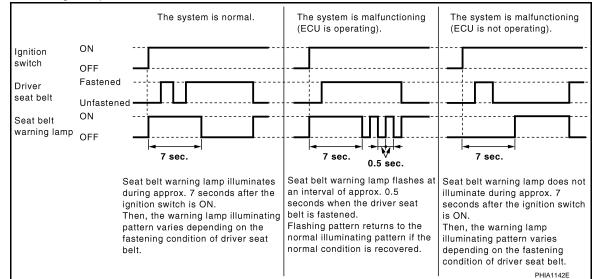
### FAIL-SAFE MODE

When a malfunction occurs in the following system, the pre-crash seat belt function is controlled according to the malfunctioning parts.

Also, seat belt warning lamp blinks with fastening driver seat belt when the following malfunction occurs.

Malfunctioning parts	Control contents
Brake pedal stroke sensor system malfunction	Pre-crash seat belt RH/LH do not activate when emergency brake operates.
Seat belt motor RH malfunction	Pre-crash seat belt RH does not activate.
Seat belt motor LH malfunction	Pre-crash seat belt LH does not activate.
Motor power supply circuit malfunction	Pre-crash seat belt RH/LH do not activate.

### Seat Belt Warning Lamp Illumination Pattern



### NOTE:

The seat belt warning lamp illumination system shown above operates only when the air bag system does not turn on the seat belt warning lamp. The air bag system turns on the seat belt warning lamp, depending on the conditions of passenger being on and the passenger seat belt fastening.

### CAN Communication System Description

INFOID:000000005348306

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 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.

### **CAN** Communication Unit

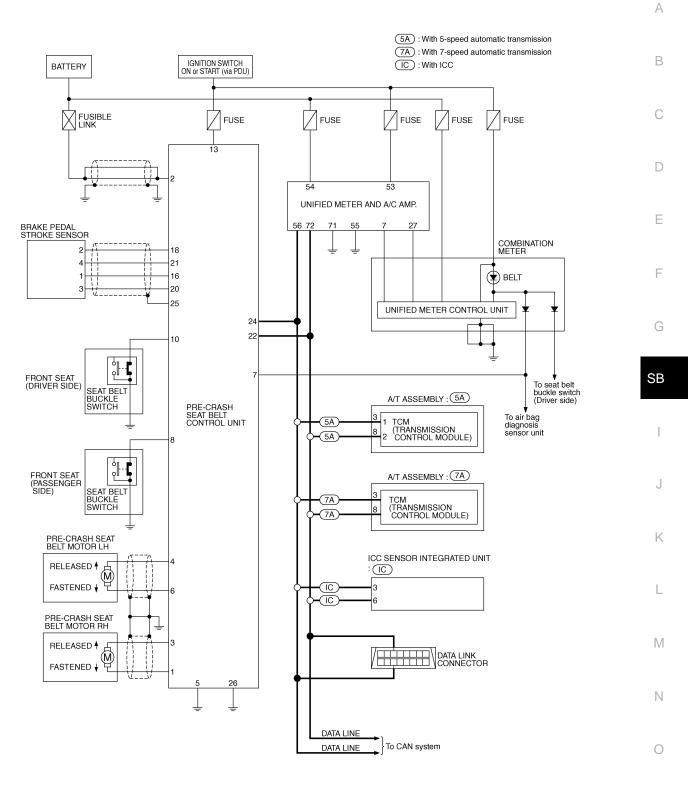
INFOID:000000005348307

Refer to LAN-29, "CAN System Specification Chart".

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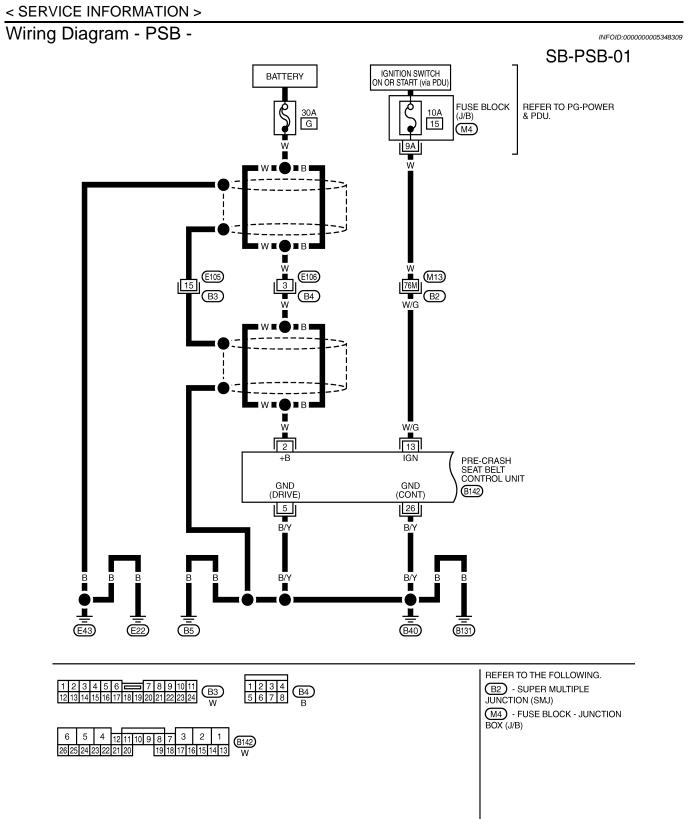
# Schematic

INFOID:000000005348308



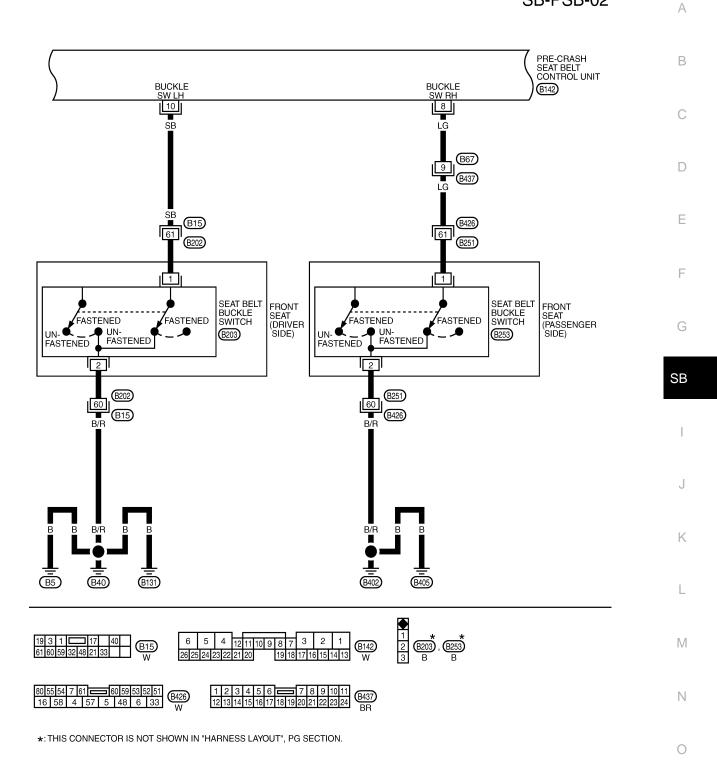
THWT0382E

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THWT0308E

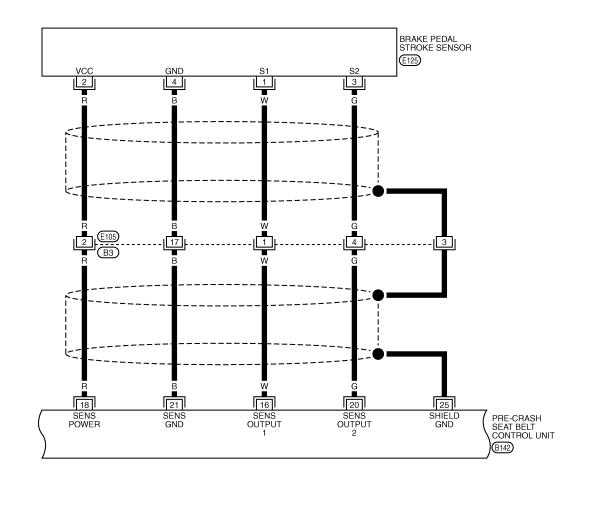
SB-PSB-02



THWT0309E

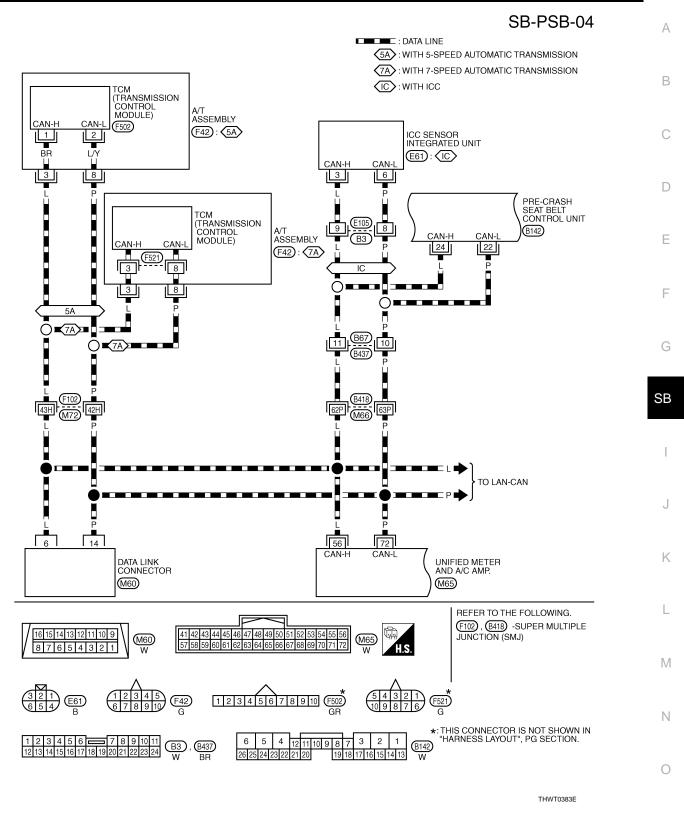
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### SB-PSB-03



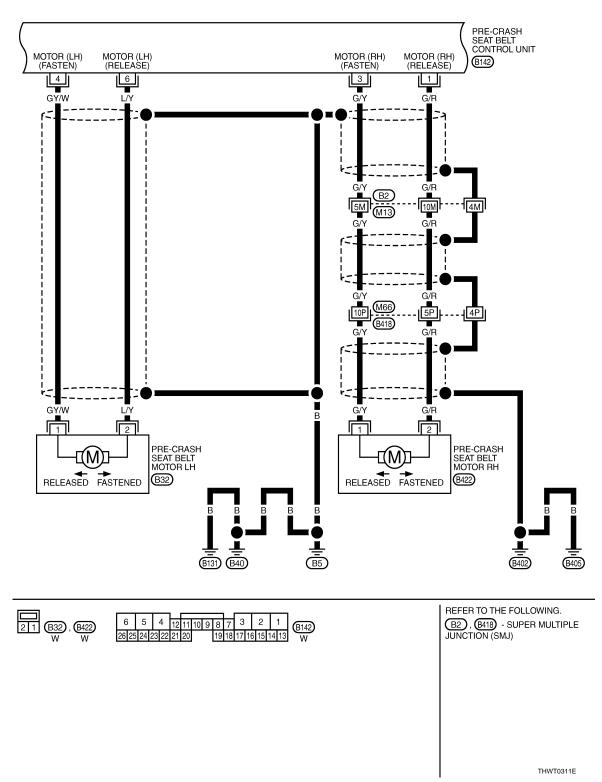
THWT0142E

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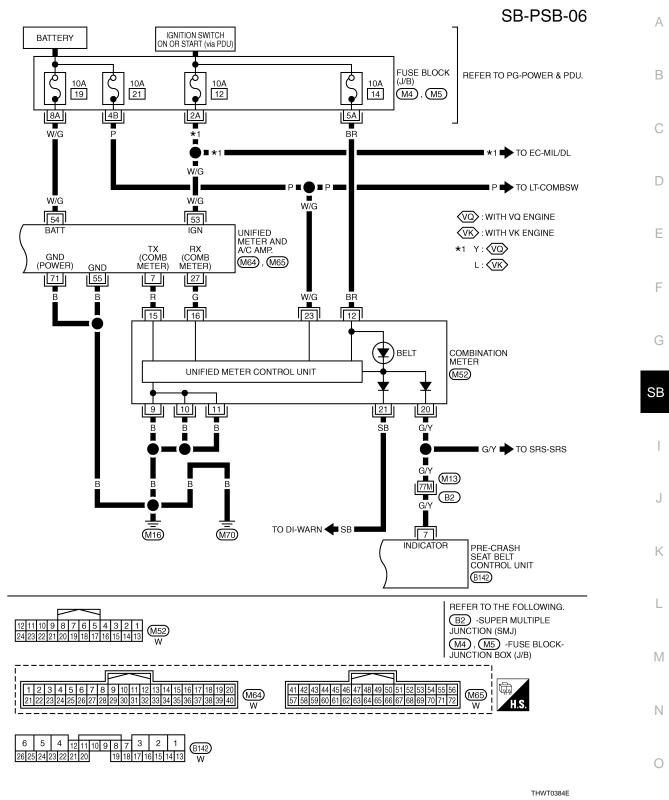


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SB-PSB-05



### < SERVICE INFORMATION >



Terminal and Reference Value for Pre-Crash Seat Belt Control Unit

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Terminal	Wire Color	Item	Signal Input/Output	Condition	Voltage [V] (Approx.)
1	G/R	Seat belt motor RH release di-	Output	Seat belt motor RH operation	Battery voltage
I	0/1	rection signal	Output	Other than above	0

### < SERVICE INFORMATION >

Terminal	Wire Color	Item	Signal Input/Output	Condition	Voltage [V] (Approx.)
2	W	Power source (BAT)	Input	—	Battery voltage
3	G/Y	Seat belt motor RH fastened	Output	Seat belt motor RH operation	Battery voltage
3	G/ f	direction signal	Output	Other than above	0
4	GY/W	Seat belt motor LH fastened	Output	Seat belt motor LH operation	Battery voltage
4	GI/W	direction signal	Output	Other than above	0
5	B/Y	Ground (Driver circuit)	_	—	0
6	L/Y	Seat belt motor LH release di-	Output	Seat belt motor LH operation	Battery voltage
0	L/ f	rection signal	Output	Other than above	0
				When driver side seat belt is fastened	Battery voltage
7	G/Y	Seat belt indicator signal	Output	When driver side seat belt is un-fastened	0
,	0,1		Output	When driver side seat belt is fastened and system malfunction	Battery voltage $\Leftrightarrow 0$
0		Oaat halt husble switch DU	la a cat	When seat belt is fastened	5
8	LG	Seat belt buckle switch RH	Input	When seat belt is un-fastened	0
40	00	Oa at halt hualda awitah 111	la a cit	When seat belt is fastened	Battery voltage
10	SB	Seat belt buckle switch LH	Input	When seat belt is un-fastened	0
13	W/G	Power source (IGN)	Input	Ignition switch ON or START	Battery voltage
10	10/	Brake pedal stroke sensor	Outrout	Brake pedal is fully released operation	1
16	W	output signal 1	Output	Brake pedal is slightly depressed operation	4
18	R	Power source (Brake pedal stroke sensor)	Input	_	5
00	0	Brake pedal stroke sensor	Outrast	Brake pedal is fully released operation	4
20	G	output signal 2	Output	Brake pedal is slightly depressed operation	1
21	В	Ground (Brake pedal stroke sensor)	_	_	0
22	Р	CAN-L	Input/Output		_
24	L	CAN-H	Input/Output	_	_
25		Ground (Shield wire)			0
26	B/Y	Ground (Control circuit)	_		0

### Work Flow

INFOID:000000005348311

- 1. Check the symptom and customer's requests.
- 2. Understand the system description. Refer to SB-5, "System Description".
- 3. Perform the preliminary check. Refer to <u>SB-15, "Preliminary Check"</u>.
- 4. Check the self-diagnosis, results using CONSULT-III. Refer to <u>SB-14, "CONSULT-III Function (PRE-CRASH SEATBELT)"</u>.
- 5. Based on the trouble diagnosis chart, repair or replace the cause of the malfunction. Refer to <u>SB-15.</u> <u>"Diagnosis Symptom Chart"</u>.
- Does pre-crash seat belt system operate normally? OK: GO TO 7. NG: GO TO 4.
- 7. INSPECTION END

# CONSULT-III Function (PRECRASH SEATBELT)

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

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### SB-14

2010 M35/M45

INFOID:000000005348312

### < SERVICE INFORMATION >

CONSULT-III di- agnosis items	Inspection item self-diagnosis mode	Content	Reference page	A
	SELF-DIAG RESULTS	Carries out the self-diagnosis.	"SELF-DIAGNOSTIC RE- SULTS ITEM CHART"	В
PRECRASH SEATBELT	DATA MONITOR	Displays pre-crash seat belt control unit input data in real time.	"DATA MONITOR ITEM CHART"	
SEATBELT	CAN DIAG SUPPORT MNTR	The results of transmit / receive diagnosis of CAN communication can be read.	LAN-17, "CAN Diagnostic Support Monitor"	С
	ECU PART NUMBER	Displays pre-crash seat belt control unit part No.	_	

### SELF-DIAGNOSTIC RESULTS ITEM CHART

DTC	Self-diagnosis item (CONSULT-III indication)	DTC detection condition	Reference page	E
U1000	CAN COMM CIRCUIT	When pre-crash seat belt control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	<u>SB-16</u>	
B2451	SB MOTOR RH CIRC	Circuit of seat belt motor (RH) is open or shorted.	<u>SB-24</u>	F
B2452	SB MOTOR LH CIRC	Circuit of seat belt motor (LH) is open or shorted.	<u>SB-23</u>	
B2453	BR STROKE SEN CIRC	Circuit of brake pedal stroke sensor is open or shorted.	<u>SB-21</u>	G
B2454	MOTOR PWR SUP CIRC	Circuit of motor power supply is open or shorted.	<u>SB-17</u>	0
B2455	PSB C/U INT CIRC	ECU circuit internal abnormality	_	

### DATA MONITOR ITEM CHART

 Contents	TION or UNIT]	Monitor item [OPERA
 RH seat belt switch signal is displayed.	"ON/OFF"	SB SW RH SIG
 LH seat belt switch signal is displayed.	"ON/OFF"	SB SW LH SIG
Vehicle speed signal is displayed.	"Km/h"	VHCL SPEED SE
 Brake pedal stroke sensor 1 signal voltage is displayed.	"V"	B PEDAL SIG1
 Brake pedal stroke sensor 2 signal voltage is displayed.	"V"	B PEDAL SIG 2
	1	

### **Preliminary Check**

### PRE-CRASH SEAT BELT OPERATION INSPECTION

### 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. Do not attempt the tests on wet or unpaved  $_{\rm M}$  road, open road, or highway. (This may cause an accident or personal injury.)
- Driver and passenger assume it will not operate and prepare themselves accordingly.
- 1. Tighten 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. Make sure that the shoulder of the seat belt is pulled while braking.

### Diagnosis Symptom Chart

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Symptom	Diagnosis procedure	Reference page
	1. Check ignition power supply circuit	<u>SB-16</u>
All functions of pre-crash seat belt system	2. Check motor power supply and ground circuit [B2454]	<u>SB-17</u>
does not operate.	3. Check CAN communication circuit	<u>SB-16</u>
	4. Replace pre-crash seat belt control unit	<u>SB-25</u>

Revision: 2009 June

### < SERVICE INFORMATION >

Symptom	Diagnosis procedure	Reference page
	1. Check seat belt buckle switch (driver side) circuit	<u>SB-18</u>
Driver side pre-crash seat belt system does not operate.	2. Check pre-crash seat belt motor LH circuit [B2452]	<u>SB-23</u>
	3. Replace pre-crash seat belt control unit	<u>SB-25</u>
	1. Check seat belt buckle switch (passenger side) circuit	<u>SB-19</u>
Passenger side pre-crash seat belt system does not operate.	2. Check pre-crash seat belt motor RH circuit [B2451]	<u>SB-24</u>
	3. Replace pre-crash seat belt control unit	<u>SB-25</u>
	1. Check CAN communication circuit [U1000]	<u>SB-16</u>
Pre-crash seat belt system does not operate	2. Check brake pedal stroke sensor circuit [B2453]	<u>SB-21</u>
during emergency brake operation.	3. Check brake pedal stroke sensor shield wire circuit	<u>SB-25</u>
	4. Replace pre-crash seat belt control unit	<u>SB-25</u>

# Check CAN Communication Circuit [U1000]

INFOID:000000005348315

# 1.CHECK SELF-DIAGNOSTIC RESULT

### With CONSULT-III

- 1. Connect CONSULT-III, and turn ignition switch ON.
- 2. Touch "PRECRASH SEATBELT" on "SELECT SYSTEM" screen.
- 3. Touch "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.
- 4. Check display content in self-diagnostic results.

### Displayed U1000?

- Yes >> Refer to LAN-29, "CAN System Specification Chart".
- No >> Inspection END.

### **Check Ignition Power Supply Circuit**

## **1.**CHECK FUSE

Check 10A fuse [No.15, located in fuse block (J/B)].

### NOTE: Refer to <u>SB-5, "Component Parts and Harness Connector Location"</u>.

### <u>OK or NG</u>

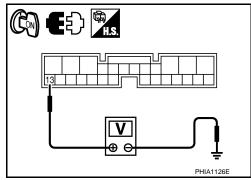
OK >> GO TO 2.

NG >> If fuse is blown out, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-4.

# **2.**CHECK IGNITION POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect pre-crash seat belt control unit connector.
- 3. Turn ignition switch ON.
- 4. Check voltage between pre-crash seat belt control unit harness connector and ground.

(+	·)		Voltage (V)	
Pre-crash seat belt control unit con- nector	Terminal	()	(Approx.)	
B142	13	Ground	Battery voltage	



### <u>OK or NG</u>

OK >> Ignition power supply circuit is OK.

NG >> Check pre-crash seat belt control unit ignition power supply circuit harness.

INFOID:000000005348316

< SERVICE INF				
Check Motor	Power Supp	oly and Ground	d Circuit [B245	54] INFOID:00000005348317
1.CHECK FUSE				,
	e link (letter <b>G</b> ,	located in the fuse	and fusible link b	pox).
NOTE: Refer to SB-5, "C	omponent Part	s and Harness Co	nnector Location"	
OK or NG				
OK >> GO 1	-			
NG >> If fus PG-4		be sure to elimina	te cause of maiful	nction before installing new fuse. Refer to
2.CHECK SELF	-DIAGNOSTIC	RESULT		Ξ
With CONSU Select "SELF-DIA		and then make su	e the "MOTOR P	WR SUP CIRC" is displayed.
CONSULT-	III display	CONSULT-III d	isplay code	
NO D	TC			F
MOTOR PWR	SUP CIRC	B245	4	
Without CONS When CONSULT Displayed B2454	-III is not used,	omit this inspectio	n, and then GO T	O 3.
Yes >> GO 1	- O 3.			S
<b>^</b>		system is normal.		
3.CHECK MOTO		JPPLY CIRCUIT		
<ol> <li>Turn ignition</li> <li>Disconnect p</li> </ol>		elt control unit cor	nector.	
	e between pre-	crash seat belt co		° (C) €D 📆
	Terminal			
(-	+)		Voltage (V)	
Pre-crash seat belt control unit con- nector	Terminal	()	(Approx.)	
B142	2	Ground	Battery voltage	
OK or NG		1		PHIA1127E
OK >> GO T	-			
	ir or replace ha			
		BELT CONTROL U		
2. Check contin		elt control unit cor pre-crash seat bel		
	Terminal			
Pre-crash seat belt control unit con- nector	Terminal		Continuity	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $
	5	Ground		
B142	26		Yes	
OK or NG				PHIA1128E

### < SERVICE INFORMATION >

OK >> Motor power supply and ground circuit is OK.

NG >> Repair or replace harness.

# Check Seat Belt Buckle Switch (Driver Side) Circuit

INFOID:000000005348318

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

### With CONSULT-III

Select "SB SW LH SIG" on DATA MONITOR screen, and then make sure that ON/OFF display changes synchronized with the insertion operation to the seat belt buckle.

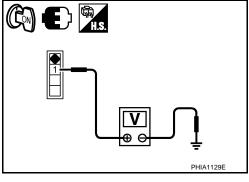
### SB SW LH SIG

When driver seat belt is not fastened	: OFF
When driver seat belt is fastened	: ON

### **Without CONSULT-III**

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

Т	erminal				
(+)	(+)			Voltage (V)	
Seat belt buckle switch connector (driver side)	Terminal	()	Condition	(Approx.)	
B203	B203 1 Ground -		When seat belt is un- fastened	0	
6203	I	Giouna	When seat belt is fastened	Battery voltage	



### OK or NG

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

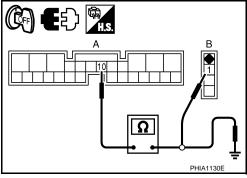
NG >> GO TO 2.

connector.

# 2.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) HARNESS

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

A		В		
Pre-crash seat belt control unit connector	Terminal	Seat belt buckle switch (driver side) connector	Terminal	Continuity
B142	10	B203	1	Yes



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

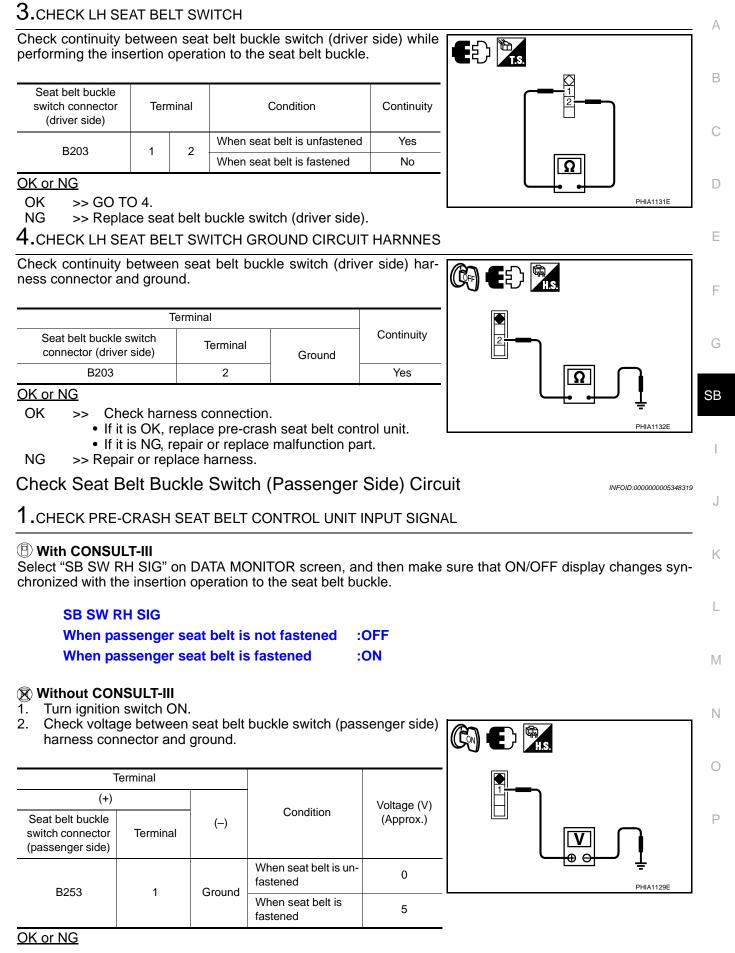
А			
Pre-crash seat belt control unit connector	Terminal	Ground	Continuity
B142	10		No

OK or NG

OK >> GO TO 3.

NG >> Repair or replace harness.

### < SERVICE INFORMATION >



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### < SERVICE INFORMATION >

OK >> Seat belt buckle switch (passenger side) circuit is OK.

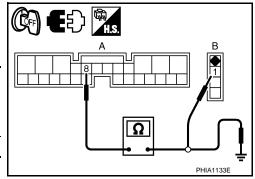
NG >> GO TO 2.

2.check seat belt buckle switch (passenger side) harness

### 1. Turn ignition switch OFF.

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

A		В		
Pre-crash seat belt control unit connector	Terminal	Seat belt buckle switch (passenger side) connector	Terminal	Continuity
B142	8	B253	1	Yes



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

А			
Pre-crash seat belt control unit connector	Terminal	Ground	Continuity
B142	8		No

### OK or NG

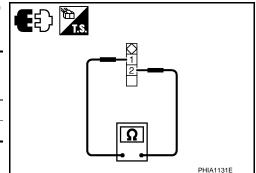
OK >> GO TO 3.

NG >> Repair or replace harness.

# **3.**CHECK RH SEAT BELT SWITCH

Check continuity between seat belt buckle switch (passenger side) while performing the insertion operation to the seat belt buckle.

Seat belt buckle switch connector (passenger side)	Terr	ninal	Condition	Continuity
<b>R</b> 253	B253 1 2	When seat belt is unfastened	Yes	
B233		2	When seat belt is fastened	No



### OK or NG

OK >> GO TO 4.

NG >> Replace seat belt buckle (passenger side).

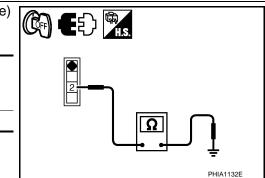
4. CHECK RH SEAT BELT SWITCH GROUND CIRCUIT HARNNES

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

Τε			
Seat belt buckle switch connector (passenger side)	Terminal	Ground	Continuity
B253	2		Yes
OK or NG			

<u>OK or NG</u>

- OK >> Check harness connection.
  - If it is OK, replace pre-crash seat belt control unit.
  - If it is NG, repair or replace malfunction part.
- NG >> Repair or replace harness.



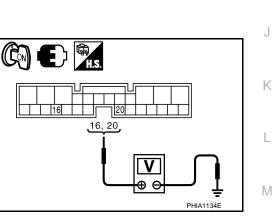
< SERVICE INFORMATION >			
Check Brake Pedal Strok	e Sensor Circuit [B2453]	INFOID:00000005348320	А
1.CHECK SELF-DIAGNOSTIC	RESULT		/ \
With CONSULT-III     Select "SELF-DIAG RESULTS",	and then make sure that "BR STR	OKE SEN CIRC" is displayed.	В
CONSULT-III display	CONSULT-III display code		С
NO DTC			
BR STROKE SEN CIRC	B2453		
Without CONSULT-III When CONSULT-III is not used, <u>Displayed B2453?</u> Yes >> GO TO 3. No >> GO TO 2.	omit this inspection, and then GO	το 2.	E
•	BELT CONTOROL UNIT INPUT SI	GNAL	F
With CONSULT-III     Select "B PEDAL SIG1" and "B     with brake pedal operation.	PEDAL SIG2", and then make su	re that the voltage changes synchronized	G

B PEDAL SIG1 Brake released  $\rightarrow$  depressed : Approx. 1  $\rightarrow$  4V B PEDAL SIG 2 Brake released  $\rightarrow$  depressed : Approx. 4  $\rightarrow$  1V

### **Without CONSULT-III**

- 1. Turn ignition switch ON.
- connector and ground. Terminal (+) Voltage (V) Condition Pre-crash seat (Approx.) (-) Terminal belt control unit connector 16 1 
  ightarrow 4Brake released  $\rightarrow$ B142 Ground depressed 20  $4 \rightarrow 1$

Check voltage between pre-crash seat belt control unit harness



OK or NG

2.

OK >> Brake pedal stroke sensor system is normal.

NG >> GO TO 3.

**3.**CHECK BRAKE PEDAL STROKE SENSOR HARNESS

1. Turn ignition switch OFF.

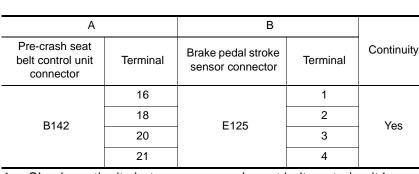
2. Disconnect pre-crash seat belt control unit connector and brake pedal stroke sensor connector.

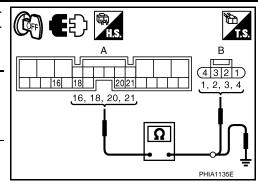
Ν

SB

### < SERVICE INFORMATION >

 Check continuity between pre-crash seat belt control unit harness connector and brake pedal stroke sensor harness connector.





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

A	A		
Pre-crash seat belt control unit connector	Ierminal		
	16	Ground	
B142	18	-	No
	20		NO
	21	1	

### <u>OK or NG</u>

OK >> GO TO 4.

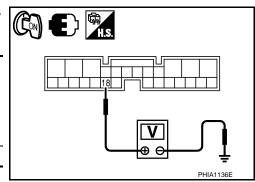
NG >> Repair or replace harness between pre-crash seat belt control unit and brake pedal stroke sensor.

4.CHECK BRAKE PEDAL STROKE SENSOR POWER SUPPLY

1. Connect pre-crash seat belt control unit connector.

- 2. Turn ignition switch ON.
- 3. Check voltage between pre-crash seat belt control unit harness connector and ground.

(	+)		Voltage (V)
Pre-crash seat belt control unit con- nector	Terminal	(-)	(Approx.)
B142	18	Ground	5



### OK or NG

OK >> GO TO 5.

NG >> Replace pre-crash seat belt control unit.

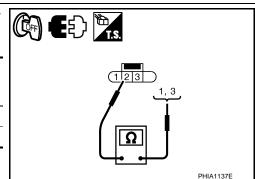
**5.**CHECK BRAKE PEDAL STROKE SENSOR

Check continuity between brake pedal stroke sensor while performing brake operation.

Brake pedal stroke sensor connector	Terr	ninal	Condition	Resistance (KΩ) (Approx.)
E125	2	1	Brake released $\rightarrow$ depressed	$1.0 \rightarrow 0.2$
E125	2 3			0.2  ightarrow 1.0

OK or NG

OK >> Check harness connection.



< SERVICE INF	ORMATION	1 >					
• If it	t is NG, repa	ace pre-cras iir or replace edal stroke s	malfund				A
Check Pre-C	rash Seat	Belt Moto	or LH (	Circuit	[B2452]	INFOID:000000005348321	В
1.CHECK SELF	-DIAGNOS	TIC RESULT	-				D
With CONSU     Select "SELF-DI		S" of CONS	ULT-III, a	and then	make sure	that "SB MOTOR LH CIRC" is displayed.	С
CONSULT	III display	C	ONSULT-	III display	code		D
NO E	отс			_			
SB MOTOF	R LH CIRC		В	2452			Е
Without CON     When CONSULT     Displayed B2452     Yes >> GO	<sup>-</sup> -III is not us <u>??</u> TO 2.		·		then GO TC	) 2.	F
No >> Pre- 2.CHECK SEAT		elt motor LH		s OK.			G
<ol> <li>Turn ignition</li> <li>Disconnect p</li> <li>Check continents connection</li> <li>ness connection</li> </ol>	pre-crash se	at belt contro en pre-crash	seat be	elt contro	ol unit har-	Ash seat belt motor LH connector.	SB
A			В				
Pre-crash seat belt control unit connector	Terminal	Pre-crash s belt motor l connecto	LH	Terminal	Continuity		J
B142	4 6	B32		1 2	Yes		Κ
<ol> <li>Check contines connect</li> </ol>			seat b	elt contro	ol unit har-		L
	А				0		
Pre-crash se control unit co		Terminal	Grou	und	Continuity		Μ
B142		4			No		Ν
OK or NG				l l			
OK >> GO NG >> Repa <b>3.</b> CHECK SEAT	air or replac						0
U.UNEUN SEAI	DELI WUU						Ρ

### < SERVICE INFORMATION >

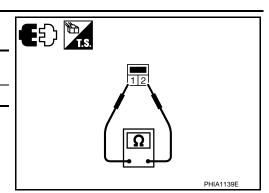
Check continuity between pre-crash seat belt motor LH.

Pre-crash seat belt mo- tor LH connector	Terr	Continuity	
B32	1	2	Yes

### <u>OK or NG</u>

OK >> Replace pre-crash seat belt control unit.

NG >> Replace pre-crash seat belt motor LH.



Check Pre-Crash Seat Belt Motor RH Circuit [B2451]

INFOID:000000005348322

### **1.**CHECK SELF-DIAGNOSTIC RESULT

### (P) With CONSULT-III

Select "SELF-DIAG RESULTS" of CONSULT-III, and then make sure that "SB MOTOR RH CIRC" is displayed.

CONSULT-III display	CONSULT-III display code	
NO DTC	_	
SB MOTOR RH CIRC	B2451	

### **Without CONSULT-III**

When CONSULT-III is not used, omit this inspection, and then GO TO 2.

### Displayed B2451?

Yes >> GO TO 2.

No >> Pre-crash seat belt motor RH circuit is OK.

# 2. CHECK SEAT BELT MOTOR RH HARNESS

Terminal

1

### 1. Turn ignition switch OFF.

А

Pre-crash seat

belt control unit

connector

B142

2. Disconnect pre-crash seat belt control unit connector and pre-crash seat belt motor RH connector.

Terminal

2

В

 Check continuity between pre-crash seat belt control unit harness connector and pre-crash seat belt motor RH harness connector.

Pre-crash seat

belt motor RH

connector

B422

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

A			
Pre-crash seat belt control unit connector	Terminal	Ground	Continuity
B142	1		No
D142	3		INO

### <u>OK or NG</u>

- OK >> GO TO 3.
- NG >> Repair or replace harness.
- **3.**CHECK SEAT BELT MOTOR RH



### < SERVICE INFORMATION >

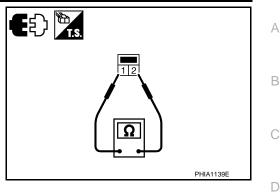
### Check continuity between pre-crash seat belt motor RH.

Dro groop goot halt ma			
Pre-crash seat belt mo- tor RH connector	Terr	Continuity	
B422	1	2	Yes

### OK or NG

OK >> Replace pre-crash seat belt control unit.

NG >> Replace pre-crash seat belt motor RH.



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# Check Brake Pedal Stroke Sensor Shield Wire Circuit

1.CHECK PRE-CRASH SEAT BELT INPUT SIGNAL

### (P) With CONSULT-III

Select "B PEDAL SIG1 and 2" on DATA MONITOR screen, and then make sure that the voltage does not change if brake pedal is not operated.

### NOTE:

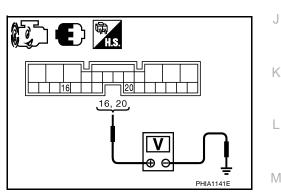
Diagnosis should be performed with engine running, audio and air conditioner operating.

B PEDAL SIG1	
Brake released	:There is no change in the voltage val- ue, and it is almost constant
B PEDAL SIG2	
Brake released	:There is no change in the voltage val- ue, and it is almost constant.

### Without CONSULT-III

- Start engine. 1.
- 2. Check voltage between pre-crash seat belt harness connector.

_						Į.
Terminal						
_	(+)	(+)			Voltage (V)	
_	Pre-crash seat belt control unit connector	Terminal	()	Condition	(Approx.)	
_	B142	16	Ground	Performed with en- gine running, audio and air conditioner	There is no change in the voltage value,	
		20		operating and brake pedal released.	and it is almost constant	



### OK or NG

OK >> Brake pedal stroke sensor shield wire circuit is OK.

NG >> Check shield wire for damage. Repair or replace if necessary.

# Removal and Installation of Pre-Crash Seat Belt Control Unit

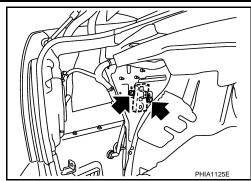
### REMOVAL

Remove trunk side finisher LH. Refer to EI-65, "Component Parts Location". 1.

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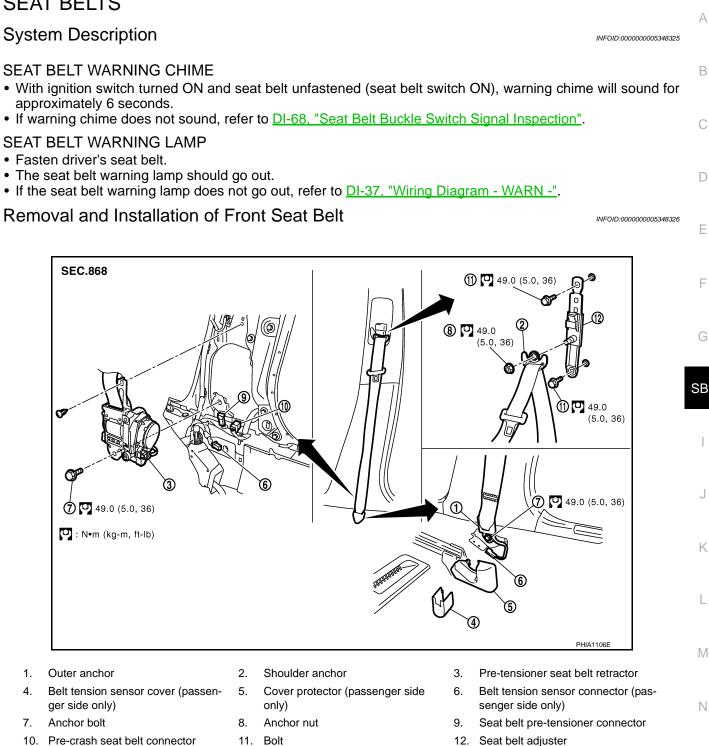
### < SERVICE INFORMATION >

- 2. Remove pre-crash seat belt control unit mounting bolts.
- 3. Remove pre-crash seat belt control unit connector, and the precrash seat belt control unit.



INSTALLATION Install in the reverse order of removal.

# < SERVICE INFORMATION > SEAT BELTS



Refer to GI-9, "Component" for symbols in the figure.

### **CAUTION:**

# Before servicing SRS, turn the ignition switch off, disconnect both battery cables and wait at least 3 minutes.

### REMOVAL OF SEAT BELT RETRACTOR

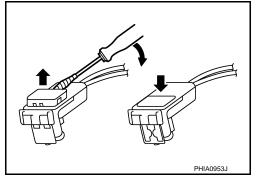
- 1. Remove the outer anchor.
  - Remove the belt tension sensor cover and cover protector (passenger side only).
  - Disconnect the belt tension sensor connector (passenger side only).
  - Remove the fixing bolt of the outer anchor.

### SB-27

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### < SERVICE INFORMATION >

- 2. Remove the shoulder anchor.
  - Remove the center pillar lower and upper garnishes, refer to EI-48.
  - Remove the fixing anchor nut of the shoulder anchor.
- 3. Remove the seat bert assembly.
  - Disconnect the seat belt pre-tensioner connector. CAUTION:
    - For installing/removing seat belt pre-tensioner connector, insert thin screwdriver wrapped in tape into notch, lift lock and remove connector.
    - Install connector with lock raised, and push lock into connector.



- Disconnect the pre-crush seat belt connector (for only the vehicle with pre-clash seat belt).
- Remove the fixing screw and anchor bolt of the pre-tensioner seat belt retractor.

### INSTALLATION OF SEAT BELT RETRACTOR

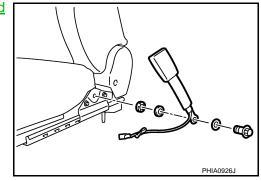
- Install in the reverse order of removal.
- Tighten by specified torque.

### Tightening torque : 49.0 N·m (5.0 kg-m, 36 ft-lb)

### REMOVAL OF SEAT BELT BUCKLE

Remove the seat belt buckle.

- Remove the front seat from vehicle, refer to <u>SE-146</u>, "Removal and <u>Installation</u>" (For ease of tool operation in narrow space).
- Disconnect the seat belt buckle harness connector.
- Remove the fixing anchor bolt of the seat belt buckle.



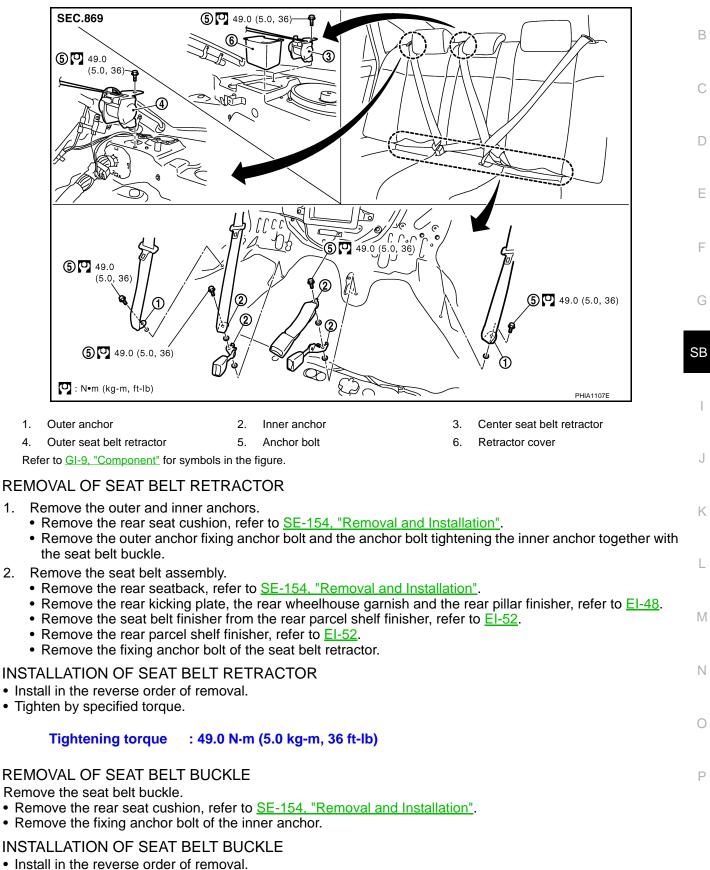
### INSTALLATION OF SEAT BELT BUCKLE

- Install in the reverse order of removal.
- Tighten by specified torque.

Tightening torque : 49.0 N·m (5.0 kg-m, 36 ft-lb)

### < SERVICE INFORMATION >

## Removal and Installation of Rear Seat Belt



• Tighten by specified torque.

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### Tightening torque : 49.0 N·m (5.0 kg-m, 36 ft-lb)

### Seat Belt Inspection

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### AFTER A COLLISION

### WARNING:

Inspect all seat belt assemblies including retractors and attaching hardware after any collision.

NISSAN / INFINITI 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 pretensioned 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.

### PRELIMINARY CHECKS

- 1. Check the seat belt warning lamp/chime for proper operation as follows:
- a. Switch ignition ON. The seat belt warning lamp should illuminate. Also, the seat belt warning chime should sound for about six seconds.
- b. Fasten driver's seat belt. The seat belt warning lamp should go out and the chime (if sounding) should stop.
- 2. If the air bag warning lamp is blinking, conduct self-diagnosis using CONSULT-III, and air bag warning lamp. Refer to <u>SRS-22, "SRS Operation Check (USER MODE)"</u>.
- 3. Check that the seat belt retractor, seat belt anchor and buckle bolts are securely attached.
- 4. Check the shoulder seat belt guide and shoulder belt height adjuster for front seats. Ensure guide swivels freely and that webbing lays flat and does not bind in guide. Ensure height adjuster operates properly and holds securely.
- 5. Check retractor operation:
- a. Fully extend the seat belt webbing and check for twists, tears or other damage.
- b. Allow the seat belt to retract. Ensure that webbing returns smoothly and completely into the retractor. If the seat belt does not return smoothly, wipe the inside of the loops with a clean paper cloth. Because dirt built up in the loops of the upper anchors can cause the seat belts to retract slowly.
- c. Fasten the seat belt. Check the seat belt returns smoothly and completely to the retractor. If the webbing does not return smoothly, the cause may be an accumulation of dust or dirt. Use the "SEAT BELT TAPE SET" and perform the following steps.

Inspect the front seat belt though-anchor

- 1. Pull the seat belt out to a length of 500 mm (19.69 in) or more.
- 2. Use a clip or other device to the fix the seat belt at the center pillar webbing opening.
- 3. Pass a thin wire though the though-anchor webbing opening. Hold both ends of the wire and pull it tantly while moving it up and down several times along the webbing opening surface to move matter stuck there.
- 4. Any dirt that can not be removed with the wire can be removed by cleaning the opening with a clean cloth.
- 5. Apply tape at the point where the webbing contacts the though-anchor webbing opening. **NOTE:** 
  - Apply the tape so that there is no looseness or wrinkling.
- 6. Remove the clip fixing the seat belt and check that the webbing returns smoothly.
- 6. Repeat steps above as necessary to check the other seat belts.

### < SERVICE INFORMATION >

Emergency Locking Retractors (ELR) and Automatic Locking Retractors (ALR) **NOTE:** 

All seat belt retractors are of the Emergency Locking Retractors (ELR) type. In an emergency (sudden stop) the retractor will lock and prevent the webbing from extending any further. All 3-point type seat belt retractors except the driver's seat belt also have an Automatic Locking Retractors (ALR) mode. The ALR mode (also called child restraint mode) is used when installing child seats. The ALR mode is activated when the seat belt is fully extended. When the webbing is then retracted partially, the ALR mode automatically locks the seat belt in a specific position so the webbing cannot be extended any further. To cancel the ALR mode, allow the seat belt to fully wind back into the retractor.

Check the seat belt retractors using the following test(s) to determine if a retractor assembly is operating properly.

### ELR Function Stationary Check

Grasp the shoulder webbing and pull forward quickly. The retractor should lock and prevent the belt from E extending further.

ALR Function Stationary Check

- 1. Pull out entire length of seat belt from retractor until a click is heard.
- 2. Retract the webbing partially. A clicking noise should be heard as the webbing retracts indicating that the retractor is in the Automatic Locking Retractors (ALR) mode.
- Grasp the seat belt and try to pull out the retractor. The webbing must lock and not extend any further. If NG, replace the retractor assembly.
- 4. Allow the entire length of the webbing to retract to cancel the automatic locking mode.

### ELR Function Moving Check

### WARNING:

Perform the following test in a safe, open area clear of other vehicles and obstructions (for example, a large, empty parking lot). Road surface must be paved and dry. DO NOT perform the following test on wet or gravel roads or on public streets and highways. This could result in an accident and serious personal injury. The driver and passenger must be prepared to brace themselves in the event the retractor does not lock.

- 1. Fasten driver's seat belt. Buckle a passenger into the seat for the belt that is to be tested.
- 2. Proceed to the designated safe area.
- Drive the vehicle at approximately 16 km/h (10 MPH). Notify any passengers of a pending sudden stop and the driver and passenger must be prepared to brace themselves in the event the retractor does not lock, apply brakes firmly and make a very hard stop.

During stop, seat belts should lock and not be extended. If the seat belt retractor assembly does not lock, perform the retractor off-vehicle check.

SEAT BELT RETRACTOR OFF-VEHICLE CHECK (FRONT SEAT BELT)

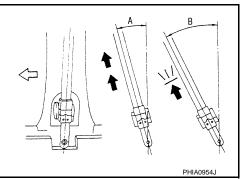
- Remove the seat belt retractor. Remove the front seat belt assembly, refer to <u>SB-27</u>, "Removal and Installation of Front Seat Belt".
- 2. Slowly pull out webbing while tilting the retractor assembly forward from the mounted position without twisting the retractor assembly as shown in the illustration.

 ${\bf A}$  : The webbing can be pulled out in case the retractor is tilted 15° degree or less.

**B** : The webbing can't be pulled out in case the retractor is tilted 35° degree or more.

• A and B show tilting angles.

• <> : Vehicle front.



Replace the seat belt assembly if it does not operate normally.

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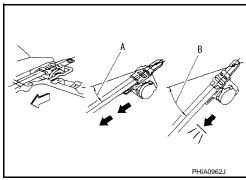
### < SERVICE INFORMATION >

### SEAT BELT RETRACTOR OFF-VEHICLE CHECK (REAR SEAT BELT)

- Remove the seat belt retractor. Remove the front seat belt assembly, refer to <u>SB-29</u>, "Removal and Installation of Rear Seat Belt".
- 2. Slowly pull out webbing while tilting the retractor assembly forward from the mounted position without twisting the retractor assembly as shown in the illustration.
  - ${\bf A}$  : The webbing can be pulled out in case the retractor is tilted 15° degree or less.

**B** : The webbing can't be pulled out in case the retractor is tilted 35° degree or more.

- A and B show tilting angles.
- <> : Vehicle front.



Replace the seat belt assembly if it does not operate normally.

# LATCH (LOWER ANCHORS AND TETHER FOR CHILDREN) SYSTEM < SERVICE INFORMATION >

# LATCH (LOWER ANCHORS AND TETHER FOR CHILDREN) SYSTEM

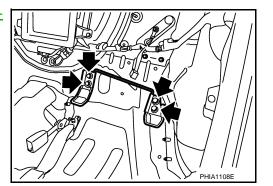
### Removal and Installation

### CAUTION:

### Replace anchor bolts if they are deformed or worn out.

### REMOVAL

- 1. Remove the rear seat. Refer to <u>SE-154, "Removal and Installa-</u> tion".
- 2. Remove rear seat frame (Models with rear power seat).
- 3. Remove LATCH (Lower Anchor and Tether for Children) system.



### INSTALLATION

- Install in the reverse order of removal.
- Tighten by specified torque.

Tightening torque : 28.0 N·m (2.9 kg-m, 21 ft-lb)

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### < SERVICE INFORMATION >

# TOP TETHER STRAP CHILD RESTRAINT

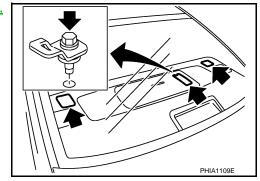
Removal and Installation

### **CAUTION:**

### Replace anchor bolts if they are deformed or worn out.

### REMOVAL

- 1. Remove the top tether strap child restraint cover. Refer to <u>EI-52</u>, <u>"Component Parts Location"</u>.
- 2. Remove the top tether strap child restraint.



### INSTALLATION

- Install in the reverse order of removal.
- Tighten by specified torque.

Tightening torque : 30.0 N·m (3.1 kg-m, 22 ft-lb)

INFOID:000000005348330