# **GENERAL DESCRIPTION**

# BODY STRUCTURE

# 1. General Description

# A: PREPARATION TOOL

TOOL NAME	REMARKS
Tram tracking gauge	Used for measuring dimen- sion.
Tape measure	Used for measuring dimen- sion





# 2. Datum Points

# A: LOCATION

NOTE:

- Datum points are specified for body repair.
- Guide holes, locators, and indents are provided to facilitate panel replacement and to increase alignment accuracy.
- Both right and left reference points are symmetrical.

#### 1. ROOM SECTION



- (13) Front fener attaching hole at front pillar center portion M6
- (14) Front fender attaching hole at front pillar lower portion M6
- (19) Retainer attaching hole at side rail outer 3.2 mm (0.126 in) dia.(20) Center pillar outer hole 14 mm
- (0.55 in) dia.(21) Front seat belt adjust plate attach-
- ing hole M10
- (22) Side sill outer hole 20 mm (0.79 in) dia.
- (23) Rear quarter outer door switch attaching hole 20 mm (0.79 in) dia.
- (64) Center pillar (LWR) gauge hole 16 mm (0.63 in) dia.
- (81) Panel rear center (UPR) gauge hole 8 mm (0.31 in) dia.
- (82) Bulk head rear trim clip hole 7 mm (0.28 in) dia.
- (85) Rear quarter outer gauge hole 20 mm (0.79 in) dia.
- (87) Six light glass attaching hole 6.2 mm (0.244 in) dia.
- (88) Retainer attaching square hole at side rail outer 8 × 8 mm (0.31 × 0.31 in)
- (89) Retainer attaching square hole at rear quarter outer  $8 \times 8$  mm (0.31  $\times$  0.31 in)
- (92) Rear panel center hole (UPR) 6 mm (0.24 in) dia.

## **DATUM POINTS**

#### BODY STRUCTURE

#### 2. REAR SECTION



- $\begin{array}{ll} \mbox{(38)} & \mbox{Front panel instrument panel} \\ & \mbox{attaching hole 18} \times 36 \mbox{ mm (0.71} \times \\ & \mbox{1.42 in) dia. oblong hole} \end{array}$
- (46) Rear/front shock absorber floor side attaching hole 13 mm (0.51 in) dia.
- (83) Rear skirt outer burring hole 20 mm (0.79 in) dia.
- (84) Rear extension attaching hole 6.2 mm (0.244 in) dia.
- (86) Reinforce striker trim attaching hole 7 mm (0.28 in) dia.
- (90) Rear rale roof trim attaching hole 8 mm (0.31 in) dia.
- (91) Rear glass attaching hole RH: 6.5 mm (0.256 in) dia. LH: (6.5  $\times$  10 mm (0.256  $\times$  0.394 in) oval
- (93) Rear panel inner trim attaching hole (UPR) 8 mm (0.31 in) dia.
- (94) Rear panel inner trim attaching hole (LWR) 8 mm (0.31 in) dia.
- $\begin{array}{ll} \mbox{(95)} & \mbox{Rear bumper attaching hole 12.5} \\ & \times \mbox{17 mm (0.492 $\times$ 0.669 in) dia.} \\ & \mbox{oblong hole} \end{array}$
- (97) Trunk trim attaching hole at rear skirt 7 mm (0.28 in) dia.
- (98) Rear bumper slider attaching hole 6.2 mm (0.244 in) dia.
- (99) Rear combination light mounting hole 8 mm (0.31 in) dia.
- $\begin{array}{lll} \mbox{(100)} & \mbox{Rear bumper beam attaching hole} \\ & \mbox{8.2 mm (0.323 in) dia.} \\ & \mbox{RH: 8.2 mm (0.323 in)} \\ & \mbox{LH: 8.2 \times 12 mm (0.323 \times 0.472 in) oval} \end{array}$

#### 3. UNDERBODY SECTION



- (50) Radiator panel (LWR) frame gauge hole 15 mm (0.59 in) dia.
- (51) Front side frame (Ft) gauge hole 20 mm (0.79 in) dia.
- (52) Front side frame (Ft) gauge hole 20 mm (0.79 in) dia.
- (53) Front suspension bracket COMPL securing nut (M14)
- (54) Front side frame (Rr) gauge hole 20 mm (0.79 in) dia.
- (55) Crossmember front floor gauge hole M10
- (56) Front side frame (Rr) gauge hole 18 mm (0.71 in) dia.
- (57) Frame rear floor side gauge hole 25 mm (0.98 in) dia.
- (58) Reinforcement crossmember B hole RH: 15 mm (0.59 in) dia., LH: 12 mm (0.47 in) dia.
- (59) Frame rear floor side gauge hole 30 mm (1.18 in) dia.

# DATUM POINTS

#### BODY STRUCTURE



**DATUM POINTS** 



#### BODY STRUCTURE

# DATUM POINTS



**DATUM POINTS** 



BODY STRUCTURE

# 3. Datum Dimensions

## A: MEASUREMENT

Refer to LOCATION for details on measurement points. <Ref. to BS-3, LOCATION, Datum Points.>

NOTE:

• Using a tram tracking gauge, measure all the dimensions.

• When using a tape measure, carefully measure dimensions without letting the tape measure sag or twist.

• Measure the linear dimensions between cores of holes.

• Suffixes "RH" and "LH" indicate right-hand and left-hand.



(1) Tram tracking gauge

• Measure at the center of the circle around the outside of the body panel.



(1) Outside

(2) Inside

(3) Datum point

(4) Body panel

#### 1. FRONT STRUCTURE



Point to point	Dimension	Point to point	Dimension
(11) to (1)	888 (34.96)	(4) RH to (4) LH	1,320 (51.97)
(11) to (9) RH	519 (20.43)	(5) RH to (4) LH	1,073 (42.24)
(11) to (9) LH	519 (20.43)	(5) LH to (4) RH	1,073 (42.24)
(11) to (6) RH	950 (37.40)	(60) RH to (13) RH	1,179 (46.42)
(11) to (6) LH	950 (37.40)	(60) LH to (13) LH	1,179 (46.42)
(11) to (3) RH	1,008 (39.68)	(60) RH to (14) RH	1,135 (44.68)
(11) to (3) LH	1,008 (39.68)	(60) LH to (14) LH	1,135 (44.68)
(10) RH to (3) RH	897 (35.31)	(10) RH to (3) LH	1,679 (66.10)
(10) RH to (8) RH	504 (19.84)	(10) LH to (3) RH	1,679 (66.10)
(10) LH to (8) LH	504 (19.84)	(8) RH to (8) LH	1,398 (55.04)
(9) RH to (9) LH	1,020 (40.16)	(8) RH to (10) LH	1,519 (59.80)
(6) RH to (6) LH	740 (29.13)	(8) LH to (10) RH	1,519 (59.80)
(6) RH to (10) LH	1,522 (59.92)	(3) RH to (8) LH	1,439 (56.65)
(6) LH to (10) RH	1,522 (59.92)	(3) LH to (8) RH	1,439 (56.65)
(8) RH to (3) RH	395 (15.55)	(7) RH to (7) LH	870 (34.25)
(8) LH to (3) LH	395 (15.55)	(7) RH to (6) LH	943 (37.13)
(10) RH to (10) LH	1,470 (57.87)	(7) LH to (6) RH	943 (37.13)
(3) RH to (3) LH	1,370 (53.94)	(7) RH to (10) LH	1,322 (52.05)
(5) RH to (5) LH	720 (28.35)	(7) LH to (10) RH	1,322 (52.05)
Unit: mm (in)		-	

#### BODY STRUCTURE

#### 2. CENTER STRUCTURE



MEMO:

BODY STRUCTURE

#### BODY STRUCTURE

## 3. WINDSHIELD AND DOORS



#### BODY STRUCTURE

Point to point	Dimension	Point to point	Dimension
(14) RH to (18) RH	1,425 (56.10)	(12) to (10) RH	1,136 (44.72)
(14) LH to (18) LH	1,425 (56.10)	(12) to (10) LH	1,136 (44.72)
(13) RH to (64) RH	1,030 (40.55)	(11) to (17) RH	1,130 (44.49)
(13) LH to (64) LH	1,030 (40.55)	(11) to (17) LH	1,130 (44.49)
(16) RH to (64) RH	966 (38.03)	(81) to (82) RH	611 (24.06)
(16) LH to (64) LH	966 (38.03)	(81) to (82) LH	611 (24.06)
(20) RH to (23) RH	864 (34.02)	(81) to (21) RH	1,309 (51.54)
(20) LH to (23) LH	864 (34.02)	(81) to (21) LH	1,309 (51.54)
(20) RH to (24) RH	860 (33.86)	(81) to (23) RH	812 (31.97)
(20) LH to (24) LH	860 (33.86)	(81) to (23) LH	812 (31.97)
(19) RH to (23) RH	899 (35.39)	(82) LH to (21) LH	1,019 (40.12)
(19) LH to (23) LH	899 (35.39)	(82) RH to (21) LH	1,606 (63.23)
(20) RH to (36) RH	1,548 (60.94)	(82) RH to (82) LH	1,140 (44.88)
(20) LH to (36) LH	1,548 (60.94)	(85) LH to (20) LH	1,548 (60.94)
(42) RH to (44) RH	1,037 (40.83)	(85) LH to (64) LH	1,650 (64.96)
(42) LH to (44) LH	1,037 (40.83)	(19) LH to (64) LH	1,029 (40.51)
(11) to (12)	989 (38.94)	(20) LH to (87) LH	911 (35.87)
(67) RH to (67) LH	1,100 (43.31)	(20) LH to (88) LH	842 (33.15)
(11) to (67) RH	1,119 (44.06)	(20) LH to (64) LH	399 (15.71)
(11) to (67) LH	1,119 (44.06)	(23) LH to (89) LH	552 (21.73)
(12) to (67) RH	551 (21.69)	(88) LH to (64) LH	1,192 (46.93)
(12) to (67) LH	551 (21.69)	(89) LH to (64) LH	1,204 (47.40)
Unit: mm (in)			

#### BODY STRUCTURE

#### 4. COMPARTMENT



Point to point	Dimension	Point to point	Dimension
(21) RH to (21) LH	1,351 (53.19)	(41) to (22) LH	738 (29.06)
(15) RH to (15) LH	1,455 (57.28)	(41) to (26) RH	1,459 (57.44)
(22) RH to (22) LH	1,455 (57.28)	(41) to (26) LH	1,459 (57.44)
(39) RH to (39) LH	1,385 (54.53)	(41) to (25)	1,290 (50.79)
(40) RH to (40) LH	1,392 (54.80)	(41) to (12)	1,228 (48.35)
(41) to (38)	1,639 (64.53)	(41) to (21) RH	940 (37.01)
(41) to (39) RH	1,642 (64.65)	(41) to (21) LH	940 (37.01)
(41) to (39) LH	1,642 (64.65)	(41) to (17) RH	1,261 (49.65)
(41) to (40) RH	1,531 (60.28)	(41) to (17) LH	1,261 (49.65)
(41) to (40) LH	1,531 (60.28)	(65) RH to (65) LH	1,307 (51.46)
(41) to (15) RH	1,342 (52.83)	(41) to (65) RH	969 (38.15)
(41) to (15) LH	1,342 (52.83)	(41) to (65) LH	969 (38.15)
(41) to (22) RH	738 (29.06)		Unit: mm (in)

MEMO:

BODY STRUCTURE

BODY STRUCTURE

## 5. TRUNK LID AND REAR GATE



#### BODY STRUCTURE

Point to point	Dimension	Point to point	Dimension
(45) to (48)	974 (38.35)	(84) RH to (84) LH	1,410 (55.51)
(45) to (47) RH	797 (31.38)	(100) RH to (84) LH	1,226 (48.27)
(45) to (47) LH	797 (31.38)	(86) to (21) RH	2,073 (81.61)
(47) RH to (47) LH	1,289 (50.75)	(86) to (21) LH	2,086 (82.13)
(49) RH to (49) LH	1,313 (51.69)	(86) to (38)	3,143 (123.74)
(34) RH to (34) LH	700 (27.56)	(86) to (46) RH	1,121 (44.13)
(41) to (45)	1,482 (58.35)	(86) to (46) LH	1,140 (44.88)
(41) to (43) RH	1,206 (47.48)	(86) to (96)	558 (21.97)
(41) to (43) LH	1,199 (47.20)	(90) to (22) RH	1,319 (51.93)
(41) to (48)	1,663 (65.47)	(90) to (22) LH	1,319 (51.93)
(48) to (46) RH	1,191 (46.89)	(22) RH to (94) LH	1,710 (67.32)
(48) to (46) LH	1,191 (46.89)	(22) LH to (94) RH	1,710 (67.32)
(70) RH to (70) LH	1,215 (47.83)	(38) to (97) RH	3,100 (122.05)
(72) RH to (72) LH	1,320 (51.97)	(38) to (97) LH	3,227 (127.05)
(81) to (38)	2,351 (92.56)	(92) to (91) RH	776 (30.55)
(81) to (90)	444 (17.48)	(92) to (91) LH	776 (30.55)
(81) to (93) RH	719 (28.31)	(91) RH to (91) LH	976 (38.43)
(81) to (93) LH	719 (28.31)	(46) LH to (97) LH	1,008 (39.68)
(81) to (94) RH	632 (24.88)	(46) LH to (97) RH	1,374 (54.09)
(81) to (94) LH	632 (24.88)	(46) LH to (46) RH	1,052 (41.42)
(38) to (82) RH	2,178 (85.75)	(93) RH to (93) LH	1,099 (43.27)
(38) to (82) LH	2,419 (95.24)	(94) RH to (94) LH	1,257 (49.49)
(83) RH to (83) LH	930 (36.61)	(95) RH to (95) LH	1,115 (43.90)
(84) RH to (83) LH	1,216 (47.87)	(97) RH to (97) LH	830 (32.68)
(99) RH to (83) LH	1,246 (49.06)	(99) RH to (99) LH	1,370 (53.94)
(100) RH to (83) LH	991 (39.02)	(100) RH to (100) LH	1,020 (40.16)
Unit: mm (in)			

BODY STRUCTURE

MEMO:

# **GENERAL DESCRIPTION**

COMMUNICATION SYSTEM

# 1. General Description

A: PREPARATION TOOL

## 1. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance and voltage.



COM-2





#### COMMUNICATION SYSTEM

# 2. Horn System

# A: SCHEMATIC

# 1. HORN

<Ref. to WI-136, SCHEMATIC, Horn System.>

## **B: INSPECTION**

## 1. HORN RELAY

Measure horn relay resistance between terminals (indicated in table below) while connecting terminal No. 4 to battery positive terminal and terminal No. 3 to battery ground terminal.



Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 $\Omega$
No flow	T anu z	More than 1 M $\Omega$



COM-3





#### COMMUNICATION SYSTEM

# 3. Horn

## A: REMOVAL

1) Disconnect ground cable from battery.

2) Remove horn bracket mounting bolt (A).3) Disconnect harness connector and remove horn assembly (B).



## **B: INSTALLATION**

Install in the reverse order of removal.

#### **C: INSPECTION**

With 12 V direct current supply between horn termi-nal and case ground, check that the horn sounds properly.



# 4. Horn Switch

## A: REMOVAL

#### WARNING:

Before servicing, be sure to read the notes in the AB section for proper handling of the driver airbag module. <Ref. to AB-3, CAUTION, General Description.>

1) Disconnect ground cable from battery.

2) Remove the driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.>

3) Remove horn switch from steering wheel as shown.



**B: INSTALLATION** Install in the reverse order of removal.

# C: INSPECTION

Measure horn switch resistance.



Switch position	Terminal No.	Standard
When horn switch is pushed.	1 and Body	Less than 1 $\Omega$
When horn switch is not pushed.	ground	More than 1 $M\Omega$

COMMUNICATION SYSTEM

MEMO:

# **GENERAL DESCRIPTION**

CRUISE CONTROL SYSTEM

# 1. General Description

# A: COMPONENT



(1) Actuator

- (4) Cruise control main switch
- (7) Cruise control module

- (2) Inhibitor switch (AT)
- (5) Clutch switch (MT)(6) Stop and brake switch
- (3) Cruise control command switch

## **GENERAL DESCRIPTION**

#### CRUISE CONTROL SYSTEM

#### **B: CAUTION**

Before disassembling or reassembling parts, always disconnect the battery ground cable. When repairing the radio, control module and other parts with memory functions, make note of the memory before disconnecting the battery ground cable. All memory will be erased.
Reassemble parts in the reverse order of disas-

• Reassemble parts in the reverse order of disassembly unless otherwise indicated.

• Adjust parts to specifications specified in this manual.

• Connect connectors and hoses securely during reassembly.

• After reassembly, ensure functional parts operate properly.

# **C: PREPARATION TOOL**

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and volt-
	age.

CRUISE CONTROL SYSTEM

#### 2. Actuator

# A: REMOVAL

#### CAUTION:

• Be careful not to apply excessive load to the wire cable when adjusting and/or installing; otherwise, the actuator may be deformed or damaged.

• Do not bend cable sharply with a radius less than 100 mm (3.94 in); otherwise, cable may bend permanently, resulting in poor performance.

• When installing cable, be careful not to sharply bend or pinch the inner cable; otherwise, the cable may break.

1) Disconnect ground cable from battery.

2) Remove clip bands from cruise control cable.

3) Loosen nut which secures cruise control cable end to throttle cam and then remove cable from throttle cam.



4) Remove actuator attaching bolts.

5) Remove actuator while disconnecting connector.



### **B: INSTALLATION**

Install in the reverse order of removal.

#### Tightening torque:

Actuator 7.4 N⋅m (0.75 kgf-m, 5.4 ft-lb) Cable end nut 12 N⋅m (1,2 kgf-m, 8.7 ft-lb)

NOTE:

(A): Must be adjusted when cable end outer is fixed in place, so that gap between throttle cam and lever is 0 - 1 mm (0 - 0.04 in), or inner cable deflection (D) is 1 - 8 mm (0.039 - 0.315 in) with specified range of throttle cable play.

(Must be attached while throttle cam is being pulled by wire cable.)

(B): Must be coated evenly on cam end inner connection.

(C): Cover must be inserted securely, until tip of cable touches cover stopper.



#### **C: INSPECTION**

Measure cruise control actuator resistance.



Terminal No.	Standard
4 and 1	Approx. 5Ω
4 and 2	Approx. 5Ω
4 and 5	Approx. 5Ω
3 and 6	Approx. 39Ω

If NG, replace cruise control actuator.

# **CRUISE CONTROL MODULE**

CRUISE CONTROL SYSTEM

# 3. Cruise Control Module

## A: REMOVAL

1) Disconnect ground cable from battery.

2) Remove glove box. <Ref. to EI-34, REMOVAL, Glove Box.>

3) Remove nut, then remove cruise control module (A) and the other electrical control module (B) while disconnecting connector.



4) Disconnect cruise control module and the other electrical control module.

## **B: INSTALLATION**

Install is in the reverse order of removal.



CC-5







#### **CRUISE CONTROL MAIN SWITCH**

#### CRUISE CONTROL SYSTEM

# 4. Cruise Control Main Switch

## A: REMOVAL

- 1) Disconnect ground cable from battery.
- 2) Remove hook (B) and then remove switch panel

#### (A) while disconnecting connector.



3) Remove main switch by pushing it outward.



#### **B: INSTALLATION**

Install is in the reverse order of removal.

#### **C: INSPECTION**



Switch position	Terminal No.	Standard
OFF (Released)	3 and 5	More than 1 M $\Omega$
ON (Pushed)	3 and 5	Less than 1 $\Omega$

If NG, replace cruise control main switch.



CC-6





## **CRUISE CONTROL COMMAND SWITCH**

#### CRUISE CONTROL SYSTEM

# 5. Cruise Control Command Switch

## A: REMOVAL

#### WARNING:

Before servicing, be sure to read the notes in the AB section for proper handling of the driver's airbag module. <Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>

1) Set front wheels in straight ahead position.

2) Turn ignition switch OFF.

3) Disconnect ground cable from battery and wait for at least 20 seconds before starting work.

4) Using TORX<sup>®</sup> BIT T30 (Tamper resistant type), loosen two TORX<sup>®</sup> bolts which secure driver's airbag module.



5) Disconnect airbag module connector on back of airbag module.

6) Remove horn switch from steering wheel as shown.



7) Disconnect horn and cruise control command switch connector, then remove cruise control command switch.



# **B: INSTALLATION**

Install is in the reverse order of removal.

# C: INSPECTION

Measure cruise control command switch resistance.



Check continuity between cruise control command switch terminals.

Switch	Position	Terminal No.	Standard
	ON	1 (+) and 2 (–)	Less than 1 $\Omega$
CANCEL	ON	1 (+) and 3 (–)	Less than 1 $\Omega$
SET/	OFF	1 and 2	More than 1 $M\Omega$
COAST	ON	1 and 2	Less than 1 $\Omega$
RESUME/	OFF	1 and 3	More than 1 $M\Omega$
ACCEL	ON	1 and 3	Less than 1 $\Omega$

If NG, replace cruise control command switch.

# STOP AND BRAKE SWITCH

#### CRUISE CONTROL SYSTEM

# 6. Stop and Brake Switch

#### A: REMOVAL

Disconnect ground cable from battery.
 Disconnect connector from stop and brake

switch, and then remove the switch. <Ref. to BR-42, REMOVAL, Stop Light Switch.>

#### **B: INSTALLATION**

Install in the reverse order of removal.

#### **C: INSPECTION**

Measure the brake switch (A) and stop light switch (B) resistance.



Switch	Pedal	Terminal No.	Standard
Broko	Released	1 and 4	Less than 1 $\Omega$
DIAKE	Depressed	1 and 4	More than 1 $M\Omega$
Stop light	Released	2 and 3	More than 1 $M\Omega$
	Depressed	2 and 3	Less than 1 $\Omega$

If NG, replace stop and brake switch.





CRUISE CONTROL SYSTEM

# 7. Clutch Switch

## A: REMOVAL

 Disconnect ground cable from battery.
 Disconnect the connector from the clutch switch, and then remove the switch. <Ref. to CL-21, RE-MOVAL, Clutch Pedal.>

#### **B: INSTALLATION**

Install in the reverse order of removal.

#### **C: INSPECTION**

Measure clutch switch resistance.



Switch	Pedal	Terminal No.	Standard
Clutch	Released	1 and 2	Less than 1 $\Omega$
Clutch	Depressed	1 and 2	More than 1 $M\Omega$

If NG, replace the clutch switch.



# **INHIBITOR SWITCH**

#### CRUISE CONTROL SYSTEM

# 8. Inhibitor Switch

#### A: REMOVAL

1) Disconnect ground cable from battery.

2) Disconnect connector from inhibitor switch, and then remove the switch. <Ref. to AT-50, REMOV-AL, Inhibitor Switch.>

# **B: INSTALLATION**

Installation is in the reverse order of removal.

#### **C: INSPECTION**

Measure inhibitor switch resistance.



Selector lever position	Terminal No.	Standard
Р		Less than 1 $\Omega$
Ν	7 and 12	Less than 1 $\Omega$
Except P and N		More than 1 M $\Omega$

If NG, replace inhibitor switch.









# BASIC DIAGNOSTIC PROCEDURE CRUISE CONTROL SYSTEM (DIAGNOSTICS)

1. Basic Diagnostic Procedure

# A: PROCEDURE

	Step	Value	Yes	No
1	<ul> <li>START DIAGNOSIS.</li> <li>1) Perform pre-inspection. <ref. cc-5,<br="" to="">INSPECTION, General Description.&gt;</ref.></li> <li>2) Check cruise control main switch operation. Is cruise control main switch turned ON?</li> </ul>	Cruise main switch is turned ON.	Go to step 2.	Go to symptom 1. <ref. cc-12,<br="" to="">SYMPTOM CHART, Diagnos- tics Chart with Symptom.&gt;</ref.>
2	PREPARE SUBARU SELECT MONITOR. Is the Subaru select monitor available?	Subaru select monitor is available.	Go to step 3.	Go to step 4.
3	PERFORM CRUISE CANCEL CONDITIONS DIAGNOSIS. Perform cruise cancel conditions diagnosis. <ref. cc-10,="" monitor.="" select="" subaru="" to=""> Is trouble code indicated?</ref.>	Trouble code is not indicated.	Go to step <b>4</b> .	Go to "List of Diag- nostic Trouble Code (DTC)". <ref. cc-26,<br="" to="">List of Diagnostic Trouble Code (DTC).&gt;</ref.>
4	CHECK CRUISE CONTROL SET OPERA- TION. Check cruise control set operation. Can cruise control be set while driving at 40 km/h (25 MPH)?	Cruise control can be set.	Go to step <b>5</b> .	Go to symptom 2. <ref. cc-12,<br="" to="">SYMPTOM CHART, Diagnos- tics Chart with Symptom.&gt;</ref.>
5	CHECK VEHICLE SPEED IS HELD WITHIN SET SPEED. Make sure vehicle speed is held within set speed. Is vehicle speed held within set speed ±3 km/h (±2 MPH) ?	Vehicle speed is held within set speed.	Go to step 6.	Go to symptom 3. <ref. cc-12,<br="" to="">SYMPTOM CHART, Diagnos- tics Chart with Symptom.&gt;</ref.>
6	CHECK RESUME/ACCEL OPERATION. Check RESUME/ACCEL operation. Does vehicle speed increase or return to set speed after RESUME/ACCEL switch has been pressed?	Vehicle speed increases or returns to set speed.	Go to step 7.	Go to symptom 4. <ref. cc-12,<br="" to="">SYMPTOM CHART, Diagnos- tics Chart with Symptom.&gt;</ref.>
7	CHECK SET/COAST OPERATION. Check SET/COAST operation. Does vehicle speed decrease after SET/ COAST switch has been pressed?	Vehicle speed decreases.	Go to step 8.	Go to symptom 5. <ref. cc-12,<br="" to="">SYMPTOM CHART, Diagnos- tics Chart with Symptom.&gt;</ref.>
8	CHECK CANCEL OPERATION. Check CANCEL operation. Is cruise control released after CANCEL switch has been pressed?	Cruise control is released.	Go to step <b>9</b> .	Go to symptom 6. <ref. cc-12,<br="" to="">SYMPTOM CHART, Diagnos- tics Chart with Symptom.&gt;</ref.>
9	CHECK CRUISE CONTROL RELEASE OP- ERATION. Check cruise control release operation. Is cruise control released after brake pedal has been depressed?	Cruise control is released.	Go to step <b>10</b> .	Go to symptom 7. <ref. cc-12,<br="" to="">SYMPTOM CHART, Diagnos- tics Chart with Symptom.&gt;</ref.>

# BASIC DIAGNOSTIC PROCEDURE CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Value	Yes	No
10 CHECK CRUISE CONTROL RELEASE OP- ERATION. Check cruise control release operation. Is cruise control released after clutch pedal has been depressed? (MT)	Cruise control is released.	Finish the diag- nostics.	Go to symptom 8. <ref. cc-12,<br="" to="">SYMPTOM CHART, Diagnos- tics Chart with Symptom.&gt;</ref.>

## **GENERAL DESCRIPTION**

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

# 2. General Description

## A: CAUTION

# 1. SUPPLEMENTAL RESTRAINT SYSTEM "AIRBAG"

Airbag system wiring harness is routed near the cruise control module and cruise control command switch.

#### CAUTION:

• All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.

• Be careful not to damage airbag system wiring harness when servicing the cruise control module and cruise control command switch.

# **B: PREPARATION TOOL**

#### 1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
ST24082AA210	24082AA210 (Newly adopted tool)	CARTRIDGE	Troubleshooting for electrical systems.
ST22771AA030	22771AA030	SUBARU SELECT MONITOR KIT	Troubleshooting for electrical systems. • English: 22771AA030 (Without printer)

#### 2. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance, voltage and ampere.
#### GENERAL DESCRIPTION CRUISE CONTROL SYSTEM (DIAGNOSTICS)

### **C: INSPECTION**

### 1. BATTERY

Measure battery voltage and specific gravity of electrolyte.

Standard voltage: 12 V, or more

### Specific gravity: Above 1.260

#### 2. CRUISE CONTROL CABLE



Check the cruise control cable installation. If NG, install the cable securely.

### 3. ACCELERATOR CABLE



Check movement of the accelerator cable when the cruise control throttle is moved by hand. If NG, check throttle cam.

### 4. THROTTLE CAM

Check that the throttle cam moves smoothly. If NG, repair throttle cam.

### 5. CABLE FREE PLAY



Check that the clearance (A) between throttle cam (B) and lever or cable deflection (D) is within specifications.

Throttle cam-to-lever clearance: 0 - 1 mm (0 - 0.04 in)

Inner cable deflection:

1 — 8 mm (0.04 — 0.31 in)

If NG, adjust the clearance or the deflection with the adjust nut.

### NOTE:

Check that the cap (C) is positioned in the groove.

# ELECTRICAL COMPONENTS LOCATION CRUISE CONTROL SYSTEM (DIAGNOSTICS)

# 3. Electrical Components Location

### A: LOCATION



(1) Actuator

- (4) Cruise control main switch
- (7) Cruise control module

- (2) Inhibitor switch (AT)
- (5) Clutch switch (MT)(6) Stop and brake switch
- (3) Cruise control command switch (6) Stop a

MEMO:

## CRUISE CONTROL MODULE I/O SIGNAL CRUISE CONTROL SYSTEM (DIAGNOSTICS)

# 4. Cruise Control Module I/O Signal

# A: ELECTRICAL SPECIFICATION



Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Main light	1	<ul> <li>Battery voltage is present when main switch is turned OFF.</li> <li>"0" volt is present when main switch is turned ON.</li> </ul>
Inhibitor switch (AT)	4	<ul> <li>Battery voltage is present when selector lever is other than "P" or "N" position.</li> <li>"0" volt is present when selector lever is set to "P" or "N" position.</li> </ul>
Motor B	5	<ul> <li>ON-and-OFF ("0"-and-battery voltage) operation is alternately repeated while cruise control is operating.</li> <li>"0" volt is present when main switch is turned OFF.</li> </ul>
Ground	6	_
Motor A	7	<ul> <li>ON-and-OFF ("0"-and-battery voltage) operation is alternately repeated while cruise control is operating.</li> <li>"0" volt is present when main switch is turned OFF.</li> </ul>
RESUME/ACCEL switch	9	<ul> <li>Battery voltage is present when command switch is turned to RESUME/ACCEL position.</li> <li>"0" volt is present when command switch is released.</li> </ul>
SET/COAST switch	10	<ul> <li>Battery voltage is present when command switch is turned to SET/COAST position.</li> <li>"0" volt is present when command switch is released.</li> </ul>
Main power supply	11	<ul> <li>Battery voltage is present when main switch is turned ON.</li> <li>"0" volt is present when main switch is turned OFF.</li> </ul>
Ignition switch	12	<ul> <li>Battery voltage is present when ignition switch is turned ON.</li> <li>"0" volt is present when ignition switch is turned OFF.</li> </ul>
Motor C	13	<ul> <li>ON-and-OFF ("0"-and-battery voltage) operation is alternately repeated while cruise control is operating.</li> <li>"0" volt is present when main switch is turned OFF.</li> </ul>
Motor clutch	14	<ul> <li>ON-and-OFF ("0"-and-battery voltage) operation is alternately repeated while cruise control is operating.</li> <li>"0" volt is present when vehicle is stopped.</li> </ul>
Cruise control main switch	15	<ul> <li>Battery voltage is present during pressing the main switch.</li> <li>"0" volt is present when main switch is released.</li> </ul>
Brake switch	16	<ul> <li>Leave clutch pedal released (MT), while cruise control main switch is turned ON. Then check that;</li> <li>Battery voltage is present when brake pedal is released.</li> <li>"0" volt is present when brake pedal is depressed.</li> <li>Additionally only in MT vehicle, keep the cruise control main switch to ON and leave brake pedal released.</li> <li>Then check that;</li> <li>Battery voltage is present when clutch pedal is released.</li> <li>"0" volt is present when clutch pedal is depressed.</li> </ul>
Data link connector	17	—
Data link connector	18	

# CRUISE CONTROL MODULE I/O SIGNAL CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)		
Vehicle speed sensor (MT) TCM (AT)	19	Lift-up the vehicle until all four wheels are raised off ground, and then rotate any wheel manually. Approx. "5" and "0" volt pulse signals are alternately input to cruise control module.		
Stop light switch	20	<ul> <li>Turn ignition switch to OFF.</li> <li>Then check that;</li> <li>Battery voltage is present when brake pedal is depressed.</li> <li>"0" volt is present when brake pedal is released.</li> </ul>		
NOTE: Voltage at terminals 5, 7, 13 and 14 cannot be checked unless vehicle is driving by cruise control operation.				

## **B: SCHEMATIC**

<Ref. to WI-96, SCHEMATIC, Cruise Control System.>

### SUBARU SELECT MONITOR

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

### 5. Subaru Select Monitor

### A: OPERATION

### 1. GENERAL

The on-board diagnosis function of the cruise control system uses an external Subaru Select Monitor.

The on-board diagnosis function operates in two categories, which are used depending on the type of problems;

1) Cruise cancel conditions diagnosis

(1) This category of diagnosis requires actual vehicle driving in order to determine the cause, (as when cruise speed is cancelled during driving although cruise cancel condition is not entered).

(2) Cruise control module memory stores the cancel condition (Code No.) which occurred during driving. When there are plural cancel conditions (Code No.), they are shown on the Subaru Select Monitor.

#### CAUTION:

• The cruise control memory stores not only the cruise "cancel" which occurred (although "cancel" operation is not entered by the driver), but also the "cancel" condition input by the driver.

• The content of memory is cleared when ignition switch or cruise main switch is turned OFF. 2) Real-time diagnosis

The real-time diagnosis function is used to determine whether or not the input signal system is in good order, according to signal emitted from switches, sensors, etc.

(1) Vehicle cannot be driven at cruise speed because problem occurs in the cruise control system or its associated circuits.

(2) Monitor the signal conditions from switches and sensors.

# 2. CRUISE CANCEL CONDITIONS DIAGNOSIS

1) Prepare Subaru Select Monitor kit.



2) Connect diagnosis cable to Subaru Select Monitor.

3) Insert cartridge into Subaru Select Monitor. <Ref. to CC-4, SPECIAL TOOLS, PREPARATION TOOL, General Description.>



4) Connect Subaru Select Monitor to data link connector.

(1) Data link connector (A) is located in the lower portion of the instrument panel (on the driver's side).



(2) Connect diagnosis cable to data link connector.

5) Start engine and turn cruise control main switch to ON.

6) Turn Subaru Select Monitor switch (A) to ON.



7) On the «Main Menu» display screen, select the {All System Diagnosis} and press the [YES] key.

#### NOTE:

The diagnostic trouble code (DTC) is also shown in the {Each System Check} mode. This mode is called up on the «Cruise Control Diagnosis» display screen by selecting the item {Cancel Code(s) Display}.

8) Drive vehicle at least 30 km/h (19 MPH) with cruise speed set.

9) If cruise speed is canceled itself (without doing any cancel operations), a diagnostic trouble code (DTC) will appear on select monitor display.

#### CAUTION:

• A diagnostic trouble code (DTC) will also appear when cruise cancel is effected by driver. Do not confuse.

• Have a co-worker ride in vehicle to assist in diagnosis during driving.

#### NOTE:

Diagnostic trouble code (DTC) will be cleared by turning ignition switch or cruise control main switch to OFF.

#### 3. REAL-TIME DIAGNOSIS

1) Connect select monitor.

2) Turn ignition switch and cruise control main switch to ON.

3) Turn Subaru Select Monitor switch to ON.

4) On the «Main Menu» display screen, select the

{Each System Check} and press the [YES] key. 5) On the «System Selection Menu» display screen, select the {Cruise Control} and press the [YES] key.

6) Press the [YES] key after displayed the information of engine type.

7) On the «Cruise Control Diagnosis» display screen, select the {Current Data Display & Save} and press the [YES] key.

8) Make sure that normal indication is displayed when controls are operated as indicated below:

• Depress/release the brake pedal. (Stop light switch and brake switch turn ON or OFF.)

- Turn ON/OFF the "SET/COAST" switch.
- Turn ON/OFF the "RESUME/ACCEL" switch.
- Depress/release the clutch pedal. (MT)

• Set the selector lever to P or N. (AT)

NOTE:

• For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MAN-UAL.

• For detailed concerning diagnostic trouble codes (DTCs), refer to the List of Diagnostic Trouble Code (DTC).

<Ref. to CC-26, List of Diagnostic Trouble Code (DTC).>

# 6. Diagnostics Chart with Symptom

# A: SYMPTOM CHART

	Symptom	Repair area	Reference
	Cruise control main switch is	(1) Check power supply.	<ref. cc-14,="" check="" diagnostics<="" power="" supply,="" td="" to=""></ref.>
1	not turned ON.		Chart with Symptom.>
		(2) Check cruise control main	<ref. cc-16,="" check="" control="" cruise="" main<="" td="" to=""></ref.>
		switch.	SWITCH, Diagnostics Chart with Symptom.>
	Cruise control cannot be set.	(1) Check SET/COAST	<ref. cc-18,="" check="" com-<="" control="" cruise="" td="" to=""></ref.>
		switch.	MAND SWITCH, Diagnostics Chart with Symptom.>
		(2) Check stop light switch	<ref. and<="" cc-20,="" check="" light="" stop="" switch="" td="" to=""></ref.>
		and brake switch.	BRAKE SWITCH, Diagnostics Chart with Symptom.>
		(3) Check clutch switch (MT).	<ref. (mt),="" cc-22,="" check="" clutch="" diag-<="" switch="" td="" to=""></ref.>
			nostics Chart with Symptom.>
2		(4) Check inhibitor switch	<ref. (at),<="" cc-24,="" check="" inhibitor="" switch="" td="" to=""></ref.>
		(AT).	Diagnostics Chart with Symptom.>
		(5) Check vehicle speed sen-	<ref. 22="" cc-28,="" dtc="" sensor,<="" speed="" td="" to="" vehicle=""></ref.>
		sor.	Diagnostics Chart with Trouble Code.>
		(6) Check motor drive sys-	<ref. 35="" 36="" actuator="" and="" cc-32,="" dtc="" motor,<="" p="" to=""></ref.>
		(7) Check motor clutch drive	Control CC-34, DTC 37 ACTUATOR MOTOR CLUTCH, Discrete states and the transfer of the control
	Vahiele encedie wethold	(4) Charley wabiele encoderer	
3	within set speed +3 km/h (+2	(1) Check vehicle speed sen-	CREI. 10 CC-28, DTC 22 VEHICLE SPEED SEINSOR,
	MPH).	(2) Chock motor drive sve	Plagnostics chart with Houble Code.>
		tem	Diagnostics Chart with Trouble Code >
		(3) Check motor clutch drive	
		system.	Diagnostics Chart with Trouble Code.>
	Vehicle speed does not	(1) Check RESUME/ACCEL	<pre><ref. cc-18.="" check="" com-<="" control="" cruise="" pre="" to=""></ref.></pre>
	increase or does not return to	switch.	MAND SWITCH, Diagnostics Chart with Symptom.>
4	set speed after RESUME/	(2) Check motor drive sys-	<ref. 35="" 36="" actuator="" and="" cc-32,="" dtc="" motor,<="" td="" to=""></ref.>
4	ACCEL switch has been	tem.	Diagnostics Chart with Trouble Code.>
	pressed.	(3) Check motor clutch drive	<ref. 37="" actuator="" cc-34,="" clutch,<="" dtc="" motor="" td="" to=""></ref.>
		system.	Diagnostics Chart with Trouble Code.>
	Vehicle speed does not	(1) Check SET/COAST	<ref. cc-18,="" check="" com-<="" control="" cruise="" td="" to=""></ref.>
	decrease after SET/COAST	switch.	MAND SWITCH, Diagnostics Chart with Symptom.>
5	switch has been pressed.	(2) Check motor drive sys-	<ref. 35="" 36="" actuator="" and="" cc-32,="" dtc="" motor,<="" td="" to=""></ref.>
-		tem.	Diagnostics Chart with Trouble Code.>
		(3) Check motor clutch drive	<ref. 37="" actuator="" cc-34,="" clutch,<="" dtc="" motor="" td="" to=""></ref.>
	<u> </u>	system.	Diagnostics Chart with Trouble Code.>
	Cruise control is not released	(1) Check CANCEL switch.	<ref. cc-18,="" check="" com-<br="" control="" cruise="" to="">MAND SIMUTCH. Diagnostics Chart with Sumpton :</ref.>
	been pressed		MAND SWITCH, Diagnostics Chart with Symptom.>
6	been pressed.	(2) Check motor drive sys-	Ref. to CC-32, DTC 35 AND 36 ACTUATOR MOTOR,
		(2) Chaok motor eluteb drive	
		(3) Check motor clutch drive	CREI. 10 CC-34, DTC 37 ACTUATOR MOTOR CLUTCH,
	Cruise control is not released	(1) Check stop light switch	
	after brake pedal has been	and brake switch	BRAKE SWITCH Diagnostics Chart with Symptom >
	depressed.	(2) Check motor drive sys-	<pre><ref 35="" 36="" actuator="" and="" cc-32_dtc="" motor<="" pre="" to=""></ref></pre>
7		tem.	Diagnostics Chart with Trouble Code.>
		(3) Check motor clutch drive	<ref. 37="" actuator="" cc-34.="" clutch<="" dtc="" motor="" td="" to=""></ref.>
		system.	Diagnostics Chart with Trouble Code.>
L	1		-

	Symptom	Repair area	Reference
	Cruise control is not released after clutch pedal has been	(1) Check clutch switch.	<ref. (mt),="" cc-22,="" check="" clutch="" diag-<br="" switch="" to="">nostics Chart with Symptom.&gt;</ref.>
8	depressed (MT).	(2) Check motor drive sys- tem.	<ref. 35="" 36="" actuator="" and="" cc-32,="" dtc="" motor,<br="" to="">Diagnostics Chart with Trouble Code.&gt;</ref.>
		(3) Check motor clutch drive system.	<ref. 37="" actuator="" cc-34,="" clutch,<br="" dtc="" motor="" to="">Diagnostics Chart with Trouble Code.&gt;</ref.>

# DIAGNOSTICS CHART WITH SYMPTOM

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

### **B: CHECK POWER SUPPLY**

TROUBLE SYMPTOM:

Cruise control cannot be set, and indicator does not come on. (When main switch is pressed.) **WIRING DIAGRAM:** 



	Step	Value	Yes	No
1	<ul> <li>CHECK POWER SUPPLY.</li> <li>1) Turn ignition switch OFF.</li> <li>2) Disconnect cruise control module harness connector.</li> <li>3) Turn ignition switch ON.</li> <li>4) Measure voltage between harness connector terminal and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(B94) No. 12 (+) — Chassis ground (-):</li> <li>Does the measured value exceed the specified value?</li> </ul> </li> </ul>	10 V	Go to step 2.	<ul> <li>Check fuse No. 18 (in fuse &amp; relay box).</li> <li>Check harness for open or short between cruise control module and fuse &amp; relay box.</li> </ul>
2	<ul> <li>CHECK GROUND CIRCUIT.</li> <li>1) Turn ignition switch OFF.</li> <li>2) Measure resistance between harness connector terminal and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(B94) No. 6 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	10 Ω	Power supply and ground circuit are OK.	Repair harness.

# DIAGNOSTICS CHART WITH SYMPTOM

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

## C: CHECK CRUISE CONTROL MAIN SWITCH

### TROUBLE SYMPTOM:

Cruise control main switch is not turned ON and cruise control cannot be set.

### NOTE:

When the main relay (built-in cruise control module) operates, the main switch circuit is in normal condition. The main relay operation can be checked by hearing the operation sounds.

This operation sounds will be heard when ignition switch and cruise control main switch is turned to ON. **WIRING DIAGRAM:** 



**CC-16** 

Step	Value	Yes	No
<ol> <li>CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.         <ol> <li>Turn ignition switch OFF.</li> <li>Disconnect cruise control main switch harness connector.</li> <li>Turn ignition switch ON.</li> <li>Measure voltage between harness connector tor terminal and chassis ground.</li> </ol> </li> <li>Connector &amp; terminal         <ol> <li>(i19) No. 3 (+) — Chassis ground (-):             <ol> <li>Does the measured value exceed the specified value?</li> </ol> </li> </ol></li></ol>	10 V	Go to step 2.	<ul> <li>Check fuse No. 18 (in fuse &amp; relay box).</li> <li>Check harness for open or short between cruise control main switch and fuse &amp; relay box.</li> </ul>
<ul> <li>2 CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.         <ol> <li>Turn ignition switch OFF.</li> <li>Disconnect cruise control module harness connector.</li> <li>Measure resistance between cruise control module harness connector terminal and cruise control main switch harness connec- tor terminal.</li> </ol> </li> <li>Connector &amp; terminal         <ol> <li>(B94) No. 15 — (i19) No. 5:</li> <li>(B94) No. 11 — (i19) No. 6:</li> <li>(B94) No. 11 — (i19) No. 1:</li> <li>Is the measured value less than the speci- fied value?</li> </ol> </li> </ul>	10 Ω	Go to step 3.	Repair harness.
3 CHECK CRUISE CONTROL MAIN SWITCH. Remove and check cruise control main switch. <ref. cc-6,="" control="" cruise="" main="" switch.="" to=""> Is cruise control main switch OK?</ref.>	Cruise control main switch is OK.	Replace cruise control module.	Replace cruise control main switch.

## DIAGNOSTICS CHART WITH SYMPTOM

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

### D: CHECK CRUISE CONTROL COMMAND SWITCH TROUBLE SYMPTOM:

Cruise control cannot be set. (Cancelled immediately.) WIRING DIAGRAM:



	Stop	Value	Voc	No
4			Tes	
1	1) Turn ignition switch OEE	when SET/COAST switch is	Go to step 2.	Go to step 4.
	<ol> <li>1) Turn ignition Switch OFF.</li> <li>2) Disconnect cruise control module barness.</li> </ol>	SET/COAST switch is		
	connector	pressed: 10 V		
	3) Measure voltage between harness connec-			
	tor terminal and chassis ground when SET/			
	COAST switch is pressed and not pressed.			
	Connector & terminal			
	(B94) No. 10 (+) — Chassis ground (–):			
	Is the measured value less than the speci-			
	fied value, when SET/COAST switch is not			
	pressed?			
	Does the measured value exceed the spec-			
	ified value, when SET/COAST switch is			
	pressed?			
2	CHECK RESUME/ACCEL SWITCH CIRCUIT.	When RESUME/ACCEL	Go to step 3.	Go to step 4.
	Measure voltage between harness connector	switch is not pressed: 0 V, and		
	terminal and chassis ground when RESUME/	when RESUME/ACCEL switch		
	ACCEL switch is pressed and not pressed.	is pressed: 10 V		
	(P04) No. 0 (1) Chassis ground ( ):			
	(B94) No. 9 (+) — Chassis ground (-).			
	Is the measured value less than the specified			
	pressed?			
	Does the measured value exceed the specified			
	value, when RESUME/ACCEL switch is			
	pressed?			
3	CHECK CANCEL SWITCH CIRCUIT.	When CANCEL switch is not	Cruise control	Go to step 4.
	Measure voltage between harness connector	pressed: 0 V, and when CAN-	command switch	
	terminal and chassis ground when CANCEL	CEL switch is pressed: 10 V	circuit is OK.	
	switch is pressed and not pressed.			
	Connector & terminal			
	(B94) No. 9 (+) — Chassis ground (–):			
	(B94) No. 10 (+) — Chassis ground (–):			
	Is the measured value less than the specified			
	value, when CANCEL switch is not pressed?			
	Does the measured value exceed the specified			
4		Horn coundo	Ca ta atan E	<ul> <li>Chaok fund No.</li> </ul>
4		Horn sounds.	Go to step <b>5.</b>	<ul> <li>Check fuse No.</li> <li>6 (in main fuse</li> </ul>
	Check horn operation			box)
	Does horn sound?			Check horn
				relay. <ref. td="" to<=""></ref.>
				COM-3, HORN
				RELAY, INSPEC-
				TION, Horn Sys-
				tem.>
				Check harness
				for open or short
				between cruise
				control command
5		Cruise control command	Chock barnasa	Poplace cruice
5		switch is OK	between cruise	control command
	Remove and check cruise control command		control command	switch.
	switch. <ref. cc-7.="" com-<="" control="" cruise="" td="" to=""><td></td><td>switch and cruise</td><td></td></ref.>		switch and cruise	
	mand Switch.>		control module.	
	Is cruise control command switch OK?			

# DIAGNOSTICS CHART WITH SYMPTOM

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

### E: CHECK STOP LIGHT SWITCH AND BRAKE SWITCH

**TROUBLE SYMPTOM:** Cruise control cannot be set.

WIRING DIAGRAM:



	Step	Value	Yes	No
1	<ul> <li>CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.</li> <li>1) Turn ignition switch OFF.</li> <li>2) Disconnect stop light switch and brake switch harness connector.</li> <li>3) Turn ignition switch ON.</li> <li>4) Turn cruise control main switch ON.</li> <li>5) Measure voltage between harness connec- tor terminal and chassis ground.</li> <li>Connector &amp; terminal (B65) No. 2 (+) — Chassis ground (-): Does the measured value exceed the spec- ified value?</li> </ul>	10 V	Go to step <b>2</b> .	<ul> <li>Check fuse No.</li> <li>16 (in fuse &amp; relay box).</li> <li>Check harness for open or short between stop light/ brake switch and fuse &amp; relay box.</li> </ul>
2	CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT. Measure voltage between harness connector terminal and chassis ground. <i>Connector &amp; terminal</i> (B65) No. 1 (+) — Chassis ground (–): Does the measured value exceed the specified value?	10 V	Go to step <b>3</b> .	<ul> <li>Check harness for open or short between stop light/ brake switch and cruise control module (AT).</li> <li>Check clutch switch and the cir- cuit (MT).</li> </ul>
3	<ul> <li>CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.</li> <li>1) Turn cruise control main switch and ignition switch OFF.</li> <li>2) Disconnect cruise control module harness connector.</li> <li>3) Measure resistance between cruise control module harness connector terminal and stop light switch and brake switch harness connector terminal.</li> <li>Connector &amp; terminal (B94) No. 20 — (B65) No. 3: (B94) No. 16 — (B65) No. 4: Is the measured value less than the speci- fied value?</li> </ul>	10 Ω	Go to step <b>4</b> .	Repair harness.
4	CHECK STOP LIGHT SWITCH AND BRAKE SWITCH. Remove and check stop light switch and brake switch. <ref. and="" brake<br="" cc-8,="" stop="" to="">Switch.&gt; Are stop light switch and brake switch OK?</ref.>	Stop light switch and brake switch are OK.	Stop light switch and brake switch circuit are OK.	Replace stop light switch and brake switch.

## DIAGNOSTICS CHART WITH SYMPTOM

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

### F: CHECK CLUTCH SWITCH (MT) TROUBLE SYMPTOM:

Cruise control cannot be set. WIRING DIAGRAM:



Step	Value	Yes	No
<ol> <li>CHECK CLUTCH SWITCH CIRCUIT.         <ol> <li>Turn ignition switch OFF.</li> <li>Disconnect clutch switch harness connector.</li> <li>Turn ignition switch ON.</li> <li>Turn cruise control main switch ON.</li> <li>Turn cruise control main switch ON.</li> <li>Measure voltage between harness connector tor terminal and chassis ground.</li> <li>Connector &amp; terminal</li></ol></li></ol>	10 V -	Go to step 2.	Check harness for open or short between clutch switch and cruise control module.
<ul> <li>2 CHECK CLUTCH SWITCH CIRCUIT.         <ol> <li>Turn cruise control main switch and ignition switch OFF.</li> <li>Disconnect stop light switch and brake switch harness connector.</li> <li>Measure resistance between clutch switch harness connector terminal and stop light switch and brake switch harness connector terminal.</li> </ol> </li> <li>Connector &amp; terminal         <ol> <li>(B107) No. 1 — (B65) No. 1:</li> <li>Is the measured value less than the specified value?</li> </ol> </li> </ul>	10 Ω	Go to step 3.	Repair harness.
3 CHECK CLUTCH SWITCH. Remove and check clutch switch. <ref. cc<br="" to="">9, Clutch Switch.&gt; Is clutch switch OK?</ref.>	Clutch switch is OK. -	Clutch switch cir- cuit is OK.	Replace clutch switch.

# DIAGNOSTICS CHART WITH SYMPTOM

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

### G: CHECK INHIBITOR SWITCH (AT)

TROUBLE SYMPTOM:

Cruise control cannot be set. **WIRING DIAGRAM:** 



	Step	Value	Yes	No
1	<ul> <li>CHECK INHIBITOR SWITCH CIRCUIT.</li> <li>1) Turn ignition switch OFF.</li> <li>2) Disconnect inhibitor switch harness connector.</li> <li>3) Turn ignition switch ON.</li> <li>4) Turn cruise control main switch ON.</li> <li>5) Measure voltage between harness connector terminal and chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(T7) No. 12 (+) — Chassis ground (-):</li> <li>Does the measured value exceed the specified value?</li> </ul> </li> </ul>	10 V	Go to step 2.	Check harness for open or short between inhibitor switch and cruise control module.
2	<ul> <li>CHECK INHIBITOR SWITCH CIRCUIT.</li> <li>1) Turn cruise control main switch and ignition switch OFF.</li> <li>2) Disconnect starter motor harness connector.</li> <li>3) Measure resistance between inhibitor switch harness connector terminal and chassis ground.</li> <li>Connector &amp; terminal         <ul> <li>(T7) No. 7 — (B14) No. 1:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	10 Ω	Go to step 3.	Repair harness.
3	CHECK INHIBITOR SWITCH. Remove and check inhibitor switch. <ref. to<br="">CC-10, Inhibitor Switch.&gt; Is inhibitor switch OK?</ref.>	Inhibitor switch is OK.	Inhibitor switch cir- cuit is OK.	Replace inhibitor switch.

# LIST OF DIAGNOSTIC TROUBLE CODE (DTC) CRUISE CONTROL SYSTEM (DIAGNOSTICS)

# 7. List of Diagnostic Trouble Code (DTC)

# A: LIST

 $igodoldsymbol{ heta}$ 

DTC	Item	Contents of diagnosis	Reference
21	Inner relay is seized.	Cruise control module inner relay is seized when main switch is OFF.	<ref. 21,="" 24,="" 25="" 2a="" and="" cc-27,="" cruise<br="" dtc="" to="">CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Trouble Code.&gt;</ref.>
22	Vehicle speed sensor	Vehicle speed signal changes more than 10 km/h (6 MPH) within 350 ms.	<ref. 22="" cc-28,="" dtc="" sen-<br="" speed="" to="" vehicle="">SOR, Diagnostics Chart with Trouble Code.&gt;</ref.>
24	Cruise control module is abnormal.	Two vehicle speed values stored in cruise control module memory are not the same.	<ref. 21,="" 24,="" 25="" 2a="" and="" cc-27,="" cruise<br="" dtc="" to="">CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Trouble Code.&gt;</ref.>
25	Cruise control module is abnormal.	Two output values stored in cruise control module memory are not the same.	<ref. 21,="" 24,="" 25="" 2a="" and="" cc-27,="" cruise<br="" dtc="" to="">CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Trouble Code.&gt;</ref.>
28	Wiring harness opened.	Open wiring harness circuit is detected via control module relay when main switch is ON.	<ref. 28="" cc-31,="" dtc="" harness<br="" to="" wiring="">OPENED., Diagnostics Chart with Trouble Code.&gt;</ref.>
35	Motor drive system is abnormal.	<ul> <li>Motor output circuit is open or shorted.</li> <li>Motor drive circuit is open or shorted.</li> </ul>	<ref. 35="" 36="" actuator<br="" and="" cc-32,="" dtc="" to="">MOTOR, Diagnostics Chart with Trouble Code.&gt;</ref.>
36	Trouble of motor turning speed	Motor turning speed is low.	<ref. 35="" 36="" actuator<br="" and="" cc-32,="" dtc="" to="">MOTOR, Diagnostics Chart with Trouble Code.&gt;</ref.>
37	Motor clutch drive system is abnormal.	<ul> <li>Motor clutch output circuit is open or shorted.</li> <li>Motor clutch drive circuit is open or shorted.</li> </ul>	<ref. 37="" actuator="" cc-34,="" dtc="" motor<br="" to="">CLUTCH, Diagnostics Chart with Trouble Code.&gt;</ref.>
38	Motor drive shaft does not engage properly.	Motor drive gear engagement is not properly adjusted.	<ref. 38="" cc-36,="" drive="" dtc="" motor="" shaft<br="" to="">DOES NOT ENGAGE PROPERLY., Diagnostics Chart with Trouble Code.&gt;</ref.>
39	Motor is overloaded.	Current flows through motor more frequently than under normal conditions.	<ref. 39="" cc-36,="" dtc="" is="" motor="" over-<br="" to="">LOADED., Diagnostics Chart with Trouble Code.&gt;</ref.>
2A	Cruise control module is abnormal.	Cruise control module self-diagnosis function senses abnormality.	<ref. 21,="" 24,="" 25="" 2a="" and="" cc-27,="" cruise<br="" dtc="" to="">CONTROL MODULE BUILT-IN RELAY, CPU RAM, Diagnostics Chart with Trouble Code.&gt;</ref.>



## DIAGNOSTICS CHART WITH TROUBLE CODE

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

# 8. Diagnostics Chart with Trouble Code

### A: DTC 21, 24, 25 AND 2A CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM

### DIAGNOSIS:

• Poor welding of built-in relay of cruise control module.

• Failure of built-in CPU RAM of cruise control module.

### TROUBLE SYMPTOM:

• Cruise control is canceled and memorized cruise speed is also canceled.

• Once cruise control is canceled, cruise control cannot be set until the ignition switch and cruise control main switch turns OFF, and then turns ON again.

### NOTE:

Check input/output signal and vehicle speed signal with select monitor. When signals are in good condition, failure is in cruise control module. (Check power supply and ground conditions of cruise control module.)

### DIAGNOSTICS CHART WITH TROUBLE CODE

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

### **B: DTC 22 VEHICLE SPEED SENSOR**

**DIAGNOSIS:** 

Disconnection or short circuit of vehicle speed sensor system. **TROUBLE SYMPTOM:** Cruise control cannot be set. (Cancelled immediately.) **WIRING DIAGRAM:** 



# DIAGNOSTICS CHART WITH TROUBLE CODE CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Value	Yes	No
1 CHECK TRANSMISSION TYPE.	Transmission type is MT.	Go to step 2.	Go to step 6.
Is the transmission type MT?			
<ul> <li>2 CHECK HARNESS BETWEEN BATTERY AND VEHICLE SPEED SENSOR.         <ol> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect harness connector from vehicle speed sensor.</li> <li>3) Turn ignition switch to ON.</li> <li>4) Measure voltage between vehicle speed sensor harness connector terminal and chassis ground.</li> </ol> </li> <li>Connector &amp; terminal         <ol> <li>(B17) No. 3 (+) — Chassis ground (-):</li> <li>Does the measured value exceed the specified value?</li> </ol> </li> </ul>	10 V	Go to step 3.	Check harness for open or short between ignition relay and vehicle speed sensor.
<ul> <li>3 CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND VEHICLE SPEED SENSOR.         <ol> <li>Turn ignition switch to OFF.</li> <li>Disconnect harness connector from cruise control module.</li> <li>Measure resistance between vehicle speed sensor harness connector terminal and cruise control module harness connector terminal.</li> <li>Connector &amp; terminal (B17) No. 1 — (B94) No. 19: Is the measured value less than the specified value?</li> </ol> </li> </ul>	10 Ω	Go to step 4.	Repair harness.
<ul> <li>CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND. Measure resistance between vehicle speed sensor harness connector terminal and engine ground.</li> <li>Connector &amp; terminal (B17) No. 2 (+) — Engine ground (-): Is the measured value less than the specified value?</li> </ul>	10 Ω	Go to step 5.	Repair harness.
<ul> <li>5 CHECK VEHICLE SPEED SENSOR.         <ol> <li>Connect harness connector to vehicle speed sensor.</li> <li>Lift-up the vehicle and support with safety stands.</li> <li>Drive the vehicle at speed greater than 20 km/h (12 MPH).</li> </ol> </li> <li>Warning:         <ol> <li>Be careful not to be caught up by the running wheels.</li> <li>Measure voltage between cruise control module harness connector terminal and chassis ground.</li> <li>Connector &amp; terminal (B94) No. 19 (+) — Chassis ground (-): Is the measured value same as the specified value?</li> </ol> </li> </ul>	$0 \leftrightarrow 5 V$	Replace cruise control module. <ref. cc-5,<br="" to="">Cruise Control Module.&gt;</ref.>	Replace vehicle speed sensor.

# DIAGNOSTICS CHART WITH TROUBLE CODE

	Step	Value	Yes	No
6	<ul> <li>CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND TRANSMISSION CONTROL MODULE.</li> <li>1) Turn ignition switch to OFF.</li> <li>2) Disconnect harness connector from transmission control module and cruise control module.</li> <li>3) Measure resistance between cruise control module harness connector terminal and transmission control module harness connector terminal.</li> <li>Connector &amp; terminal Without VDC:         <ul> <li>(B94) No. 19 — (B55) No. 13:</li> <li>With VDC:</li> <li>(B94) No. 19 — (B56) No. 17:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	10 Ω?	Go to step 7.	Repair harness.
7	<ul> <li>CHECK TRANSMISSION CONTROL MOD-ULE.</li> <li>1) Connect harness connector to transmission control module.</li> <li>2) Lift-up the vehicle and support with safety stands.</li> <li>3) Drive the vehicle faster than 10 km/h (6 MPH).</li> <li>Warning: Be careful not to be caught by the running wheels.</li> <li>4) Measure voltage between transmission</li> </ul>	0 ←→ 5 V	Replace cruise control module. <ref. cc-5,<br="" to="">Cruise Control Module.&gt;</ref.>	Replace transmis- sion control mod- ule. <ref. at-<br="" to="">75, Transmission Control Module (TCM).&gt;</ref.>
	<ul> <li>A) Measure voltage between transmission control module harness connector terminal and chassis ground.</li> <li>Connector &amp; terminal Without VDC:         <ul> <li>(B55) No. 13 (+) — Chassis ground (-):</li> <li>With VDC:                 (B56) No. 17 (+) — Chassis ground (-):</li> <li>Is the measured value same as the specified value?</li> </ul> </li> </ul>			

### DIAGNOSTICS CHART WITH TROUBLE CODE CRUISE CONTROL SYSTEM (DIAGNOSTICS)

## C: DTC 28 WIRING HARNESS OPENED.

	Step	Value	Yes	No
1	<b>CHECK BATTERY.</b> Measure battery specific gravity of electrolyte. Does the measured value exceed the specified value?	1.250	Go to step 2.	Charge or replace battery. Go to step 2.
2	CHECK FUSES, CONNECTORS AND HAR- NESSES. Check the condition of the main and other fuses, and harnesses and connectors. Also check for proper grounding. Is there anything unusual about the appear- ance of main fuse, fuse, harness, connector and grounding?	Fuse, harness, connector and grounding are OK.	End of inspection.	Repair or replace faulty parts.

# DIAGNOSTICS CHART WITH TROUBLE CODE

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

# D: DTC 35 AND 36 ACTUATOR MOTOR

**DIAGNOSIS:** Open or poor contact of cruise control actuator motor. **TROUBLE SYMPTOM:** Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:





# DIAGNOSTICS CHART WITH TROUBLE CODE CRUISE CONTROL SYSTEM (DIAGNOSTICS)

	Step	Value	Yes	No
1	<ul> <li>CHECK POWER SUPPLY.</li> <li>1) Turn ignition switch OFF.</li> <li>2) Disconnect harness connector from cruise control actuator.</li> <li>3) Turn ignition switch ON.</li> <li>4) Turn cruise control main switch ON.</li> <li>5) Measure voltage between cruise control actuator harness connector terminal and chassis ground.</li> <li>Terminals         <ul> <li>(B7) No. 4 (+) — Chassis ground (-):</li> <li>Does the measured value exceed the specified value?</li> </ul> </li> </ul>	10 V	Go to step 2.	Check harness for open or short between cruise control module and cruise control actuator.
2	<ul> <li>CHECK GROUND CIRCUIT OF ACTUATOR.</li> <li>1) Turn ignition switch and cruise control main switch OFF.</li> <li>2) Measure resistance between cruise control actuator harness connector terminal and chassis ground.</li> <li>Terminals     <ul> <li>(B7) No. 6 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	10 Ω	Go to step <b>3</b> .	Repair harness.
3	MEASURE RESISTANCE OF ACTUATOR. Measure resistance of cruise control actuator motor. Terminals No. 4 — No. 1: No. 4 — No. 2: No. 4 — No. 5: Is the measured value same as the specified value?	Approximately 5 Ω	Go to step 4.	Replace cruise control actuator. <ref. cc-4,<br="" to="">Actuator.&gt;</ref.>
4	<ul> <li>CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.</li> <li>1) Disconnect harness connector from cruise control module.</li> <li>2) Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal.</li> <li>Connector &amp; terminal (B7) No. 1 — (B94) No. 7: Is the measured value less than the speci- fied value?</li> </ul>	10 Ω	Go to step <b>5</b> .	Repair harness.
5	CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE. Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. <i>Connector &amp; terminal</i> <i>(B7) No. 5 — (B94) No. 5:</i> Is the measured value less than the specified value?	10 Ω	Replace cruise control module. <ref. cc-5,<br="" to="">Cruise Control Module.&gt;</ref.>	Repair harness.

# DIAGNOSTICS CHART WITH TROUBLE CODE

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

## E: DTC 37 ACTUATOR MOTOR CLUTCH

**DIAGNOSIS:** 

Open or poor contact of cruise control actuator motor clutch. **TROUBLE SYMPTOM:** Cruise control cannot be set. (Cancelled immediately.)

WIRING DIAGRAM:





# DIAGNOSTICS CHART WITH TROUBLE CODE CRUISE CONTROL SYSTEM (DIAGNOSTICS)

Step	Value	Yes	No
<ol> <li>CHECK POWER SUPPLY.         <ol> <li>Turn ignition switch OFF.</li> <li>Disconnect harness connector from cruise control actuator.</li> <li>Turn ignition switch ON.</li> <li>Turn cruise control main switch ON.</li> <li>Turn cruise control main switch ON.</li> <li>Measure voltage between cruise control actuator harness connector terminal and chassis ground.</li> </ol> </li> <li>Terminals         <ol> <li>(B7) No. 4 (+) — Chassis ground (-): Does the measured value exceed the specified value?</li> </ol> </li> </ol>	10 V	Go to step 2.	Check harness for open or short between cruise control module and cruise control actuator.
<ul> <li>2 CHECK GROUND CIRCUIT OF ACTUATOR.</li> <li>1) Turn ignition switch and cruise control main switch OFF.</li> <li>2) Measure resistance between cruise control actuator harness connector terminal and chassis ground.</li> <li>Terminals         <ul> <li>(B7) No. 6 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	10 Ω	Go to step 3.	Repair harness.
3 MEASURE RESISTANCE OF ACTUATOR CLUTCH. Measure resistance of cruise control actuator clutch. <i>Terminals</i> <i>No. 3 — No. 6:</i> Is the measured value same as the specified value?	Approximately 39 Ω	Go to step 4.	Replace cruise control actuator. <ref. cc-4,<br="" to="">Actuator.&gt;</ref.>
<ul> <li>CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.         <ol> <li>Disconnect harness connector from cruise control module.</li> <li>Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal.</li> <li>Connector &amp; terminal (B7) No. 2 — (B94) No. 13: Is the measured value less than the specified value?</li> </ol> </li> </ul>	10 Ω	Go to step <b>5</b> .	Repair harness.
<ul> <li>5 CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE. Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. Connector &amp; terminal (B7) No. 3 — (B94) No. 14: Is the measured value less than the specified value?</li> </ul>	10 Ω	Replace cruise control module. <ref. cc-5,<br="" to="">Cruise Control Module.&gt;</ref.>	Repair harness.

### DIAGNOSTICS CHART WITH TROUBLE CODE CRUISE CONTROL SYSTEM (DIAGNOSTICS)

## F: DTC 38 MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY.

Step	Value	Yes	No
<ol> <li>CHECK ACTUATOR MOTOR.         <ol> <li>Turn ignition switch to OFF.</li> <li>Disconnect harness connector from cruise control actuator.</li> <li>Remove cruise control actuator from mounting bracket.</li> <li>Pull cable by hand to check for looseness or status of inner gear engagement. Are foreign particles caught in inner gear or does inner gear engage and disengage improperly?</li> </ol> </li> </ol>	Cable and inner gear are OK.	Replace cruise control actuator. <ref. cc-4,<br="" to="">Actuator.&gt;</ref.>	Check the cruise control cable adjustment. <ref. to CC-5, CABLE FREE PLAY, INSPECTION, General Descrip- tion.&gt;</ref. 

### G: DTC 39 MOTOR IS OVERLOADED.

Step	Value	Yes	No
<ol> <li>CHECK THE OPERATING CURRENT TO AC- TUATOR MOTOR.         <ol> <li>Connect Subaru Select Monitor to data link connector.</li> <li>Try to drive the vehicle while operating the cruise control system.</li> <li>Measure the operation current to the cruise control actuator motor. Is the measured value less than the speci- fied value?</li> </ol> </li> </ol>	10 A	Replace cruise control module. <ref. cc-5,<br="" to="">Cruise Control Module.&gt;</ref.>	Check the power supply circuit. <ref. cc-14,<br="" to="">CHECK POWER SUPPLY, Diag- nostics Chart with Symptom.&gt;</ref.>

### **GENERAL DESCRIPTION**

#### ENTERTAINMENT

### 1. General Description

### A: CAUTION

• Before disassembling or reassembling parts, always disconnect battery ground cable. When replacing radio, control module, and other parts provided with memory functions, record memory contents before disconnecting the battery ground cable. Otherwise, the memory will be erased.

• Reassemble in reverse order of disassembly, unless otherwise indicated.

• Adjust parts to the given specifications.

• Connect connectors and hoses securely during reassembly.

• After reassembly, make sure functional parts operate smoothly.

### **B: PREPARATION TOOL**

#### 1. GENERAL TOOLS

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resis- tance and voltage.
Conductive Silver Composition (DUPONT NO. 4817 or equiva- lent)	Used for repairing antenna wire.



# **RADIO SYSTEM**

ENTERTAINMENT

# 2. Radio System

# A: SCHEMATIC

### 1. AUDIO SYSTEM

<Ref. to WI-78, SCHEMATIC, Audio System.>

### **B: INSPECTION**

Symptom	Repair order
No power coming in (No display and no sound from speakers)	(1) Check fuse and power supply for radio.
	(2) Check radio ground.
	(3) Remove radio for repair.
A specific speaker does not operate.	(1) Check speaker.
	(2) Check output circuit between radio and speaker.
Radio generates noise with engine running.	(1) Check radio ground.
	(2) Check generator.
	(3) Check ignition coil.
	(4) Remove radio for repair.
AM and FM modes are weak or noisy.	(1) Check antenna.
	(2) Check antenna amplifier.
	(3) Check radio ground.
	(4) Remove radio for repair.



### **CIGARETTE LIGHTER SYSTEM**

### ENTERTAINMENT

# 3. Cigarette Lighter System

# A: SCHEMATIC

### **1. CIGARETTE LIGHTER**

<Ref. to WI-134, SCHEMATIC, Front Accessory Power Supply System.>



# 4. Radio Body

### A: REMOVAL

1) Disconnect ground cable from battery.

2) Remove hook (D) and then remove front cover

(A).3) Remove two screws (B) and hook (D), then remove center panel (C) while disconnecting connector.



4) Remove fitting screws, and slightly pull radio out from center console.



5) Disconnect electric connectors and antenna feeder cord and then disconnect heater control unit.

### **B: INSTALLATION**

Install in the reverse order of removal.
# **FRONT SPEAKER**

ENTERTAINMENT

# 5. Front Speaker

- A: REMOVAL
  1) Disconnect ground cable from battery.
  2) Remove front door trim. <Ref. to EI-32, REMOV-</li>
- AL, Front Door Trim.>
- 3) Remove front speaker mounting screws.



4) Disconnect harness connector and remove front speaker.

#### **B: INSTALLATION**

# FRONT TWEETER

ENTERTAINMENT

# 6. Front Tweeter

# A: REMOVAL

- 1) Disconnect ground cable from battery.
- 2) Remove gusset cover.



3) Disconnect harness connector and remove tweeter.

#### **B: INSTALLATION**









# **REAR SPEAKER**

ENTERTAINMENT

# 7. Rear Speaker

### A: REMOVAL

- 1) Disconnect ground cable from battery.
- 2) Remove rear door trim. <Ref. to EI-33, REMOV-
- ÁL, Rear Door Trim.>
- 3) Remove rear speaker mounting screws.



4) Disconnect harness connector and remove rear speaker.

## **B: INSTALLATION**



# **REAR TWEETER**

ENTERTAINMENT

# 8. Rear Tweeter

### A: REMOVAL

1) Disconnect ground cable from battery.

2) Remove rear door trim. <Ref. to EI-33, REMOV-

ÁL, Rear Door Trim.>

3) Remove tweeter mounting screws.

4) Disconnect harness connector and remove

#### tweeter.

#### **B: INSTALLATION**



#### ENTERTAINMENT

# 9. Woofer

# A: REMOVAL

#### 1. SEDAN

- 1) Disconnect ground cable from battery.
- 2) Remove rear shelf trim. <Ref. to EI-48, Remov-
- al, Rear Shelf Trim.>
- 3) Remove woofer mounting screws.
- 4) Disconnect harness connector, and then remove woofer.

#### 2. WAGON

- 1) Disconnect ground cable from battery.
- 2) Remove hook (A) and then remove trim of woof-

er.



3) Remove woofer mounting screws.



4) Disconnect harness connector, and then remove woofer.

## **B: INSTALLATION**





# **SPEAKER AMPLIFIER**

ENTERTAINMENT

# **10.Speaker Amplifier**

A: REMOVAL 1) Disconnect ground cable from battery. 2) Remove passenger's seat. <Ref. to SE-7, RE-MOVAL, Front Seat.>

3) Disconnect harness connector.

4) Remove mounting nuts, and then detach speak-er amplifier.



**B: INSTALLATION** Install in the reverse order of removal.

# ANTENNA

#### ENTERTAINMENT

# 11.Antenna

## A: INSPECTION

Measure resistance between antenna terminal and each antenna wire.

If an antenna wire is OK, resistance will be less than 1  $\Omega$ . If an antenna wire is broken, resistance will be more than 1 M $\Omega$ .

#### NOTE:

When checking continuity, wind a piece of tin foil around the tip of the tester probe (A) and press the foil (B) against the wire (C) with your finger.



To locate the broken point, move the probe along the antenna wire.



#### **B: REPAIR**

1) Clean antenna wire and the surrounding area with a cloth dampened by alcohol.

2) Paste a thin masking film (B) on glass along the broken wire.

3) Deposit conductive silver composition (C) (DU-PONT NO. 4817) on the broken portion (A) with a drawing pen.



4) Dry out the deposited portion.

5) After repair has been completed, measure resistance in the repaired wire.



#### **ANTENNA AMPLIFIER**

# **12.Antenna Amplifier** A: REMOVAL

#### 1. SEDAN

1) Disconnect ground cable from battery.

2) Remove rear pillar upper trim. <Ref. to EI-43, SEDAN, REMOVAL, Rear Quarter Trim.>

3) Disconnect harness connector and terminal.

4) Remove mounting screw and detach antenna amplifier.



#### 2. WAGON

1) Disconnect ground cable from battery.

2) Remove rear quarter lower trim. <Ref. to EI-43, WAGON, REMOVAL, Rear Quarter Trim.>

3) Disconnect harness connector and terminal.

4) Remove mounting screw and detach antenna amplifier.



# **B: INSTALLATION**

Install in the reverse order of removal.

# C: INSPECTION 1. SEDAN

Measure antenna amplifier resistance.



Terminal No.	Standard
1–a and Amplifier body	More than 100 k $\Omega$
1-b and Amplifier body	Less than 1 $\Omega$
2 and Amplifier body	More than 100 k $\Omega$
3 and Amplifier body	More than 100 k $\Omega$
4 and Amplifier body	More than 100 k $\Omega$
5 and Amplifier body	More than 100 k $\Omega$
1 and 3	Less than 1 $\Omega$

## 2. WAGON

Measure antenna amplifier resistance.



Terminal No.	Standard
1 and Amplifier body	More than 100 k $\Omega$
2 and Amplifier body	More than 100 k $\Omega$
3 and Amplifier body	More than 100 k $\Omega$
4 and Amplifier body	More than 100 k $\Omega$

# **CIGARETTE LIGHTER**

#### ENTERTAINMENT

# 13.Cigarette Lighter

### A: REMOVAL

 Disconnect ground cable from battery.
 Remove center panel. <Ref. to ET-5, REMOV-</li> ÁL, Radio Body.>

3) Disconnect harness connectors and remove cigarette lighter.



**B: INSTALLATION** Install in the reverse order of removal.



# **GENERAL DESCRIPTION**

EXTERIOR/INTERIOR TRIM

# **1. General Description**

# A: COMPONENT

1. FRONT BUMPER



- (1) Bumper face(2) E/A form
- (5) Side bracket
- (6) Cover (Tie down hook)
- (7) Cover
- Tightening torque: N·m (kgf-m, ft-lb) T: 33 (3.4, 25)

- (3) Bumper beam
- (4) Side stay

EI-2

### 2. REAR BUMPER (SEDAN)



- (1) Bumper beam
- (2) Upper beam
- (3) Resin beam
- (4) Side bracket
- (5) Bumper face
- (6) Hook (7) Side stay
- Tightening torque: N·m (kgf-m, ft-lb) T: 95 (9.7, 70)

# **GENERAL DESCRIPTION**

#### EXTERIOR/INTERIOR TRIM

## 3. REAR BUMPER (WAGON)



- (1) Bumper beam
- (2) Resin beam(3) Side bracket
- (4) Bumper face
- (5) Hook (6) Side stay

Tightening torque: N·m (kgf-m, ft-lb) T: 95 (9.7, 70)

#### 4. SIDE PROTECTOR



- (1) Side protector (Front fender)
- (2) Side protector (Front door)
- (3) Side protector (Rear door)
- (4) Side protector (Rear quarter)
- (5) Side garnish (Front fender)
- (6) Side garnish (Front door)
- (7) Side garnish (Rear door)
- (8) Side garnish (Rear quarter)
- (8) Side garnish (Side sill)

# **GENERAL DESCRIPTION**

#### 5. DOOR TRIM



- (1) Gusset cover (2) Bracket
- (5) Pad
- (6) Trim panel

(8) Weatherstrip lower

(7) Power window switch cover

- (9) Upper trim
- (10) Side trim
- (11) Lower trim

(3) Weatherstrip upper (4) Clip

- EI-6

### 6. INNER TRIM (SEDAN)



- (1) Front pillar upper trim
- (2) Center pillar upper trim
- (3) Rear pillar upper trim
- (4) Rear shelf trim
- (5) Rear bulk trim
- (6) Trunk rear trim
- (7) Trunk side trim
- (8) Rear pillar lower trim
- (9) Side sill rear upper cover
- (10) Center pillar lower trim
- (11) Side sill rear lower cover
- (12) Front pillar lower trim
- (13) Side sill front lower cover
- (14) Pad stopper A pillar
- (15) Pad B pillar upper

# **GENERAL DESCRIPTION**

## 7. INNER TRIM (WAGON)



- (1) Front pillar upper trim
- (2) Center pillar upper trim
- (3) Rear pillar upper trim
- (4) Rear rail trim
- (5) Pocket(6) Rear quarter lower trim
- (7) Lid
- (8) Rear skirt trim
- (9) Hook
- (10) Side sill rear upper cover
- (11) Center pillar lower trim
- (12) Side sill rear lower cover
- (13) Front pillar lower trim
- (14) Side sill front lower cover
- (15) Pad stopper A pillar
- (16) Pad B pillar upper

#### 8. INSTRUMENT PANEL



- (1) Pad & frame
- (2) Grille side (D)
- (3) Hook
- (4) Grille side (P)
- (5) Grille vent (P)
- (6) Glove box panel
- (7) Glove box lid
- (8) Center panel side (D)
- (9) Center panel side (P)
- (10) Front cover (AT)

- (11) Front cover (MT)
- (12) Rear cup holder
- (13) Console box
- (14) Cap
- (15) Console lid (16) Console cover
- (17) Tray
- (18) Ash tray (19) Lower cover
- (20) Center panel

- (21) Switch panel
- (22) Meter visor
- (23) Grille vent (D)
- (24) Grille center

Tightening torque: N·m (kgf-m, ft-lb) T: 7 (0.7, 5.1)

## EI-9

# **GENERAL DESCRIPTION**

EXTERIOR/INTERIOR TRIM

## 9. INNER ACCESSORIES



(1) Hook(2) Sun visor

- (3) Pad side rail(4) Assist grip

# **GENERAL DESCRIPTION**

#### EXTERIOR/INTERIOR TRIM

# **B: PREPARATION TOOL**

TOOL NAME	REMARKS	
Clip remover	Used for removal of trim.	
Adhesive remover	Used for removal of side protector.	
Primer	Used for installation of side protector.	
Infrared lamp	Used for disassembly/assembly of side protector.	
Tow-sided tape	Used for installation of side protector.	
TORX® T30	Used for disassembly/assembly of crossbar.	

# **FRONT GRILLE**

EXTERIOR/INTERIOR TRIM

# 2. Front Grille

# A: REMOVAL

Open hood.
 Loosen bolts and nuts to remove front grill.



# **B: INSTALLATION**

Install in the reverse order of removal.

Tightening torque: A: 4.4±1.5 N·m (0.4±0.1 kgf-m, 3.2±1.0 ft-lb) B: 7.0±2.0 N·m (0.7±0.2 kgf-m, 5.1±1.4 ft-lb)

# **FRONT UNDER COVER**

#### EXTERIOR/INTERIOR TRIM

# 3. Front Under Cover

# A: REMOVAL

1) Lift-up the vehicle.
 2) Loosen bolts and clips to remove under cover.



**B: INSTALLATION** Install in the reverse order of removal.

Tightening torque: 18.4 N⋅m (1.88 kgf-m, 13.6 ft-lb)

EXTERIOR/INTERIOR TRIM

# 4. Front Bumper

#### A: REMOVAL

CAUTION:

• Handle bumper carefully to avoid damage to bumper face.

• Do not damage body during removal or installation of bumper.

• To avoid damage to bumper, lay removed bumper on sheet spread on the floor. Do not lay it directly on the floor.

1) Open hood.

2) Disconnect ground cable from battery.

3) Pull off front side of front mat guard to remove bolts.



4) Remove clip at bottom of bumper.



5) Remove clip (A), and pull out bumper slightly.6) Disconnect electrical connector of fog light to remove bumper.



7) Remove E/A FOAM from bumper beam. **CAUTION:** 

E/A FOAM is easy to brak. Do not apply excessive force to it during removal.



8) Remove bumper beam.



#### **B: INSTALLATION**

Install in the reverse order of removal.

**CAUTION:** 

• Handle bumper carefully to avoid damage to bumper face.

• Do not damage body during removal or installation of bumper.

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EI-2, FRONT BUMPER, COM-PONENT, General Description.>

# C: REPAIR

# **1. COATING METHOD FOR PP BUMPER**

Pro- cess No.	Process name	Job contents	
1	Bumper mounting	Set bumper (A) on paint worktable if required. Use paint worktable conforming to inner shape of bumper when possible (B).	(A) (B) EI-00132
2	Masking	Mask specified part (black base) with masking tape. Use masking tape for PP (example, Nichiban No. 533, etc.).	
3	Degreasing, clean- ing	Clean all parts to be painted with white gasoline,	, normal alcohol, etc. to remove dirt, oil, fat, etc.
4	Primer paint	Apply primer one to all parts to be painted, using	air gun. Use primer (clear).
5	Drying	Dry at normal temperature [10 to 15 min. at 20°C (68°F)]. In half-dried condition, PP primer paint is dissolved by solvent, e.g. thinner, etc. Therefore, if dust or dirt must be removed, use ordinary alcohol, etc.	
6	Top coat paint (I)	Solid color Use section (block) paint for top coat. • Paint in use (for each color): Solid paint Hardener PB Thinner T-301 • Mixing ratio: Main agent vs. hardener = 4:1 • Viscosity: 10 - 13 sec/20°C (68°F) • Film thickness: $35 - 45\mu$ • Spraying pressure: $245 - 343$ kPa (2.5 - 3.5 kg/cm <sup>2</sup> , 36 - 50 psi)	Metallic colorUse section (block) paint for top coat.• Paint in use (for each color):Metallic paintHardener PBThinner T-306• Mixing ratio:Main agent vs. hardener = 10 : 1• Viscosity: 10 - 13 sec/20°C (68°F)• Film thickness: 15 - 20 $\mu$ • Spraying pressure: 245 - 343 kPa(2.5 - 3.5 kg/cm², 36 - 50 psi)
7	Drying	Not required.	Dry at normal temperature [10 min. or more at 20°C (68°F)]. In half-dried condition, avoid dust, dirt.
8	Top coat paint (II)	Not required.	Apply a clear coat to parts with top coat paint (I), three times, at 5 — 7 minutes intervals. • Paint in use: Metallic paint Hardener PB Thinner T-301 • Mixing ratio: Clear vs. hardener = 6 : 1 • Viscosity: 14 — 16 sec/20°C (68°F) • Film thickness: 25 — $30\mu$ • Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm <sup>2</sup> , 36 — 50 psi)
9	Drying	60°C (140°F), 60 min. or 80°C (176°F), 30 min. If higher than 80°C (176°F), PP may be deformed. Keep maximum temperature of 80°C (176°F).	
10	Inspection	Paint check.	
11	Masking removal	Remove masking in process No. 2.	

EXTERIOR/INTERIOR TRIM

#### 2. REPAIR INSTRUCTIONS FOR COLORED PP BUMPER

#### NOTE:

All PP bumpers are provided with a grained surface, and if the surface is damaged, it cannot normally be restored to its former condition. Damage limited to shallow scratches that cause only a change in the lustre of the base material or coating, can be almost fully restored. Before repairing a damaged area, explain this point to the customer and get an understanding about the matter. Repair methods are outlined below, based on a classification of the extent of damage.

#### • Minor damage causing only a change in the lustre of the bumper due to a light touch

Almost restorable.

Process No.	Process name	Job contents	
1	Cleaning	Clean the area to be repaired using water.	
2	Sanding	Grind the repairing area with #500 sand paper in a "feathering" motion.	
		Resin section	Coated section
3 Finish	Finish	Repeatedly apply wax to the affected area using a soft cloth (such as flannel). Recom- mended wax: NITTO KASEI Soft 99 TIRE WAX BLACK, or equivalent.	Perform either the same operation as for the resin section or process No. 18 and subsequer operations in the "(3)" section, depending on
		Polish the waxed area with a clean cloth after 5 to 10 minutes.	the degree and nature of damage.

#### • Deep damage caused by scratching fences, etc.

A dent cannot be repaired but a whitened or swelled part can be removed.

Process No.	Process name	Job contents	
1	Cleaning	Clean damaged area with water.	
2	Removal of dam- aged area	Cut off protruding area, if any, due to collision, using a putty knife.	
3	Sanding	Grind the affected area with #100 to #500 sand paper.	
		Resin section	Coated section
4	Finish	Same as Process No. 3 in the "(1)" section.	Perform Process No. 12 and subsequent oper- ations in the "(3)" section.

#### • Deep damage such as a break or hole that requires filling

Much of the peripheral grained surface must be sacrificed for repair, and the degree of restoration is not really worth the expense. (The surface, however, will become almost flush with adjacent areas.) Recommended repair kit: PP Part Repair Kit (NRM)

Process No.	Process name	Job contents	
1	Bumper removal	Remove bumper as required.	
2	Part removal	Remove parts built into bumper as required.	
3	Bumper place- ment	Place bumper (A) on a paint worktable as required. It is recommended that contour of worktable accommodate internal shape of bumper (B).	
4	Surface prepara- tion	Remove dust, oil, etc. from areas to be repaired and surrounding areas, using a suitable solvent (NRM No. 900 Precleno, white gasoline, or alcohol).	
5	Cutting	If nature of damage are cracks or holes, cut a guide slit of 20 to 30 mm (0.79 to 1.18 in) in length along the crack or hole up to the bumper's base surface. Then, bevel or "veeout" the affected area using a knife or grinder. EI-00134 (1) 20 - 30 (0.79 - 1.18) 3 (0.12) (1) 3 (0.12) EI-00134	
6	Sanding (I)	Grind beveled surface with sand paper (#40 to #60) to smooth finish.	
7	Cleaning	Clean the sanded surface with the same solvent as used in Process No. 4.	
		Grind the salided surface with the same solvent as used if if focess (4.4). Grind the side just opposite the beveled area with sand paper (#40 to #60) and clean using a solvent. Temporarily spot-weld the side, using a PP welding rod and heater gun. (1) (2) (2) (3) EI-00135 (1) Welded spot (Use heater gun and PP welding rod) (2) PP base surface (3) Beveled section NOTE: • Do not melt welding rod until it flows out. This results in reduced strength. • Leave the welded spot unattended until it cools completely.	
8	Temporary weld- ing		

#### EXTERIOR/INTERIOR TRIM



#### EXTERIOR/INTERIOR TRIM

Process No.	Process name	Job contents	
18	Cleaning/ degreasing	Same as Process No. 12.	
		Solid color	Metallic color
19	Top coat (I)	Use a "block" coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 11 — 13 sec/20°C (68°F) • Coated film thickness: 40 — 50μ • Spraying thickness: 245 — 343 kPa (2.5 — 3.5 kg/cm <sup>2</sup> , 36 — 50 psi)	Use a "block" coating method. • Recommended paint: Suncryl (SC) No. 307 Flex Hardener SC Reducer (thinner) • Mixing ratio: 3 : 1 Suncryl (SC) vs. No. 307 Flex Hardener • Viscosity: 11 — 13 sec/20°C (68°F) • Coated film thickness: 20 — 30μ • Spraying thickness: 245 — 343 kPa (2.5 — 3.5 kg/cm <sup>2</sup> , 36 — 50 psi)
20	Leave unat- tended.	Not required.	Leave unattended at 20°C (68°F) for at least 10 minutes until the topcoated area is half-dry. NOTE: Be careful to keep dust or dirt from coming in contact with the affected area.
21	Top coat (II)	Not required.	<ul> <li>Apply a clear coat three times at an interval of 3 to 5 minutes.</li> <li>Recommended paint: SC710 Overlay Clear</li> <li>No. 307 Flex Hardener</li> <li>SC Reducer (thinner)</li> <li>Mixing ratio: 3 : 1</li> <li>Suncryl (SC) vs. No. 307 Flex Hardener</li> <li>Viscosity: 10 — 13 sec/20°C (68°F)</li> <li>Coated film thickness: 20 — 30μ</li> <li>Spraying pressure: 245 — 343 kPa</li> <li>(2.5 — 3.5 kg/cm<sup>2</sup>, 36 — 50 psi)</li> </ul>
		Allow the coated surface to dry at 20°C (68°F) for two hours or 60°C (140°F) for 30 minutes.	
22	Drying	NOTE: Do not allow the temperature to exceed 80°C (176°F) since this will deform the PP substrate.	
23	Inspection	Carefully check the condition of the repaired area.	
24	Masking removal	Remove masking tape applied in Process No. 11 and 13.	
25	Parts installation	Install parts on bumper in reverse order of removal.	
26	Bumper installa- tion	Install bumper.	

EXTERIOR/INTERIOR TRIM

# 5. Rear Bumper

# A: REMOVAL

# 1. SEDAN

#### CAUTION:

• Handle bumper carefully to avoid damage to bumper face.

• Do not damage body during removal or installation of bumper.

• To avoid damage to bumper, lay removed bumper on sheet spread on the floor. Do not lay it directly on the floor.

- 1) Lift-up the vehicle.
- 2) Remove bolts and clips.



3) Loosen clips to remove trunk rear trim.



4) Remove hook (A) to pull off rear side of trunk side trim.



5) Remove two nuts from each side to remove rear bumper.



6) Loosen clips to remove upper beam (A) from bumper face.



7) Remove resin beam.



#### **REAR BUMPER**

#### EXTERIOR/INTERIOR TRIM

## 2. WAGON

#### CAUTION:

• Handle bumper carefully to avoid damage to bumper face.

• Do not damage body during removal or installation of bumper.

• To avoid damage to bumper, lay removed bumper on sheet spread on the floor. Do not lay it directly on the floor.

1) Lift-up the vehicle.

2) Remove trailer hitch. <Ref. to EI-31, REMOVAL, Trailer Hitch.>

3) Remove bolts and clips.



4) Remove rear floor box. <Ref. to EI-43, REMOV-AL, Rear Quarter Trim.>

5) Pull off rear end of rear quarter lower trim to remove cap.



6) Loosen bolts to remove rear bumper.



7) Loosen clip (A) to remove bumper beam (B) from rear bumper face (C).



8) Remove resin beam from bumper beam.



# **B: INSTALLATION**

### 1. SEDAN

CAUTION:

• Handle bumper carefully to avoid damage to bumper face.

• Do not damage body during removal or installation of bumper.

1) Install in the reverse order of removal.

2) Fit slider (A) to guide pin (B) securely.



Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EI-3, REAR BUMPER (SE-DAN), COMPONENT, General Description.>

#### 2. WAGON

CAUTION:

• Handle bumper carefully to avoid damage to bumper face.

• Do not damage body during removal or installation of bumper.

1) Install in the reverse order of removal.

2) Fit slider (A) to guide pin (B) securely.



#### Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EI-4, REAR BUMPER (WAG-ON), COMPONENT, General Description.>

#### C: REPAIR

Refer to front bumper repair. <Ref. to EI-14, RE-MOVAL, Front Bumper.>

#### EXTERIOR/INTERIOR TRIM

# 6. Mud Guard

# A: REMOVAL

Jack-up the vehicle.
 Loosen screws and clips to remove mud guard.



### **B: INSTALLATION**

Insert hook into body, and tighten it with screw and clip.

# PROTECTOR

EXTERIOR/INTERIOR TRIM

# 7. Protector

# A: REMOVAL

## 1) Except OUTBACK:



## NOTE:

Paying attention to the position of clip (b). OUTBACK: Remove clip (a) and bolt (b).



#### NOTE:

Paying attention to the position of clip (c).

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2) Attach masking tape to outer perimeter of side protector. (If original side protector is re-installed, tape the entire protector.)

3) Insert fishing line [0.8 mm (0.031 in) dia.] (A) between side protector (B) and vehicle body. Cut (pull the line) through two-sided tape (C) along side protector on the body. Using a puller, remove clips from vehicle body while pulling side protector towards yourself as required.





NOTE:

• To increase adhesive remover strength, leave two-sided tape on body and side protector.

If two-sided tape is too thick, use a putty knife to cut it thin so that adhesive remover is ready for use.
If two-sided tape is hard to remove, heat to approximately 40°C (104°F).

4) Apply an even coat of adhesive remover to the two-sided tape.

## Recommended adhesive remover:

#### SUMITOMO 3M4000 or equivalent

#### CAUTION:

# Do not apply adhesive remover to lacquer base coated body panels.

5) Attach plastic wrap (A) to adhesive remover coated areas and heat to 40 to  $60^{\circ}$ C (104 to  $140^{\circ}$ F) for 5 to 10 minutes using an infrared lamp (B).

#### CAUTION:

Do not overheat until plastic wrap is somewhat white.



6) Using a plastic spatula, remove traces of twosided tape from body panel.

7) Remove masking tape and clean traces of twosided tape using a cloth dampened with white gasoline.

8) Similarly, clean traces of adhesive from two-sided tape on side protector.

#### CAUTION:

Make sure side protector is clean and free of adhesive remover. Clean if necessary.



## PROTECTOR

EXTERIOR/INTERIOR TRIM

#### **B: INSTALLATION**

1) Apply primer to original side protector (if used), and attach two-sided tape to side protectors as shown.

Two-sided tape: Thickness; 1.2 mm (0.047 in) Width; 5 mm (0.20 in)

Recommended primer: SUMITOMO 3MK-500 or equivalent

Recommended two-sided tape: SUMITOMO 3M4210 or equivalent



- (1) Front door part
- (2) Rear door part

2) Using an infrared lamp, heat body panel to 40 to  $60^{\circ}$ C (104 to 140°F) and rear surface of side protector to 20 to  $30^{\circ}$ C (68 to  $86^{\circ}$ F).

3) Remove tack paper from two-sided paper. While aligning clips with holes in body panel, attach two-sided tape to side protector and body panel with a force of more than 49 N (5 kgf, 11 lb) with roller. Do not allow air to enter mating surface of the two.

#### CAUTION:

• To maintain adhesive power, do not wash the vehicle for 24 hours after tape application.

Push clip in securely using hands.
 To prove the formation of a net use of the secure of the

(To prevent deformation, do not use excessive force.)

# 8. Cowl Panel

# A: REMOVAL

- 1) Open hood.
- 2) Remove wiper arm. <Ref. to WW-11, REMOV-AL, Front Wiper Arm.>
- 3) Remove front panel seal.



4) Remove clips (A) and cowl side panel (C). Loos-en clips (D) on six positions, and remove cowl side panel (B).



**B: INSTALLATION** Install in the reverse order of removal.

EXTERIOR/INTERIOR TRIM

# 9. Spoiler

 $igodoldsymbol{ heta}$ 

# A: REMOVAL

1) Open trunk lid.

2) Remove electrical connector (a) of high-mounted stop light.

3) Remove mounting nut of rear spoiler to remove rear spoiler.

#### CAUTION:

• When removing nut, do not drop it into trunk lid.

• Pay attention to avoid damage during removal or installation.



# **B: INSTALLATION**

1) Install in the reverse order of removal.

2) Clean mounting surfaces of trunk lid and spoiler before installation.


## SIDE SILL SPOILER

EXTERIOR/INTERIOR TRIM

# 10.Side Sill Spoiler

A: REMOVAL Remove clips (1 on front, 6 on lower, 1 on side), remove side spoiler.



**B: INSTALLATION** Install in the reverse order of removal.



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# 11.Crossbar

### A: REMOVAL

1) Remove  $\text{TORX}^{\text{(B)}}$  bolt T30 from each cross end support.

Rotate lower clamp of each end support about
 degrees downward to remove crossbar.



- (1) TORX<sup>®</sup> bolt T30
- (2) End support
- (3) Roof rail
- (4) Lower clamp

### CAUTION:

Do not damage roof panel during removal or installation.

#### **B: INSTALLATION**

1) Rotate lower clamp of each end support about 90 degrees downward.

2) Set crossbar so that front direction arrow on the right top face of crossbar points in the direction of vehicle front, and place crossbar end support at position 152.4 mm (6.00 in) back from joint of front roof rail support and roof rail.

#### Length A:

152.4 mm (6.00 in)



(1) Front of vehicle

3) Set crossbar so that front direction arrow on the right top face of crossbar points in the direction of vehicle front, and place crossbar end support at position 152.4 mm (6.00 in) back from joint of rear roof rail support and roof rail.

#### Length B: 152.4 mm (6.00 in)



(1) Front of vehicle

4) Tighten end support and lower clamp using TORX  $^{\mbox{\tiny \ensuremath{\mathbb{R}}}}$  bolt T30.

## **12.Trailer Hitch**

### A: REMOVAL

#### CAUTION:

# Because trailer hitch is heavy, two people are required to remove it.

1) Lift-up the vehicle.

2) Remove rubber cushion from body.

NOTE:

If rubber cushion is hard to remove, apply SUBARU CRC.

#### SUBARU CRC (Part No. 004301003)



3) Remove strap (a).

4) Remove bolts. Remove trailer hitch while lowering muffler.

### **B: INSTALLATION**

#### CAUTION:

Because trailer hitch is heavy, two people are required to remove it.

- 1) Install in the reverse order of removal.
- 2) For installation method of bolt, see the figure.



- (a) Bolt
- (b) Spring washer
- (c) Flat washer
- (d) Plate
- (e) Nut

### FRONT DOOR TRIM

EXTERIOR/INTERIOR TRIM

## 13.Front Door Trim

### A: REMOVAL

### CAUTION:

# Do not apply excessive force to clip. Otherwise the clip may be broken.

1) Pull up inner remote cover toward you to remove upper hook. Pull down it to remove lower claw. Remove inner remote cover.



2) Remove two hook (A) of switch panel to remove power window main switch.



3) Disconnect electrical connectors from power window main switch and mirror switch.



4) Remove three screws and clips.



5) Remove gusset cover. Disconnect electrical connectors to remove speaker.



6) Remove seven clips (A) of trim panel using clip remover to remove trim panel.



**B: INSTALLATION** Install in the reverse order of removal.

### REAR DOOR TRIM

#### EXTERIOR/INTERIOR TRIM

# 14.Rear Door Trim

### A: REMOVAL

### CAUTION:

# Do not apply excessive force to clip. Otherwise the clip may be broken.

1) Pull up inner remote cover toward you to remove upper hook. Pull down it to remove lower claw. Remove inner remote cover.



2) Remove two hook (A) of switch panel to remove power window sub switch and disconnect electrical connector.



3) Remove three screws and clips.



4) Remove seven clips (A) of trim panel using clip remover to remove trim panel.



**B: INSTALLATION** 

Install in the reverse order of removal.

# **GLOVE BOX**

EXTERIOR/INTERIOR TRIM

# 15.Glove Box A: REMOVAL

1) Remove stoppers.



2) Loosen screws to remove glove box.



**B: INSTALLATION** Install in the reverse order of removal.

**ROOF RAIL** 

# 16.Roof Rail

# A: REMOVAL

1) Remove roof trim. <Ref. to EI-45, REMOVAL, Roof Trim.>

2) Remove five mounting nuts and then detach roof rail carefully.



### **B: INSTALLATION**

Install in the reverse order of removal. CAUTION: Be careful not to scratch body panels with roof rail stud bolts when removing and installing them.

### **CONSOLE BOX**

EXTERIOR/INTERIOR TRIM

## **17.Console Box**

### A: REMOVAL

1) Remove shift knob (A) (MT model) and front cover (B).



(1) Hook pawl

2) Remove tray (A) and console cover (B).



3) Remove console box (A).



### **B: INSTALLATION**

Install in the reverse order of removal.

#### EXTERIOR/INTERIOR TRIM

## **18.Instrument Panel Assembly**

#### A: REMOVAL

Airbag system wiring harness is routed near the combination meter.

#### WARNING:

• All airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.

- Be careful not to damage airbag system harness when servicing the instrument panel.
- 1) Disconnect ground cable from battery.
- 2) Remove lower cover.



(1) Hook pawl

3) Remove lower column cover and disconnect harness connectors to steering column.



4) Remove steering column assembly (with steering wheel). <Ref. to PS-21, REMOVAL, Tilt Steering Column.> 5) Remove stopper (A) then remove glove box.



6) Remove side panel of both sides.



(1) Hook pawl

7) Remove passenger's airbag module. <Ref. to AB-14, REMOVAL, Passenger's Airbag Module.>
8) Remove console box. <Ref. to EI-36, REMOV-AL, Console Box.>





(1) Hook pawl

EXTERIOR/INTERIOR TRIM

10) Remove front pillar lower trim (A) of passenger side.



(1) Hook pawl

11) Set temperature control switch (A) to "FULL HOT" and then disconnect temperature control cable from bottom of heater unit. (Manual A/C equipped model)

#### NOTE:

Do not move the switch and link when installing.



EXTERIOR/INTERIOR TRIM

12) Remove instrument panel mounting bolts.



#### EXTERIOR/INTERIOR TRIM

13) Disconnect harness connectors and remove instrument panel carefully. CAUTION:

Do not pull the harness when disconnecting the connector.

### NOTE:

If necessary, make matching marks for easy reassembly.



- (1) SMJ/White
- (5) 1P/Black (2) 2P/Blue
- (3) 10P/White
- (6) 1P/Black

#### CAUTION:

• Take care not to scratch the instrument panel and related parts.

 When storing the removed instrument panel, place it standing up on the floor.



### **B: INSTALLATION**

Install in the reverse order of removal.

### CAUTION:

- Be careful not to snag the harness.
- Make sure to connect harness connector.
- Take care not to scratch the instrument panel and related parts.

#### NOTE:

When setting the instrument panel into position, push the three hooks into grommet (A) on the body panel.

(8) 16P/Blue



Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EI-9, INSTRUMENT PANEL, COMPONENT, General Description.>

### **UPPER INNER TRIM**

EXTERIOR/INTERIOR TRIM

# **19.Upper Inner Trim**

### A: REMOVAL

- 1) Remove front mole (A).
- 2) Remove front pillar upper trim (B).
- 3) Detach front seat belt shoulder anchor, then remove center pillar upper trim (C).



(1) Hook pawl

#### **B: INSTALLATION**

Install in the reverse order of removal.

#### CAUTION:

#### Be sure to securely hook pawls of inner trim panel to body flange.

#### NOTE:

When installing center pillar upper trim and front pillar upper trim, be sure to set front mole as shown in figure.



- (1) Outside
- (2) Inside
- (3) Weatherstrip
- (4) Mole
- (5) Body
- (6) Trim







### LOWER INNER TRIM

#### EXTERIOR/INTERIOR TRIM

### 20.Lower Inner Trim

### A: REMOVAL

- 1) Remove front pillar lower trim (A).
- 2) Remove side sill front lower cover (B).
- 3) For sedan: Remove rear seat cushion <Ref. to SE-17, SEDAN, REMOVAL, Rear Seat.>, then re-
- move side sill rear upper cover (C).

For wagon: Rise rear seat cushion, then remove side sill rear upper cover (C).

- 4) Remove side sill rear lower cover (D).
- 5) Remove center pillar lower trim (E).



(1) Hook pawl

#### **B: INSTALLATION**

Install in the reverse order of removal. **CAUTION:** 

### Be sure to securely hook pawls of inner trim

panel to body flange.







### **REAR QUARTER TRIM**

#### EXTERIOR/INTERIOR TRIM

### 21.Rear Quarter Trim A: REMOVAL

#### 1. SEDAN

- 1) Remove rear mole (A).
- 2) Remove rear shelf trim. <Ref. to EI-48, REMOV-
- ÁL, Rear Shelf Trim.>
- 3) Remove side sill rear upper cover. <Ref. to El-
- 42, REMOVAL, Lower Inner Trim.>
- 4) Remove rear pillar icwer trim (B).
  5) Remove rear pillar upper trim (C).



#### 2. WAGON

1) Remove side sill rear upper cover. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>

2) Remove luggage floor mat. <Ref. to EI-51, RE-MOVAL, Luggage Floor Mat.>

3) Remove rear skirt trim (A).

4) Remove rear quarter lower trim mounting volts, screws and clips, then remove the trim (B).

5) Remove rear mole (C).

6) Remove rear quarter upper trim mounting screw, then remove the trim (D).



(1) Hook pawl

### **B: INSTALLATION**

Install in the reverse order of removal.

#### CAUTION:

# Be sure to securely hook pawls of inner trim panel to body flange.

NOTE:

When installing rear quarter upper trim, be sure to set rear mole as shown in the figure.



- (1) Outside
- (2) Inside
- (3) Weatherstrip
- (4) Mole
- (5) Body
- (6) Trim

### **SUN VISOR**

EXTERIOR/INTERIOR TRIM

# 22.Sun Visor

### A: REMOVAL

Remove mounting screws then detach sun visor (A) and hook (B).



**B: INSTALLATION** Install in the reverse order of removal.



EI-44

# 23.Roof Trim

### A: REMOVAL

#### CAUTION:

When removing clip, use great care not to damage the roof trim.

#### 1. SEDAN

1) Disconnect ground cable from battery.

2) Remove sunroof switch. (Sunroof equipped model) <Ref. to SR-14, REMOVAL, Sunroof Switch.>

3) Remove room light. <Ref. to LI-27, REMOVAL, Room Light.>

4) Remove sun visor and hook of both sides. <Ref. to EI-44, REMOVAL, Sun Visor.>

5) Remove assist grips (A).



6) Remove sunroof garnish (A).



7) Remove upper inner trim. <Ref. to EI-41, RE-MOVAL, Upper Inner Trim.>

8) Remove rear window mole (A) of both sides.

9) Remove screw (B) of rear quarter lower trim shown in the figure.

10) Remove rear quarter upper trim (C) of both sides.



11) Remove clips, and then remove roof trim.



#### 2. WAGON

1) Open the rear sunroof, and then remove four clips. (Sunroof equipped model)



2) Disconnect ground cable from battery.
3) Remove sunroof switch. (Sunroof equipped model) <Ref. to SR-14, REMOVAL, Sunroof Switch.>

4) Remove room light and luggage room light.
<Ref. to LI-27, REMOVAL, Room Light.> and <Ref. to LI-28, REMOVAL, Luggage Room Light.>
5) Remove sun visor and hook of both sides. <Ref. to EI-44, REMOVAL, Sun Visor.>

EXTERIOR/INTERIOR TRIM





7) Remove upper inner trim. <Ref. to EI-41, RE-MOVAL, Upper Inner Trim.>

8) Remove rear window mole of both sides (A).9) Remove screws (B) and clips (C) of rear quarter lower trim shown in the figure.

10) Remove rear quarter upper trim (D) of both sides.

11) Remove rear rail trim (E).



(1) Hook pawl

12) Remove cover (B) while detaching snap lock carefully. Put the rear center seat belt tongue (A) out to the other side of the trim through the hole.



13) Remove clips and then remove roof trim.



(1) Snap lock

**B: INSTALLATION** 

Install in the reverse order of removal.

# 24.Rear Gate Trim

### A: REMOVAL

### CAUTION:

Be careful not to damage clips or their holes.

1) Remove clips and detach rear gate lower trim (A).



2) Remove caps and screws, and then detach high-mounted stop light cover (A).



3) Remove rear gate upper trim (A).



(1) Hook pawl

**B: INSTALLATION** Install in the reverse order of removal.

# 25.Rear Shelf Trim

### A: REMOVAL

1) Remove high-mounted stop light.



2) Remove rear seat backrest. <Ref. to SE-17, RE-MOVAL, Rear Seat.>

3) Remove inner seat belt RH, then disconnect inner seat belt RH (A) and outer seat belt center (B).



4) Detach rear shelf trim through each rear outer seat belt from slits (A) and hole (B) of rear shelf trim.



(1) Clip

**B: INSTALLATION** 

Install in the reverse order of removal.

### **TRUNK TRIM**

### EXTERIOR/INTERIOR TRIM

# 26.Trunk Trim

# A: REMOVAL

Remove clips, and then detach trunk rear trim (A).
 Remove luggage hook (B) and clips, then detach trunk side trim (C).



**B: INSTALLATION** Install in the reverse order of removal.



EI-49



#### EXTERIOR/INTERIOR TRIM

### **27.Floor Mat**

### A: REMOVAL

1) Remove front seats. <Ref. to SE-7, REMOVAL, Front Seat.>

2) Remove rear seat cushion. <Ref. to SE-17, RE-MOVAL, Rear Seat.>

3) Remove console box. <Ref. to EI-36, Console Box.>

4) Remove front pillar lower trim, side sill rear upper cover and center pillar lower trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>

5) Remove clips from floor mat.

NOTE:

When pulling out edge, do not pull mat alone; pull mat together with edge. Ply off two steel clips on side sill front cover and one on side sill rear cover using screwdriver.

6) Remove mat hook.

7) Remove mat from toe board area.

8) Remove mat from rear heater duct.

9) Roll mat, and then take it out of opened rear door.



### **B: INSTALLATION**

Install in the reverse order of removal.

NOTE:

• Secure mat firmly with hook and Velcro tape.

• Insert mat edge firmly into the groove of side sill cover.



## LUGGAGE FLOOR MAT

EXTERIOR/INTERIOR TRIM

# 28.Luggage Floor Mat A: REMOVAL

Remove clips, then detach rear floor mats and boxes.



(1) Clips

**B: INSTALLATION** Install in the reverse order of removal.



## TRUNK ROOM MAT

EXTERIOR/INTERIOR TRIM

# 29.Trunk Room Mat

A: REMOVAL Draw out trunk room mat.



**B: INSTALLATION** Install in the reverse order of removal.



EI-52

EXTERIOR BODY PANELS

# **1. General Description**

### A: SPECIFICATIONS



(4) Section A

(12) Unit: mm (in)

# **B: COMPONENT**

### 1. FRONT HOOD



(2) Seal (Front hood)

(3) Hinge

- (4) Buffer C
- (6) Buffer B
- (7) Plug
- (8) Seal ASSY

T1: 24.5 (2.5, 18.1)

### 2. FRONT DOOR PANEL



- (1) Gusset
- (2) Weatherstrip (Outer)
- (3) Clip (Weatherstrip, outer)
- (4) Stabilizer (Lifter)
- (5) Stabilizer (Outer)
- (6) Stabilizer (Inner)
- (7) Sealing cover
- (8) Checker
- (9) Lower hinge
- (10) Upper hinge
- (11) Door panel
- Tightening torque: N·m (kgf-m, ft-lb)

   T1:
   7.35 (0.75, 5.4)

   T2:
   18 (1.8, 13)

   T3:
   30 (3.1, 22.4)

#### 3. REAR DOOR PANEL



- (1) Weatherstrip (Outer)
- (2) Clip (Weatherstrip, outer)
- (3) Stabilizer (Outer)
- (4) Stabilizer (Inner)
- (5) Door panel
- (6) Bracket

- (7) Sealing cover
- (8) Checker
- (9) Lower hinge
- (10) Upper hinge
- Tightening torque: N·m (kgf-m, ft-lb)

   T1:
   7.35 (0.75, 5.4)

   T2:
   18 (1.8, 13)

   T3:
   30 (3.1, 22.4)

#### EXTERIOR BODY PANELS

### 4. TRUNK LID PANEL



(1) Torsion bar

(4) Hinge ASSY(5) Cover

Tightening torque: N·m (kgf-m, ft-lb) T1: 18 (1.8, 13)

(2) Trunk lid(3) Weatherstrip

#### 5. REAR GATE PANEL



- (2) Hinge
- (3) Rear gate

- (4) Buffer (Rear gate)
- (5) Buffer cover
- (6) Buffer (Back door)
- Tightening torque: N·m (kgf-m, ft-lb) T1: 7.5 (0.76, 5.5) T2: 14 (1.4, 10.1) T3: 25 (2.5, 18.1)

EXTERIOR BODY PANELS

### C: CAUTION

Exterior body panels are heavy. Do not drop and damage the panels. During removal and installation, do not damage the panel painting surface.
While removing mounting bolts, using assistance devices such as a support jack will help support the panel.

• Be careful not to lose small parts.

### **D: PREPARATION TOOL**

### 1. SPECIAL TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
ST-925610000	925610000	WRENCH	Used for removing and installing door hinge.
	927780000	REMOVER	Used for removing and installing trunk torsion bar.
ST-927780000			

### 2. GENERAL TOOL

TOOL NAME	REMARKS	
Support Jack	Used for supporting door panel.	

### **FRONT HOOD**

#### EXTERIOR BODY PANELS

## 2. Front Hood

### A: REMOVAL

Open front hood to remove washer nozzles.
 Release clips to remove hood insulator.



3) Remove bolts to disconnect hood from hinges.



### **B: INSTALLATION**

 Install in the reverse order of removal.
 Adjust clearance between hood and fender. Clearance must be equal at both sides.

#### Tightening torque:

24.5 N·m (2.5 kgf-m, 18.1 ft-lb)

### C: ADJUSTMENT

1) Use hinge mounting holes to align front hood longitudinally and laterally.



2) Adjust height at front end of hood. <Ref. to SL-43, ADJUSTMENT, Front Hood Lock Assembly.>

3) Rotate hood buffer to adjust lateral height.



#### EXTERIOR BODY PANELS

### 3. Fender Panel

### A: REMOVAL

1) Disconnect ground cable from battery.

2) Remove side sill spoilers. <Ref. to EI-29, RE-MOVAL, Side Sill Spoiler.> (If fitted)

3) Remove side protectors and fender protectors. (OUTBACK)

4) Remove front bumper face. <Ref. to EI-14, RE-MOVAL, Front Bumper.>

5) Remove headlights. <Ref. to LI-11, REMOVAL, Headlight Assembly.>

6) Remove mud guard. <Ref. to EI-23, REMOVAL, Mud Guard.>

7) Remove bolts and clips to remove front fender.



### **B: INSTALLATION**

 Install in the reverse order of removal.
 When fender panel is installed, clearance between fender panel and hood or front fender must be equal.

#### Tightening torque:

7.35 N·m (0.75 kgf-m, 5.4 ft-lb)





#### **FRONT DOOR PANEL**

#### EXTERIOR BODY PANELS

### 4. Front Door Panel

#### A: REMOVAL

1) Disconnect ground cable from battery.

2) Remove front door trim. <Ref. to EI-32, RE-MOVAL, Front Door Trim.>

3) Remove outer mirror assembly. <Ref. to GW-33, REMOVAL, Outer Mirror Assembly.>

4) Remove front door regulator and motor. <Ref. to GW-16, REMOVAL, Front Regulator and Motor Assembly.>

5) Remove front door latch assembly. <Ref. to SL-32, REMOVAL, Front Door Latch Assembly.>

6) Remove front outer handle. <Ref. to SL-31, RE-MOVAL, Front Outer Handle.>

7) Remove front pillar lower trim to disconnect connector from body harness.



8) Put wooden block on jack and place jack under door. Support door with a jack to protect it from damage.

9) Remove checker bolts.



10) Remove door-side bolts for upper and lower hinges to remove door.



11) Using special tool, remove body-side bolts for upper and lower hinges, and remove door hinges. ST 925610000 DOOR HINGE WRENCH



#### CAUTION:

• During removal and installation of doors, do not damage body.

• Doors are heavy. Be careful not to drop and damage them.

#### **B: INSTALLATION**

Install in the reverse order of removal.
 Apply grease to sliding area of door hinges.

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EB-4, FRONT DOOR PANEL, COMPONENT, General Description.>

**EB-11** 

### FRONT DOOR PANEL

EXTERIOR BODY PANELS

### **C: ADJUSTMENT**

1) Using special tool, loosen body-side bolts of upper and lower hinges to align the position of front door panel longitudinally and vertically. ST 925610000 DOOR HINGE WRENCH



2) Loosen door-side bolts of upper and lower hinges to align the position of front door panel vertically and laterally at the front end.



3) Loosen screw (A) and tap striker (B) using plastic hammer to adjust striker.



CAUTION: Do not use impact wrench. Welding area on striker nut plate is easily broken.

# 5. Front Sealing Cover

#### A: REMOVAL

1) Remove front door trim. <Ref. to EI-32, REMOV-

AL, Front Door Trim.>

2) Remove front speaker. <Ref. to ET-6, REMOV-AL, Front Speaker.>

### CAUTION:

• Carefully remove butyl tape. Excessive force will easily break the cover.

• If cover gets broken, replace it with a new one.



### **B: INSTALLATION**

1) Install in the reverse order of removal.

2) When replacing sealing cover, use butyl tape.3) Press sealer-applied area firmly to prevent any floating on surface.

#### Butyl tape:

3M8626 or equivalent

#### CAUTION:

- Apply a uniform bead of butyl tape.
- Attach sealing cover, keeping it from becoming wrinkled.

• Breaks in the bead will allow water leakage and contamination.

### **C: INSPECTION**

If sealing cover is damaged, replace it with a new one.
EXTERIOR BODY PANELS

# 6. Rear Door Panel

### A: REMOVAL

1) Disconnect ground cable from battery.

2) Remove rear door trim. <Ref. to EI-33, REMOV-AL, Rear Door Trim.>

3) Remove rear door regulator and motor assembly. <Ref. to GW-19, REMOVAL, Rear Regulator and Motor Assembly.>

4) Remove rear door latch. <Ref. to SL-36, RE-MOVAL, Rear Door Latch Assembly.>

5) Remove rear outer handle. <Ref. to SL-35, RE-MOVAL, Rear Outer Handle.>

6) Remove center pillar lower trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>

7) Remove seatbelt bracket and blind plug.

Disconnect connector of door harness and remove door hinge nut.



8) Put a wooden block on the jack and place the jack under the door. Support the door with the jack to protect it.

9) Remove checker bolts.



10) Remove door-side bolts for upper and lower hinges to remove door.



11) Using special tool, remove body-side bolts for upper and lower hinges, and remove door hinges. ST 925610000 WRENCH

### CAUTION:

• During removal and installation of doors, do not damage body.

• Doors are heavy. Be careful not to drop and damage them.

### **B: INSTALLATION**

1) Install in the reverse order of removal.

2) Apply grease to sliding area of door hinges.

### Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EB-5, REAR DOOR PANEL, COMPONENT, General Description.>

# **REAR DOOR PANEL**

EXTERIOR BODY PANELS

# C: ADJUSTMENT

1) Using special tool, loosen body-side bolts of upper and lower hinges to align the position of rear door panel longitudinally and vertically. ST 925610000 WRENCH



2) Loosen door-side bolts of upper and lower hinges to align the position of rear door panel vertically and laterally at front-end.



3) Loosen screw (A) and tap striker (B) using plastic hammer to adjust striker.



CAUTION: Do not use an impact wrench. The welding area on the striker nut plate is easily broken. EXTERIOR BODY PANELS

# 7. Rear Sealing Cover

### A: REMOVAL

1) Remove rear door trim. <Ref. to EI-33, REMOV-

AL, Rear Door Trim.>

2) Remove rear speaker. <Ref. to ET-8, REMOV-AL, Rear Speaker.>

# CAUTION:

• Carefully remove butyl tape. Excessive force will easily break the cover.

• If cover gets broken, replace it with a new one.



### **B: INSTALLATION**

1) Install in the reverse order of removal.

2) When replacing sealing cover, use butyl tape.3) Press sealer-applied area firmly to prevent any floating on surface.

### Butyl tape:

3M8626 or equivalent

### CAUTION:

- Apply an uniform bead of butyl tape.
- Attach sealing cover, keeping it from becoming wrinkled.

• Breaks in the bead will allow water leakage and contamination.

### **C: INSPECTION**

If sealing cover gets damaged, replace it with a new one.

# **TRUNK LID PANEL**

# 8. Trunk Lid Panel

# A: REMOVAL

## 1. TRUNK LID

### 1) Open trunk lid.

2) Disconnect trunk lid connector.

3) Loosen trunk lid mounting bolts to remove trunk lid from hinges.



# 2. TORSION BAR

1) Open trunk lid.

2) Using special tool, remove torsion bar from hinge link.

ST 927780000 REMOVER

### CAUTION:

During removal and installation, carefully handle torsion bar. It will generate reactive force.



3) Remove right/left torsion bars.

### CAUTION:

After the torsion bar is removed, the trunk lid will slam shut. Be careful not to get hit by the trunk lid.

# **B: INSTALLATION**

### 1. TRUNK LID

1) Install in the reverse order of removal.

2) Install trunk lid with uniform clearance.

### 2. TORSION BAR

Install in the reverse order of removal.
 Apply grease to rotating area of hinges and mating surface of torsion bar.

### Tightening torque:

18 N·m (1.8 kgf-m, 13.0 ft-lb)

EXTERIOR BODY PANELS

### **REAR GATE PANEL**

EXTERIOR BODY PANELS

# 9. Rear Gate Panel

### A: REMOVAL

### 1. REAR GATE PANEL

1) Open rear gate.

2) Remove rear gate outer handle. <Ref. to SL-38, REMOVAL, Rear Gate Outer Handle.>

3) Remove rear gate latch assembly. <Ref. to SL-39, REMOVAL, Rear Gate Latch Assembly.>

4) Remove rear gate trim. <Ref. to EI-47, REMOV-AL, Rear Gate Trim.>

5) Remove rear gate key lock cylinders. <Ref. to SL-46, REAR GATE, REPLACEMENT, Key Lock Cylinders.>

6) Remove rear finisher light assembly. <Ref. to LI-

20, REMOVAL, Rear Finisher Light Assembly.>

7) Remove rear wiper. <Ref. to WW-15, REMOV-AL, Rear Wiper Motor.>

8) Disconnect connectors of rear wiper, rear defogger, and other lighting devices.

9) Disconnect washer hose.

10) Remove rubber duct (A) connection, and pull out harness and washer hose from rear gate.



11) Using a support, support the rear gate while removing gas stay mounting bolts.



### CAUTION:

When the rear gate is released, it may hit and damage the body. To prevent this, place a shop cloth between body and gate.

12) Loosen rear gate bolts to remove rear gate.

### 2. GAS STAY

1) Open rear gate. Using a jack to support the rear gate.



CAUTION:

• After gas stay is removed, rear gate cannot stay open. Supporting the rear gate with a jack, remove the bolts.

• Do not damage piston rods and oil seals.

• Never disassemble cylinders: They contain gas.

2) Loosen bolts to remove gas stay from rear gate.

### **REAR GATE PANEL**

### **B: INSTALLATION**

## 1. REAR GATE PANEL

1) Install in the reverse order of removal.

2) Install rear gate panel with uniform clearance to body.

# CAUTION:

Do not damage painted surfaces of body and rear gate.

### 2. GAS STAY

Install in the reverse order of removal.

### CAUTION:

• Do not confuse right and left sides of gas stay.

• After supporting rear gate with a jack, start operation.

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EB-7, REAR GATE PANEL, COMPONENT, General Description.>

# C: DISPOSAL

# 1. GAS STAY

1) Place the gas stay (B) in a vinyl sack (C) before drilling hole with a drill (A).



# CAUTION:

# Prevent the vinyl case from being caught by drill cutting edge

2) Lift body side slightly with piston rods fully extended, and secure body side on vise stand. Drill a hole in 2 to 3 mm (0.08 to 0.12 in) diameter at a point 10 to 200 mm (0.39 to 7.87 in) from door side, and bleed gas stay completely.

### CAUTION:

Gas is colorless, odorless, and harmless. However, gas pressure may spray cutting powder or oil. Be sure to wear dust-resistant goggles.



- (1) Body side
- (2) Door side
- (3) Piston rod(4) Cylinder
- (5) Portion to be drilled

### EXTERIOR BODY PANELS

**REAR GATE PANEL** 

EXTERIOR BODY PANELS

MEMO:

# **GENERAL DESCRIPTION**

GLASS/WINDOWS/MIRRORS

# 1. General Description

- A: COMPONENT
- 1. FIXED GLASS (SEDAN)



- (1) Windshield glass
- (4) Rearview mirror mount
- (7) 6 light glass

- (2) Dam rubber(3) Molding
- (5) Locate pin(6) Rear window glass

GENERAL DESCRIPTION

# 2. FIXED GLASS (WAGON)



- (1) Windshield glass
- (2) Dam rubber(3) Molding
- (4) Rearview mirror mount
- (5) Locate pin
- (6) Fastener

- (7) Rear quarter glass
- (8) Locate pin
- (9) Glass

# **GENERAL DESCRIPTION**

# 3. FRONT DOOR GLASS



(1) Glass

(5) Motor ASSY

Tightening torque: N·m (kgf-m, ft-lb) T1: 7.35 (0.75, 5.4) T2: 14 (1.4, 10.1)

(2) Door sash (Front)(3) Door sash (Rear)

(4) Regulator ASSY

GENERAL DESCRIPTION

### 4. REAR DOOR GLASS



(1) Glass

. .\_\_\_\_\_

(2) Door sash (Front)

(3) Door sash (Rear)(4) Regulator ASSY

 Tightening torque: N⋅m (kgf-m, ft-lb)

 T1:
 7.35 (0.75, 5.4)

 T2:
 14 (1.4, 10.1)

(5) Motor ASSY

# **GENERAL DESCRIPTION**

### GLASS/WINDOWS/MIRRORS

# 5. MIRRORS



# **GENERAL DESCRIPTION**

### GLASS/WINDOWS/MIRRORS

# **B: CAUTION**

• When electrical connectors are disconnected, always conduct an operational check after connecting them again.Avoid impact and damage to the glass.

# **C: PREPARATION TOOL**

TOOL NAME	REMARKS
Circuit Tester	Used for checking voltage and continuity.
Piano Wire	Used for window glass removal.
Windshield Knife	Used for window glass removal.



### GLASS/WINDOWS/MIRRORS

# 2. Power Window System

A: SCHEMATIC <Ref. to WI-186, Power Window System.>

# **B: INSPECTION**

Symptom	Repair order
All power windows does not operate.	<ul> <li>(1) Fuse (SBF-6) (F/B No. 18)</li> <li>(2) Power window circuit breaker</li> <li>(3) Power window relay</li> <li>(4) Wire harness</li> </ul>
One window does not operate.	<ul><li>(1) Power window main switch</li><li>(2) Power window sub switch</li><li>(3) Power window motor</li><li>(4) Wire harness</li></ul>
"Window Lock" does not operate.	(1) Power window main switch



**GW-8** 



# 3. Rear Window Defogger System

### A: SCHEMATIC

<Ref. to WI-194, SCHEMATIC, Rear Window Defogger System.>

## **B: INSPECTION**

Symptom	Repair order
Rear window defogger does not operate.	<ul> <li>(1) Fuse (M/B No. 1)</li> <li>(2) Rear defogger relay</li> <li>(3) Defogger switch</li> <li>(4) Rear defogger condenser</li> <li>(5) Deffogger wire</li> <li>(6) Wire harness</li> </ul>





# WINDSHIELD WIPER DEICER SYSTEM

# 4. Windshield Wiper Deicer System

# A: SCHEMATIC

<Ref. to WI-216, Wiper Deicer System.>

# **B: INSPECTION**

Symptom	Repair order
Wiper deicer does not operate.	<ul> <li>(1) Fuse (F/B No. 18, 19)</li> <li>(2) Wiper deicer relay</li> <li>(3) Wiper deicer switch</li> <li>(4) Wire harness</li> </ul>



# **REMOTE CONTROL MIRROR SYSTEM**

GLASS/WINDOWS/MIRRORS

# 5. Remote Control Mirror System

# A: SCHEMATIC

<Ref. to WI-196, Remote Controlled Rearview Mirror System.>

# **B: INSPECTION**

Symptom	Repair order
All function does not operate.	<ul> <li>(1) Fuse (F/B No. 4)</li> <li>(2) Mirror switch</li> <li>(2) Wire borness</li> </ul>
One side of the mirror motor does not operate.	(1) Mirror switch (2) Mirror motor
	(3) Wire harness
Mirror bostor doos not operate	(1) Mirror switch
Mirror neater does not operate.	(2) Mirror heater (3) Wire harness



### GLASS/WINDOWS/MIRRORS

# 6. Front Door Glass

### A: REMOVAL

1) Remove door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>

- 2) Remove sealing cover. <Ref. to EB-13, RE-MOVAL, Front Sealing Cover.>
- 3) Remove outer weatherstrip.
- 4) Remove inner stabilizer.



- 5) Remove outer mirror. <Ref. to GW-33, REMOV-AL, Outer Mirror Assembly.>
- 6) Remove gusset.



7) Operate the power window switch to move glass to the position shown in the figure, and then remove the two nuts from service holes.



8) Take out glass door panel upward.



### CAUTION:

• Do not turn regulator in the closing direction after removal of the glass. Otherwise gear may be disengaged.

### Avoid impact and damage to the glass.

### **B: INSTALLATION**

1) Install in the reverse order of removal.

### **CAUTION:**

Make sure that glass stay is placed securely in sash.

2) Adjust front door glass. <Ref. to GW-13, AD-JUSTMENT, Front Door Glass.>

### Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EB-4, FRONT DOOR PANEL, COMPONENT, General Description.>and <Ref. to GW-4, FRONT DOOR GLASS, COMPONENT, General Description.>



#### GLASS/WINDOWS/MIRRORS

# **C: ADJUSTMENT**

### NOTE:

Before adjustment, ensure that all adjusting bolts of stabilizer, upper stopper, and sash are loose and door glass is raised so that it is in contact with weatherstrip.

1) Temporarily tighten one adjusting bolt on one side of rear sash at the midpoint of slotted hole in the inner panel.

2) Temporarily tighten regulator B-channel in a position slightly lower than midpoint of slotted hole.

3) Lower door glass 10 to 15 mm (0.39 to 0.59 in) from fully closed position. While applying outward pressure of  $45\pm5$  N ( $4.59\pm0.51$  kgf,  $10.1\pm1.1$  lb) (F) to upper edge of glass above midpoint of two outer stabilizers, press inner stabilizer at  $10\pm5$  N ( $1.02\pm0.51$  kgf,  $2.2\pm1.1$  lb) until it just touches the glass, then secure it.



- (1) Full close
- (2) Stabilizer

4) For adjustment of clearance between front and rear glasses, loosen nuts (A), and move glass sash back and forth until clearance becomes the value shown.





5) For adjustment of upper and lower ends of center pillar, loosen adjusting nut (A) of B-channel (B).



(1) Unit: mm (in)



GLASS/WINDOWS/MIRRORS

6) Adjust so that upper and lower ends of center pillar are the same size.



- (1) Glass tilts too far rearward
- (2) Narrow
- (3) Wide
- (4) Lower B channel
- (5) Glass tilts too far forward
- (6) Raise B channel

7) For glass stroke adjustment, close door, raise glass until positional relationship between glass and weatherstrip becomes as shown. And secure the glass so that upper stopper lightly touches the glass holder.



(1) Unit: mm (in)

8) After stabilizer adjustment, carry out glass crimp adjustment. First, visually ensure positional relationship between retainer & molding and glass of the roof side, and then begin with rear sash adjustment. Adjust two adjusting bolts alternately step by step to obtain dimensions shown below (cross-section A).

NOTE:

If two nuts are loosened at the same time, sash moves back and forth. Therefore, when one nut is adjusted, secure the other.

9) Make the same adjustment of two adjusting bolts of rear sash.



(1) Unit: mm (in)

CAUTION:

Do not tilt sash bracket to inner panel during adjustment. Otherwise smooth regulator operation cannot be achieved.



- (1) Sash bracket
- (2) Rear sash
- (3) Adjust a line parallel
- (4) Sash
- (5) Inner panel



GLASS/WINDOWS/MIRRORS

10) Make adjustment of front sash in the same manner as that of rear sash.

### **CAUTION:**

Although front and rear sashes must, as a rule, be adjusted in the same manner, in some door installation, the adjustment in a different manner may be required. However, adjustment of one sash to the maximum amount and the other to the minimum amount is not permitted. Such adjustment may result in application of excessive load to regulator.

11) After adjustments, tighten nuts.

12) After adjustment of glass, if there is a gap between outer lip of gusset and glass surface, adjust the gap with adjusting bolt (A) in lower fitting part of gusset to prevent generation of wind noise.

13) During adjustments, loosen other three clamping bolts.



14) After adjustment, tighten bolts and nuts.

# FRONT REGULATOR AND MOTOR ASSEMBLY

GLASS/WINDOWS/MIRRORS

# 7. Front Regulator and Motor Assembly

### A: REMOVAL

1) Remove door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>

2) Remove sealing cover. <Ref. to EB-13, RE-MOVAL, Front Sealing Cover.>

3) Remove inner remote. <Ref. to SL-30, REMOV-AL, Front Inner Remote.>

4) Remove door glass. <Ref. to GW-12, REMOV-AL, Front Door Glass.>

5) Disconnect electrical connector.

6) Loosen four bolts and two nuts to pull out regulator assembly.



7) Loosen screws to remove motor assembly.



### **B: INSTALLATION**

Install in the reverse order of removal.
 Adjust front door glass. <Ref. to GW-13, Adjustment.>

Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EB-4, FRONT DOOR PANEL, COMPONENT, General Description.> and <Ref. to GW-4, FRONT DOOR GLASS, COMPONENT, General Description.>

# **C: INSPECTION**

1) Make sure that power window motor rotates properly when battery voltage is applied to terminals of motor connector. 2) Change polarity of battery connections to terminals to ensure that motor rotates in reverse direction.

### REAR DOOR GLASS

#### GLASS/WINDOWS/MIRRORS

# 8. Rear Door Glass

### A: REMOVAL

1) Remove door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>

2) Remove sealing cover. <Ref. to EB-16, RE-MOVAL, Rear Sealing Cover.>3) Remove stabilizer.

3) Remove stabilizer.



4) Operate power window switch to move glass as shown in the figure, and remove two nuts.



5) Loosen two screws to remove weatherstrip.



6) Pull out glass.

CAUTION: Avoid impact and damage to the glass.

### **B: INSTALLATION**

1) Install in the reverse order of removal.

CAUTION:

# Make sure that glass stay is placed securely in sash.

2) Adjust rear door glass. <Ref. to GW-17, AD-JUSTMENT, Rear Door Glass.>

### Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EB-5, REAR DOOR PANEL, COMPONENT, General Description.> and <Ref. to GW-5, REAR DOOR GLASS, COM-PONENT, General Description.>

### C: ADJUSTMENT

NOTE:

Rear door glass, as a rule, should be adjusted in the same manner as front glass, although they are different in dimension. Special notes for rear glass are given below.

1) Adjust glass position using the following dimensions as a guide line.



(1) Unit: mm (in)

CAUTION:

• If dimensions are smaller than the given dimensions, glass may get caught in weatherstrip during lifting/lowering operation. In the worst case, it may cause glass not to be opened fully.

• After adjustment, move glass up and down to check whether it is caught.

# **REAR DOOR GLASS**

### GLASS/WINDOWS/MIRRORS

2) Adjust crimp of glass using the following dimensions as a guide line.



(1) Unit: mm (in)

### CAUTION:

If crimp of rear glass is higher than necessary, glass may get caught in weatherstrip of center pillar corner, resulting in early wear of weatherstrip. Be careful when adjusting.
After adjustment, move glass up and down to aback whether it is exually.

check whether it is caught.

### **REAR REGULATOR AND MOTOR ASSEMBLY**

GLASS/WINDOWS/MIRRORS

# 9. Rear Regulator and Motor Assembly

### A: REMOVAL

1) Remove door trim. <Ref. to EI-33, REMOVAL, Rear Door Trim.>

2) Remove sealing cover. <Ref. to EB-16, RE-MOVAL, Rear Sealing Cover.>

3) Remove door glass. <Ref. to GW-17, REMOV-AL, Rear Door Glass.>

4) Secure bolts using screwdriver to remove front sash adjusting nut.



- 5) Remove front sash.
- 6) Disconnect electrical connector.

7) Loosen four bolts and two nuts to remove regulator assembly.



8) Loosen screws to remove motor assembly.



### **B: INSTALLATION**

Install in the reverse order of removal.
 Adjust rear door glass. <Ref. to GW-17, AD-JUSTMENT, Rear Door Glass.>

### Tightening torque:

Refer to COMPONENT in General Description. <Ref. to EB-5, REAR DOOR PANEL, COMPONENT, General Description.> and <Ref. to GW-5, REAR DOOR GLASS, COM-PONENT, General Description.>

### **C: INSPECTION**

1) Make sure that power window motor rotates properly when battery voltage is applied to terminals of motor connector.

2) Change polarity of battery connections to terminals to ensure that motor rotates in reverse direction. GLASS/WINDOWS/MIRRORS

# **10.Windshield Glass**

# A: REMOVAL

### **1. USING WINDSHIELD KNIFE**

1) Remove cowl panel. <Ref. to EI-27, REMOVAL, Cowl Panel.>

2) Remove front side molding and upper front molding.

3) Tape body side of the circumference of windshield glass for protection.

4) Apply sufficient amount of soapy water to adhesive layer.

5) Insert windshield knife into the adhesive layer.

6) While holding the knife edge and windshield glass edge at a right angle, move windshield knife in parallel to windshield glass edge along face and edge of windshield glass to cut the adhesive layer.

### CAUTION:

• Do not twist windshield knife.

• Cutting of adhesive layer shall be started with wider gap between windshield glass and body.



- (1) Putty knife
- (2) Protective tape
- (3) Windshield knife
- (4) Matching pin

NOTE:

Because matching pins are bonded to the corners of glass, use piano wire to cut the pin.



- (1) Matching pin
- (2) Body panel
- (3) Glass

### 2. USING PIANO WIRE

1) Remove cowl panel. <Ref. to EI-27, REMOVAL, Cowl Panel.>

2) Remove roof molding and upper front molding.3) Tape the body side of the circumference of windshield glass for protection.

4) Make a hole in adhesive layer using drill or knife.5) Pass piano wire through the hole, and attach securely both the wire ends to pieces of wood.



6) Pull the wire ends alternately to cut off the adhesive layer.

### CAUTION:

• Do not tightly pull the piano wire against the windshield glass edge.

• Be careful not to damage interior and exterior parts.

• When removal is made with area close to instrument panel, place a protection plate over it. Pay particular attention to the removal.

• Do not cross piano wires. Otherwise they may be cut.

**GW-20** 

### WINDSHIELD GLASS

### **B: INSTALLATION**

1) Clean external circumference of windshield glass with alcohol or white gasoline.

2) Remove adhesive layer on the body using cutter knife to obtain smooth face 2 mm (0.08 in) thick.

### CAUTION:

Be careful not to damage the body and paint surface.



- (1) Adhesive
- (2) Dam rubber
- (3) Glass

3) Clean body with alcohol or white gasoline to remove thoroughly chips, dusts, and dirts from body face.

4) Place glass on body.

5) Adjust glass position to make uniform clearance between body and glass in four corners.

6) Place matching pins (A) and body on glass.



7) Remove glass from body.

8) Fit molding mark (B) to notch (A) of ceramic print.



9) Apply primer to adhesive layer (A) of glass (B) using sponge.

10) Apply primer to adhesive layer (A) of body (C). **CAUTION:** 

• Primer once attached to the painted surface of the body and internal trim is hard to wipe off. Mask the circumference of such areas.

• Let primer dry for about ten minutes before installing the glass.

• Do not touch surface coated with primer.



### GLASS/WINDOWS/MIRRORS

### WINDSHIELD GLASS

### GLASS/WINDOWS/MIRRORS

11) Cut off cartridge nozzle tip and set it in sealant gun as shown.



#### (1) Unit: mm (in)

12) Apply adhesive to glass end surface as shown.13) Fit matching pins using suction rubber cup to install windshield glass.



14) Lightly press windshield glass for tight fit.

15) Make adhesive surface flush using spatula.

### CAUTION:

• When door is opened/closed after glass is bonded, always lower door glass and then open/close it carefully.

### • Move vehicle slowly.

16) After completion of all work, allow vehicle to stand for about 24 hours.

### NOTE:

For minimum drying time and time the vehicle must be left standing before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.

17) After curing of adhesive, pour water on external surface of vehicle to check that there are no water leaks.

### CAUTION:

When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

18) Install cowl panel. <Ref. to EI-27, INSTALLA-TION, Cowl Panel.>

# **REAR GATE GLASS**

#### GLASS/WINDOWS/MIRRORS

# 11.Rear Gate Glass

### A: REMOVAL

1) Remove real wiper motor. <Ref. to WW-15, RE-MOVAL, Rear Wiper Motor.>

2) Remove electrical connector from rear defogger terminal.

3) Remove glass in the same procedure as for windshield glass. <Ref. to GW-20, REMOVAL, Windshield Glass.>

### **B: INSTALLATION**

1) Apply adhesive evenly to the glass attachment area.

2) Insert the glass clip pin into the rear gate hole, and after pushing on the area around the clip pin to secure it, push lightly all around the area to seal it.3) About one hour after installation, conduct a leak test.



- (1) Upper side
- (2) Adhesive
- (3) Strip rubber
- (4) Glass
- (5) Primer
- (6) Left and right side
- (7) Unit: mm (in)

### CAUTION:

When door is opened/closed after glass is bonded, always lower door glass and then open/close it carefully.
Move vehicle slowly.



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4) After completion of all work, allow vehicle to stand for about 24 hours.

NOTE:

For minimum drying time and time the vehicle must be left standing before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.

#### **CAUTION:**

When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

5) Connect rear defogger terminals.

6) Install rear wiper. < Ref. to WW-15, INSTALLA-TION, Rear Wiper Motor.> GLASS/WINDOWS/MIRRORS

# 12.Rear Quarter Glass A: REMOVAL

# 1. SEDAN

Remove glass in the same procedure as for windshield glass. <Ref. to GW-20, REMOVAL, Windshield Glass.>



- (1) Matching pin
- (2) Rear quarter glass

(3) Body panel(4) Trim panel

### GLASS/WINDOWS/MIRRORS

### 2. WAGON

Remove glass in the same procedure as for windshield glass. <Ref. to GW-20, REMOVAL, Windshield Glass.>

### **B: INSTALLATION**

1) Cut off nozzle tip as shown in the figure.



- (1) Dam rubber
- (2) Matching pin
- (3) Adhesive
- (4) Molding
- (5) Unit: mm (in)

2) Install glass in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>

### CAUTION:

• When door is opened/closed after glass is bonded, always lower door glass and then open/close it carefully.

# • Move vehicle slowly.

3) After completion of all work, allow vehicle to stand for about 24 hours.

### NOTE:

For minimum drying time and time the vehicle must be left standing before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.

4) After curing of adhesive, pour water on external surface of vehicle to check that there are no water leaks.

### CAUTION:

When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

# **REAR WINDOW GLASS**

### GLASS/WINDOWS/MIRRORS

# **13.Rear Window Glass**

### A: REMOVAL

1) Disconnect electrical connectors from rear defogger terminals.

2) Remove glass in the same procedure as for windshield glass. <Ref. to GW-20, REMOVAL, Windshield Glass.>

### **B: INSTALLATION**

1) Bond dam rubber and matching pin.



- (1) Matching pin
- (2) Dam rubber
- (3) Fastener
- (4) Unit: mm (in)

2) Install glass in the same procedure as for windshield glass. <Ref. to GW-21, INSTALLATION, Windshield Glass.>

3) Connect rear defogger terminals.

### CAUTION:

• When door is opened/closed after glass is bonded, always lower door glass and then open/close door carefully.

### Move vehicle slowly.

4) After completion of all work, allow vehicle to stand for about 24 hours.

#### NOTE:

For minimum drying time and time the vehicle must be left standing before driving after bonding, follow instructions or instruction manual from the adhesive manufacturer.



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5) After curing of adhesive, pour water on external surface of vehicle to check that there are no water leaks.

### CAUTION:

When a vehicle is returned to the user, tell him or her that the vehicle should not be subjected to heavy impact for at least three days.

# **ROOF WINDOW GLASS**

GLASS/WINDOWS/MIRRORS

# **14.Roof Window Glass**

# A: REMOVAL

<Ref. to SR-6, REMOVAL, Sunroof Lid.> **B: INSTALLATION** 

<Ref. to SR-6, INSTALLATION, Sunroof Lid.>

# **C: ADJUSTMENT**

<Ref. to SR-6, ADJUSTMENT, Sunroof Lid.>









# **INNER REARVIEW MIRROR**

### GLASS/WINDOWS/MIRRORS

# **15.Inner Rearview Mirror**

# A: REMOVAL

1) Turn mirror base 90 degrees clockwise or counterclockwise to remove it.



2) Remove spring from mirror base.



### CAUTION:

### Be careful not to damage the mirror surface. B: INSTALLATION

Install in the reverse order of removal.

### **C: INSPECTION**

Do not let mirror be damaged. Do not let spring deteriorate.



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GLASS/WINDOWS/MIRRORS

# 16.Power Window Control Switch

# A: REMOVAL

### 1. MAIN SWITCH

1) Remove two hooks (A) of switch panel to remove power window main switch.



2) Disconnect electrical connectors from power window main switch and mirror switch.



### 2. SUB-SWITCH

Remove two hooks (A) of switch panel to remove power window sub-switch and disconnect electrical connector.



# **B: INSTALLATION**

### 1. MAIN SWITCH

Install in the reverse order of removal.

# 2. SUB-SWITCH

Install in the reverse order of removal.

# POWER WINDOW CONTROL SWITCH

GLASS/WINDOWS/MIRRORS

# **C: INSPECTION**

### 1. MAIN SWITCH

Measure switch resistance.

### Driver's switch:

Switch position	Terminal No.	Standard
UP	3 and 9, 7 and 1	Less than 1 $\Omega$
OFF	3 and 7 and 1	Less than 1 $\Omega$
DOWN	7 and 9, 3 and 1	Less than 1 $\Omega$
AUTO DOWN	7 and 9, 3 and 1	Less than 1 $\Omega$

### Front passenger's switch:

Switch position	Terminal No.	Standard
UP	9 and 5, 1 and 4	Less than 1 $\Omega$
OFF	1 and 5 and 4	Less than 1 $\Omega$
DOWN	9 and 4, 1 and 5	Less than 1 $\Omega$

### Rear left switch:

Switch position	Terminal No.	Standard
UP	9 and 13, 1 and 8	Less than 1 $\Omega$
OFF	1 and 13 and 8	Less than 1 $\Omega$
DOWN	9 and 8, 1 and 13	Less than 1 $\Omega$

### Rear right switch:

Switch position	Terminal No.	Standard
UP	9 and 16, 1 and 14	Less than 1 $\Omega$
OFF	1 and 16 and 14	Less than 1 $\Omega$
DOWN	9 and 14, 1 and 16	Less than 1 $\Omega$

If NG, replace the main switch.

### 2. SUB-SWITCH

### Measure switch resistance.

Front passenger's door switch and rear door switch:

Switch position	Terminal No.	Standard
UP	5 and 1, 6 and 2	Less than 1 $\Omega$
OFF	4 and 1, 6 and 2	Less than 1 $\Omega$
DOWN	5 and 2, 4 and 1	Less than 1 $\Omega$

If NG, replace the sub-switch.


GLASS/WINDOWS/MIRRORS

# **17.Rear Window Defogger Switch**

## A: REMOVAL

<Ref. to AC-29, REMOVAL, Control Unit.>

## **B: INSTALLATION**

<Ref. to AC-29, INSTALLATION, Control Unit.>

## **C: INSPECTION**

Check continuity between connectors at the back of heater control unit.

#### 1. AUTO A/C

Switch position	Terminal No.	Standard
OFF	_	More than 1 M $\Omega$
ON	(i48) 13 and (i49) 12	Less than 1 $\Omega$

## 2. MANUAL A/C

Switch position	Terminal No.	Standard	
OFF	—	More than 1 M $\Omega$	
OFF	(i17) 14 and (i17) 10	Less than 1 $\Omega$	



## **REAR WINDOW DEFOGGER**

#### GLASS/WINDOWS/MIRRORS

## **18.Rear Window Defogger**

## **A: INSPECTION**

#### **CAUTION:**

When wiping stain on glass off with cloth, use a dry and soft cloth and move it in the direction of the heat wire extension to avoid damage to the heat wire.

- 1) Turn ignition switch to ON.
- 2) Turn defogger switch to ON.

3) Wrap tips of tester pins with aluminum foil to avoid damage to heat wire.



- (1) Tester probe
- (2) Tin foil
- (3) Heat wire
- (4) PRESS

4) Measure voltage at wire center (A) with DC voltmeter.

#### Standard voltage: Approx. 6 volts



Voltage	Criteria
Approx. 6 V	ОК
Approx. 12 V or 0 V	Broken

#### NOTE:

• If the measured value is 12 volts, heat wire is open between wire center and positive (+) end. · If zero volt, heat wire is open between wire center and ground.

Vehicle-id: SIE-id::A:Inspection 5) Apply positive lead of voltmeter to positive terminal of voltmeter, and then move negative lead along the wire up to the negative terminal end. If voltage changes from zero to several volts during movement of lead, heat wire is open at the voltage change point.

#### **B: REPAIR**

1) Clean broken portion with alcohol or white gasoline.

2) Mask both side of wire with thin film.

3) Apply conductive silver composition (DUPONT No. 4817) to broken portion.



- (1) Broken portion
- (2) Masking thin film
- (3) Conductive silver composition
- (4) Broken wire

#### 4) After repair, check wire.



**GW-32** 



GLASS/WINDOWS/MIRRORS

## **19.Outer Mirror Assembly**

## A: REMOVAL

1) Remove door trim. <Ref. to EI-32, REMOVAL, Front Door Trim.>

2) Pull off sealing cover to disconnect mirror electrical connector.



3) Loosen screws to remove mirror assembly.



## **B: INSTALLATION**

Install in the reverse order of removal.

## **C: INSPECTION**

Check to ensure that rearview mirror moves properly when battery voltage is applied to terminals.

Switch position	Terminal No.
OFF	—
UP	1 (+) and 3 (-)
DOWN	3 (+) and 1 (-)
LEFT	2 (+) and 3 (-)
RIGHT	3 (+) and 2 (-)

If NG, replace the mirror.

## **OUTER MIRROR**

#### GLASS/WINDOWS/MIRRORS

## **20.Outer Mirror**

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## A: REPLACEMENT

1) Remove the door mirror assembly. <Ref. to GW-33, REMOVAL, Outer Mirror Assembly.>

2) Warm the area around the mirror holder (A) with a hair drier until the edges of the mirror holder become soft (about 2 or 3 minutes with a 1,000 W drier.)

3) Use a flat-bladed screwdriver without sharp edges to lift the mirror out of the mirror holder (A). (Also remove the connector from the back of mirrors with heaters.)



4) Warm the area around the mirror holder (A) with a hair drier until the edges of the mirror holder (A) become soft (about 2 or 3 minutes with a 1,000 W drier.)

5) Remove the backing of the new two-sided tape, and push the mirror in to install it.

#### CAUTION:

Unless the mirror holder is warmed sufficiently, the mirror holder edges may be damaged or the mirror cracked.



**GW-34** 

## **REMOTE CONTROL MIRROR SWITCH**

#### GLASS/WINDOWS/MIRRORS

## 21.Remote Control Mirror Switch

## A: REMOVAL

1) Remove power window main switch panel.



2) Remove four hook (A) to remove remote control mirror switch.



## **B: INSTALLATION**

Install in the reverse order of removal.

## **C: INSPECTION**

Move rearview mirror switch to each position and check continuity between terminals.



	Change	over	switch	left	position:
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Switch position	Terminal No.	Standard
OFF	—	More than 1 M $\Omega$
UP	7 and 4, 2 and 1	Less than 1 $\Omega$
DOWN	7 and 2, 4 and 1	Less than 1 $\Omega$
LEFT	9 and 4, 2 and 1	Less than 1 $\Omega$
RIGHT	9 and 2, 4 and 1	Less than 1 $\Omega$

#### Change over switch right position:

Switch position	Terminal No.	Standard
OFF	—	More than 1 M $\Omega$
UP	6 and 4, 2 and 1	Less than 1 $\Omega$
DOWN	6 and 2, 4 and 1	Less than 1 $\Omega$
LEFT	8 and 4, 2 and 1	Less than 1 $\Omega$
RIGHT	8 and 2, 4 and 1	Less than 1 $\Omega$

If NG, replace the switch.

## WIPER DEICER

#### GLASS/WINDOWS/MIRRORS

## 22.Wiper Deicer

## A: INSPECTION

Refer to INSPECTION under Rear Window Defogger. <Ref. to GW-32, INSPECTION, Rear Window Defogger.>

## **B: REPAIR**

Refer to REPAIR under Rear Window Defogger. <Ref. to GW-32, REPAIR, Rear Window Defogger.>



**GW-36** 

# 23.Wiper Deicer Switch

A: REMOVAL Remove driver side switch panel, and then remove wiper deicer switch.



## **B: INSTALLATION**

Install in the reverse order of removal.

## **C: INSPECTION**

Move wiper deicer switch to each position and check continuity between terminals.

Terminal No.	Standard
_	More than 1 M $\Omega$
ON 3 and 5	
	Terminal No. — 3 and 5

If NG, replace the switch.

GLASS/WINDOWS/MIRRORS

MEMO:

#### AIRBAG SYSTEM

## **1. General Description**

## A: COMPONENT

## 1. SRS AIRBAG



- (1) Combination switch ASSY with roll connector
- (2) TORX® bolt T30
- (3) Airbag module ASSY (Driver)
- (4) Airbag module ASSY (Passenger)
- (5) Airbag control module
- (6) Side airbag sensor
- (7) Side airbag harness
- (8) Side airbag module
- (9) Airbag main harness
- (10) Front sub sensor harness
- Tightening torque: N·m (kgf-m, ft-lb)

   T1:
   7.4 (0.75, 5.4)

   T2:
   10 (1.0, 7.2)

   T3:
   20 (2.0, 14.5)
- T4: 25 (2.5, 18.1)
- (11) Front sub sensor

• When servicing a vehicle, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait for more than 20 seconds before starting work.

• The airbag system is fitted with a backup power source. If the airbag system is serviced within 20 seconds after the ground cable is disconnected, it may inflate.



• If sensors, airbag module, airbag control module, pretensioner, and harness are deformed or damaged, replace them with new genuine parts.



• When checking the system, be sure to use a digital circuit tester.

Use of an analog circuit tester may cause the airbag to activate erroneously.

• When checking, use a test harness. Do not directly apply the tester probe to any connector terminal of the airbag.





(1) Test harness

• Do not check continuity of either of the airbag modules for driver, passenger or side, or pretensioner.



#### AIRBAG SYSTEM

• Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the internal parts may be damaged and reliability greatly lowered.



• If any damage, opening, or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



• Install the wire harness securely with the specified clips to avoid interference or tongled up with other parts.



• Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.



• Either of the airbag parts, or pretensioner must not be disassembled.



• After removal, keep the airbag module with the pad facing upward on a dry, clean, and flat surface away from heat and light sources, and moisture and dust.



• The removed front seat with the airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



• Do not use the airbag or pretensioner parts from other vehicles. Always replace defective parts with new parts.

• Never re-use a deployed airbag or pretensioner.

• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender, and front side frame, remove parts and take utmost care not to apply paint or the flame of the welding burner directly to the front sub sensors and wire harness of the airbag system.

• When painting or performing sheet metal work on the side of the vehicle, including the side sill, center pillar, and front and rear doors, remove parts and take utmost care not to apply paint or the flame of the welding burner directly to the side airbag sensors and wire harness of the airbag system.



AIRBAG SYSTEM

• When storing a removed airbag module, do not place any objects on it or pile airbag modules on top of each other. If the airbag inflates for some reason when it is placed with its pad side facing downward or under any object, a serious accident may result.



## C: PREPARATION TOOL

## 1. GENERAL TOOL

TOOL NAME	REMARKS
TORX <sup>®</sup> T30	Used for removal/installation of drivers airbag module

## AIRBAG CONNECTOR

AIRBAG SYSTEM

## 2. Airbag Connector

## A: OPERATION

#### 1. DRIVER'S AIRBAG, PASSENGER'S AIR-BAG, SIDE AIRBAG, FRONT SUB SENSOR HARNESS TO AIRBAG MAIN HARNESS AND PRETENSIONER

#### • How to disconnect:

1) Push lock arm (A).

2) With lock arm (Å) pushed in, move slide lock (B) in the direction of the arrow.



3) With slide lock (B) pulled, remove lock arm (A) to its original position, and then pull in the direction of the arrow and separate the connector.

#### CAUTION:

When pulling, be sure to hold onto the connector and not the wire.



#### • How to connect:

Holding the connector, and push it in carefully until a connecting sound is heard.

#### CAUTION:

Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.



## AIRBAG CONNECTOR

# 2. FRONT SUB-SENSOR, SIDE AIRBAG SENSOR

#### • How to disconnect:

1) Holding outer part (A), pull it in the direction of the arrow.

#### CAUTION:

When pulling, be sure to hold onto the connector and not the wire.



#### • How to connect:

Holding the connector, and push it in carefully until a connecting sound is heard.

#### CAUTION:

• Outer (A) moves back, and so do not put your hand on the outer part.

• Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.



## 3. PASSENGER'S AIRBAG

#### • How to disconnect:

Holding female connector (C) in one hand, use your other hand to pull slide lock (A) in the direction of the arrow.

#### CAUTION:

When pulling, be sure to hold onto the slide lock and not the male connector or wire.



#### • How to connect:

1) Insert female connector (C) over male connector socket (B), and push slide lock (A) into the female connector tabs.

#### CAUTION:

#### Do not hold onto the slide lock.

2) If the male connector socket is pushed too hard, slide lock (A) will go past slide lock (A) tabs and connect.



(1) Hook

## AIRBAG CONNECTOR

AIRBAG SYSTEM

#### 4. AIRBAG MAIN HARNESS TO BODY HARNESS CONNECTOR

1) How to disconnect:

(1) Push lock arm (A) to let green lever (B) pop out.



(2) Then separate the connector halves by pulling them apart while pressing lever (A).

#### CAUTION:

When pulling, be sure to hold onto the connector and not the wire.



2) How to connect:

(1) Insert the (A) connector half into the other until a "click" is heard.

(2) Push in green lever (B) until a "click" is heard.

This engages the double lock mechanism.

## CAUTION:

Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.



## **INSPECTION LOCATIONS AFTER A COLLISION**

AIRBAG SYSTEM

# 3. Inspection Locations After a Collision

## A: INSPECTION

If the vehicle is involved in a collision on any side, even if it is a slight collision, be sure to check the following system parts.

## 1. AIRBAG MODULE (DRIVER)

1) Check for the following, and replace damaged parts with new parts.

- Airbag module is cracked or deformed.
- Harness and/or connector is cracked, deformed or open. Lead wire is exposed.
- Mounting bracket is cracked or deformed.
- Mounting bracket is cracked or deformed.
   The module surface is fould with groose
- The module surface is fouled with grease, oil, water or cleaning solvent.

2) When installing a new driver's airbag module, check the following. If necessary, install a new airbag module and steering wheel.

• The steering wheel is in the way, making it difficult to install the airbag module.

• The clearance between the driver's airbag module and steering wheel is not constant.

• Free play of the steering wheel is over specifications in axial and radial directions.

#### Specifications:

Height deflection A Less than 6 mm (0.24 in) O.D. deflection L Less than 7 mm (0.28 in)



#### 2. AIRBAG MODULE (PASSENGER)

Check for the following, and replace damaged parts with new parts.

- Airbag module is cracked or deformed.
- Harness and/or connector is cracked, deformed
- or open. Lead wire is exposed.
- Mounting bracket is cracked or deformed.
- The module surface is fouled with grease, oil, water or cleaning solvent.

#### 3. AIRBAG MODULE (SIDE)

Check for the following, and replace damaged parts with new parts.

- Front seat is damaged or deformed.
- Harness and/or connector is cracked, deformed or open.
- Lead wire is exposed.

#### 4. AIRBAG CONTROL MODULE

Check for the following, and replace damaged parts with new parts.

- Control module is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched or deformed.
- Airbag is deployed.
- Side airbag is deployed.

#### 5. FRONT SUB SENSOR

If the front section of vehicle as shown in the figure is damaged:



Check for the following, and replace damaged parts with new parts.

- Front sub sensor is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched or cracked.
- Airbag is deployed.

#### 6. FRONT SUB SENSOR HARNESS

Check for the following, and replace damaged parts with new parts.

• Harness is open, lead wire is exposed, and corrugated tube is noticeably cracked.

Connector is scratched or cracked.

## **INSPECTION LOCATIONS AFTER A COLLISION**

AIRBAG SYSTEM

#### 7. SIDE AIRBAG SENSOR

If the side section of vehicle as shown in the figure is damaged:



Check for the following, and replace damaged parts with new parts.

- Side airbag sensor is cracked or deformed.
- Mounting bracket is cracked or deformed.
- Connector is scratched or cracked.
- Side airbag is deployed. (operating side)

#### 8. SIDE AIRBAG SENSOR HARNESS

Check for the following, and replace damaged parts with new parts.

- Harness is open, lead wire is exposed, and corrugated tube is noticeably cracked.
- Connector is scratched or cracked.

#### 9. MAIN HARNESS

Check for the following, and replace damaged parts with new parts.

• Harness is open, lead wire is exposed, and corrugated tube is noticeably cracked.

• Connector is scratched or cracked.

#### **10.ROLL CONNECTOR**

Check for the following, and replace damaged parts with new parts.

• Combination switch or steering roll connector is cracked or deformed.

#### **11.STEERING SHAFT**

Check for the following, and replace damaged parts with new parts.

The clearance between capsule (A) and tip of column bracket (B) on steering column upper side should be within specifications.

#### Specifications:

Clearance between capsule and tip of column bracket L

More than 1.3 mm (0.051 in)



If necessary, replace them with new parts.

## 4. Driver's Airbag Module

## A: REMOVAL

#### CAUTION:

#### Refer to "CAUTION" in General Description before handling the airbag module. <Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>

1) Position front wheels straight ahead. (After moving a vehicle more than 5 m (16 ft) with front wheels positioned straight ahead, make sure that the vehicle moves straight ahead).

2) Turn ignition switch OFF.

3) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.

4) Using TORX<sup>®</sup> BIT T30, remove two TORX<sup>®</sup> bolts on side of steering wheel.



5) Disconnect airbag connector on back of airbag module, and then remove airbag module.



6) Refer to "CAUTION" for handling of a removed airbag module. **<Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>** 

#### **B: INSTALLATION**

1) Install in the reverse order of removal.

CAUTION:

Do not allow harness and connectors to interfere or get tangled up with other parts.

## **C: INSPECTION**

#### CAUTION:

Refer to "CAUTION" in General Description before handling the airbag module. <Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>

Check for the following, and replace damaged parts with new parts.

• Airbag module, harness, connector, and mounting bracket are damaged.

## **PASSENGER'S AIRBAG MODULE**

AIRBAG SYSTEM

## 5. Passenger's Airbag Module

## A: REMOVAL

#### CAUTION:

Refer to "CAUTION" in General Description before handling the airbag module. <Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>

1) Turn ignition switch OFF.

2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.

3) Remove glove box. <Ref. to EI-34, REMOVAL, Glove Box.>

4) Disconnect airbag connector (A), and then detach airbag connector from support beam bracket.5) Remove three bolts, and then carefully remove airbag module.



6) Refer to "CAUTION" for handling of a removed airbag module. **<Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>** 

#### **B: INSTALLATION**

Install in the reverse order of removal.

#### CAUTION:

Do not allow harness and connectors to interfere or get tangled up with other parts.

#### C: INSPECTION

#### CAUTION:

Refer to "CAUTION" in General Description before handling the airbag module. <Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>

Check for the following, and replace damaged parts with new parts.

• Airbag module, harness, connector, and mounting bracket are damaged.

## SIDE AIRBAG MODULE

AIRBAG SYSTEM

## 6. Side Airbag Module

## A: REMOVAL

#### CAUTION:

• Refer to "CAUTION" in General Description before handling the airbag module. <Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>

• The side airbag module cannot be detached from the front seat assembly.

• When replacing side airbag module, replace front seat assembly.

<Ref. to SE-7, REMOVAL, Front Seat.>

#### **B: INSTALLATION**

<Ref. to SE-8, INSTALLATION, Front Seat.>

#### C: INSPECTION

#### **CAUTION:**

Refer to "CAUTION" in General Description before handling the airbag module. <Ref. to AB-3, CAUTION, GENERAL DESCRIPTION.>

Check for the following, and replace damaged parts with new parts.

• Front seat is deformed or damaged.

- Harness and/or connector is cracked, deformed or open.
- Lead wire is exposed.



AB-15



AIRBAG SYSTEM

## 7. Main Harness

## A: REMOVAL

1) Turn ignition switch OFF.

2) Disconnect the ground cable from the battery and wait for at least 20 seconds before starting work.

3) Remove instrument panel. <Ref. to EI-37, RE-MOVAL, Instrument Panel Assembly.>

4) Disconnect connector from airbag control module.



5) Disconnect front sub sensor connector (blue) from airbag main harness.



6) Detach clips (A) from steering support beam, and remove main harness.



(1) View A

## **B: INSTALLATION**

Install in the reverse order of removal.

### **C: INSPECTION**

Check for the following, and replace damaged parts with new parts.

• Harness and/or connector is damaged.

# 8. Side Airbag Harness

## A: REMOVAL

1) Turn ignition switch OFF.

2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.

3) Remove front seat. <Ref. to SE-7, REMOVAL, Front Seat.>

4) Remove console box. <Ref. to EI-36, REMOV-AL, Console Box.>

5) Roll up floor mat, and then disconnect two 12-pin yellow connectors from airbag control module.

6) Disconnect connector from side airbag sensor.
<Ref. to AB-19, REMOVAL, Side Airbag Sensor.>
7) Detach clips, and then remove side airbag harness.



## **B: INSTALLATION**

Install in the reverse order of removal.

## **C: INSPECTION**

Check for the following, and replace damaged parts with new parts.

• Harness and/or connector is damaged.

AIRBAG SYSTEM

## 9. Airbag Control Module

## A: REMOVAL

CAUTION:

• Do not disassemble the airbag control module.

• If the airbag control module is deformed or if water damage is suspected, replace the airbag control module with a new genuine part.

• Do not drop the airbag control module.

• After removal, keep the airbag control module on a dry, clean surface away from moisture, heat, and dust.

1) Turn ignition switch OFF.

2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.

3) Remove console box. <Ref. to EI-36, REMOV-AL, Console Box.>

4) Disconnect connector from airbag control module.

5) Remove four airbag control module mounting bolts in the order shown in the figure.



## **B: INSTALLATION**

CAUTION:

Use new mounting bolts during re-assembly. Install in the reverse order of removal.

#### C: INSPECTION

Check for the following, and replace damaged parts with new parts.

• Control module, connector, and mounting bracket are damaged.

- Airbag is deployed.
- Side airbag is deployed.

## SIDE AIRBAG SENSOR

## **10.Side Airbag Sensor**

## A: REMOVAL

1) Turn ignition switch OFF.

2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.

3) Remove center pillar lower trim. <Ref. to EI-42, REMOVAL, Lower Inner Trim.>

4) Remove Outer Belt (FRONT). <Ref. to SB-7, REMOVAL, Front Seat Belt.>

5) Remove bracket (A), and then remove cap (B).



6) Remove two mounting nuts, and then detach side airbag sensor (A).



**B: INSTALLATION** 

CAUTION: Use new mounting nuts during re-assembly. Install in the reverse order of removal.

## **C: INSPECTION**

Check for the following, and replace damaged parts with new parts.

• Bracket connector for side airbag sensor is damaged.

## **ROLL CONNECTOR**

AIRBAG SYSTEM

## **11.Roll Connector**

## A: REMOVAL

1) Turn ignition switch OFF.

2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.

3) Remove instrument panel lower cover.

4) Disconnect airbag connector (AB3) and (AB8) below steering column.



5) Remove driver's airbag module. <Ref. to AB-13, Driver's Airbag Module.>

6) Remove steering wheel. <Ref. to PS-18, RE-MOVAL, Steering Wheel.>

7) Remove steering column cover.

8) Remove screws, and then remove roll connector.



#### **B: INSTALLATION** Install in the reverse order of removal.

install in the reverse order of remov

## C: INSPECTION

Check for the following, and replace damaged parts with new parts.

• Combination switch and roll connector is cracked or deformed.

## **D: ADJUSTMENT**

1) Check that front wheels are positioned in straight ahead direction.

2) Turn roll connector pin (A) clockwise until it stops.

3) Turn roll connector pin (A) counterclockwise approximately 2.65 turns until "▲" marks are aligned.



## A: REMOVAL

1) Turn ignition switch OFF.

2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.

3) Remove front bumper. <Ref. to EI-14, REMOV-AL, Front Bumper.>

4) Disconnect connector from front sub sensor.



5) Remove front sub sensor (A).



## **B: INSTALLATION**

Install in the reverse order of removal.

#### **C: INSPECTION**

Check for the following, and replace damaged parts with new parts.

• Front sub sensor, mounting bracket, and connector are damaged.

## FRONT SUB SENSOR HARNESS

AIRBAG SYSTEM

## **13.Front Sub Sensor Harness**

## A: REMOVAL

1) Turn ignition switch OFF.

2) Disconnect the ground cable from the battery, and wait for at least 20 seconds before starting work.

3) Remove instrument panel. <Ref. to EI-37, RE-MOVAL, Instrument Panel Assembly.>

4) Disconnect front sub sensor connector (blue) from airbag main harness.



5) Remove front bumper. <Ref. to EI-14, REMOV-AL, Front Bumper.>

6) Disconnect connector from front sub sensor.



7) Remove wiring harness clips.

8) Remove grommet, and then detach front sub sensor harness (A).



#### **B: INSTALLATION** Install in the reverse order of removal.

#### C: INSPECTION

Check for the following, and replace damaged parts.

• Harness and/or connector is damaged.

# BASIC DIAGNOSTIC PROCEDURE

# 1. Basic Diagnostic Procedure

## A: PROCEDURE

	Step	Value	Yes	No
1	Read DTC. <ref. ab-20,="" code<br="" diagnostic="" read="" to="" trouble="">(DTC).&gt; Is the normal code being detected?</ref.>	Normal code detected.	Finish the diagno- sis.	Go to step 2.
2	Read DTC. <ref. ab-20,="" code<br="" diagnostic="" read="" to="" trouble="">(DTC).&gt; Is the DTC being detected?</ref.>	DTC detected.	Go to step 3.	Go to "Airbag Warning Light Fail- ure". <ref. ab-<br="" to="">24, Airbag Warn- ing Light Failure.&gt;</ref.>
3	<ul> <li>Perform the diagnosis.</li> <li>1) Judge the possible cause from "List of Diagnostic Trouble Code (DTC)" <ref. (dtc).="" ab-28,="" code="" diagnostic="" list="" of="" to="" trouble="">.</ref.></li> <li>2) Inspect using "Diagnostic Chart with Diagnostic Trouble Code (DTC)".</li> <li>3) Repair the cause of the trouble.</li> <li>4) Perform the clear memory mode. <ref. ab-22,="" clear="" memory="" mode.="" to=""></ref.></li> <li>5) Perform the inspection mode. <ref. ab-21,="" inspection="" mode.="" to=""></ref.></li> <li>6) Read DTC. Is the DTC being detected?</li> </ul>	DTC detected.	Perform the proce- dure 1) to 5) in step 3.	Finish the diagno- sis.

## CHECK LIST FOR INTERVIEW

AIRBAG SYSTEM (DIAGNOSTICS)

# 2. Check List for Interview

## A: CHECK

Customer's Name		Inspector's Name	
Date Vehicle Brought In	/ /	Registration No.	
Odometer Reading	km Miles	Vin No.	
Date Problem Occurred	/ /	Registration Year	/ /
Weather	□ Fine □ Cloudy □ Rainy □ Snowy □ Other:		
Temperature	°C (°F)		
Road Condition	Level road 🗅 Uphil 🗅 Downhill 🗅 Rough road 🗅 Others:		
Vehicle Operation	□ Starting □ Idling □ Driving (□ Constant Speed □ Acceleration □ Deceleration □ Steering wheel turn □ Other: )		
Details of Problem			
Check Airbag Warning Light	Remains ON Remains OFF		
Check DTC	Normal Code Trouble Code: (Code: )		

Vehicle-id: SIE-id::A:Check



AIRBAG SYSTEM (DIAGNOSTICS)

## 3. General Description

## A: CAUTION

• When servicing a vehicle, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait for more than 20 seconds before starting work.

• The airbag system is fitted with a backup power source. If the airbag system is serviced within 20 seconds after the ground cable is disconnected, it may inflate.



• If the airbag warning light illuminates, repair the vehicle immediately. Airbag or pretensioner may inflate incorrectly, or not inflate in collision.

• If sensors, airbag module, airbag control module pretensioner, and harness are deformed or damaged, replace them with new genuine parts.

• Do not use the airbag system and pretensioners on other vehicles. When replacing parts, be sure to replace them with new parts.



• When checking the system, be sure to use a digital circuit tester. Use of an analog circuit tester may cause the airbag to activate erroneously.



• When checking, use a test harness. Do not directly apply the tester probe to any connector terminal of the airbag.



(1) Test harness

• Do not drop the airbag modulator parts, subject them to high temperature over 93°C (199°F), or let water, oil, or grease get on them; otherwise, the in-

## AIRBAG SYSTEM (DIAGNOSTICS)

ternal parts may be damaged and reliability greatly lowered.



• If any damage, opening or rust is found on the airbag system wire harness, do not attempt to repair using soldering equipment. Be sure to replace the faulty harness with a new genuine part.



• Install the wire harness securely with the specified clips to avoid interference or tangled up with other parts.



• Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.



• The airbag module (driver, passenger, and side, pretensioner) must not be disassembled.

• The airbag module cannot be used again once inflated.



• After removal, keep the airbag module with the pad facing upward on a dry, clean, and flat surface away from heat and light sources, and moisture and dust.



AB-5

AIRBAG SYSTEM (DIAGNOSTICS)

• Do not check continuity of the airbag module (driver, passenger, and side, pretensioner).



• The removed front seat with the airbag module must be kept at least 200 mm (8 in) away from walls and other objects.



(1) More than 200 mm (8 in)

• When painting or performing sheet metal work on the front part of the vehicle, including the front wheel apron, front fender, and front side frame, remove the front sub sensors and wire harness of the airbag system.

• When painting or performing sheet metal work on the side of the vehicle, including the side sill, center pillar, and front and rear doors, remove the side airbag sensors and wire harness of the airbag system.



• When storing a removed airbag module, do not place any objects on it or pile airbag modules on top of each other. If the airbag inflates for some reason when it is placed with its pad side facing downward or under any object, a serious accident may result.



#### (1) Driver side

(2) Passenger side

• Do not discard undeployed airbag modules. They could easily cause a serious accident if accidentally deployed.Do not damage the airbag module or drop it.

**AB-7** 

AIRBAG SYSTEM (DIAGNOSTICS)

## **B: INSPECTION**

Before diagnosing, check the following items that might be related to the engine problem:

## 1. BATTERY

Measure battery voltage and specific gravity of electrolyte.

Standard voltage: 12 V

Specific gravity: Above 1.260
#### C: PREPARATION TOOL

#### CAUTION:

Be sure to use specified test harness F, G, H, K and I or I2 when measuring voltage, resistance, etc. of AIRBAG system component parts.

#### 1. TEST HARNESS F



#### AIRBAG SYSTEM (DIAGNOSTICS)

#### 2. TEST HARNESS G



GENERAL DESCRIPTION

#### 3. TEST HARNESS H



#### AIRBAG SYSTEM (DIAGNOSTICS)

#### 4. TEST HARNESS I2



#### AIRBAG SYSTEM (DIAGNOSTICS)

#### 5. AIRBAG RESISTOR

The airbag resistor is used during diagnostics. The airbag resistor has the same resistance as the airbag module and thus provides safety when used instead of the airbag module. It also makes it possible to finish, diagnostics in less time.



#### AIRBAG SYSTEM (DIAGNOSTICS)

#### 6. TEST HARNESS K



## 4. Electrical Components Location

#### A: LOCATION



- (1) Front sub sensor (LH)
- (2) Front sub sensor (RH)
- (3) Front sub sensor harness (LH)
- (4) Front sub sensor harness (RH)
- (5) Airbag control module with safety sensor and electric sensor
- (6) Inflator (Passenger)
- (7) Roll connector
- (8) Airbag main harness
- (9) Inflator (Driver)
- (10) Side airbag harness (LH)
- (11) Side airbag harness (RH)
- (12) Side airbag sensor (LH)
- (13) Side airbag sensor (RH)
- (14) Side airbag inflator (LH)
- (15) Side airbag inflator (RH)
- (a) To body harness
- (b) To seal belt pretensioner (LH)
- (c) To seal belt pretensioner (RH)

Connec- tor No.	(AB1)	(AB2)	(AB3)	(AB6)	(AB7)	(AB8)	(AB9)	(AB10)	(AB11)	(AB12)	(AB13)	(AB14)
Pole	12	2	2	28	2	2	4	4	2	2	2	2
Color	Yellow	Blue	Blue	Yellow	Blue							
Male/ Female	Male	Male	Male	Female	Female	Female	Female	Male	Male	Female	Female	Male
Connec- tor No.	(AB15)	(AB16)	(AB17)	(AB18)	(AB19)	(AB20)	(AB21)	(AB23)	(AB24)	(AB25)	(AB26)	(AB28)
Pole	2	2	12	12	2	2	2	4	2	2	2	4
Color	Blue	Yellow										
Male/ Female	Female	Female	Female	Female	Female	Male	Female	Female	Female	Male	Female	Female

## AB-15

### AIRBAG CONNECTOR

AIRBAG SYSTEM (DIAGNOSTICS)

### 5. Airbag Connector

#### A: OPERATION

1. DRIVER'S AIRBAG (AIRBAG MAIN HAR-NESS AND ROLL CONNECTOR), SIDE AIR-BAG, FRONT SUB SENSOR HARNESS TO AIRBAG MAIN HARNESS AND PRETEN-SIONER

#### • How to disconnect:

1) Push lock arm (A).

2) With lock arm (Å) pushed in, move slide lock (B) in the direction of the arrow.



3) With slide lock (B) pulled, remove lock arm (A) to its original position, and then pull in the direction of the arrow and separate the connector.

#### CAUTION:

When pulling, be sure to hold onto the connector and not the wire.



• How to connect:

Holding the connector, and push it in carefully until a connecting sound is heard.

#### CAUTION:

Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.



#### AIRBAG CONNECTOR

#### AIRBAG SYSTEM (DIAGNOSTICS)

## 2. FRONT SUB-SENSOR, SIDE AIRBAG SENSOR

#### • How to disconnect:

1) Holding outer part (A), pull it in the direction of the arrow.

#### **CAUTION:**

When pulling, be sure to hold onto the connector and not the wire.



#### • How to connect:

Holding the connector, and push it in carefully until a connecting sound is heard.

#### CAUTION:

• Outer (A) moves back, and so do not put your hand on the outer part.

• Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.



#### 3. PASSENGER'S AIRBAG

#### • How to disconnect:

Holding female connector (C) in one hand, use your other hand to pull slide lock (A) in the direction of the arrow.

#### CAUTION:

## When pulling, be sure to hold onto the slide lock and not the male connector or wire.



#### • How to connect:

1) Insert female connector (C) over male connector socket (B), and push slide lock (A) into the female connector tabs.

#### CAUTION:

#### Do not hold onto the slide lock.

2) If the male connector socket is pushed too hard, slide lock (A) will go past slide lock (A) tabs and connect.



#### AIRBAG CONNECTOR

AIRBAG SYSTEM (DIAGNOSTICS)

#### 4. AIRBAG MAIN HARNESS TO BODY HARNESS CONNECTOR

1) How to disconnect:

(1) Push lock arm (A) to let green lever (B) pop out.



(2) Then separate the connector halves by pulling them apart while pressing lever (A).

#### CAUTION:

When pulling, be sure to hold onto the connector and not the wire.



2) How to connect:

(1) Insert the (A) connector half into the other until a "click" is heard.

(2) Push in green lever (B) until a "click" is heard.

This engages the double lock mechanism.

#### CAUTION:

Be sure to insert the connector in until it locks. Then pull on it gently to make sure that it is locked.





## AIRBAG WARNING LIGHT ILLUMINATION PATTERN

AIRBAG SYSTEM (DIAGNOSTICS)

## 6. Airbag Warning Light Illumination Pattern

### A: INSPECTION

Keep the ignition switch ON, and confirm that the airbag warning light remains off approximately 6 seconds after being turned on.



- (1) Airbag warning light
- (2) Approx. 6 seconds
- (3) Ignition switch ON









## READ DIAGNOSTIC TROUBLE CODE (DTC)

AIRBAG SYSTEM (DIAGNOSTICS)

## 7. Read Diagnostic Trouble Code (DTC)

## A: OPERATION

1) Turn the ignition switch ON.

(1) Diagnosis connector(2) Diagnosis terminal

2) Connect the diagnosis terminal to diagnosis connector terminal No. 2 in the driver's seat lower cover area.



3) Read DTC by identifying the way the air bag warning light flashes.

The airbag warning light flashes a DTC corresponding to the faulty parts.

The long segment (1.2 sec on) indicates a "ten", and the short segment (0.3 sec on) indicates a "one".

#### NOTE:

• "List of Diagnostic Trouble Code (DTC)" <Ref. to AB-28, List of Diagnostic Trouble Code (DTC).>

• "Airbag Warning Light Failure" <Ref. to AB-24, Airbag Warning Light Failure.>



(2) Flashing code 12 (4) Flashing normal code

4) Turn the ignition switch OFF, and disconnect the diagnosis terminal from the diagnosis connector terminal No. 2.

5) Wind tape around the diagnosis terminal and return it to its original position.

### **INSPECTION MODE**

AIRBAG SYSTEM (DIAGNOSTICS)

## 8. Inspection Mode

A: OPERATION Recreate the circumstance by referring to the conditions described in the checklist.



AIRBAG SYSTEM (DIAGNOSTICS)

## 9. Clear Memory Mode

#### A: OPERATION

1) Turn the ignition switch ON.

2) Connect the diagnosis terminal to diagnosis connector terminal No. 2 in the driver's seat lower cover area.



3) While the warning light flashes, connect another diagnosis terminal to diagnosis connector terminal No. 3.

4) Once the memory is erased, the warning light returns to the normal flash rate (0.6 sec on). The failure to recover the normal flash rate indicates that trouble parts still remain. Having repaired such parts, erase the memory again and confirm that the normal flash rate has returned.

5) When the memory has been cleared, disconnect the diagnosis terminal from the diagnosis connector.

6) Wind tape around the diagnosis terminal and return it to its original position.

## CLEAR MEMORY MODE

AIRBAG SYSTEM (DIAGNOSTICS)

MEMO:

AIRBAG SYSTEM (DIAGNOSTICS)

## **10.Airbag Warning Light Failure**

## A: AIRBAG WARNING LIGHT REMAINS ON.

#### DIAGNOSIS:

- Airbag warning light is faulty.
- Airbag control module to airbag warning light circuit is shorted or open.
- Grounding circuit is faulty.
- Airbag control module is faulty.
- (AB1) and (B31) are not connected properly.
- (AB6) is not connected properly to airbag control module.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the airbag module connector of the driver and passenger seats for safety reasons.

#### WIRING DIAGRAM:



AIRBAG SYSTEM (DIAGNOSTICS)

	Step	Value	Yes	No
1	<ul> <li>CHECK POOR CONTACT IN CONNECTORS (AB1) AND (B31).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Remove side sill cover. (Driver's side)</li> <li>3) Confirm that firm contact is secured between connectors (AB1) and (B31). Is the poor contact in connectors (AB1) and (B31)?</li> </ul>	There is no poor contact.	Go to step 2.	Repair the body harness or replace airbag main har- ness. <ref. ab-<br="" to="">16, Main Har- ness.&gt;</ref.>
2	CHECK POOR CONTACT. Confirm that firm contact is secured between the air bag control module and the connector (AB6). <ref. ab-18,="" airbag="" control="" mod-<br="" to="">ule.&gt; Is the poor contact in connector (AB6)?</ref.>	There is no poor contact.	Go to step 3.	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt; Or replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.></ref.>
3	<ul> <li>CHECK AIRBAG MAIN HARNESS.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Connect the connector (AB1) to (B31).</li> <li>3) Disconnect connectors (AB3) and (AB8).</li> <li>4) Pull out the two stopper pins and lower the glove box and disconnect connectors (AB10) and (AB9).</li> <li>5) Disconnect the connector (AB6) from the airbag control module, and connect the connector (11) in test harness I2. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>6) Connect the battery ground cable and turn the ignition switch ON.</li> <li>7) Connect connectors (41) and (51) in test harness I2.</li> <li>NOTE: After problem has been eliminated, disconnect connectors (41) and (51). Is the airbag warning light turned off?</li> </ul>	Airbag warning light turns OFF.	Go to step 4.	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt; Or replace combina- tion meter printed circuit. <ref. to<br="">IDI-12, Combina- tion Meter Assem- bly.&gt; Or repair the body harness.</ref.></ref.>
4	<ul> <li>CHECK AIRBAG MAIN HARNESS.</li> <li>1) Connect the connector (AB1) to (B31).</li> <li>2) Disconnect the connector (AB6) from the airbag control module, and connect the connector (11) in test harness I2. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>3) Measure the resistance between connector (21) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal (21) No. 9 — Chassis ground: Is the measured value less than the specified value?</li> </ul>	10 Ω	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt; Or repair the body harness.</ref.>

AIRBAG SYSTEM (DIAGNOSTICS)

## **B: AIRBAG WARNING LIGHT REMAINS OFF.**

#### DIAGNOSIS:

- Fuse No. 5 (in fuse box) is blown.
- Body harness circuit is open.
- Airbag warning light is faulty.
- Airbag main harness is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the airbag module connector of the driver and passenger seats for safety reasons.

#### WIRING DIAGRAM:



AIRBAG SYSTEM (DIAGNOSTICS)

	Step	Value	Yes	No
1	<b>CHECK COMBINATION METER.</b> Turn the ignition switch ON, and confirm that warning lights equipped in the combination meter are turned on. Do warning lights not for the airbag turn on?	Warning lights not for the air- bag turn ON.	Go to step 2.	Repair combina- tion meter power supply. <ref. to<br="">IDI-4, Combina- tion Meter Sys- tem.&gt;</ref.>
2	CHECK FUSE NO. 5 (IN MAIN FUSE BOX). Remove fuse No. 5 and perform visual inspec- tion. Is fuse No. 5 (in main fuse box) blown?	Fuse No. 5 is not blown.	Go to step 3.	Replace fuse No. 5. If fuse No. 5 blows again, go to step 3.
3	<ul> <li>CHECK AIRBAG WARNING LIGHT CIRCUIT (IN COMBINATION METER).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the connector (AB1) from (B31).</li> <li>3) Connect the battery ground cable and turn the ignition switch ON. Is the airbag warning light turned on?</li> </ul>	Airbag warning light turns ON.	Go to step 4.	Replace airbag warning light bulb or combination meter printed cir- cuit. <ref. idi-<br="" to="">12, Combination Meter Assembly.&gt; Or repair the body harness.</ref.>
4	<ol> <li>CHECK AIRBAG MAIN HARNESS.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Connect the connector (AB1) to (B31).</li> <li>3) Disconnect the connector (AB6) from the airbag control module. <ref. ab-18,="" air-<br="" to="">bag Control Module.&gt;</ref.></li> <li>4) Connect the battery ground cable and turn the ignition switch ON. Is the airbag warning light turned on?</li> </ol>	Airbag warning light turns ON.	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace airbag main harness. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>

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# LIST OF DIAGNOSTIC TROUBLE CODE (DTC)

## 11.List of Diagnostic Trouble Code (DTC) A: LIST

DTC	Memory func-	Contents of diagnosis	Index No.
11	Provided.	<ul> <li>Airbag main harness circuit is open, shorted or shorted to ground.</li> <li>Airbag module harness (driver) circuit is open, shorted or shorted to ground.</li> <li>Roll connector circuit is open, shorted or shorted to ground.</li> <li>Airbag control module is faulty.</li> <li>Driver's airbag module is faulty.</li> </ul>	<ref. 11,<br="" ab-32,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
12	Provided.	<ul> <li>Airbag main harness circuit is open, shorted or shorted to ground.</li> <li>Airbag module harness (passenger) circuit is open, shorted or shorted to ground.</li> <li>Airbag control module is faulty.</li> <li>Passenger's airbag module is faulty.</li> </ul>	<ref. 12,<br="" ab-36,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
15	Provided.	<ul> <li>Airbag main harness circuit (driver) is shorted to power supply.</li> <li>Airbag module harness (driver) is shorted to power supply.</li> <li>Roll connector is shorted to power supply.</li> <li>Airbag control module is faulty.</li> <li>Driver's airbag module is faulty.</li> </ul>	<ref. 15,<br="" ab-38,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
16	Provided.	<ul> <li>Airbag main harness circuit (passenger) is shorted to power supply.</li> <li>Airbag module harness (passenger) is shorted to power supply.</li> <li>Airbag control module is faulty.</li> <li>Passenger's airbag module is faulty.</li> </ul>	<ref. 16,<br="" ab-40,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
21	Provided.	Airbag control module is faulty.	<ref. 21,<br="" ab-41,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
22	Provided.	Front airbag module and seat belt pretensioner (LH/ RH) are inflated.	<ref. 22,<br="" ab-42,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
23	Not provided.	(AB6), (AB17) and (AB18) are not connected properly to airbag control module.	<ref. 23,<br="" ab-43,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
24	Not provided.	<ul> <li>Airbag control module is faulty.</li> <li>Airbag main harness circuit is open.</li> <li>Fuse No. 11 (in joint box) is blown.</li> <li>Body harness circuit is open.</li> </ul>	<ref. 24,<br="" ab-44,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
25	Provided.	<ul> <li>Airbag control module is faulty.</li> <li>Airbag main harness circuit is open.</li> <li>Fuse No. 6 (in joint box) is blown.</li> <li>Body harness circuit is open.</li> </ul>	<ref. 25,<br="" ab-46,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
31	Provided.	<ul> <li>Front sub-sensor harness (RH) circuit is shorted.</li> <li>Front sub-sensor harness (RH) circuit is open.</li> <li>Front sub-sensor (RH) is faulty.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 31,<br="" ab-48,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>



## LIST OF DIAGNOSTIC TROUBLE CODE (DTC) AIRBAG SYSTEM (DIAGNOSTICS)

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DTC	Memory func- tion	Contents of diagnosis	Index No.
32	Provided.	<ul> <li>Front sub-sensor harness (LH) circuit is shorted.</li> <li>Front sub-sensor harness (LH) circuit is open.</li> <li>Front sub-sensor (LH) is faulty.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 32,<br="" ab-52,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
41	Provided.	<ul> <li>Side airbag harness (RH) is faulty.</li> <li>Side airbag module (RH) is faulty.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 41,<br="" ab-56,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
42	Provided.	<ul> <li>Side airbag harness (LH) is faulty.</li> <li>Side airbag module (LH) is faulty.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 42,<br="" ab-58,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
45	Provided.	<ul><li>Side airbag harness (RH) is shorted to power supply.</li><li>Airbag control module is faulty.</li></ul>	<ref. 45,<br="" ab-60,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
46	Provided.	<ul> <li>Side airbag harness (LH) is shorted to power supply.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 46,<br="" ab-62,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
51	Provided.	<ul> <li>Side airbag sensor (RH) is faulty.</li> <li>Side airbag harness (RH) is faulty.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 51,<br="" ab-64,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
52	Provided.	<ul> <li>Side airbag sensor (LH) is faulty.</li> <li>Side airbag harness (LH) is faulty.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 52,<br="" ab-66,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
53	Provided.	Side airbag sensor (RH) is faulty.	<ref. 53,<br="" ab-67,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
54	Provided.	Side airbag sensor (LH) is faulty.	<ref. 54,<br="" ab-67,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
55	Provided.	Side airbag module is inflated.	<ref. 55,<br="" ab-67,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
61	Provided.	<ul> <li>Seat belt pretensioner (RH) circuit is open, shorted or shorted to ground.</li> <li>Airbag control module is faulty.</li> <li>Pretensioner is faulty.</li> <li>Pretensioner harness is faulty.</li> </ul>	<ref. 61,<br="" ab-68,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
62	Provided.	<ul> <li>Seat belt pretensioner (LH) circuit is open, shorted or shorted to ground.</li> <li>Airbag control module is faulty.</li> <li>Pretensioner is faulty.</li> <li>Pretensioner harness is faulty.</li> </ul>	<ref. 62,<br="" ab-70,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
65	Provided.	<ul> <li>Seat belt pretensioner (RH) circuit is shorted to power supply.</li> <li>Pretensioner is faulty.</li> <li>Pretensioner harness is faulty.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 65,<br="" ab-72,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>



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DTC	Memory func- tion	Contents of diagnosis	Index No.
66	Provided.	<ul> <li>Seat belt pretensioner (LH) circuit is shorted to power supply.</li> <li>Pretensioner is faulty.</li> <li>Pretensioner harness is faulty.</li> <li>Airbag control module is faulty.</li> </ul>	<ref. 66,<br="" ab-74,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
72	Provided.	<ul> <li>Airbag harness is open, shorted or shorted to ground.</li> <li>Airbag module harness (passenger) circuit is open, shorted or shorted to ground.</li> <li>Airbag control module is faulty.</li> <li>Passenger's airbag module is faulty.</li> </ul>	<ref. 72,<br="" ab-76,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>
76	Provided.	<ul> <li>Airbag harness (passenger) is shorted or shorted to power supply.</li> <li>Airbag module harness (passenger) is shorted to power supply.</li> <li>Airbag control module is faulty.</li> <li>Passenger's airbag module is faulty.</li> </ul>	<ref. 76,<br="" ab-78,="" dtc="" to="">Diagnostic Chart with Diagnostic Trouble Code (DTC).&gt;</ref.>

# LIST OF DIAGNOSTIC TROUBLE CODE (DTC)







MEMO:

## **12.Diagnostic Chart with Diagnostic Trouble Code (DTC)**

#### A: DTC 11

#### **DIAGNOSIS:**

- Airbag main harness circuit is open, shorted or shorted to ground.
- Airbag module harness (Driver) circuit is open, shorted or shorted to ground.
- Roll connector circuit is open, shorted or shorted to ground.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll controller, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

#### WIRING DIAGRAM:



Step	Value	Yes	No
<ol> <li>CHECK DRIVER'S AIRBAG MODULE.         <ol> <li>Turn the ignition switch OFF, disconnect battery ground cable, and wait more than 20 seconds.</li> <li>Remove the driver's airbag module. <ref. ab-13,="" airbag="" driver's="" module.="" to=""></ref.></li> <li>Connect the connector (1F) in test harness F to connector (AB7).</li> <li>Connect airbag resistor to connector (3F) in test harness F.</li> <li>Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace the driver's airbag module. <ref. to<br="">AB-13, Driver's Airbag Module.&gt;</ref.>	Go to step 2.
<ol> <li>CHECK ROLL CONNECTOR.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 second.</li> <li>Disconnect the test harness from the connector (AB7).</li> <li>Remove the lower cover panel, disconnect the connector (AB3) from (AB8) and connect the connector (1F) in test harness F to connector (AB8).</li> <li>Connect the airbag resistor to connector (3F) in test harness F.</li> <li>Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace the roll connector. <ref. to AB-20, Roll Connector.&gt;</ref. 	Go to step 3.
<ul> <li>3 CHECK AIRBAG MAIN HARNESS.</li> <li>1) Turn the ignition switch OFF, disconnect the ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the airbag resistor from the connector (3F) in test harness F.</li> <li>3) Remove the glove box, <ref. ab-14,="" ab-<ref.="" airbag="" module.="" passenger's="" to="">, REMOVAL, Passenger's Airbag Module.&gt; and disconnect connectors (AB10) and (AB9).</ref.></li> <li>4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (1I) in test harness I2. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>5) Measure the resistance between connector (2I) in test harness F.</li> <li>Connector &amp; terminal (2I) No. 1 — (3F) No. 4: (2I) No. 4 — (3F) No. 3: Is the measured value less than the specified value?</li> </ul>	10 Ω	Go to step <b>4</b> .	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>

## DIAGNOSTIC CHART WITH DIAGNOSTIC TROUBLE CODE (DTC)

Step	Value	Yes	No
<ul> <li>CHECK AIRBAG MAIN HARNESS. Measure the resistance of the connector (2I) in test harness I2.</li> <li>Connector &amp; terminal (2I) No. 1 — No. 4: (2I) No. 4 — Chassis ground: (2I) No. 1 — Chassis ground: Does the measured value exceed the specified value?</li> </ul>	1 ΜΩ	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>

MEMO:

## DIAGNOSTIC CHART WITH DIAGNOSTIC TROUBLE CODE (DTC)

AIRBAG SYSTEM (DIAGNOSTICS)

## B: DTC 12

## DIAGNOSIS:

- Airbag main harness circuit is open, shorted or shorted to ground.
- Airbag module harness (Passenger) circuit is open, shorted or shorted to ground.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the airbag module connector of the driver and passenger seats for safety reasons.

#### WIRING DIAGRAM:



Step	Value	Yes	No
<ol> <li>CHECK PASSENGER'S AIRBAG MODULE.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Pull out the two stopper pins and lower the glove box.</li> <li>Disconnect the connector (AB10) from (AB9).</li> <li>Connect the connector (1K) in test harness K to connect (AB9).</li> <li>Connect two airbag resistors to connectors (3K) and (4K) in test harness K.</li> <li>Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace the pas- senger airbag module. <ref. to<br="">AB-14, Passen- ger's Airbag Mod- ule.&gt;</ref.>	Go to step 2.
<ul> <li>2 CHECK AIRBAG MAIN HARNESS.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect two airbag resistors from the connectors (3K) and (4K) in test harness K.</li> <li>3) Remove lower cover and disconnect the connector (AB3) from (AB8).</li> <li>4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (11) in test harness I2. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>5) Measure the resistance between connector (2I) in test harness K.</li> <li>Connector &amp; terminal (2I) No. 2 — (3K) No. 4: (2I) No. 5 — (3K) No. 3: Is the measured value less than the specified value?</li> </ul>	10 Ω	Go to step 3.	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>
<ul> <li>CHECK AIRBAG MAIN HARNESS. Measure the resistance of the connector (2I) in test harness I2. Connector &amp; terminal (2I) No. 2 — No. 5: (2I) No. 2 — Chassis ground: (2I) No. 5 — Chassis ground: Does the measured value exceed the specified value?</li> </ul>	1 ΜΩ	Replace airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>

## DIAGNOSTIC CHART WITH DIAGNOSTIC TROUBLE CODE (DTC)

AIRBAG SYSTEM (DIAGNOSTICS)

## C: DTC 15

## DIAGNOSIS:

- Airbag main harness circuit (Driver) is shorted to the power supply.
- Airbag module harness (Driver) is shorted to the power supply.
- Roll connector is shorted to the power supply.
- Driver's airbag module is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

#### WIRING DIAGRAM:



Step	Value	Yes	No
<ol> <li>CHECK DRIVER'S AIRBAG MODULE.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Remove the driver's airbag module. <ref. ab-13,="" airbag="" driver's="" module.="" to=""></ref.></li> <li>Connect the connector (AB7) to connector (1F) in test harness F.</li> <li>Connect the airbag resistor to connector (3F) in test harness F.</li> <li>Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace the driver's airbag module. <ref. to<br="">AB-13, Driver's Airbag Module.&gt;</ref.>	Go to step 2.
<ol> <li>CHECK ROLL CONNECTOR.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Disconnect the test harness from the connector (AB7).</li> <li>Remove the lower cover panel and disconnect the connector (AB3) from (AB8).</li> <li>Connect the connector (1F) in test harness F to connect or (AB8).</li> <li>Connect the airbag resistor to connector (3F) in test harness F.</li> <li>Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace the roll connector. <ref. to AB-20, Roll Connector.&gt;</ref. 	Go to step 3.
<ul> <li>3 CHECK AIRBAG MAIN HARNESS.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the airbag resistor from the connector (3F) in test harness F.</li> <li>3) Pull out the two stopper pins and lower the glove box, and disconnect connectors (AB10) and (AB9).</li> <li>4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (11) in test harness I2. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>5) Connect the battery ground cable and turn the ignition switch ON. (Engine OFF)</li> <li>6) Measure the voltage between connector (21) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(21) No. 4 (+) — Chassis ground (-):</li> <li>(21) No. 1 (+) — Chassis ground (-):</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	1 V	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>

## D: DTC 16

#### DIAGNOSIS:

- Airbag main harness circuit (Passenger) is shorted to the power supply.
- Airbag module harness (Passenger) is shorted to the power supply.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the airbag module connector of the driver and passenger seats for safety reasons.

#### WIRING DIAGRAM:



Step	Value	Yes	No
<ol> <li>CHECK PASSENGER'S AIRBAG MODULE.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Pull out the two stopper pins and lower the glove box.</li> <li>3) Disconnect the connector (AB10) from (AB9)</li> <li>4) Connect the connector (1K) in test harness K to connector (AB9).</li> <li>5) Connect two airbag resistors to connectors (3K) and (4K) in test harness K.</li> <li>6) Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate prop- erly?</li> </ol>	Operates properly.	Replace the pas- senger airbag module. <ref. to<br="">AB-14, Passen- ger's Airbag Mod- ule.&gt;</ref.>	Go to step 2.
<ul> <li>2 CHECK AIRBAG MAIN HARNESS.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect two airbag resistors from the connectors (3K) and (4K) in test harness K.</li> <li>3) Remove the lower cover and disconnect the connector (AB3) from (AB8).</li> <li>4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (11) in test harness I2. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>5) Measure the voltage between connector (21) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(21) No. 2 — Chassis ground:</li> <li>Is the measured value less than the specified value?</li> </ul> </li> </ul>	1 V	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>

## E: DTC 21

**DIAGNOSIS:** 

• Airbag control module is faulty.

CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

	Step	Value	Yes	No
1	CHECK IF DTC 21 IS INDICATED.	DTC 21 is not indicated.	Perform clear	Replace the airbag
	Read Diagnostic Trouble Code. <ref. ab-<br="" to="">20. Read Diagnostic Trouble Code (DTC).&gt;</ref.>		memory. <ref. to<br="">AB-22. Clear</ref.>	control module.
	Is airbag warning light trouble code 21 indi- cated?		Memory Mode.>	Airbag Control Module.>

**AB-41** 

### F: DTC 22 WIRING DIAGRAM:



This code is indicated when the front airbag and the pretensioner are in operation.

Once this code is indicated, memory is not erasable; therefore change the following parts.

- Airbag control module. < Ref. to AB-18, Airbag Control Module.>
- Driver's airbag module. < Ref. to AB-13, Driver's Airbag Module.>
- Passenger's airbag module. < Ref. to AB-14, Passenger's Airbag Module.>
- Front sub-sensor of both sides. <Ref. to AB-21, Front Sub Sensor.>
- Front seat belt outer with pretensioner of both sides. <Ref. to SB-7, Front Seat Belt.>

## G: DTC 23

DIAGNOSIS:

(AB6), (AB17) and (AB18) are not connected properly to airbag control module.

#### CAUTION:

Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

	Step	Value	Yes	No
1	<ul> <li>CHECK POOR CONTACT IN CONNECTORS (AB6), (AB17) and (AB18).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the connectors (AB6), (AB17) and (AB18) from the airbag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""> Check if rust or damage appear on the har- ness connector and the control module connector.</ref.></li> </ul>	Rust or damage on the har- ness connector and the control module are not found.	Go to step 2.	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt; Replace airbag main har- ness. <ref. ab-<br="" to="">16, Main Har- ness.&gt; Replace side airbag har- ness. <ref. ab-<br="" to="">17, Side Airbag Harness.&gt;</ref.></ref.></ref.>
2	<ul> <li>CHECK POOR CONTACT IN CONNECTORS <ul> <li>(AB6), (AB17) and (AB18).</li> </ul> </li> <li>1) Ensure that connectors are firmly reconnected.</li> <li>2) Connect the battery ground cable and turn the ignition switch ON. <ul> <li>Does the air bag warning light operate properly?</li> </ul> </li> </ul>	Operates properly.	Finish the diagno- sis.	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>

## H: DTC 24

- DIAGNOSIS:
- Airbag control module is faulty.
   Airbag main harpage arouit is open
- Airbag main harness circuit is open.Fuse No, 11 (in joint box) is blown.
- Fuse No, 11 (in joint box) is bio
  Body harness circuit is open.
- CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

#### WIRING DIAGRAM:


Step	Value	Yes	No
<ol> <li>CHECK FUSE No. 11 (IN JOINT BOX).</li> <li>1) Confirm that the ignition switch is turned OFF.</li> <li>2) Remove fuse No. 11 (in joint box) and per- form visual inspection. Is fuse No.11 blown?</li> </ol>	Fuse No. 11 is not blown.	Go to step 2.	Replace fuse No. 11. If fuse No. 11 blows again, repair the body harness.
<ul> <li>2 CHECK AIRBAG CONTROL MODULE.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Disconnect the connector (AB6) from the airbag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>3) Connect the connector (11) in test harness l2 to connect or (AB6).</li> <li>4) Connect the battery ground cable and turn the ignition switch ON.</li> <li>5) Measure the voltage between connector (21) in test harness l2 and chassis ground.</li> </ol> </li> <li>Connector &amp; terminal         <ol> <li>(21) No. 3 (+) — Chassis ground (-): Does the measured value exceed the specified value?</li> </ol> </li> </ul>	10 V	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Go to step 3.
<ul> <li>3 CHECK BODY MAIN HARNESS.         <ol> <li>While checking control module, turn the ignition switch OFF and disconnect the battery ground cable. Wait more than 20 seconds before operation.</li> <li>Disconnect the airbag connector (AB1) from the body harness (B31).</li> <li>Measure the voltage between the connector (B31) and the chassis ground.</li> </ol> </li> <li>Connector &amp; terminal         <ul> <li>(B31) No. 12 (+) — Chassis ground (-): Does the measured value exceed the specified value?</li> </ul> </li> </ul>	10 V	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>	Repair the body harness.

AIRBAG SYSTEM (DIAGNOSTICS)

### I: DTC 25

- DIAGNOSIS:
- Airbag control module is faulty.
   Airbag main barrage circuit is oper
- Airbag main harness circuit is open.Fuse No. 6 (in joint box) is blown.
- Fuse No. 6 (in joint box) is blow
  Body harness circuit is open.
- CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.



	Step	Value	Yes	No
1	<ul> <li>CHECK FUSE NO. 6 (IN JOINT BOX).</li> <li>1) Confirm that the ignition switch is turned OFF.</li> <li>2) Remove No. 6 fuse (in joint box) and perform visual inspection. Is fuse No. 6 blown?</li> </ul>	Fuse No. 6 is not blown.	Go to step 2.	Replace fuse No. 6. If fuse No. 6 is blown again, repair the body harness.
2	<ul> <li>CHECK AIRBAG CONTROL MODULE.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the connector (AB6) from airbag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>3) Connect the connector (11) in test harness I2 to connect or (AB6).</li> <li>4) Connect the battery ground cable, and turn the ignition switch ON.</li> <li>5) Measure the voltage between the connector (21) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal (21) No. 6 (+) — Chassis ground (-): Does the measured value exceed the specified value?</li> </ul>	10 V	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Go to step 3.
3	<ul> <li>CHECK AIRBAG MAIN HARNESS.</li> <li>1) While checking control module, turn the ignition switch OFF and disconnect the battery ground cable. Wait more than 20 seconds before operation.</li> <li>2) Disconnect the airbag connector (AB1) from the body harness (B31).</li> <li>3) Measure the voltage between the connector (B31) and the chassis ground.</li> <li>Connector &amp; terminal (B31) No. 11 (+) — Chassis ground (-): Does the measured value exceed the specified value?</li> </ul>	10 V	Replace the airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>	Repair the body harness.

### J: DTC 31

#### DIAGNOSIS:

- Front sub-sensor harness (RH) circuit is shorted.
- Front sub-sensor harness (RH) circuit is open.
- Front sub-sensor (RH) is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.



	Step	Value	Yes	No
1	<ul> <li>Step</li> <li>CHECK FRONT SUB-SENSOR (RH) AND FRONT SUB-SENSOR HARNESS (RH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the connector (AB6) from the airbag control module , and connect the connector (11) in test harness 12. <ref. to<br="">AB-18, Airbag Control Module.&gt;</ref.></li> <li>3) Measure the resistance of the connector (31) in test harness 12.</li> <li>Connector &amp; terminal (31) No. 2 — No. 4: Is the measured value within the specified range?</li> </ul>	Value 750 Ω — 1 ΚΩ	Yes Go to step 2.	No Go to step 3.
2	CHECK FRONT SUB-SENSOR (RH) AND FRONT SUB-SENSOR HARNESS (RH). Measure the resistance between connector (31) in test harness 12 and the chassis ground. Connector & terminal (31) No. 2 — Chassis ground: (31) No. 4 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Go to step 3.
3	<ul> <li>CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (RH).</li> <li>1) Disconnect connector (AB16) from the front sub-sensor. <ref. ab-21,="" front<br="" to="">Sub Sensor.&gt;</ref.></li> <li>2) Connect connector (IH) in test harness H to connector (AB16).</li> <li>3) Measure the resistance between connector (3I) in test harness I2 and connector (3H) in test harness H.</li> <li>Connector &amp; terminal (3I) No. 2 — (3H) No. 5: (3I) No. 4 — (3H) No. 6: Is the measured value less than the speci- fied value?</li> </ul>	10 Ω	Go to step 4.	Go to step 5.
4	CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (RH). Measure the resistance between connector (31) in test harness I2 and the chassis ground. Connector & terminal (31) No. 2 — Chassis ground: (31) No. 4 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Go to step <b>9</b> .	Go to step <b>5</b> .

Step	Value	Yes	No
<ul> <li>5 CHECK AIRBAG MAIN HARNESS <ol> <li>Remove the instrument panel. <ref. tr<br="">37, Instrument Panel Assembly.&gt;</ref.></li> <li>Disconnect connector (AB15) from (AE and connect connector (2F) in test harn F to connector (AB14).</li> <li>Measure the resistance between conner (3I) in test harness I2 and connector (3 test harness F.</li> </ol> </li> <li>Connector &amp; terminal (3I) No. 2 - (3F) No. 6: (3I) No. 4 - (3F) No. 5: Is the measured value less than the sp fied value?</li> </ul>	0 EI- 314), ness ector F) in peci-	Go to step 6.	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>
6 CHECK AIRBAG MAIN HARNESS Measure the resistance between connector (3I) in test harness I2 and the chassis grov Connector & terminal (3I) No. 2 — Chassis ground: (3I) No. 4 — Chassis ground: Does the measured value exceed the spect value?	or und.	Go to step 7.	Replace airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>
<ul> <li>7 CHECK FRONT SUB-SENSOR HARNES (RH).</li> <li>1) Connect connector (1F) in test harness the connector (AB15).</li> <li>2) Measure the resistance between conne (3H) in test harness H and connector ( in the test harness F.</li> <li>Connector &amp; terminal (3F) No. 3 — (3H) No. 5: (3F) No. 4 — (3H) No. 6: Is the measured value less than the sp fied value?</li> </ul>	SS 10 Ω F to ector 3F) peci-	Go to step 8.	Replace the front sub-sensor har- ness (RH) <ref. to<br="">AB-22, Front Sub Sensor Harness.&gt;</ref.>
<ul> <li>8 CHECK FRONT SUB-SENSOR HARNES         <ul> <li>(RH).</li> <li>Measure the resistance between connected</li> <li>(3F) in test harness F and the chassis gro</li> <li>Connector &amp; terminal</li></ul></li></ul>	SS 1 MΩ or und.	Go to step 9.	Replace the front sub-sensor har- ness (RH) <ref. to<br="">AB-22, Front Sub Sensor Harness.&gt;</ref.>
<ul> <li>9 CHECK FRONT SUB-SENSOR (RH).</li> <li>1) Connect connector (2H) in test harne to front sub-sensor (RH).</li> <li>2) Measure the resistance of the connect (3H) in test harness H.</li> <li>Connector &amp; terminal (3H) No. 3 - No. 4: Is the measured value within the speci range?</li> </ul>	750 Ω — 1 KΩ ss H or fied	Go to step <b>10</b> .	Replace the front sub-sensor (RH) <ref. ab-21,<br="" to="">Front Sub Sen- sor.&gt;</ref.>

Step	Value	Yes	No
<ul> <li>10 CHECK FRONT SUB-SENSOR (RH). Measure the resistance between connector (3H) in test harness H and the chassis ground. Connector &amp; terminal (3H) No. 3 — Chassis ground: (3H) No. 4 — Chassis ground: Does the measured value exceed the specified value?</li> </ul>	1 ΜΩ	Finish the diagno- sis.	Replace the front sub-sensor (RH) <ref. ab-21,<br="" to="">Front Sub Sen- sor.&gt;</ref.>

## K: DTC 32

#### DIAGNOSIS:

- Front sub-sensor harness (LH) circuit is shorted.
- Front sub-sensor harness (LH) circuit is open.
- Front sub-sensor (LH) is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.



	Step	Value	Yes	No
1	<ul> <li>CHECK FRONT SUB-SENSOR (LH) AND FRONT SUB-SENSOR HARNESS (RH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect connector (AB6) from the air- bag control module, and connect connector (11) in the test harness I2 to connector (AB6). <ref. ab-18,="" airbag="" control<br="" to="">Module.&gt;</ref.></li> <li>3) Measure the resistance of the connector (31) in the test harness I2.</li> <li>Connector &amp; terminal (31) No. 1 - No. 3: Is the measured value within the specified</li> </ul>	750 Ω — 1 ΚΩ	Go to step 2.	Go to step 3.
2	range? CHECK FRONT SUB-SENSOR (LH) AND FRONT SUB-SENSOR HARNESS (RH). Measure the resistance between connector (31) in test harness 12 and the chassis ground. Connector & terminal (31) No. 1 — Chassis ground: (31) No. 3 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Replace the air- bag control mod- ule. <ref. ab-<br="" to="">18, Airbag Control Module.&gt;</ref.>	Go to step 3.
3	<ul> <li>CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (LH).</li> <li>1) Disconnect the connector (AB13) from the front sub-sensor. <ref. ab-21,="" front<br="" to="">Sub Sensor.&gt;</ref.></li> <li>2) Connect connector (1H) in test harness H to connector (AB13).</li> <li>3) Measure the resistance between connector (3I) in test harness I2 and connector (3H) in test harness H.</li> <li>Connector &amp; terminal (3I) No. 3 - (3H) No. 5: (3I) No. 1 - (3H) No. 6: Is the measured value less than the speci- fied value?</li> </ul>	10 Ω	Go to step 4.	Go to step 5.
4	CHECK AIRBAG MAIN HARNESS AND FRONT SUB-SENSOR HARNESS (LH). Measure the resistance between connector (31) in test harness I2 and the chassis ground. Connector & terminal (31) No. 3 — Chassis ground: (31) No. 1 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Go to step <b>9</b> .	Go to step 5.

	Step	Value	Yes	No
5	<ul> <li>CHECK AIRBAG MAIN HARNESS.</li> <li>1) Remove the instrument panel. <ref. el-<br="" to="">37, Instrument Panel Assembly.&gt;</ref.></li> <li>2) Disconnect connector (AB11) from (AB12), and connect connector (2F) in test harness F to (AB11).</li> <li>3) Measure the resistance between connector (3I) in test harness I2 and connector (3F) in test harness F.</li> <li>Connector &amp; terminal (3I) No. 3 - (3F) No. 6: (3I) No. 1 - (3F) No. 5: Is the measured value less than the speci- fied value?</li> </ul>	10 Ω	Go to step <b>6</b> .	Replace the airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>
6	CHECK AIRBAG MAIN HARNESS. Measure the resistance between connector (3I) in the test harness I2 and the chassis ground. Connector & terminal (3I) No. 3 — Chassis ground: (3I) No. 1 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Go to step 7.	Replace the airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>
7	<ul> <li>CHECK FRONT SUB-SENSOR HARNESS (LH).</li> <li>1) Connect connector (1F) in test harness F to connector (AB12).</li> <li>2) Measure the resistance between connector (3H) in test harness H and connector (3F) in test harness F.</li> <li>Connector &amp; terminal (3F) No. 3 - (3H) No. 5: (3F) No. 4 - (3H) No. 6: Is the measured value less than the specified value?</li> </ul>	10 Ω	Go to step 8.	Replace the front sub-sensor har- ness (LH). <ref. to<br="">AB-16, Main Har- ness.&gt;</ref.>
8	CHECK FRONT SUB-SENSOR HARNESS (LH). Measure the resistance between connector (3F) in test harness F and the chassis ground. <i>Connector &amp; terminal</i> (3F) No. 3 — Chassis ground: (3F) No. 4 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Go to step <b>9</b> .	Replace the front sub-sensor har- ness (LH). <ref. to<br="">AB-16, Main Har- ness.&gt;</ref.>
9	<ul> <li>CHECK FRONT SUB-SENSOR (LH).</li> <li>1) Connect connector (2H) in test harness H to front sub-sensor (LH).</li> <li>2) Measure the resistance of the connector (3H) in test harness H.</li> <li>Connector &amp; terminal (3H) No. 3 - No. 4: Is the measured value within the specified range?</li> </ul>	750 Ω — 1 ΚΩ	Go to step <b>10</b> .	Replace the front sub-sensor (LH). <ref. ab-21,<br="" to="">Front Sub Sen- sor.&gt;</ref.>

Step	Value	Yes	No
<ul> <li>10 CHECK FRONT SUB-SENSOR (LH). Measure the resistance between connector (3H) in test harness H and the chassis ground. Connector &amp; terminal (3H) No. 3 — Chassis ground: (3H) No. 4 — Chassis ground: Does the measured value exceed the specified value?</li> </ul>	1 ΜΩ	Finish the diagno- sis.	Replace the front sub-sensor (LH). <ref. ab-21,<br="" to="">Front Sub Sen- sor.&gt;</ref.>

#### L: DTC 41

#### DIAGNOSIS:

- Side airbag harness (RH) is faulty.
- Side airbag module (RH) is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



Step	Value	Yes	No
<ol> <li>CHECK SIDE AIRBAG MODULE.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Disconnect the connector (AB26) from the seat belt pretensioner (RH). <ref. sb-7,<br="" to="">Front Seat Belt.&gt;</ref.></li> <li>Disconnect connector (AB25) from (AB24), and connect connector (1F) in test harness F to (AB24).</li> <li>Connect air bag resistor to connector (3F) in test harness F.</li> <li>Connect the battery ground cable, and turn the ignition switch ON. Does the airbag warning light operate prop- erly?</li> </ol> </li> </ol>	Operates properly.	Replace front seat with side airbag module (RH). <ref. sb-7,<br="" to="">Front Seat Belt.&gt;</ref.>	Go to step 2.
<ul> <li>2 CHECK SIDE AIRBAG HARNESS (RH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect airbag resistor from test harness.</li> <li>3) Disconnect the connector (AB18) from air bag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>4) Connect connector (11) in test harness I2 to connector (AB18).</li> <li>5) Measure the resistance between connector (31) in test harness I2 and connector (3F) in test harness F.</li> <li>Connector &amp; terminal (31) No. 7 - (3F) No. 4: (31) No. 9 - (3F) No. 3: Is the measured value less than the specified value?</li> </ul>	10 Ω	Go to step 3.	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>
<ul> <li>CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance of the connector (3F) in test harness F. Connector &amp; terminal (3F) No. 3 — No. 4: Does the measured value exceed the specified value?</li> </ul>	1 ΜΩ	Go to step <b>4</b> .	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>
<ul> <li>CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance between connector (3F) in test harness F and the chassis ground. Connector &amp; terminal (3F) No. 3 — Chassis ground: (3F) No. 4 — Chassis ground: Does the measured value exceed the specified value?</li> </ul>	1 MΩ	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>

#### M: DTC 42

#### DIAGNOSIS:

- Side airbag harness (LH) is faulty.
- Side airbag module (LH) is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



Step Value Yes No CHECK SIDE AIRBAG MODULE. Operates properly. Replace front seat Go to step 2. 1) Turn the ignition switch OFF, disconnect with side airbag the battery ground cable, and wait more module (LH). than 20 seconds. <Ref. to SB-7. 2) Disconnect the connector (AB21) from the Front Seat Belt.> seat belt pretensioner (LH). <Ref. to SB-7, Front Seat Belt.> Disconnect connector (AB20) from (AB19), 3) and connect connector (1F) in test harness F to (AB19). 4) Connect airbag resistor to connector (3F) in test harness F. Connect the battery ground cable, and turn the ignition switch ON. 5) Does the air bag warning light operate properly? CHECK SIDE AIRBAG HARNESS (LH). 10 Ω Go to step 3. Replace side air-2 1) Turn ignition switch OFF, disconnect the bag harness. battery ground cable, and wait more than <Ref. to AB-17, 20 seconds. Side Airbag Har-2) Disconnect airbag resistor from the test ness.> harness. 3) Disconnect the connector (AB17) from the airbag control module. < Ref. to AB-18, Airbag Control Module.> 4) Connect connector (1I) in test harness I2 to connector (AB17). 5) Measure the resistance between connector (3I) in test harness I2 and connector (3F) in test harness F. Connector & terminal (31) No. 10 — (3F) No. 3: (31) No. 12 — (3F) No. 4: Is the measured value less than the specified value? CHECK SIDE AIRBAG HARNESS (LH). 1 MΩ Go to step 4. Replace side air-3 Measure the resistance of the connector (3F) bag harness. in test harness F. <Ref. to AB-17, **Connector & terminal** Side Airbag Har-(3F) No. 3 — No. 4: ness.> Does the measured value exceed the specified value? CHECK SIDE AIRBAG HARNESS (LH). 1 MΩ Replace the airbag Replace side air-Measure the resistance between connector control module. bag harness. (3F) in test harness F and the chassis ground. <Ref. to AB-17, <Ref. to AB-18, Connector & terminal Airbag Control Side Airbag Har-(3F) No. 3 — Chassis ground: (3F) No. 4 — Chassis ground: Module.> ness.> Does the measured value exceed the specified value?

#### N: DTC 45

DIAGNOSIS:

• Side airbag harness (RH) is shorted to power supply.

• Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



Step	Value	Yes	No
<ol> <li>CHECK SIDE AIRBAG MODULE.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Disconnect the connector (AB26) from the seat belt pretensioner (RH). <ref. front="" se-7,="" seat.="" to=""></ref.></li> <li>Disconnect the connector (AB25) from (AB24), and connect connector (1F) in test harness F to (AB24).</li> <li>Connect airbag resistor to connector (3F) in test harness F.</li> <li>Connect the battery ground cable, and turn the ignition switch ON. Does air bag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace front seat with side airbag module (RH). <ref. se-7,<br="" to="">Front Seat.&gt;</ref.>	Go to step 2.
<ul> <li>2 CHECK SIDE AIRBAG HARNESS (RH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect airbag resistor from the test harness.</li> <li>3) Disconnect the connector (AB18) from the airbag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>4) Connect connector (11) in test harness I2 to connector (AB18).</li> <li>5) Connect the battery ground cable, and turn the ignition switch ON.</li> <li>6) Measure the voltage between connector (31) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal (31) No. 7 (+) — Chassis ground (-): (31) No. 9 (+) — Chassis ground (-): Is the measured value less than the specified value?</li> </ul>	1 V	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>

#### O: DTC 46

DIAGNOSIS:

• Side airbag harness (LH) is shorted to power supply.

• Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



Step	Value	Yes	No
<ol> <li>CHECK SIDE AIRBAG MODULE.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Disconnect connector (AB21) from the seat belt pretensioner (LH). <ref. se-7,<br="" to="">Front Seat.&gt;</ref.></li> <li>Disconnect connector (AB20) from (AB19), and connect connector (1F) in test harness F to (AB19).</li> <li>Connect airbag resistor to connector (3F) in test harness F.</li> <li>Connect the battery ground cable and turn the ignition switch ON. Does air bag warning light operate prop- erly?</li> </ol> </li> </ol>	Operates properly.	Replace front seat with side airbag module (LH). <ref. se-7,<br="" to="">Front Seat.&gt;</ref.>	Go to step 2.
<ul> <li>2 CHECK SIDE AIRBAG HARNESS (LH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect airbag resistor from the test harness.</li> <li>3) Disconnect the connector (AB17) from the airbag control module. <ref. ab-18,="" air-<br="" to="">bag Control Module.&gt;</ref.></li> <li>4) Connect connector (11) in test harness I2 to connector (AB17).</li> <li>5) Connect the battery ground cable, and turn the ignition switch ON.</li> <li>6) Measure the voltage between connector (31) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal (31) No. 10 (+) — Chassis ground (-): (31) No. 12 (+) — Chassis ground (-): Is the measured value less than the speci- fied value?</li> </ul>	1 V	Replace the air- bag control mod- ule. <ref. ab-<br="" to="">18, Airbag Control Module.&gt;</ref.>	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>

#### P: DTC 51

#### DIAGNOSIS:

- Side airbag sensor (RH) is faulty.
- Side airbag harness (RH) is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



Step Value Yes No CHECK SIDE AIRBAG HARNESS (RH). 10 Ω Go to step 2. Replace side air-1) Turn the ignition switch OFF, disconnect bag harness. the battery ground cable, and wait more <Ref. to AB-17, Side Airbag Harthan 20 seconds. 2) Disconnect connector (AB26) from the seat ness.> belt pretensioner (RH). <Ref. to SB-7, Front Seat Belt.> 3) Disconnect connector (AB25) from (AB24). 4) Disconnect connector (AB18) from the airbag control module. < Ref. to AB-18, Airbag Control Module.> 5) Connect connector (11) in test harness I2 to the connector (AB18). 6) Disconnect connector (AB28) from the side airbag sensor (RH), and connect connector (1G) in test harness G to connector (AB28). 7) Measure the resistance between connector (3I) in test harness I2 and connector (3G) in test harness G. **Connector & terminal** (31) No. 17 — (3G) No. 2: (31) No. 18 — (3G) No. 4: (31) No. 19 — (3G) No. 1: (31) No. 20 — (3G) No. 5:

1 MΩ

Replace side air-

bag sensor (RH).

<Ref. to AB-19,

Side Airbag Sen-

sor.>When sensor

replacement is not

OK, replace the airbag control module. <Ref. to

AB-18, Airbag

Control Module.>

Replace side air-

<Ref. to AB-17,

Side Airbag Har-

bag harness.

ness.>

Is the measured value less than the speci-

CHECK SIDE AIRBAG HARNESS (RH).

(3I) No. 17 — Chassis ground: (3I) No. 18 — Chassis ground:

(31) No. 19 — Chassis ground: (31) No. 20 — Chassis ground:

Does the measured value exceed the specified

Measure the resistance between connector

(3I) in test harness I2 and the chassis ground.

fied value?

value?

**Connector & terminal** 

2

#### AB-65

### Q: DTC 52

#### DIAGNOSIS:

- Side airbag sensor (LH) is faulty.
- Side airbag harness (LH) is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



AIRBAG SYSTEM (DIAGNOSTICS)

Step	Value	Yes	No
1 CHECK SIDE AIRBAG HARNESS (LH).	10 Ω	Go to step 2.	Replace side air-
<ol> <li>Turn the ignition switch OFF, disconnect</li> </ol>			bag harness.
the battery ground cable, and wait more			<ref. ab-17,<="" th="" to=""></ref.>
than 20 seconds.			Side Airbag Har-
<ol><li>Disconnect the connector (AB21) from the</li></ol>			ness.>
seat belt pretensioner (LH). <ref. sb-7,<="" td="" to=""><td></td><td></td><td></td></ref.>			
Front Seat Belt.>			
3) Disconnect connector (AB20) from (AB19).			
4) Disconnect connector (AB17) from the air-			
bag control module. <ref. ab-18,="" airbag<="" td="" to=""><td></td><td></td><td></td></ref.>			
Control Module.>			
5) Connect connector (11) in test harness I2 to			
Connector (AB17).			
6) Disconnect connector (AB23) from the side			
tor (1G) in test harpess G to connector			
<ul><li>7) Measure the resistance between connector</li></ul>			
(31) in test harness I2 and connector (3G) in			
test harness G.			
Connector & terminal			
(3I) No. 5 — (3G) No. 5:			
(31) No. 14 — (3G) No. 1:			
(3I) No. 15 — (3G) No. 4:			
(3I) No. 16 — (3G) No. 2:			
Is the measured value less than the speci-			
fied value?			
2 CHECK SIDE AIRBAG HARNESS (RH).	1 MΩ	Replace side air-	Replace side air-
Measure the resistance between connector		bag sensor (LH).	bag harness.
(3I) in test harness I2 and the chassis ground.		<ref. ab-19,<="" td="" to=""><td><ref. ab-17,<="" td="" to=""></ref.></td></ref.>	<ref. ab-17,<="" td="" to=""></ref.>
Connector & terminal		Side Airbag Sen-	Side Airbag Har-
(31) No. 5 — Chassis ground:		sor.> When sensor	ness.>
(31) No. 14 — Chassis ground:		replacement is not	
(31) No. 15 — Chassis ground:		OK, replace the	
(31) NO. 16 — Chassis ground:		airbag control	
Does the measured value exceed the specified		AR 19 Airboa	
value?		Control Module -	
		Control Module.>	

#### R: DTC 53 DIAGNOSIS:

• Side airbag sensor (RH) is faulty.

When Code 53 is displayed, the circuit within the side airbag sensor (RH) is faulty. Replace the side airbag sensor (RH).

<Ref. to AB-19, Side Airbag Sensor.>

## S: DTC 54

#### DIAGNOSIS:

• Side airbag sensor (LH) is faulty.

When Code 53 is displayed, the circuit within the side airbag sensor (LH) is faulty. Replace the side airbag sensor (LH).

<Ref. to AB-19, Side Airbag Sensor.>

#### T: DTC 55

This code is displayed when the side airbag is deployed.

When this code is displayed, the memory cannot be erased. Replace the following parts.

- Airbag control module. <Ref. to AB-18, Airbag Control Module.>
- Front seat with side airbag module. (Operating side) <Ref. to SE-7, Front Seat.>
- Side airbag sensor. (Operating side) <Ref. to AB-19, Side Airbag Sensor.>

AIRBAG SYSTEM (DIAGNOSTICS)

### U: DTC 61

### DIAGNOSIS:

- Seat belt pretensioner (RH) circuit is open, shorted or shorted to ground.
- Airbag control module is faulty.
- Pretensioner is faulty.
- Pretensioner harness is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



	Step	Value	Yes	No
1	<ul> <li>CHECK SEAT BELT PRETENSIONER.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the connector (AB26) from the seat belt pretensioner (RH). <ref. belt.="" front="" sb-7,="" seat="" to=""></ref.></li> <li>3) Connect the connector (1F) in test harness F to (AB26).</li> <li>4) Connect the airbag resistor to connector (3F) in test harness F.</li> <li>5) Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ul>	Operates properly.	Replace seat belt pretensioner (RH). <ref. sb-7,<br="" to="">Front Seat Belt.&gt;</ref.>	Go to step 2.
2	<ul> <li>CHECK SIDE AIRBAG HARNESS (RH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the airbag resistor from the test harness.</li> <li>3) Disconnect the connector (AB25) from (AB24).</li> <li>4) Disconnect the connectors (AB17) and (AB18) from the airbag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>5) Connect the connector (11) in test harness l2 to connector (AB18).</li> <li>6) Measure the resistance between connector (31) in test harness l2 and connector (3F) in test harness F.</li> <li>Connector &amp; terminal (3I) No. 8 - (3F) No. 4: (3I) No. 6 - (3F) No. 3: Is the measured value less than the specified value?</li> </ul>	10 Ω	Go to step 3.	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>
3	CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance of the connector (3I) in test harness I2. Connector & terminal (3I) No. 6 — No. 8: Does the measured value exceed the specified value?	1 ΜΩ	Go to step 4.	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>
4	CHECK SIDE AIRBAG HARNESS (RH). Measure the resistance between connector (31) in test harness I2 and the chassis ground. Connector & terminal (31) No. 6 — Chassis ground: (31) No. 8 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>

AIRBAG SYSTEM (DIAGNOSTICS)

### V: DTC 62

#### DIAGNOSIS:

- Seat belt pretensioner (LH) circuit is open, shorted or shorted to ground.
- Airbag control module is faulty.
- Pretensioner is faulty.
- Pretensioner harness is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



	Step	Value	Yes	No
1	<ul> <li>CHECK SEAT BELT PRETENSIONER.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the connector (AB21) from the seatbelt pretensioner (LH). <ref. belt.="" front="" sb-7,="" seat="" to=""></ref.></li> <li>3) Connect the connector (1F) in test harness F to (AB21).</li> <li>4) Connect the airbag resistor to the connector (3F) in test harness F.</li> <li>5) Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ul>	Operates properly.	Replace seat belt pretensioner (LH). <ref. sb-7,<br="" to="">Front Seat Belt.&gt;</ref.>	Go to step 2.
2	<ul> <li>CHECK SIDE AIRBAG HARNESS (LH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the airbag resistor from the test harness.</li> <li>3) Disconnect the connector (AB20) from (AB19).</li> <li>4) Disconnect the connectors (AB17) and (AB18) from the airbag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>5) Connect the connector (AB17).</li> <li>6) Measure the resistance between connector (3I) in test harness I2 and the connector (3F) in test harness F.</li> <li>Connector &amp; terminal (3I) No. 11 - (3F) No. 4: (3I) No. 13 - (3F) No. 3: Is the measured value less than the specified value?</li> </ul>	10 Ω	Go to step 3.	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>
3	CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance of the connector (3I) in test harness I2. Connector & terminal (3I) No. 11 — No. 13: Does the measured value exceed the specified value?	1 ΜΩ	Go to step 4.	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>
4	CHECK SIDE AIRBAG HARNESS (LH). Measure the resistance between the connec- tor (3I) in test harness I2 and the chassis ground. Connector & terminal (3I) No. 11 — Chassis ground: (3I) No. 13 — Chassis ground: Does the measured value exceed the specified value?	1 ΜΩ	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>

AIRBAG SYSTEM (DIAGNOSTICS)

#### W: DTC 65

#### DIAGNOSIS:

- Seat belt pretensioner (RH) circuit is shorted to the power supply.
- Pretensioner is faulty.
- Pretensioner harness is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• Before replacing the airbag module, roll connector, control module, and sensor, reconnect each part and confirm that the warning light operates properly.

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



Step	Value	Yes	No
<ol> <li>CHECK SEAT BELT PRETENSIONER.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Disconnect the connector (AB26) from the seat belt pretensioner (RH). <ref. belt.="" front="" sb-7,="" seat="" to=""></ref.></li> <li>Connect the connector (1F) in test harness F to (AB26).</li> <li>Connect the airbag resistor to connector (3F) in test harness F.</li> <li>Connect the battery ground cable, and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace seat belt pretensioner (RH). <ref. sb-7,<br="" to="">Front Seat Belt.&gt;</ref.>	Go to step 2.
<ul> <li>2 CHECK SIDE AIRBAG HARNESS (RH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the airbag resistor from the test harness.</li> <li>3) Disconnect the connector (AB25) from (AB24).</li> <li>4) Disconnect the connectors (AB17) and (AB18) from the airbag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>5) Connect the connector (AB18).</li> <li>6) Connect the battery ground cable and turn the ignition switch ON.</li> <li>7) Measure the voltage between connector (31) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal (31) No. 6 (+) — Chassis ground (-): (31) No. 8 (+) — Chassis ground (-): Is the measured value less than the specified value?</li> </ul>	1 V	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>

AIRBAG SYSTEM (DIAGNOSTICS)

### X: DTC 66

#### DIAGNOSIS:

- Seat belt pretensioner (LH) circuit is shorted to the power supply.
- Pretensioner is faulty.
- Pretensioner harness is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

Before replacing the airbag module, roll connector, control module and the sensor, reconnect each part and confirm that the warning light operates properly.
When inspecting the side airbag harness, disconnect the side airbag module connector and seat

• When inspecting the side airbag harness, disconnect the side airbag module connector and seat belt pretensioner connector for the safety reasons.



Step	Value	Yes	No
<ol> <li>CHECK SEAT BELT PRETENSIONER.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Disconnect the connector (AB21) from the seat belt pretensioner (LH). <ref. belt.="" front="" sb-7,="" seat="" to=""></ref.></li> <li>Connect the connector (1F) in test harness F to (AB21).</li> <li>Connect the airbag resistor to the connector (3F) in test harness F.</li> <li>Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace seat belt pre-tensioner (LH). <ref. sb-7,<br="" to="">Front Seat Belt.&gt;</ref.>	Go to step 2.
<ul> <li>2 CHECK SIDE AIRBAG HARNESS (LH).</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect the airbag resistor from the test harness.</li> <li>3) Disconnect the connector (AB20) from (AB19).</li> <li>4) Disconnect the connectors (AB17) and (AB18) from the airbag control module. <ref. ab-18,="" airbag="" control="" module.="" to=""></ref.></li> <li>5) Connect the connector (AB17).</li> <li>6) Connect the battery ground cable and turn the ignition switch ON.</li> <li>7) Measure the voltage between connector (31) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal (31) No. 11 (+) — Chassis ground (-): (31) No. 13 (+) — Chassis ground (-): Is the measured value less than the specified value?</li> </ul>	1 V	Replace the airbag control module. <ref. ab-18,<br="" to="">Airbag Control Module.&gt;</ref.>	Replace side air- bag harness. <ref. ab-17,<br="" to="">Side Airbag Har- ness.&gt;</ref.>

### Y: DTC 72

#### **DIAGNOSIS:**

- Airbag harness is open, shorted or shorted to ground.
- Airbag module harness (Passenger) circuit is open, shorted or shorted to ground.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.
When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's

airbag module connectors for safety reasons.



	Step	Value	Yes	No
1	<ul> <li>CHECK PASSENGER'S AIRBAG MODULE.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Pull out the two stopper pins and lower the glove box.</li> <li>3) Disconnect the connector passenger's airbag module from (AB9).</li> <li>4) Connect the connector (1K) in test harness K to connector (AB9).</li> <li>5) Connect two airbag resistors to connectors (3K) and (4K) in test harness K.</li> <li>6) Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ul>	Operates properly.	Replace the pas- senger's airbag module. <ref. to<br="">AB-13, Passen- ger's Airbag Mod- ule S802308.&gt;</ref.>	Go to step 2.
2	<ul> <li>CHECK AIRBAG MAIN HARNESS.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect two airbag resistors from the connectors (3K) and (4K) in test harness K.</li> <li>3) Remove the lower cover and disconnect the connector (AB3) from (AB8).</li> <li>4) Disconnect the connector (AB6) from the air bag control module, and connect the connector (11) in test harness I2.</li> <li>5) Measure the resistance between connector (6I) in test harness K.</li> <li>Connector &amp; terminal <ul> <li>(6I) No. 2 — (4K) No. 3:</li> <li>(6I) No. 4 — (4K) No. 4:</li> </ul> </li> </ul>	10 Ω	Go to step 3.	Replace the airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>
3	CHECK AIRBAG MAIN HARNESS. Measure the resistance of the connector (6I) in test harness I2. Connector & terminal (6I) No. 2 — No. 4: (6I) No. 2 — Chassis ground: (6I) No. 4 — Chassis ground: Is the measured value more than specified value?	1 ΜΩ	Replace the airbag control module. <ref. ab-15,<br="" to="">Airbag Control Module S802302.&gt;</ref.>	Replace the airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>

## Z: DTC 76 DIAGNOSIS:

- Airbag main harness (Passenger) circuit is shorted to the power supply.
- Airbag module harness (Passenger) is shorted to the power supply.
- Passenger's airbag module is faulty.
- Airbag control module is faulty.

#### CAUTION:

• Before diagnosing the airbag system, be sure to turn the ignition switch OFF, disconnect the ground cable from the battery, and wait more than 20 seconds before starting to work.

• When inspecting the airbag main harness, disconnect the driver's airbag module and passenger's airbag module connectors for safety reasons.



Step	Value	Yes	No
<ol> <li>CHECK PASSENGER'S AIRBAG MODULE.         <ol> <li>Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>Pull out the two stopper pins and lower the glove box.</li> <li>Disconnect the connector (AB9) from passenger's airbag module.</li> <li>Connect the connector (1K) in test harness K to connect r (AB9).</li> <li>Connect two airbag resistors to connectors (3K) and (4K) in test harness K.</li> <li>Connect the battery ground cable and turn the ignition switch ON. Does the airbag warning light operate properly?</li> </ol> </li> </ol>	Operates properly.	Replace the pas- senger's airbag module. <ref. to<br="">AB-13, Passen- ger's Airbag Mod- ule S802308.&gt;</ref.>	Go to step 2.
<ul> <li>2 CHECK AIRBAG MAIN HARNESS.</li> <li>1) Turn the ignition switch OFF, disconnect the battery ground cable, and wait more than 20 seconds.</li> <li>2) Disconnect two airbag resistors from the connectors (3K) and (4K) in test harness K.</li> <li>3) Remove the lower cover and disconnect the connector (AB3) from (AB8).</li> <li>4) Disconnect the connector (AB6) from the airbag control module, and connect the connector (11) in test harness I2.</li> <li>5) Measure the voltage between connector (6I) in test harness I2 and the chassis ground.</li> <li>Connector &amp; terminal <ul> <li>(6I) No. 2 (+) — Chassis ground (-):</li> <li>(6I) No. 4 (+) — Chassis ground (-):</li> </ul> </li> </ul>	1 V	Replace the airbag control module. <ref. ab-15,<br="" to="">Airbag Control Module S802302.&gt;</ref.>	Replace the airbag main harness. <ref. ab-16,<br="" to="">Main Harness.&gt;</ref.>

MEMO: