# 1. Precaution

## A: SUPPLEMENTAL RESTRAINT SYSTEM “AIRBAG”

Airbag system wiring harness is routed on and along body panels.

**CAUTION:**
- All Airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuit.
- Be careful not to damage Airbag system wiring harness when repairing the body panel.

**MEMO:**

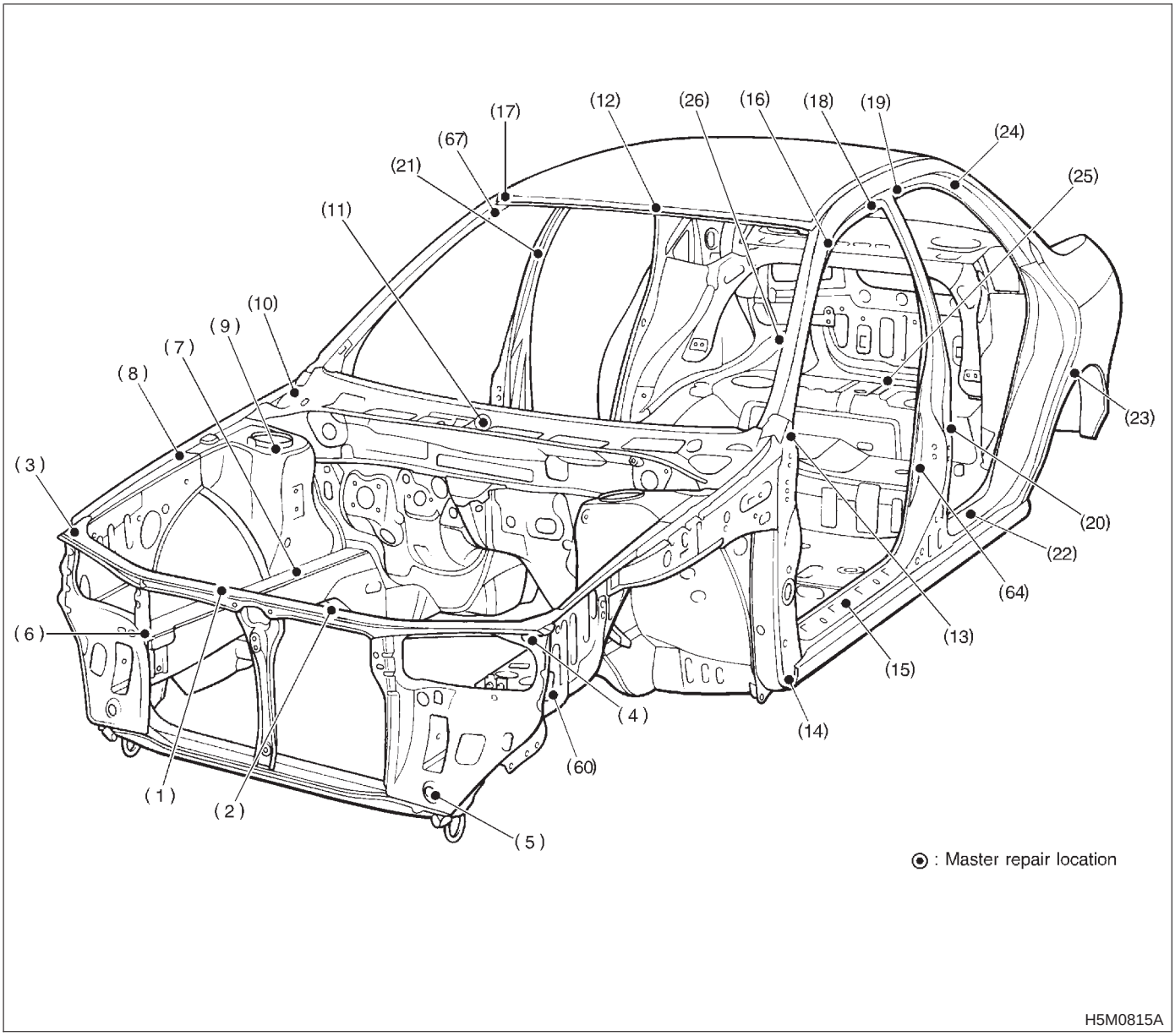
# 2. Body Datum Points

Various master repair locations are established as datum points used during body repairs. In addition, guide holes, locators and indents are provided to facilitate panel replacement and achieve alignment accuracy.

NOTE:
Left and right datum points are all symmetrical to each other.

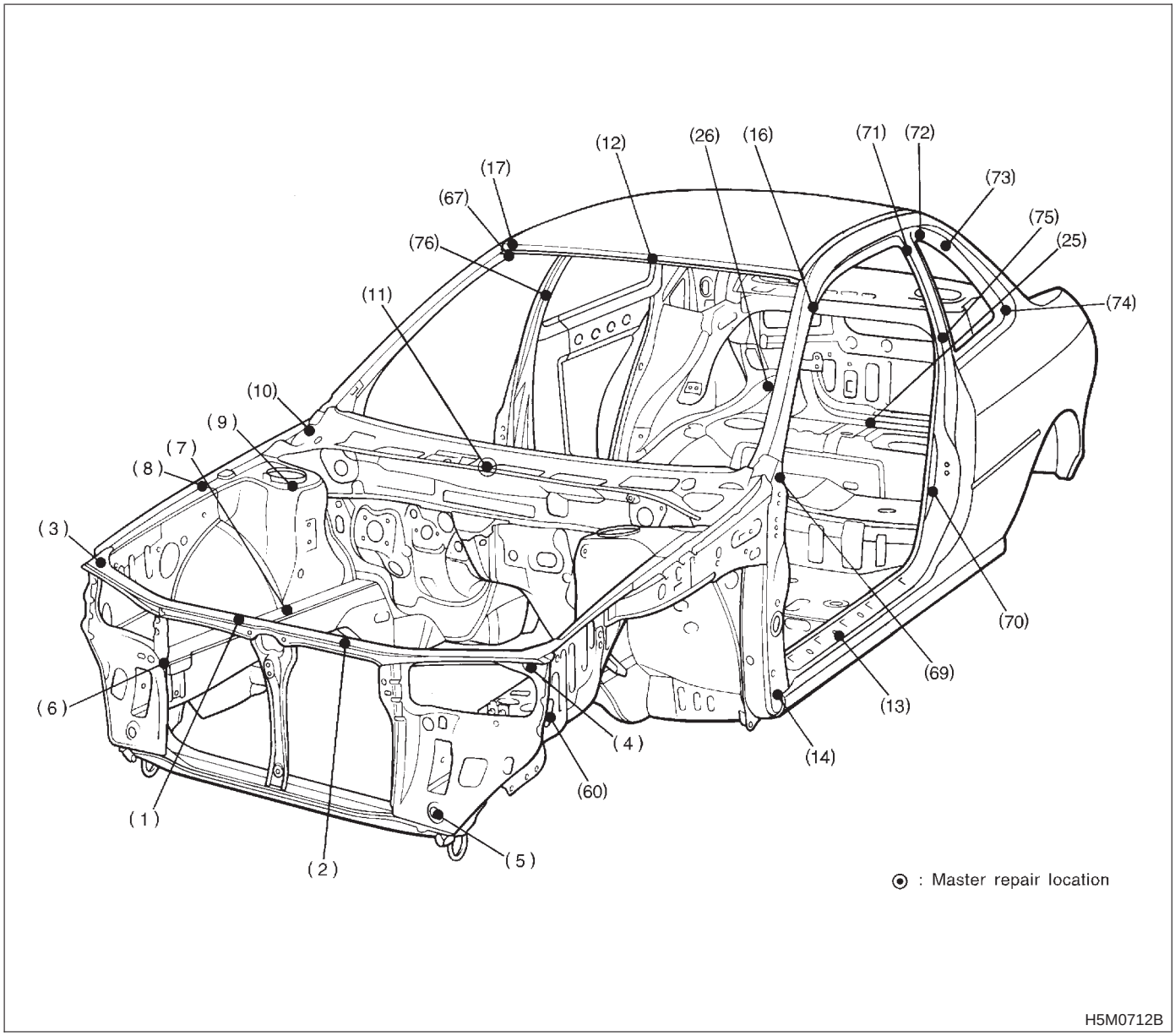
## A: ENGINE COMPARTMENT AND ROOM

### 1. SEDAN AND WAGON



(1) Radiator panel (UPR) repair bolt hole M8 (Right)
(2) Radiator panel (UPR) repair bolt hole M8 (Left)
(3) Fender attaching bolt hole M6 (Symmetrical)
(4) Headlight attaching bolt hole M6 (Symmetrical)
(5) Radiator panel side gauge hole 24 mm (0.94 in) dia. (Symmetrical)
(6) Front bumper mounting hole 14 x 17 mm (0.55 x 0.67 in) dia. (Symmetrical)
(7) Front crossmember attaching bolt hole 12.4 mm (0.488 in) dia. (Symmetrical)
(8) Fender attaching bolt hole M6 (Symmetrical)
(9) Front strut mounting hole 10 mm (0.39 in) dia. (Symmetrical)
(10) Hood hinge attaching bolt hole M8 (Symmetrical)
(11) Cowl panel mounting hole 5 mm (0.20 in) dia. (Located in center of vehicle.)
(12) Front rail (Inner) mirror attaching bolt hole 8 mm (0.31 in) dia.
(13) Fender attaching bolt hole M6 (Symmetrical)
(14) Front pillar gauge hole 20 mm (0.79 in) dia. (Symmetrical)
(15) Wax coat hole, 20 mm (0.79 in) dia. (Symmetrical)
(16) Retainer attaching square hole 7 mm (0.28 in) (Symmetrical)
(17) Sun visor attaching hole 20 mm (0.79 in) dia. (Symmetrical)
(18) Retainer attaching square hole 7 mm (0.28 in) (Symmetrical)
(19) Retainer attaching square hole 7 mm (0.28 in) (Symmetrical)
(20) Center pillar gauge hole 10 mm (0.39 in) dia. (Symmetrical)
(21) Belt anchor attaching bolt hole (Symmetrical)
(22) Wax coat hole, 20 mm (0.79 in) dia. (Symmetrical)
(23) Rear door switch attaching hole 20 mm (0.79 in) dia. (Symmetrical)
(24) Retainer attaching square hole 7 mm (0.28 in) (Symmetrical)
(25) Spare tire attaching bolt hole M8
(26) Air draw hole 7 mm (0.28 in) dia. (Symmetrical)
(60) Fender attaching bolt hole M6 (Symmetrical)
(64) Door switch attaching hole 20 mm (0.79 in) dia. (Symmetrical)
(67) Front glass attaching hole Right 6.5 mm (0.256 in) dia. Left 6.5 x 10 mm (0.256 x 0.39 in) dia.

## 2. COUPE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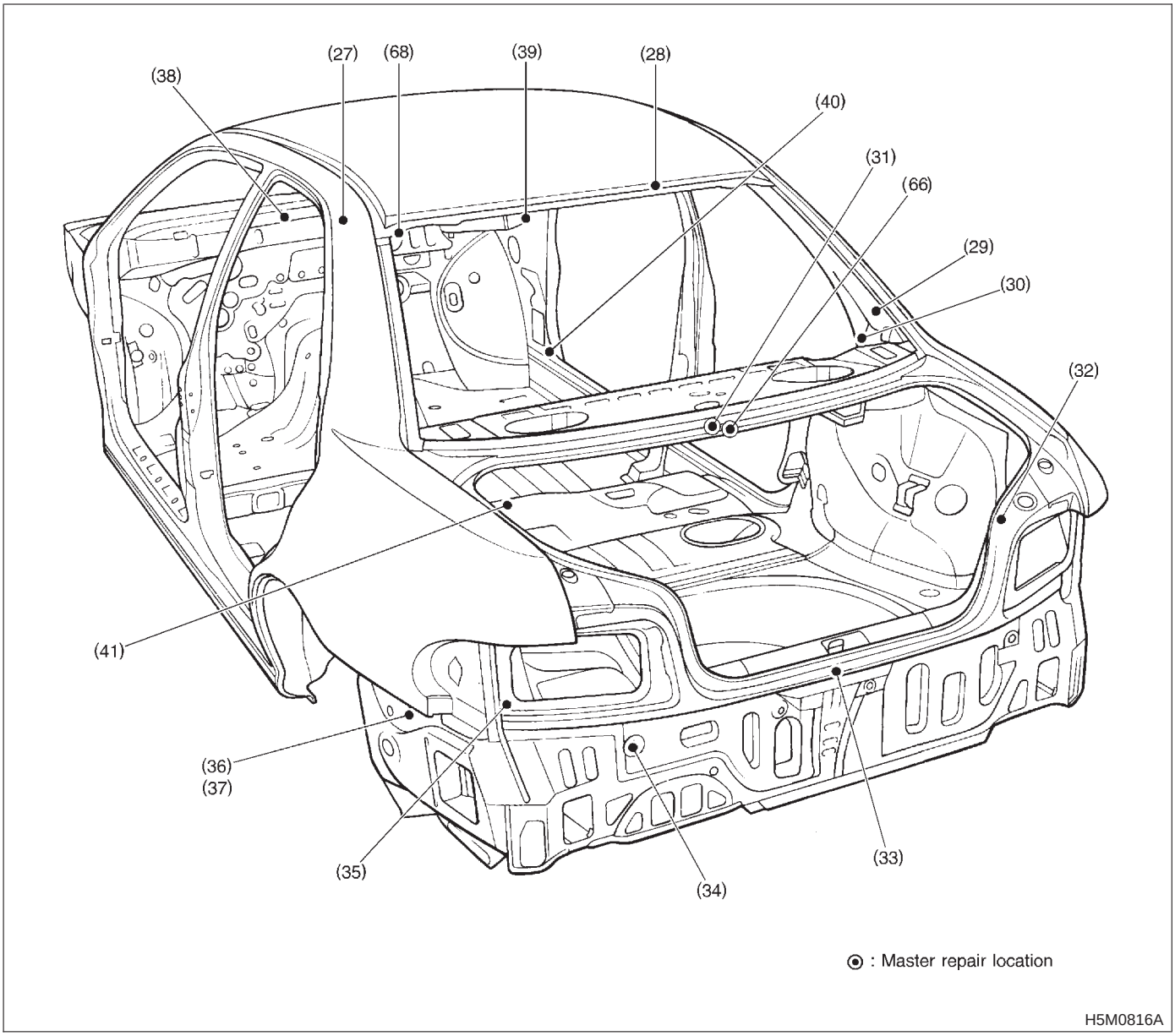
⊙ : Master repair location
H5M0712B

(1) Radiator panel (UPR) repair bolt hole M8 (Right)
(2) Radiator panel (UPR) repair bolt hole M8 (Left)
(3) Fender attaching bolt hole M6 (Symmetrical)
(4) Headlight attaching bolt hole M6 (Symmetrical)
(5) Radiator panel side gauge hole 24 mm (0.94 in) dia. (Symmetrical)
(6) Front bumper mounting hole 14 x 17 mm (0.55 x 0.67 in) dia. (Symmetrical)
(7) Front crossmember attaching bolt hole 12.4 mm (0.488 in) dia. (Symmetrical)
(8) Fender attaching bolt hole M6 (Symmetrical)
(9) Front strut mounting hole 10 mm (0.39 in) dia. (Symmetrical)
(10) Hood hinge attaching bolt hole M8 (Symmetrical)
(11) Cowl panel mounting hole 5 mm (0.20 in) dia. (Located in center of vehicle.)
(12) Front rail (Inner) mirror attaching bolt hole 8 mm (0.31 in) dia.
(13) Fender attaching bolt hole M6 (Symmetrical)
(14) Front pillar gauge hole 20 mm (0.79 in) dia. (Symmetrical)
(16) Retainer attaching square hole 7 mm (0.28 in) (Symmetrical)
(17) Sun visor attaching hole 20 mm (0.79 in) dia. (Symmetrical)
(25) Spare tire attaching bolt hole M8
(26) Air draw hole 7 mm (0.28 in) dia. (Symmetrical)
(60) Fender attaching bolt hole M6 (Symmetrical)
(67) Front glass attaching hole Right 6.5 mm (0.256 in) dia. Left 6.5 x 10 mm (0.256 x 0.39 in) dia.
(69) Wax coat hole 20 mm (0.79 in) dia. (Symmetrical)
(70) Door switch attaching hole 13.5 mm (0.531 in) dia. (Symmetrical)
(71) Retainer attaching square hole 8 mm (0.31 in). (Symmetrical)
(72) Rear quarter glass attaching hole 8 mm (0.31 in) dia. (Symmetrical)
(73) Rear quarter glass attaching hole 7 mm (0.28 in) dia. (Symmetrical)
(74) Rear quarter glass attaching hole 8 x 5.5 mm (0.31 x 0.217 in) dia. (Symmetrical)
(75) Retainer attaching square hole 8 mm (0.31 in). (Symmetrical)
(76) Seat belt anchor attaching bolt hole 16 mm (0.63 in) dia. (Symmetrical)

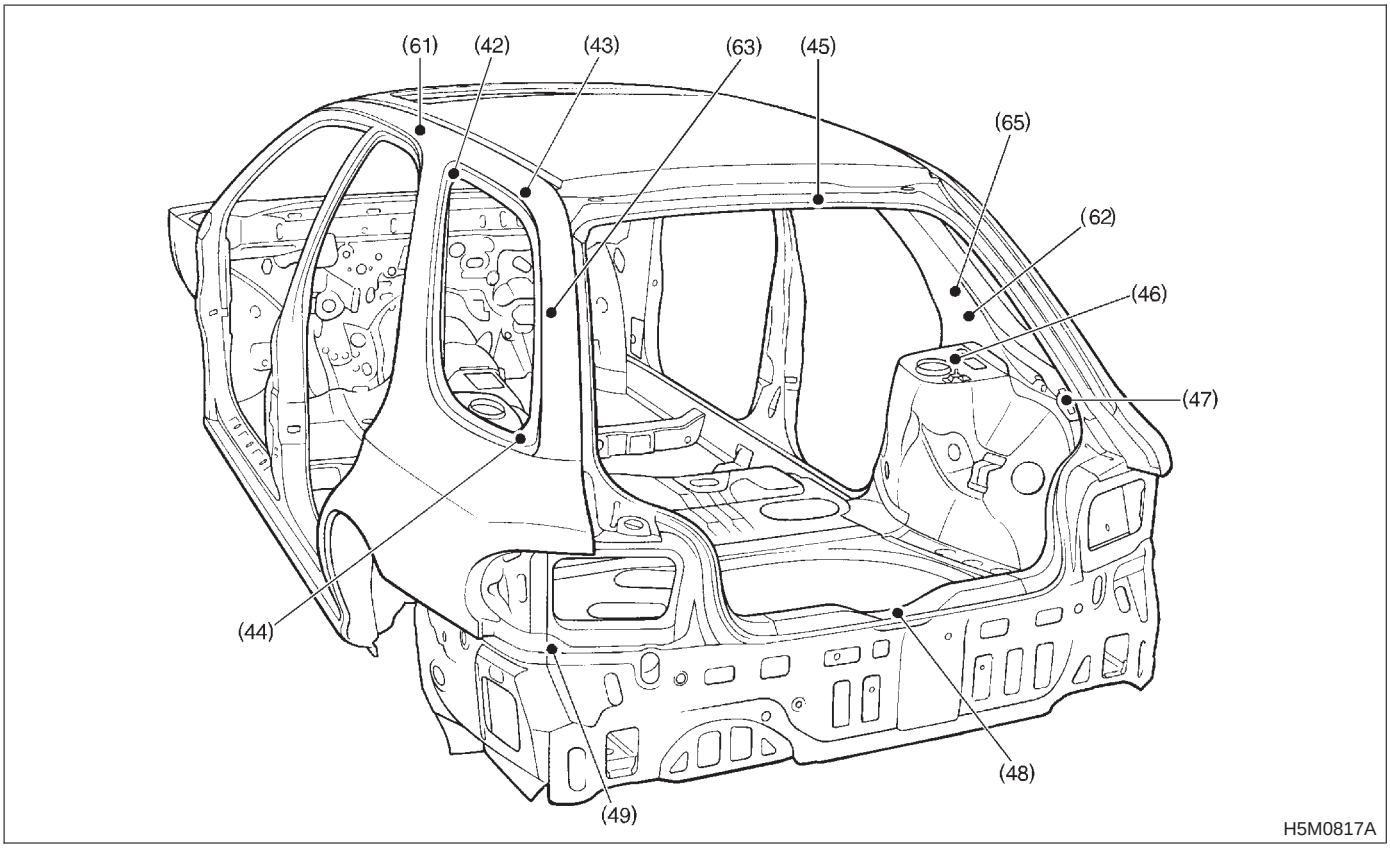
## B: LUGGAGE COMPARTMENT AND ROOM

### 1. SEDAN AND COUPE



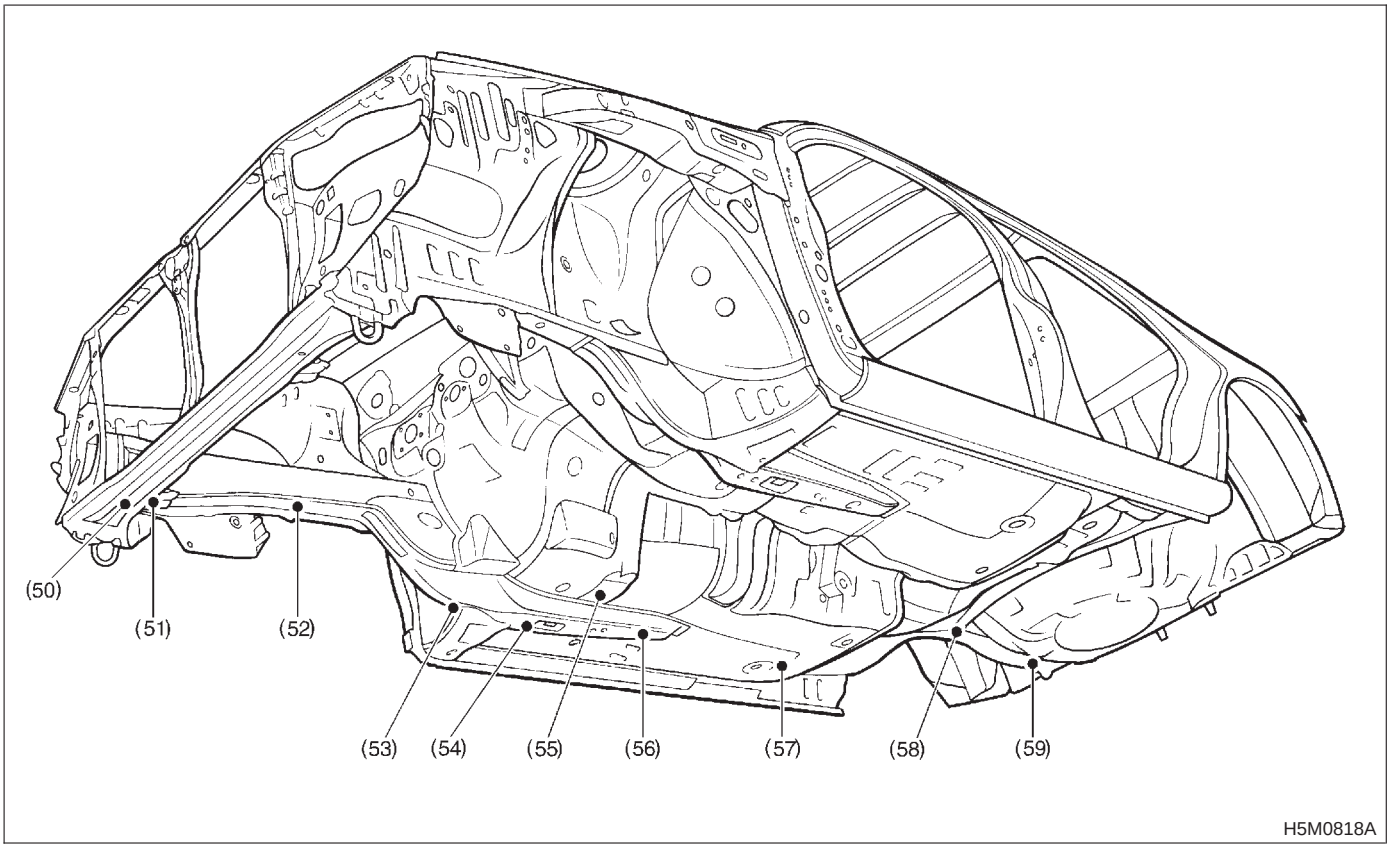
(27) Rear pillar (Inner) gauge hole 8 mm (0.31 in) dia. (Symmetrical)
(28) Rear roof trim attaching hole 8 mm (0.31 in) dia. (Symmetrical)
(29) Rear quarter trim attaching hole 8 mm (0.31 in) dia. (Symmetrical)
(30) Seat belt anchor attaching bolt hole (Symmetrical)
(31) Reinforcement (Rear panel rear) repair locator (Located in center of vehicle)
(32) Rear corner patch at flange (Symmetrical)
(33) Rear skirt (UPR) cutout (Repair locator)
(34) Rear skirt gauge hole 20 mm (0.79 in) dia. (Symmetrical)
(35) Rear combination light mounting hole 9 mm (0.35 in) dia. (Symmetrical)
(36) Rear quarter bumper side gauge hole 20 mm (0.79 in) dia. (Left)
(37) Rear quarter bumper side gauge hole 20 mm (0.79 in) dia. (Right)
(38) Instrument panel attaching square hole 22 x 34.5 mm (0.87 x 1.358 in) (Right)
(39) Steering support beam attaching bolt hole M8 (Symmetrical)
(40) Front pillar (Inner) gauge hole 10 mm (0.39 in) dia. (Symmetrical)
(41) Floor mat attaching clip hole 8 mm (0.31 in) dia. (Symmetrical)
(66) Rear panel (Center) repair locator (Located in center of vehicle.)
(68) Rear glass attaching hole (Right): 6.5 mm (0.256 in) dia. (Left): 6.5 x 10 mm (0.256 x 0.39 in) dia.

## 2. WAGON



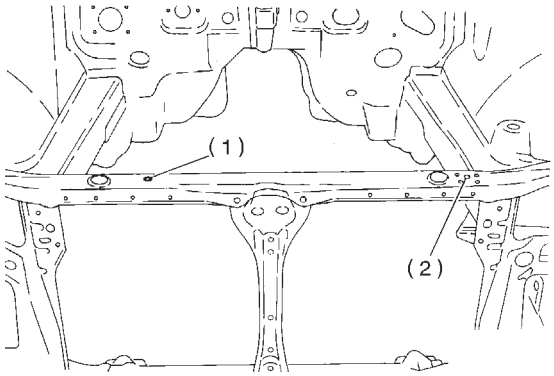

(42) Rear quarter glass attaching hole 8 mm (0.31 in) dia. (Symmetrical)
(43) Roof rail attaching hole 10 mm (0.39 in) dia. (Symmetrical)
(44) Rear quarter glass attaching hole 8 x 15 mm (0.31 x 0.59 in) dia. (Symmetrical)
(45) Rear roof trim attaching hole 8 mm (0.31 in) dia. (Symmetrical)
(46) Rear strut mounting hole 10 mm (0.39 in) dia. (Symmetrical)
(47) Rear gate stay attaching bolt hole M8 (Symmetrical)
(48) Child seat anchor attaching bolt hole
(49) Rear combination light mounting hole 10 mm (0.39 in) dia. (Symmetrical)
(61) Side rail (Inner) gauge hole 8 mm (0.31 in) dia. (Symmetrical)
(62) Rear quarter trim attaching hole 8 mm (0.31 in) dia. (Symmetrical)
(63) Rear quarter harness attaching clip hole 7 mm (0.28 in) dia. (Symmetrical)
(65) Seat belt anchor attaching bolt hole (Symmetrical)

## C: UNDER BODY




(50) Radiator panel (LWR) frame gauge hole 15 mm (0.59 in) dia. (Symmetrical)
(51) Front side frame gauge hole 20 mm (0.79 in) dia. (Symmetrical)
(52) Front crossmember attaching hole 12.4 mm (0.488 in) dia. (Symmetrical)
(53) Front suspension attaching bolt hole M14
(54) Side frame gauge hole 20 mm (0.79 in) dia. (Symmetrical)
(55) Transmission mount attaching bolt hole M10 (Symmetrical)
(56) Side frame gauge hole 15 mm (0.59 in) dia. (Symmetrical)
(57) Rear differential attaching bolt hole M12 (Symmetrical)
(58) Rear suspension attaching bolt hole M12 (Symmetrical)
(59) Rear side frame gauge hole 15 mm (0.59 in) dia. (Symmetrical)

## D: DATUM POINT LOCATION



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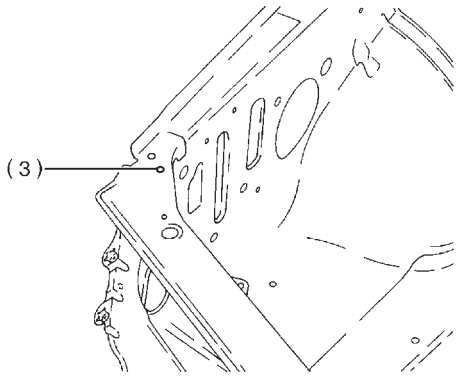

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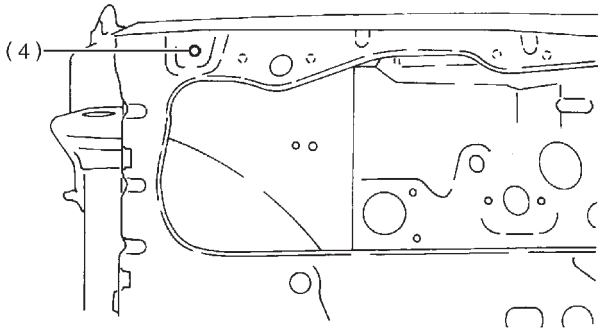

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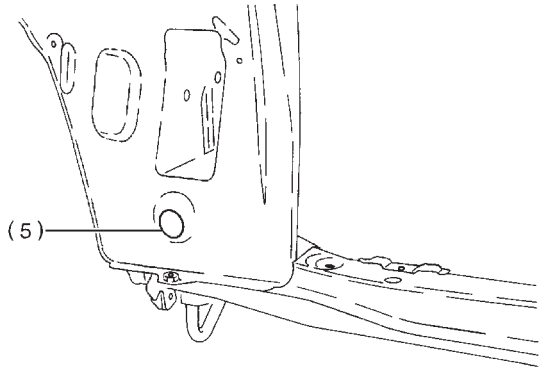

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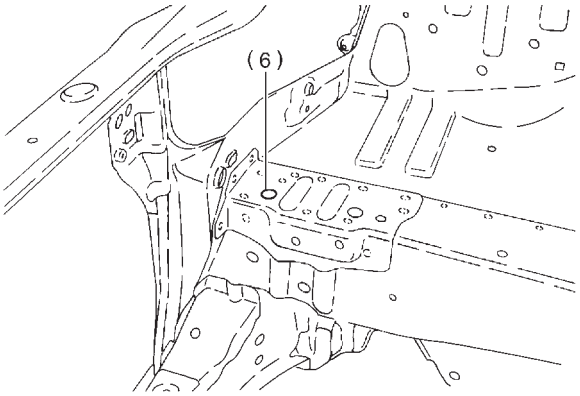

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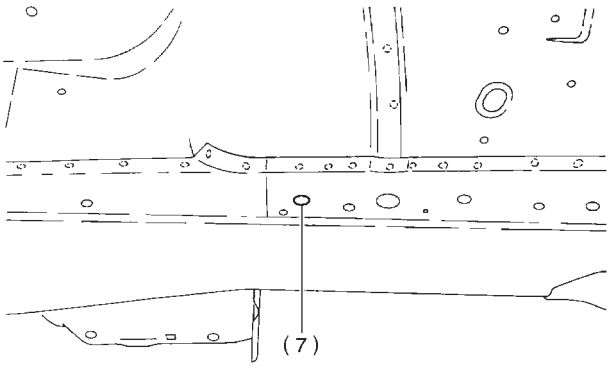

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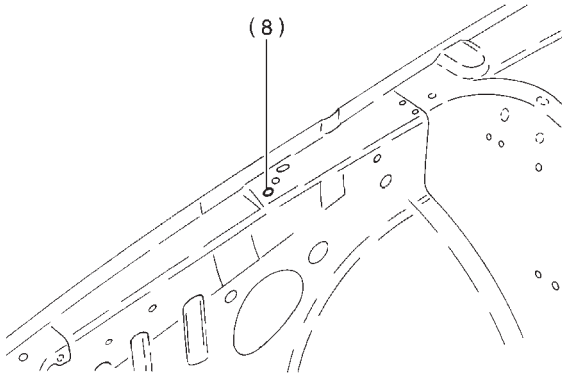

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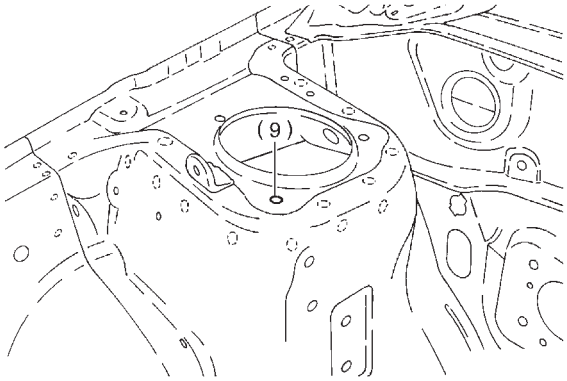

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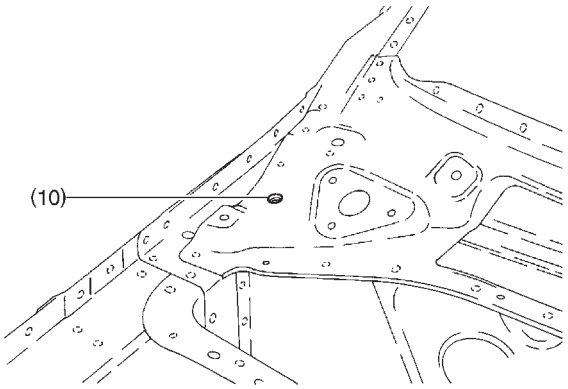

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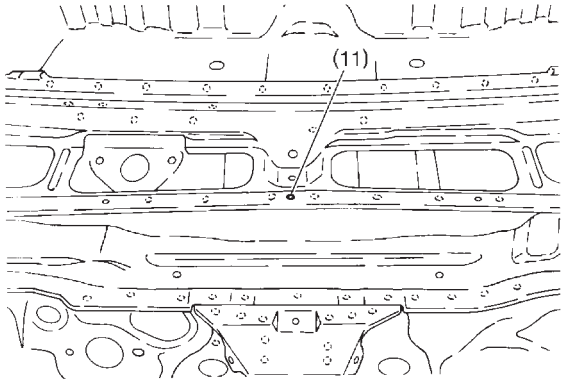

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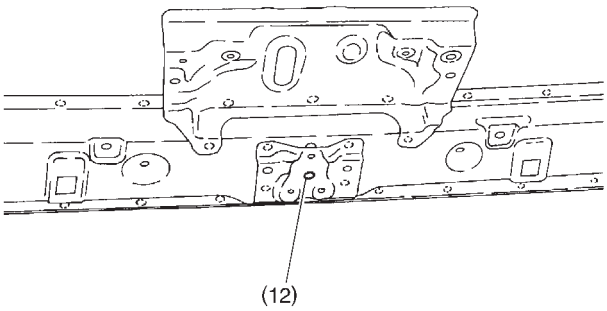

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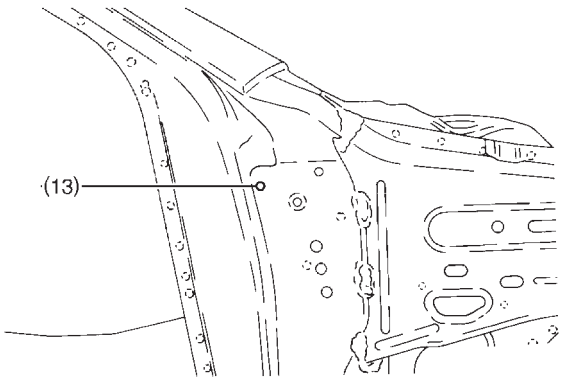

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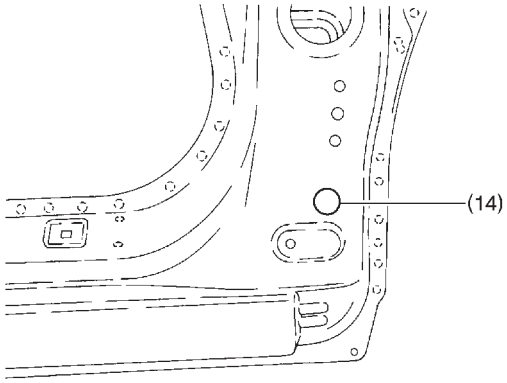

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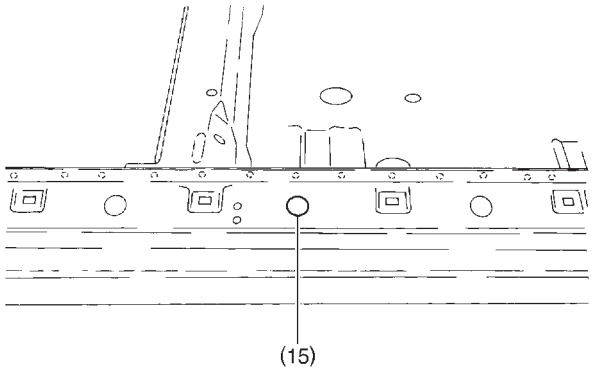

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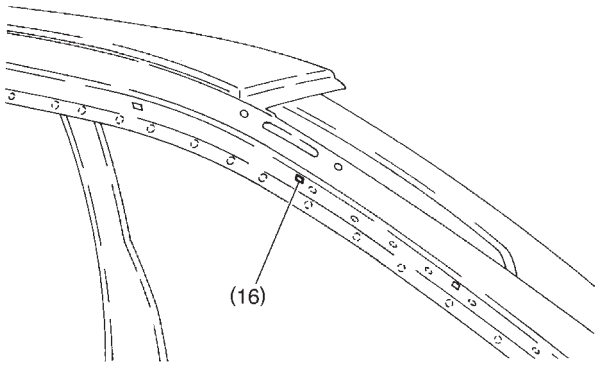

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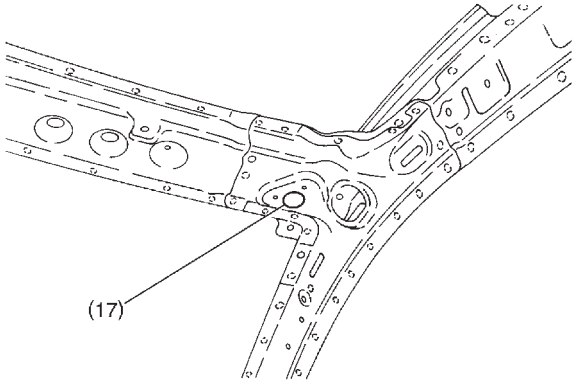

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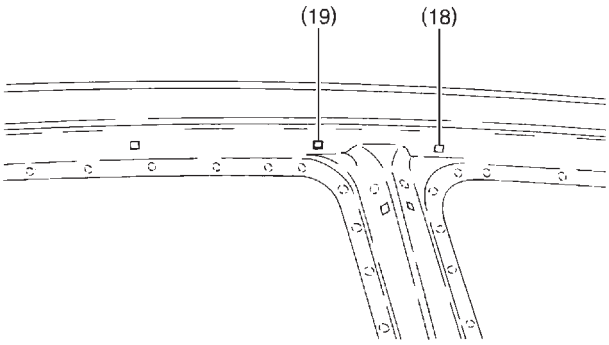

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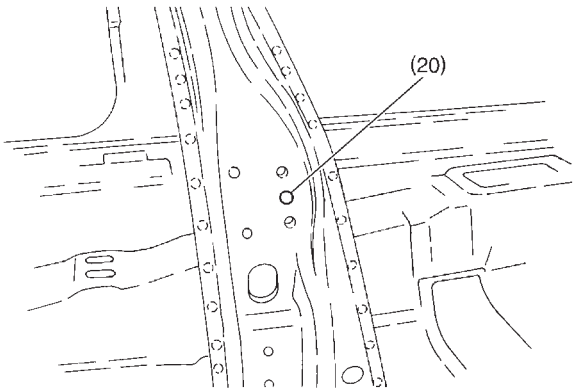

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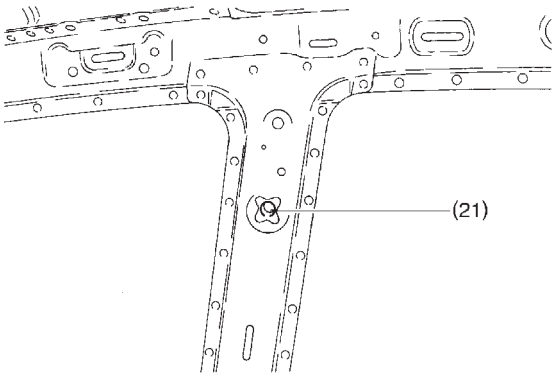

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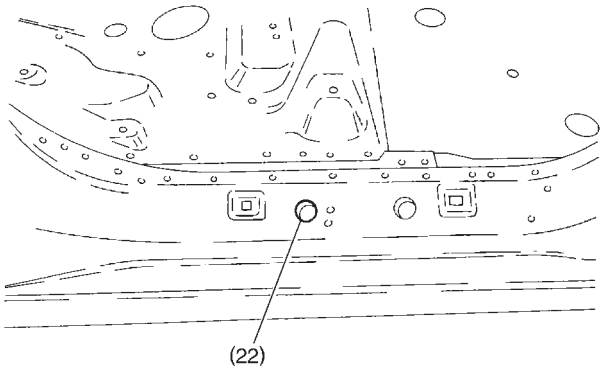

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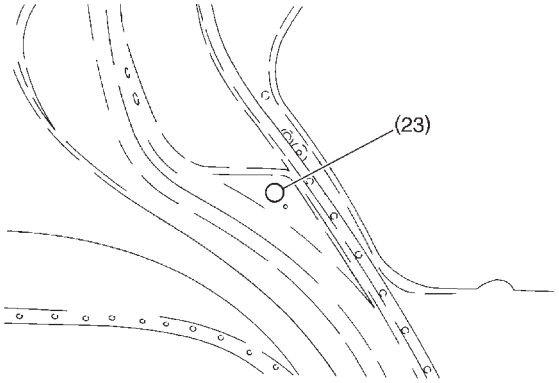

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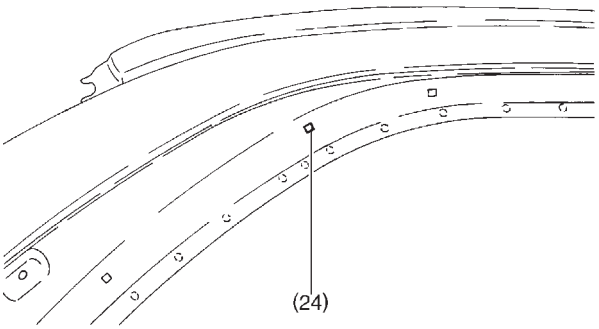

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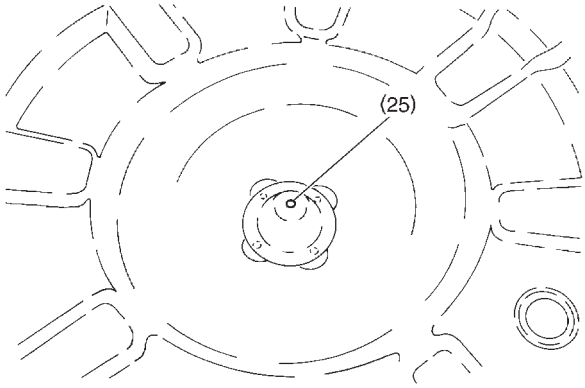

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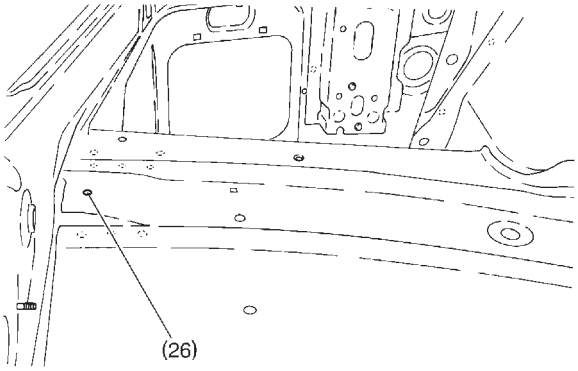

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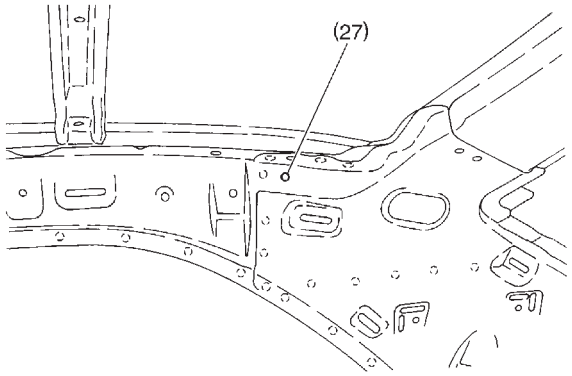

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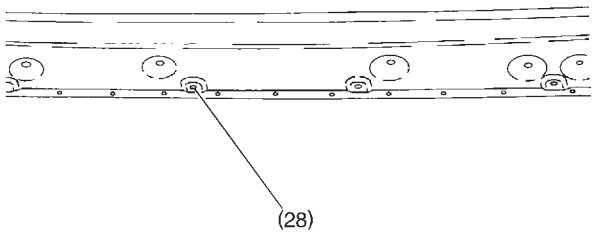
Sedan



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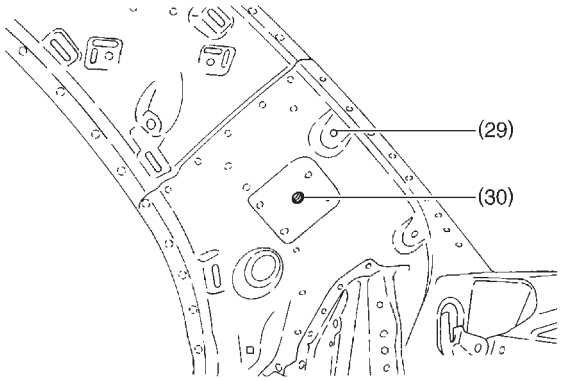

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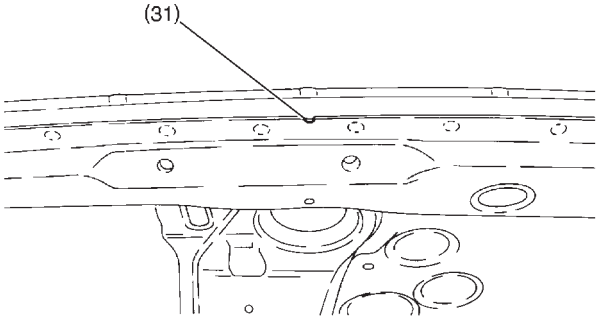

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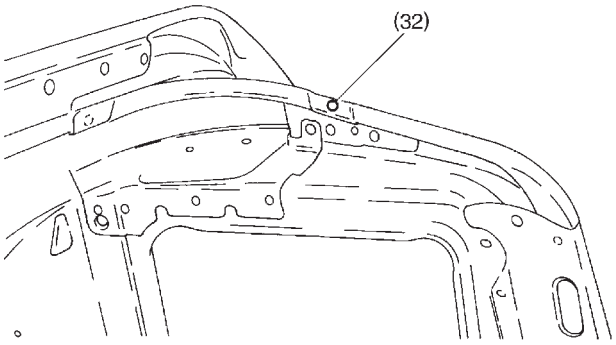

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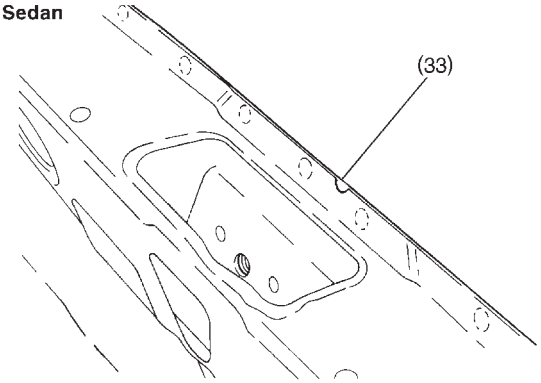

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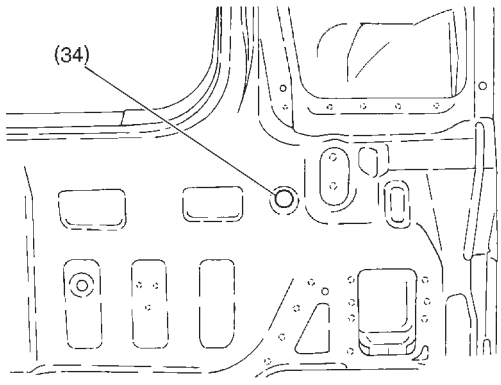

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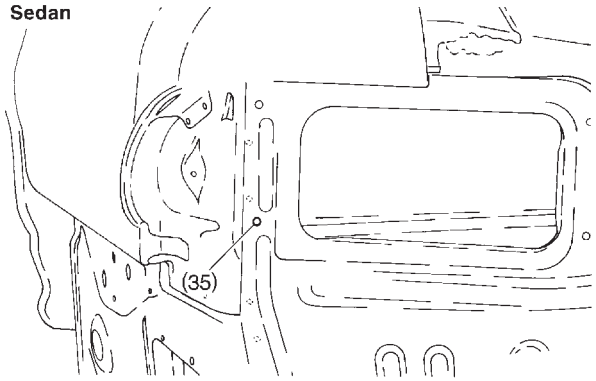

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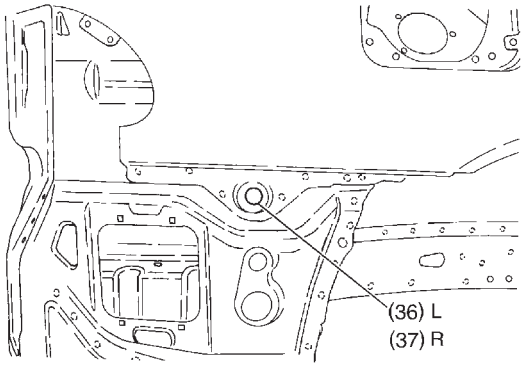

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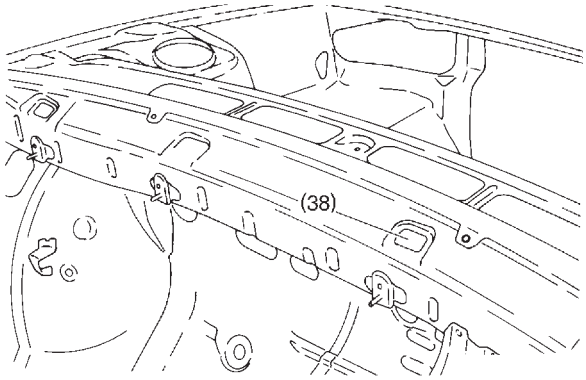

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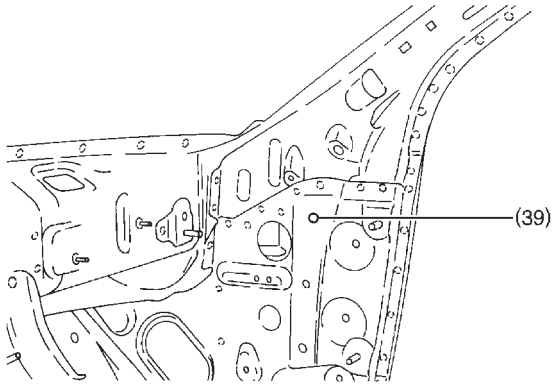
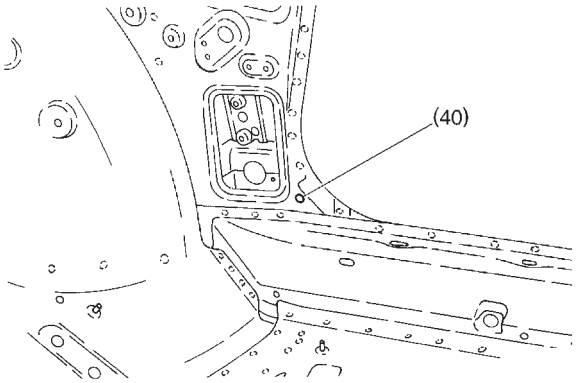
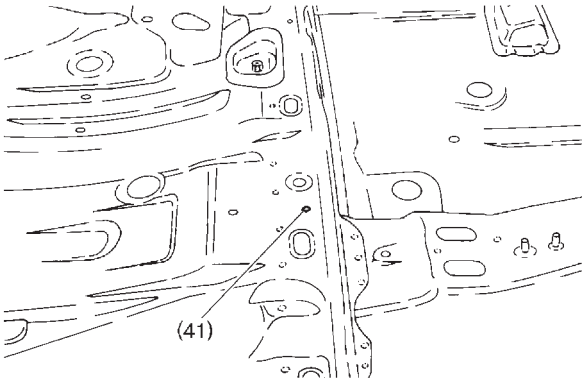


H5M0852A

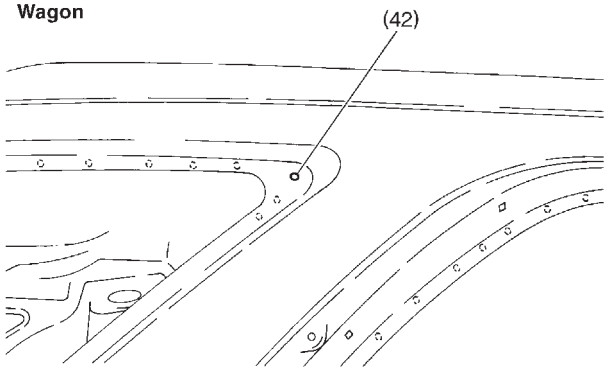


H5M0856A



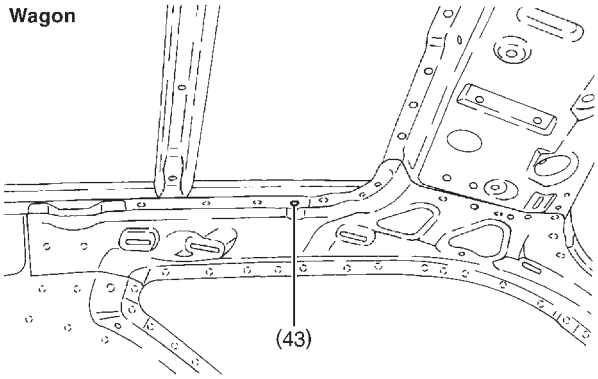
H5M0853A

Wagon



H5M0857A

Wagon



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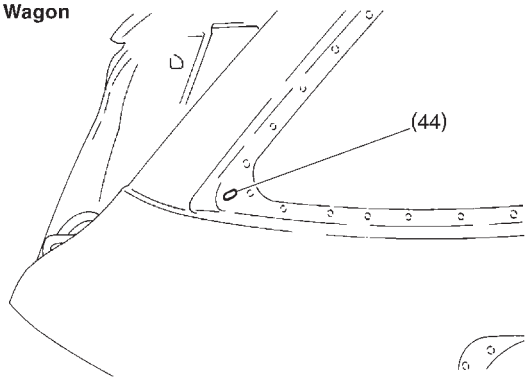

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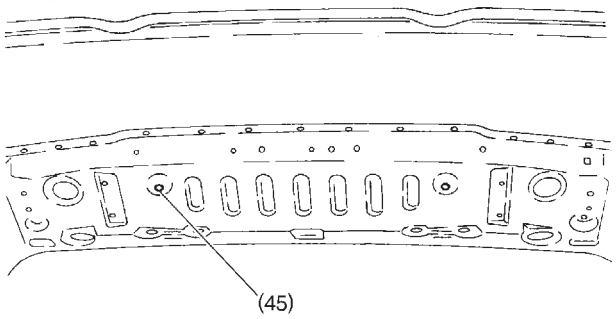
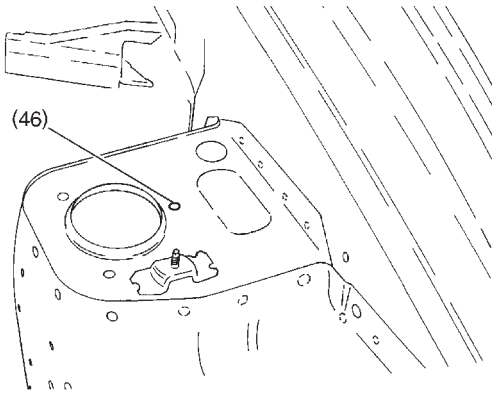



H5M0859A




H5M0863A

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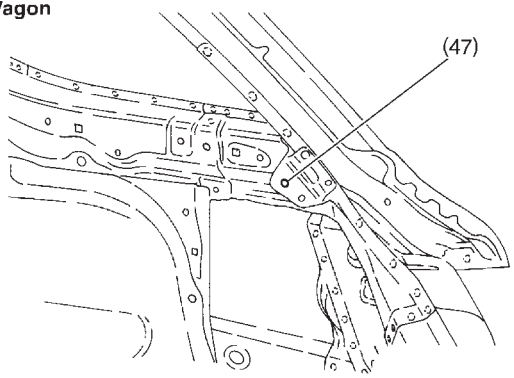


H5M0860A

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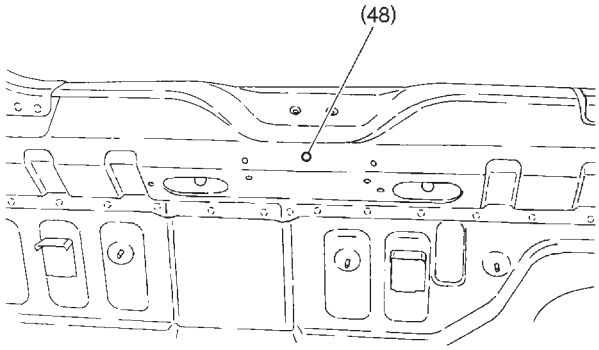


H5M0864A

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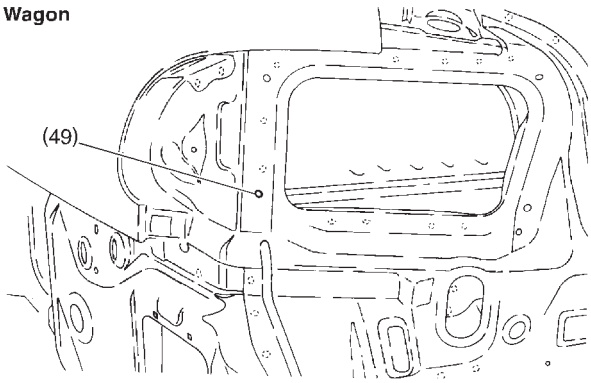


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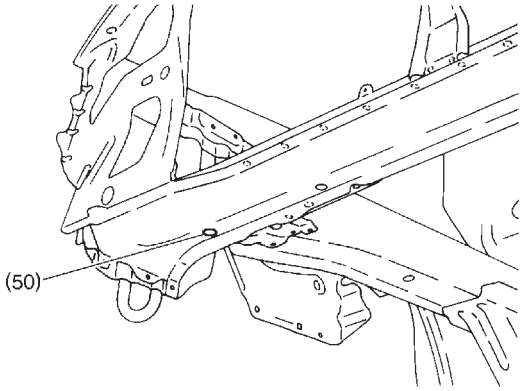


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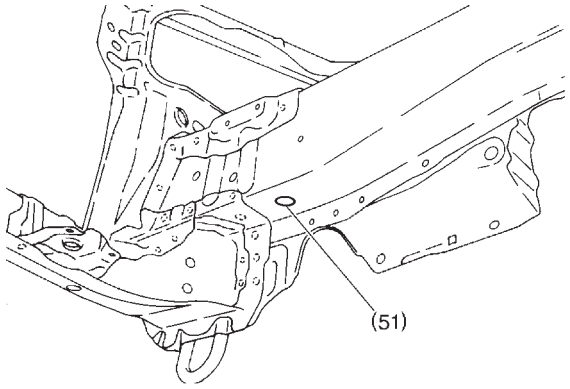
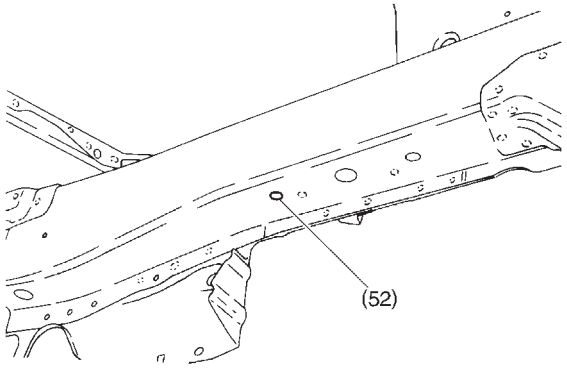



H5M0862A

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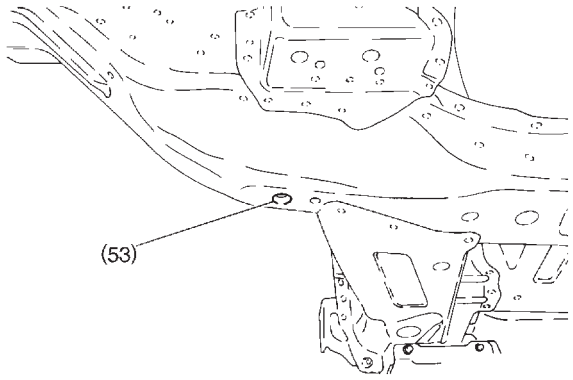
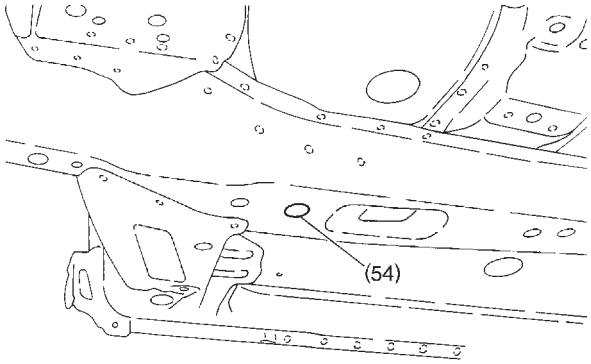
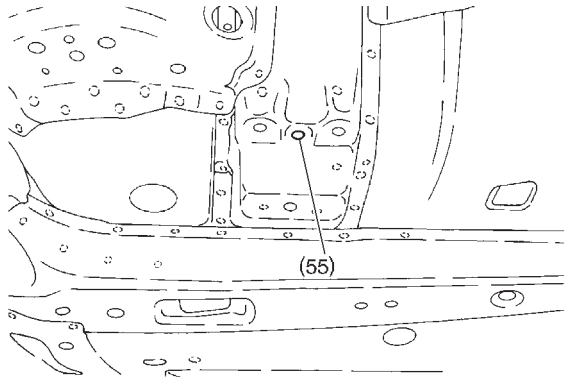


H5M0867A



H5M0871A



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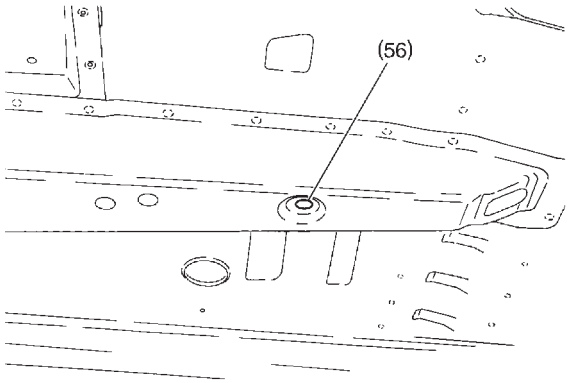
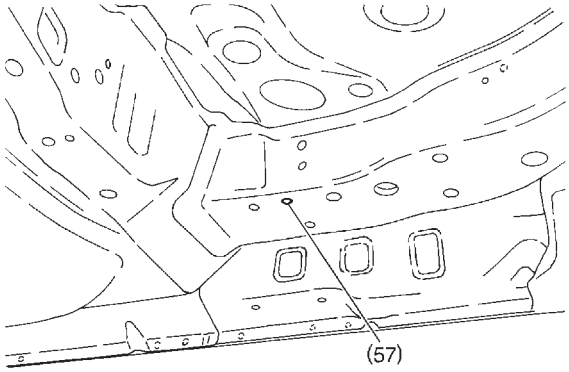
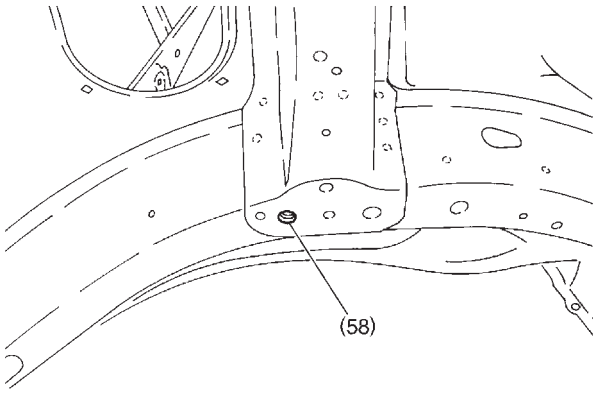


H5M0872A



H5M0869A



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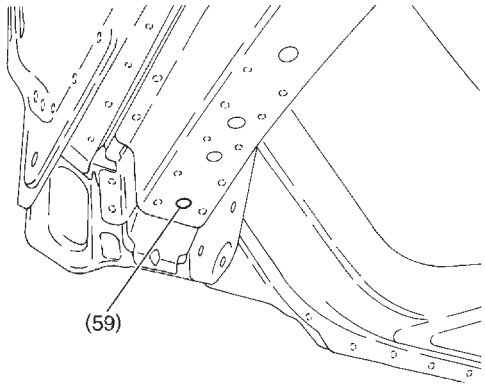
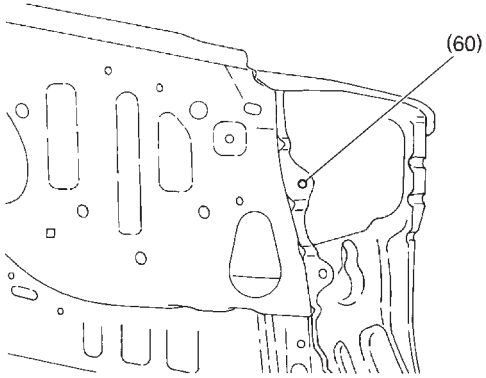
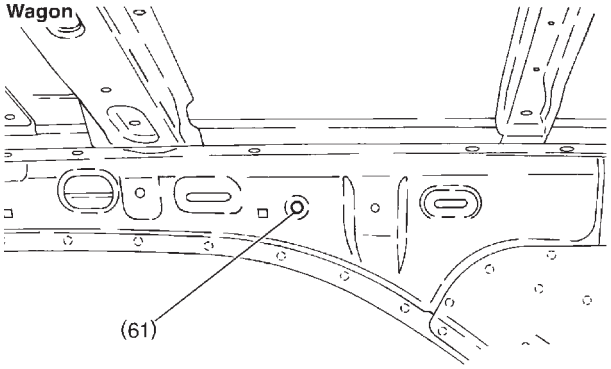


H5M0870A



H5M0874A

Wagon




H5M0875A

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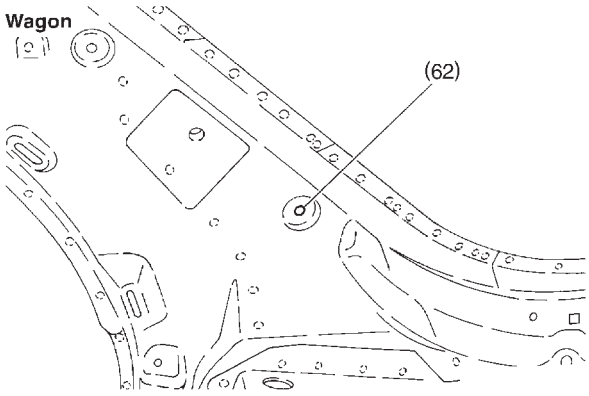
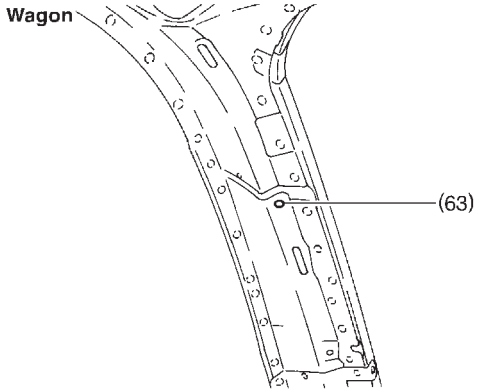
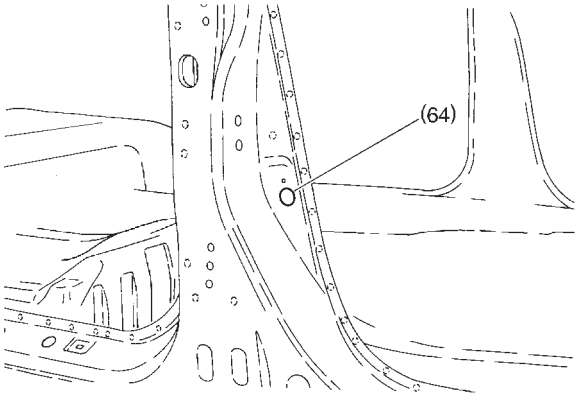



H5M0879A

Wagon

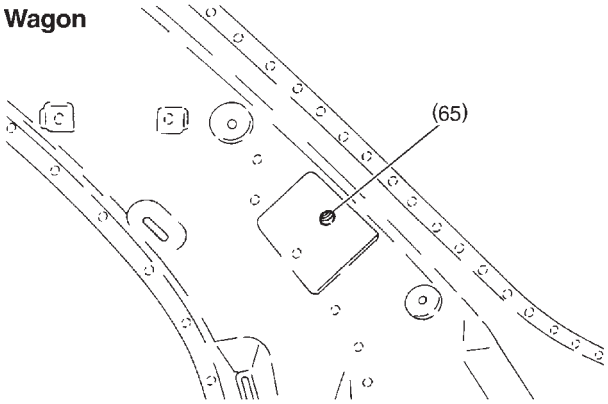



H5M0876A



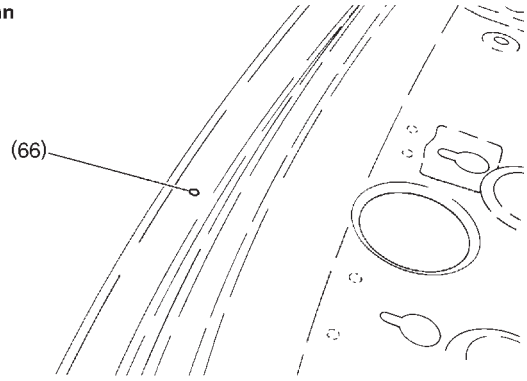

H5M0880A

Wagon




H5M0670B

Sedan

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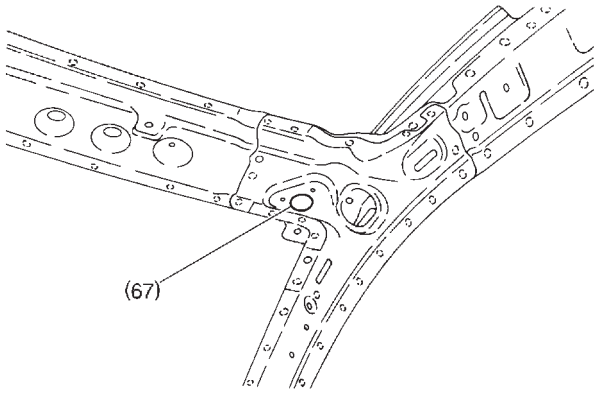
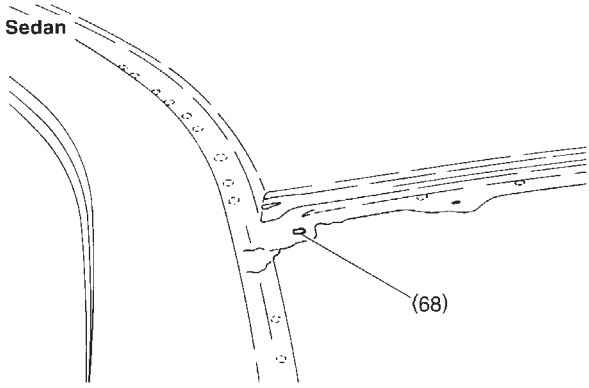
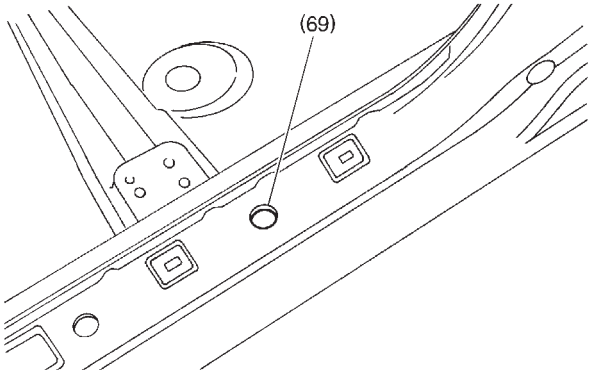



H5M0878A

Sedan




H5M0882A



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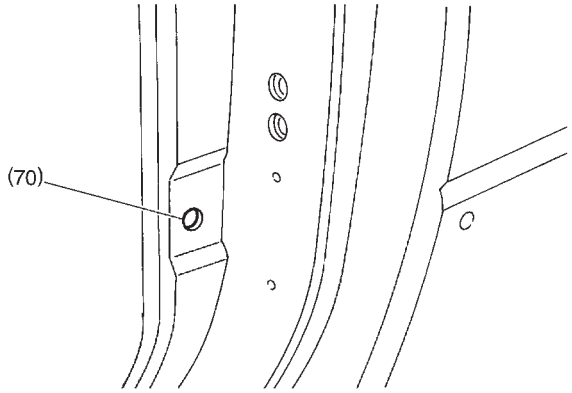
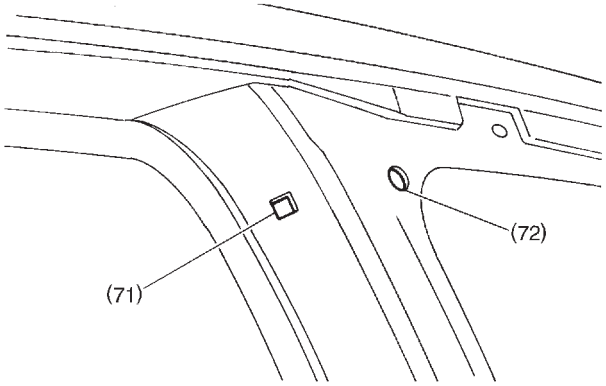


H5M0887A



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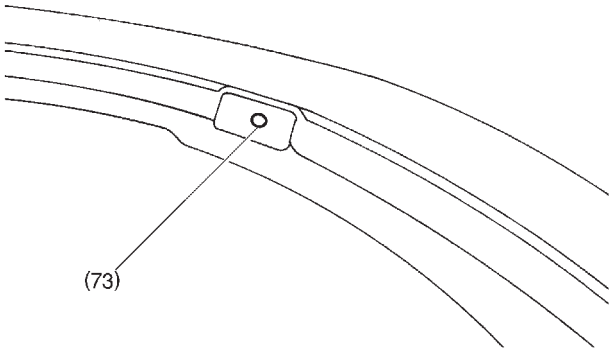
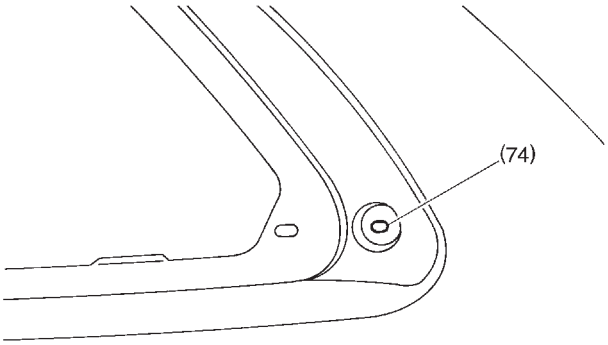
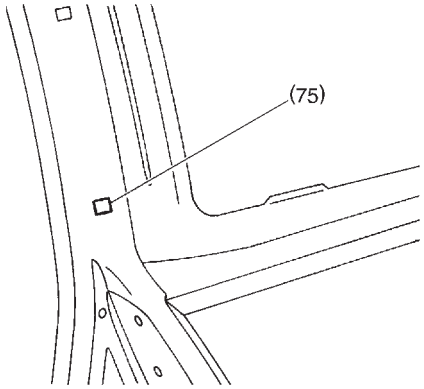


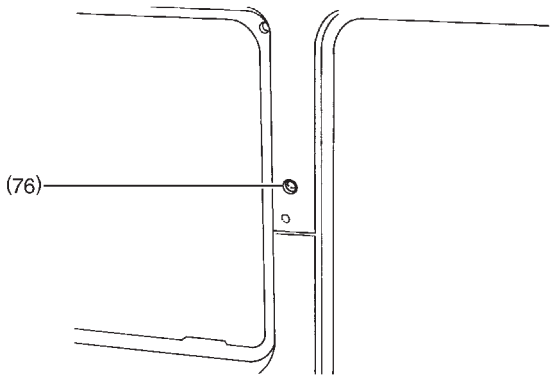
H5M0888A



H5M0885A



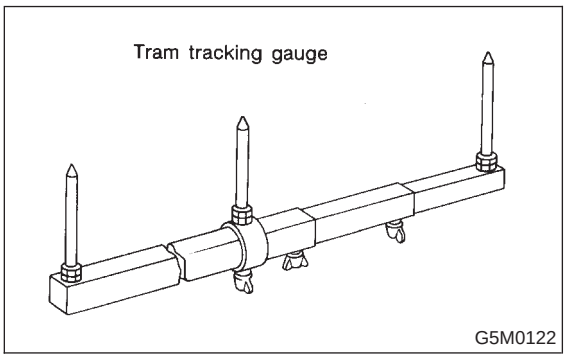
H5M0889A



H5M0886A

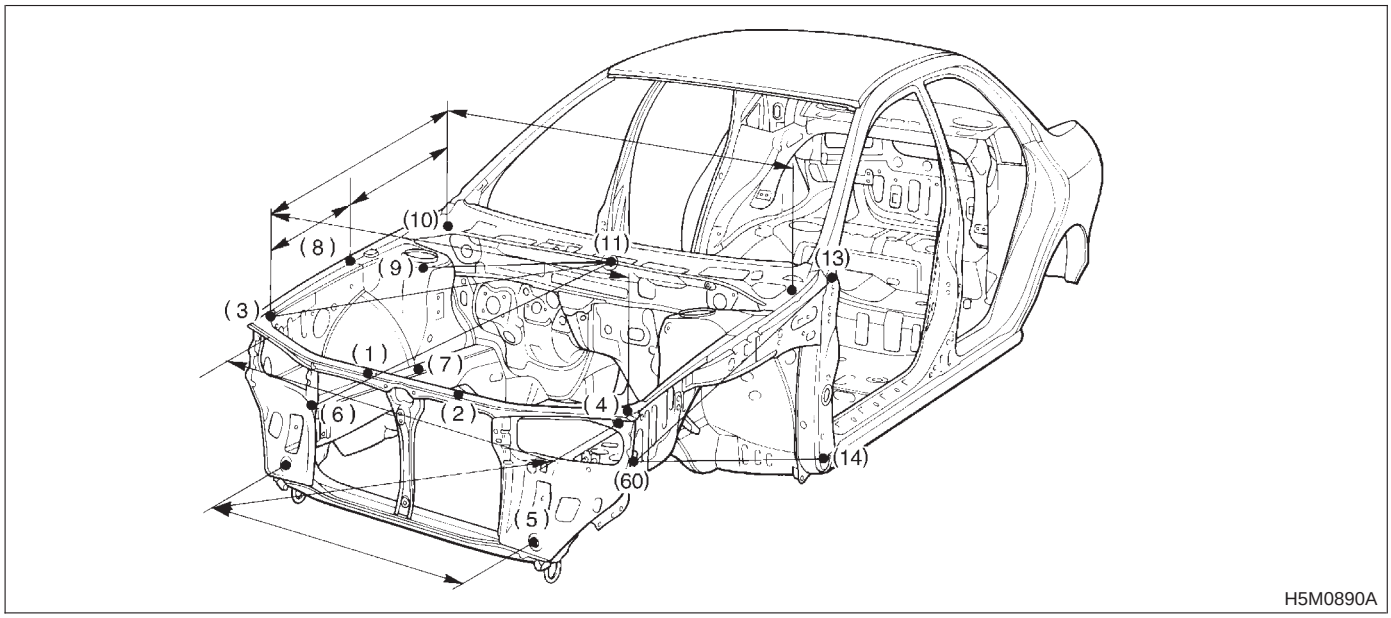
# 3. Datum Dimensions

Use a tram tracking gauge to measure all dimensions. If a measuring tape is used, be extremely careful because it tends to deflect or twist, which results in a false reading.




NOTE:
- A suffix character “R” or “L” refers to the right or the left.
- All dimensions refer to the distance between the centers of holes measured in a straight line
- Each dimension indicates a projected dimension between hole centers.

## A: FRONT STRUCTURE

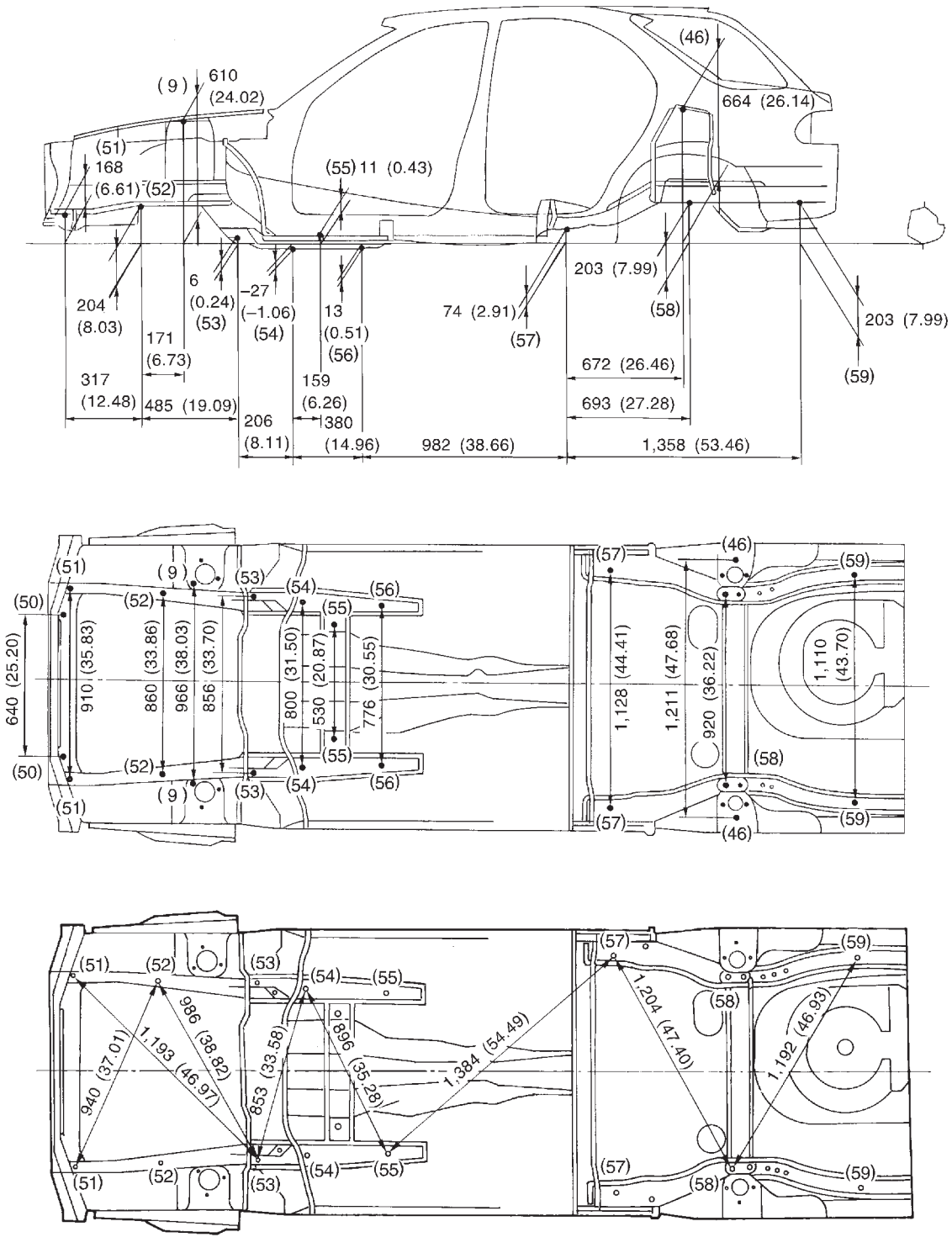



Unit: mm (in)

| Point to point | Dimension | | Point to point | Dimension |
|---|---|---|---|---|
| (11) to (9) R | 525 (20.67) | | (10) R to (10) L | 1,382 (54.41) |
| (11) to (9) L | 525 (20.67) | | (3) R to (3) L | 1,336 (52.60) |
| (11) to (6) R | 988 (38.90) | | (5) R to (5) L | 942 (37.09) |
| (11) to (6) L | 988 (38.90) | | (5) R to (4) R | 1,174 (46.22) |
| (11) to (3) R | 990 (38.98) | | (5) L to (4) L | 1,174 (46.22) |
| (11) to (3) L | 990 (38.98) | | (4) R to (4) L | 1,269 (49.96) |
| (10) R to (3) R | 829 (32.64) | | (60) R to (13) R | 1,113 (43.82) |
| (10) L to (3) L | 829 (32.64) | | (60) L to (13) L | 1,113 (43.82) |
| (10) R to (8) R | 567 (22.32) | | (60) R to (14) R | 1,076 (42.36) |
| (10) L to (8) L | 567 (22.32) | | (60) L to (14) L | 1,076 (42.36) |
| (8) R to (3) R | 264 (10.39) | | (1) to (11) | 882 (34.72) |
| (8) L to (3) L | 264 (10.39) | | (2) to (11) | 913 (35.94) |

## B: CENTER STRUCTURE

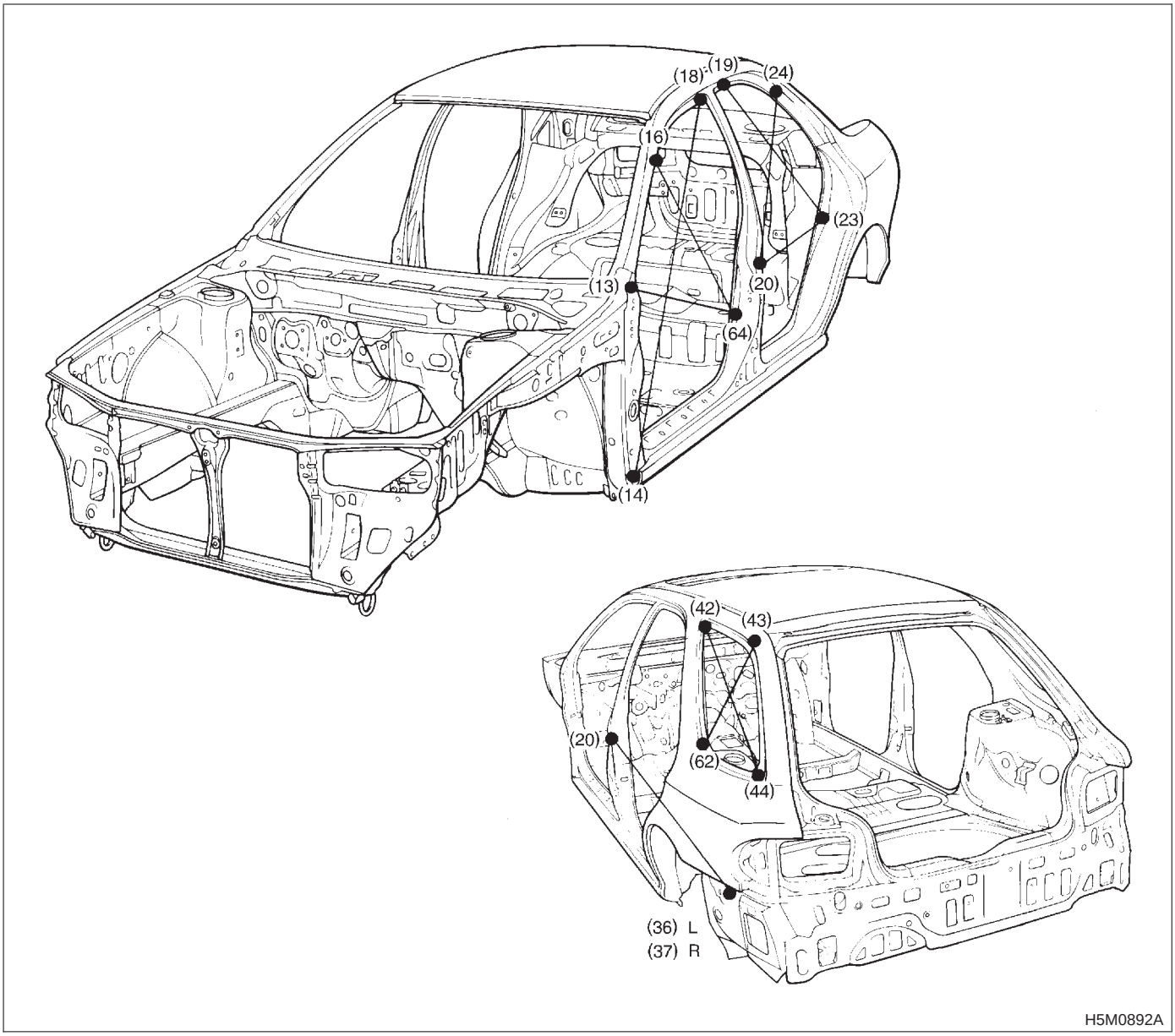
Unit: mm (in)




H5M0891A

# C: DOORS AND REAR QUARTER

## 1. SEDAN AND WAGON

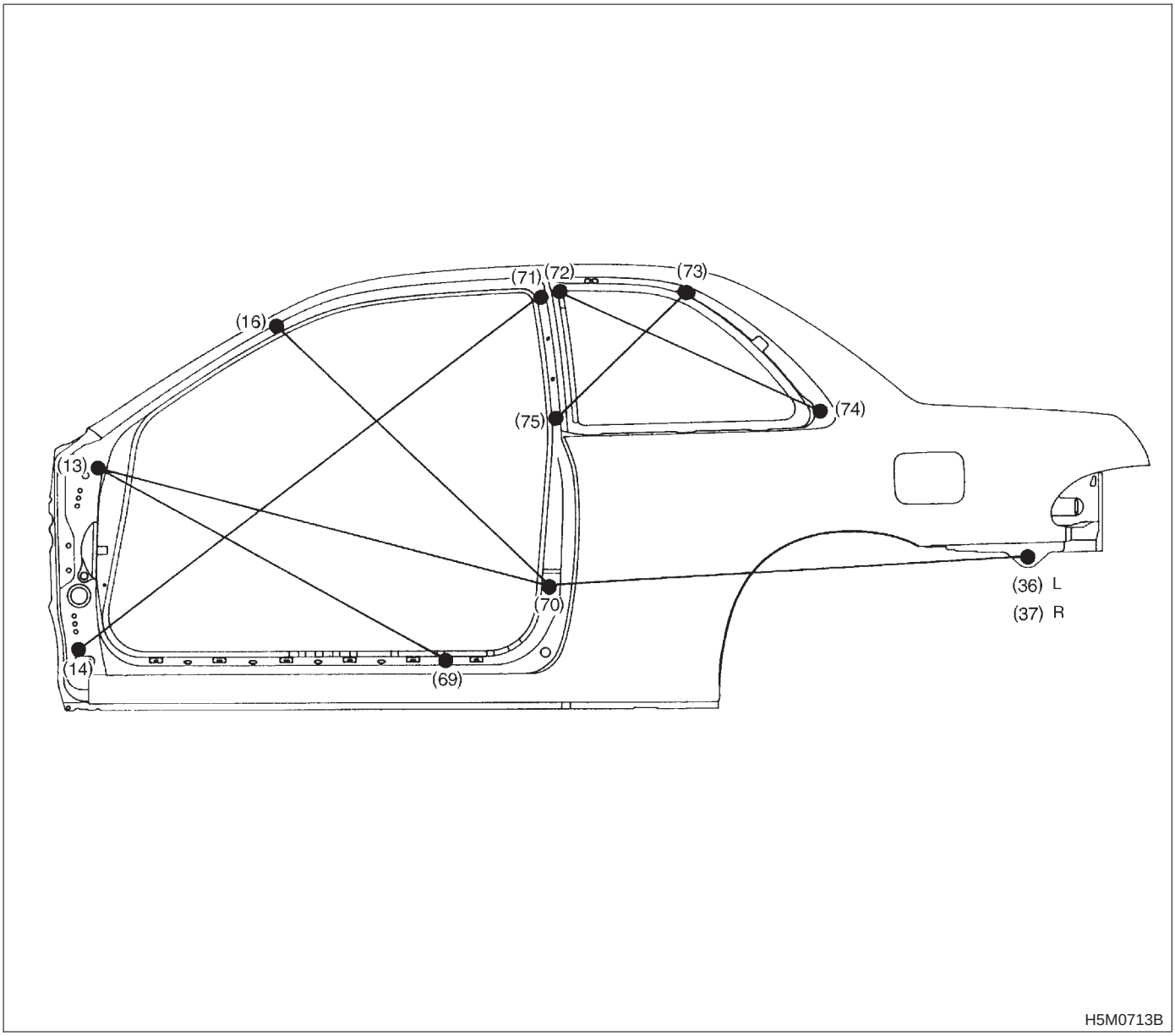



Unit: mm (in)

| Point to point | Dimension | | Point to point | Dimension |
|---|---|---|---|---|
| (14) to (18) | 1,495 (58.86) | | (19) to (23) | 912 (35.91) |
| (13) to (64) | 947 (37.28) | | (20) to (36) L* | 1,462 (57.56) |
| (16) to (64) | 976 (38.43) | | (20) R to (37) R* | 1,481 (58.31) |
| (20) to (23) | 803 (31.61) | | (62) to (43) * | 377 (14.84) |
| (20) to (24) | 829 (32.64) | | (42) to (44) * | 847 (33.35) |

*: Wagon only

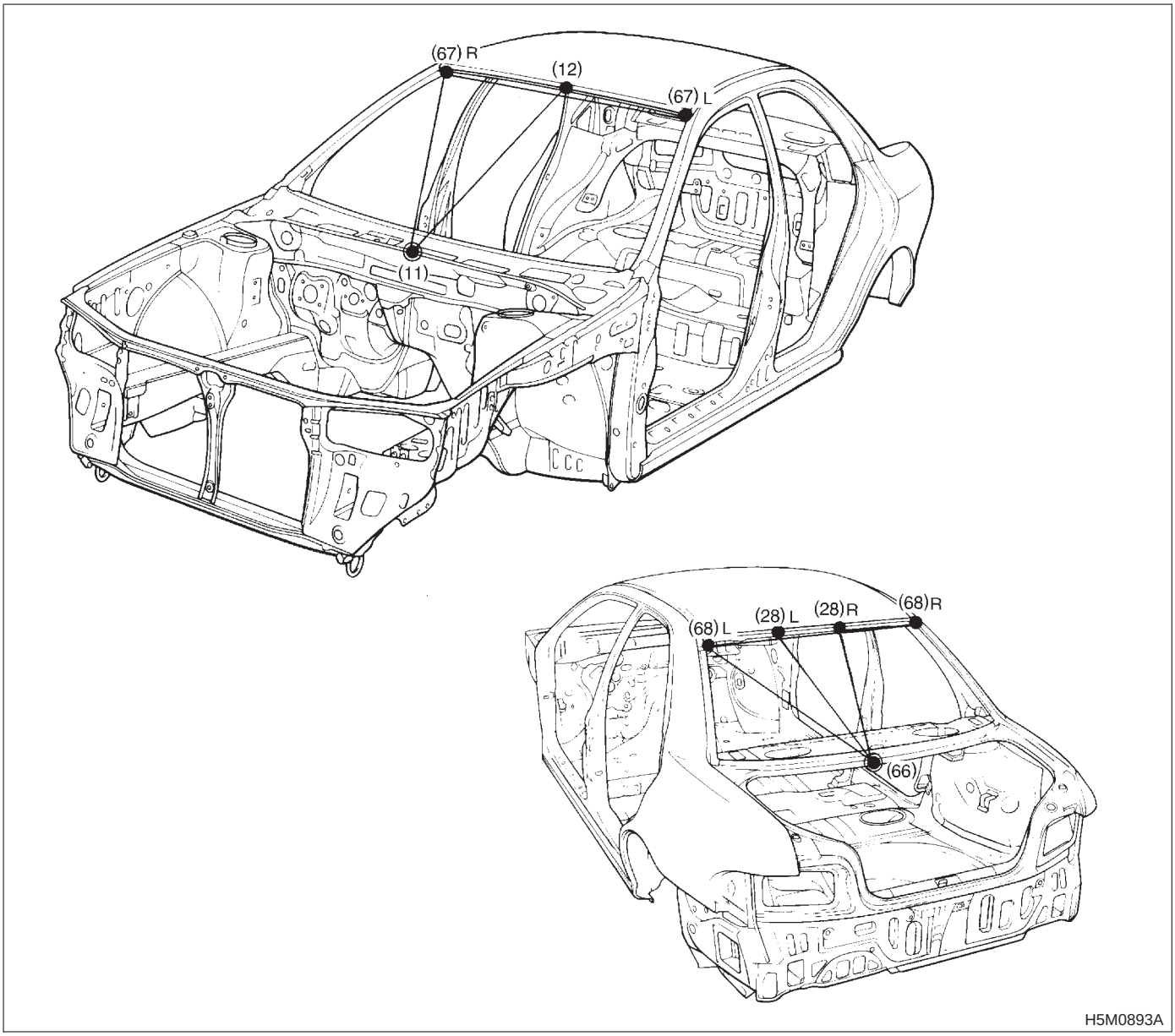
## 2. COUPE




Unit: mm (in)

| Point to point | Dimension | | Point to point | Dimension |
|---|---|---|---|---|
| (14) to (71) | 1,576 (62.05) | | (72) to (74) | 778 (30.63) |
| (13) to (70) | 1,251 (49.25) | | (73) to (75) | 512 (20.16) |
| (16) to (70) | 997 (39.25) | | (70) to (36) L | 1,295 (50.98) |
| (13) to (69) | 1,063 (41.85) | | (70) to (37) R | 1,243 (48.94) |

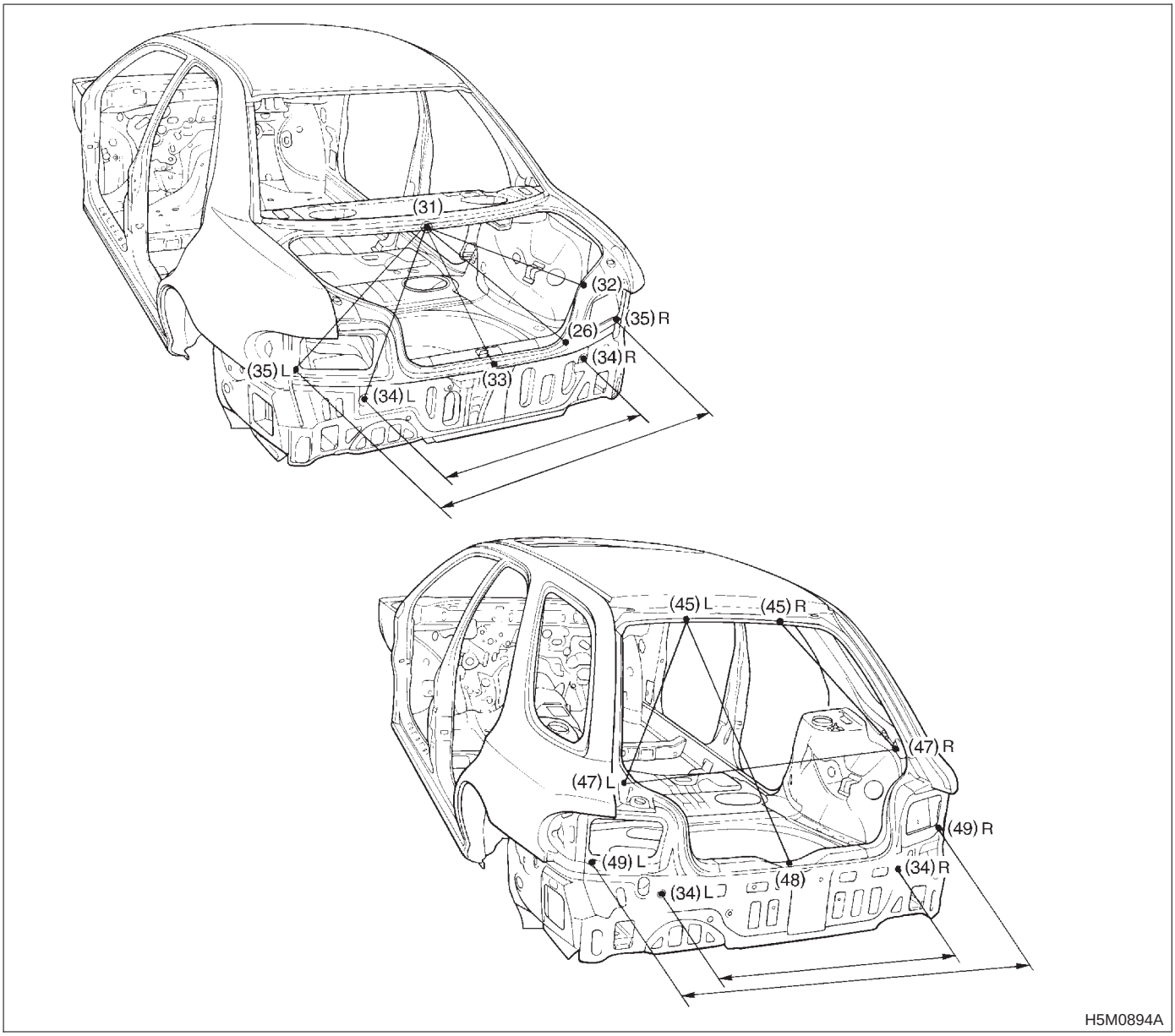
## D: FRONT WINDSHIELD AND REAR WINDOW




Unit: mm (in)

| Point to point | Dimension | | Point to point | Dimension |
|---|---|---|---|---|
| (11) to (12) | 989 (38.94) | | (66) to (28) L | 714 (28.11) |
| (67) R to (67) L | 1,012 (39.84) | | (66) to (68) R | 856 (33.70) |
| (11) to (67) R | 1,116 (43.94) | | (66) to (68) L | 856 (33.70) |
| (11) to (67) L | 1,116 (43.94) | | (68) R to (68) L | 1,012 (39.84) |
| (66) to (28) R | 714 (28.11) | | | |

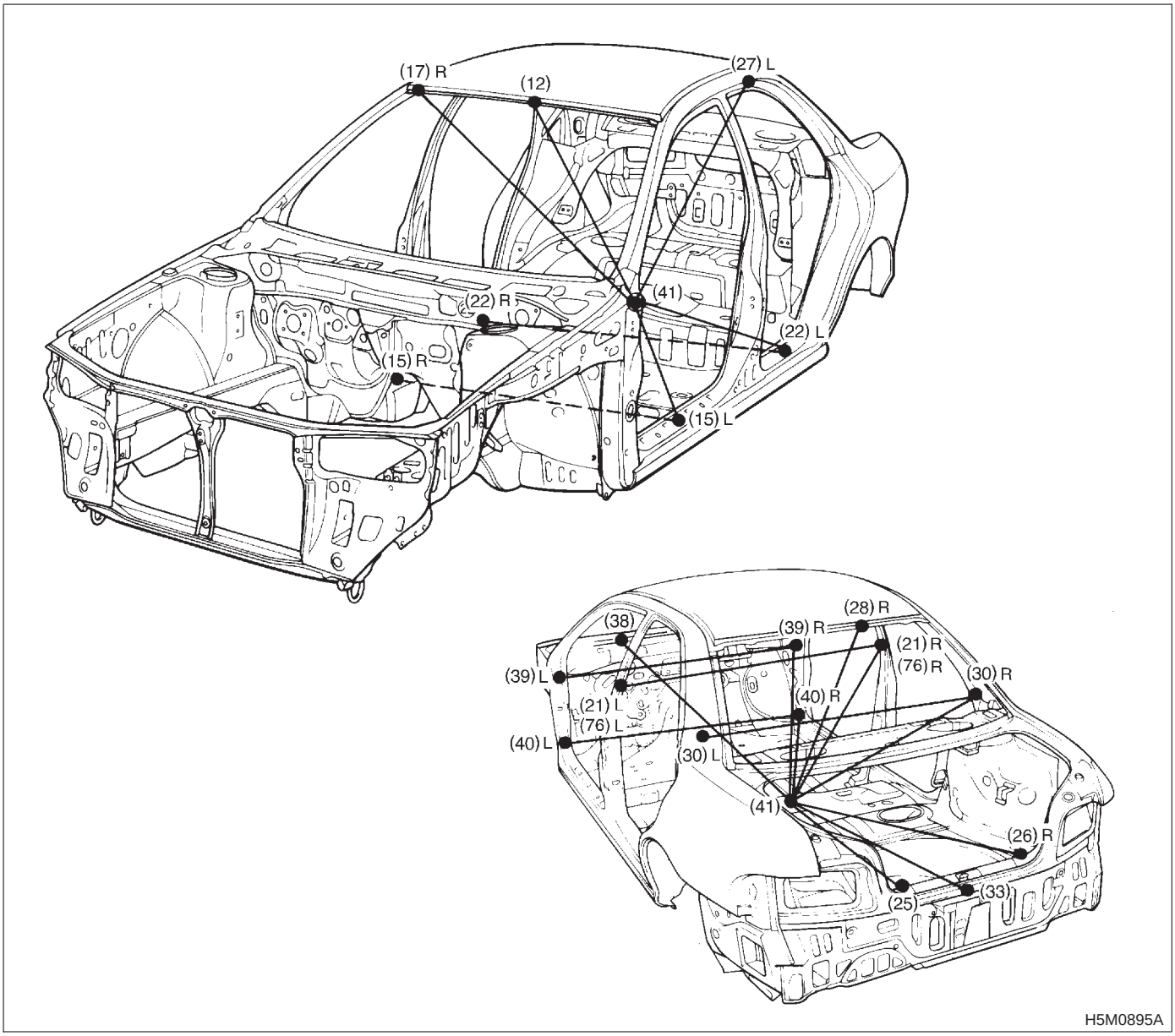
## E: TRUNK LID AND REAR GATE




Unit: mm (in)

| Point to point | Dimension | | Point to point | Dimension |
|---|---|---|---|---|
| (31) to (32) R | 575 (22.64) | | (35) R to (35) L | 1,364 (53.70) |
| (31) to (32) L | 575 (22.64) | | (45) R to (48) | 988 (38.90) |
| (31) to (26) R | 812 (31.97) | | (45) L to (48) | 988 (38.90) |
| (31) to (26) L | 812 (31.97) | | (45) R to (47) R | 926 (36.46) |
| (31) to (33) | 522 (20.55) | | (45) L to (47) L | 926 (36.46) |
| (31) to (35) R | 794 (31.26) | | (47) R to (47) L | 1,043 (41.06) |
| (31) to (35) L | 794 (31.26) | | (49) R to (49) L | 1,355 (52.56) |
| (34) R to (34) L | 890 (35.04) | | (34) R to (34) L | 890 (35.04) |

## F: COMPARTMENT

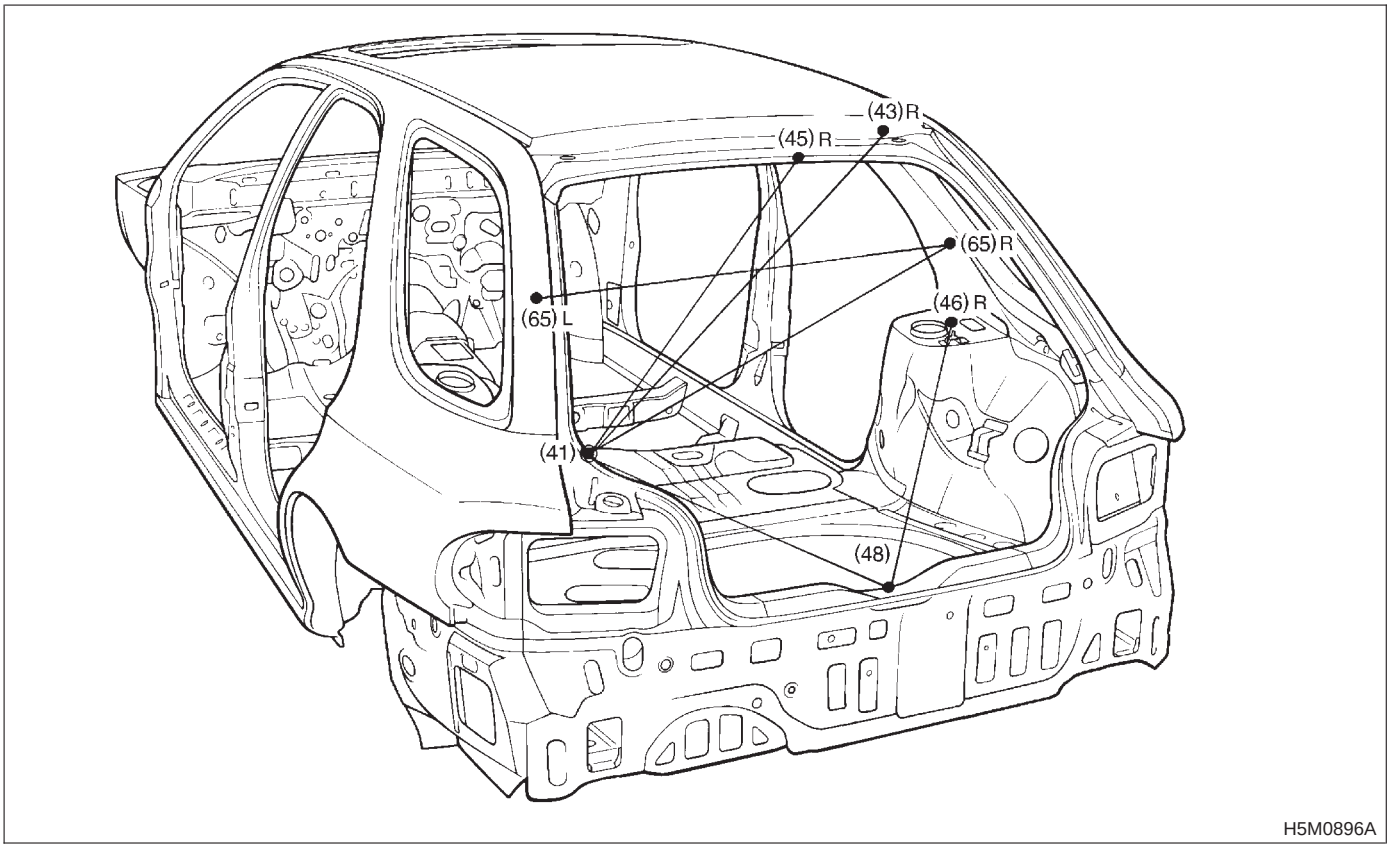



Unit: mm (in)

| Point to point | Dimension | Point to point | Dimension | Point to point | Dimension |
|---|---|---|---|---|---|
| (30) R to (30) L | 1,197 (47.13) | (41) to (15) R | 1,140 (44.88) | (41) to (30) L* | 1,168 (45.98) |
| (21) R to (21) L | 1,061 (41.77) | (41) to (15) L | 1,140 (44.88) | (41) to (28) R* | 1,050 (41.34) |
| (15) R to (15) L | 1,453 (57.20) | (41) to (22) R | 733 (28.86) | (41) to (28) L* | 1,050 (41.34) |
| (22) R to (22) L | 1,453 (57.20) | (41) to (22) L | 733 (28.86) | (41) to (21) R | 1,038 (40.87) |
| (39) R to (39) L | 1,388 (54.65) | (41) to (12) | 1,156 (45.51) | (41) to (21) L | 1,038 (40.87) |
| (40) R to (40) L | 1,401 (55.16) | (41) to (27) R | 1,085 (42.72) | (41) to (17) R | 1,208 (47.56) |
| (41) to (38) | 1,527 (60.12) | (41) to (27) L | 1,085 (42.72) | (41) to (17) L | 1,208 (47.56) |
| (41) to (39) R | 1,524 (60.00) | (41) to (26) R | 1,568 (61.73) | (41) to (33) * | 1,569 (61.77) |
| (41) to (39) L | 1,524 (60.00) | (41) to (26) L | 1,568 (61.73) | (76) R to (76) L☆ | 1,212 (47.72) |
| (41) to (40) R | 1,756 (69.13) | (41) to (25) | 1,184 (46.61) | | |
| (41) to (40) L | 1,756 (69.13) | (41) to (30) R* | 1,168 (45.98) | | |

*: Sedan only
☆ : Coupe only

## G: LUGGAGE ROOM

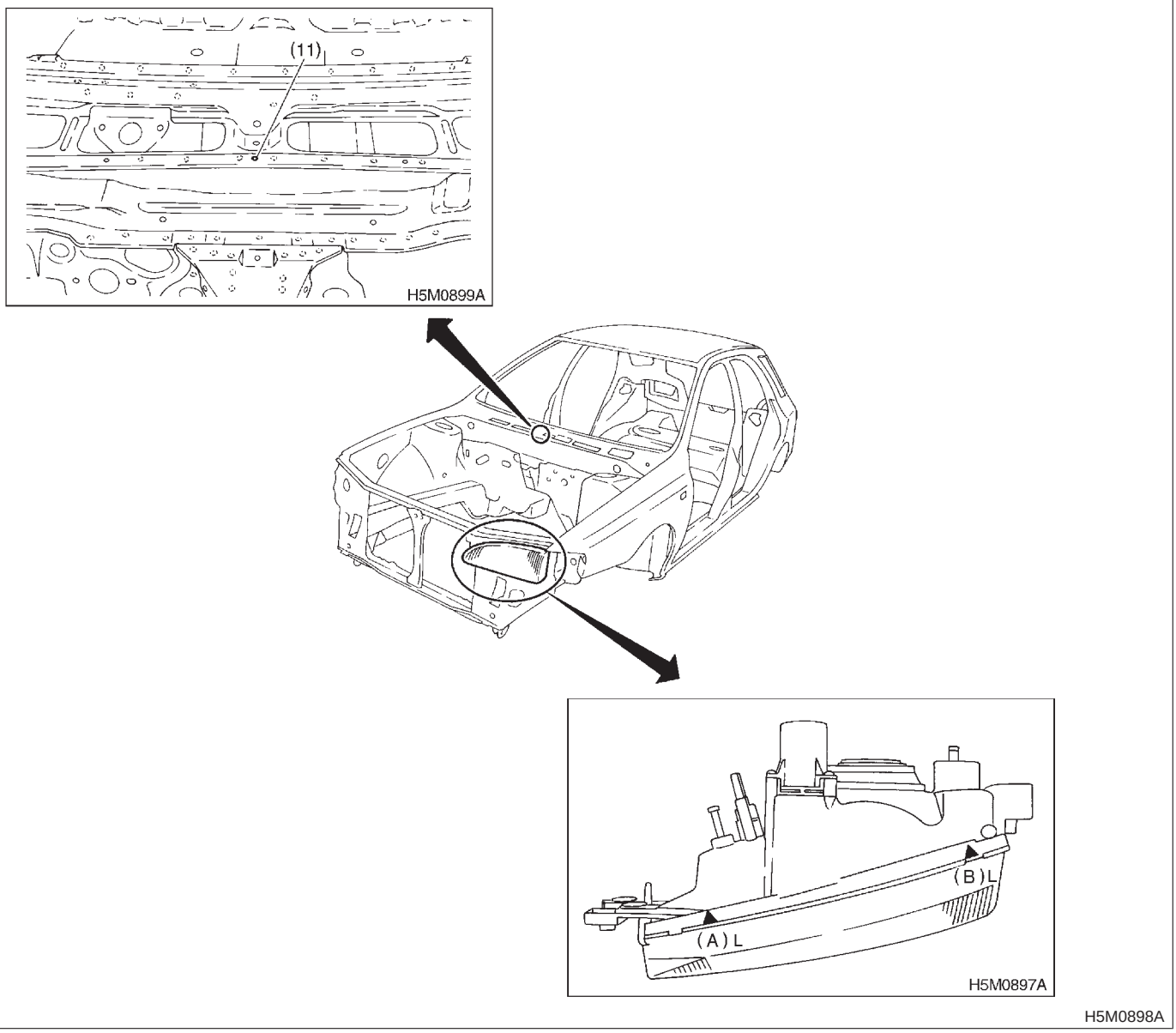



Unit: mm (in)

| Point to point | Dimension | | Point to point | Dimension |
|---|---|---|---|---|
| (41) to (65) R | 1,122 (44.17) | | (41) to (43) R | 1,237 (48.70) |
| (41) to (65) L | 1,122 (44.17) | | (41) to (43) L | 1,237 (48.70) |
| (41) to (45) R | 1,225 (48.23) | | (48) to (46) R | 971 (38.23) |
| (41) to (45) L | 1,225 (48.23) | | (48) to (46) L | 971 (38.23) |
| (41) to (48) | 1,446 (56.93) | | (65) R to (65) L | 1,235 (48.62) |

# 4. Datum Points and Dimensions Concerning On-Board Aiming Adjustment

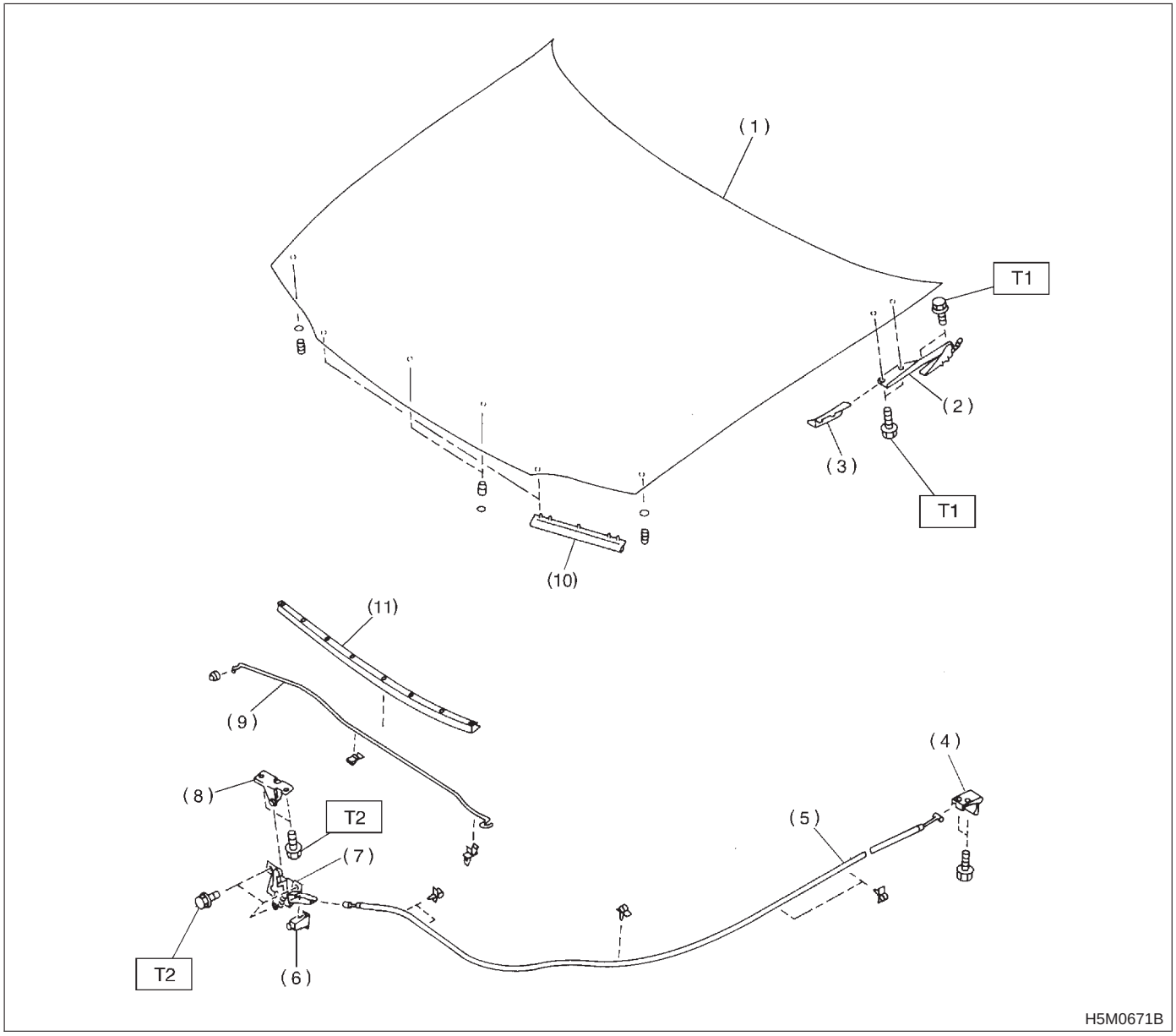
If headlight aiming is misaligned due to damaged body panel, repair headlight mating surface using body and headlight datum points as a guide.




Unit: mm (in)

| Point to point | Dimension | | Point to point | Dimension |
|---|---|---|---|---|
| (11) to (A) L | 993 (39.09) | | (11) to (B) L | 1,048 (41.26) |
| (11) to (A) R | 993 (39.09) | | (11) to (B) R | 1,048 (41.26) |

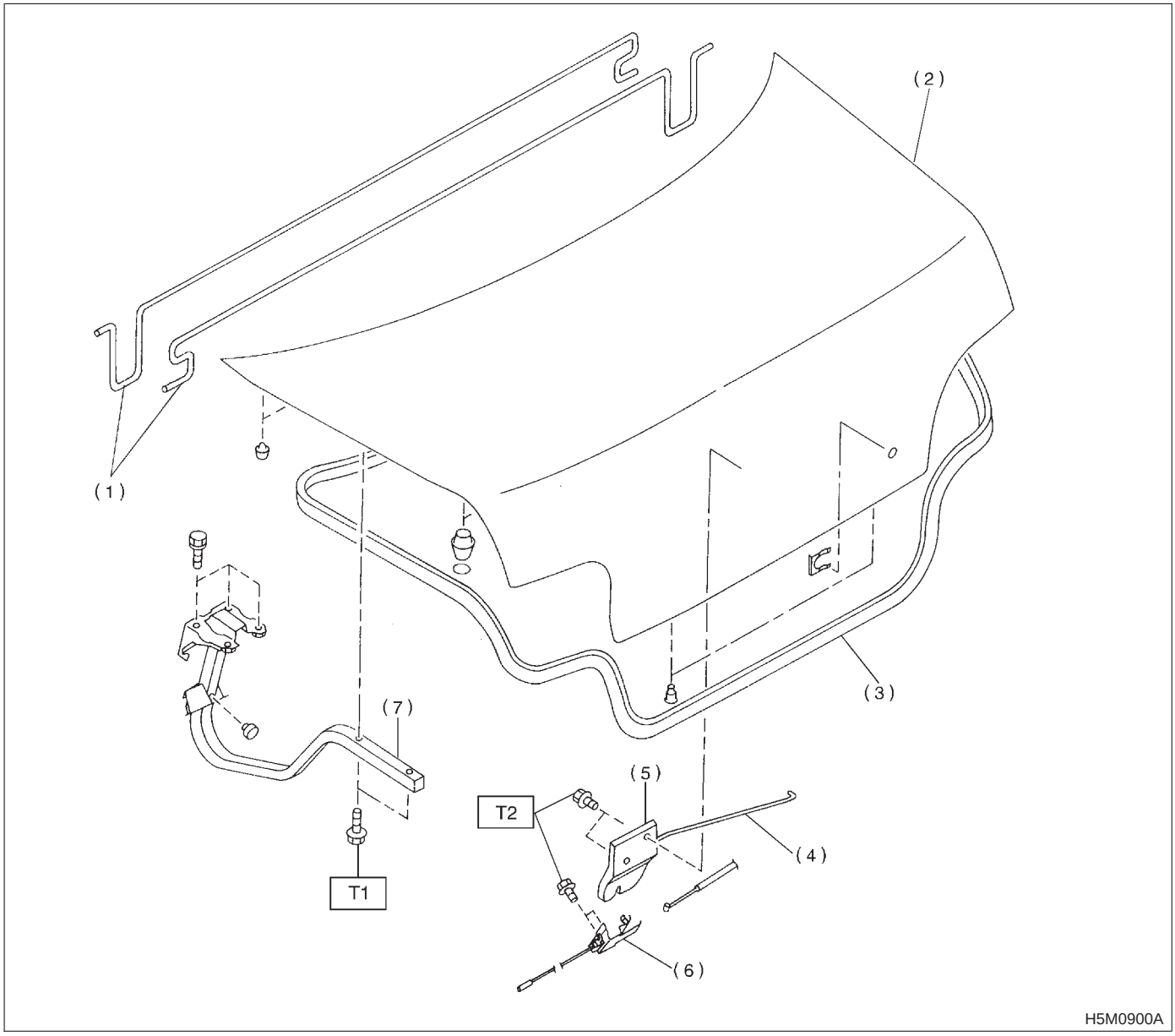
# 1. Front Hood and Hood Lock




(1) Front hood
(2) Hinge (RH, LH)
(3) Hood hinge cover (RH, LH)
(4) Lever ASSY
(5) Cable
(6) Stopper
(7) Hood lock ASSY
(8) Striker
(9) Front hood stay
(10) Seal (Front hood) SD
(11) Seal (Front hood) CTR

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 14±9 (1.4±0.9, 10.1±6.5)***
***T2: 32±1 (3.3±0.1, 23.9±0.7)***

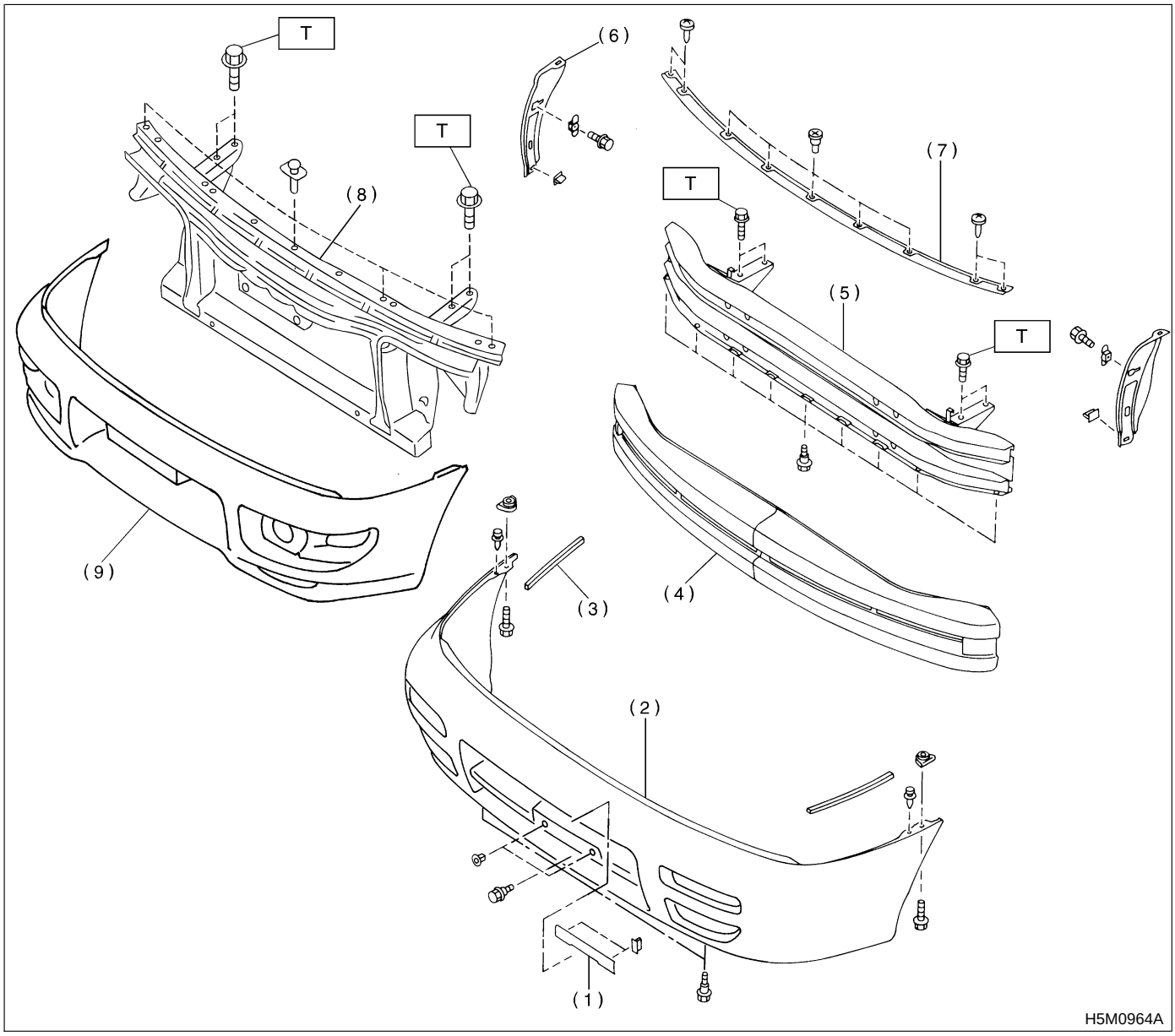
# 2. Trunk Lid




(1) Torsion bar
(2) Trunk lid
(3) Weatherstrip
(4) Rod
(5) Trunk lid lock ASSY
(6) Striker
(7) Hinge ASSY

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 14±4 (1.4±0.4, 10.1±2.9)***
***T2: 18±5 (1.8±0.5, 13.0±3.6)***

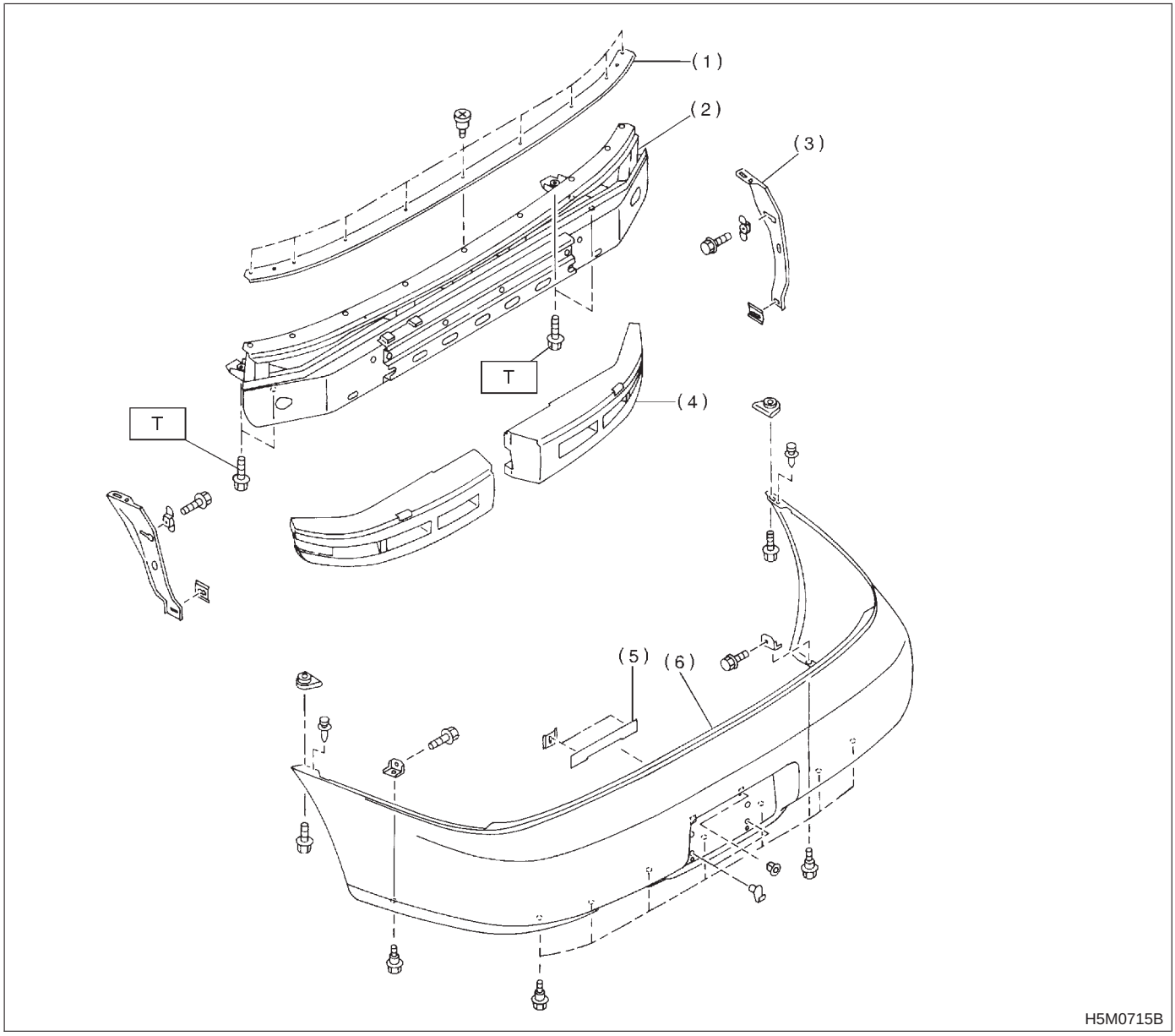
# 3. Front Bumper




(1) Plate
(2) Bumper face (Except USA 2500 cc)
(3) Spacer
(4) E/A form bumper
(5) Front beam (Except USA 2500 cc)
(6) Bracket (Side)
(7) Holder upper
(8) Front beam (USA 2500 cc)
(9) Bumper face (USA 2500 cc)

***Tightening torque: N·m (kg-m, ft-lb)***
***T: 93±25 (9.5±2.5, 69±18)***

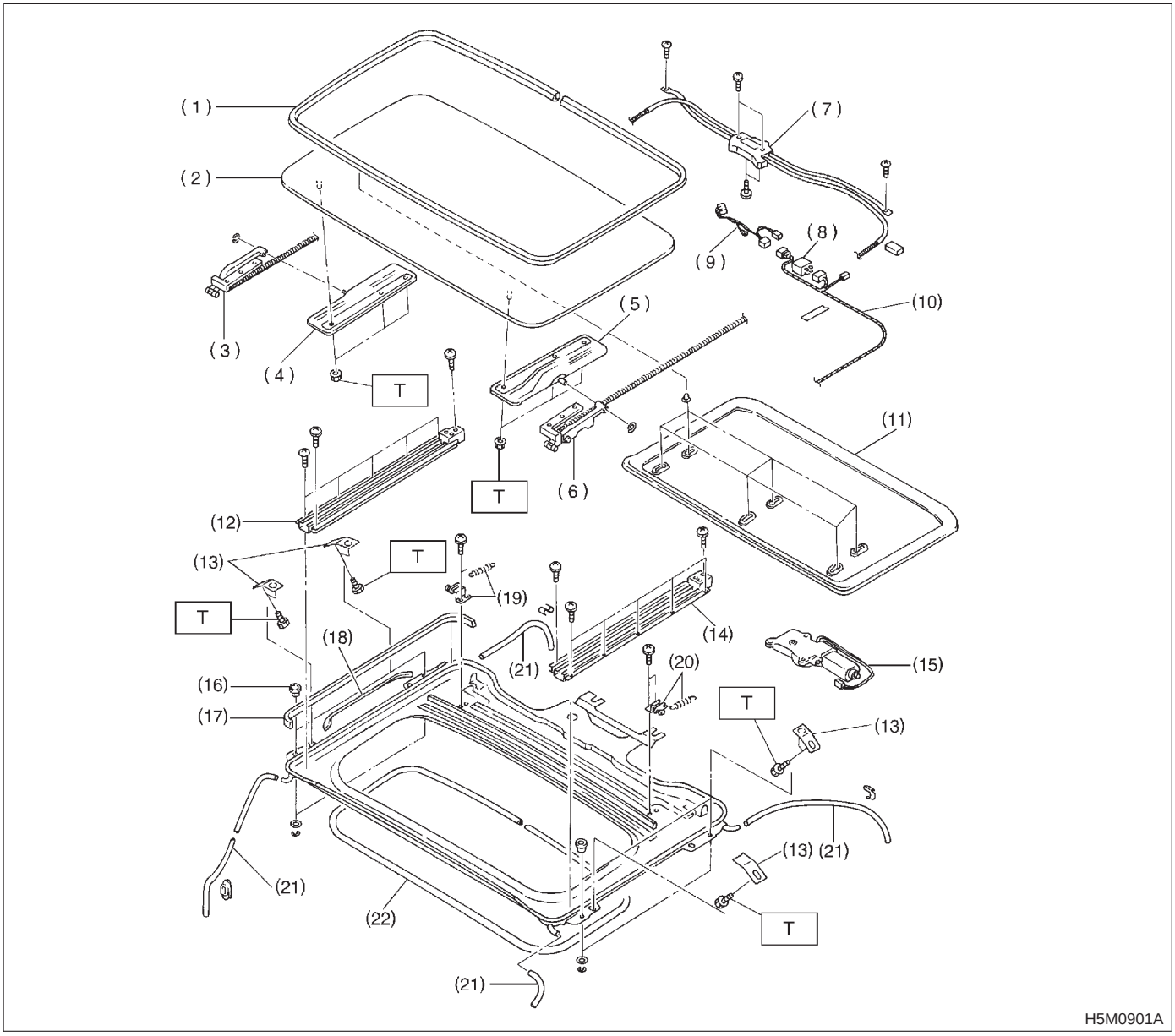
# 4. Rear Bumper




(1) Holder upper
(2) Bumper beam
(3) Bracket (Side)
(4) E/A from bumper
(5) Plate
(6) Bumper surface

***Tightening torque: N·m (kg-m, ft-lb)***
***T: 93±25 (9.5±2.5, 69±18)***

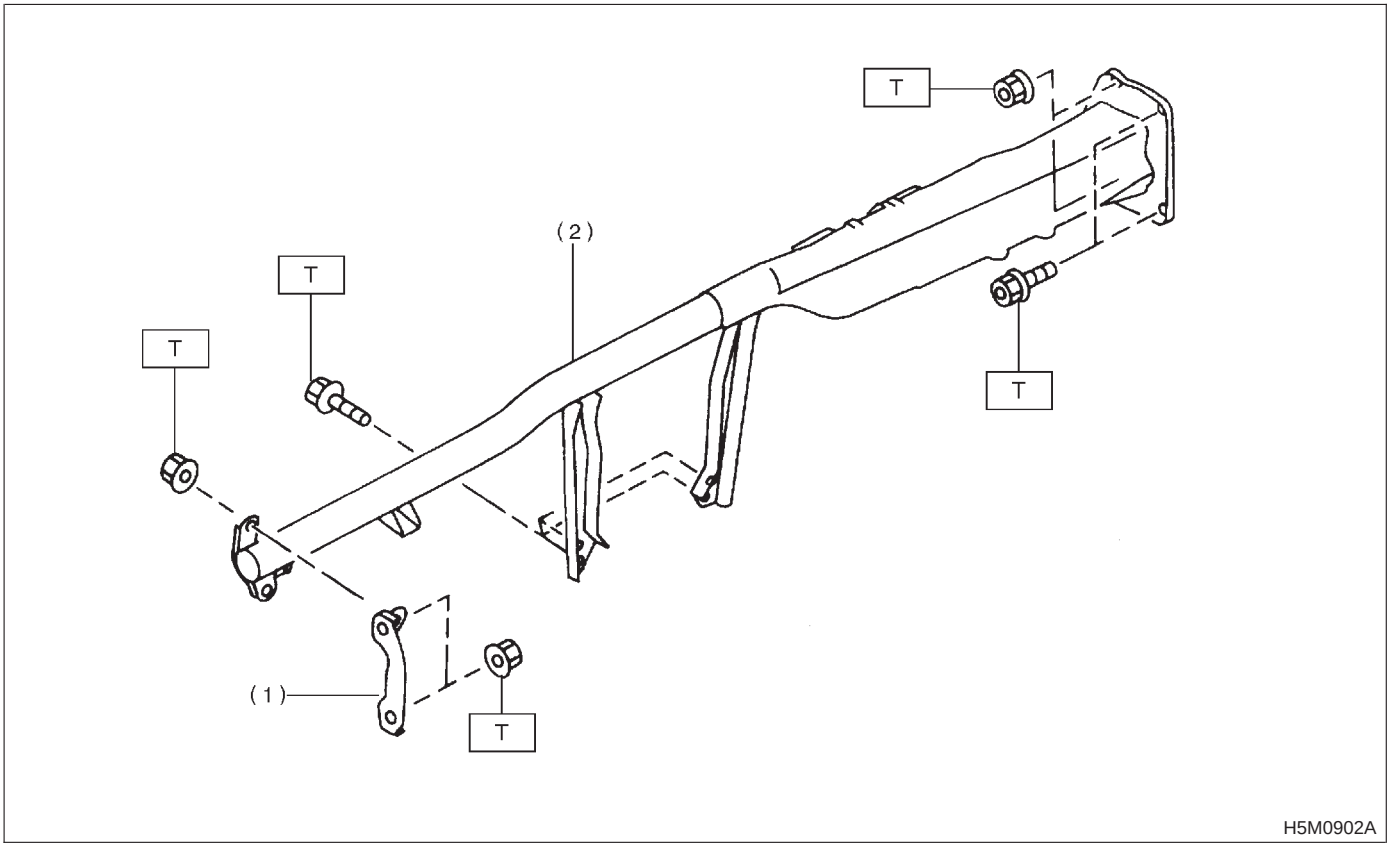
# 5. Sunroof




(1) Weatherstrip
(2) Sunroof panel
(3) Rear guide ASSY
(4) Lower panel
(5) Lower panel
(6) Rear guide ASSY
(7) Drive unit
(8) Relay
(9) Harness
(10) Harness
(11) Sunroof trim
(12) Guide rail
(13) Set bracket
(14) Guide rail
(15) Motor ASSY
(16) Sealed tape
(17) Frame ASSY
(18) Sealed cushion
(19) Shutting ASSY (RH)
(20) Shutting ASSY (LH)
(21) Drain tube
(22) Garnish

***Tightening torque: N·m (kg-m, ft-lb)***
***T: 7.4±2.0 (0.75±0.2, 5.4±1.4)***

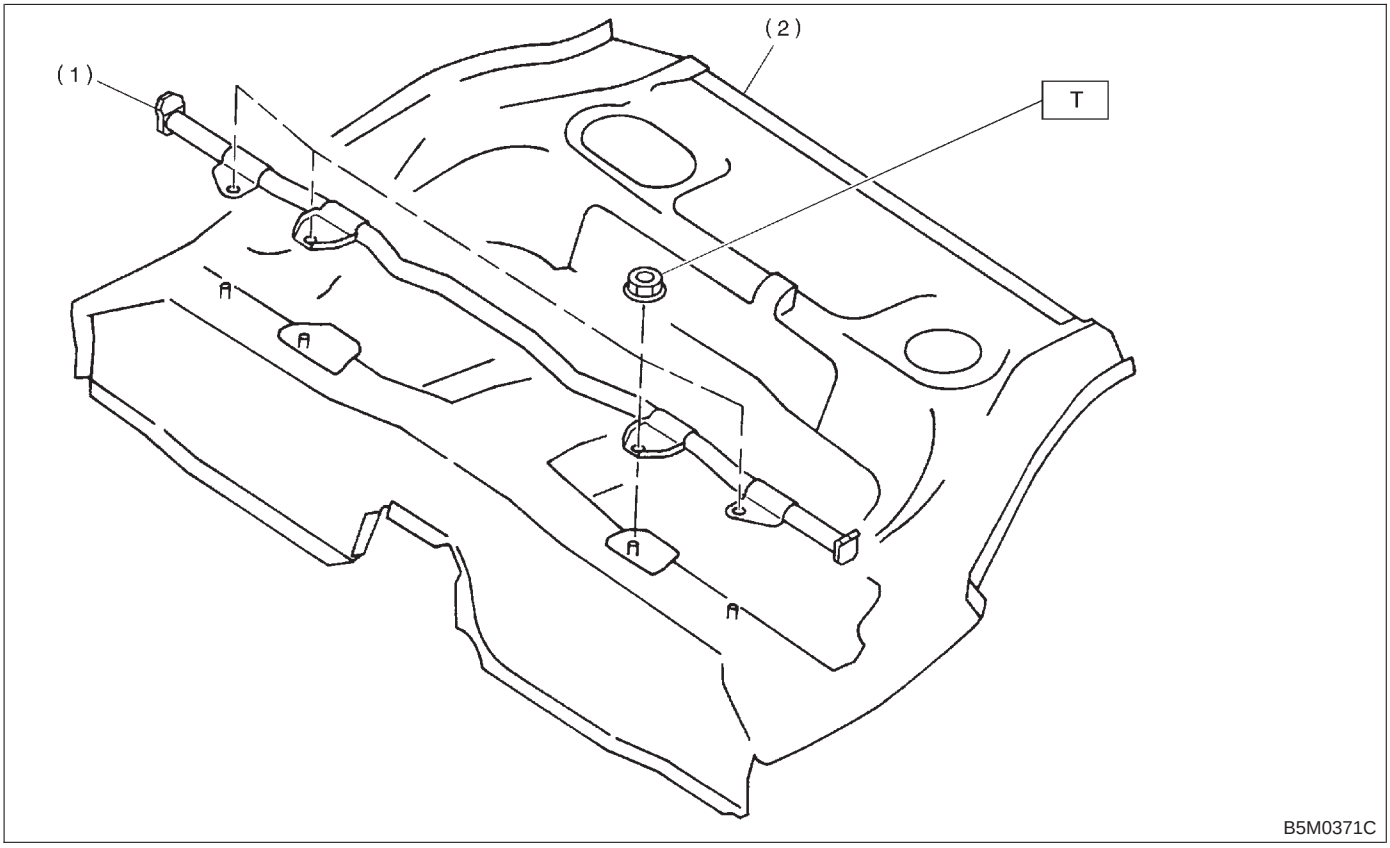
# 6. Steering Support Beam




(1) Bracket
(2) Steering beam

***Tightening torque: N·m (kg-m, ft-lb)***
***T: 18±5 (1.8±0.5, 13.0±3.6)***

# 7. Guard Pipe




(1) Guard pipe
(2) Rear floor panel

***Tightening torque: N·m (kg-m, ft-lb)***
***T: 32±10 (3.3±1.0, 23.9±7)***

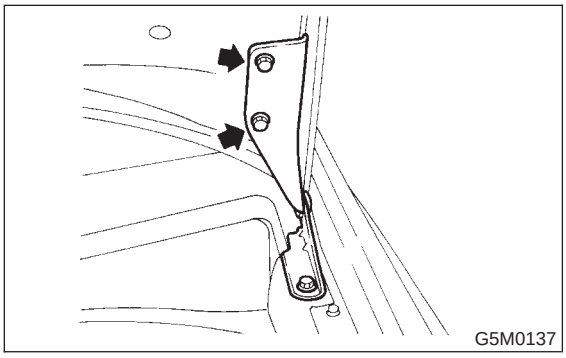
# 1. Hood

## A: REMOVAL AND INSTALLATION

NOTE:
The hood lock has a dual locking design which consists of a main lock and a safety lock mechanism. When the release knob located at the front pillar on the driver's side is pulled back, the main lock is released through the cable attached to the knob.
The safety lock can be released by pushing the lever protruding above the front grill while opening the hood.

### 1. HOOD

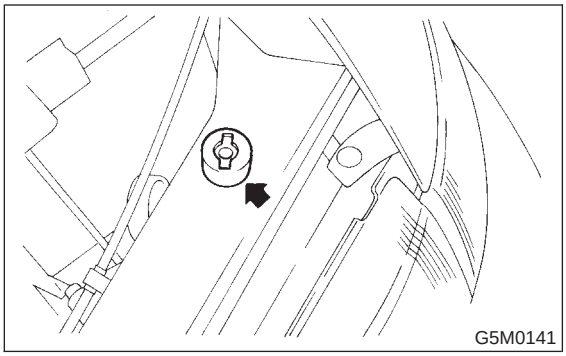
1) Open front hood, and remove washer hose.
2) Remove attaching bolts.




3) Detach front hood from hinges.
4) Installation is in the reverse order of removal.

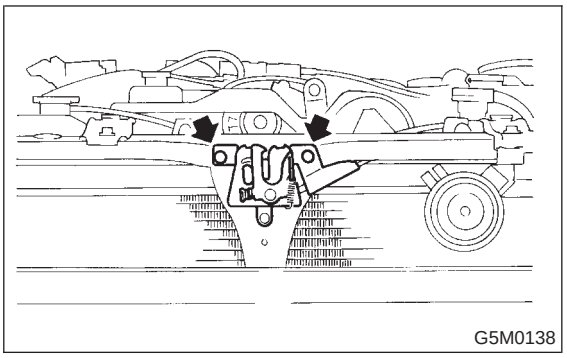
**CAUTION:**
**Adjust buffer assembly on each end so that main lock is applied securely when hood is released from a height of approx. 20 mm (0.79 in).**

NOTE:
Align the center of striker with lock during installation. Make sure safety lever is properly caught by striker under the hood's own weight.



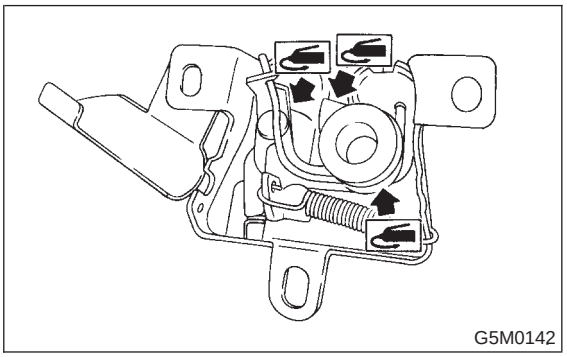

### 2. HOOD LOCK

1) Open front hood and remove front grille.
2) Remove bolts which secure lock assembly to radiator panel, and remove lock assembly.



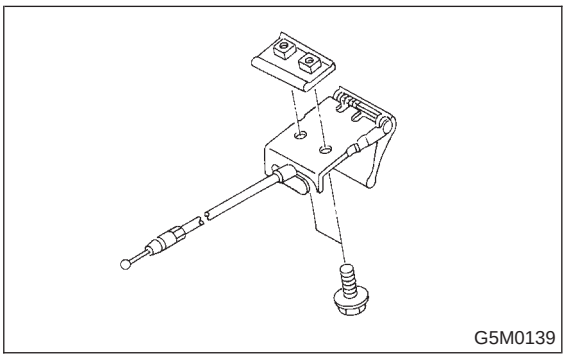

3) Disconnect release cable from lock assembly
4) Installation is in the reverse order of removal.

NOTE:
● Route hood lock release cable and hold with clips.
● After installing release cable, ensure it operates smoothly.
● Apply grease to sliding surfaces of parts.




### 3. RELEASE CABLE

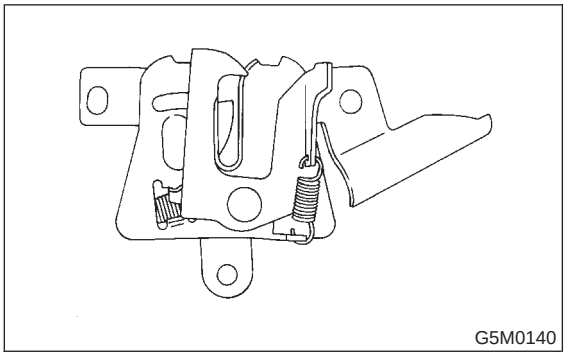
1) Remove front grille.
2) Remove release cable from lock assembly.
3) Remove cable clip from engine compartment.
4) Remove bracket from front pillar.




5) Installation is in the reverse order of removal.

## B: POINTS TO CHECK

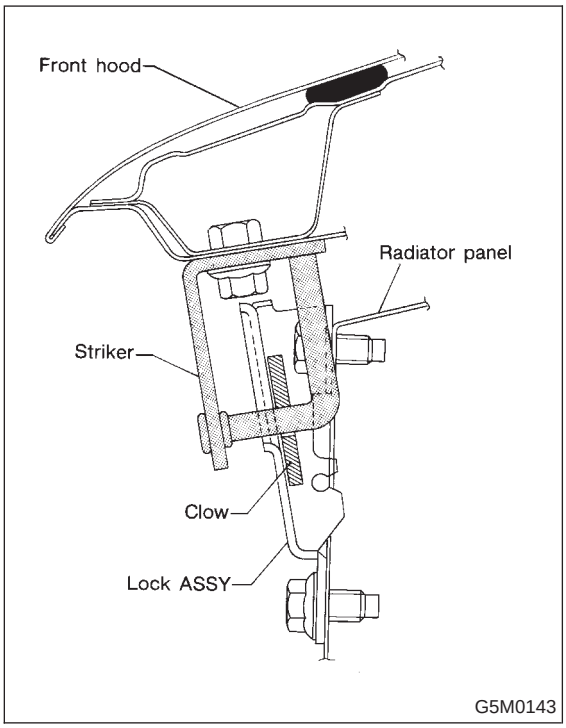
1) Check striker for bending or abnormal wear.
2) Check safety lever for improper movement.
3) Check other levers and spring for rust formation and unsmooth movement.


G5M0140

## C: ADJUSTMENT

1) Fore-aft and left-right adjustments Loosen striker mounting bolts and adjust fore-and-aft position of striker.

**CAUTION:**
**Do not adjust striker position using the lock. Doing so may result in a misaligned front grille.**



G5M0143

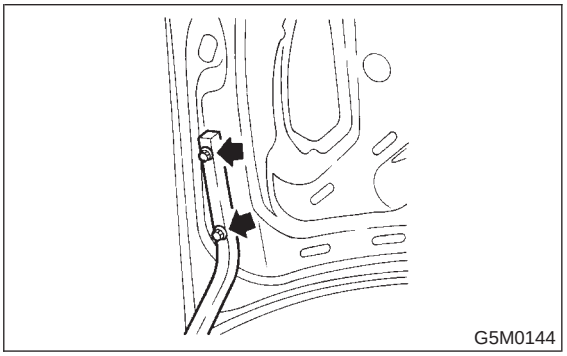
2) Up-down adjustment
Make up-and-down adjustment of striker only when hood does not properly contact buffer or hood is not flush with fender, or when release cable does not properly operate. Adjustment can be made by adjusting the stroke length of striker after lock assembly mounting screws are removed.

# 2. Trunk Lid

## A: REMOVAL AND INSTALLATION

### 1. TRUNK LID

1) Open trunk lid.
2) Remove trunk lid mounting bolts and detach trunk lid from hinges.

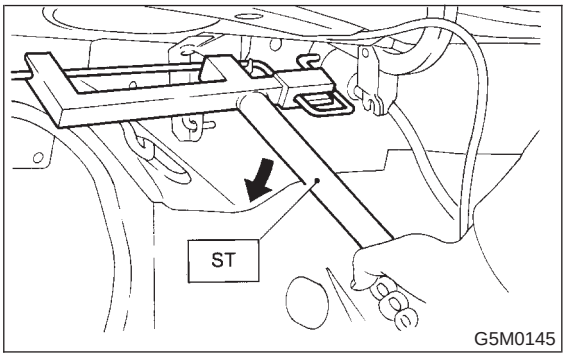

G5M0144

3) Installation is in the reverse order of removal.

### 2. TORSION BAR

1) Open trunk lid. Remove torsion bars from hinge links using ST.
ST 927780000 REMOVER

**CAUTION:**
**Be careful because torsion bar quickly swings back when released.**



G5M0145

2) Remove the left and right torsion bars.

**WARNING:**
**Be careful because trunk lid drops under its own weight when torsion bars are removed.**

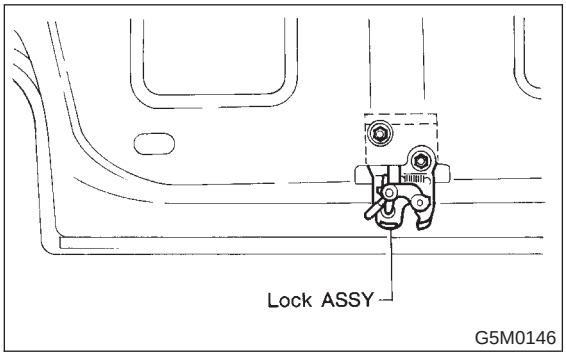
3) Installation is in the reverse order of removal.

NOTE:
Apply a coat of grease to the rotary section of hinges and contact surfaces of torsion bars.

### 3. TRUNK LID LOCK ASSEMBLY AND KEY CYLINDER

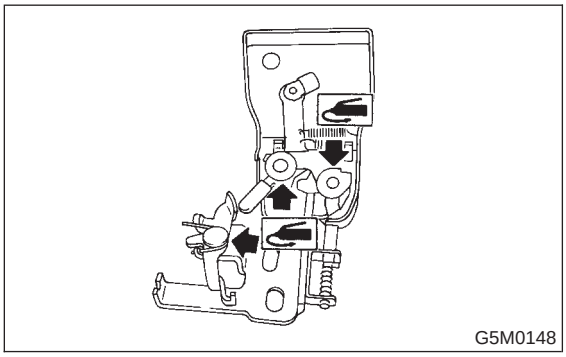
1) Remove rod of lock assembly from rod holder of key lock assembly.
2) Remove bolts which hold lock assembly and remove lock assembly.

NOTE:
- Always remove rear skirt trim panel beforehand, if so equipped.
- Be careful not to bend opener cable.




3) Remove clip and detach key cylinder from trunk lid.
4) Installation is in the reverse order of removal.

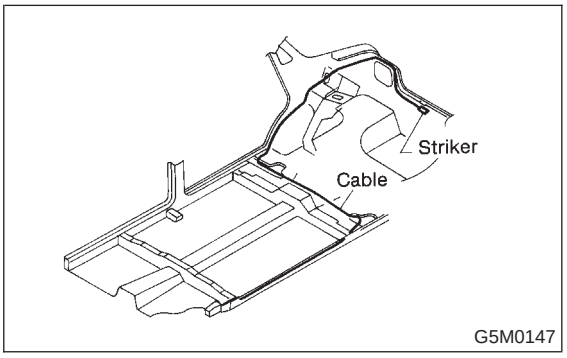
NOTE:
Apply grease to sliding surfaces of lock assembly and striker.




### 4. TRUNK LID OPENER

1) Remove driver's seat, rear seats, center pillar lower cover, floor mat, rear arch cover and side sill cover (on the driver's side).
2) Remove all clips which hold cable.
3) Disconnect cable from pull handle assembly.
4) Remove bolts and detach pull handle assembly.
5) Loosen bolts which hold lock assembly, and remove it.
6) Remove striker from trunk lid.
7) Disconnect cable from striker.

NOTE:
Be careful not to bend or break cable.




8) Installation is in the reverse order of removal.

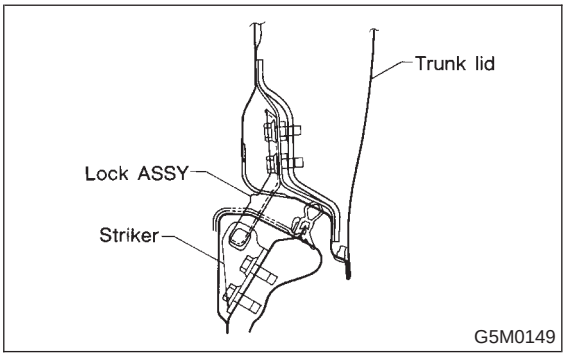
**CAUTION:**
- **When installing cover to pull handle assembly, observe the following:**
  - **Be careful not to catch harness.**
  - **Engage pull handle assembly pawls firmly.**

NOTE:
After installing opener cable, ensure it moves smoothly.

## B: ADJUSTMENT

### 1. TRUNK LID

1) To adjust left-right lid positioning, loosen bolts which hold trunk lid to hinges.
2) To adjust up-down lid alignment, place washer(s) between trunk lid and hinges or move trunk lock assembly up or down.

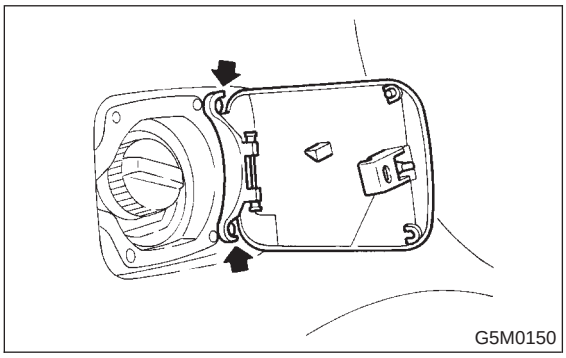


# 3. Fuel Flap

## A: REMOVAL AND INSTALLATION

### 1. FUEL FLAP

1) Remove bolts which hold hinge to car body, and detach fuel flap and hinge as a unit.

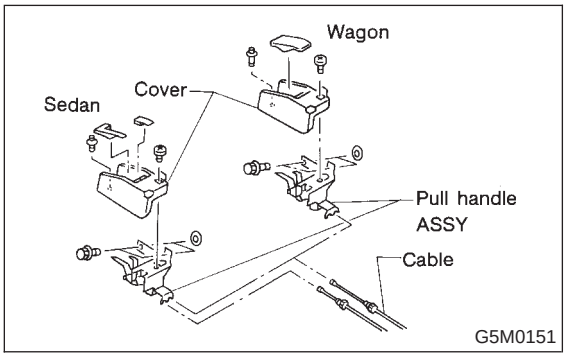



2) Installation is in the reverse order of removal.

**CAUTION:**
**Make sure the clearance between fuel flap and car body is equal at all points.**

### 2. FUEL FLAP OPENER

1) Remove driver's seat, rear seats, center pillar lower cover, floor mat, rear arch cover/rear quarter trim (wagon), and side sill cover (on the driver's side).
2) Remove all clips which hold cable.
3) Disconnect cable from pull handle.
4) Detach pull handle by removing bolts.



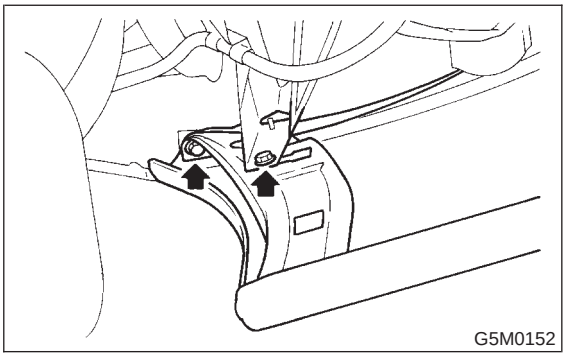

5) Detach fuel lock holder by turning it.
6) Installation is in the reverse order of removal.

**CAUTION:**
**● When installing cover to pull handle assembly, observe the following:**
**● Be careful not to catch harness.**
**● Engage pull handle assembly pawls firmly.**
**● After installing opener cable, ensure it moves smoothly.**

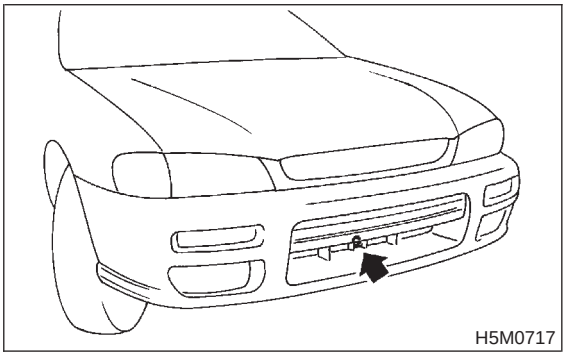
# 4. Front Bumper

## A: REMOVAL AND INSTALLATION

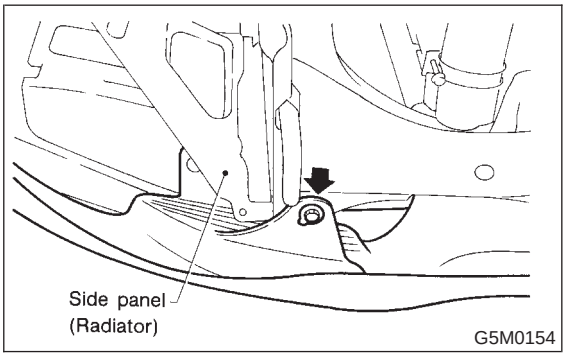
1) Disconnect the ground cable from the battery.
2) Remove the canister.
3) Remove the front grille.
4) Remove the parking light and headlight LH.
5) Remove the mud guard.
6) Remove bolts from side of bumper.



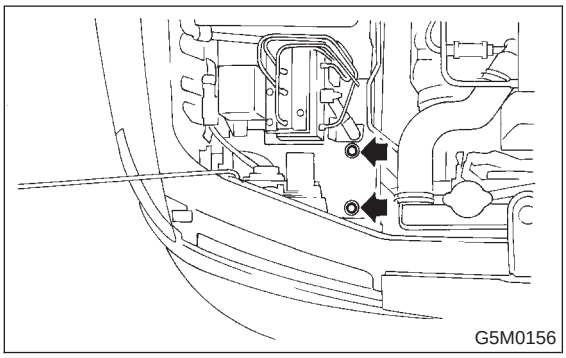

7) Remove bolt from lower center of bumper.



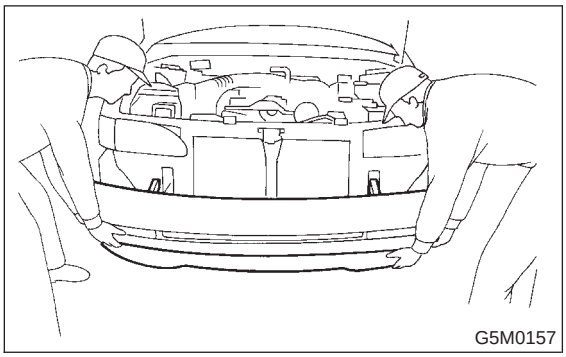

8) Remove bolts from lower side of bumper.



9) Remove bolts (engine compartment side) from bumper stays.


G5M0156

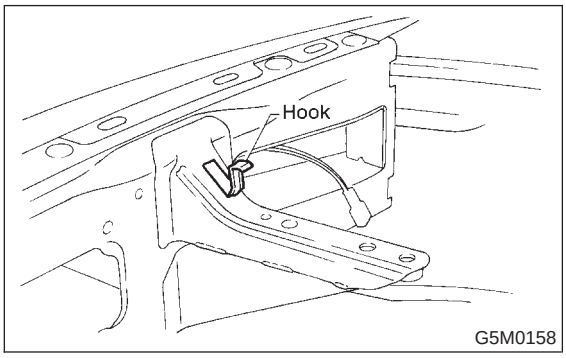
10) Remove turn signal light connector.
11) Remove bumper assembly.


G5M0157

12) Installation is in the reverse order of removal.

**CAUTION:**
**● Be extremely careful to prevent scratches on bumper face as it is made of resin.**
**● Be careful not to scratch the body when removing or installing the bumper.**
**● When installing canister, insert air vent hose of canister into the hole on body.**

NOTE:
To facilitate installation of front bumper, attach hook (located at stay) to body panel.



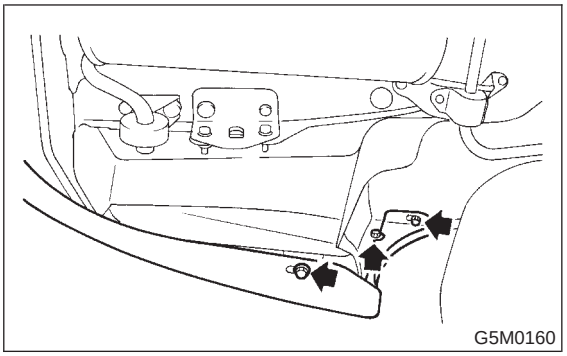
G5M0158

# 5. Rear Bumper

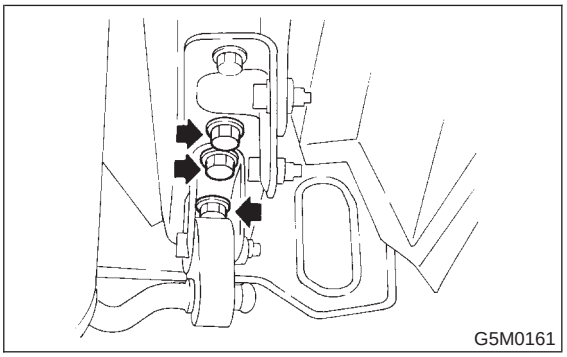
## A: REMOVAL AND INSTALLATION

### 1. SEDAN

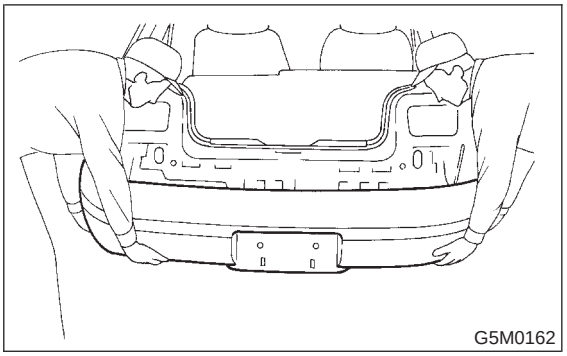
1) Open trunk lid. Remove trunk trim panel clips and detach trim.
2) Disconnect license plate light connector.
3) Remove bolts from side of bumper.


G5M0160

4) Remove bolts from bumper stay.


G5M0161

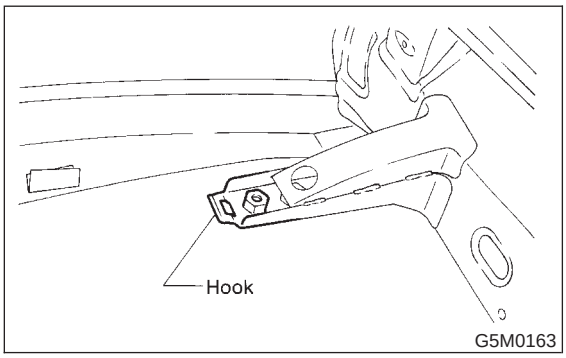
5) Remove rear bumper.


G5M0162

6) Installation is in the reverse order of removal.

**CAUTION:**
**● Be extremely careful to prevent scratches on bumper face as it is made of resin.**
**● Be careful not to scratch the body when removing or installing bumper.**

NOTE:
To facilitate installation of rear bumper, attach hook (located at stay) to body panel.

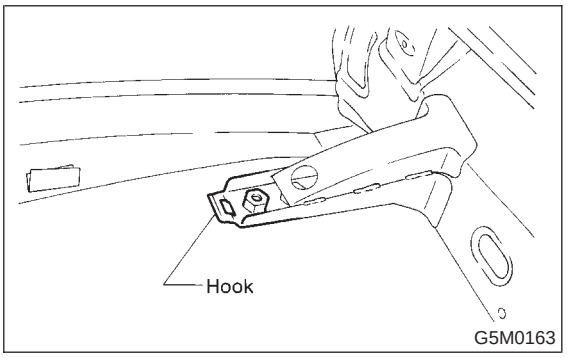



## 2. WAGON

1) Open rear gate and rear quarter trim lid.
2) Disconnect license plate light connector.
3) Remove bolts from side of bumper.
4) Remove bolts from bumper stays.
5) Remove bumper assembly.
6) Installation is in the reverse order of removal.

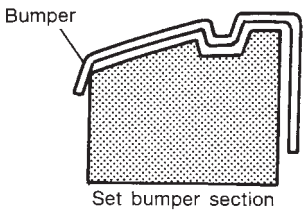
**CAUTION:**
**● Be extremely careful to prevent scratches on bumper face as it is made of resin.**
**● Be careful not to scratch the body when removing or installing bumper.**

NOTE:
To facilitate installation of rear bumper, attach hook (located at stay) to body panel.



# 6. Coating Method for PP Bumper

## A: PROCESS STEPS

<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td>1</td><td>Bumper mounting</td><td>Set bumper on paint worktable if required. Use paint worktable conforming to inner shape of bumper when possible.</td><td> 

G5M0164</td></tr>
<tr><td>2</td><td>Masking</td><td colspan="2">Mask specified part (black base) with masking tape. Use masking tape for PP (example, Nichiban No. 533, etc.).</td></tr>
<tr><td>3</td><td>Degreasing, cleaning</td><td colspan="2">Clean all parts to be painted with white gasoline, normal alcohol, etc. to remove dirt, oil, fat, etc.</td></tr>
<tr><td>4</td><td>Primer paint</td><td colspan="2">Apply primer one to all parts to be painted, using air gun. Use primer (clear).</td></tr>
<tr><td>5</td><td>Drying</td><td colspan="2">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.</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">Top coat paint (I)</td><td>Solid color</td><td>Metallic color</td></tr>
<tr><td>Use section (block) paint for top coat.<br>● Paint in use (for each color):<br>Solid paint<br>Hardener PB<br>Thinner T-301<br>● Mixing ratio: Main agent vs. hardener = 4:1<br>● Viscosity: 10 — 13 sec/20°C (68°F)<br>● Film thickness: 35 — 45μ<br>● Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm$^2$, 36 — 50 psi)</td><td>Use section (block) paint for top coat.<br>● Paint in use (for each color):<br>Metallic paint<br>Hardener PB<br>Thinner T-306<br>● Mixing ratio: Main agent vs. hardener = 10:1<br>● Viscosity: 10 — 13 sec/20°C (68°F)<br>● Film thickness: 15 — 20μ<br>● Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm$^2$, 36 — 50 psi)</td></tr>
<tr><td>7</td><td>Drying</td><td>Not required.</td><td>Dry at normal temperature [10 min. or more at 20°C (68°F)]. In half-dried condition, avoid dust, dirt.</td></tr>
<tr><td>8</td><td>Top coat paint (II)</td><td>Not required.</td><td>Apply a clear coat to parts with top coat paint (I), three times, at 5 — 7 minute intervals.<br>● Paint in use<br>Metallic paint<br>Hardener PB<br>Thinner T-301<br>● Mixing ratio: Clear vs. hardener = 6:1<br>● Viscosity: 14 — 16 sec/20°C (68°F)<br>● Film thickness: 25 — 30μ<br>● Spraying pressure: 245 — 343 kPa (2.5 — 3.5 kg/cm$^2$, 36 — 50 psi)</td></tr>
<tr><td>9</td><td>Drying</td><td colspan="2">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).</td></tr>
<tr><td>10</td><td>Inspection</td><td colspan="2">Paint check.</td></tr>
<tr><td>11</td><td>Masking removal</td><td colspan="2">Remove masking in process No. 2.</td></tr>
</table>

# 7. Repair Instructions for Colored PP Bumper

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.

## A: 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 sandpaper in a “feathering” motion. | |
| 3 | Finish | Resin section | Coated section |
| | | Repeatedly apply wax to the affected area using a soft cloth (such as flannel).<br>Recommended 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 subsequent operations in the “(3)” section, depending on the degree and nature of damage. |
| | | Polish the waxed area with a clean cloth after 5 to 10 minutes. | |

## B: DEEP DAMAGE CAUSED BY SCRATCHING FENCES, ETC.

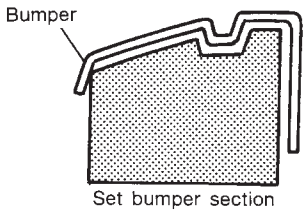
A dent cannot be repaired but a whitened or swelled part can be removed.

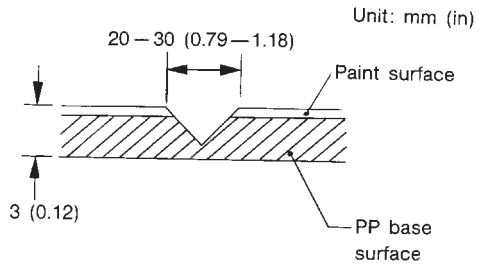
| Process No. | Process name | Job contents | |
|---|---|---|---|
| 1 | Cleaning | Clean damaged area with water. | |
| 2 | Removal of damaged area | Cut off protruding area, if any, due to collision, using a putty knife. | |
| 3 | Sanding | Grind the affected area with #100 to #500 sandpaper. | |
|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

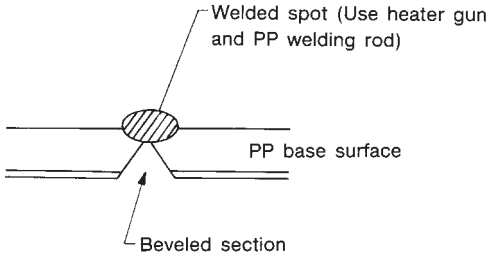
## C: DEEP DAMAGE SUCH AS A BREAK OR HOLE THAT REQUIRES FILLING

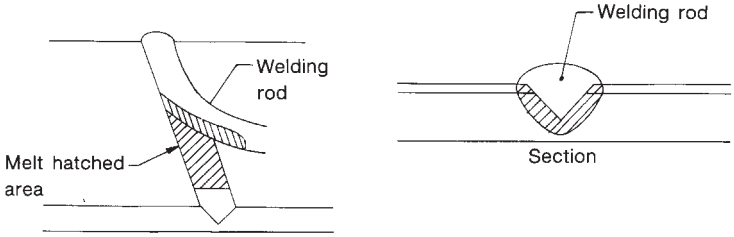
Much of the peripheral grained surface must be sacrificed for repair, and the degree of restoration is not really worth the expense. (The surface, however, will become almost flush with adjacent areas.)

Recommended repair kit: PP Part Repair Kit (NRM)

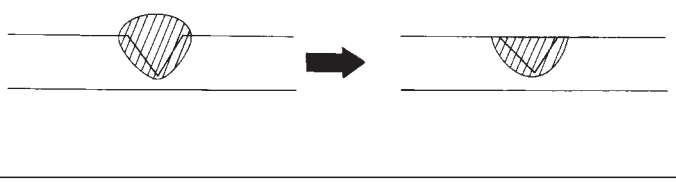
| Process No. | Process name | Job contents | |
|---|---|---|---|
| 1 | Job contents | Remove bumper as required. | |
| 2 | Part removal | Remove parts built into bumper as required. | |
| 3 | Bumper placement | Place bumper on a paint worktable as required. It is recommended that contour of worktable accommodate internal shape of bumper. |  G5M0164 |
| 4 | Surface preparation | Remove dust, oil, etc. from areas to be repaired and surrounding areas, using a suitable solvent (NRM No. 900 Precleno, white gasoline, or alcohol). | |

<table>
<tr><th>Process No.</th><th>Process name</th><th colspan="2">Job contents</th></tr>
<tr><td>5</td><td>Cutting</td><td>If nature of damage is 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 "vee-out" the affected area using a knife or grinder.</td><td> 

G5M0165</td></tr>
<tr><td>6</td><td>Sanding (I)</td><td colspan="2">Grind beveled surface with sandpaper (#40 to #60) to smooth finish.</td></tr>
<tr><td>7</td><td>Cleaning</td><td colspan="2">Clean the sanded surface with the same solvent as used in Process No. 4.</td></tr>
<tr><td rowspan="2">8</td><td rowspan="2">Temporary welding</td><td colspan="2">Grind the side just opposite the beveled area with sandpaper (#40 to #60) and clean using a solvent. Temporarily spot-weld the side, using a PP welding rod and heater gun.</td></tr>
<tr><td colspan="2"> 

G5M0166<br>NOTE:<br>● Do not melt welding rod until it flows out. This results in reduced strength.<br>● Leave the welded spot unattended until it cools completely.</td></tr>
<tr><td rowspan="2">9</td><td rowspan="2">Welding</td><td colspan="2">Using a heater gun and PP welding rod, weld the beveled spot while melting the rod and damaged area.</td></tr>
<tr><td colspan="2"> 

G5M0167<br>NOTE:<br>● Melt the sections indicated by hatched area.<br>● Do not melt welding rod until it flows out, in order to provide strength.<br>● Always keep the heater gun 1 to 2 cm (0.4 to 0.8 in) away from the welding spot.<br>● Leave the welded spot unattended until it cools completely.</td></tr>
</table>

| Process No. | Process name | Job contents | |
|---|---|---|---|
| 10 | Sanding (II) | Remove excess part of weld with a putty knife. If a drill or disc wheel is used instead of the knife, operate it at a rate lower than 1,500 rpm and grind the excess part little by little. A higher rpm will cause the PP substrate to melt from the heat. | |
| | |  G5M0168 | |
| | | Sand the welded spot smooth with #240 sand paper. | |
| 11 | Masking | Mask the black substrate section using masking tape.<br>Recommended masking tape: Nichiban No. 533 or equivalent | |
| 12 | Cleaning/ degreasing | Completely clean the entire coated area, using solvent similar to that used in Process No. 4. | |
| 13 | Primer coating | Apply a coat of primer to the repaired surface and its surrounding areas. Mask these areas, if necessary.<br>Recommended primer: Mp/ 364 PP Primer<br>NOTE:<br>Be sure to apply one coat of primer at a spraying pressure of 245 to 343 kPa (2.5 to 3.5 kg/cm$^2$, 36 to 50 psi) with a spray gun. | |
| 14 | Leave unattended. | Leave the repaired area unattended at 20°C (68°F) for 10 to 15 minutes until primer is half-dry.<br>NOTE:<br>If dirt or dust comes in contact with the coated area, wipe it off with a cloth dampended with alcohol. (Do not use thinner since the coated area tends to melt.) | |
| 15 | Primer surfacer coating | Apply a coat of primer surfacer to the repaired area two or three times at an interval of 3 to 5 minutes.<br>Recommended surfacer:<br>● UPS 300 Flex Primer<br>● No. 303 UPS 300 Exclusive hardener<br>● NPS 725 Exclusive Reducer (thinner)<br>● Mixing ratio: 2 : 1 (UPS 300: No. 303)<br>● Viscosity: 12 — 14 sec/20°C (68°F)<br>● Coated film thickness: 40 — 50µ | |
| 16 | Drying | Allow the coated surface to dry for 60 minutes at 20°C (68°F) [or 30 minutes at 60°C (140°F)]. | |
| 17 | Sanding (III) | Sand the coated surface and its surrounding areas using #400 sandpaper and water. | |
| 18 | Cleaning/ degreasing | Same as Process No. 12. | |
| 19 | Top coat (I) | Solid color | Metallic color |
| | | Use a “block” coating method.<br>● Recommended paint:<br>Suncryl (SC)<br>No. 307 Flex Hardener<br>SC Reducer (thinner)<br>● Mixing ratio: 3 : 1<br>(Suncryl: No. 307)<br>● Viscosity: 11 — 13 sec/20°C (68°F)<br>● Coated film thickness: 40 — 50µ<br>● Spraying thickness: 245 — 343 kPa (2.5 — 3.5 kg/cm$^2$, 36 — 50 psi) | Use a “block” coating method.<br>● Recommended paint:<br>Suncryl (SC)<br>No. 307 Flex Hardener<br>SC Reducer (thinner)<br>● Mixing ratio: 3 : 1<br>(Suncryl: No. 307)<br>● Viscosity: 11 — 13 sec/20°C (68°F)<br>● Coated film thickness: 20 — 30µ<br>● Spraying thickness: 245 — 343 kPa (2.5 — 3.5 kg/cm$^2$, 36 — 50 psi) |
| 20 | Leave unattended. | Not required. | Leave unattended at 20°C (68°F) for at least 10 minutes until the topcoated area is half-dry.<br>NOTE:<br>Be careful to keep dust or dirt from coming in contact with the affected area. |

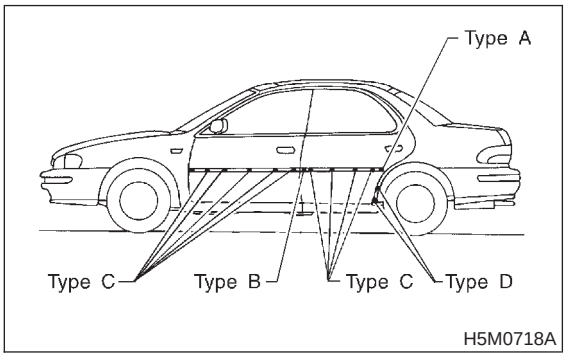
| Process No. | Process name | Job contents | |
|---|---|---|---|
| 21 | Top coat (II) | Not required. | Apply a clear coat three times at an interval of 3 to 5 minutes.<br>● Recommended paint:<br>SC710 Overlay Clear<br>No. 307 Flex Hardener<br>SC Reducer (thinner)<br>● Mixing ratio: 3 : 1<br>(SC710: No. 307)<br>● Viscosity: 10 — 13 sec/20°C (68°F)<br>● Coated film thickness: 20 — 30μ<br>● Spraying pressure: 245 — 343 kPa<br>(2.5 — 3.5 kg/cm$^2$, 36 — 50 psi) |
| 22 | Drying | Allow the coated surface to dry at 20°C (68°F) for two hours or 60°C (140°F) for 30 minutes.<br>NOTE:<br>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 installation | Install bumper. | |

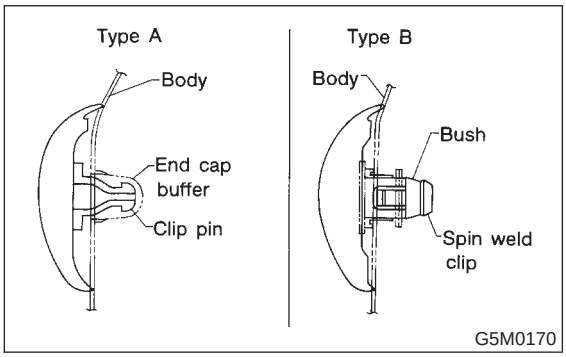
# 8. Side Protector

## A: REMOVAL AND INSTALLATION

NOTE:
Do not re-use protector.

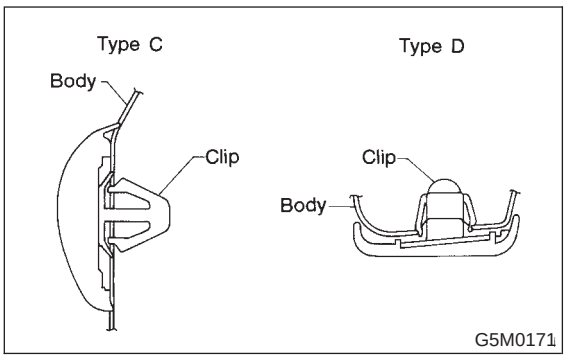
1) Type A and B:
Protector is attached to body with clips.
While holding end of protector by hand, force protector out.




2) Type C:
Protector is attached to body with clips.
Remove door inner trim, and detach protector by pushing clip pawl from inside.

3) Type D:
Protector is attached to body with clips.
While holding end of protector by hand, force protector out.



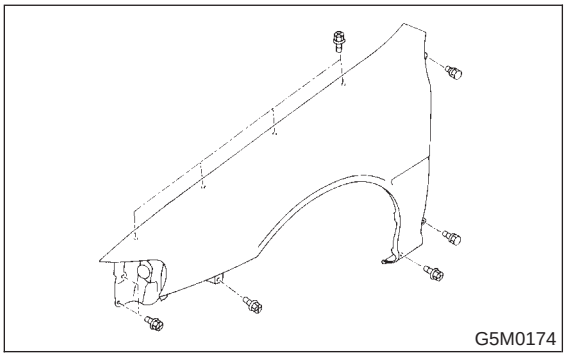

4) Installation is in the reverse order of removal.

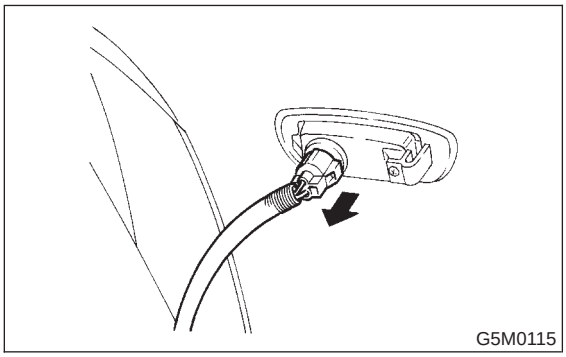
NOTE:
- Type A: Insert clip pins into holes in body, then fit end cap buffers into place.
- Type B: Insert spin weld clips into holes in body, then fit bushings into place.
- Type C and D: Align the clips with holes in body and insert them.
- Install clips in standard holes first.

# 9. Front Fender

## A: REMOVAL AND INSTALLATION

1) Disconnect ground cable from battery.
2) Remove mud guard.
3) Remove parking light and headlight.
4) Remove front bumper.
5) Remove bolts which secure fender to radiator panel and turn signal light connector.


G5M0174

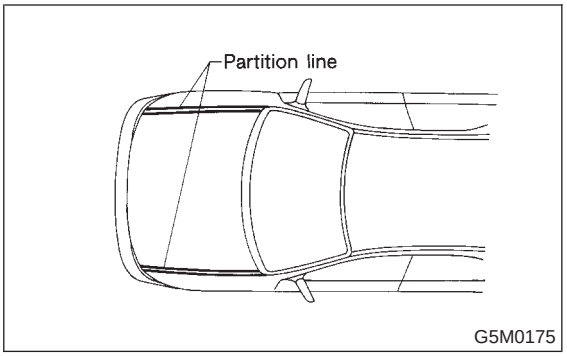

G5M0115

6) Remove body protector. (This step may be skipped if fender is to be reused.)
7) Remove attaching bolt to remove fender.

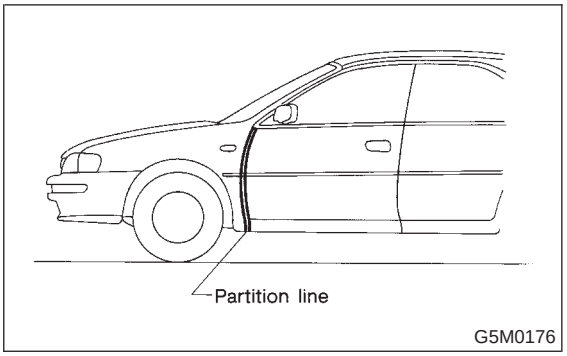
**CAUTION:**
**Be careful not to scratch body panels with fender edges when removing it.**

8) Installation is in the reverse order of removal.

NOTE:
Check for alignment of front fender with hood and front door with front fender at all points. Adjust, if necessary.



G5M0175



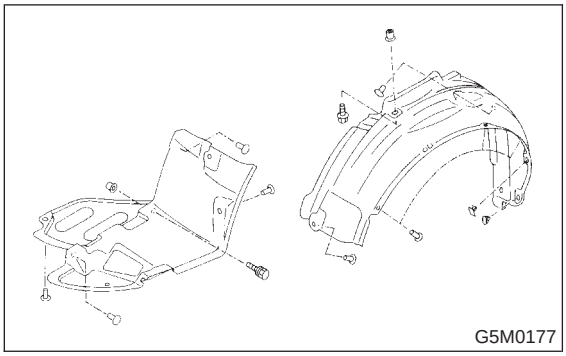
G5M0176

# 10. Mud Guard and Rear Arch Protector

## A: REMOVAL AND INSTALLATION

### 1. MUD GUARD

1) Jack-up vehicle to remove tire.
2) Remove screws and clips. Move mud guard toward the center of the body and remove mud guard.

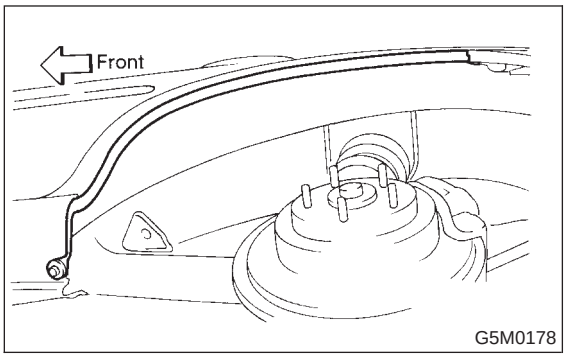



3) Installation is in the reverse order of removal.

**CAUTION:**
**Only use new nuts and clips.**

### 2. REAR ARCH PROTECTOR

1) Remove clip and screws.



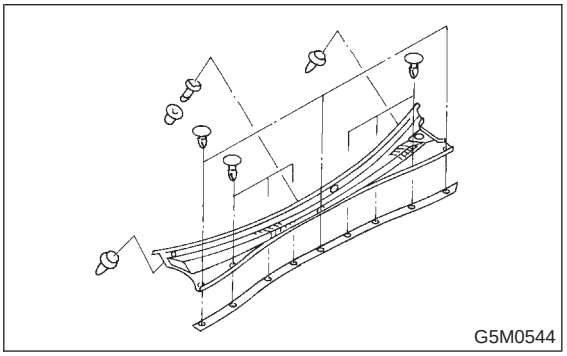

2) Remove arch protectors.
3) Installation is in the reverse order of removal.

**CAUTION:**
**Only use new nuts and clips.**

# 11. Cowl Panel

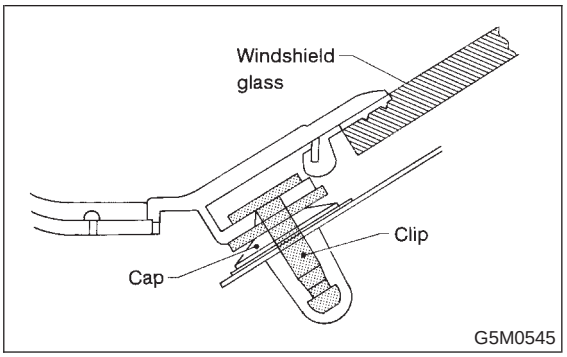
## A: REMOVAL AND INSTALLATION

1) Remove wiper arms.
2) Open front hood.
3) Pry clip off front hood seal using a screwdriver.
4) Lift cowl panel and remove clips from windshield.




5) Installation is in the reverse order of removal.

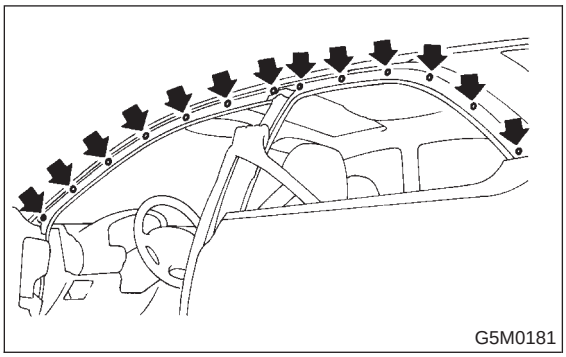
NOTE:
Install middle clip and other clips in that order.



# 12. Molding and Retainer

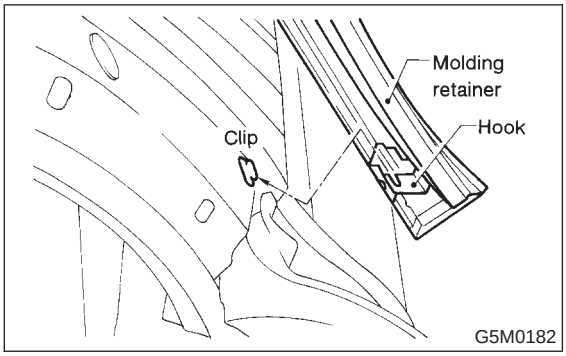
## A: REMOVAL AND INSTALLATION

1) Remove weatherstrip.
2) Remove tapping screws.




3) Installation is in the reverse order of removal.

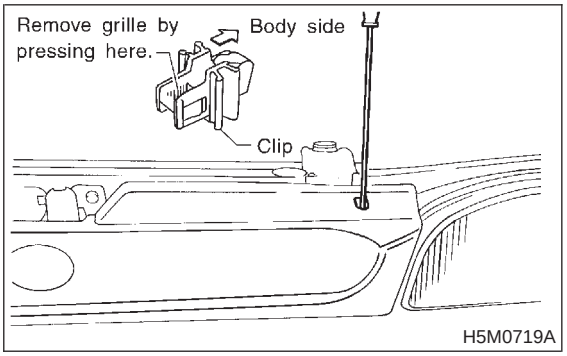
NOTE:
Insert clips onto hooks, then fasten with screws.




# 13. Front Grille

## A: REMOVAL AND INSTALLATION

1) Remove two upper clips from body panel. To facilitate removal, press portion shown in figure using screwdriver while lightly pulling front grille.




2) Installation is in the reverse order of removal.

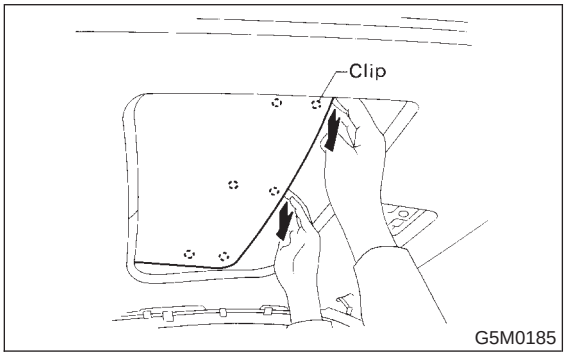
NOTE:
Attach all clips to grille. Align them with clip hole in body and push them into place.

# 14. Sunroof

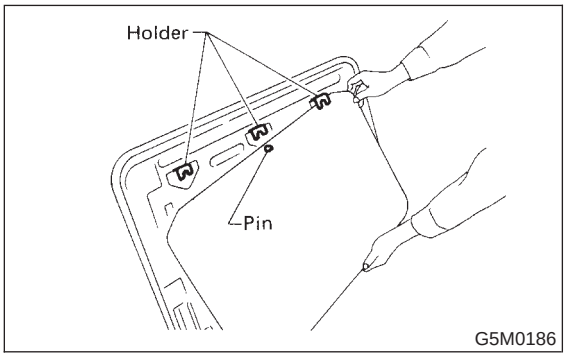
## A: REMOVAL

### 1. SUNROOF PANEL

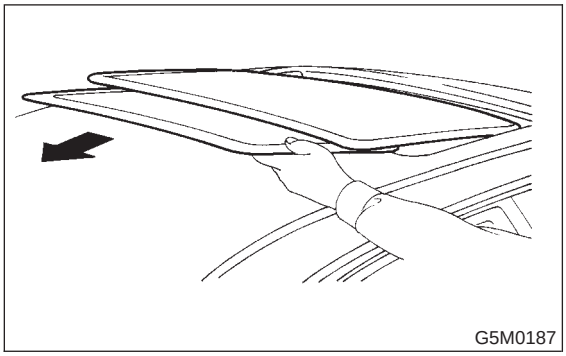
1) Open sunroof approx. 1/3.
2) Remove clips attached to front side of sunroof trim by pulling trim from inside of compartment.



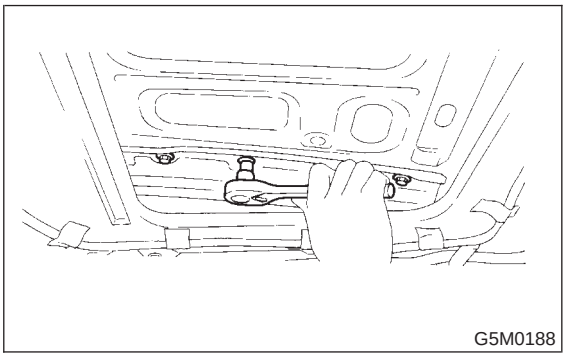

3) Move trim forward, and detach trim end from holder.




4) Detach trim.




5) Close sunroof and remove nuts.

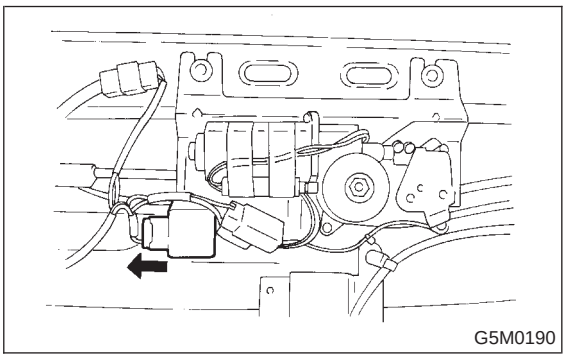



6) Remove sunroof panel.
7) Installation is in the reverse order of removal.

NOTE:
Sunroof trim reference pin must be fitted in holder notch.

### 2. SUNROOF MOTOR AND RELAY

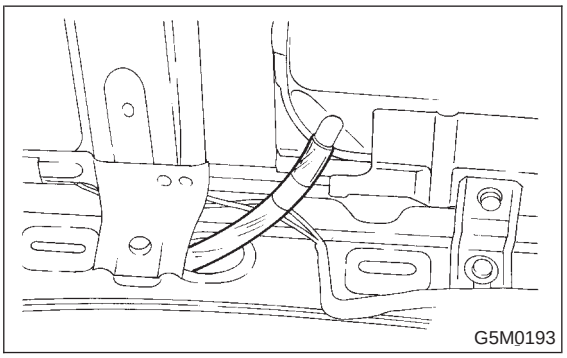
1) Remove roof trim, rear quarter trim, pillar trim, etc.
<Ref. to 5-3 [W500].>
2) Remove screw.
3) Disconnect connector.



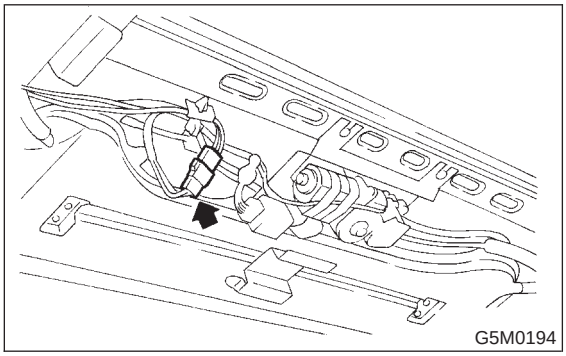

4) Remove relay by pulling it out.

### 3. SUNROOF FRAME

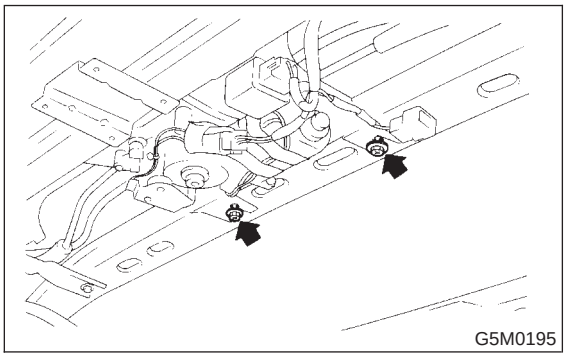
1) Remove roof trim, rear quarter trim, pillar trim, etc.
<Ref. to 5-3 [W500].>
2) Remove sunroof panel.
3) Disconnect front and rear drain tubes.



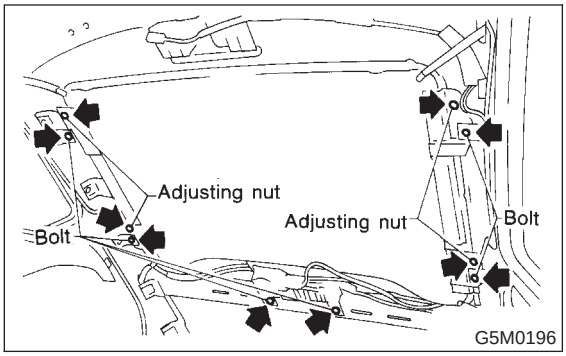
4) Disconnect connector between body harness and sunroof harness.


G5M0194

5) Loosen two mounting bolts near motor. (Do not remove bolts.)

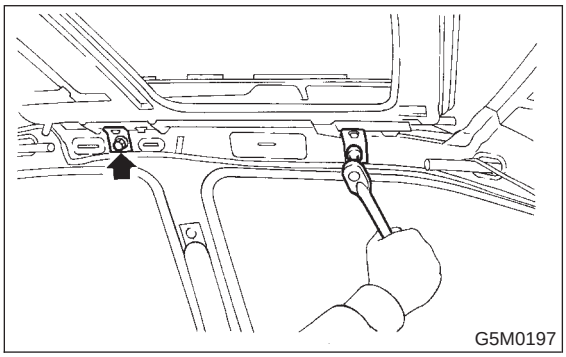

G5M0195

6) Remove six bolts, and four adjusting nuts.



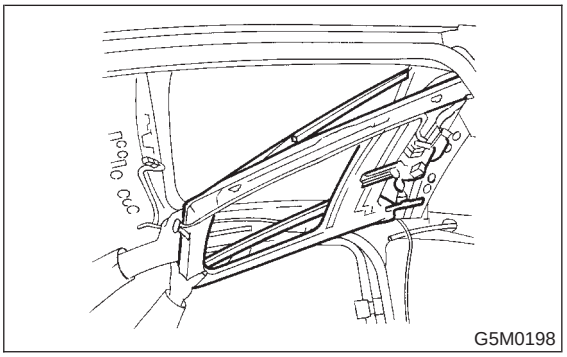
G5M0196

7) Remove sunroof frame.
8) Loosen set bracket mounting bolt.

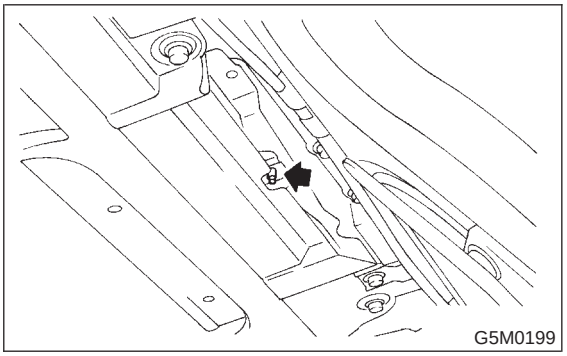

G5M0197

## B: INSTALLATION

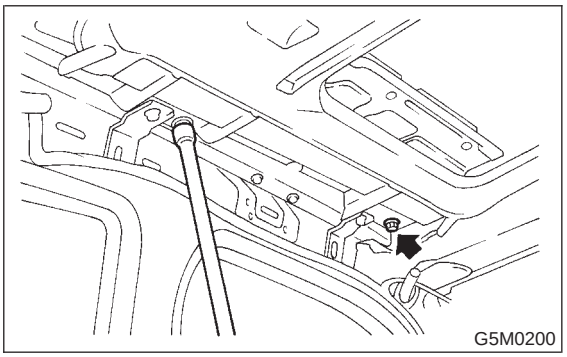
1) Insert frame rear end slit to two bolts fitted temporarily to roof brace.


G5M0198

2) Align frame to reference pin installed on roof.


G5M0199

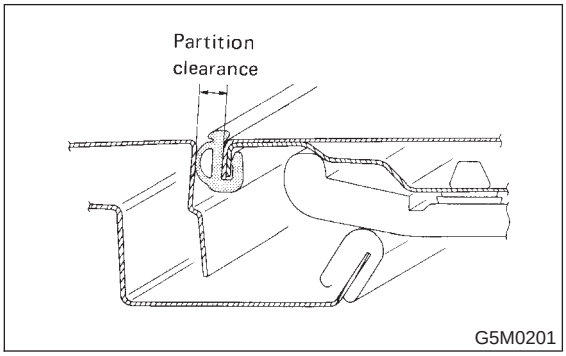
3) Tighten adjusting nut (that is, set frame at highest position).
Temporarily tighten bolts.


G5M0200

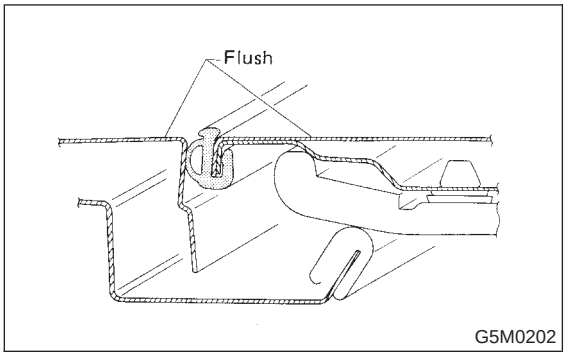
4) Install sunroof panel.

5) Adjust height by turning adjusting nut.
Also adjust front, rear, right, and left side partitions.

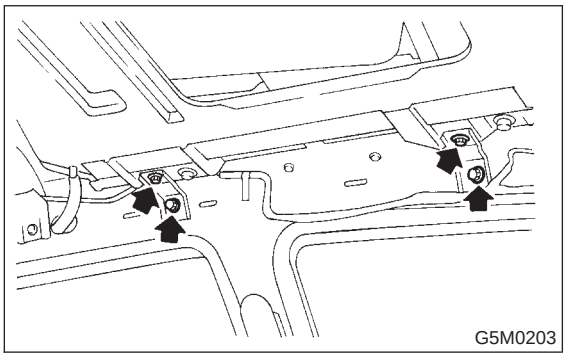
***Partition clearance:***
***5.9±0.5 mm (0.232±0.020 in)***



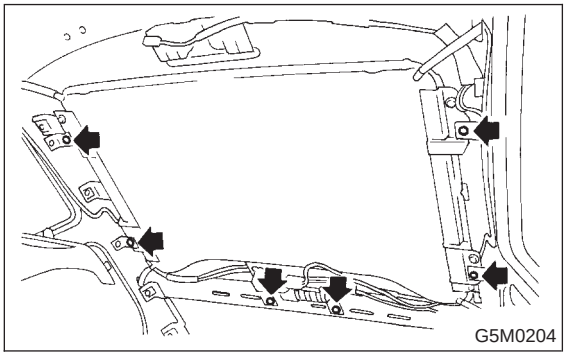

***Difference in height between roof panel and sunroof panel:***
***0±1.0 mm (0±0.039 in)***




6) Tighten set bracket mounting bolts.



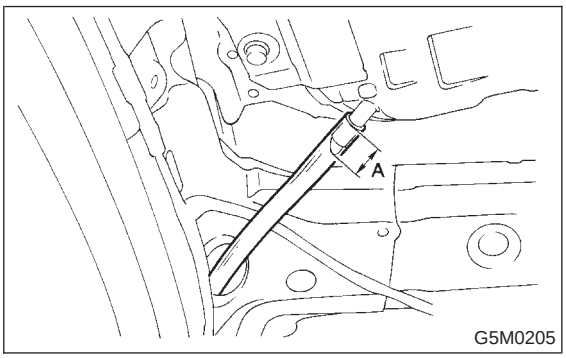

7) Tighten bolts.




8) Install drain tubes.

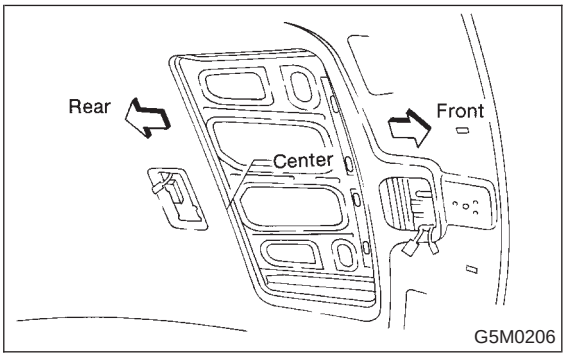
**CAUTION:**
**Insert drain tube securely into drain pipe.**

***Length: A***
***Approx. 20 mm (0.79 in)***




9) Install roof trim.
10) Install garnish.

NOTE:
Place garnish joint at rear center of body.



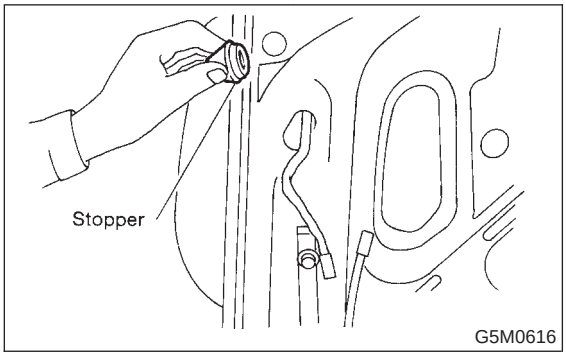

11) Install sunroof trim, pillar trim, rear quarter trim etc.
12) Check the following items after assembling all parts;
(1) Garnish must be free from waves.
(2) When sunroof is fully closed, must be no clearance between garnish and sunroof trim.
(3) Sunroof must be free from slack and noise when it is fully opened and closed.

# 15. Rear Spoiler

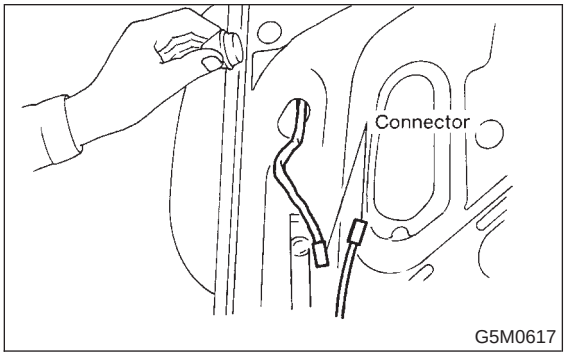
## A: REMOVAL AND INSTALLATION

### 1. COUPE

1) Remove stoppers from both sides of trunk lid.

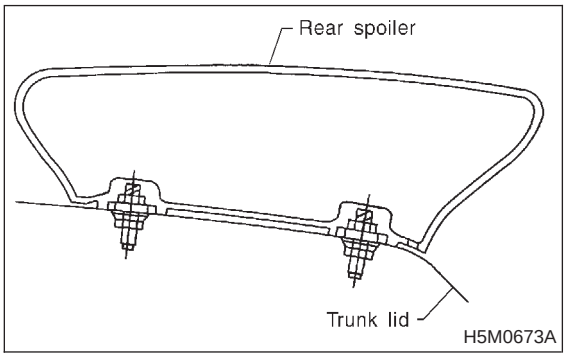



2) Disconnect high-mount stop light connector.




3) Remove nuts from rear spoiler.

**CAUTION:**
**Be careful not to drop nuts into box section of trunk lid.**




4) Lift rear spoiler and unfasten clips.
5) Remove spoiler from trunk lid.

**CAUTION:**
**Be careful not to damage trunk lid.**

6) Installation is in the reverse order of removal.

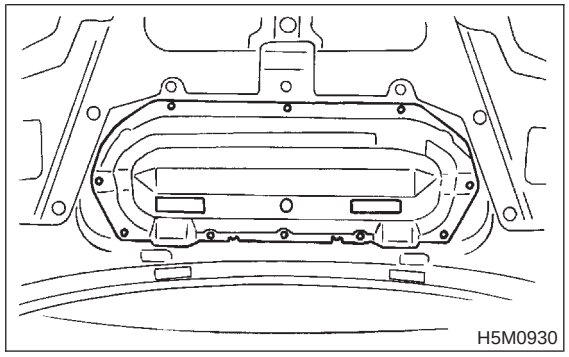
***Tightening torque:***
***7.4±2.0 N·m (0.75±0.2 kg-m, 5.4±1.4 ft-lb)***

# 16. Hood Duct

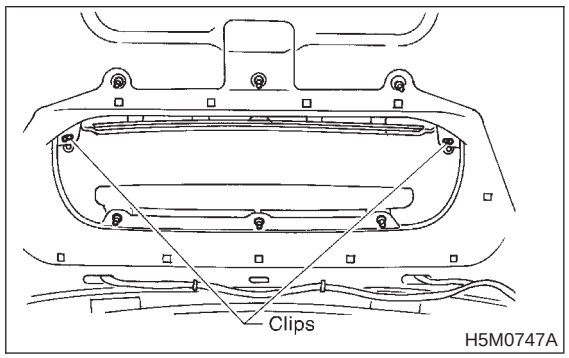
## A: REMOVAL AND INSTALLATION

### 1. CENTER DUCT

1) Open the hood.
2) Remove clip and screws, then remove brace cover.



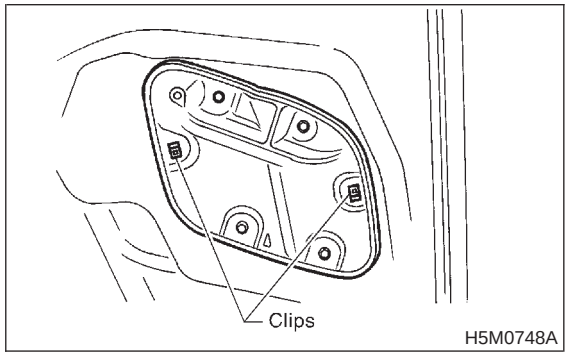

3) Remove six nuts.
4) Disconnect the two clips from hood, then remove hood duct grille.




5) Installation is in the reverse order of removal.

### 2. SIDE DUCT

1) Open the hood.
2) Remove four nuts.
3) Disconnect the two clips from brace cover, then remove brace cover.



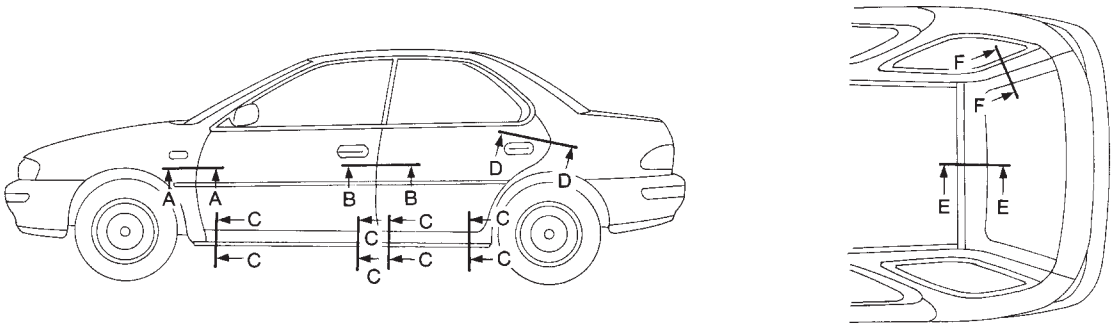

4) Remove duct grille.
5) Installation is in the reverse order of removal.

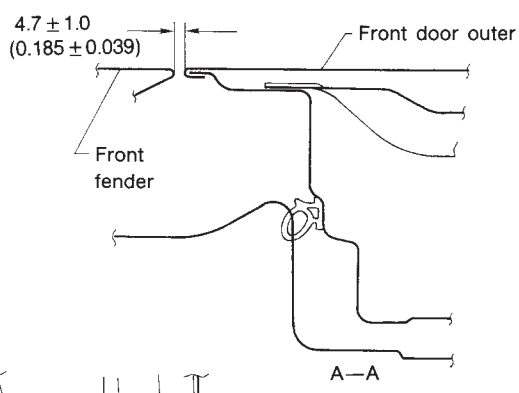
# 1. Sunroof

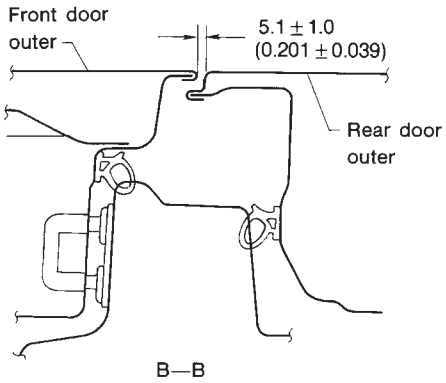
| | |
|---|---|
| Entry of water into compartment | (1) Check roof panel and sunroof panel for improper or poor sealing.<br>(2) Check drain tube for clogging.<br>(3) Check sunroof frame seal and body for improper fit. |
| Booming noise | (1) Check roof panel and roof panel for improper clearance.<br>(2) Check sunroof trim and roof trim for improper clearance. |
| Abnormal motor noise | (1) Check motor for looseness.<br>(2) Check gears and bearings for wear.<br>(3) Check cable for wear.<br>(4) Check cable pipe for deformities. |
| Failure of sunroof to operate (Motor operates properly.) | (1) Check guide rail for foreign particles.<br>(2) Check guide rail for improper installation.<br>(3) Check parts for mutual interference.<br>(4) Check cable slider for improper clinching.<br>(5) Check cable for improper installation.<br>(6) Check clutch adjustment nut for improper tightness. |
| Motor does not rotate or rotates improperly. (Use sunroof wrench to check operation.) | (1) Check fuse for blowout.<br>(2) Check switch for improper function.<br>(3) Check motor for incorrect terminal voltage.<br>(4) Check relay for improper operation.<br>(5) Check poor grounding system.<br>(6) Check cords for discontinuity and terminals for poor connections.<br>(7) Check limit switch for improper operation. |

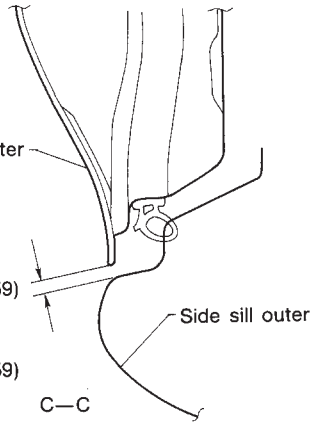
# 1. Door Alignment

## A: SEDAN AND WAGON MODEL

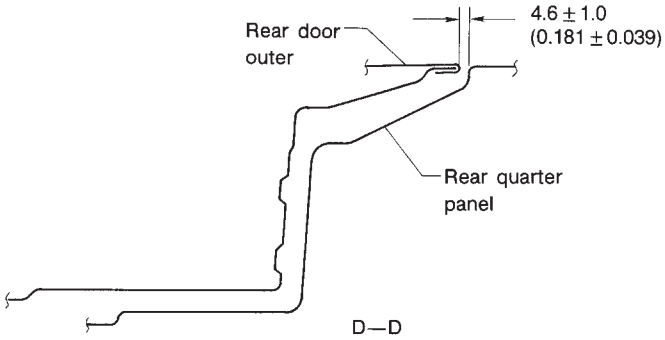


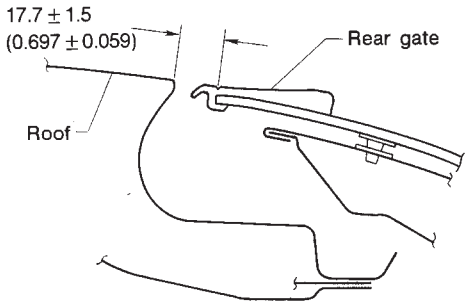



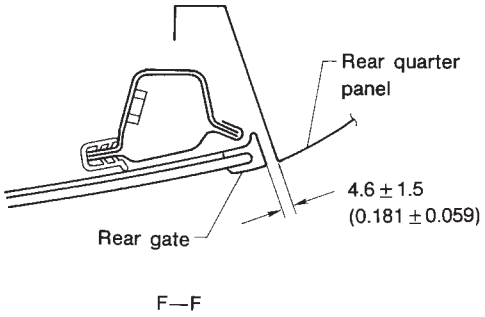




- Front door
  Front part:
  5.2 ± 1.5
  (0.205 ± 0.059)
  Back part:
  5.4 ± 1.5
  (0.213 ± 0.059)
- Rear door
  Front part:
  5.4 ± 1.5
  (0.213 ± 0.059)
  Back part:
  6.1 ± 1.5
  (0.240 ± 0.059)



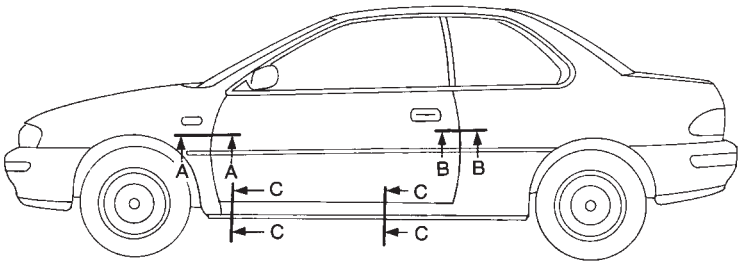



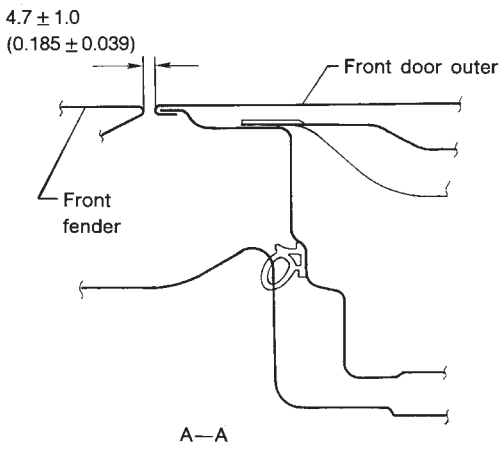




Unit: mm (in)

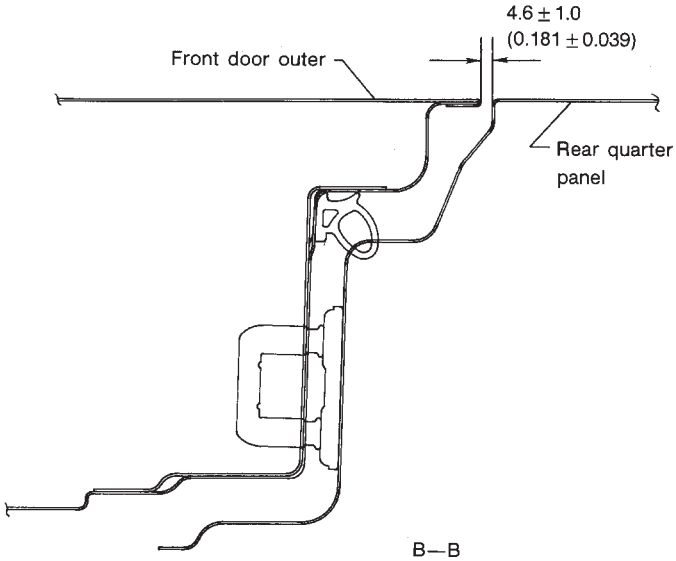
G5M0485

## B: COUPE MODEL

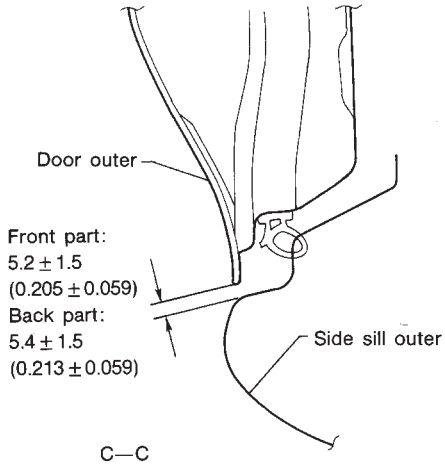



A—A




B—B

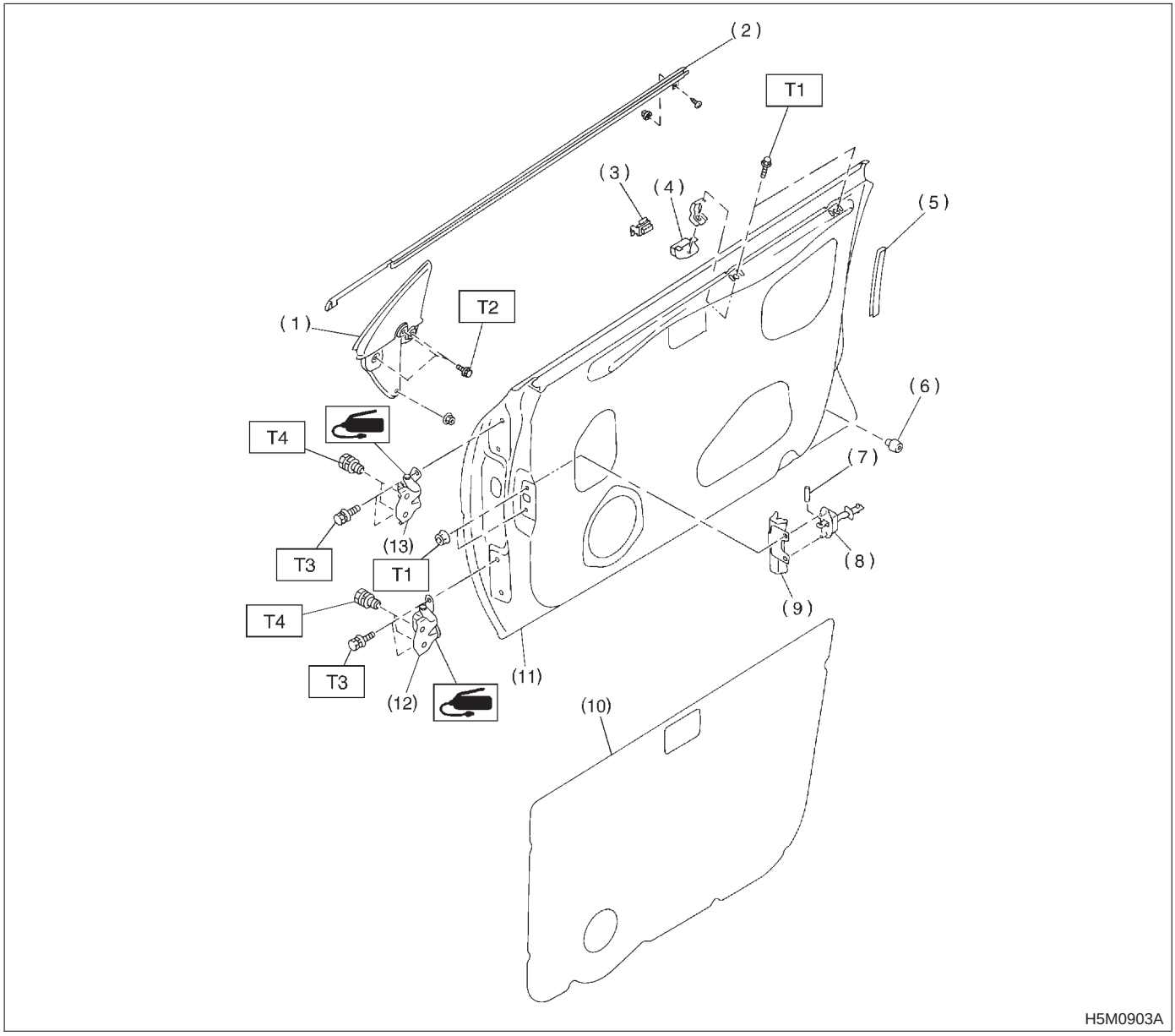



C—C

Unit: mm (in)

G5M0637

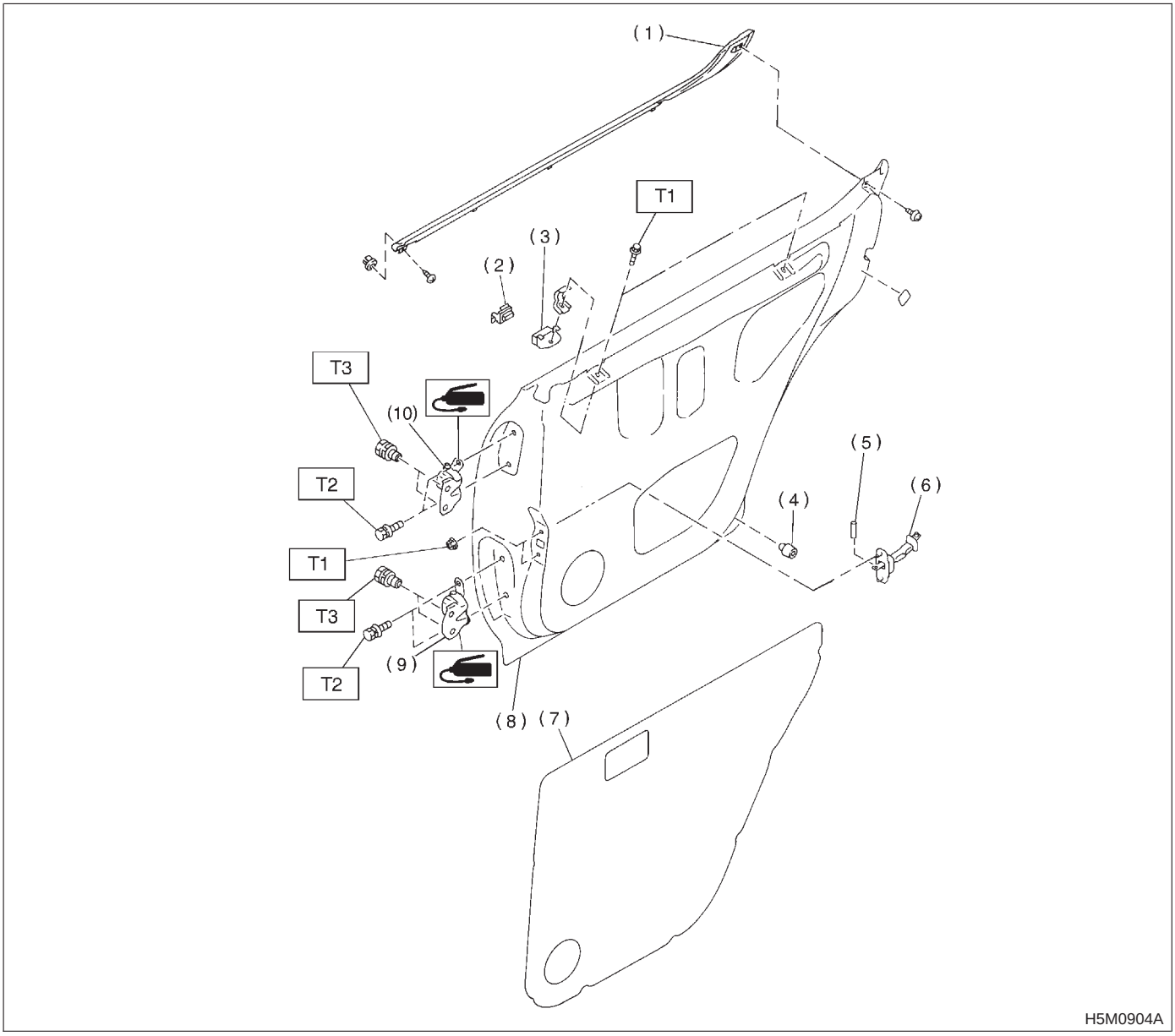
# 1. Front Door




(1) Gusset
(2) Weatherstrip
(3) Stabilizer (Outer)
(4) Stabilizer (Inner)
(5) Protector
(6) Stopper
(7) Knock pin
(8) Checker
(9) Guide
(10) Sealing cover
(11) Door panel
(12) Lower hinge
(13) Upper hinge

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 7.4±2.0 (0.75±0.2, 5.4±1.4)***
***T2: 13±3 (1.3±0.3, 9.4±2.2)***
***T3: 25±3 (2.5±0.3, 18.1±2.2)***
***T4: 29±5 (3.0±0.5, 21.7±3.6)***

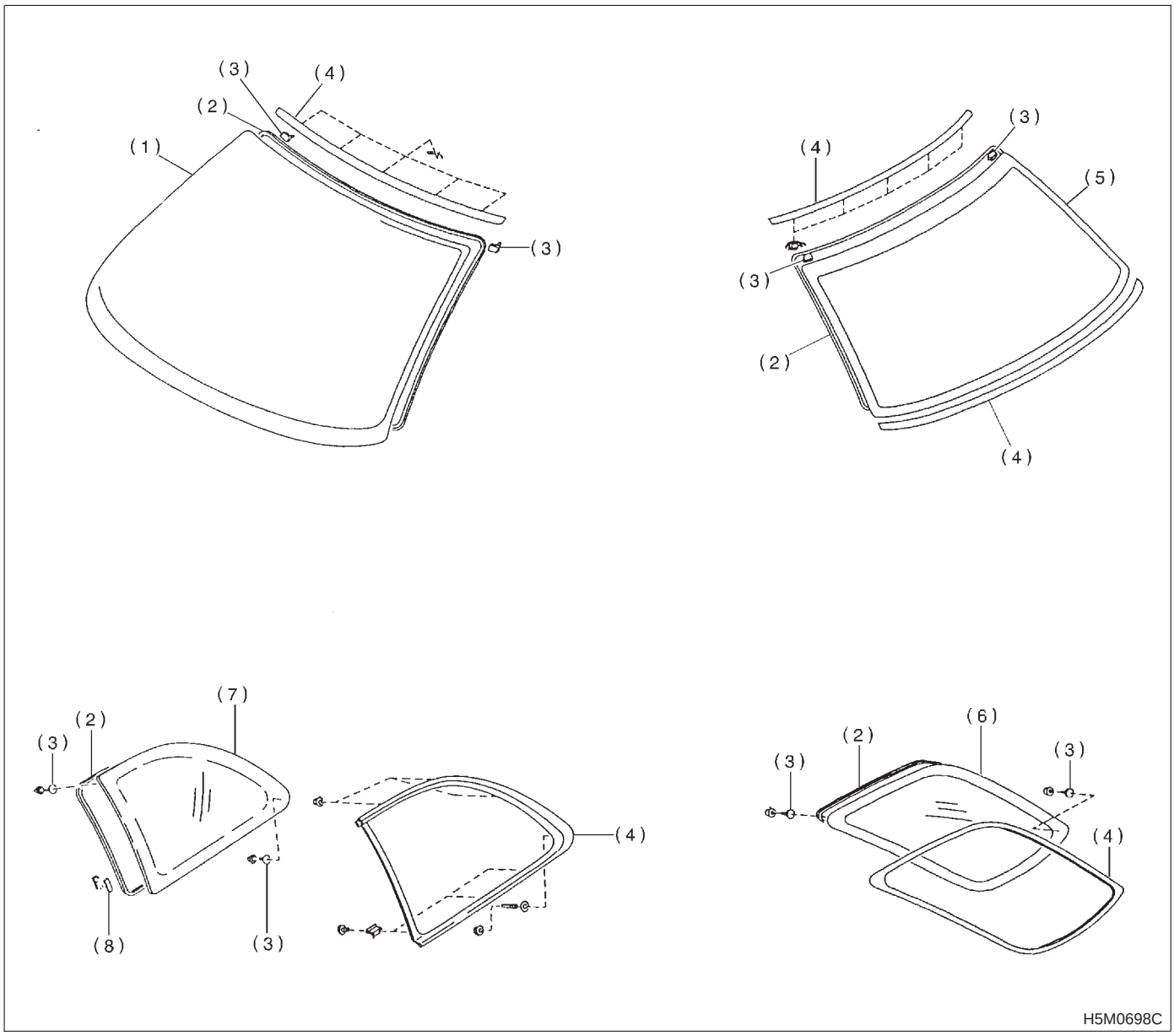
# 2. Rear Door




(1) Weatherstrip
(2) Stabilizer (Outer)
(3) Stabilizer (Inner)
(4) Stopper
(5) Knock pin
(6) Checker
(7) Seating cover
(8) Door panel
(9) Lower hinge
(10) Upper hinge

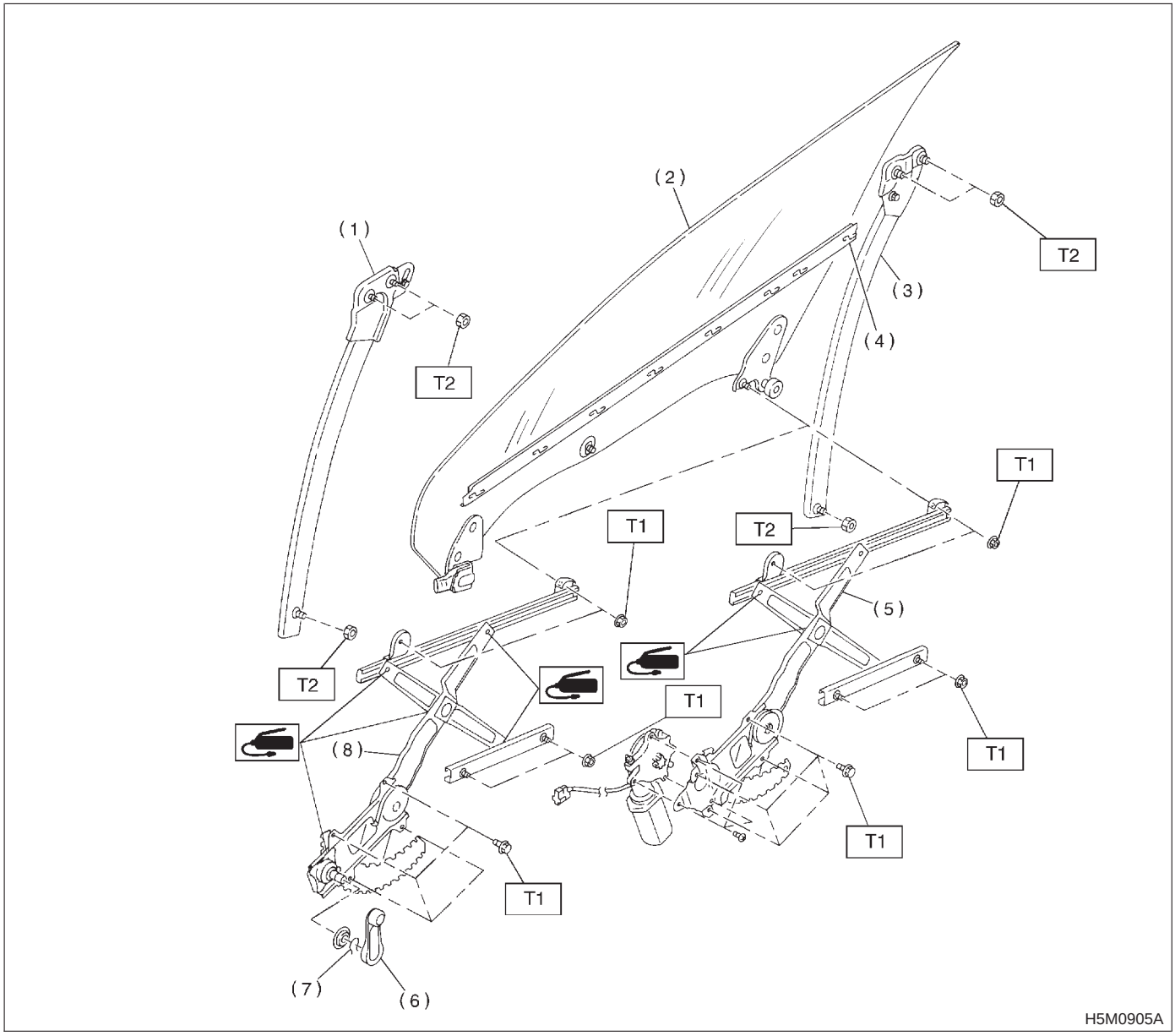
***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 7.4±2.0 (0.75±0.2, 5.4±1.4)***
***T2: 25±3 (2.5±0.3, 18.1±2.2)***
***T3: 29±5 (3.0±0.5, 21.7±3.6)***

# 3. Fixed Glass




(1) Windshield glass
(2) Dam rubber
(3) Locate pin
(4) Molding
(5) Rear window glass
(6) Rear quarter glass (Wagon)
(7) Rear quarter glass (Coupe)
(8) Fastener

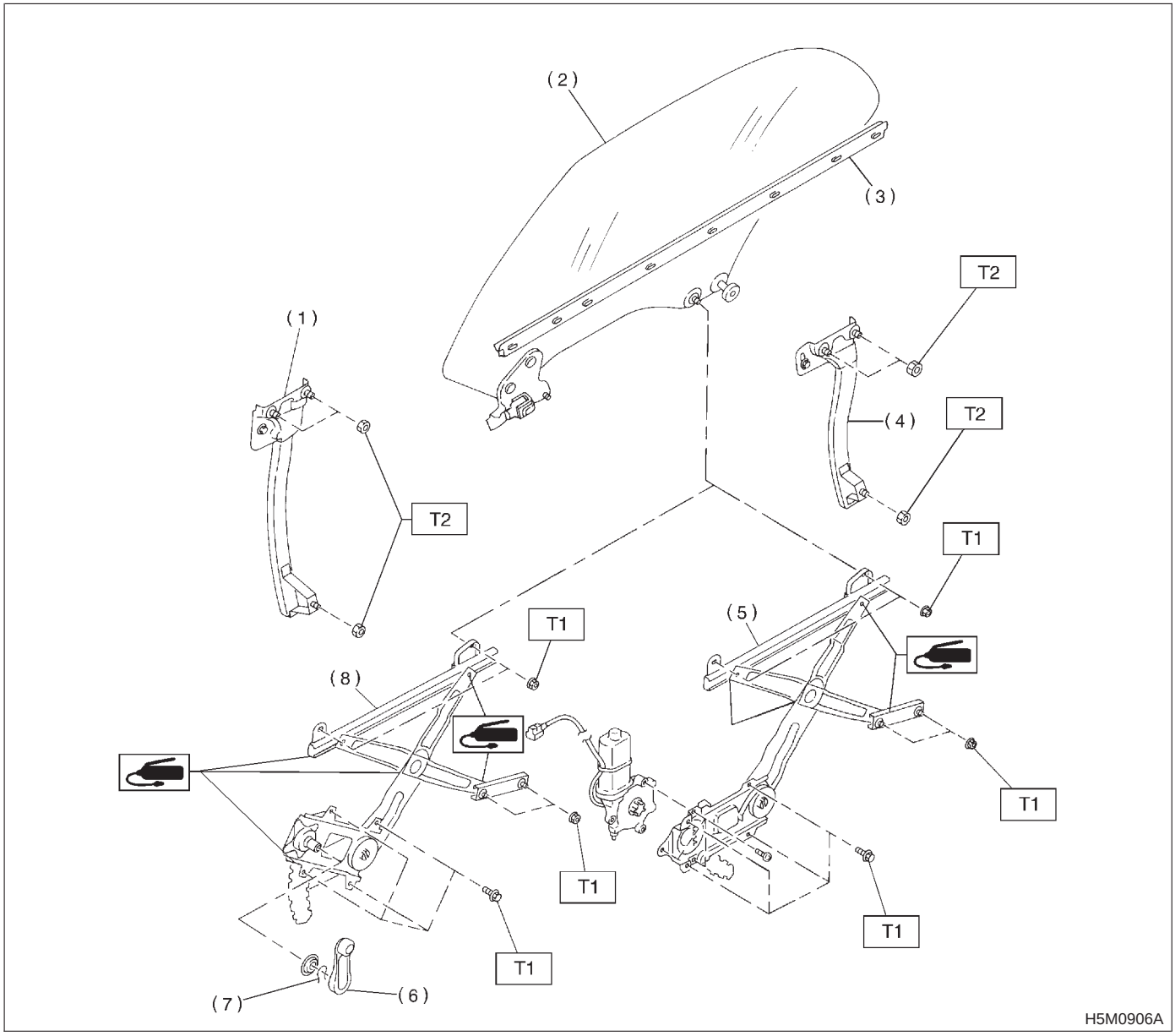
# 4. Front Door Glass




(1) Door sash (Front)
(2) Glass
(3) Door sash (Rear)
(4) Weatherstrip (Inner)
(5) Regulator and motor ASSY
(6) Regulator handle (Except power window)
(7) Retainer spring
(8) Regulator ASSY

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 7.4±2.0 (0.75±0.2, 5.4±1.4)***
***T2: 14±4 (1.4±0.4, 10.1±2.9)***

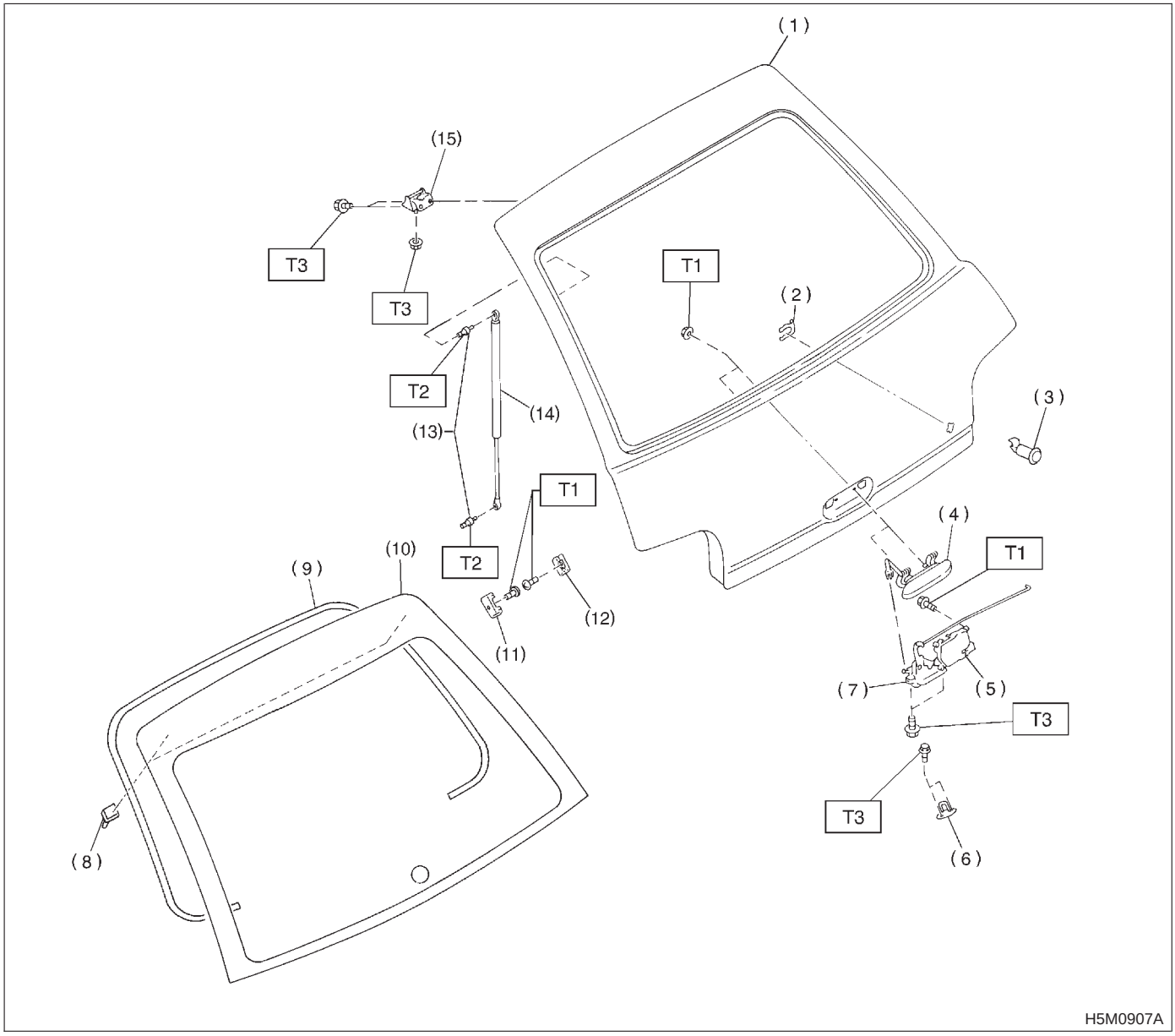
# 5. Rear Door Glass




(1) Door sash (Front)
(2) Glass
(3) Weatherstrip (Inner)
(4) Door sash (Rear)
(5) Regulator and motor ASSY
(6) Regulator handle (Except power window)
(7) Retainer spring
(8) Regulator ASSY

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 7.4±2.0 (0.75±0.2, 5.4±1.4)***
***T2: 14±4 (1.4±0.4, 10.1±2.9)***

# 6. Rear Gate and Glass

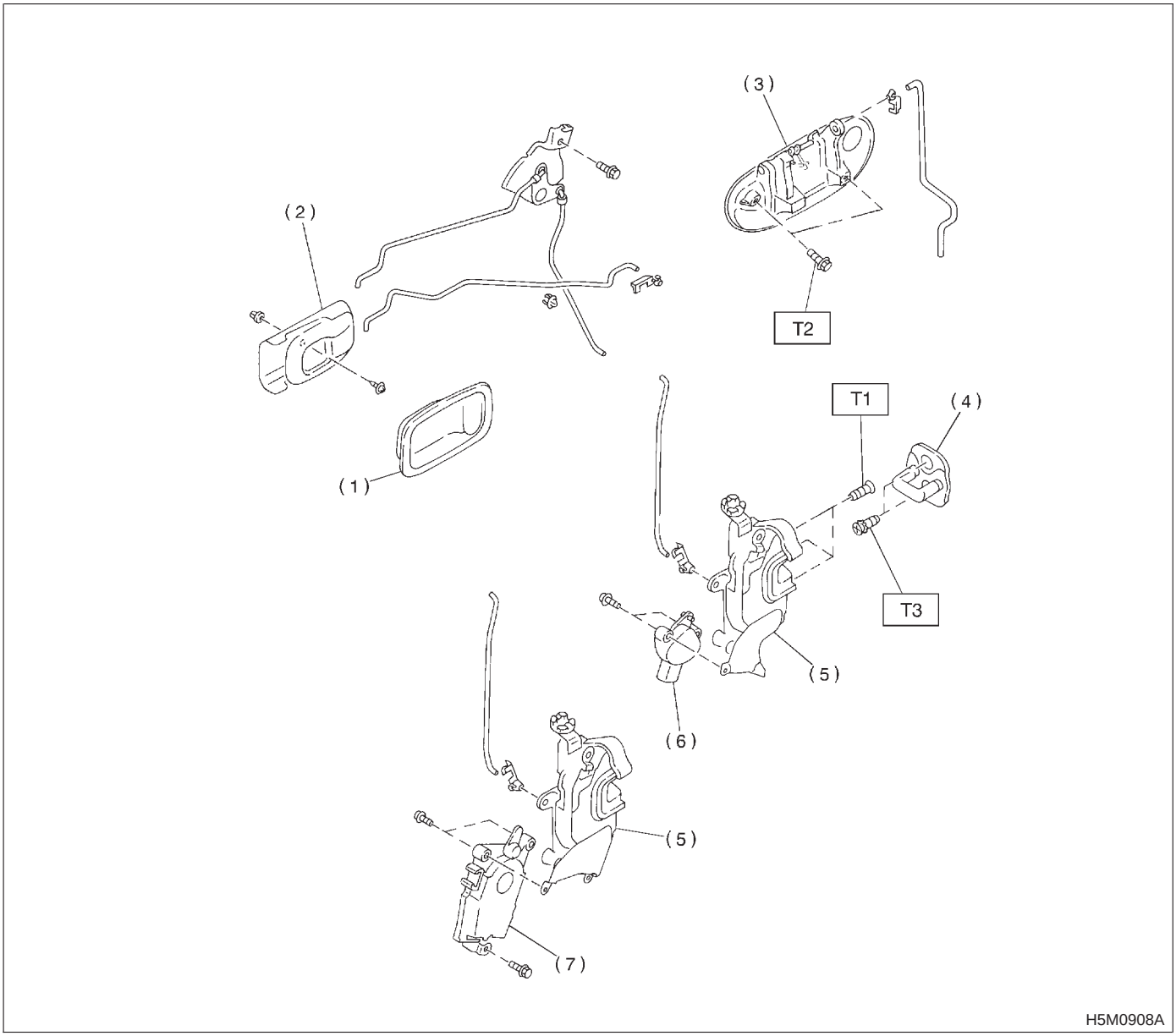



(1) Rear gate
(2) Clip
(3) Key cylinder
(4) Outer handle
(5) Auto-door lock actuator
(6) Striker
(7) Latch
(8) Glass pin
(9) Trim
(10) Glass
(11) Buffer
(12) Rear gate side buffer
(13) Stud
(14) Gas stay
(15) Hinge

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 7.4±2.0 (0.75±0.2, 5.4±1.4)***
***T2: 14±4 (1.4±0.4, 10.1±2.9)***
***T3: 25±5 (2.5±0.5, 18.1±3.6)***

# 7. Door Lock Assembly

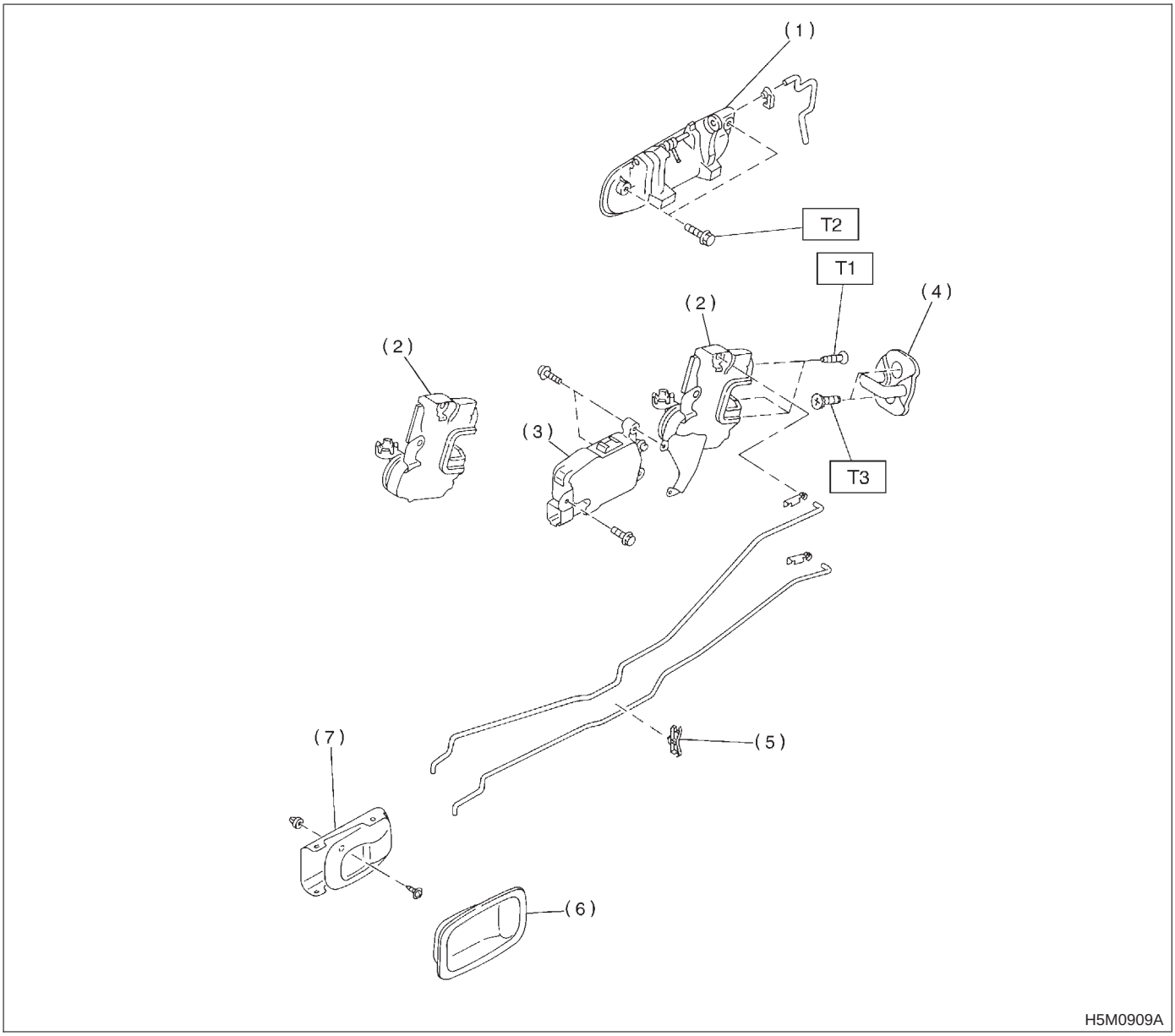
## A: FRONT DOOR




(1) Cover
(2) Inner remote ASSY
(3) Door outer handle
(4) Striker
(5) Door latch
(6) Switch ASSY
(7) Auto-door lock actuator

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 6.4±2.0 (0.65±0.2, 4.7±1.4)***
***T2: 7.4±2.0 (0.75±0.2, 5.4±1.4)***
***T3: 14±4 (1.4±0.4, 10.1±2.9)***

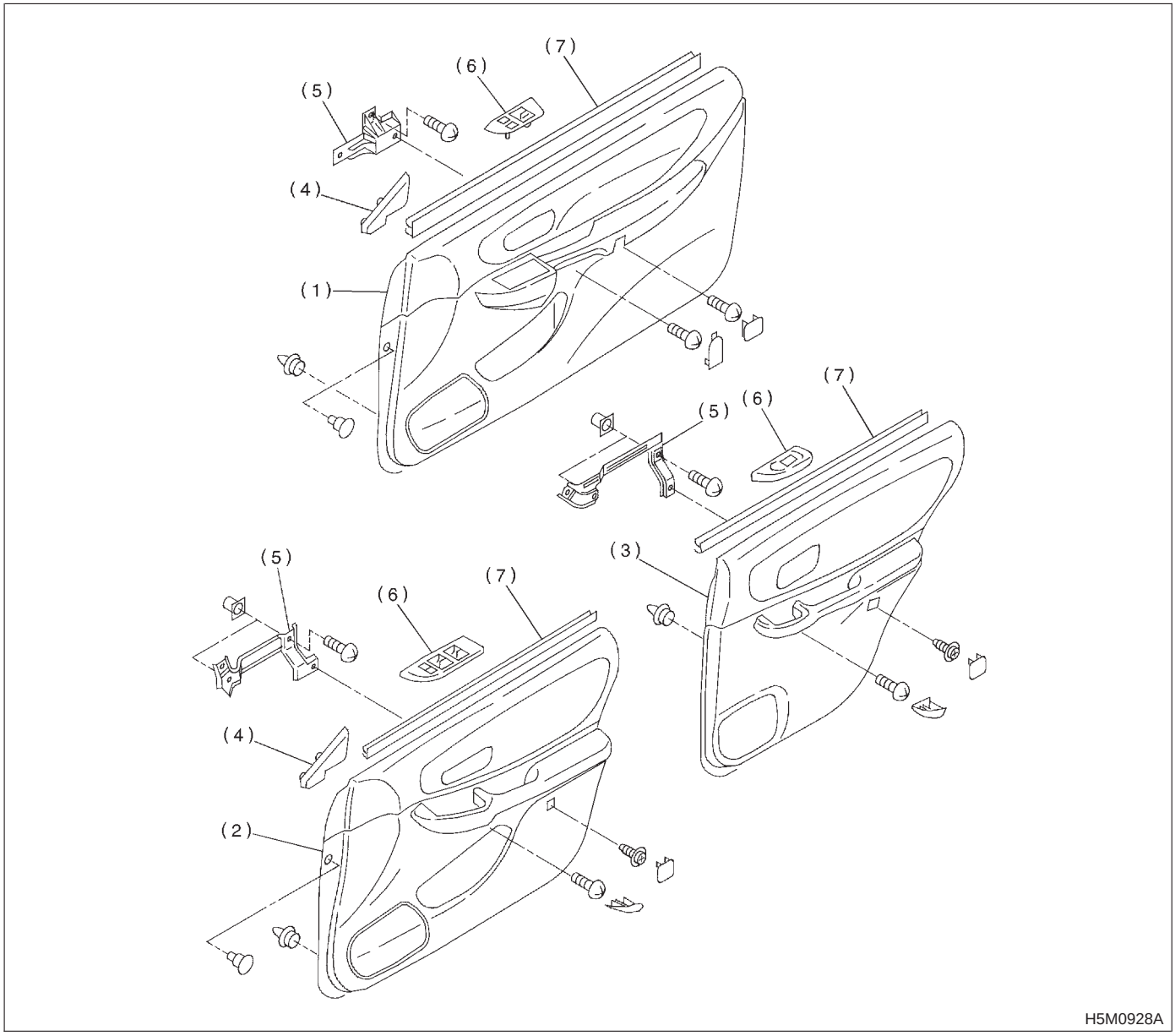
## B: REAR DOOR




(1) Door outer handle
(2) Door latch
(3) Auto-door lock actuator
(4) Striker
(5) Rod holder
(6) Cover
(7) Inner remote ASSY

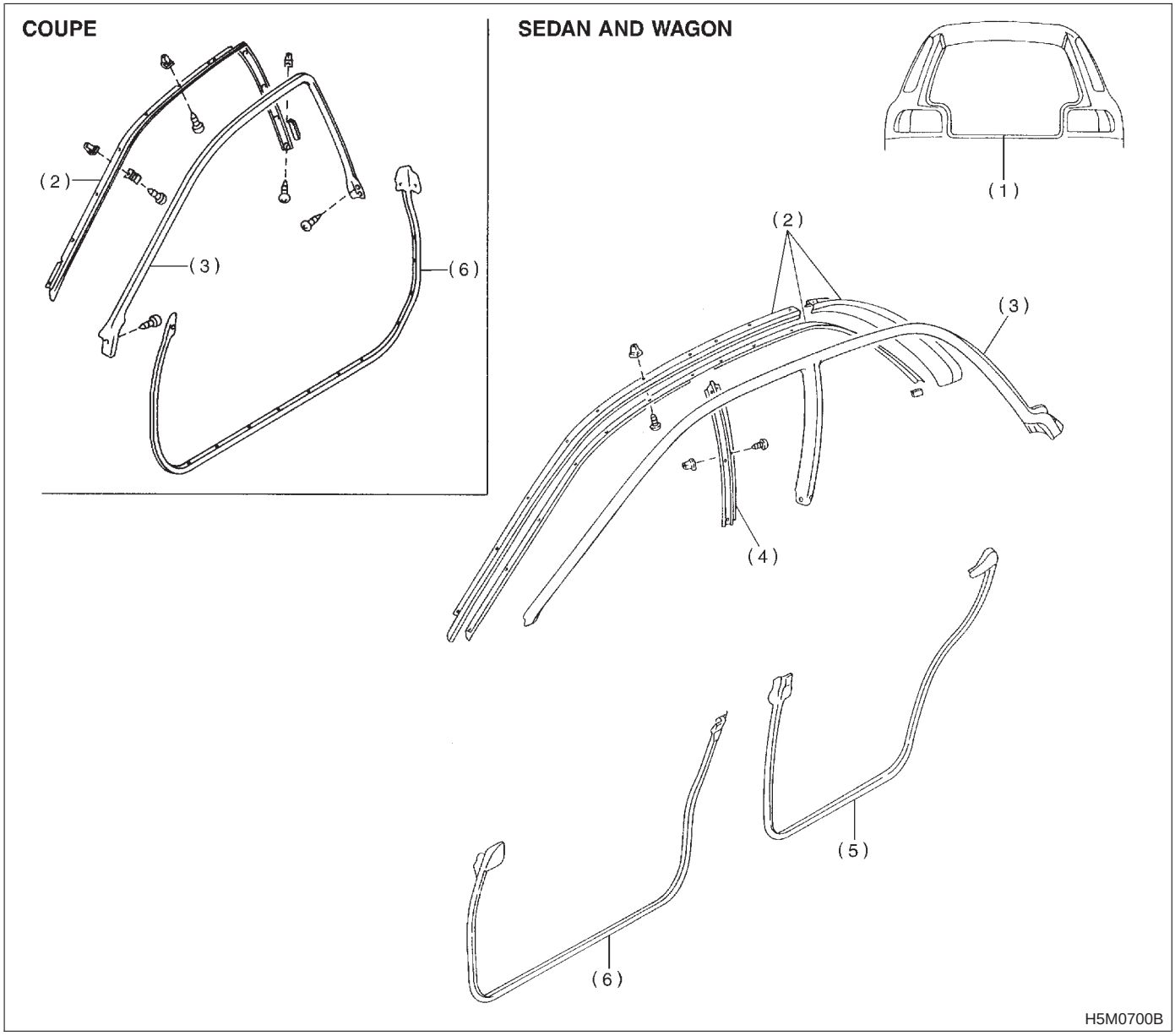
***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 6.4±2.0 (0.65±0.2, 4.7±1.4)***
***T2: 7.4±2.0 (0.75±0.2, 5.4±1.4)***
***T3: 14±4 (1.4±0.4, 10.1±2.9)***

# 8. Door Trim




(1) Trim panel (Coupe)
(2) Trim panel (Except coupe/front)
(3) Trim panel (Except coupe/rear)
(4) Gusset cover
(5) Bracket
(6) Cover
(7) Weatherstrip

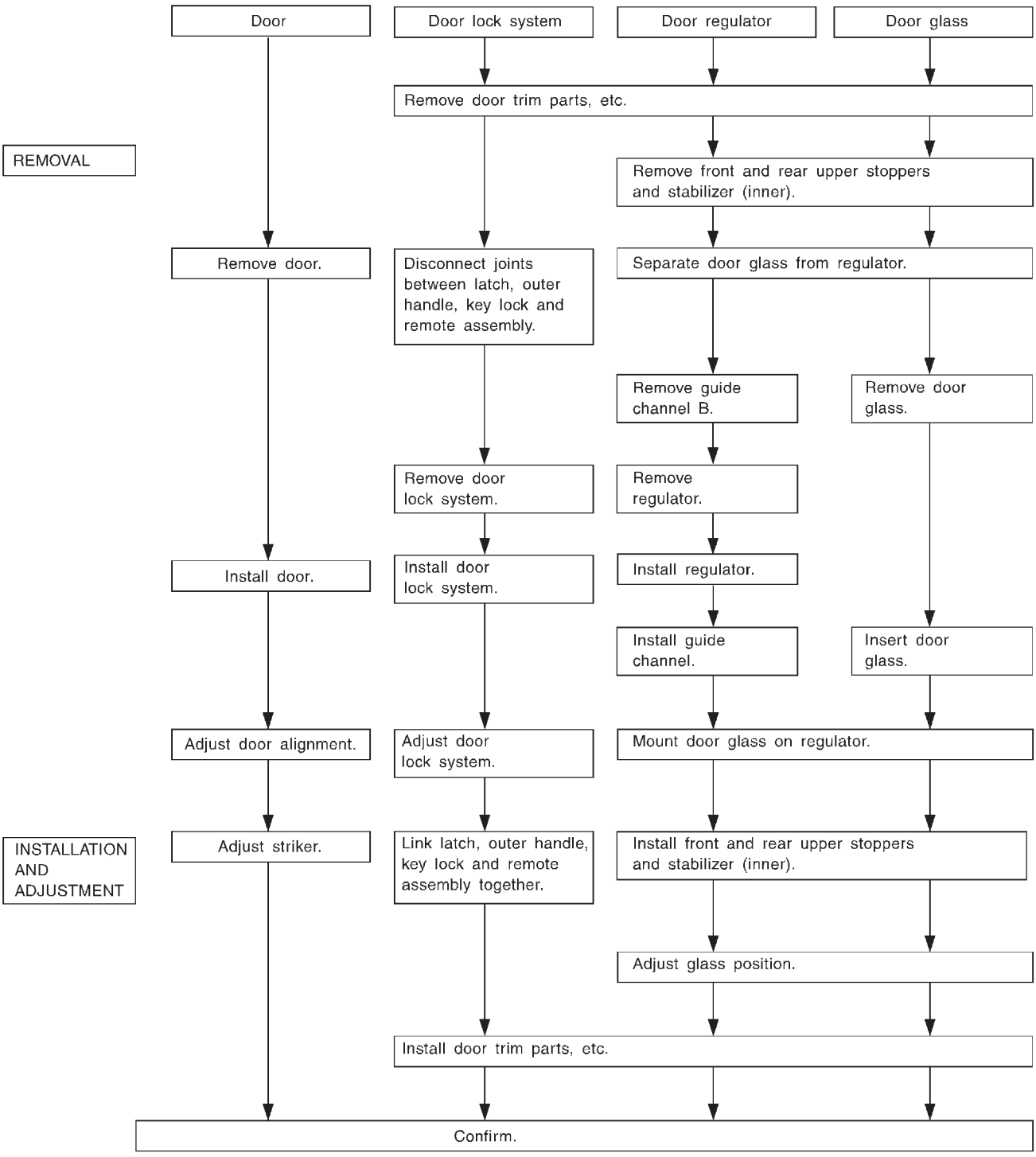
# 9. Weatherstrip




(1) Rear gate weatherstrip (Wagon only)
(2) Retainer and molding
(3) Upper and side weatherstrip
(4) Retainer (Center)
(5) Weatherstrip (Rear door)
(6) Weatherstrip (Front door)

# 1. Procedure Chart for Removing and Installing Door and Related Parts

NOTE:
This flowchart shows the main procedures for removing and installing the door and its related parts. For details, refer to the text.



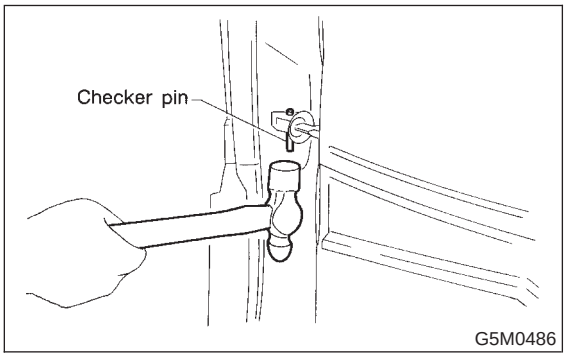

H5M0910A

# 2. Door

## A: REMOVAL AND INSTALLATION

### 1. DOOR ASSEMBLY

1) Remove lower trim and disconnect connectors from body harness.
2) Place a cloth or a wood block under door to prevent damage, and support it with a jack.
3) Remove checker pin by driving it upward. Be careful not to damage door and body.



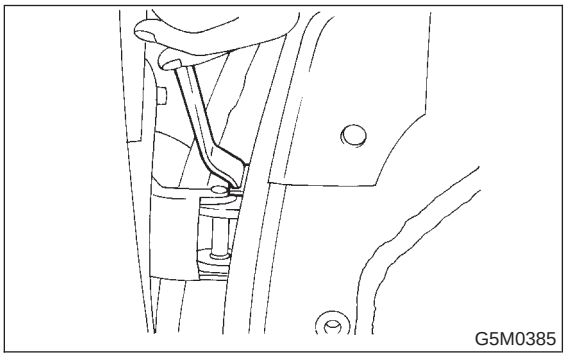

4) Remove bolts (M8) securing upper and lower hinges to door, and remove door from hinges.

***Tightening torque:***
***25±3 N·m (2.5±0.3 kg-m, 18.1±2.2 ft-lb)***

5) Remove hinges by loosening hinges mounting bolt (M8) off of body.

***Tightening torque:***
***29±5 N·m (3.0±0.5 kg-m, 21.7±3.6 ft-lb)***

**CAUTION:**
**Work carefully to avoid damaging door.**

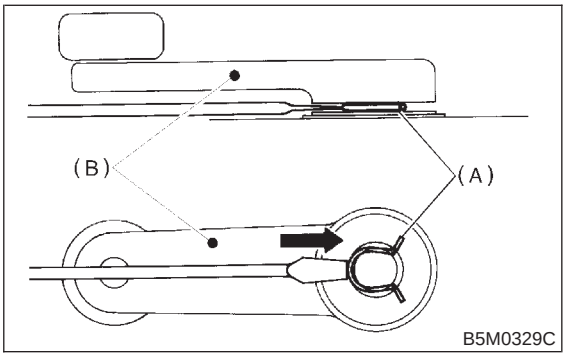



6) Installation is in the reverse order of removal.

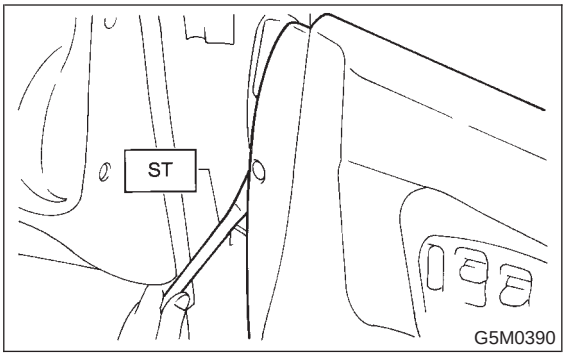
NOTE:
Apply grease to moving parts of door hinges.

### 2. TRIM PANEL

1) Press retainer spring (A) with a thin flat-bladed screwdriver and then remove regulator handle (B). (models without power window)

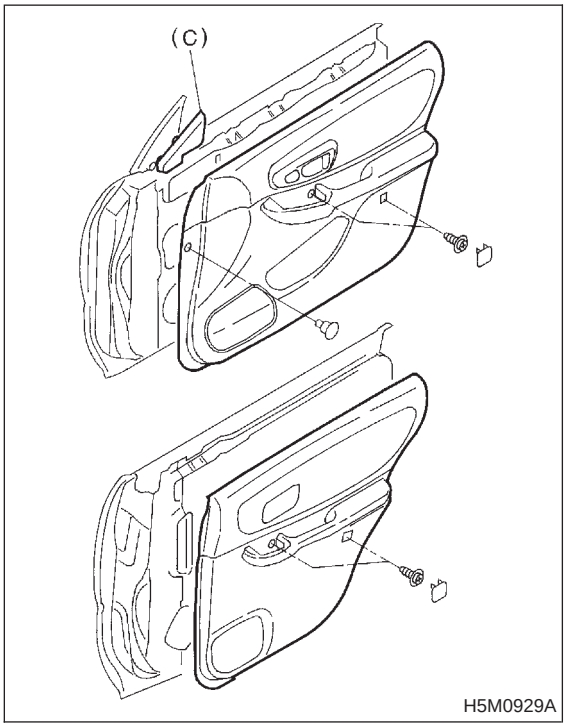



2) Using ST, disengage the clip.
ST 925580000 PULLER



3) Remove gusset cover (C) and screws.
4) Remove trim panel and then disconnect connector. (models with power window)

**CAUTION:**
**Be careful not to break clip by applying undue force.**

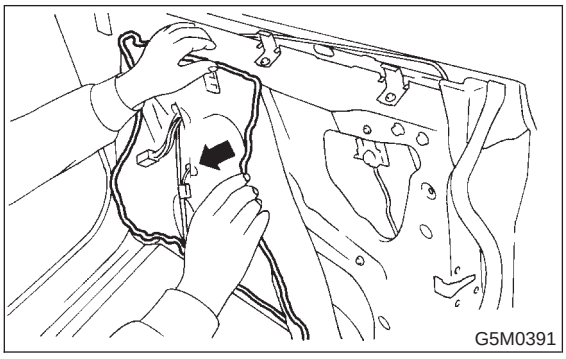



5) Installation is in the reverse order of removal.

## 3. SEALING COVER

1) Remove trim panel.
2) Remove speaker, trim bracket and remote assembly and disconnect connectors.
3) Remove sealer with a spatula.

**CAUTION:**
**Be careful because cover may break if sealer is removed forcefully.**




4) Installation is in the reverse order of removal.

NOTE:
● Confirm that sealer is properly applied without breaks. Then install sealing cover.
● When repairing or replacing sealing cover, use "CEMEDINE 5430L" as sealer. It may be overlaid on existing sealer.

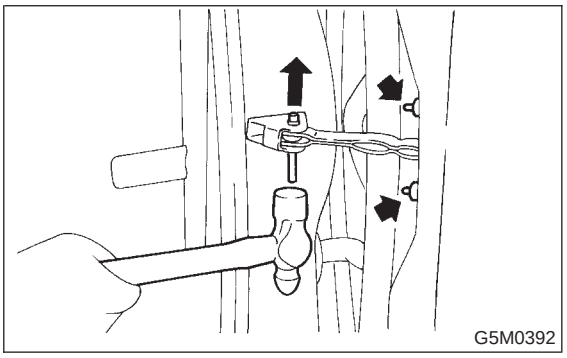
***Sealer:***
***CEMEDINE 5430L***

**CAUTION:**
**● Any breaks in sealer can cause water leakage or entry of air and dust. Be sure sealer is applied in a continuous line.**
**● Make sure sealing cover bonded areas are free from wrinkles or openings.**

## 4. CHECKER

1) Remove trim panel.
2) Remove sealing cover.
3) Apply a cloth to door and body to prevent damaging them, and remove checker pin by driving it upward.

**CAUTION:**
**Be careful not to damage door and body.**

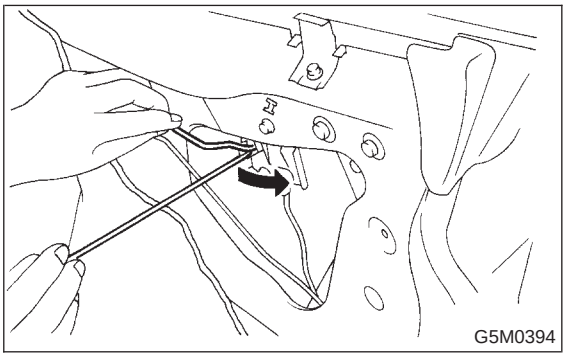



4) Completely close door glass.
5) Loosen two nuts securing checker, and take out checker through access hole in underside.
6) Installation should be made in the reverse order of removal.

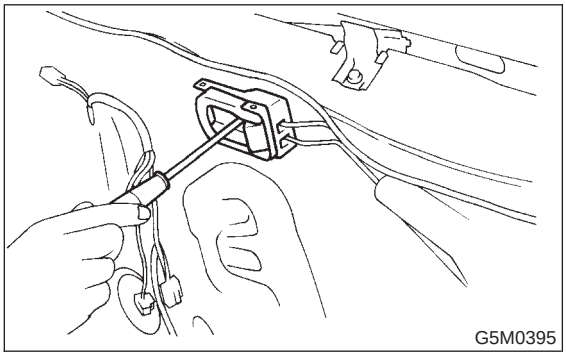
***Tightening torque:***
***7.5±2.0 N·m (0.75±0.2 kg-m, 5.4±1.4 ft-lb)***

## 5. INNER REMOTE

1) Remove trim panel.
2) Remove sealing cover.
3) Disconnect joints of two rods.



4) Unlatch rod holder.
5) Remove screws holding remote assembly.

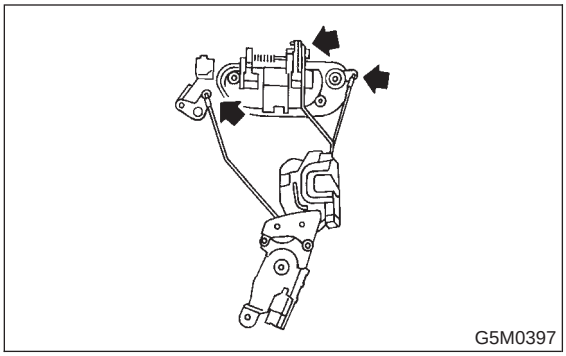



6) Installation is in the reverse order of removal.

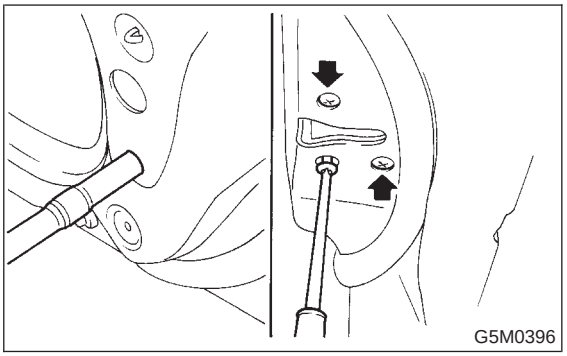
NOTE:
If rear door is equipped with child safety lock, check that child lock lever moves without dragging.

## 6. DOOR LATCH

1) Remove trim panel.
2) Remove inner remote assembly.
3) Remove sealing cover around latch service hole.
4) Completely close door glass.
5) Remove latch and actuator assembly:
   (1) Turn rod holder to disconnect joint between key lock and rod.
   (2) Turn rod holder to disconnect joint between outer handle and rod.
   (3) Turn rod holder to disconnect joint between crank and rod.




6) Loosen screws securing both latch and actuator, then remove latch and actuator assembly through service hole in bottom.




7) Installation is in the reverse order of removal.

***Tightening torque (screw):***
***6.4±2.0 N·m (0.65±0.2 kg-m, 4.7±1.4 ft-lb)***

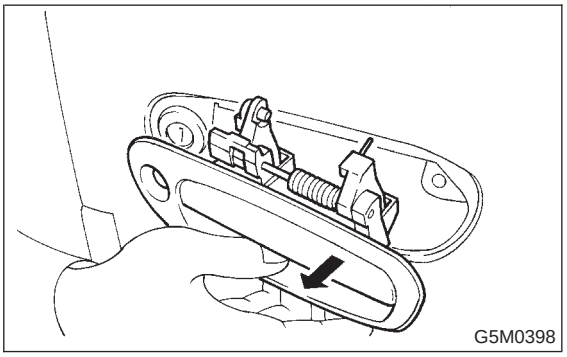
NOTE:
- Check operation of each part.
- Check each sliding part for proper lubrication.

**CAUTION:**
**After installation, be sure lock mechanism operates normally.**

## 7. OUTER HANDLE

1) Remove trim panel.
2) Remove sealing cover.
3) Detach door latch rod from outer handle and key lock.
4) Loosen nut securing outer handle and then remove outer handle from outside.

**CAUTION:**
**Be careful not to damage door.**




5) Installation is in the reverse order of removal.

***Tightening torque:***
***7.4±2.0 N·m (0.75±0.2 kg-m, 5.4±1.4 ft-lb)***

### 8. KEY LOCK

1) Remove trim panel.
2) Remove sealing cover.
3) Completely close door glass.
4) Remove outer handle.
5) Loosen spring securing key lock.
6) Remove key lock from outer handle.
7) Installation is in the reverse order of removal.

NOTE:
Install so that key slot in key lock comes to center of hole in outer handle.

### 9. GUSSET

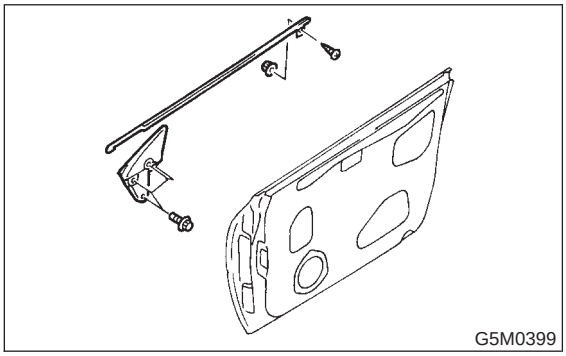
1) Be sure window is all the way down.
2) Remove gusset cover.
3) Remove trim panel.
4) Remove door rearview mirror.
5) Remove outer weatherstrip.
6) Remove sealing cover.

NOTE:
Be careful not to drop nuts on the “IN” side.

7) Remove bolts and nuts which secure gusset.

***Tightening torque: Bolt***
***3±3 N·m (1.3±0.3 kg-m, 9.4±2.2 ft-lb)***

***Tightening torque: Nut***
***7.4±2.0 N·m (0.75±0.2 kg-m, 5.4±1.4 ft-lb)***

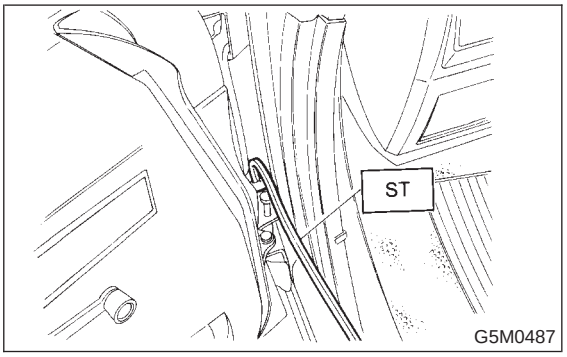



8) Lift out gusset.
9) Installation is in the reverse order of removal.

## B: ADJUSTMENT

### 1. DOOR ASSEMBLY

1) Using ST, loosen bolts securing upper and lower hinges to body, and adjust fore-and-aft and vertical alignment of door.
ST 925610000 DOOR HINGE WRENCH




2) Loosen screw one complete rotation, and adjust opening/closing direction of door using a hammer covered with a cloth.

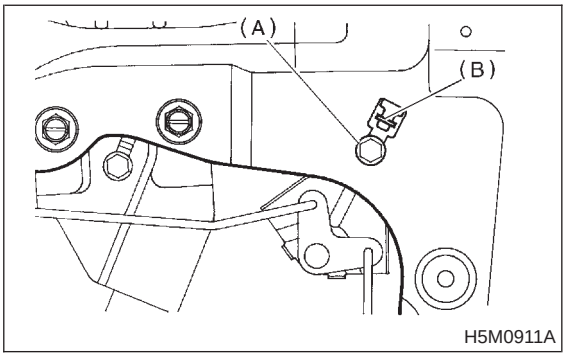
**CAUTION:**
**Be careful not to damage striker.**

***Hinge tightening torque (body side):***
***29±5 N·m (3.0±0.5 kg-m, 21.7±3.6 ft-lb)***

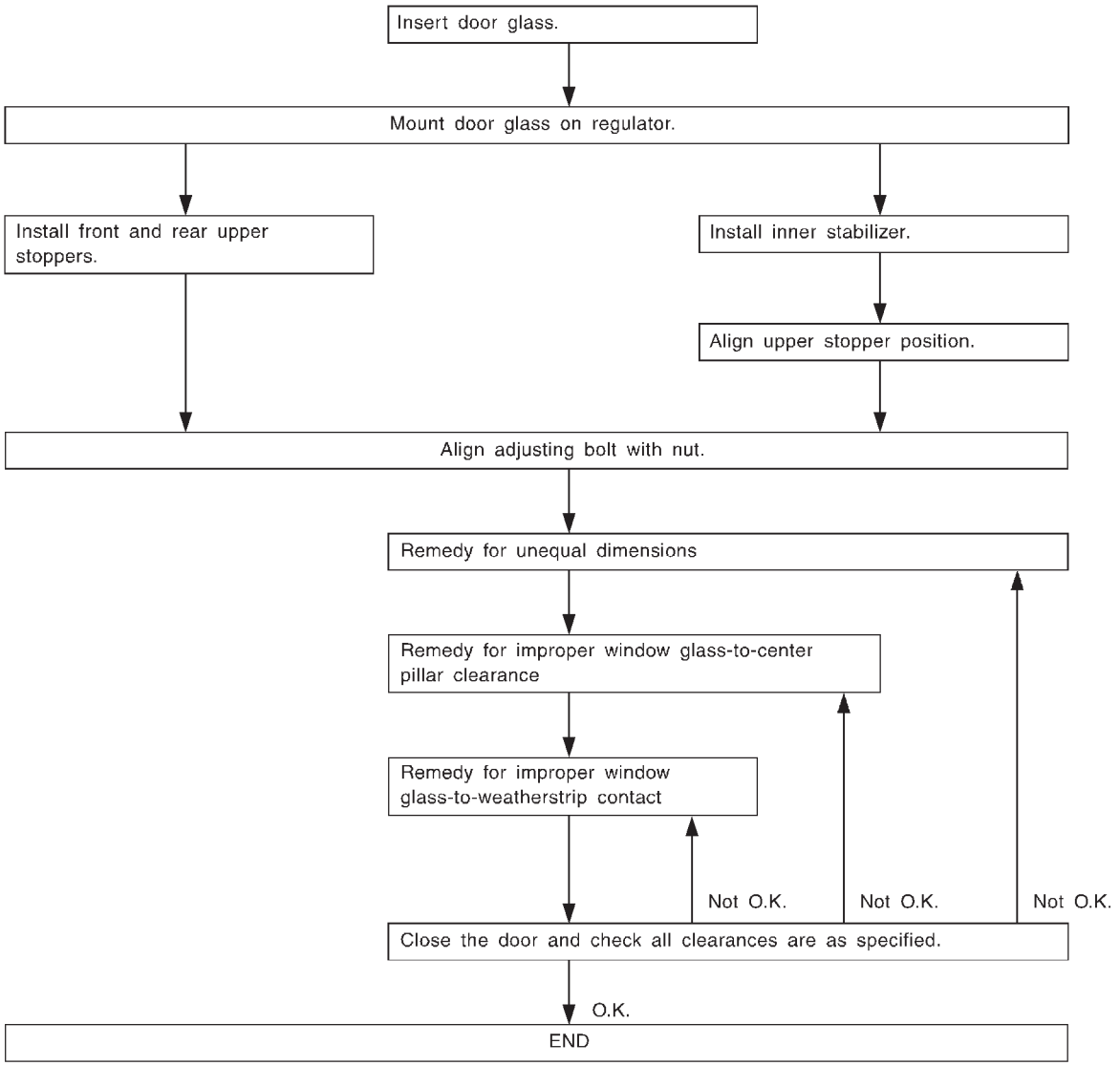
***Striker tightening torque:***
***14±4 N·m (1.4±0.4 kg-m, 10.1±2.9 ft-lb)***

### 2. INNER REMOTE

1) Lock the door.
2) Loosen bolt (A).
3) Lower bell crank (B) and then tighten bolt (A).



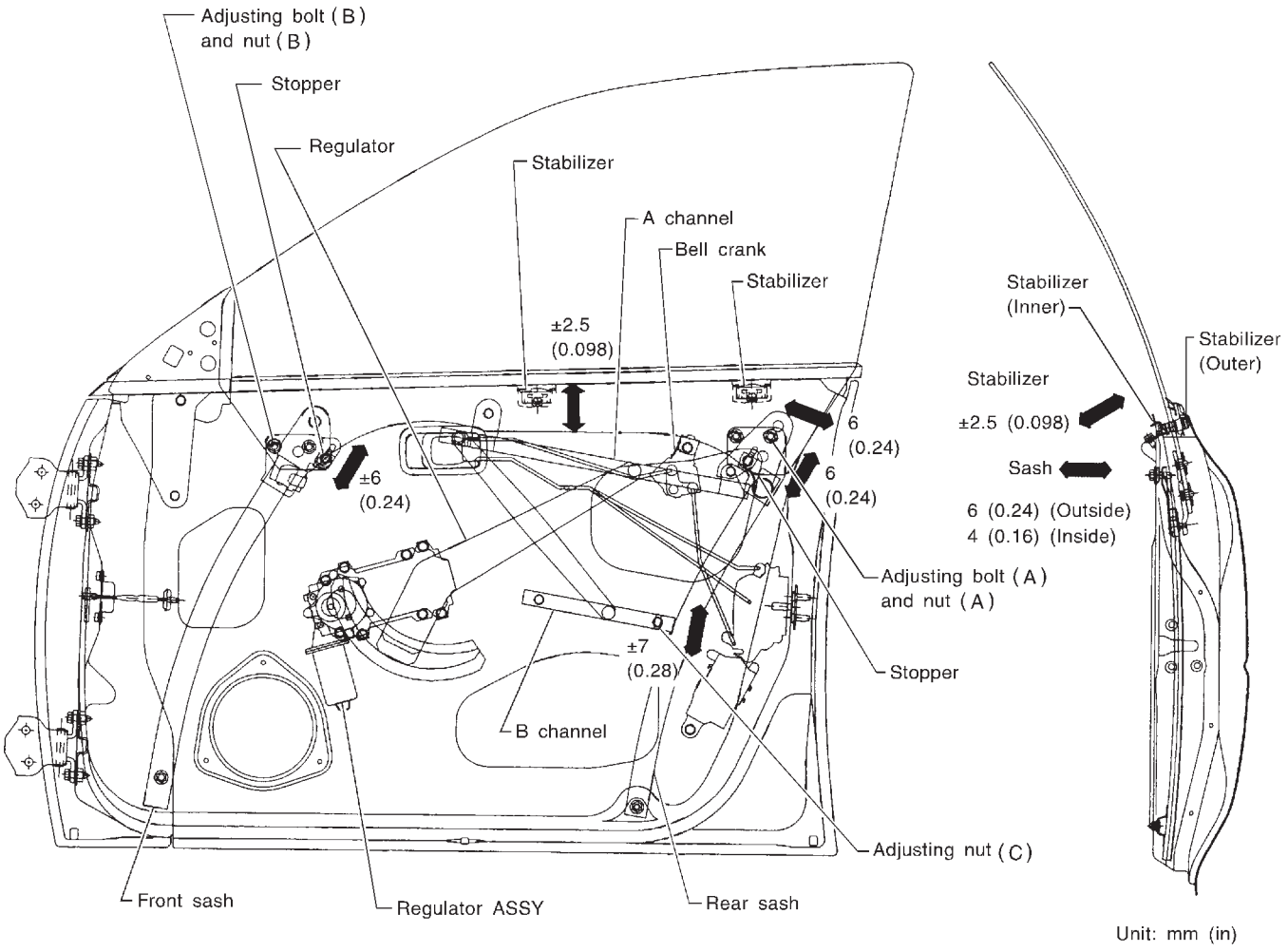
## 3. PROCEDURE CHART FOR ADJUSTING DOOR GLASS



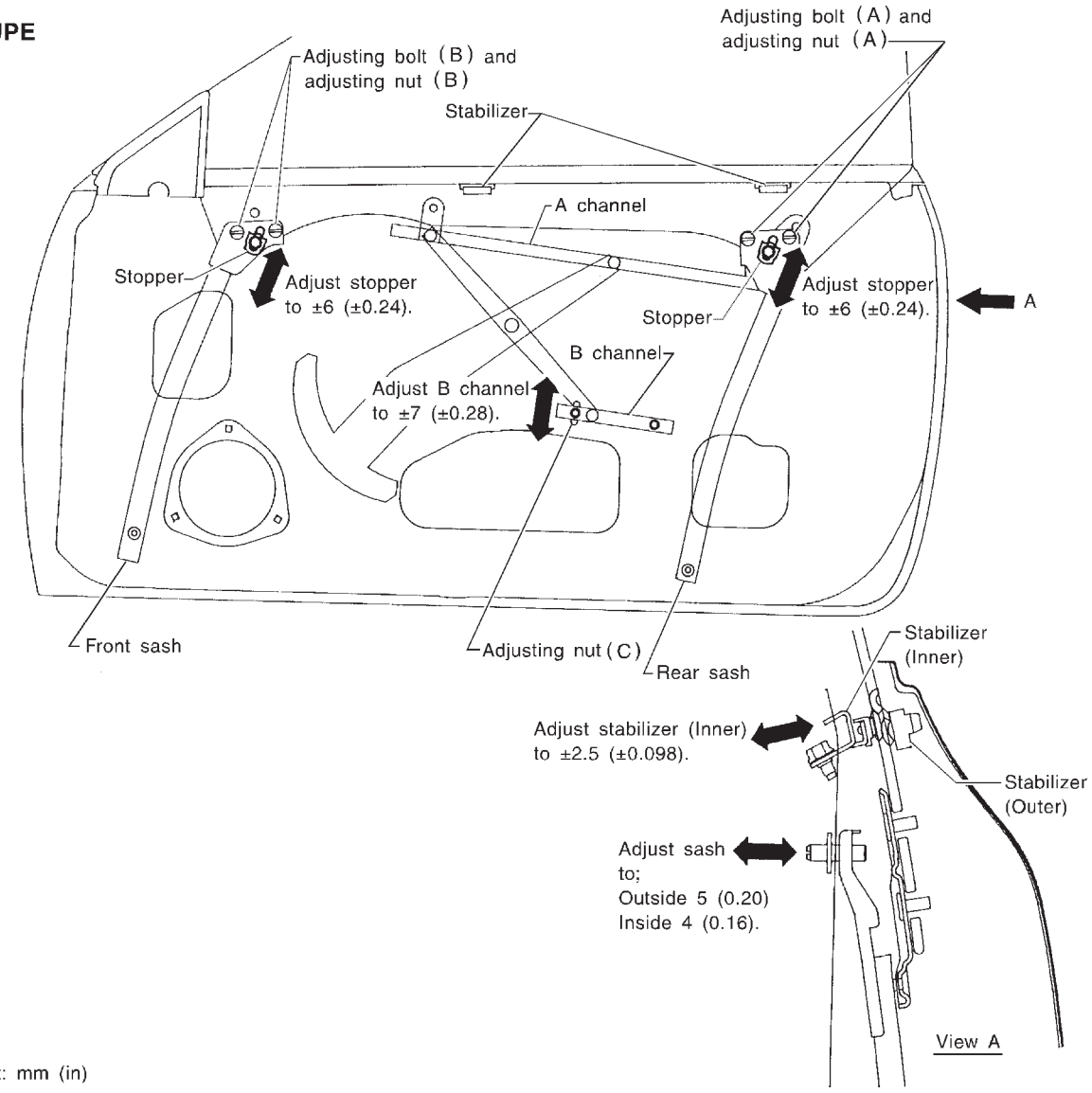

H5M0912A

## 4. FRONT DOOR GLASS

**SEDAN AND WAGON**



**COUPE**




Unit: mm (in)

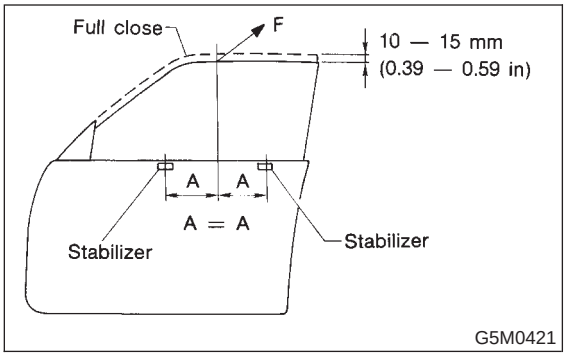
H5M0728B

## ● Door glass fit adjustment

Before adjusting door glass alignment, ensure adjusting bolts for stabilizers, upper stoppers and sashes are loose and glass is raised so that it is in contact with upper and side weatherstrip.
1) Temporarily tighten one of the two rear sash adjusting bolts, at midpoint of oblong hole on inner panel.
2) Temporarily tighten regulator B channel at a position slightly lower than midpoint of oblong hole on inner panel.
3) Lower door glass 10 to 15 mm (0.39 to 0.59 in) from fully closed position. While applying outward pressure (load) to upper edge of glass above mid-point of two outer stabilizers, press inner stabilizer until it just touches the glass, then secure it.

***Load: F***

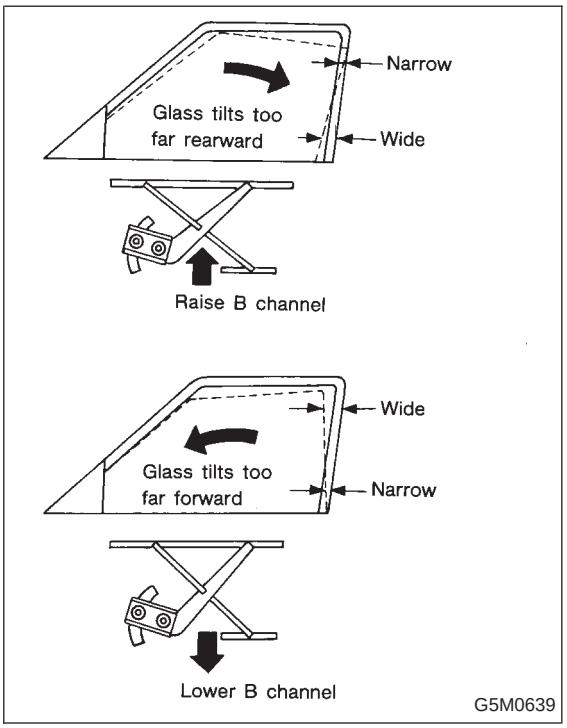
***Front door glass 44.1±4.9 N (4.5±0.5 kg, 9.9±1.1 lb)***
***Rear door glass 44.1±4.9 N (4.5±0.5 kg, 9.9±1.1 lb)***




## ● Remedy for unequal dimensions, between upper, lower and center pillar sides

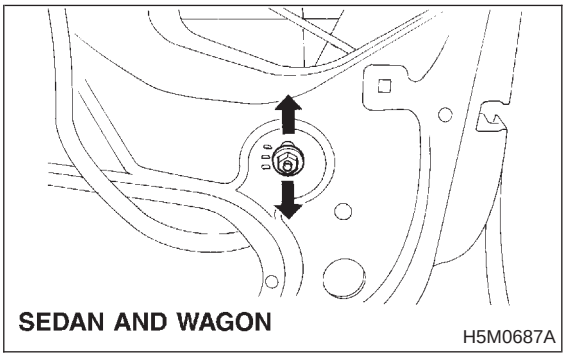
1) Close front door and raise door glass.

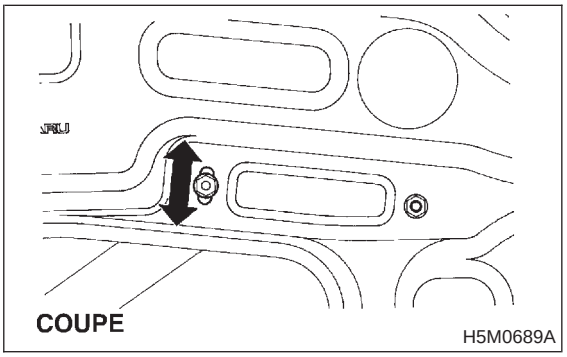
2) Make sure of unequal dimensions.




3) If glass tilts to far rearward, loosen adjusting nut (C) and adjust glass to be parallel with center pillar, then after adjustment, tighten adjusting nut (C).

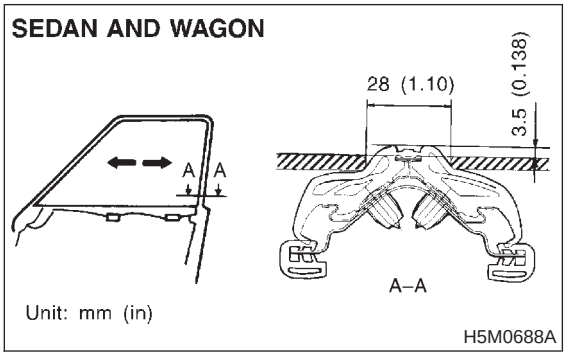
***Tightening torque:***
***7.4±2.0 N·m (0.75±0.2 kg-m, 5.4±1.4 ft-lb)***

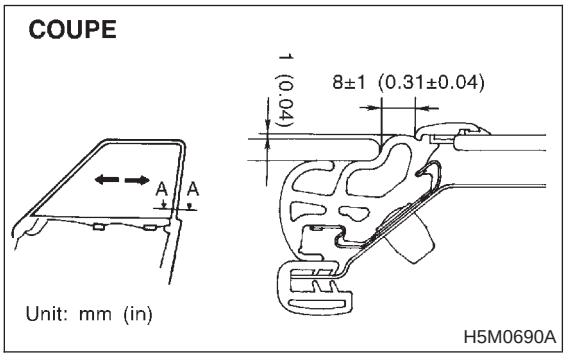


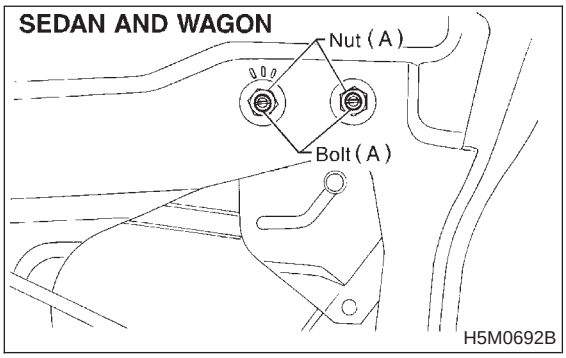
### ● Remedy for improper glass to center pillar clearance

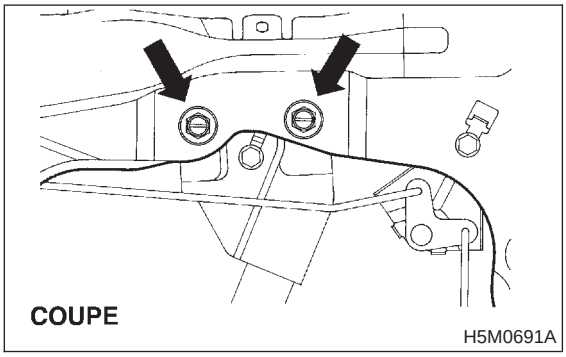
1) Close front door and raise door glass.
2) Make sure of improper clearance.



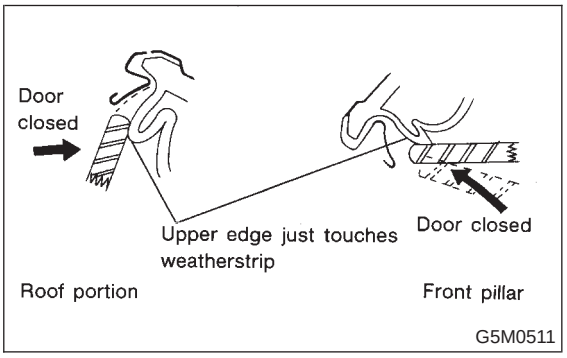

3) If clearance is improper, loosen adjusting nut (A), bolt (A) and adjust glass to center pillar.




### ● Remedy for improper upper stop point of door glass

1) Loosen front and rear sash stoppers.
2) Increase the upward travel of window glass up to the position where upper edge just touches weatherstrip surface with door closed.

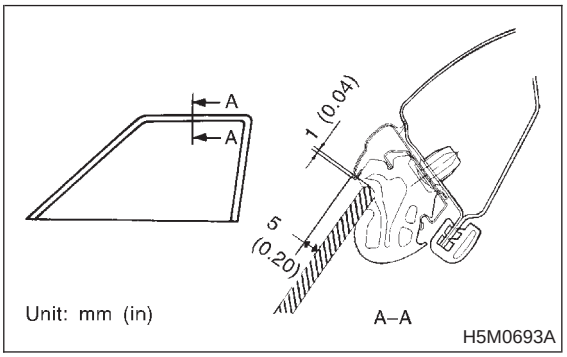



3) After adjustment, temporarily tighten stoppers.

NOTE:
Make sure that each glass stopper is touched.

### ● Remedy for incorrect contact of door glass to weatherstrip

1) Close front door and raise door glass.
2) If clearance is below specifications, loosen bolt (A) and bolt (B).
3) If clearance is over specifications, tighten bolt (A) and bolt (B).



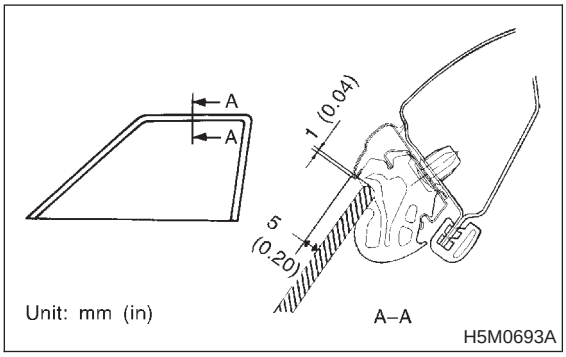
## ● Fit adjustment

Door glass fit is adjusted by displacing the glass front edge with a stabilizer.

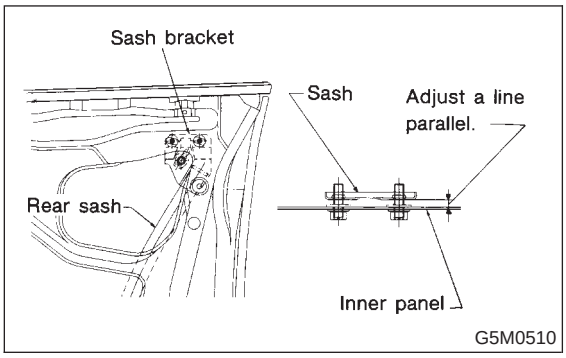
NOTE:
Before adjusting glass fit, visually check to determine relative adjusting positions of retainer and molding (on roof side) and glass surface.

1) Alternately adjust two rear sash adjusting bolts (A) until dimensions are obtained.

**CAUTION:**
**Do not loosen two adjusting nuts (A) at the same time, as this moves sash fore and aft, creating unequal glass- to-sash clearance. During adjustment, loosen only one nut and keep the other tightened.**




NOTE:
Always adjust two rear sash adjusting bolts (A) by the same amount. Do not adjust the adjusting bolts with sash bracket inclined toward inner panel, as this increases effort required to operate regulator.



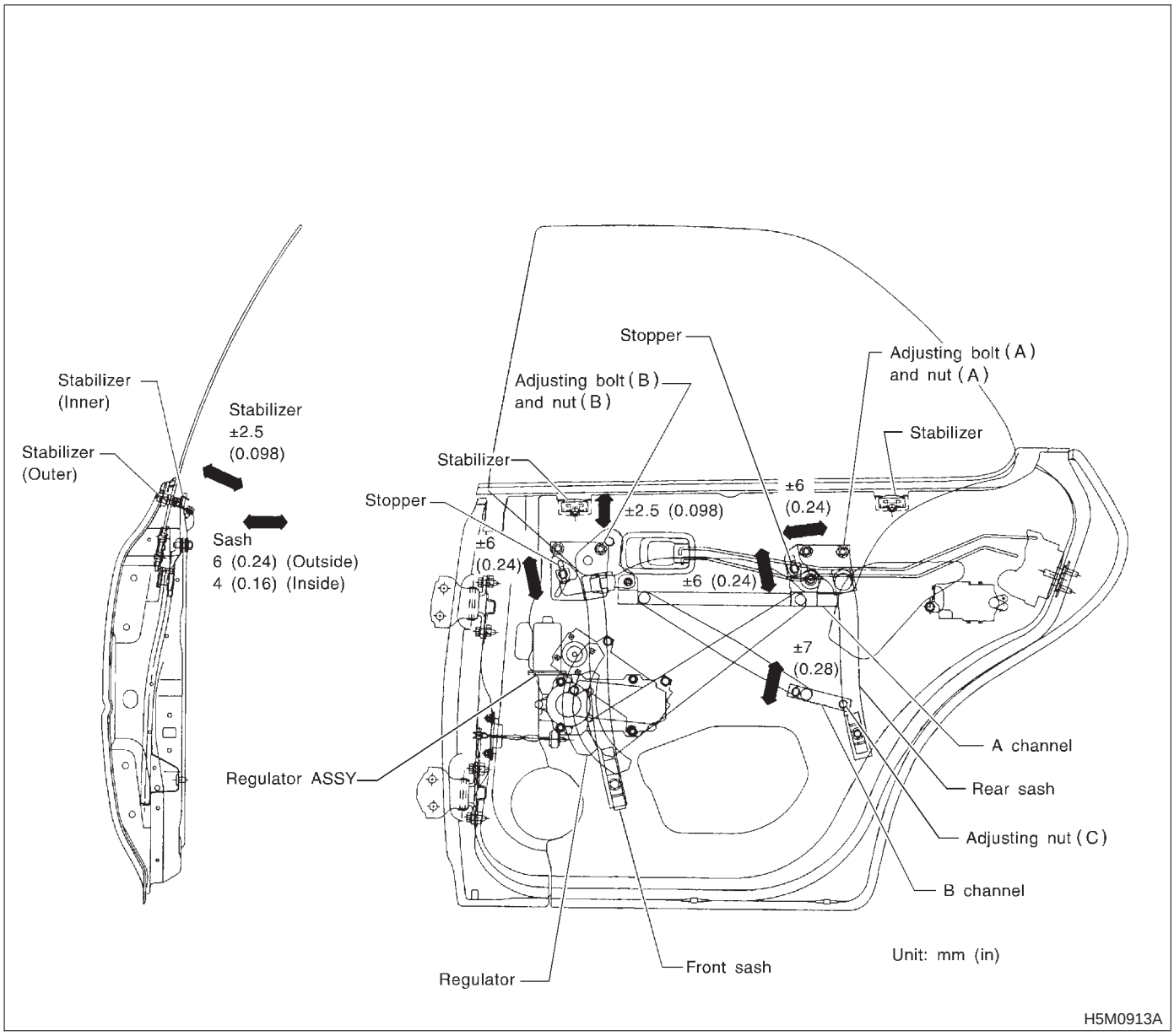

2) Adjust front sash fit using rear sash adjustment procedure outlined in the former procedure as a guide. Two adjusting bolts must be adjusted by the same amount.

NOTE:
● Front and rear sash adjustment procedures are basically the same; however, the amount of adjustment is not always the same due to alignment dispersion of individual doors.
● Adjust front and rear sash fit, as equally as possible. Otherwise, effort required to operate regulator may increase.

3) After adjusting front sash-to-glass fit, secure front sash.

## 5. REAR DOOR GLASS

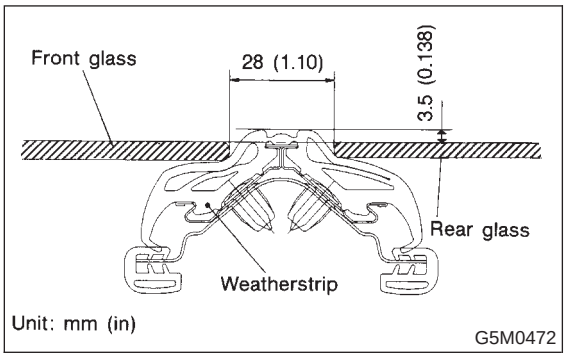
Alignment of rear door glass is basically the same as for the front door glass. Due to slight difference in adjustment dimensions for fore-aft, up-down, and in-out alignments, key points for rear door adjustment are described.



● **Fore-aft adjustment**

1) Door glass alignment must be adjusted so that glass-to-center pillar fit is equal at all points. Always use dimensions as a guide during adjustment.

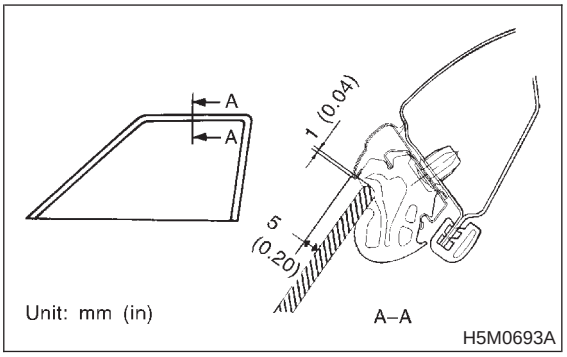
NOTE:
If dimensions are smaller than those indicated, glass will be caught in weatherstrip and may not raise to the fully closed position.




2) After making fore-aft adjustment, raise and lower glass to ensure it is free from any binding.

● **Fit adjustment**

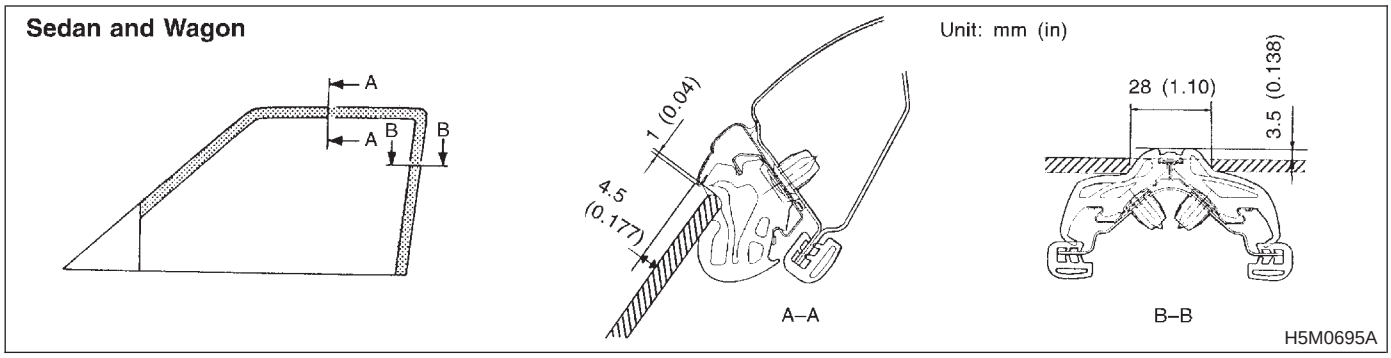
Increasing contact pressure causes rear door glass to be caught in center pillar upper and lower weatherstrip; this will cause premature weatherstrip wear. For this reason, always use dimensions indicated in figure as a guide during glass fit adjustment.

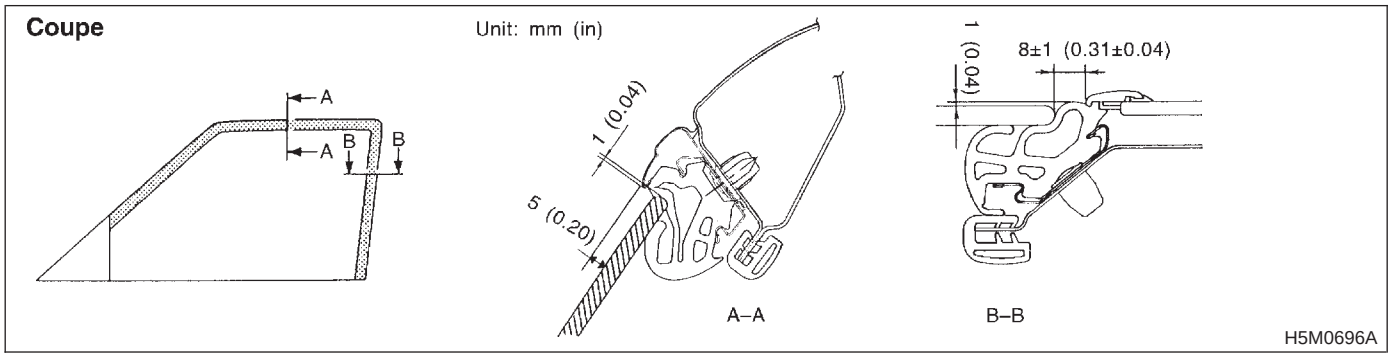



## C: INSPECTION

### 1. FRONT DOOR GLASS

1) Close front door and make sure of all clearances.



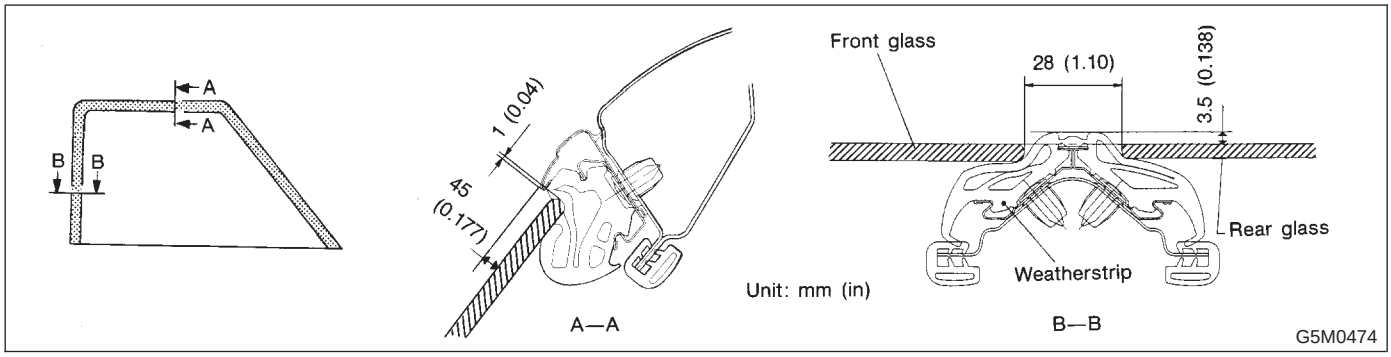




2) If any clearance is not correct, adjust affected parts. Re-check that all clearances are correct.

**CAUTION:**
**● Repeatedly adjust parts until all clearances are correct.**
**● After clearance adjustment, make sure that all adjusting bolts and nuts are tightened.**

## 2. REAR DOOR GLASS

1) Close rear door and make sure of all clearances.




2) If any clearance is not correct, adjust affected parts. Re-check that all clearances are correct.

**CAUTION:**
**● Repeatedly adjust parts until all clearances are correct.**
**● After clearance adjustment, make sure that all adjusting bolts and nuts are tightened.**

# 3. Rear Gate

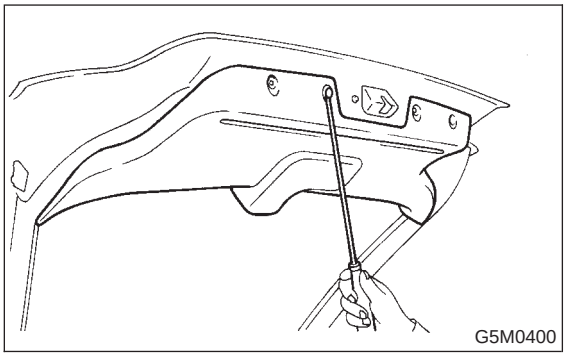
## A: REMOVAL AND INSTALLATION

**CAUTION:**
**● Be careful not to scratch coated surfaces of vehicle body and window glass during removal. Place a cloth over the affected area.**
**● Be careful not to damage trim panels.**
**● Use an assistant when handling heavy parts.**
**● Be careful not to damage or lose small parts.**

### 1. REAR GATE ASSEMBLY

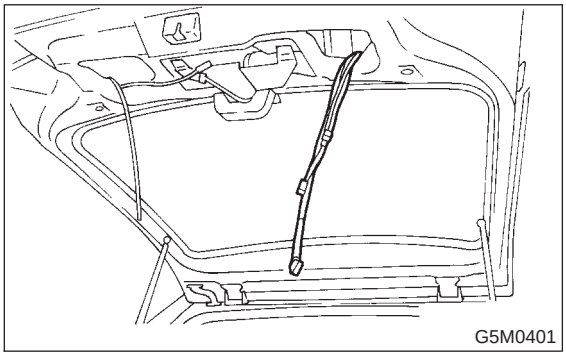
1) Remove clips from trim panel and detach trim panel.

**CAUTION:**
**Be careful not to damage clips or their holes.**


G5M0400

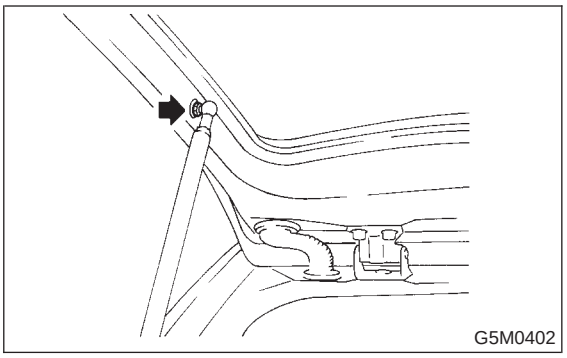
2) Disconnect connectors and terminal.
3) Disconnect rear washer hose from wiper motor.
4) Remove high-mounted stop light.
5) If disconnected harness is re-used, tie connector with a string and place on the upper side of rear gate for ready use.

**CAUTION:**
**Do not forcefully pull cords, lead wires, etc. since damage may result; carefully extract them in a wavy motion while holding connectors.**

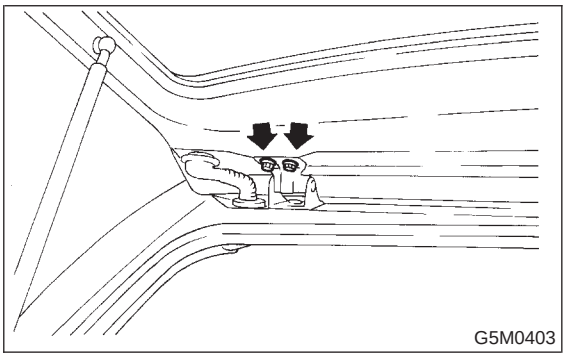

G5M0401

6) Remove rear wiper. <Ref. to 6-2 [W600].>
7) Remove both rubber ducts and then extract washer hose and harness connector.
8) Gas stay:
(1) Completely open rear gate.
(2) Remove bolts which hold gas stay to rear gate.

**CAUTION:**
**● Be careful because rear gate drops while removing bolts. Have an assistant support it while removing bolts.**
**● Be sure to place a folded cloth between rear gate and body to prevent scratches.**

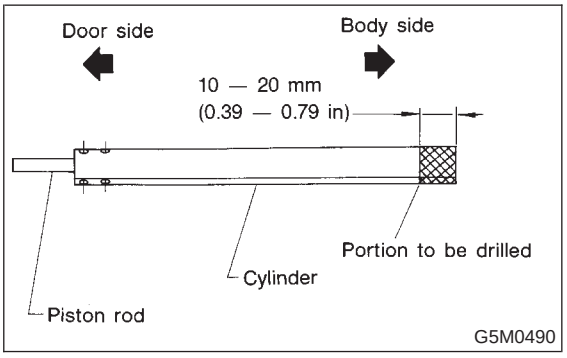

G5M0402

9) Remove the bolts which hold rear gate to hinge and then detach rear gate.


G5M0403

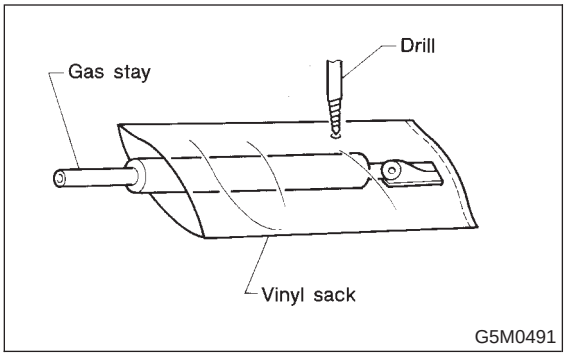
10) General precautions in handling rear gate gas stay

**CAUTION:**
**● Do not attempt to disassemble gas stay because its cylinder is filled with gas.**
**● Before discarding gas stay, place it at a slight angle with the cylinder body side facing up and drill a 2 to 3 mm (0.08 to 0.12 in) dia. hole to completely discharge the content. (Gas is odorless, colorless and harmless; however, metal powder may come out of the hole.)**



G5M0490

**● It is good practice to place a vinyl sack over it before drilling the hole because oil may spurt out. Be careful to prevent vinyl cover from becoming entangled on the drill.**



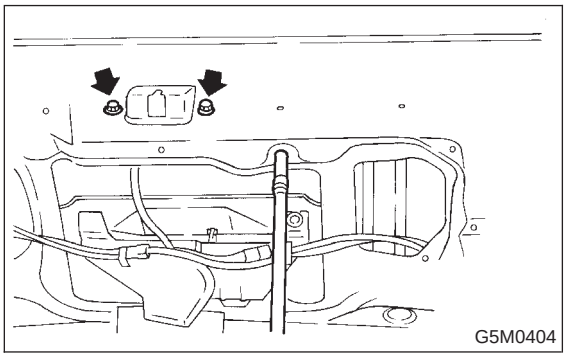

**● Be careful not to scratch the exposed section of piston rod or allow oil or paint to come in contact with it.**
**● Do not attempt to rotate the extended piston rod.**

11) Installation is in the reverse order of removal.

**CAUTION:**
**● Be careful not to mistake RH and LH body side buffers.**
**● Be sure to add sealer to hinge.**
**● When installing rear gate, be careful not to damage coating on body and rear gate.**

## 2. LATCH

1) Remove trim panel.
2) Disengage rod from holder (= key cylinder).
3) Remove bolts from auto-door lock actuator.
4) Remove bolts from latch, and detach latch.



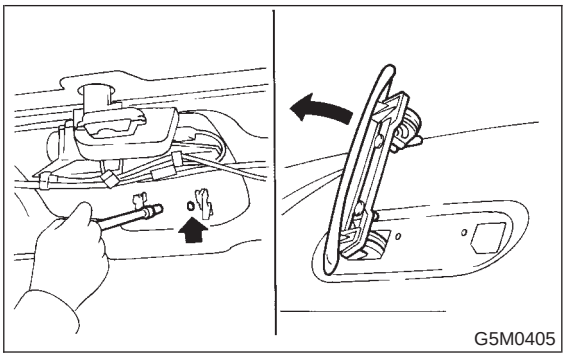

5) Disconnect rear gate switch connector.
6) Disconnect auto-door lock actuator connector.
7) Detach latch.
8) Installation is in the reverse order of removal.

**CAUTION:**
**Firmly join latch with key cylinder, and outer handle.**

## 3. OUTER HANDLE

1) Remove trim panel.
2) Remove latch.
3) Remove two nuts used to hold outer handle to the inside of rear gate, and detach outer handle.

**CAUTION:**
**Be careful not to damage packing when removing outer handle.**




4) Installation is in the reverse order of removal.

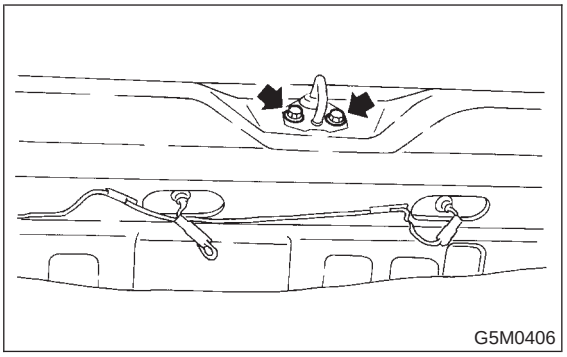
**CAUTION:**
**Completely insert latch pin into handle lever.**

## 4. KEY CYLINDER

1) Remove trim panel.
2) Disengage rod from holder.
3) Remove retaining spring from key cylinder, and detach key cylinder from outside.
4) Installation is in the reverse order of removal.

## 5. STRIKER

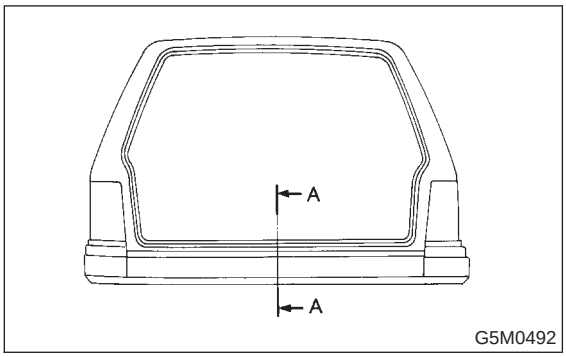
1) Remove rear skirt trim.
2) Remove two bolts from striker and detach striker.




3) Installation is in the reverse order of removal.

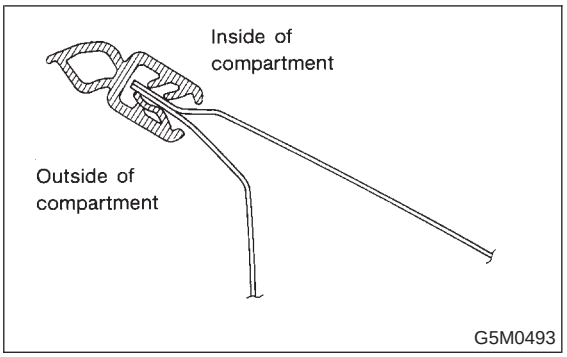
## 6. WEATHERSTRIP

1) Place weatherstrip so that its joints meet at lower center of vehicle body, and install by inserting flanged portion from below, as shown in section A—A in figure.



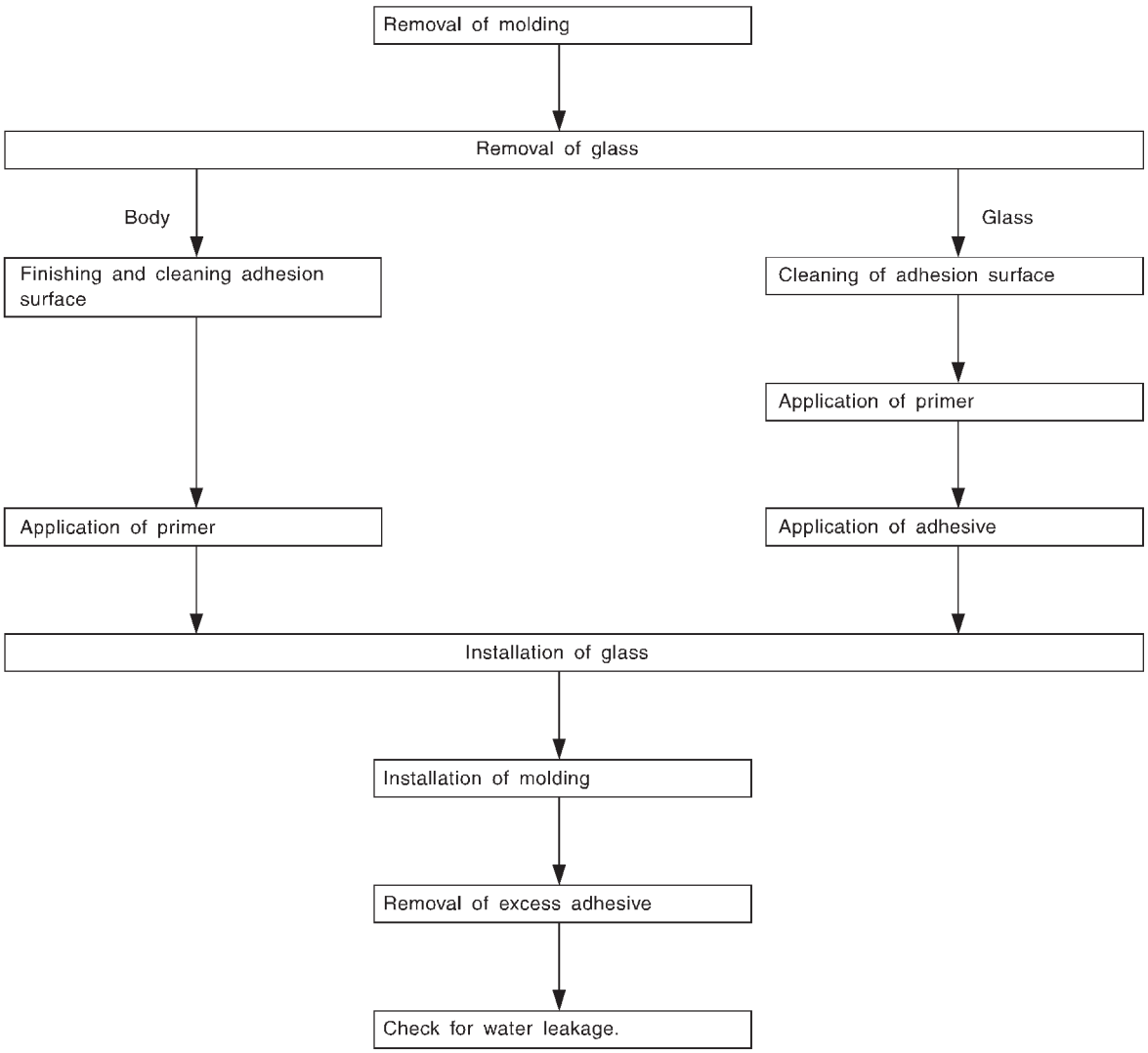

2) Tap along entire length with a rubber hammer to firmly insert body flange into weatherstrip.

**CAUTION:**
- **Be careful not to install in wrong direction.**
- **Install weatherstrip carefully and firmly.**



# 4. Procedure Chart for Removal and Installing Window Glass

## A: REMOVAL AND INSTALLATION




H5M0914A

### 1. MATERIALS REQUIRED FOR APPLICATION

| Description | Remarks |
|---|---|
| Repair adhesive set<br>● Cartridge of single-liquid urethane adhesive<br>● Primer for glass and body | Sunstar No. 580 or Essex Chemical Corp's Urethane E Sunstar No. 435-580 |
| Windshield knife or piano wire | For cutting windshield |
| Sealant gun | For applying adhesive |
| Suction cups | For holding glass |
| Putty knife | For finishing adhesion surface and cutting spacer |
| Sponge | For applying primer |
| Gauze or cloth | For cleaning |
| Alcohol or white gasoline | For cleaning adhesion surface |
| Tape | For preventing damage to painted surface |

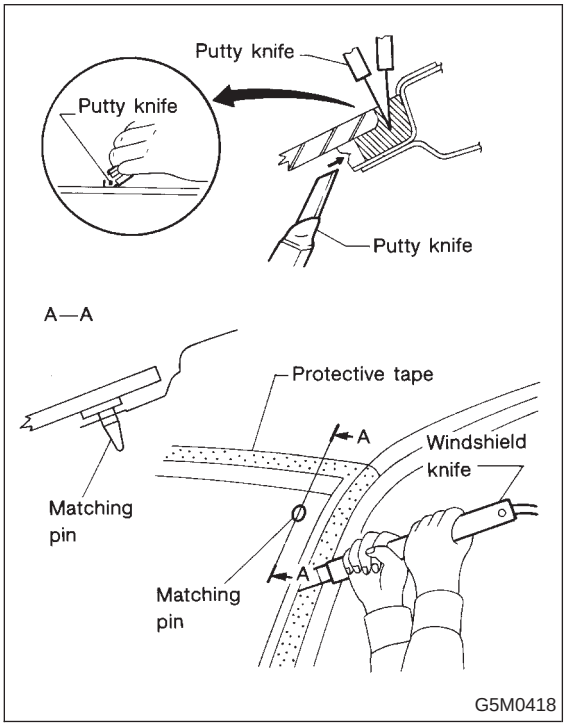
# 5. Windshield

## A: REMOVAL

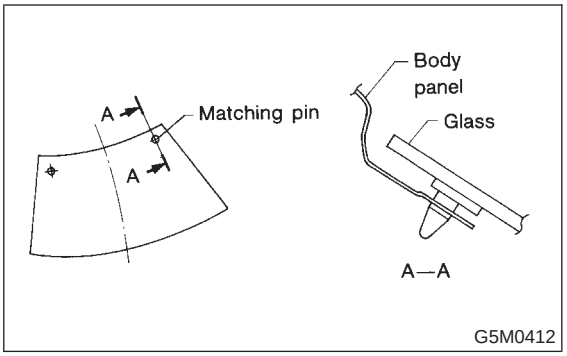
### 1. USING WINDSHIELD KNIFE

The following procedure for the front windshield can also be applied to other window glass.
1) Remove wiper arm and cowl panel.
2) Remove roof molding and front window molding upper.
3) Remove glass:
(1) Put protective tape on body to prevent damage.
(2) Apply soapy water to the surface of the adhesive agent so the knife blade slides smoothly.
(3) Cut off excess adhesive agent.
(4) Put windshield knife into layer of adhesive.
(5) Cut adhesive layer with the windshield knife.

**CAUTION:**
**● Keep knife edge along glass surface and end face.**
**● When first putting knife into layer of adhesive, select point with wide gap between body and glass.**

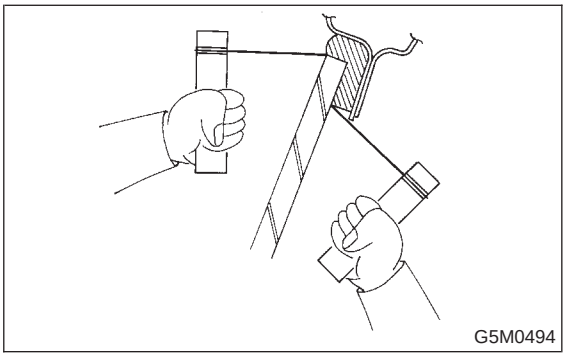



NOTE:
A matching pin is cemented to corners of glass on compartment side. Use a piano wire when cutting each pin.




### 2. USING PIANO WIRE

1) Remove wiper arm and cowl panel.
2) Remove roof molding and front window molding upper.
3) Remove glass:
(1) Put protective tape on body to prevent damage.
(2) Using drill or putty knife, make through-hole (one place) in adhesive agent.
(3) Pass piano wire through the hole from inside the compartment, and connect both ends of wire securely to wooden blocks.



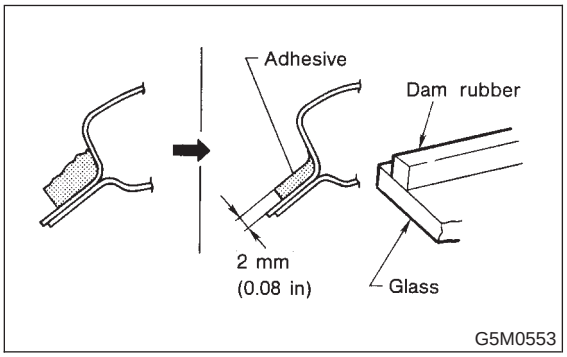

(4) Cut adhesive layer with the wire by pulling it back and forth.

**CAUTION:**
**When making through-hole into adhesive layer and cutting the adhesive, be careful not to damage interior and exterior parts.**

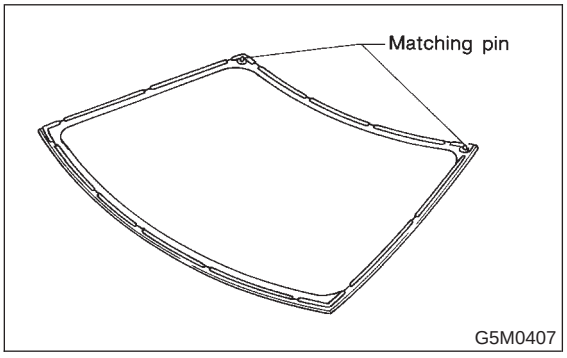
## B: INSTALLATION

1) After cutting layer of adhesive, remove gum rubber remaining on body.
2) Finishing adhesion surface on body side: Using a cutter knife etc., cut layer of adhesive sticking firmly to body, and finish it to a smooth surface of about 2 mm (0.08 in) in thickness.

**CAUTION:**
**Take extra care not to cause damage to body paint.**

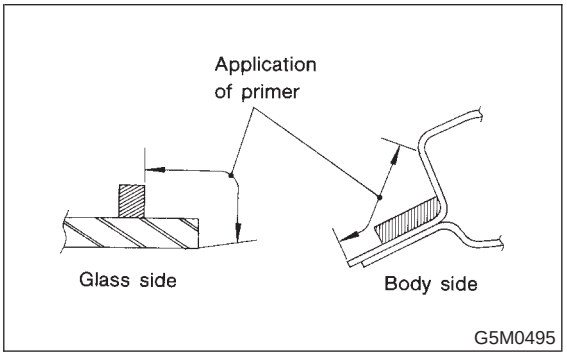



3) Cleaning body surface:
   (1) Thoroughly remove chips, dirt and dust from body surface.
   (2) Clean body wall surface and upper surface of layer of adhesive with a solvent such as alcohol or white gasoline.
4) Positioning glass:
   (1) Mount glass on body.
   (2) Adjust position of glass so that gap between body and glass is uniform on all sides.
   (3) Put matching pin on body and glass in several places.

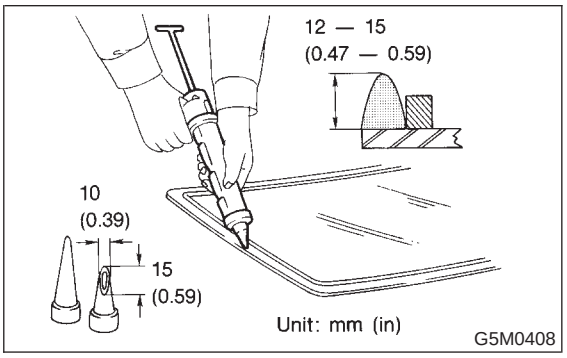



5) Cleaning glass:
   (1) Dismount glass from body.
   (2) Clean surface of glass to be adhered with alcohol or white gasoline.
6) Application of primer:
   (1) Using a sponge, apply primer to part of glass to be adhered.
   (2) Apply primer to part of body to be adhered.

**CAUTION:**
**● Primer is hard to wipe off of body paint, instrument panel, inner trim, etc. So put masking around these areas for protection.**
**● After application, let 1st primer dry spontaneously for about 10 minutes.**
**● Do not touch primer-coated surface under any circumstances.**

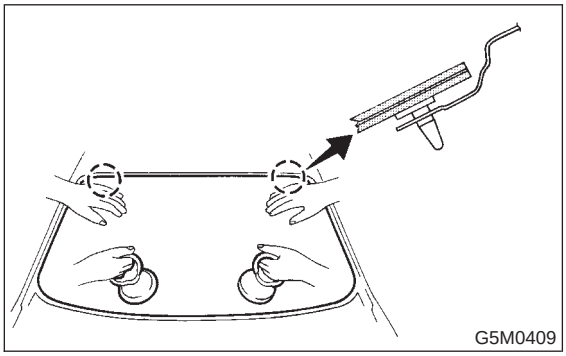



7) Application of adhesive:
   (1) Cut nozzle tip of cartridge as shown in figure.




   (2) Open cartridge and put it into a gun with nozzle attached.
   (3) Apply adhesive uniformly to all sides of adhesion surface while operating gun along glass end face.
8) Installation of glass:
   (1) Hold glass with rubber suction cups.

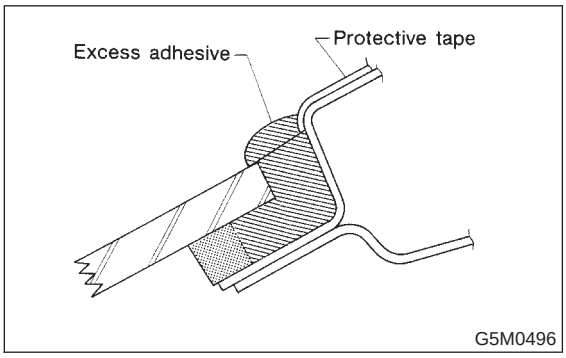
(2) Mount glass on body with matching pin aligned.




(3) Stick them fast by pressing all sides lightly.

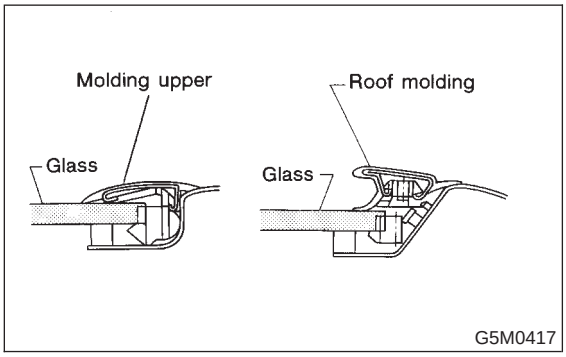
9) Installation of molding:

(1) Remove adhesive overflowing from outside of glass until it becomes level with outer height of glass. Then, add adhesive to portions that need it, and clean with alcohol or white gasoline.




(2) Firstly, press-fit front window molding upper and lastly, roof molding.

**CAUTION:**
**Do not open and close door after moldings have been installed. When opening and closing door for unavoidable reason, lower door glass and gently move door.**




10) Water leakage test:
Test for water leakage about one hour after installation.

**CAUTION:**
- **Move vehicle very gently.**
- **Do not squirt strong hose stream on vehicle.**

11) Spontaneous drying:
After completing all operations, leave vehicle alone for 24 hours.

**CAUTION:**
**When delivering vehicle to user, tell him that vehicle should not be subjected to heavy shocks for at least three days.**

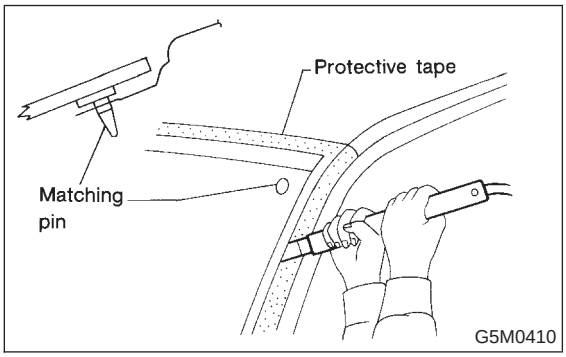
12) Install cowl panel and wiper arm.

# 6. Rear Window Glass

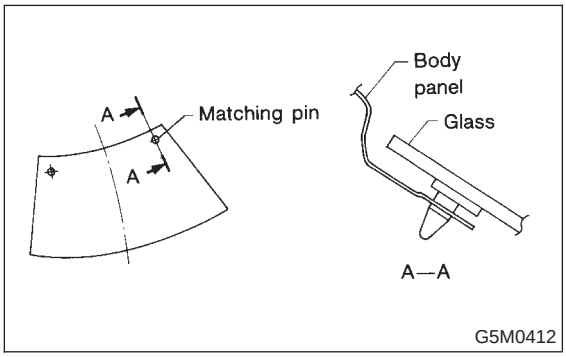
## A: REMOVAL

### 1. SEDAN AND COUPE MODEL

1) Remove roof molding.
2) Remove rear window molding upper and lower.
3) Disconnect connector from rear defogger terminal.
4) Remove glass in same manner as in windshield.




NOTE:
A matching pin is cemented to the corners of glass on compartment side. Use a piano wire when cutting each pin.



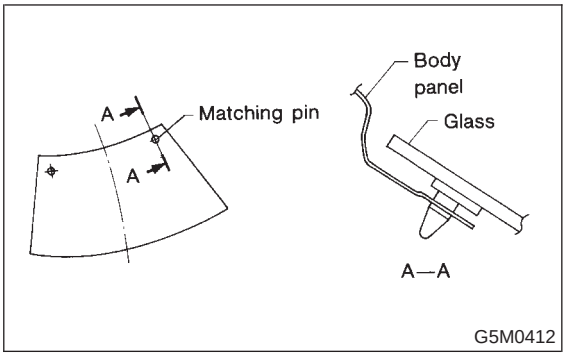

### 2. WAGON MODEL

NOTE:
It is impossible to remove the molding from the glass. If molding is broken, replace rear glass.

1) Remove rear wiper and rear gate trim.
2) Disconnect connector from rear defogger terminal.
3) Remove high mount stop light.
4) Remove glass in same manner as for windshield.

**CAUTION:**
**Be careful not to damage molding re-installing the old rear window glass using a piano wire.**

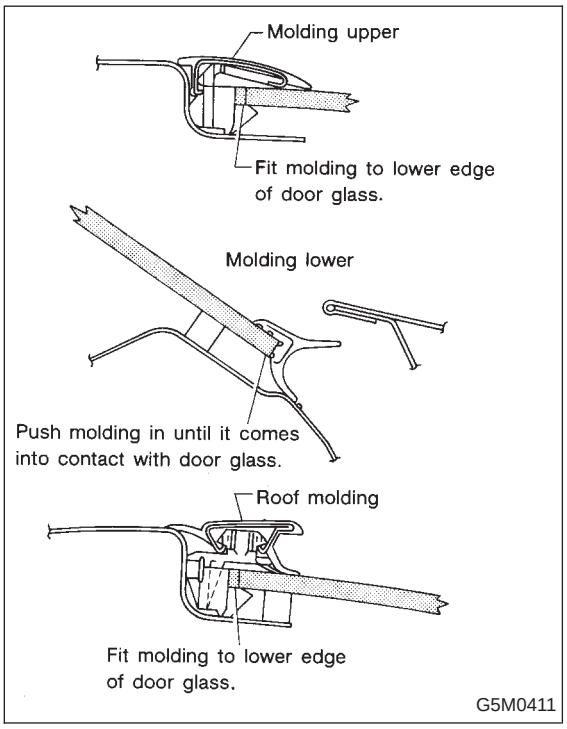
NOTE:
A matching pin is cemented to corners of glass on compartment side. Use a piano wire when cutting each pin.



## B: INSTALLATION

### 1. SEDAN AND COUPE MODEL

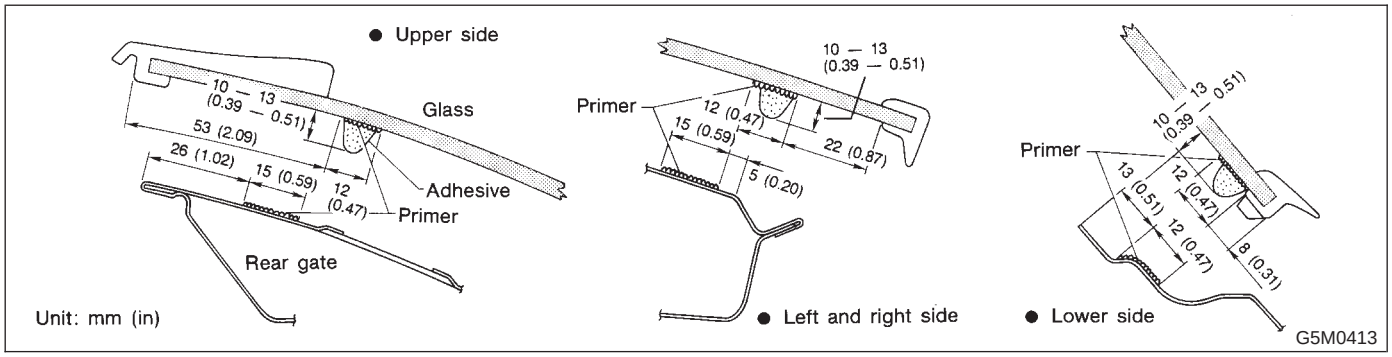
1) Install glass in same manner as in windshield.
2) Firstly, press-fit molding upper, then lower and lastly, roof molding.




3) After installation, test for water leakage after about one hour, and leave vehicle alone for 24 hours.
4) Make rear defogger connections.

### 2. WAGON MODEL

1) Install rear gate trim.
2) Install glass in same manner as windshield.



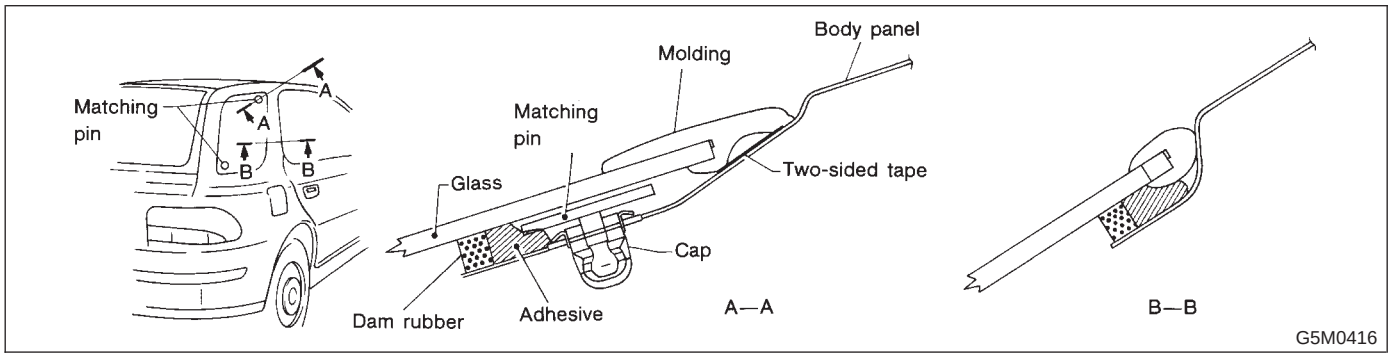

3) About one hour after installation, test for water leakage. Leave vehicle for 24 hours before using it.
4) Connect rear defogger connections.
5) Install high mount stop light and rear wiper.

# 7. Rear Quarter Glass

## A: REMOVAL

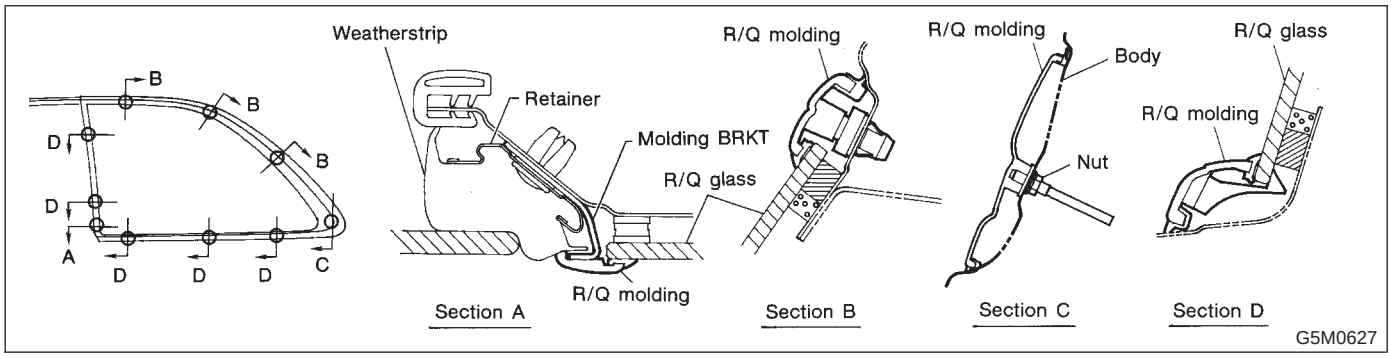
### 1. WAGON MODEL

1) Remove rear quarter molding on corner.
2) Remove glass in same manner as in windshield.

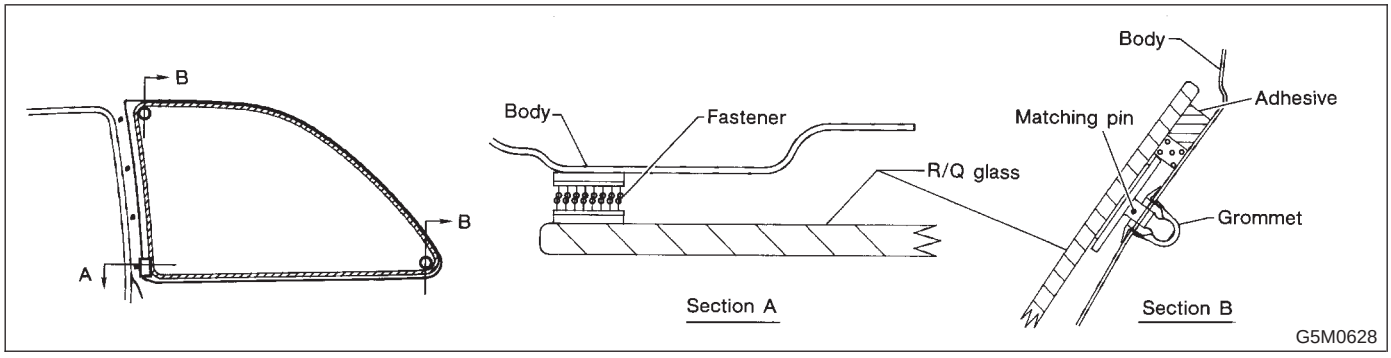



### 2. COUPE MODEL

1) Remove rear quarter molding.




2) Remove glass in same manner as in windshield.

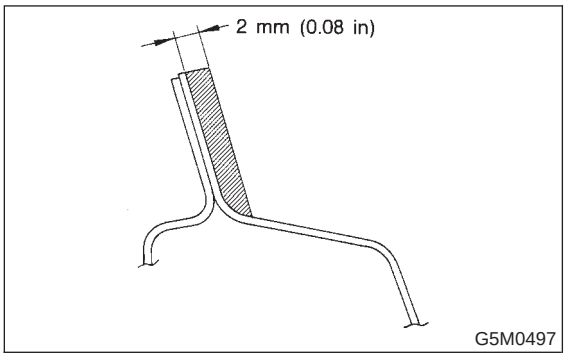


## B: INSTALLATION

### 1. WAGON MODEL

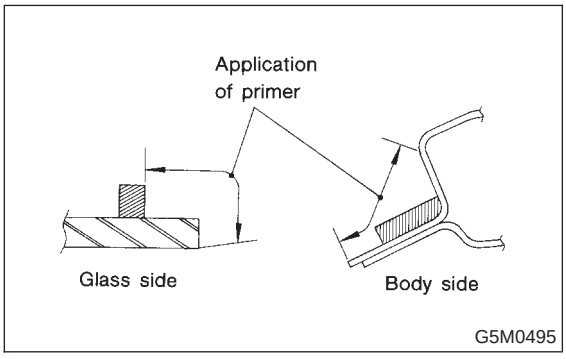
1) Finish surface of adhesive layer on body: Using a putty knife, etc., cut layer of adhesive stick firmly to body and finish it into a smooth surface of about 2 mm (0.08 in) in thickness.

**CAUTION:**
**Be careful not to damage body finish.**

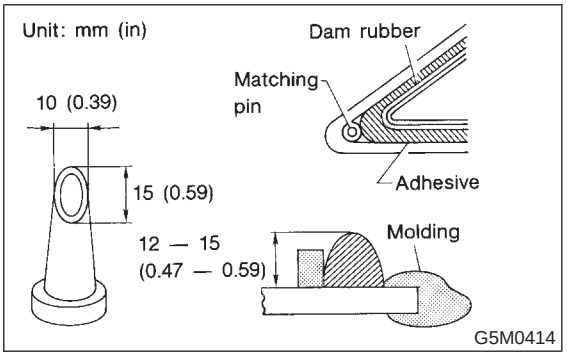



2) Cleaning of body surface:
   (1) Remove chips, dirt and dust from body surface.
   (2) Clean body wall surface and upper surface of adhesive layer with a solvent such as alcohol or white gasoline.
3) Cleaning glass:
   (1) Remove dirt and dust from surface of glass to be adhered.
   (2) Clean surface of glass to be adhered with alcohol or white gasoline.
4) Application of primer:
   (1) Using a sponge, apply primer to surface of glass to be adhered.
   (2) Apply primer to surface of body to be adhered.

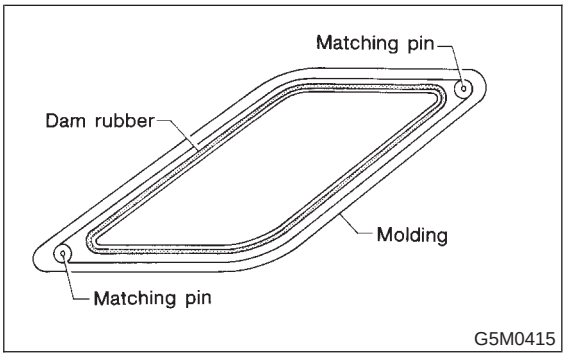
**CAUTION:**
**● If primer has dropped on body finish, it is hard to wipe it off. So protect with masking.**
**● Primer must not project from black frame of glass.**
**● After applying primer, let it dry spontaneously for about 10 minutes.**




5) Application of adhesive:
   (1) Cut nozzle tip as shown in figure.




   (2) Open cartridge and put it into a gun with nozzle attached.
   (3) Apply adhesive uniformly to all sides of adhesion surface while operating gun along glass end face.
6) Installation of glass:
   (1) Hold glass with rubber suction cups.
   (2) Mount glass on body with matching pin aligned.




   (3) Stick them fast by pressing all sides lightly.
7) Water leakage test:
After installing glass, test for water leakage after about one hour.

**CAUTION:**
**● Move vehicle slowly.**
**● When opening and closing door, lower door glass and move door gently.**
**● Do not squirt strong hose stream on vehicle.**

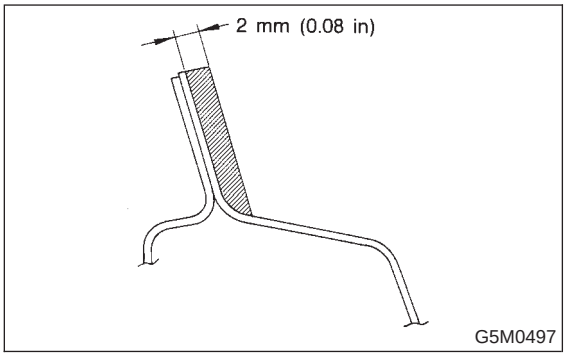
8) Spontaneous drying:
After completing all operations, leave vehicle alone for 24 hours.

**CAUTION:**
**When delivering vehicle to user, tell him or her that vehicle should not be subjected to heavy shocks for at least three days.**

## 2. COUPE MODEL

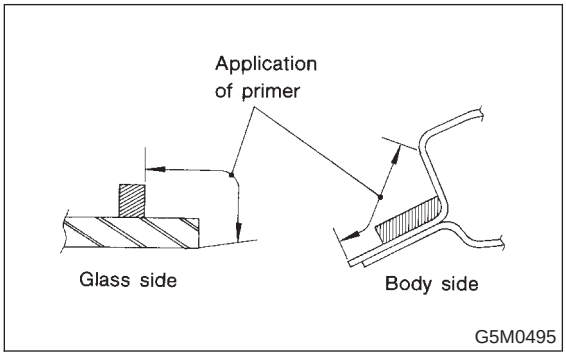
1) Finish surface of adhesive layer on body: Using a putty knife, etc., cut layer of adhesive stick firmly to body and finish it into a smooth surface of about 2 mm (0.08 in) in thickness.

**CAUTION:**
**Be careful not to damage body finish.**

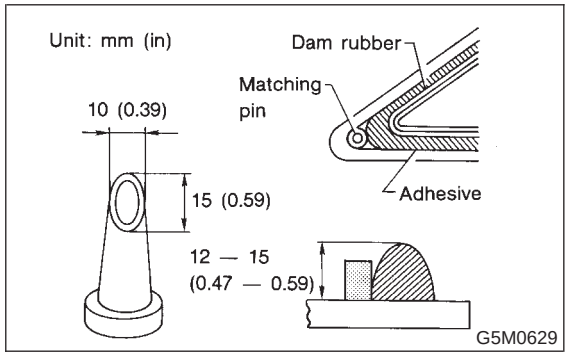



2) Cleaning of body surface:
   (1) Remove chips, dirt and dust from body surface.
   (2) Clean body wall surface and upper surface of adhesive layer with a solvent such as alcohol or white gasoline.
3) Cleaning glass:
   (1) Remove dirt and dust from surface of glass to be adhered.
   (2) Clean surface of glass to be adhered with alcohol or white gasoline.
4) Application of primer:
   (1) Using a sponge, apply primer to surface of glass to be adhered.
   (2) Apply primer to surface of body to be adhered.

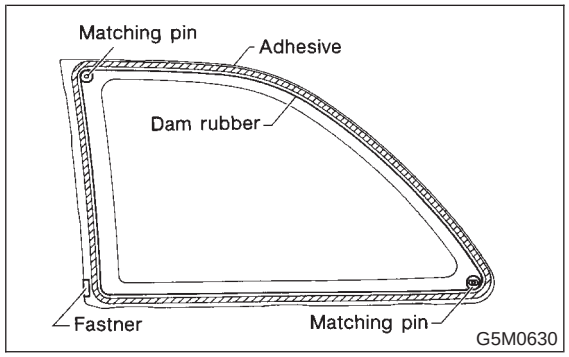
**CAUTION:**
**● If primer has dropped on body finish, it is hard to wipe it off. So protect with masking.**
**● Primer must not project from black frame of glass.**
**● After applying primer, let it dry spontaneously for about 10 minutes.**




5) Application of adhesive:
   (1) Cut nozzle tip as shown in figure.




   (2) Open cartridge and put it into a gun with nozzle attached.
   (3) Apply adhesive uniformly to all sides of adhesion surface while operating gun along glass end face.
6) Installation of glass:
   (1) Hold glass with rubber suction cups.
   (2) Mount glass on body with matching pin aligned.



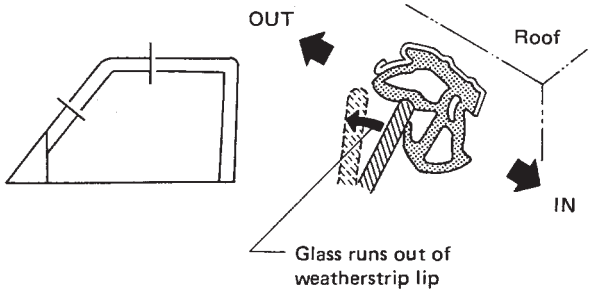
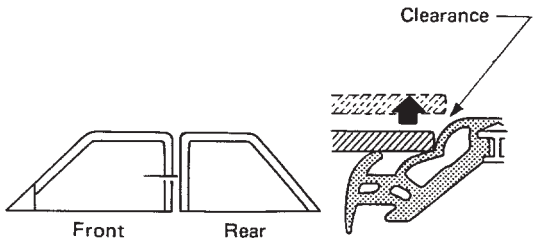
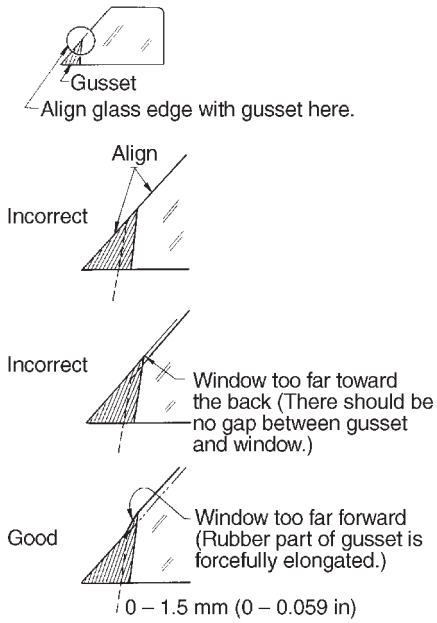

   (3) Stick them fast by pressing all sides lightly.
7) Water leakage test:
After installing glass, test for water leakage after about one hour.

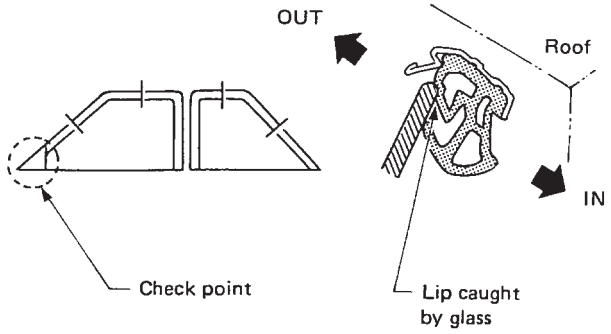
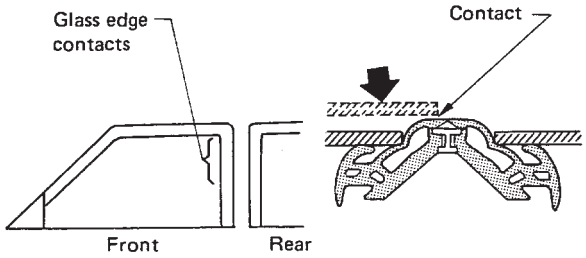
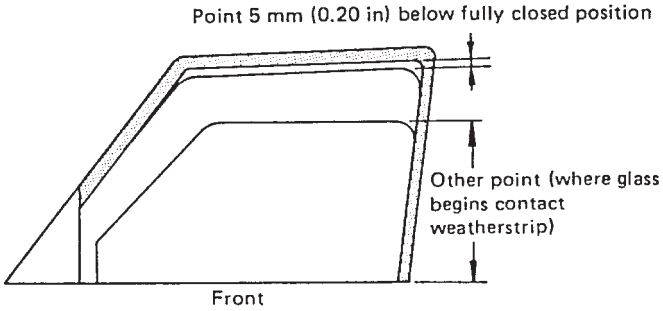
**CAUTION:**
**● Move vehicle slowly.**
**● When opening and closing door, lower door glass and move door gently.**
**● Do not squirt strong hose stream on vehicle.**

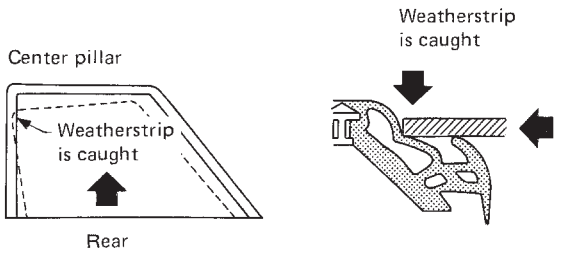
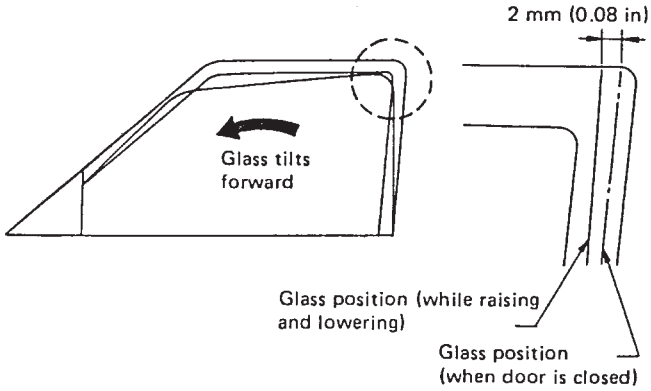
8) Spontaneous drying:
After completing all operations, leave vehicle alone for 24 hours.

**CAUTION:**
**When delivering vehicle to user, tell him or her that vehicle should not be subjected to heavy shocks for at least three days.**

# 1. Door Glass

| | Condition | Apparent cause/Correction |
|---|---|---|
| Glass in fully closed position | 1) Glass runs out of weatherstrip lip when considerable hand pressure is applied to it from inside.<br>  <br>G5M0502<br>(This condition may cause wind/booming noise during high-speed operation.) | ● Insufficient upward travel of glass<br>Increase upward travel of glass. |
| | 2) Clearance exists between glass and weatherstrip when light hand pressure is applied to it at center and rear pillar locations.<br>  <br>G5M0503<br>(This condition may cause wind noise and/or water leakage.) | ● Insufficient glass-to-door weatherstrip contact<br>Check stabilizer and glass for proper contact.<br>Increase contact using upper sash adjustment bolt.<br>● Insufficient glass-to-door weatherstrip contact<br>Check stabilizer and glass for proper contact.<br>Increase contact using upper sash adjustment bolt. |
| | 3) Adjust door glass so that it is aligned with door rearview mirror gusset<br>  <br>H5M0672A | ● Window is not properly adjusted in up-down/fore-aft direction. Adjust window. If necessary, move “B” channel for regulator to eliminate window “tilt”.<br>● Gusset is not properly adjusted in fore-aft direction. Adjust gusset after loosing all bolts and nuts witch tightening it. |

| | Condition | Apparent cause/Correction |
|---|---|---|
| Door in fully closed/ open position | 1) Glass rides over weatherstrip lip when door is closed.<br>  <br><br>G5M0505<br>(This condition increases wind/booming noise, leakage and/or effort required to close door.) | ● Improper up-down and in-out glass alignments<br>Adjust glass for up-down and in-out alignments (incl. rear sash, upper stopper adjustment, etc.). If necessary, correct glass tilt by moving regulator “B” channel. |
| | 2) Edge of glass contacts retainer when door is fully closed.<br>  <br><br>G5M0506 | ● Improper glass-to-center pillar weatherstrip or excessive glass contact to weatherstrip<br>Excessive adjusting in contact to weatherstrip causes rear edge of glass to tilt inboard closer to center pillar. Adjust rear sash adjustment bolt to reduce glass contact to weatherstrip. |
| Raise or lower window glass | 1) Considerable effort or time is required to operate regulator.<br>Standard operating effort:<br>● Entire up-down travel except for point 5 mm (0.20 in) below fully closed position: 29.4 N (3.0 kg, 6.6 lb)<br>● Point 5 mm (0.20 in) below fully closed position: 45.0 N (4.5 kg, 10.12 lb)<br>  <br><br>G5M0507 | ● Sliding resistance increased due to high stabilizer-to-glass contact pressure<br>Reduce contact by mounting inner stabilizer to inside of the car.<br>● High glass-to-windshield contact pressure<br>Reduce contact using upper sash adjustment bolt.<br>● Unequal contact adjustment stroke between front and rear sashes<br>Set to equal stroke.<br>● Tilt of rear sash adjustment bolt mounting bracket<br>Correct tilt of bracket so it is parallel to inner panel. |

| | Condition | Apparent cause/Correction |
|---|---|---|
| Raise or lower window glass | 2) Center pillar weatherstrip is caught by rear window glass when glass is raised.<br>  <br><br>G5M0508 | ● Improper fore-aft or in-out alignment of window glass<br>Lower regulator “B” channel to tilt window glass back. |
| | 3) Glass tilts forward by more than 2 mm (0.08 in).<br>  <br><br>G5M0509<br>(Excessive tilt of glass forward is due to excessive glass “contact” which causes reaction of center pillar weatherstrip.) Glass can be tilted forward due to increase in reaction of shoulder weatherstrip or free play between sash and roller. Taking these symptoms into account, glass should be aligned. | ● Excessive glass contact pressure or improper in-out alignment<br>1) Lower regulator “B” channel to tilt glass rearward.<br>2) Reduce contact pressure using upper sash adjustment bolt. |

## 2. Door Lock System

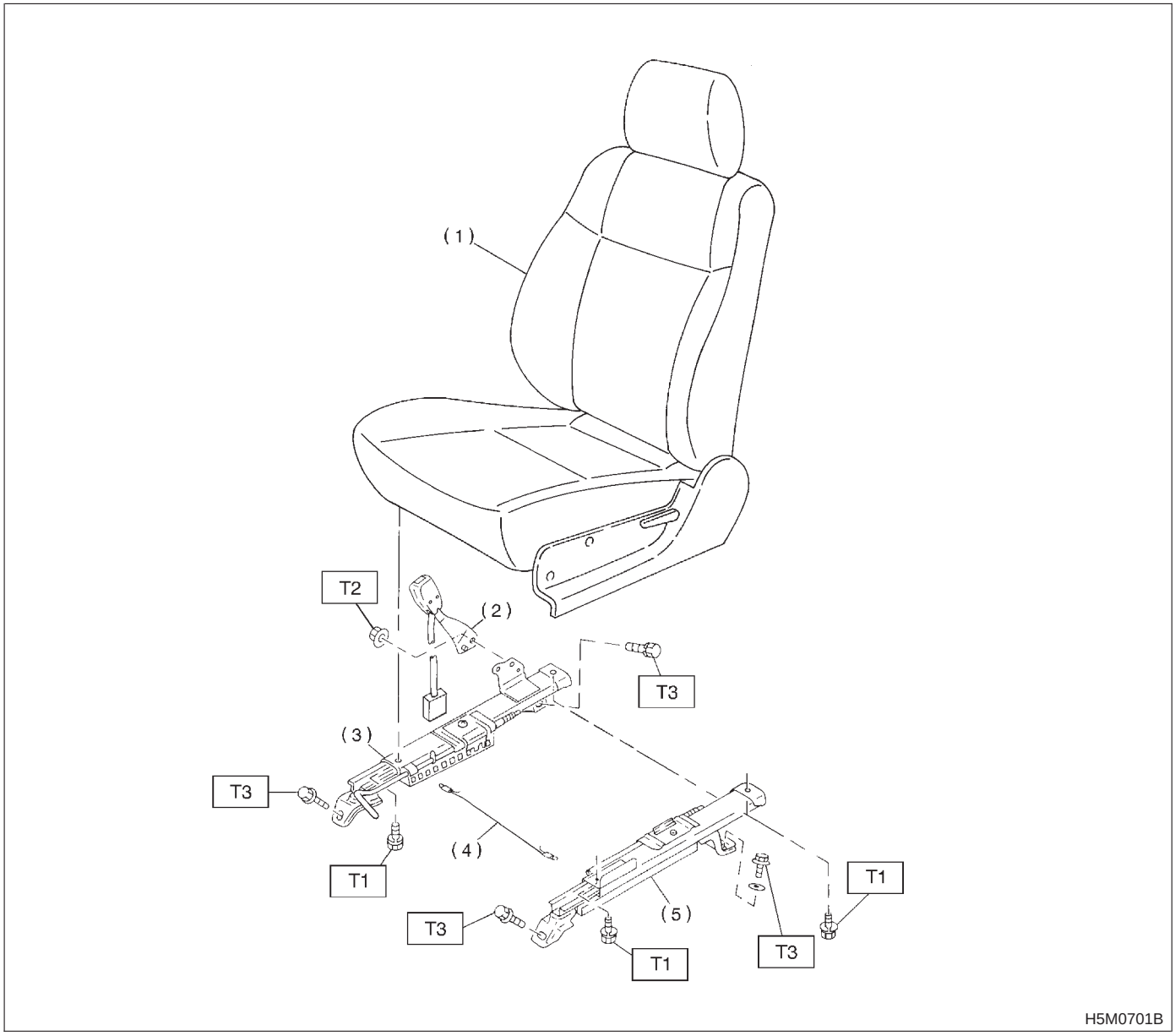
| No. | Trouble | Possible cause | Remedy |
|---|---|---|---|
| 1 | Door cannot be opened by outer handle. (Door can be opened by inner handle.) | Disconnect outer handle rod. | Connect firmly. |
| 2 | Door cannot be opened by inner handle. (Door can be opened by outer handle.) | a. Joint of upper rod is disconnected.<br>b. Rear door child lock lever is set to lock side. | Connect firmly. Functionally normal. |
| 3 | Door does not open when outer or inner handle is operated with inner lock knob set to unlock position. | a. Joint of lower rod is disconnected.<br>b. Lock is not released due to improper adjustment of lower rod. | Connect firmly. Remove rod from latch. Adjust rod so that lock knob is set in “lock” position is locked. |
| 4 | Door opens even when inner lock knob is set to lock position. (Keyless locking is impossible.) | a. Lower rod joint is separated.<br>b. Door is not locked due to improperly adjusted lower rod. | Same as a in No. 3. Same as a. in No. 3. |
| 5 | Child lock lever will not come up. | a. Inner handle fails to return completely.<br>b. Joint of upper rod is disconnected. | Refer to No. 6. |
| 6 | Inner handle stops halfway. | Contact of upper rod with inner handle mounting case. | Eliminate contact by bending upper rod properly. |
| 7 | Door cannot be locked or unlocked by key. | Joint of key lock rod is disconnected. | Connect firmly. |
| 8 | Auto door-lock switch does not act when inner lock knob is pushed. | Auto door-lock switch does not act due to improperly adjusted lower rod. | Same as a. in No. 3. |

## 3. Power Window

| | Symptom | | | |
|---|---|---|---|---|
| | All windows do not move. | The window of driver side does not move. | The window of driver side does not move “AUTO” down. | The window of each passenger sides does not move. |
| Battery | (1) | | | |
| Fuse in fuse box | (2) | | | |
| Circuit breaker and relay | (3) | | | |
| Main switch | (4) | (1) | (1) | (1) |
| Sub switch of each passenger sides | | | | (2) |
| Motor of driver side | | (2) | (2) | |
| Motor of each passenger sides | | | | (3) |
| Regulator assembly of each windows | | | | (4) |
| Power supply line of main switch | (5) | (3) | (3) | |
| Ground line | (6) | | | |
| Haness and connector | (7) | (4) | (4) | (5) |
| ( ): Figures in a parenthesis refer to diagnostics procedures. | | | | |

**MEMO:**

# 1. Front Seat

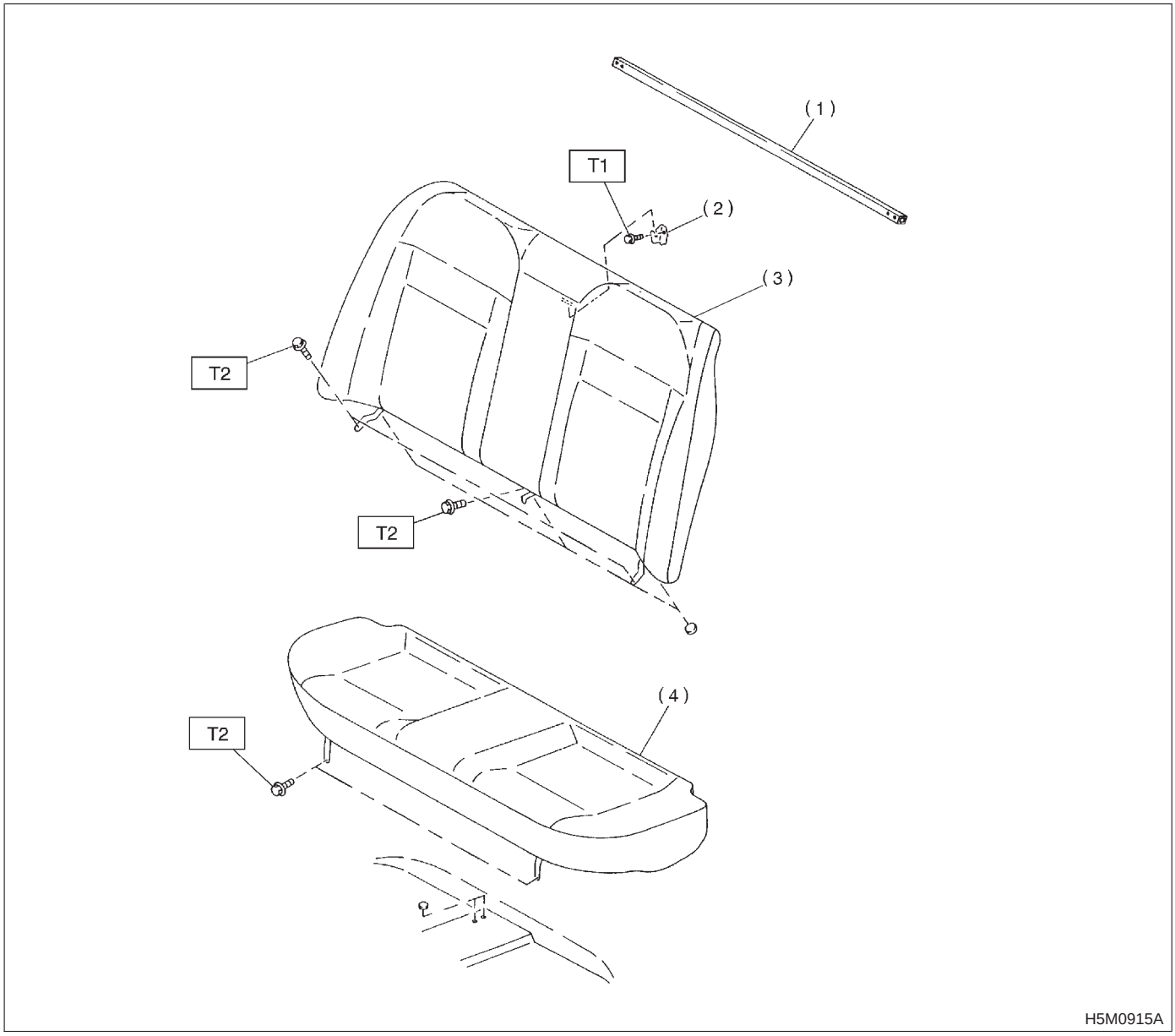



(1) Front seat ASSY
(2) Inner belt ASSY
(3) Inner slide rail ASSY
(4) Connect wire
(5) Outer slide rail ASSY

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 23±5 (2.3±0.5, 16.6±3.6)***
***T2: 29±7 (3.0±0.7, 21.7±5.1)***
***T3: 52±10 (5.3±1.0, 38±7)***

# 2. Rear Seat

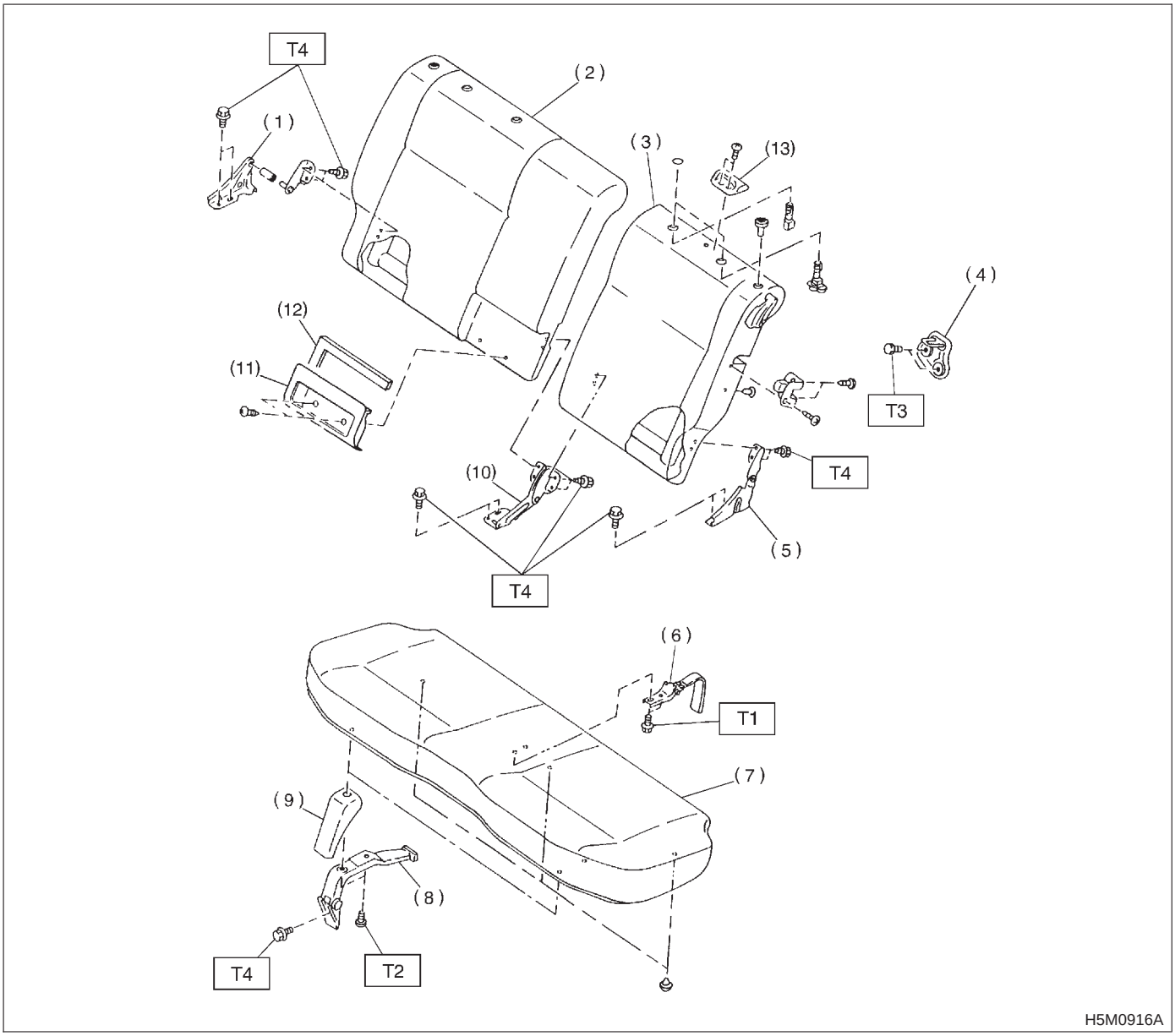
## A: SEDAN AND COUPE MODEL




(1) Rear seat reinforcement
(2) Hook
(3) Backrest
(4) Rear cushion

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 10±3 (1.0±0.3, 7.2±2.2)***
***T2: 25±7 (2.5±0.7, 18.1±5.1)***

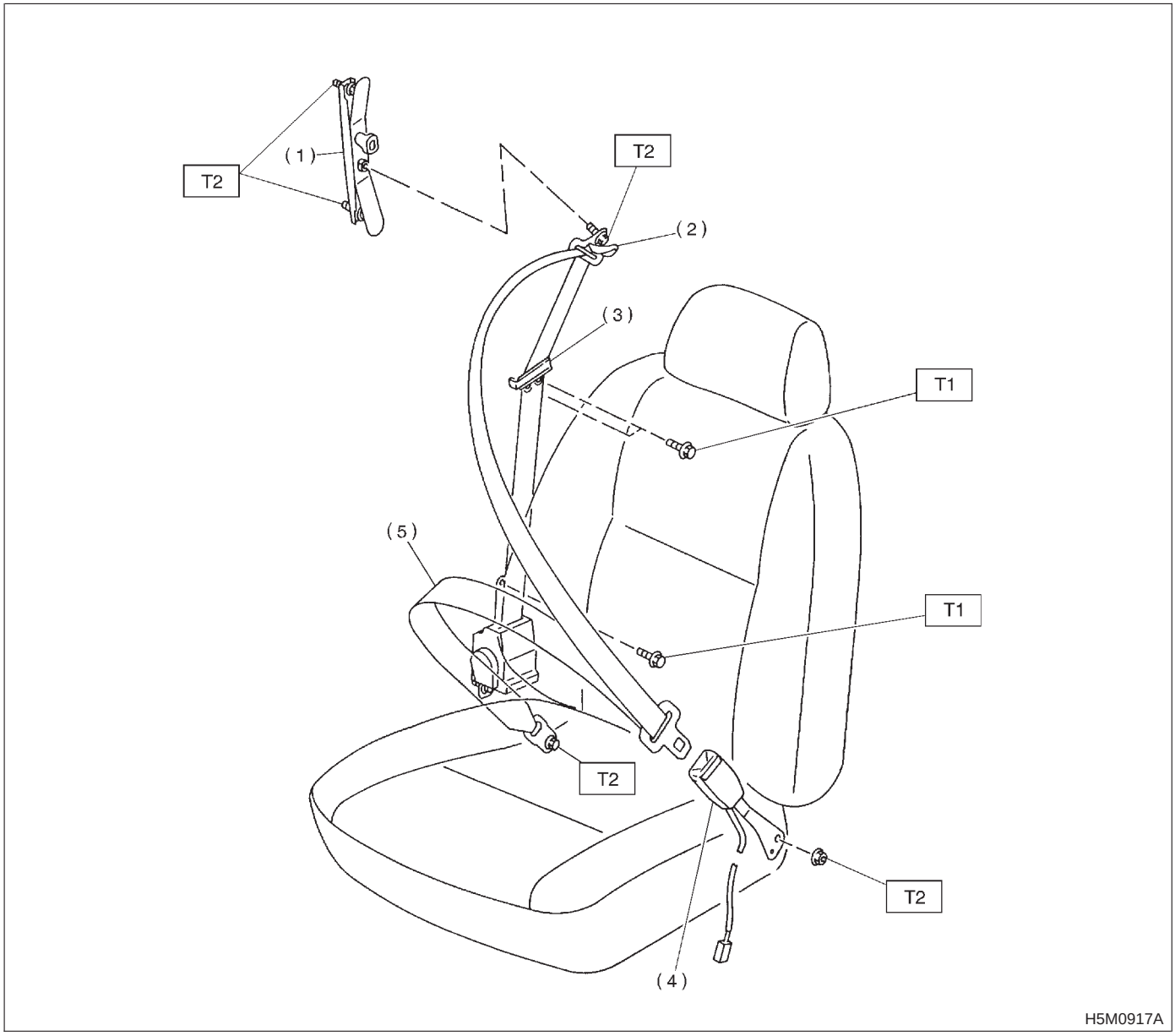
## B: WAGON MODEL




(1) Hinge bracket (RH)
(2) Hinge bracket (RH)
(3) Backrest (LH)
(4) Striker
(5) Hinge bracket (LH)
(6) Lock hinge
(7) Rear cushion
(8) Hinge
(9) Hinge cover
(10) Backrest center hinge
(11) Belt pocket
(12) Pad ASSY pocket
(13) Hook

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 2±1 (0.2±0.1, 1.4±0.7)***
***T2: 5.9±1.5 (0.6±0.15, 4.3±1.1)***
***T3: 10±3 (1.0±0.3, 7.2±2.2)***
***T4: 25±7 (2.5±0.7, 18.1±5.1)***

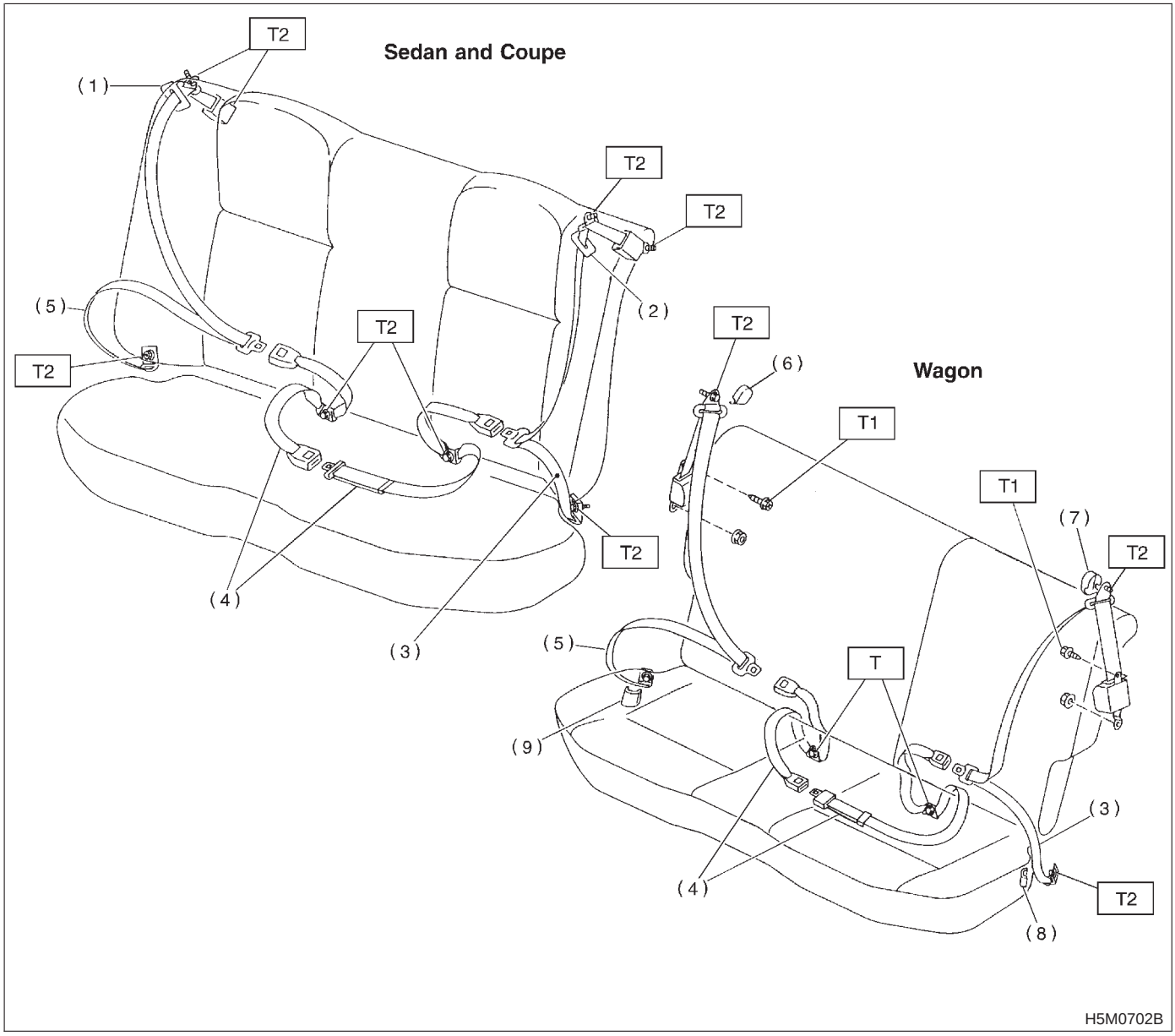
# 3. Front Seat Belt




(1) Adjuster anchor ASSY
(2) Through cover
(3) Webbing guide
(4) Inner belt ASSY
(5) Outer belt ASSY

***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 13±3 (1.3±0.3, 9.4±2.2)***
***T2: 35±13 (3.6±1.3, 26±9)***

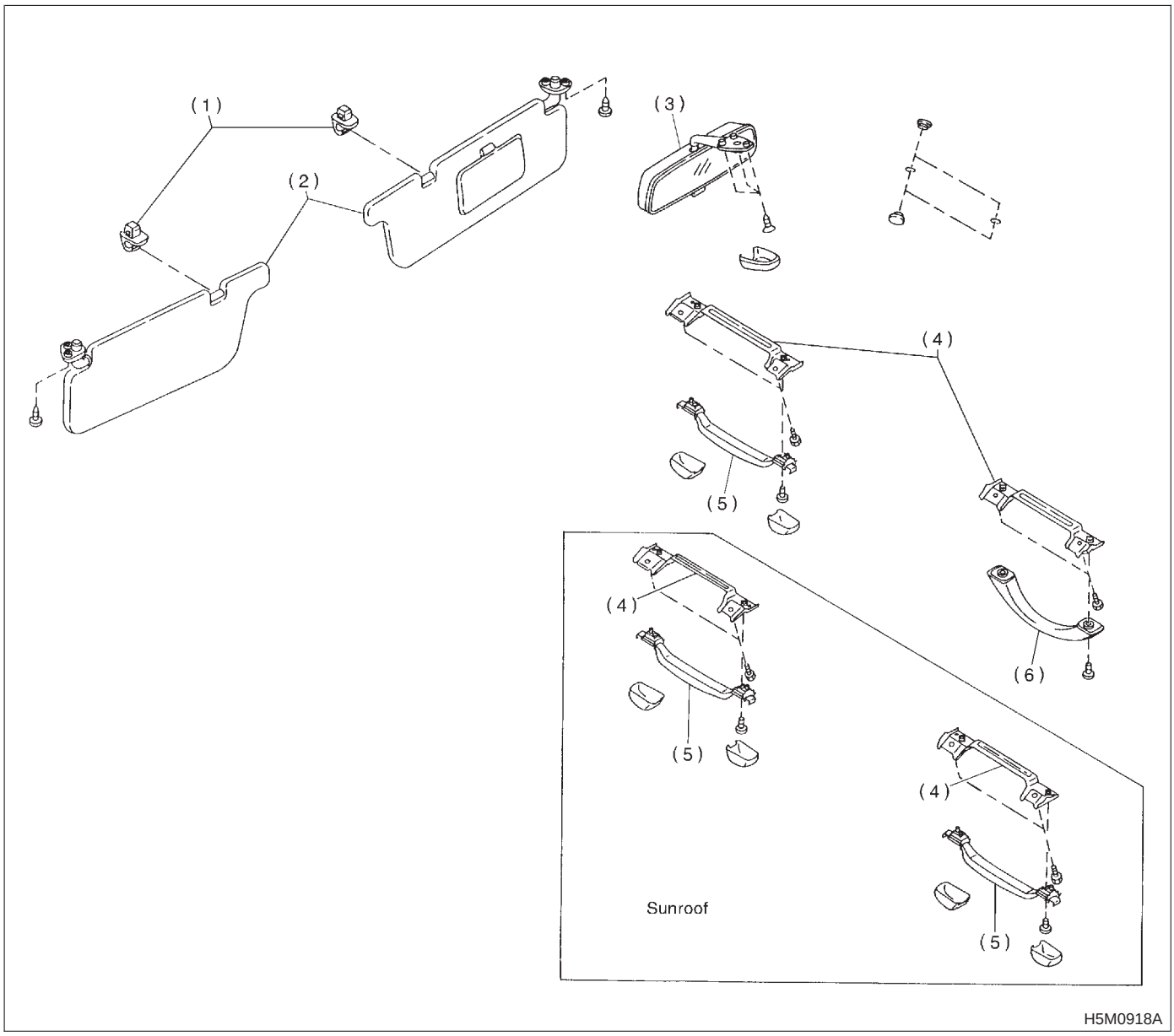
# 4. Rear Seat Belt




(1) Webbing cover (RH)
(2) Webbing cover (LH)
(3) Outer seat belt (LH)
(4) Center seat belt
(5) Outer seat belt (RH)
(6) Through cap (RH)
(7) Through cap (LH)
(8) Lap anchor cover (LH)
(9) Lap anchor cover (RH)

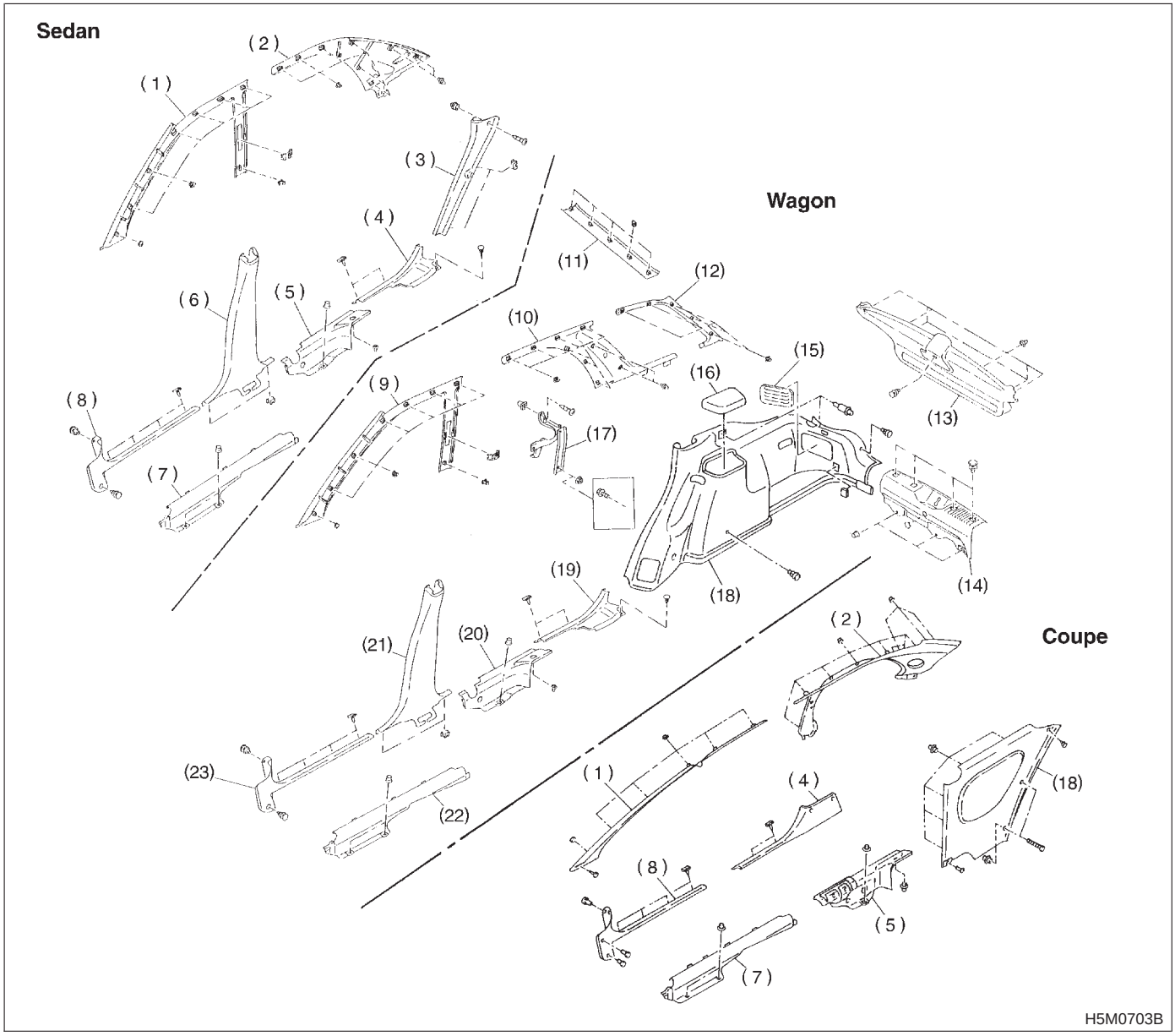
***Tightening torque: N·m (kg-m, ft-lb)***
***T1: 13±3 (1.3±0.3, 9.4±2.2)***
***T2: 35±13 (3.6±1.3, 26±9)***

# 5. Inner Accessories




(1) Hook
(2) Sun visor
(3) Rearview mirror
(4) Assist rail bracket
(5) Assist grip (retractable)
(6) Assist grip (fixed)

# 6. Inner Trim

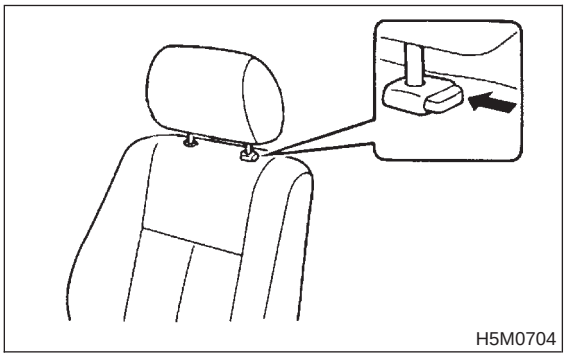



(1) Front pillar upper trim
(2) Rear pillar upper trim
(3) Rear pillar lower trim
(4) Side sill rear upper cover
(5) Side sill rear lower cover
(6) Center pillar lower trim
(7) Side sill front lower cover
(8) Front pillar lower trim
(9) Front pillar upper trim
(10) Rear quarter upper front trim
(11) Rear rail trim
(12) Rear quarter upper rear trim
(13) Rear gate trim
(14) Rear skirt trim
(15) Lamp cover
(16) Cover
(17) Trim bracket
(18) Rear quarter lower trim
(19) Side sill rear upper cover
(20) Side sill rear lower cover
(21) Center pillar lower trim
(22) Side sill front lower cover
(23) Front pillar lower trim

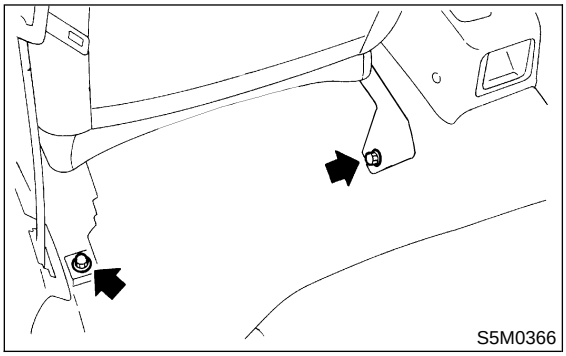
# 1. Front Seat

## A: REMOVAL

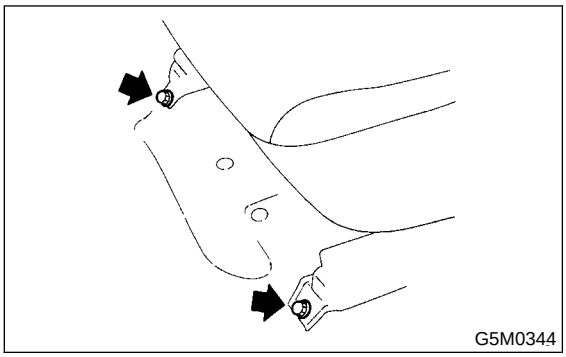
1) While operating button (located on top of backrest), lift headrest out with hand placed between backrest and headrest.




2) Pull reclining lever back to fold backrest all the way forward. While pulling slide adjuster lever, move seat all the way forward.
3) Remove bolt cover at rear end of slide rail.
4) Remove bolts securing seat rear.




5) While pulling slide adjuster lever, slide seat all the way back.
6) Remove bolts securing front of seat.

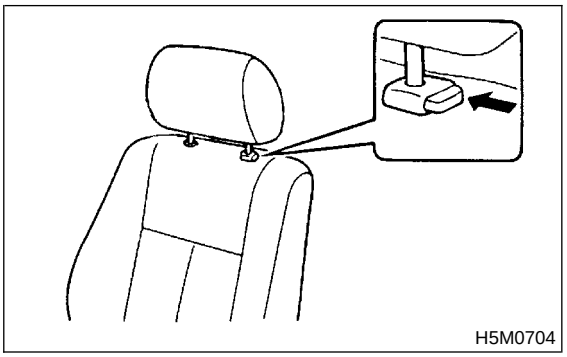



7) Remove front seat from vehicle.

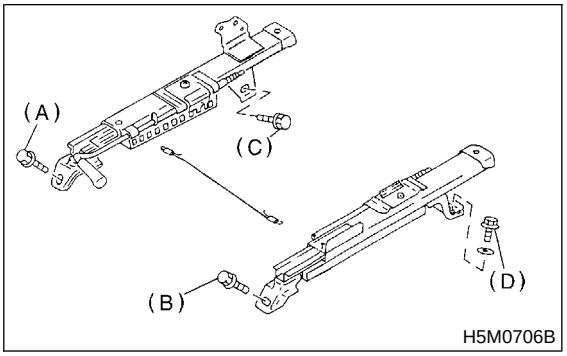
**CAUTION:**
**Be careful not to scratch seat when removing it from vehicle.**

## B: INSTALLATION

1) While operating button (located on top of backrest), lift headrest out by placing your hand between backrest and headrest.




2) Pull reclining lever back to fold backrest all the way forward. Pull slide adjuster lever and move lower slide rail all the way backward.
3) Position seat in compartment and align the holes on the seat with the holes on the car body side.
4) Secure the front of seat using inward and outward bolts (A) and (B) in that order.
5) While pulling slide adjuster lever, move seat all the way forward.
6) Secure the rear of seat using inward and outward bolts (C) and (D).




7) Connect connector under driver's seat.

**CAUTION:**
**Check that all lock plate pawls are completely and equally inserted into the holes in the slide rail brackets.**

8) After installation, ensure that all mechanisms operate properly and lock.
9) If any mechanism does not function properly, loosen bolts (C) and (D), slide seat as required, insert all lock plate pawls into holes in slide rail brackets, and tighten bolts (C) and (D) in that order.
10) Install bolt cover on rear end of slide rail.
11) Install headrest on backrest.

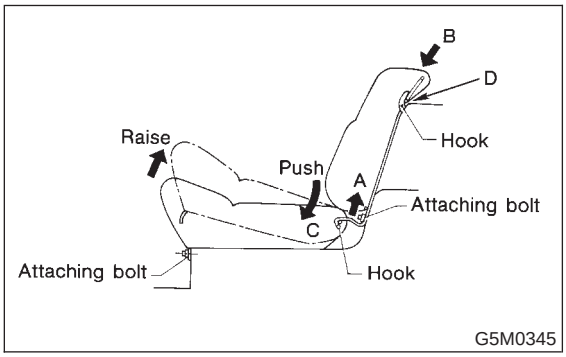
NOTE:
Tighten bolts in the designated order.

# 2. Rear Seat

## A: REMOVAL

### 1. SEDAN AND COUPE MODEL

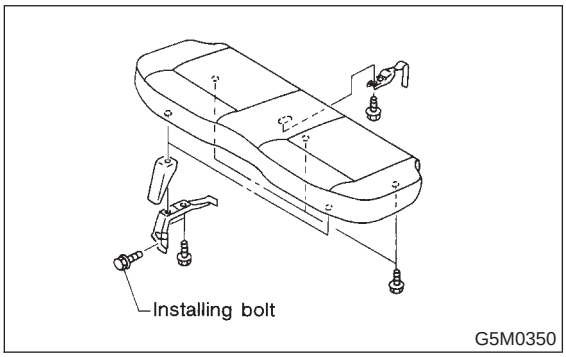
1) Remove bolts securing hinges (located at front of cushion) to body.
2) Slightly raise front of cushion while pushing down on cushion in the direction of “C”. With cushion held in that position, move it forward until it is unhooked.



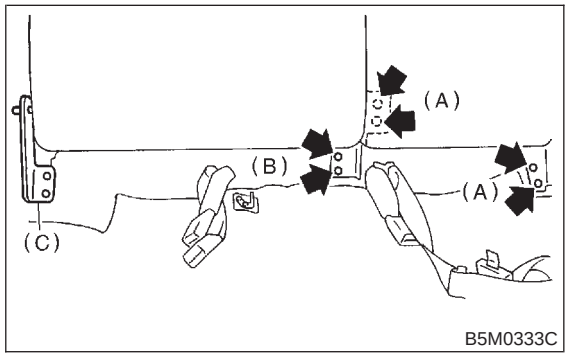

3) Remove bolts securing lower portion of backrest to body.
4) Lift rear seat backrest in direction “A” until it is released from upper hooks.

### 2. WAGON MODEL

1) Remove bolts securing hinges (located at front of seat) to body.




2) Pull strap (located in middle rear portion of cushion) to release lock. Lift cushion out and away from body.
3) Pull knobs (located at each side of backrest’s upper portion) up to release lock, and fold backrest all the way forward.
4) Remove the bolt and then remove backrest (LH side).
5) Remove the bolt and then remove backrest (RH side) from hinge bracket.

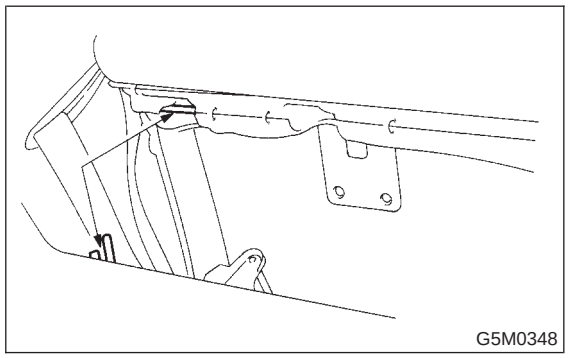



(A) Bolt (LH side)
(B) Bolt (Rh side)
(C) Hinge bracket

## B: INSTALLATION

### 1. SEDAN AND COUPE MODEL

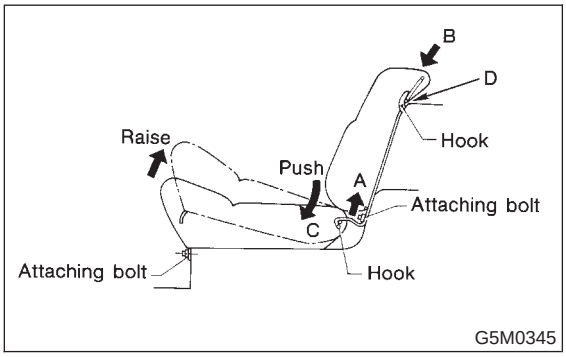
1) Before installing backrest, ensure that trim panel, insulator and seat belt are properly installed.
2) Transfer outer seat belt webbing to front of backrest and fold backrest forward. Attach seat belt webbing to upper hooks (2 places), and move pillow in the direction of “B” until backrest is aligned with lower mounting holes in body.




3) Secure lower center and both sides of backrest to body with bolts.

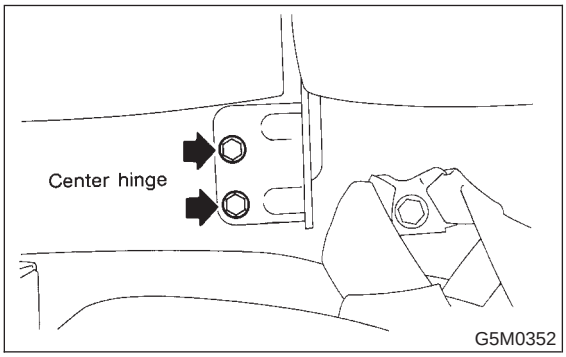
4) Slightly raise front section of cushion while pushing down on cushion in the direction of “C”. With cushion held in that position, attach rear section of cushion to hooks at lower frame location.
5) Secure front of cushion to body with bolts.

**CAUTION:**
**● Before installing seat, ensure that seat belt is placed on cushion.**
**● Confirm that winding of three-point type seat belt can operate regularly.**



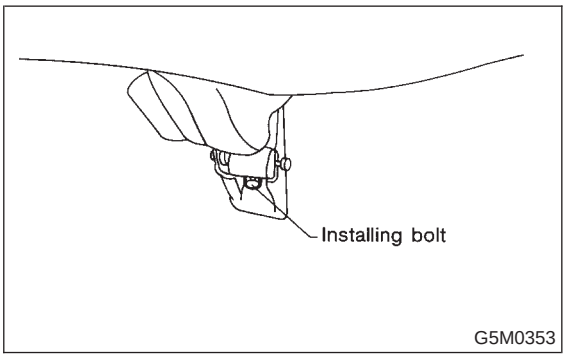

## 2. WAGON MODEL

1) Install hinge bracket to body.
2) Insert right backrest hinge pin into hole in bracket. Tilt backrest backward until striker engages with lock.
3) Secure right backrest center hinge to body using a bolt.




4) Temporarily install left backrest side hinge to body using a bolt, and fold backrest forward to the floor.
5) Roll up mat (located at rear of left backrest), and install center hinge using a bolt.
6) Tilt left backrest until striker engages with lock, and tighten bolt.

7) Install hinges to front of cushion and tighten with bolts. Check that lock properly engages.




8) Fold backrest onto cushion and overlap trunk mat and mat at rear of backrest.

**CAUTION:**
**● Do not allow center seat belt to get under cushion when folding cushion.**
**● Ensure that side seat belt tongue is free from cushion and trim panel.**
**● Lift front of cushion to ensure that cushion is properly locked.**

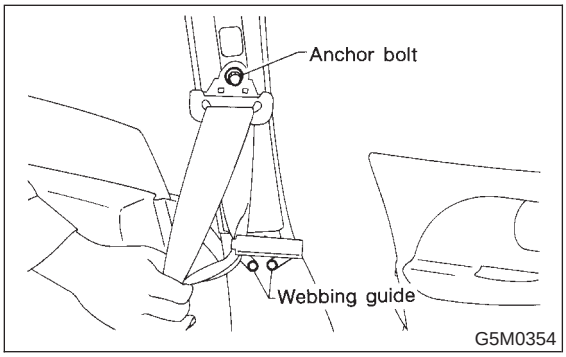
# 3. Front Seat Belt

## A: REMOVAL AND INSTALLATION

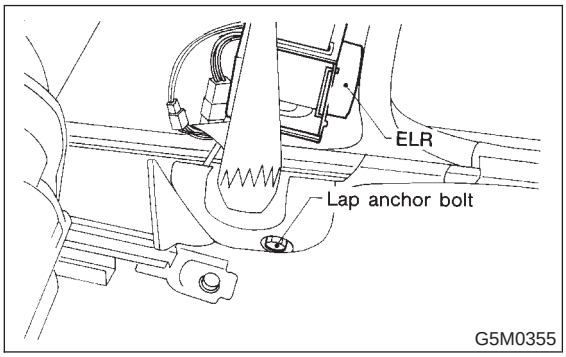
**WARNING:**
**Replace front seat belt worn by occupants of a vehicle that has been in a serious accident. The entire assembly should be replaced even if damage is not obvious.**

### 1. OUTER BELT (SEDAN AND WAGON)

1) Remove through-anchor cover cap.
2) Remove shoulder anchor bolt.
3) Remove webbing guide.




4) Remove center lower pillar trim panel.
5) Remove front cover side plate.
6) Roll up floor mat at the bottom of center pillar.
7) Remove lap anchor bolt.

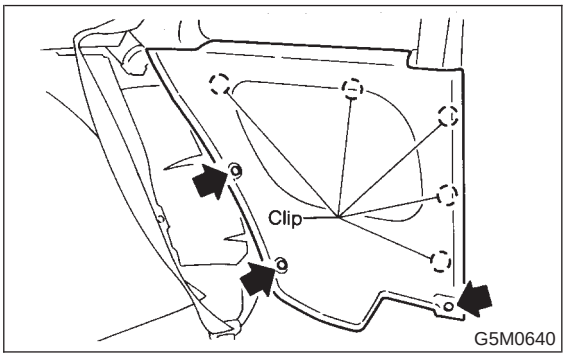



8) Remove belt retractor and outer belt.
9) Installation is in the reverse order of removal.

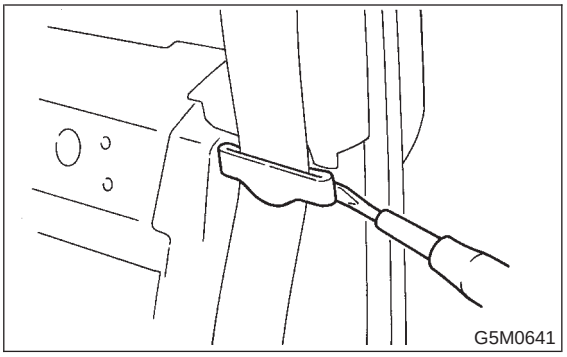
**CAUTION:**
**● The left and right ELR's are not mutually interchangeable because different sensors are used.**
**● Be careful not to twist belts during installation.**

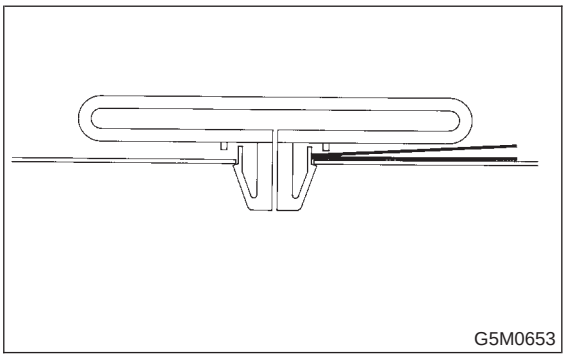
### 2. OUTER BELT (COUPE)

1) Remove rear seat cushion and backrest.
<Ref. to 5-3 [W2A1].>
2) Remove rear quarter trim.



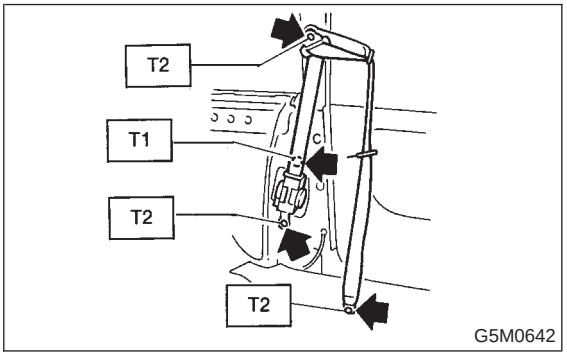

3) Remove webbing guide.




4) Remove anchor cover cap.
5) Remove four bolts and then belt retractor and outer belt. Tightening torque:
6) Installation is in the reverse order of removal.

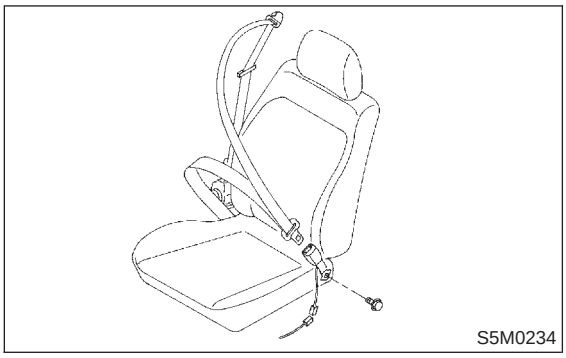
***Tightening torque:***
***T1: 13±3 N·m (1.3±0.3 kg-m, 9.4±2.2 ft-lb)***
***T2: 35±13 N·m (3.6±1.3 kg-m, 26±9 ft-lb)***



**CAUTION:**
**● The left and right ELR's are not mutually interchangeable because different sensors are used.**
**● Be careful not to twist belts during installation.**

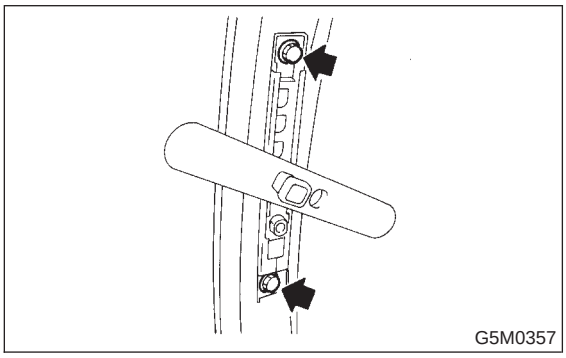
### 3. INNER BELT

1) Disconnect connector.
2) Remove anchor bolt and then detach inner belt.




### 4. ADJUSTABLE SHOULDER ANCHOR

1) Remove shoulder anchor bolt.
2) Remove lower center pillar trim.
3) Remove front and front pillar trim panel.
4) Remove adjustable shoulder anchor assembly.




5) Installation is in the reverse order of removal.

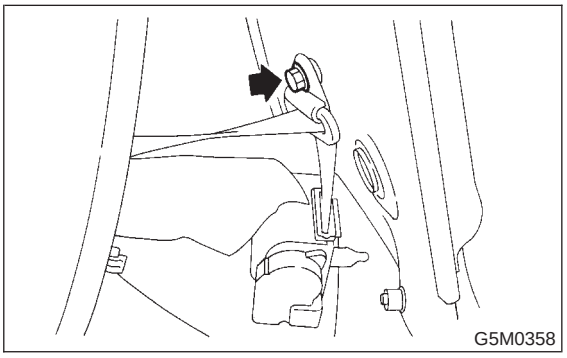
# 4. Rear Seat Belt

## A: REMOVAL AND INSTALLATION

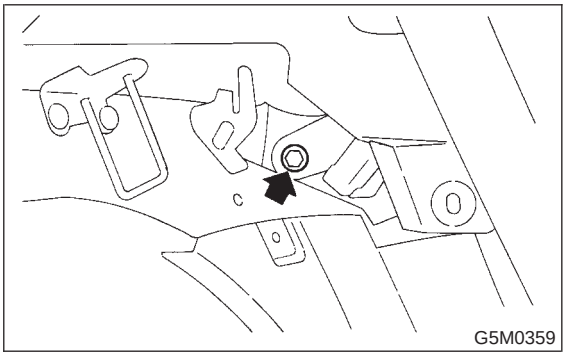
**WARNING:**
**Replace rear seat belt worn by occupants of a vehicle that has been in a serious accident. The entire assembly should be replaced even if damage is not obvious.**

### 1. SEDAN AND COUPE MODEL

1) Remove rear cushion from body.
2) Remove rear backrest from body.
3) Remove screw from lower side of rear quarter trim, and lift-up lower side of rear quarter trim.
4) Remove trim panel rear bracket upper.
5) Remove rear quarter trim.
6) Remove outer anchor bolts.

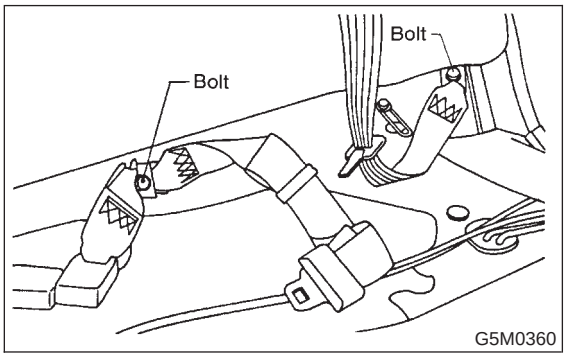



7) Remove rear bolt from ELR.




8) Remove belt from outlet in rear quarter along slit.

9) Remove inner bolts which secure outer seat.
10) Remove washer from bolt, then remove bolt, belt assembly, and anchor plate bracket.
11) Remove inner bolts (2 places) from center seat.

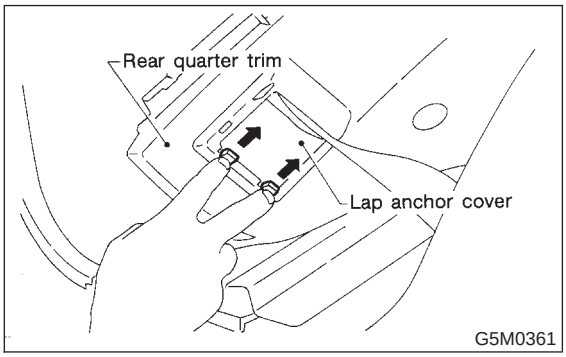



12) Remove washer from bolt, and remove bolt, belt assembly and anchor plate bracket.
13) Installation is in the reverse order of removal. Ensure that seat belt is properly reeled on and off after installation of ELR.

**CAUTION:**
**● Be extremely careful not to confuse center seat anchor plate with outer seat anchor plate during installation.**
**● Ensure that seat belts are free from twisting after installation.**
**● Ensure that tongues, buckles and belts are properly placed on seat.**

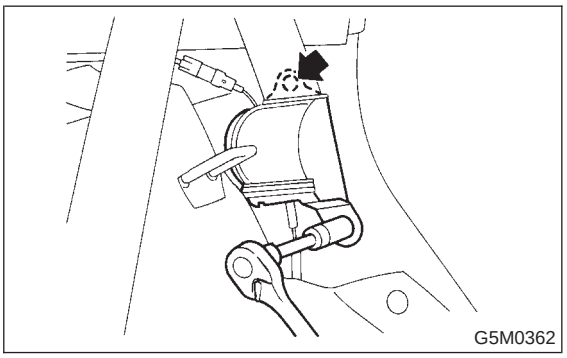
## 2. WAGON MODEL

1) Raise rear cushion.
2) Remove rear backrest from body.
3) Remove shoulder anchor cover and anchor bolt.
4) Remove lower portion of rear quarter trim.
5) Remove lap anchor cover and bolt.




6) Remove 7/16-20 UNF nuts which secure ELR and remove ELR.

**CAUTION:**
**Remove outer seat belt and center seat belt in similar manner used to remove those from Sedan.**




7) Installation is in the reverse order of removal. Ensure that seat belt is properly reeled on and off after installation of ELR.

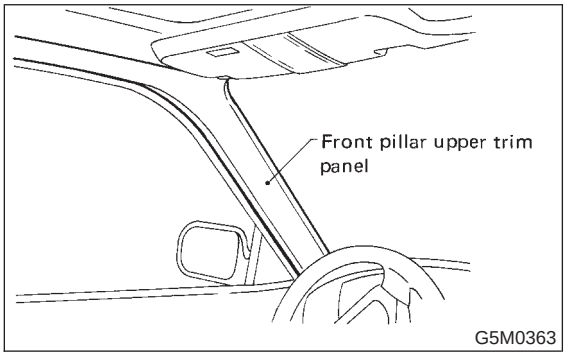
**CAUTION:**
**● Be extremely careful not to confuse center seat anchor plate with outer seat anchor plate during installation.**
**● Ensure that seat belts are free from twisting after installation.**
**● Ensure that tongues, buckles and belts are properly placed on seat.**

# 5. Inner Trim Panel

## A: REMOVAL AND INSTALLATION

### 1. FRONT PILLAR UPPER TRIM PANEL

1) Remove center pillar lower trim panel.
2) Remove seat belt anchor bolts.
3) Pry pawls off body flange of front pillar upper trim panel using screwdriver.
4) Remove clips which hold front pillar upper trim panel, and lift trim panel out by moving it toward the compartment.

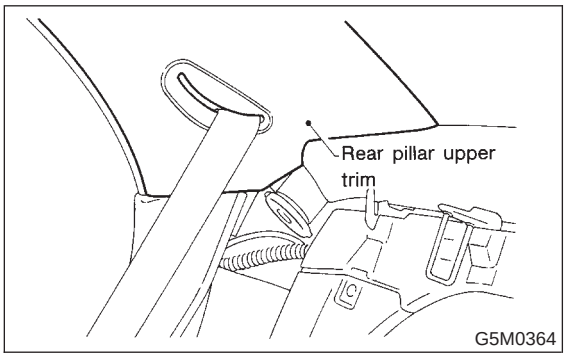



5) Installation is in the reverse order of removal.

**CAUTION:**
**Be sure to securely hook pawls of front pillar upper trim panel on body flange.**

### 2. REAR PILLAR UPPER TRIM PANEL (SEDAN)

1) Remove rear seat cushion and backrest.
2) Remove tapping screw from rear pillar lower trim panel, and remove trim panel by sliding it forward.
3) Remove front pillar upper trim end.
4) Pry the pawl off front end using screwdriver.
5) Remove clips which hold rear pillar upper trim, and remove trim panel by sliding it forward.

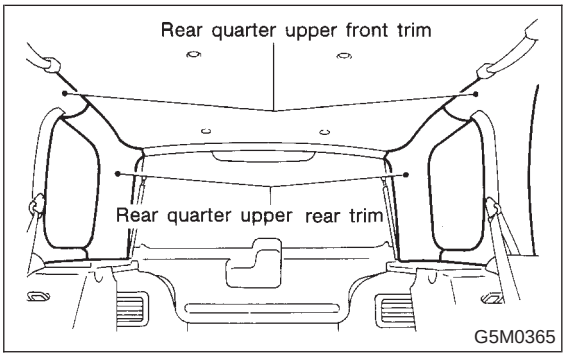



6) Installation is in the reverse order of removal.

**CAUTION:**
**Be sure to securely hook pawls of rear pillar upper trim panel on body flange.**

### 3. REAR QUARTER PILLAR UPPER TRIM PANEL (WAGON)

1) Set rear seat cushion up.
2) Remove rear seat backrest.
3) Remove rear quarter lower trim.
4) Remove rear rail trim.
5) Remove rear quarter upper front trim.
6) Remove rear quarter upper rear trim.

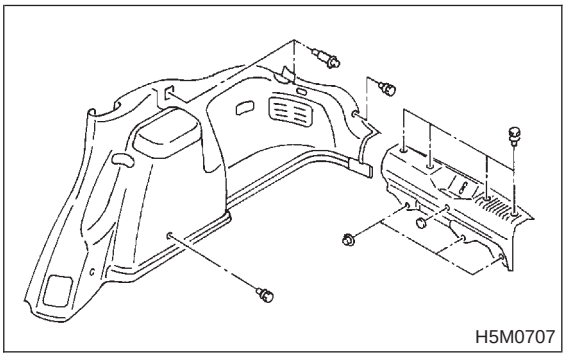



7) Installation is in the reverse order of removal.

**CAUTION:**
**Be sure to securely hook pawls of rear quarter pillar trim panel on body flange.**

### 4. REAR QUARTER LOWER TRIM PANEL (WAGON)

1) Remove luggage cover.
2) Set rear seat cushion up.
3) Remove rear seat backrest.
4) Remove rear skirt trim.
5) Remove clip and screw then disconnect connector (RH side).
6) Remove rear seat belt lower anchor then remove rear quarter lower trim.




7) Installation is in the reverse order of removal.

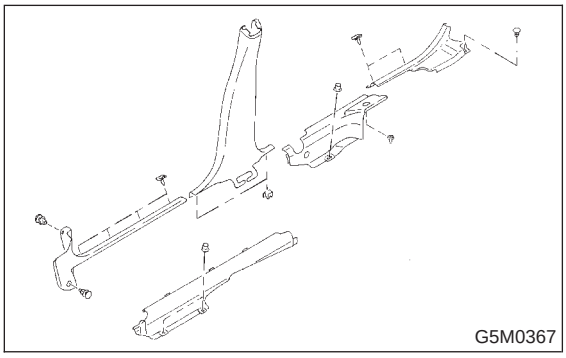
**CAUTION:**
**Be careful not to ride trim panel over harness, insulators, etc.**

## 5. FLOOR MAT AIRBAG

**Supplemental Restraint System "Airbag" Airbag system wiring harness is routed near floor mat.**

**CAUTION:**
**● All Airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuit.**
**● Be careful not to damage Airbag system wiring harness when servicing floor mat.**

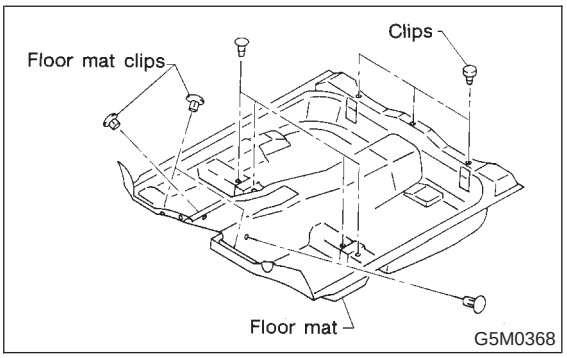
1) Remove front seats.
2) Remove rear seat cushion.
3) Remove center tray, indicator cover, cover assembly, and console box, depending on the specifications.
4) Remove front pillar lower trim panel.
5) Remove center pillar lower trim panel.
6) Remove three clips under rear seat cushion.
7) Remove rear cover side plate and rear pillar lower trim.
8) Pull out edge in the groove of side sill cover.


G5M0367

9) Remove four clips under front seat.
10) Remove four clips in toe board area.

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

11) Remove mat hook.
12) Remove mat from toe board area.

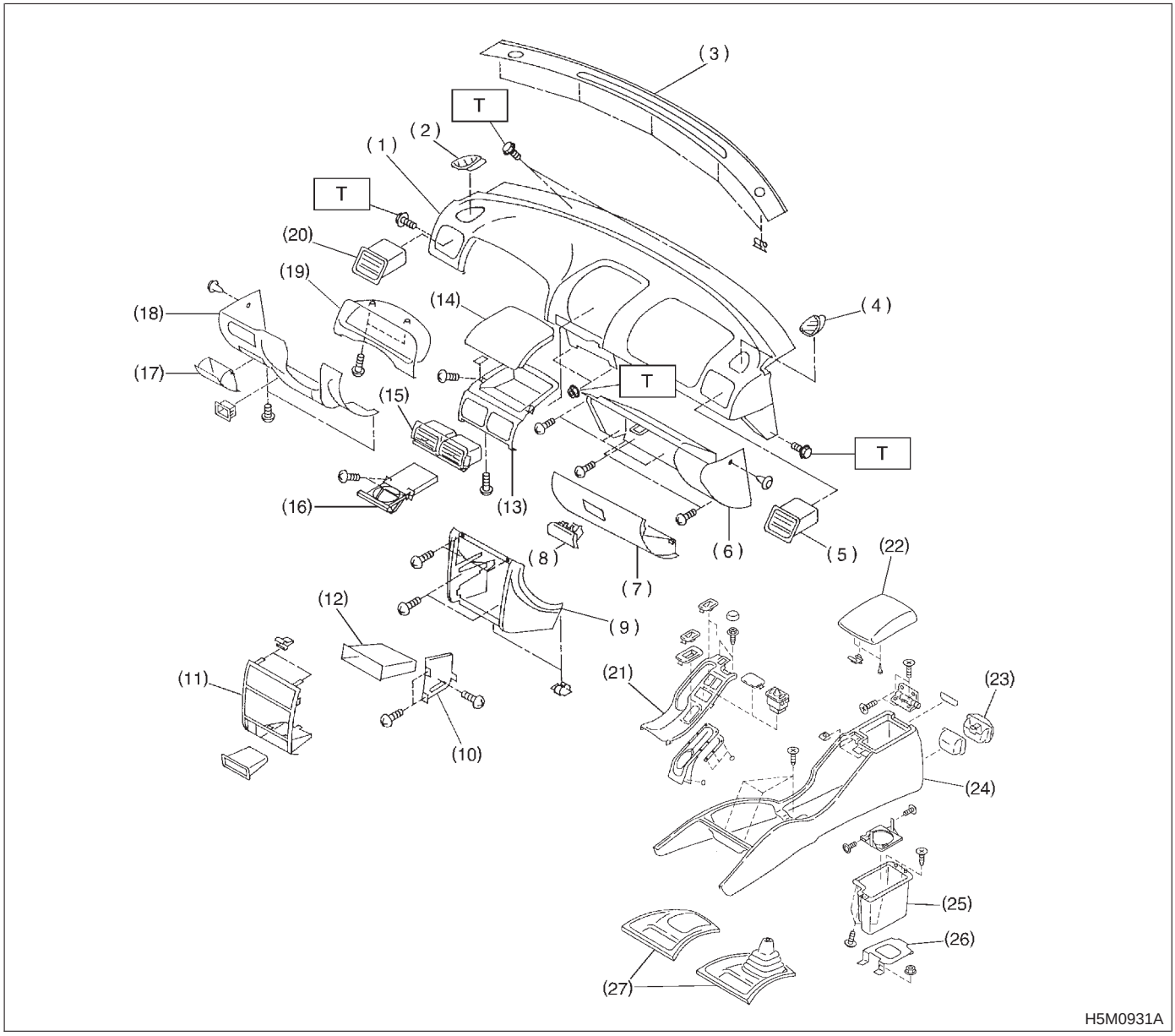


G5M0368

13) Remove mat from heater unit.
14) Roll mat, and take it out of opened rear door.
15) Installation is 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.

# 1. Instrument Panel




H5M0931A

(1) Pad & frame
(2) Grille side (D)
(3) Front def. grille
(4) Grille side (P)
(5) Grille vent (P)
(6) Glove box panel
(7) Glove box lid
(8) Knob
(9) Instrument panel center console
(10) BRKT (Radio)
(11) Center console cover
(12) Pocket
(13) Panel center
(14) Center pocket lid
(15) Grille center
(16) Cup holder
(17) Side pocket
(18) Lower cover ASSY
(19) Meter visor
(20) Grille vent (D)
(21) Console cover
(22) Console lid
(23) Ash tray
(24) Console box
(25) Console pocket
(26) Rear console BRKT
(27) Front cover

***Tightening torque: N·m (kg-m, ft-lb)***
***T: 7±1 (0.7±0.1, 5.1±0.7)***

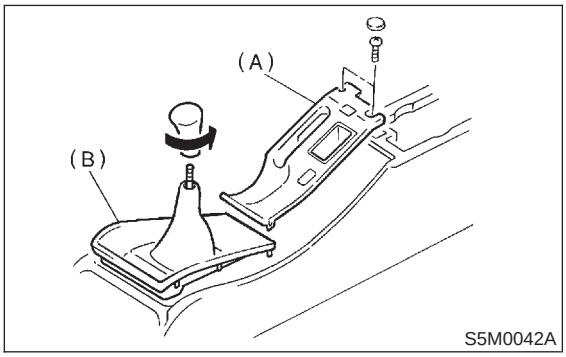
# 1. Instrument Panel AIRBAG

## A: REMOVAL

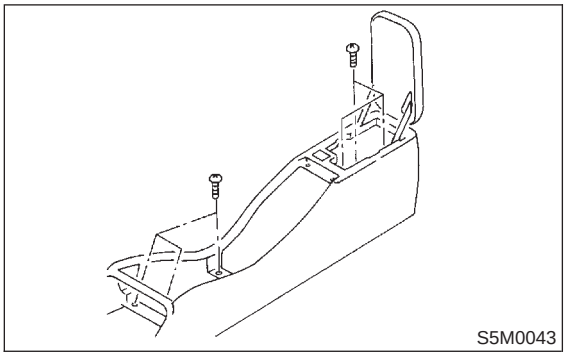
Airbag system wiring harness is routed on steering support beam.

**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 instrument panel.**

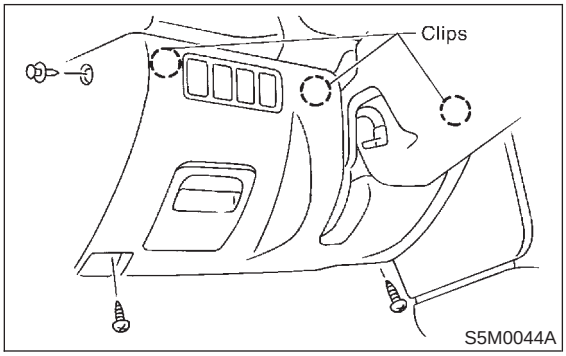
1) Disconnect GND cable from battery.
2) Remove shift knob (MT model).
3) Remove console cover (A) and front cover (B).



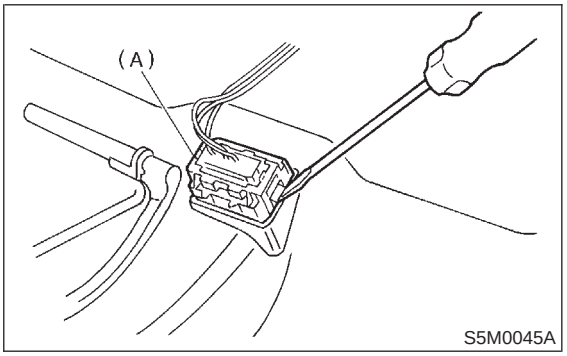

4) Remove console box.



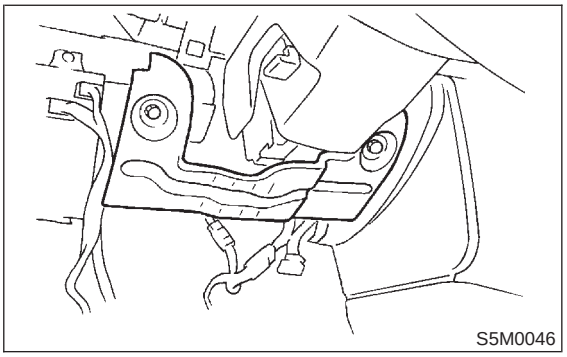

5) Remove lower cover and then disconnect connector.



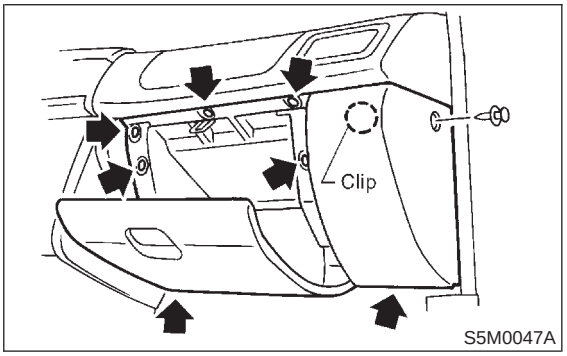

6) Disconnect data link connector (A) from lower cover.



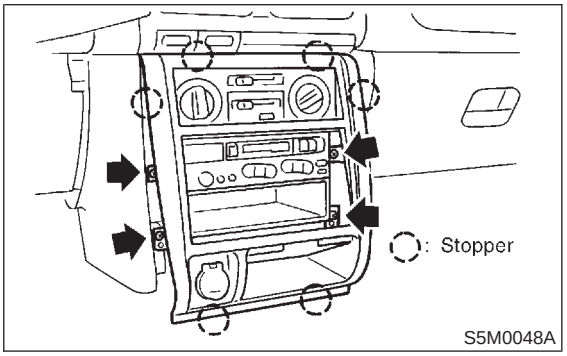

7) Remove knee panel.



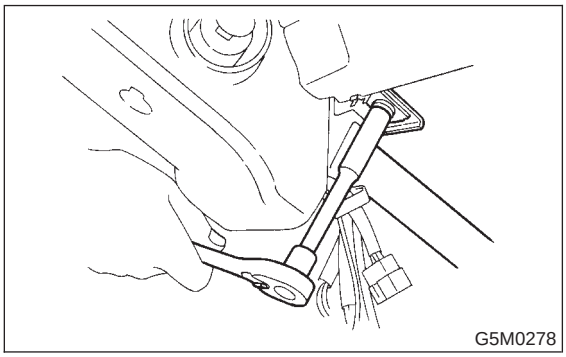

8) Remove glove box.




9) Remove center panel and disconnect connector.
10) Remove audio.



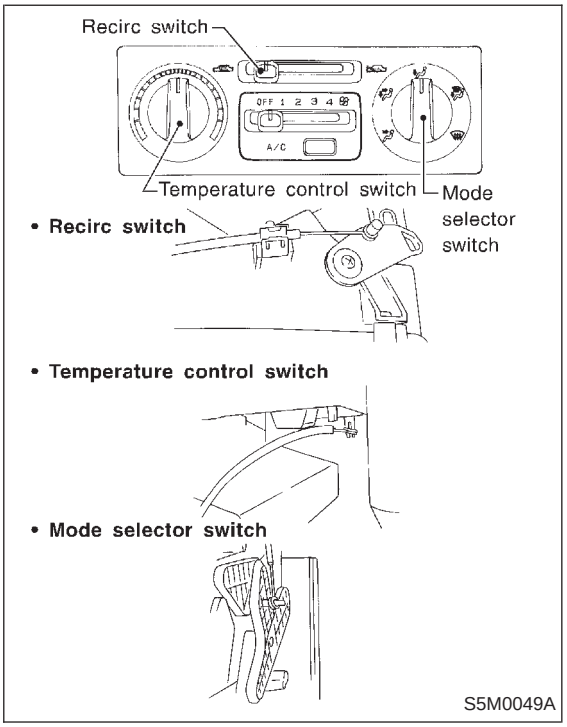
11) Remove two bolts and lower steering column.




12) Set temperature control switch to “FULL HOT”, mode selector switch to “DEF” position and recirc switch to “FRESH” position.

13) Disconnect temperature control cable and mode control cable from heater unit then disconnect recirc control cable from intake unit.

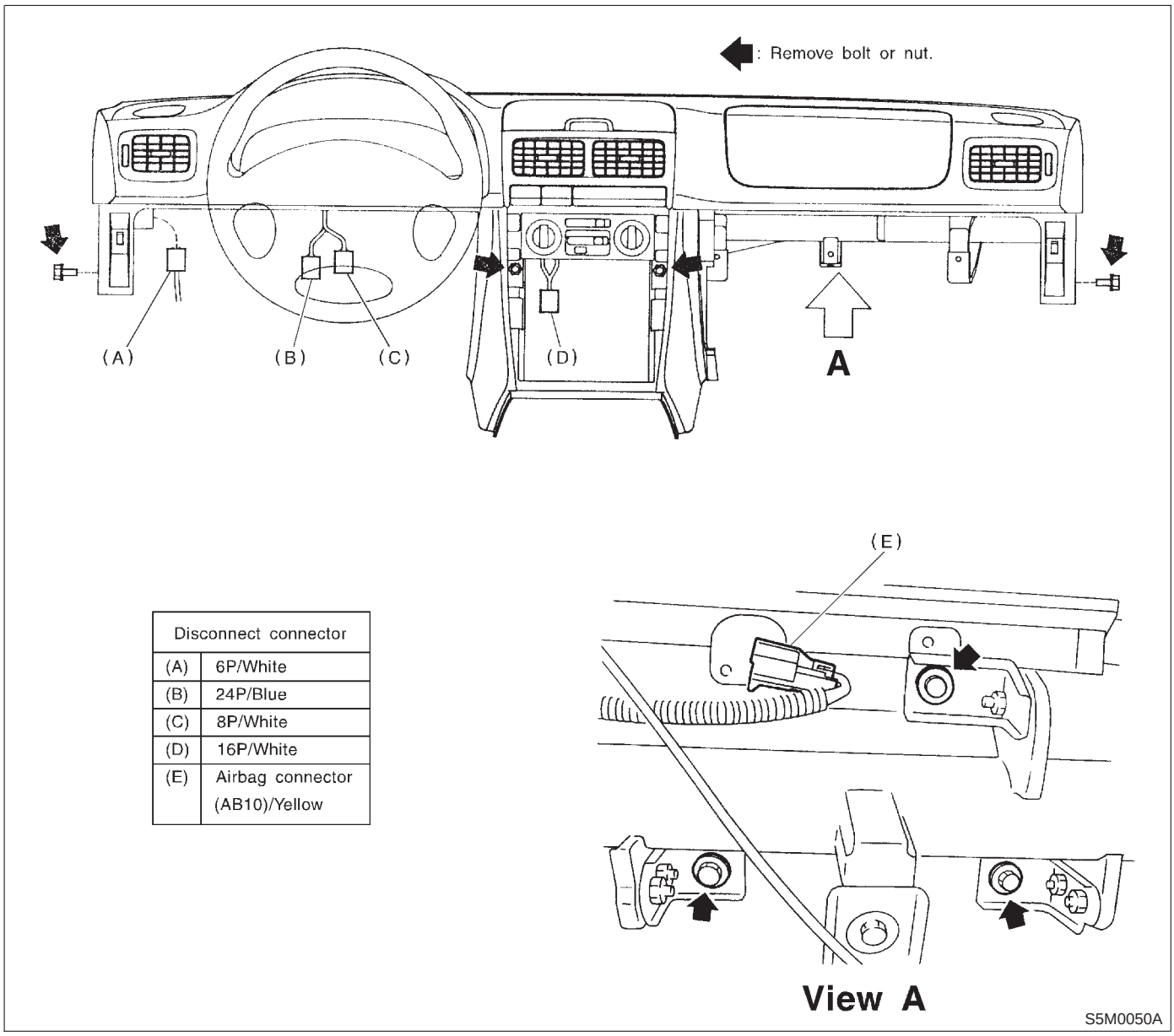
NOTE:
Do not move switch and link when installing.



14) Disconnect harness connectors and then remove the installing bolts and nuts.

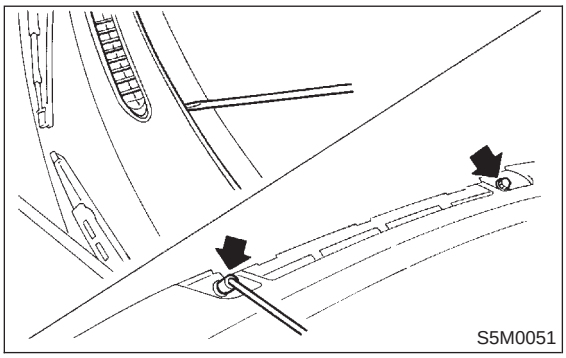
**CAUTION:**
**Be sure to hold socket section and not harness when disconnecting.**

NOTE:
Put matching mark, if necessary, for easy reassembly.



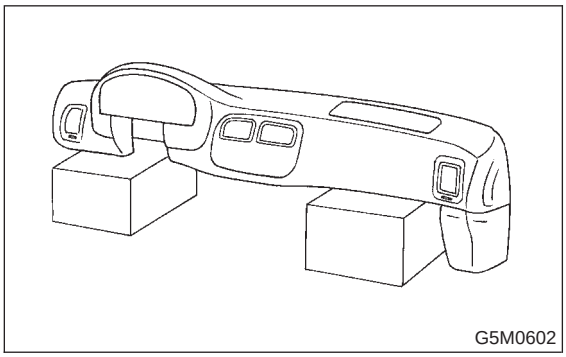

| Disconnect connector | |
|---|---|
| (A) | 6P/White |
| (B) | 24P/Blue |
| (C) | 8P/White |
| (D) | 16P/White |
| (E) | Airbag connector (AB10)/Yellow |

15) Remove front defroster grille and two bolts.




16) Remove instrument panel carefully from the body.

**CAUTION:**
- **Take care not to scratch the instrument panel and related parts.**
- **When storing removed instrument panel with passenger airbag module, place it standing up on the floor.**

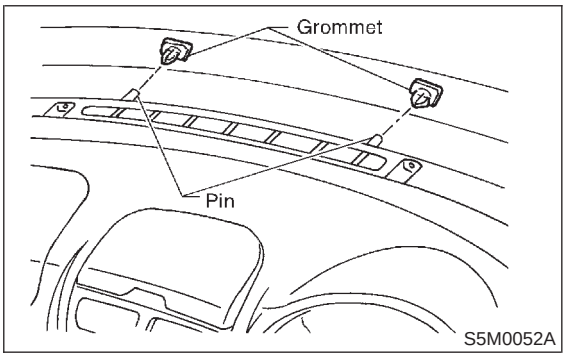



## B: INSTALLATION

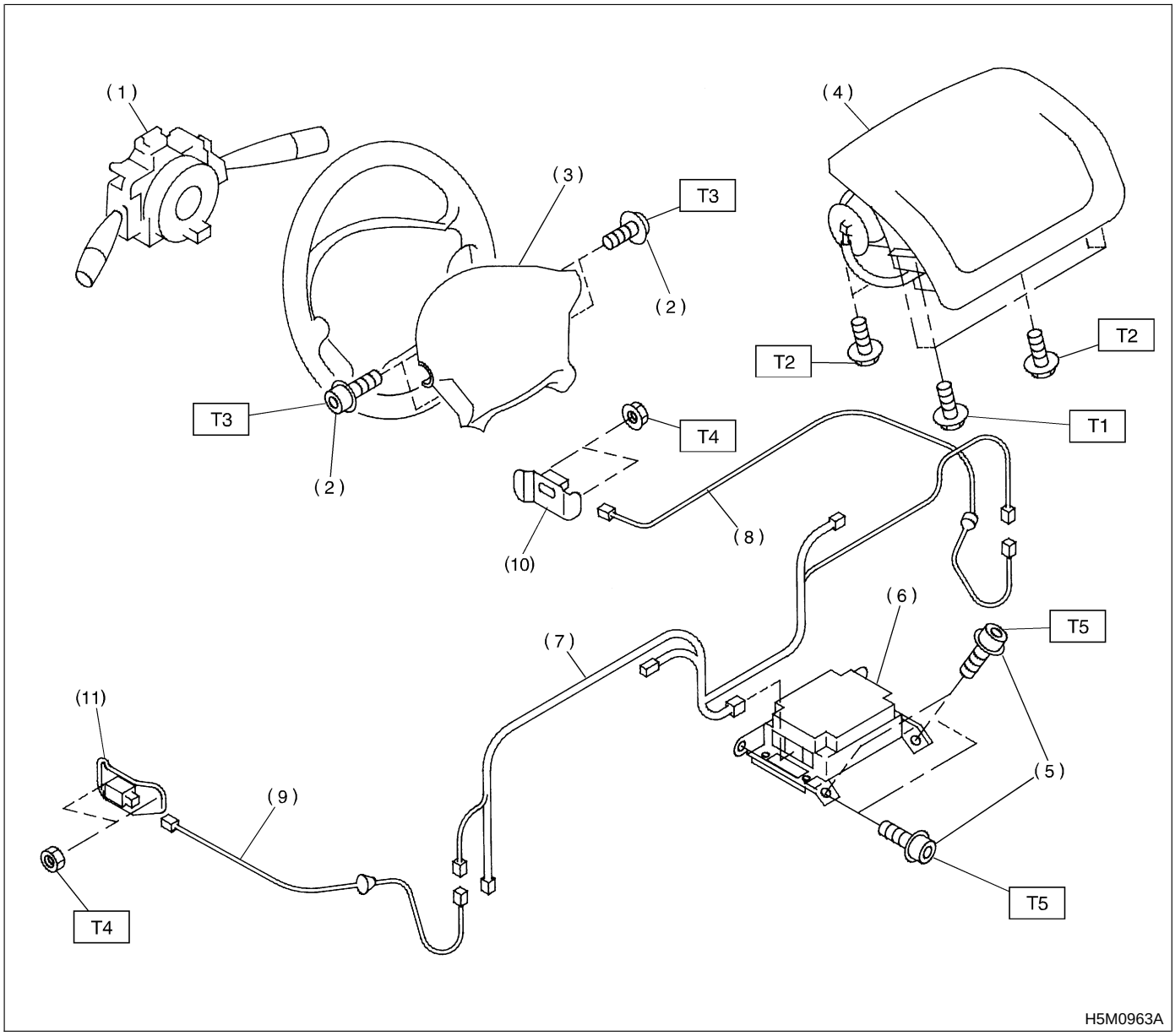
Installation is in the reverse order of removal.

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

NOTE:
When setting instrument panel into position, push two pins into grommet on body panel.



# 1. SRS Airbag



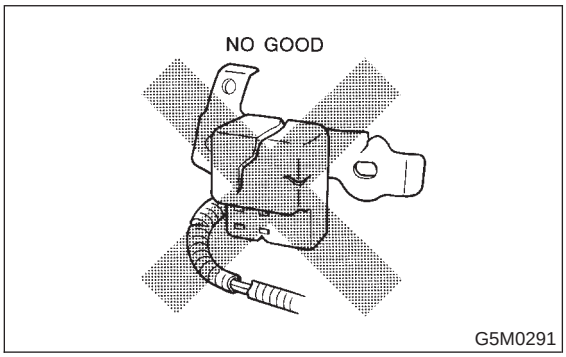

(1) Combination switch ASSY with roll connector
(2) TORX® bolt T30
(3) Airbag module ASSY (Driver)
(4) Airbag module ASSY (Passenger)
(5) TORX® bolt T40
(6) Airbag control module
(7) Airbag main harness
(8) Front sub sensor harness (RH)
(9) Front sub sensor harness (LH)
(10) Front sub sensor (RH)
(11) Front sub sensor (LH)

***Tightening torque: N·m (kgf-m, ft-lb)***
***T1: 4.4±1.5 (0.45±0.15, 3.3±1.1)***
***T2: 7.4±2.0 (0.75±0.2, 5.4±1.4)***
***T3: 10±2 (1.0±0.2, 7.2±1.4)***
***T4: 20±4 (2.0±0.4, 14.5±2.9)***
***T5: 25±2 (2.5±0.2, 18.1±1.4)***

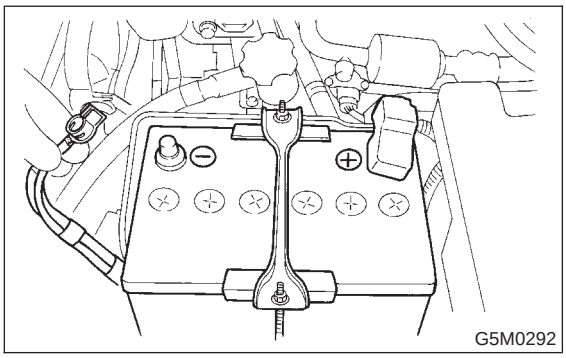
# 1. General

## A: PRECAUTION

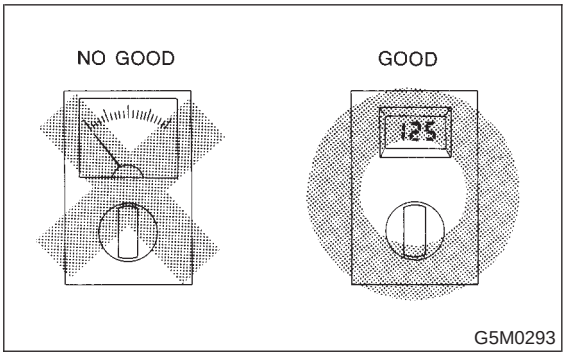
● If any of the airbag system parts such as sensors, airbag module, airbag control module and harness are damaged or deformed, replace with new genuine parts.

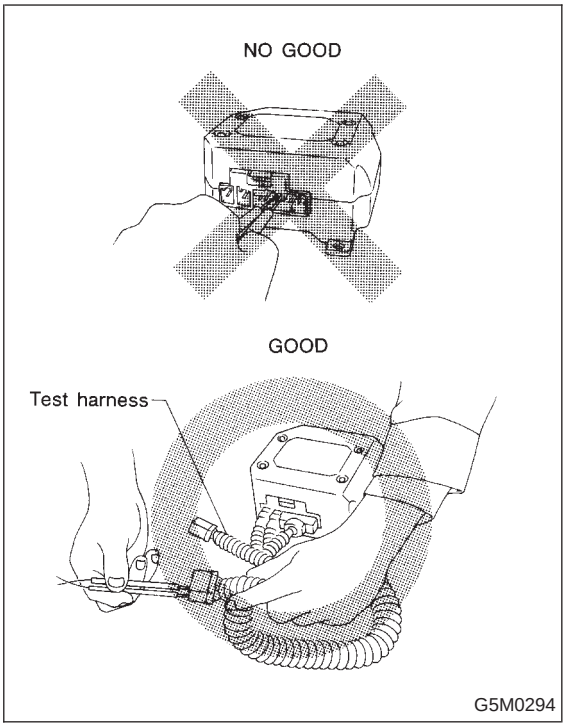



● When servicing, be sure to turn the ignition switch off, disconnect the negative (−) battery terminal then the positive (+) terminal in advance, and wait for more than 20 seconds before starting work.

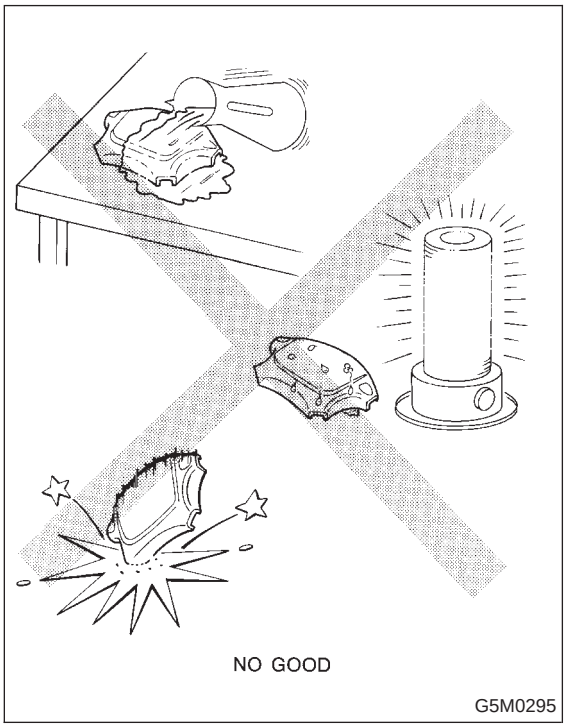



● When checking the system, be sure to use a digital circuit tester. Use of an analog circuit tester may cause the airbag to activate erroneously. Do not directly apply the tester probe to any connector terminal of the airbag. When checking, use a test harness.

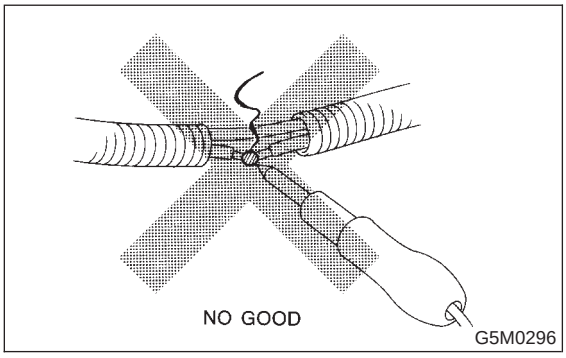


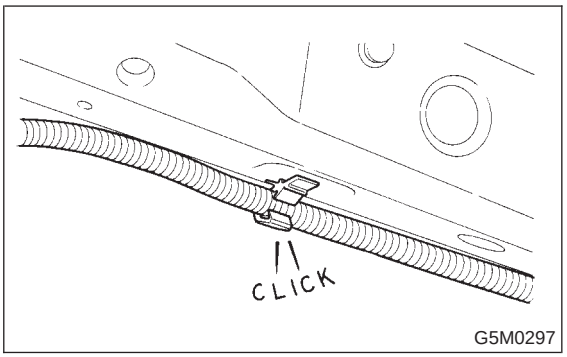
● Do not drop the airbag modulator parts, subject it to high temperatures over 90°C (194°F), or apply oil, grease, or water to it; otherwise, the internal parts may be damaged and its reliability greatly lowered.



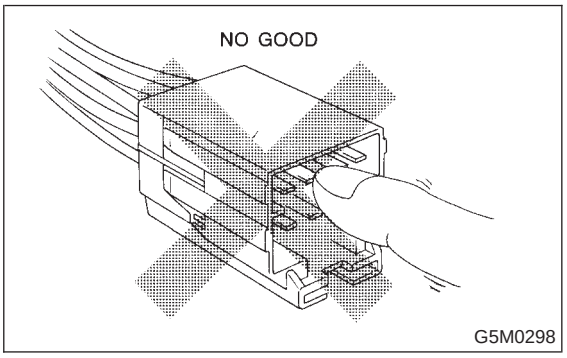

● If any damage or open is found on the SRS airbag system wire harness, do not attempt to repair using soldering, etc. Be sure to replace the faulty harness with a new genuine part.




● Install the wire harness securely with the specified clips so as to avoid interference or jamming with other parts.




● Before connecting the airbag system to ground, make sure that the grounding terminal is free from paint and contamination.
● Do not allow water or oil to come in contact with the connector terminals. Do not touch the connector terminals.




● When cpnnecting or disconnecting airbag connector, make sure ignition switch is OFF.

# 2. Inspection and Replacement Standards

## A: VEHICLES WHICH BECOME INVOLVED IN A COLLISION

**If the vehicle equipped with an SRS airbag system is damaged in a collision, the airbag system parts must be checked and replaced in accordance with the following standards:**
**● After faulty parts are replaced, the warning light operation must be checked.**
**● When the ignition switch is turned ON, it lights up for 8 seconds and then it goes out for at least 30 seconds.**
**● The trouble code stored in memory must be erased after the check.**

## B: AIRBAG MODULE (DRIVER AND PASSENGER)

### 1. INSPECTION STANDARD

● The vehicle damaged in a collision (regardless of whether or not airbag is deployed).
● The designated trouble code is output during self-diagnosis. (Refer to “Diagnostics” Section.)

### 2. REPLACEMENT STANDARD

● Airbag is deployed.
● The pad surface is scratched or cracked.
● Harness and/or connector is deformed or cracked, their circuits are broken, lead wire is exposed, etc.
● Mounting bracket is cracked or deformed.
● The module surface is fouled with foreign matter. (grease, oil, water, cleaning solvent, etc.)
● Airbag module dropped to the floor/ground.
● Airbag module determined as faulty during self-diagnosis.

## C: MAIN HARNESS

### 1. INSPECTION STANDARD

● A vehicle damaged in a collision (regardless of whether or not airbag is deployed).
● The designated trouble code is output during self-diagnosis. (Refer to “Diagnostics” Section.)

### 2. REPLACEMENT STANDARD

● Harness circuit is broken, lead wire is exposed, corrugated tube is cracked, etc.
● Connector is scratched or cracked.
● The designated trouble code is output during self-diagnosis.

## D: AIRBAG CONTROL MODULE

### 1. INSPECTION STANDARD

● A vehicle damaged in a collision (regardless of whether or not airbag is deployed).
● The designated trouble code is output during self-diagnosis. (Refer to “Diagnostics” Section.)

### 2. REPLACEMENT STANDARD

● Control module is cracked or deformed.
● Mounting bracket is cracked or deformed.
● Connector is scratched or cracked.
● Control module dropped to the floor/ground.
● Control module determined as faulty during diagnostics.
● Airbag is deployed.

## E: COMBINATION SWITCH

### 1. INSPECTION STANDARD

● A vehicle damaged in a collision (regardless of whether or not airbag is deployed).
● The designated trouble code is output during self-diagnosis. (Refer to “Diagnostics” Section.)

### 2. REPLACEMENT STANDARD

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

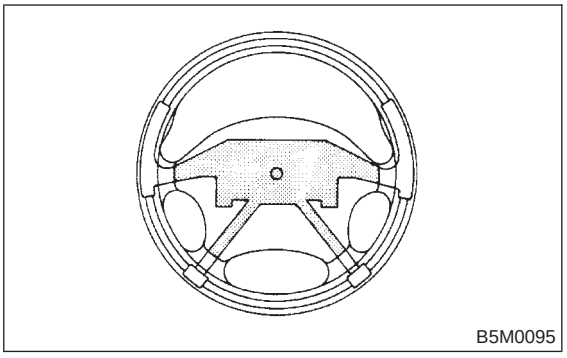
## F: STEERING WHEEL

### 1. INSPECTION STANDARD

● A vehicle damaged in a collision (regardless of whether or not airbag is deployed).

### 2. REPLACEMENT STANDARD

● Check steering wheel insert for cracks or deformities.
● Check to ensure that new airbag module is properly installed in steering wheel
● After installing airbag module, check to ensure that it is free of interference with steering wheel and that clearance between the two is equal at all points.


B5M0095

## G: STEERING COLUMN ASSEMBLY

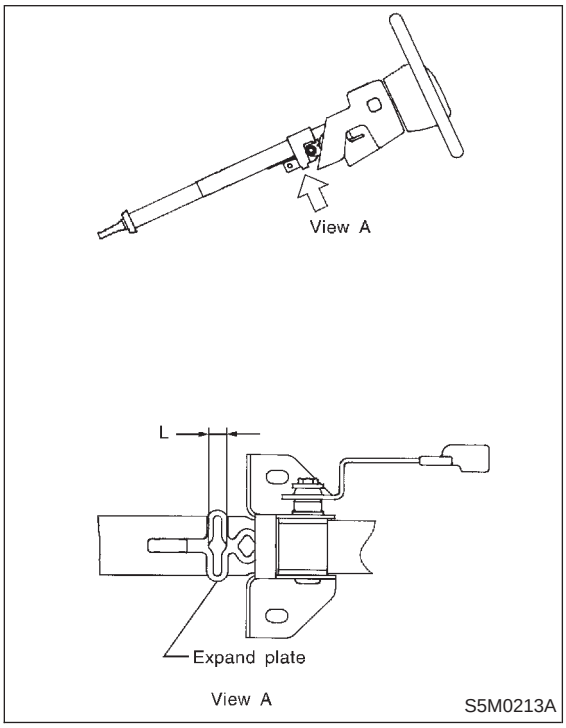
### 1. INSPECTION STANDARD

● A vehicle damaged in a collision (regardless of whether or not airbag is deployed).

### 2. REPLACEMENT STANDARD

● Check to ensure that clearance of expand plate on steering column under side is within specifications.

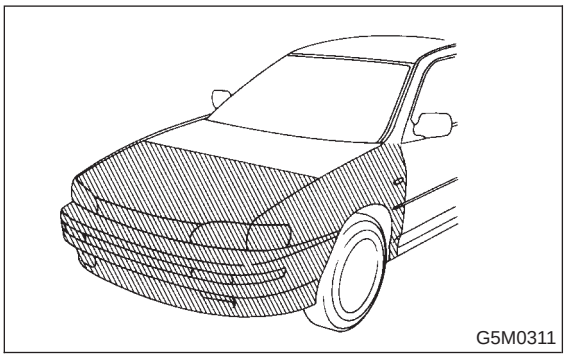
***Clearance of expand plate: L***
***More than 15 mm (0.59 in)***




## H: FRONT SUB SENSOR

### 1. INSPECTION STANDARD

● Check the front section (Refer to shaded area of vehicle in figure) for damage, regardless of whether or not airbag is deployed.




● The designated trouble code is output during self-diagnosis. <Ref. to 5-5 [T4A0].>

### 2. REPLACEMENT STANDARD

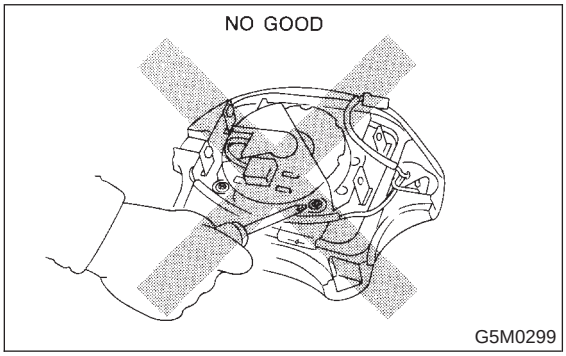
● Bracket is deformed.
● Housing is cracked or deformed.
● The label (that identifies the manufacturing number) is peeled or deteriorated.
● Harness circuit is broken, lead wire is exposed, corrugated tube is cracked, etc.
● Front sub sensor determined as faulty as a result of Diagnostics.
● Airbag is deployed.
● Front sub sensor dropped to the floor/ground.

# 3. Airbag Module

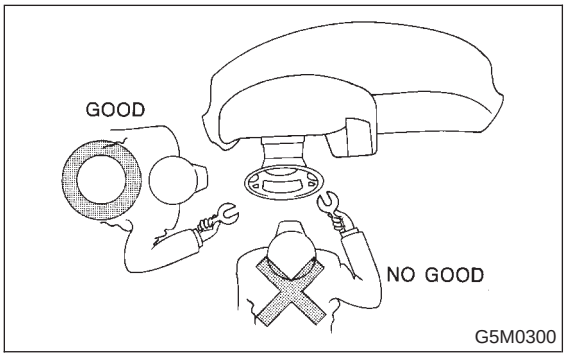
## A: REMOVAL AND INSTALLATION

**CAUTION:**

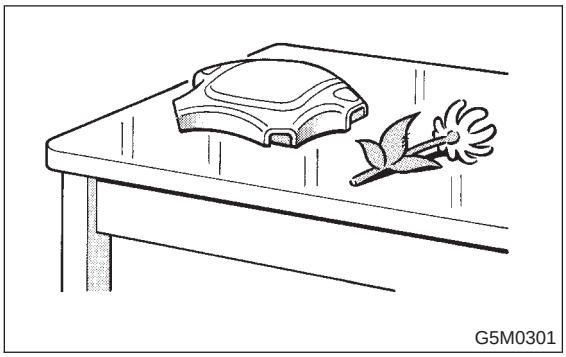
**● The airbag module (driver side and passenger side) must not be disassembled. The airbag module cannot be used again once inflated.**



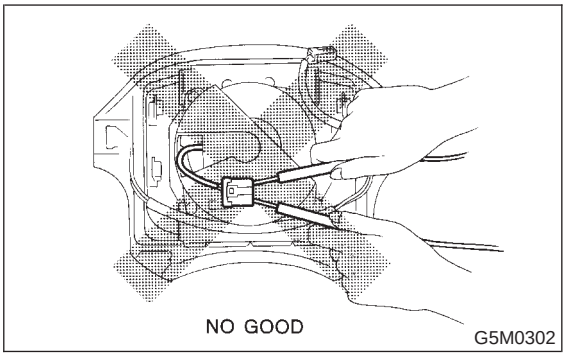

**● When removing and installing the airbag module (driver side and passenger side), the operator should stand, as much as possible, on the side of the airbag module.**




**● After removal, the airbag module (driver side and passenger side) should be kept away from heat and light sources, and stored on a clean, flat surface to prevent from any damage to its lower structure.**




**● Do not check airbag module (driver side and passenger side) continuity with airbag removed from the vehicle body.**




**● Replace airbag module (driver side and passenger side) with a new one, should any of the following conditions develop:**

- **Pad surface is scratched or cracked.**
- **Connector harness is damaged.**
- **Inflator side structure of module is cracked or deformed.**
- **Module is excessively stained with water, oil, etc.**
- **Module was accidentally dropped.**

**● When storing a removed airbag module (driver side and passenger side), be sure to place it in parallel with floor with the pad facing up. Do not place it against a wall, or place anything on the pad; otherwise, a dangerous condition may be created if the module malfunctions.**

Driver side

GOOD


NO GOOD

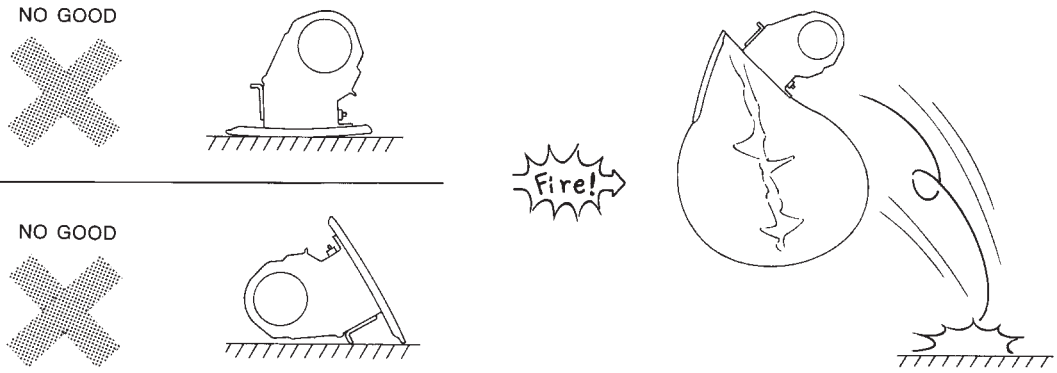

NO GOOD


NO GOOD


Passenger side

GOOD


NO GOOD

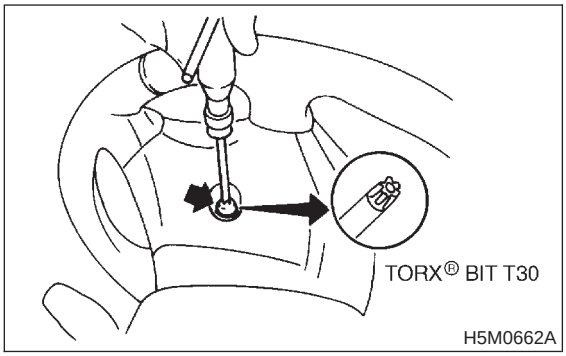



NO GOOD

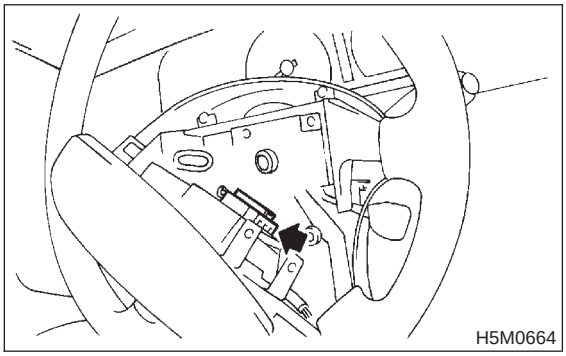
G5M0604

## 1. DRIVER SIDE

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® BIT T30, remove two TORX® bolts.




5) Disconnect airbag connector on back of airbag module. <Ref. to 5-5 [M2F2].>

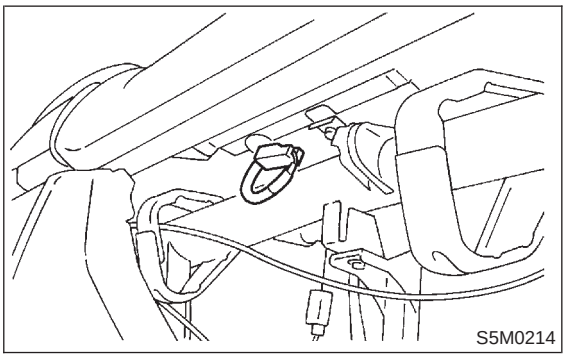



6) Refer to "**CAUTION:**" for handling of a removed airbag module. <Ref. to 5-5 [W3A0].>
7) Installation is in the reverse order of removal.

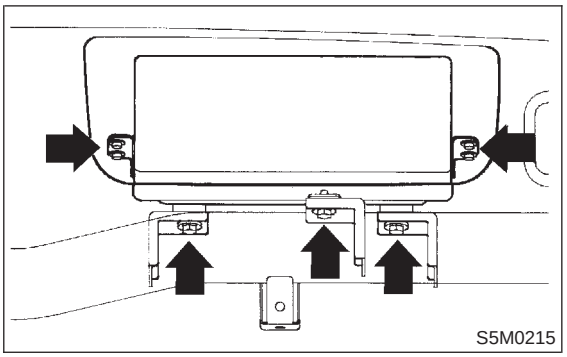
**CAUTION:**
**Do not allow harness and connectors to interfere or get caught with other parts.**

## 2. PASSENGER SIDE

1) Turn ignition switch off.
2) Disconnect ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove glove box. <Ref. to 5-4 [W1A0].>
4) Disconnect airbag connector. <Ref. to 5-5 [M2F2].>




5) Remove seven bolts and then carefully remove airbag module.




6) Refer to "**CAUTION:**" for handling of a removed airbag module. <Ref. to 5-5 [W3A0].>
7) Installation is in the reverse order of removal.

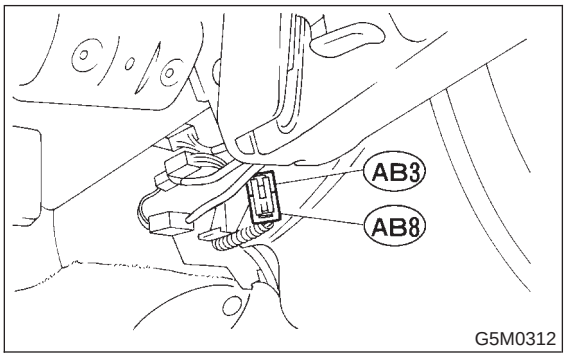
**CAUTION:**
**Do not allow harness and connectors to interfere or get caught with other parts.**

# 4. Main Harness

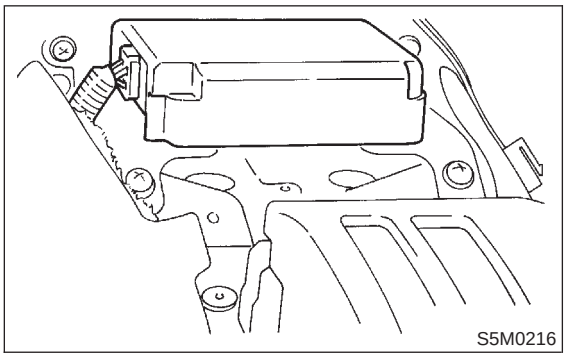
## A: REMOVAL AND INSTALLATION

1) Turn ignition switch off.
2) Disconnect ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove lower cover. <Ref. to 5-4 [W1A0].>
4) Disconnect airbag connector (AB3) and (AB8) below steering column. <Ref. to 5-5 [M2F2].>

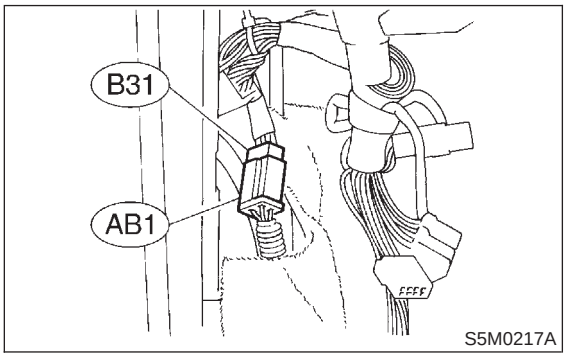
**CAUTION:**
**Do not reconnect airbag connector at steering column until main harness are securely re-installed.**



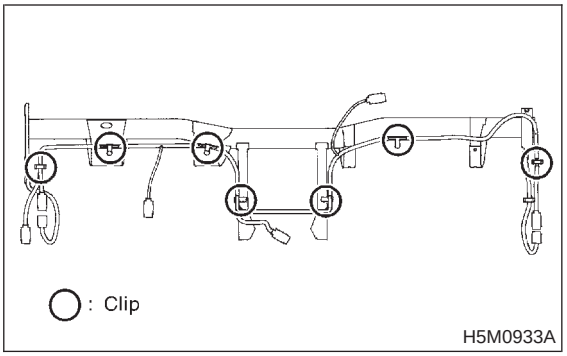

5) Remove instrument panel. <Ref. to 5-4 [W1A0].>
6) Disconnect connector from airbag control module.




7) Disconnect body harness connector (B31) from connector (AB1).




8) Disconnect front sub sensor connector from airbag main harness.
9) Detach clips from steering support beam and remove main harness.

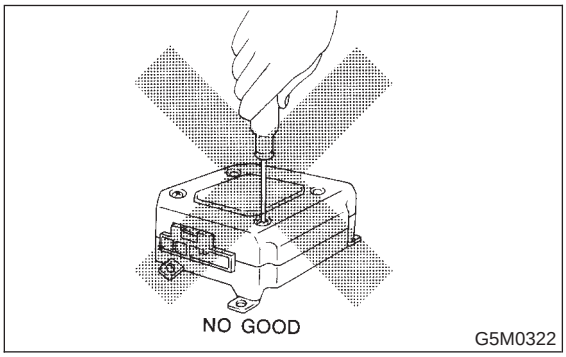



10) Installation is in the reverse order of removal.

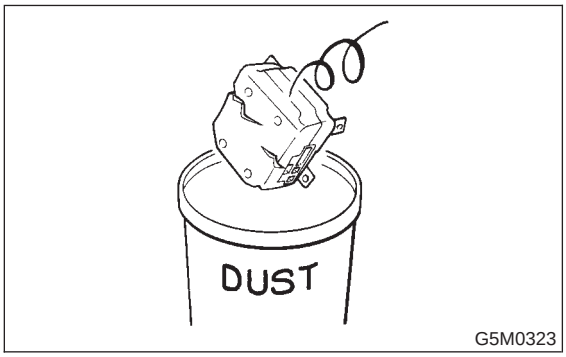
# 5. Airbag Control Module

## A: REMOVAL AND INSTALLATION

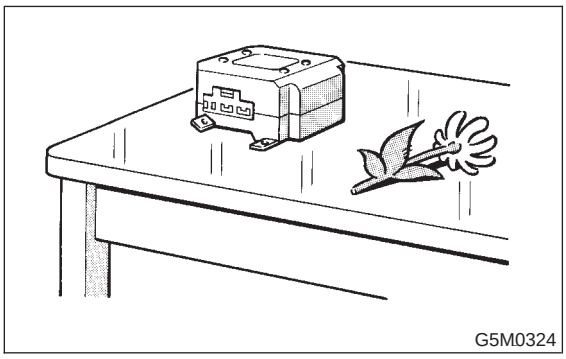
**CAUTION:**
**● Do not disassemble the airbag control module.**




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

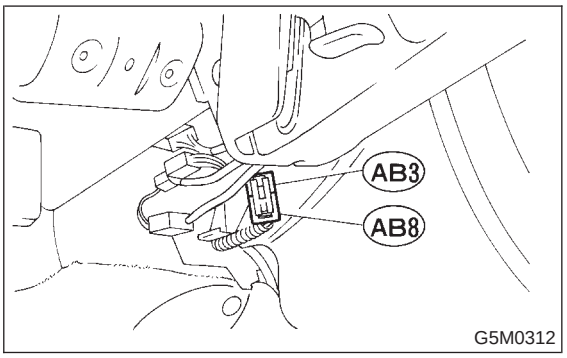



**● After removal, keep the airbag control module on a dry, clean surface away from heat and light sources, and moisture and dust.**



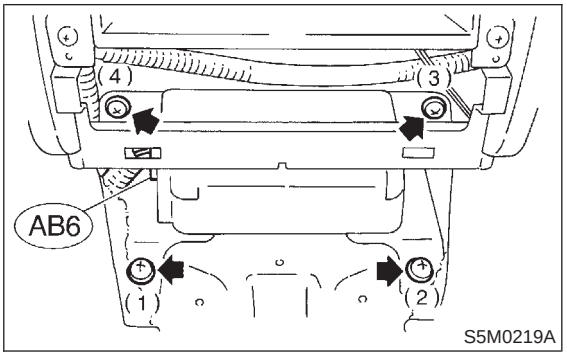

1) Turn ignition switch off.
2) Disconnect ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove lower cover. <Ref. to 5-4 [W1A0].>
4) Disconnect airbag connector (AB3) and (AB8) below steering column.

**CAUTION:**
**Do not reconnect airbag connector at steering column until airbag control module is securely re-installed.**




5) Remove instrument panel console. <Ref. to 5-4 [W1A0].>
6) Disconnect connector from airbag control module.
7) Using T40 TORX® bit (Tamper resistant type), remove four TORX® bolts in numerical sequence shown in figure. Discard the old TORX® bolts.

**CAUTION:**
**Use new TORX® bolts during re-assembly.**



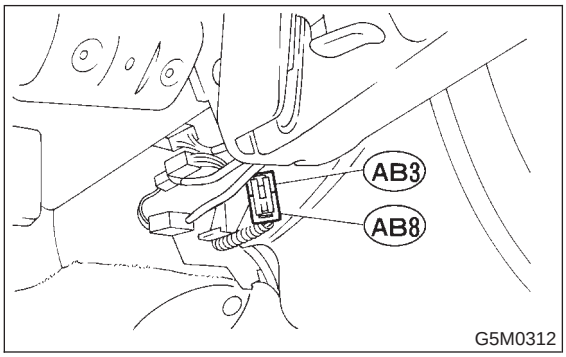

8) Installation is in the reverse order of removal.

# 6. Combination Switch

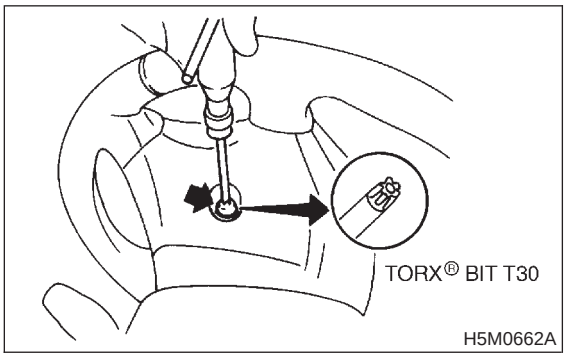
## A: REMOVAL

1) Turn ignition switch off.
2) Disconnect ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove lower cover. <Ref. to 5-4 [W1A0].> Disconnect airbag connector (AB3) and (AB8) below steering column.

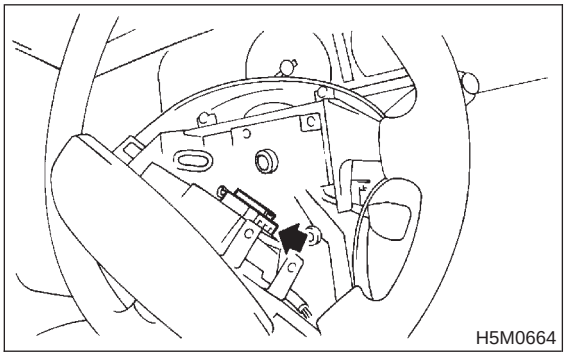
**CAUTION:**
**Do not reconnect airbag connector at steering column until combination switch is securely re-installed.**




4) Disconnect combination switch connectors from body harness connector.
5) Set front wheels in straight ahead position. Using T30 TORX® bit, remove two TORX® bolts.

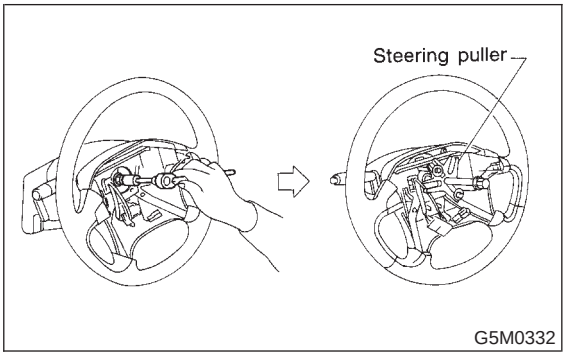



6) Disconnect airbag connector on back of airbag module. Remove airbag module, and place it with pad side facing upward. <Ref. to 5-5 [W3A0].>

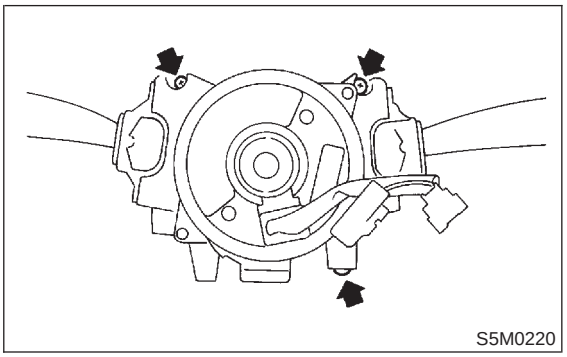



7) Using steering puller, remove steering wheel.

**CAUTION:**
**Do not allow connector to interfere when removing steering wheel.**



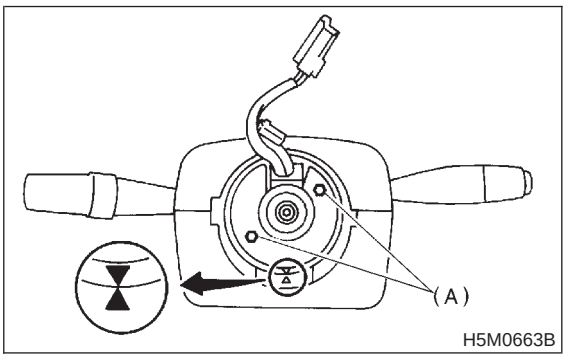

8) Remove steering column covers.
9) Removing three retaining screws, remove combination switch.




## B: ADJUSTMENT

### 1. CENTERING ROLL CONNECTOR

Before installing steering wheel, make sure to center roll connector built into combination switch.
1) Make sure that front wheels are positioned straight ahead.
2) Install steering gearbox, steering shaft and combination switch properly. Turn roll connector pin (A) clockwise until it stops.
3) Then, back off roll connector pin (A) approximately 2.5 turns until "▲" marks aligned.

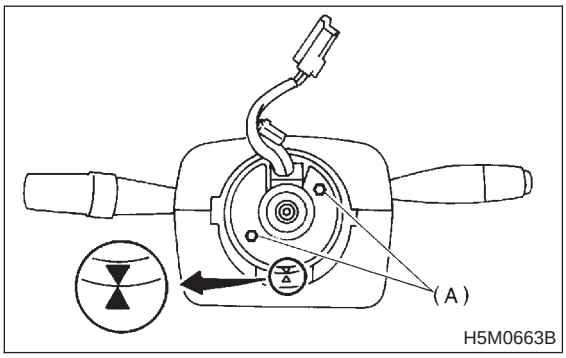


## C: INSTALLATION

**CAUTION:**
**Failure to do this might damage roll connector.**

1) Before installing combination switch, check to ensure that combination switch is off and front wheels are set in the straight ahead position.
2) Install column cover and center roll connector. <Ref. to 5-5 [W6B1].>
3) Install steering wheel in neutral position. Carefully insert roll connector pin (A) into hole on steering wheel.

NOTE:
If steering wheel angle requires fine adjustment, adjust tie-rod. <Ref. to 4-3 [W3F0].>

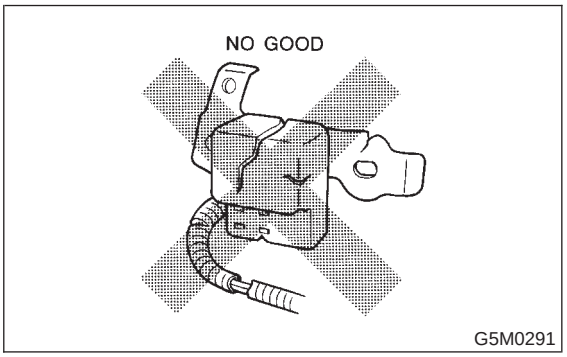



4) Install airbag module and lower cover in the reverse order of removal.

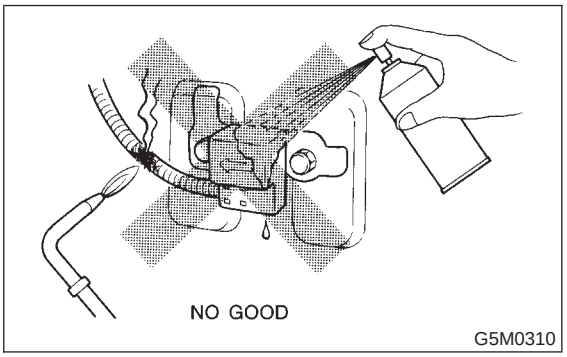
# 7. Front Sub Sensor

## A: REMOVAL AND INSTALLATION

**CAUTION:**
**● If the front end of the vehicle body is damaged by a collision, be sure to check the left and right front sub sensors, even if the airbag was not inflated. If any damage to the sensor or any deformation of the sensor mount is found, replace with a new genuine part.**




**● When painting or performing sheet metal work on the front part of vehicle body, including the front wheel apron, front fender and front side frame, take utmost care not to apply dryer heat, painting mist, or the flame of the welding burner directly to the front sub sensors and wire harness of the airbag system.**

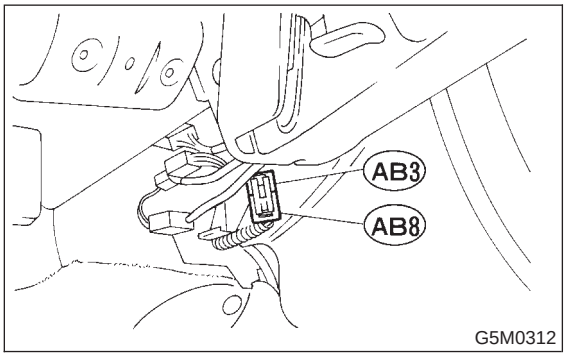



### 1. FRONT SUB SENSOR HARNESS

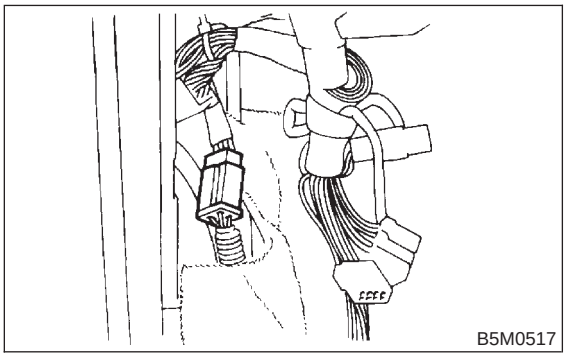
1) Turn ignition switch off.
2) Disconnect ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove lower cover. <Ref. to 5-4 [W1A0].>

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

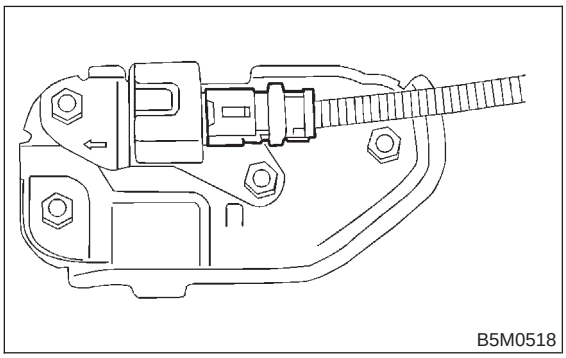
**CAUTION:**
**Do not reconnect airbag connector at steering column until front sub sensors are securely re-installed.**



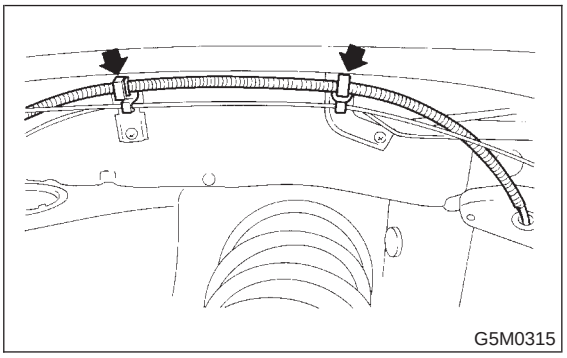

5) Remove front side sill cover and then disconnect front sub sensor connector. <Ref. to 5-5 [M2F2].>



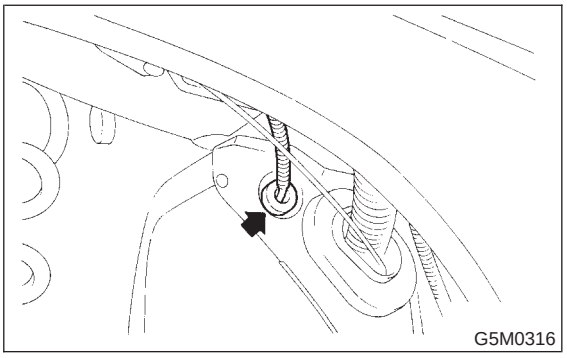

6) Remove front wheel and mud guard.
7) Disconnect connector from front sub sensor assembly. <Ref. to 5-5 [M2F3].>




8) Remove wiring harness clips.

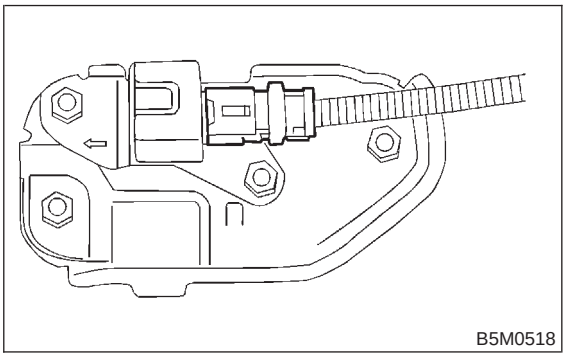



9) Remove grommet and then detach front sub sensor harness.

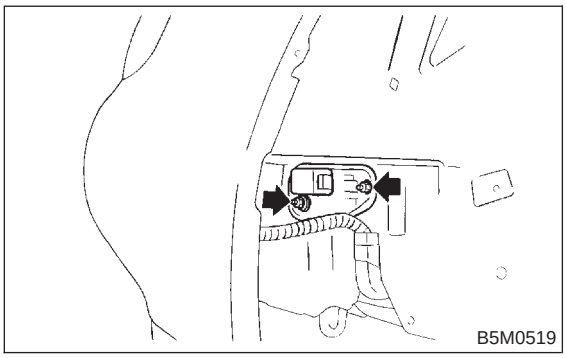



## 2. FRONT SUB SENSOR ASSEMBLY

1) Turn ignition switch off.
2) Disconnect ground cable from battery and wait for at least 20 seconds before starting work.
3) Remove front wheel and mud guard.
4) Disconnect connector from front sub sensor assembly. <Ref. to 5-5 [M2F3].>



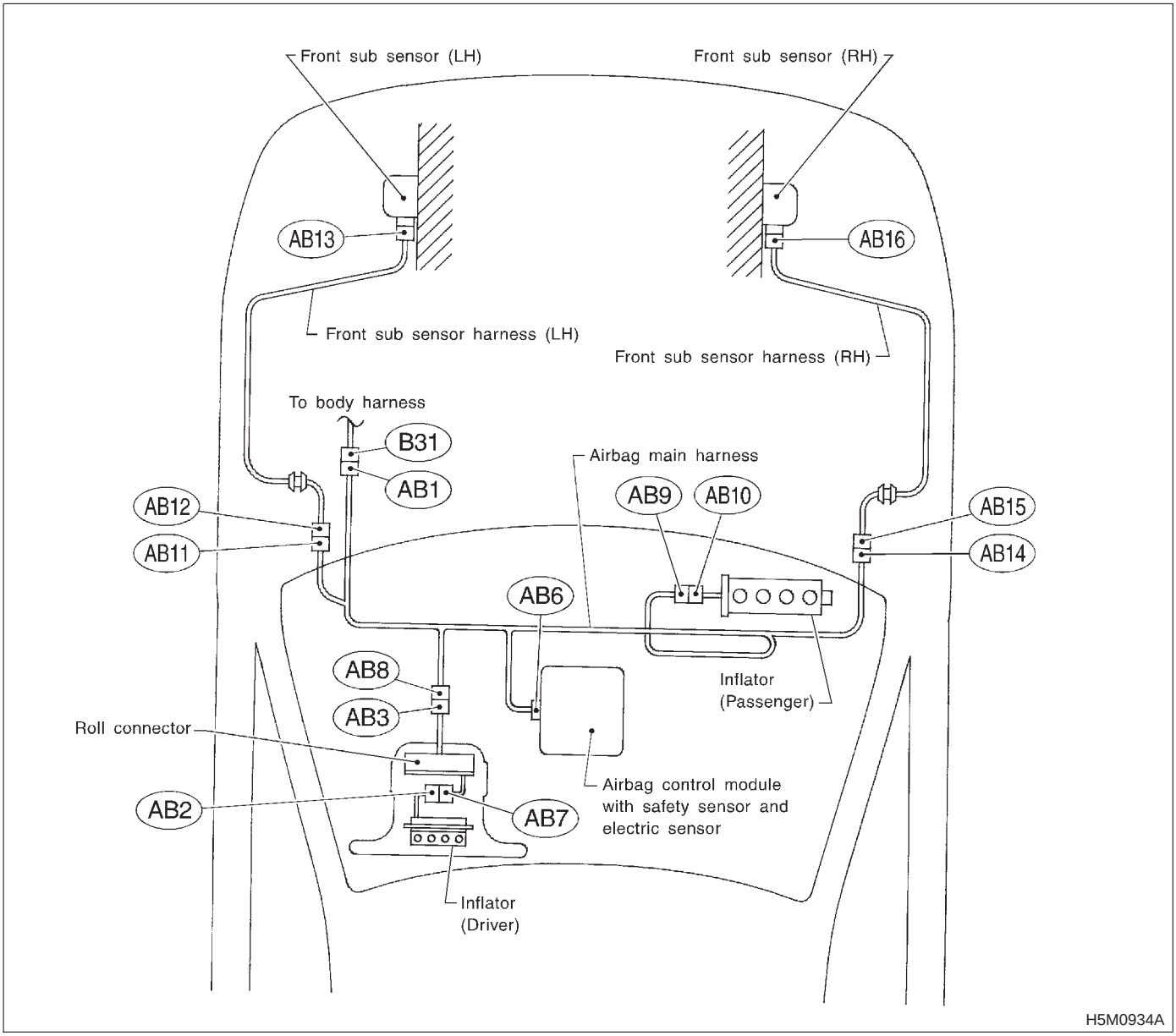
5) Remove front sub sensor.




6) Installation is in the reverse order of removal.

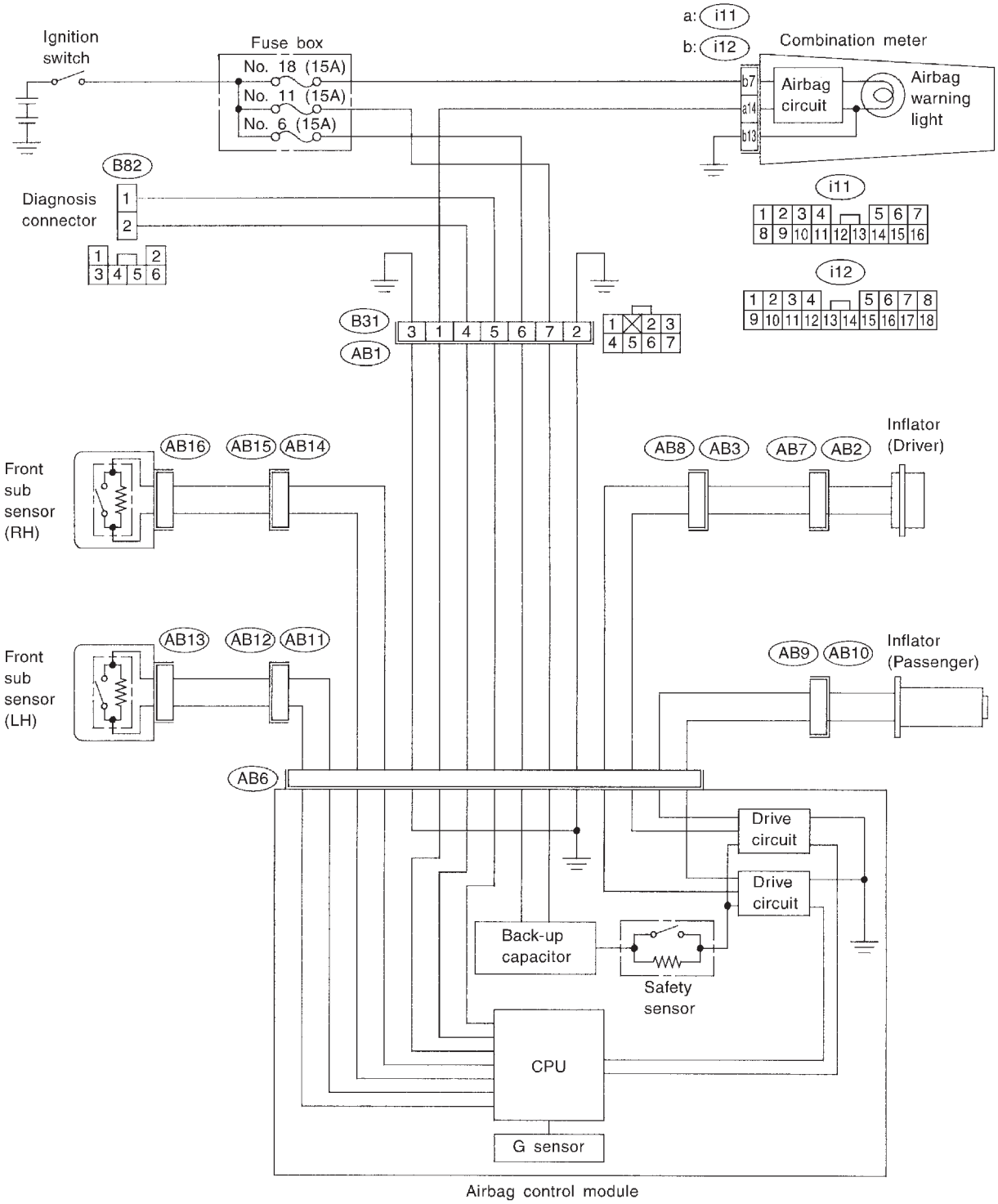
**MEMO:**

# 1. Electrical Components Location




| Connector No. | (AB1) | (AB2) | (AB3) | (AB6) | (AB7) | (AB8) | (AB9) |
|---|---|---|---|---|---|---|---|
| Pole | 7 | 2 | 2 | 28 | 2 | 2 | 2 |
| Color | Yellow | Yellow | Yellow | Yellow | Yellow | Yellow | Yellow |
| Male/Female | Male | Male | Male | Female | Female | Female | Female |
| | | | | | | | |
| Connector No. | (AB10) | (AB11) | (AB12) | (AB13) | (AB14) | (AB15) | (AB16) |
| Pole | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Color | Yellow | Blue | Blue | Yellow | Blue | Blue | Yellow |
| Male/Female | Male | Female | Male | Female | Female | Male | Female |

# 2. Schematic

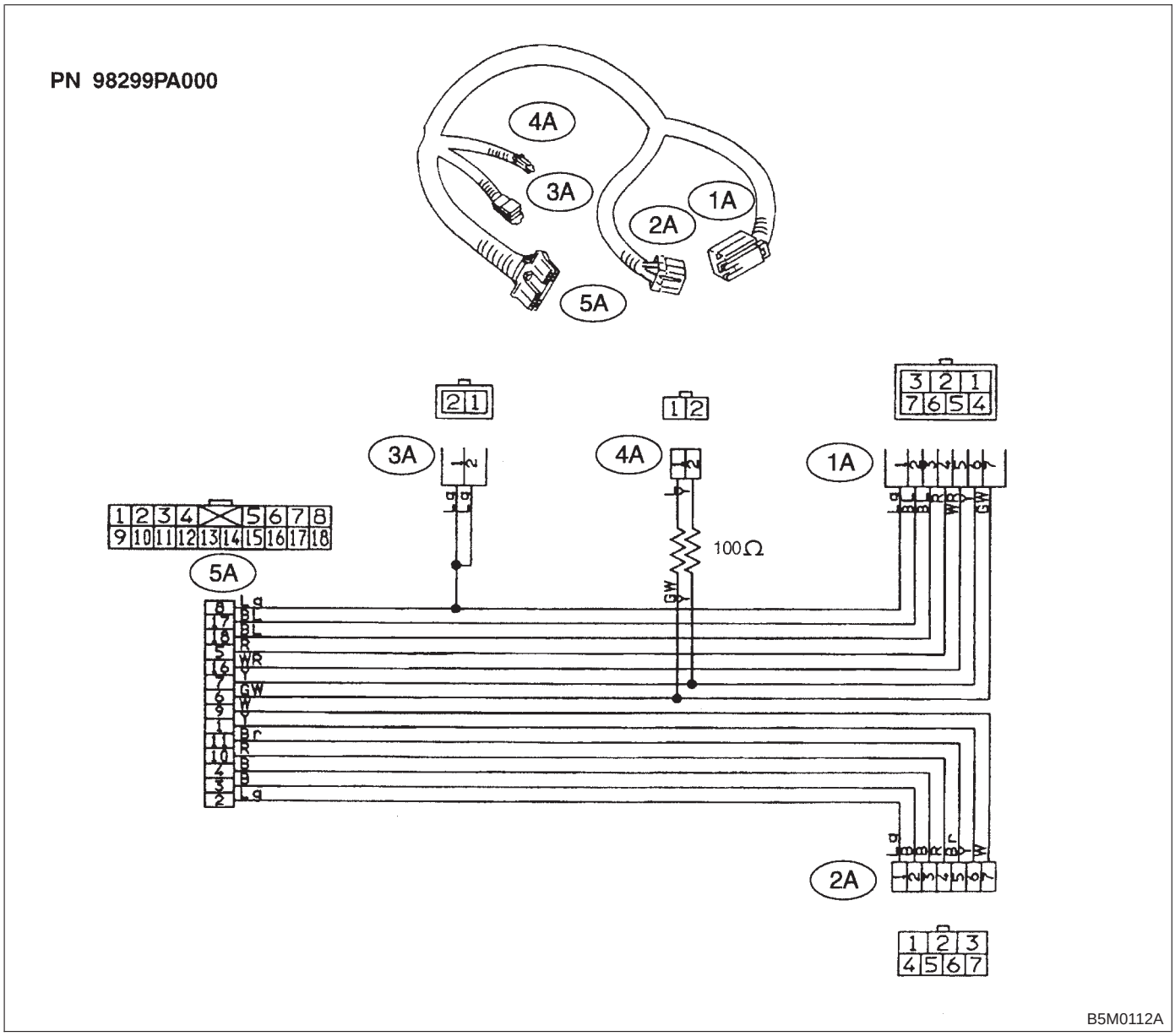



H5M0942A

# 3. Tools for Diagnostics

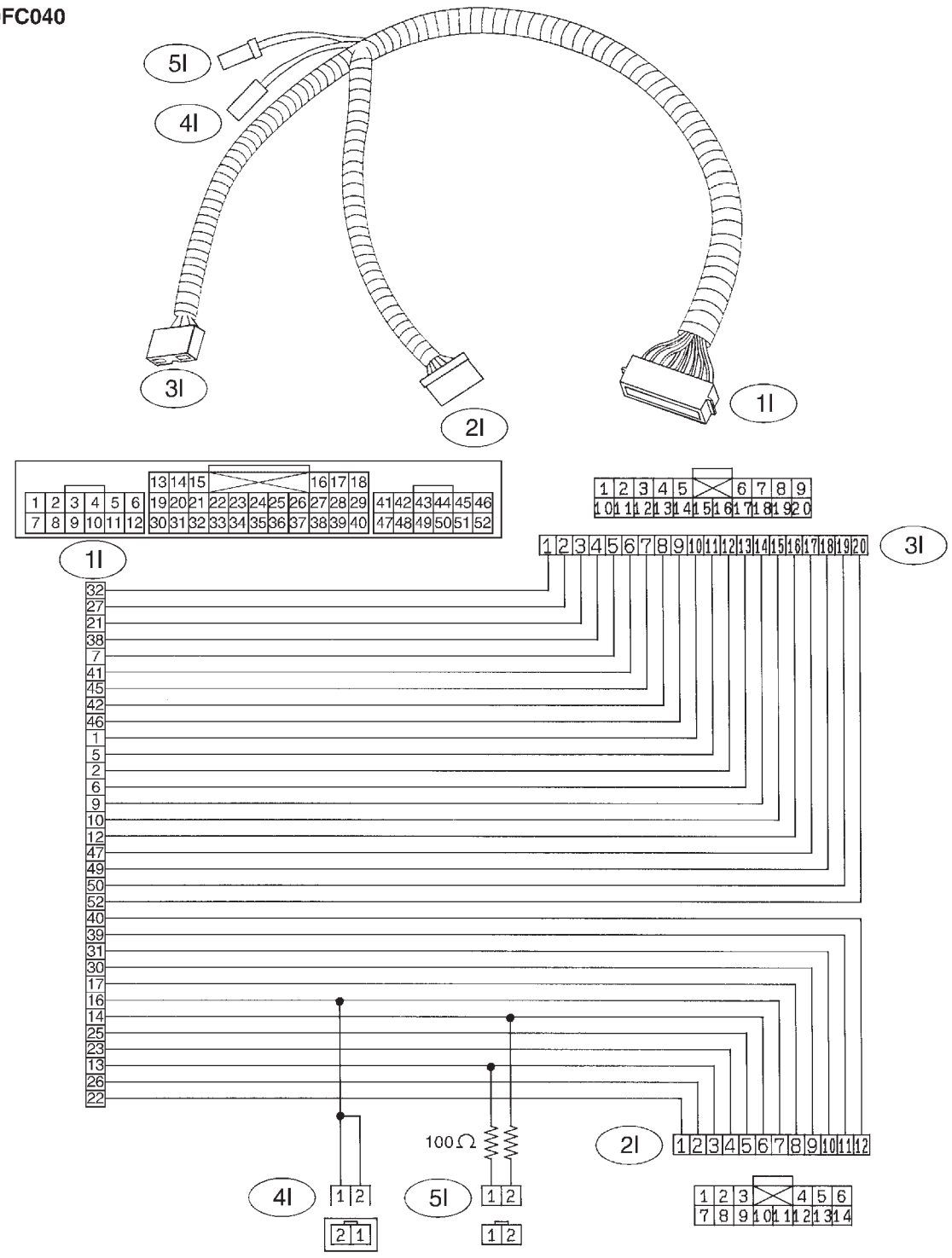
**CAUTION:**
**Be sure to use specified test harness A, I or I2, F and H when measuring voltage, resistance, etc. of AIRBAG system component parts.**

## A: TEST HARNESS A



## B: TEST HARNESS I

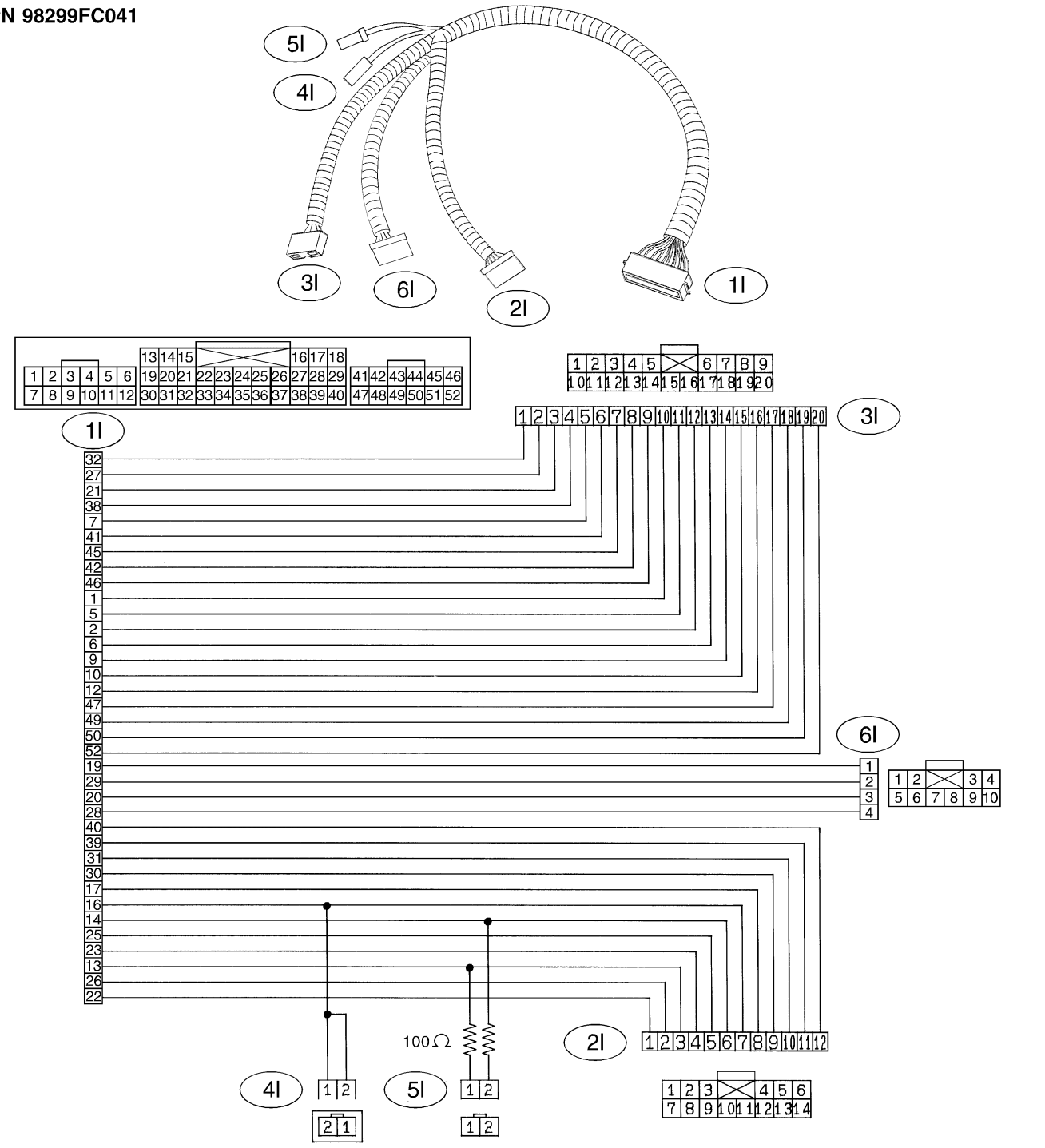
PN 98299FC040




S5M0340A

## C: TEST HARNESS I2

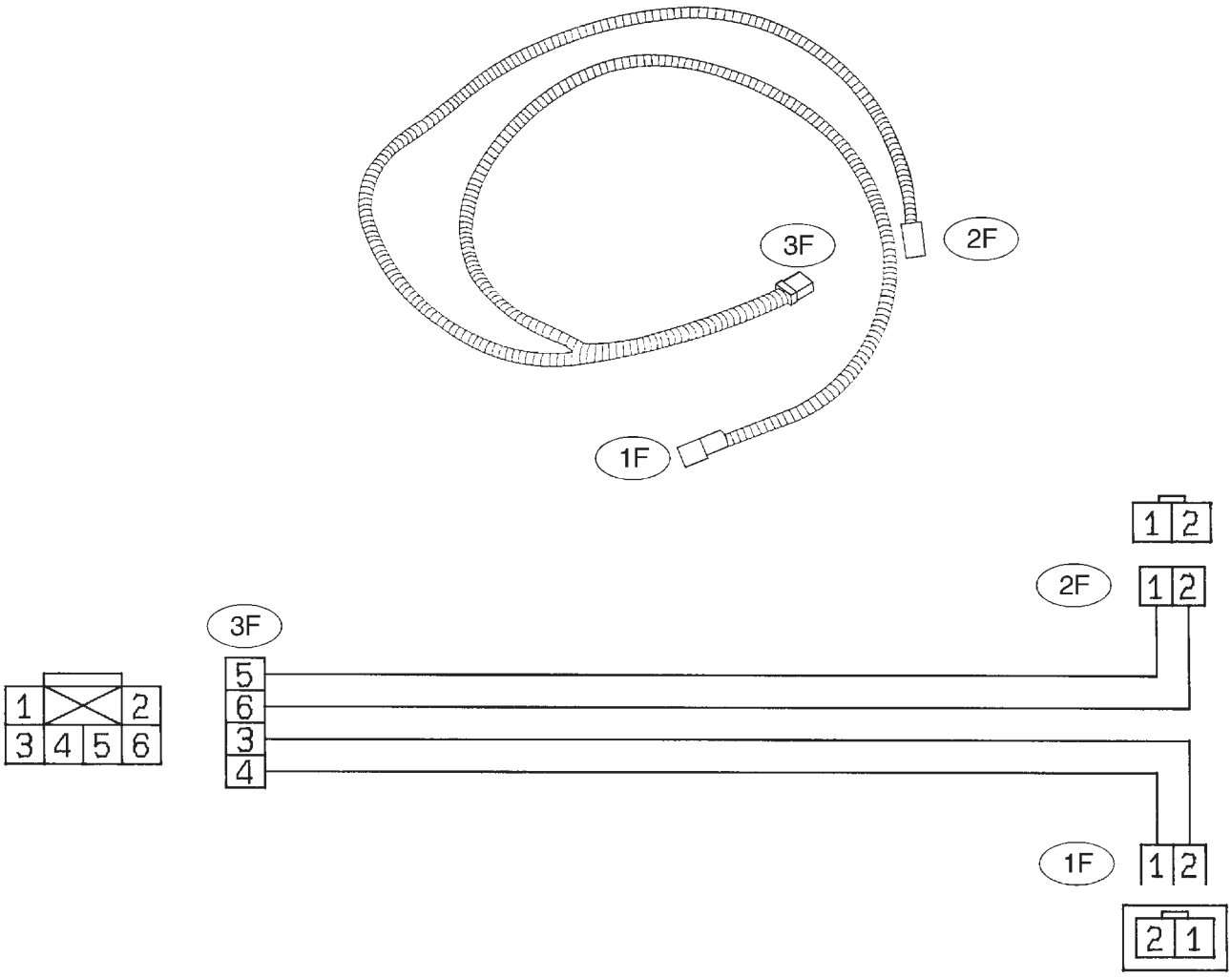
**PN 98299FC041**




B5M0927A

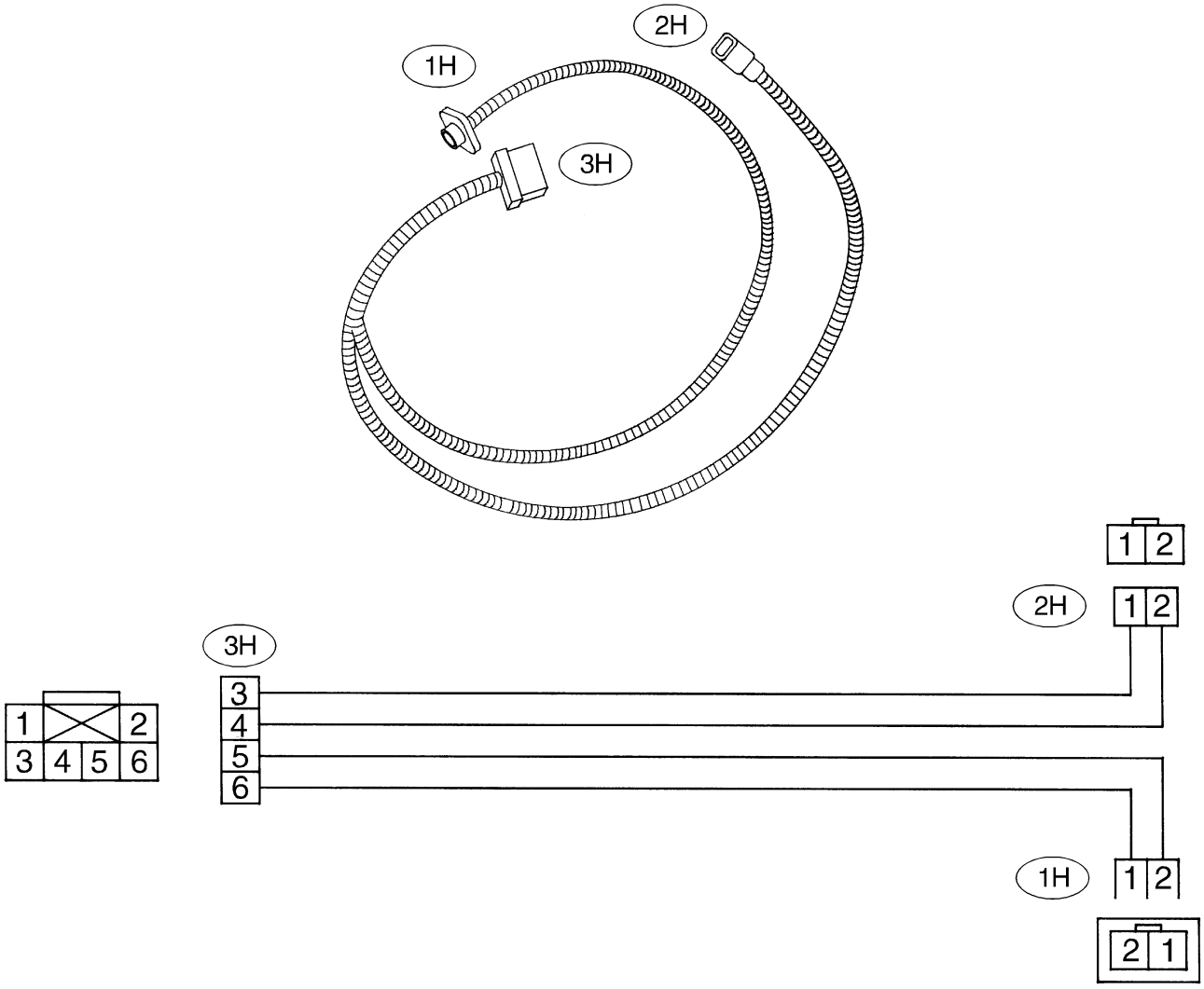
## D: TEST HARNESS F

PN 98299FC010



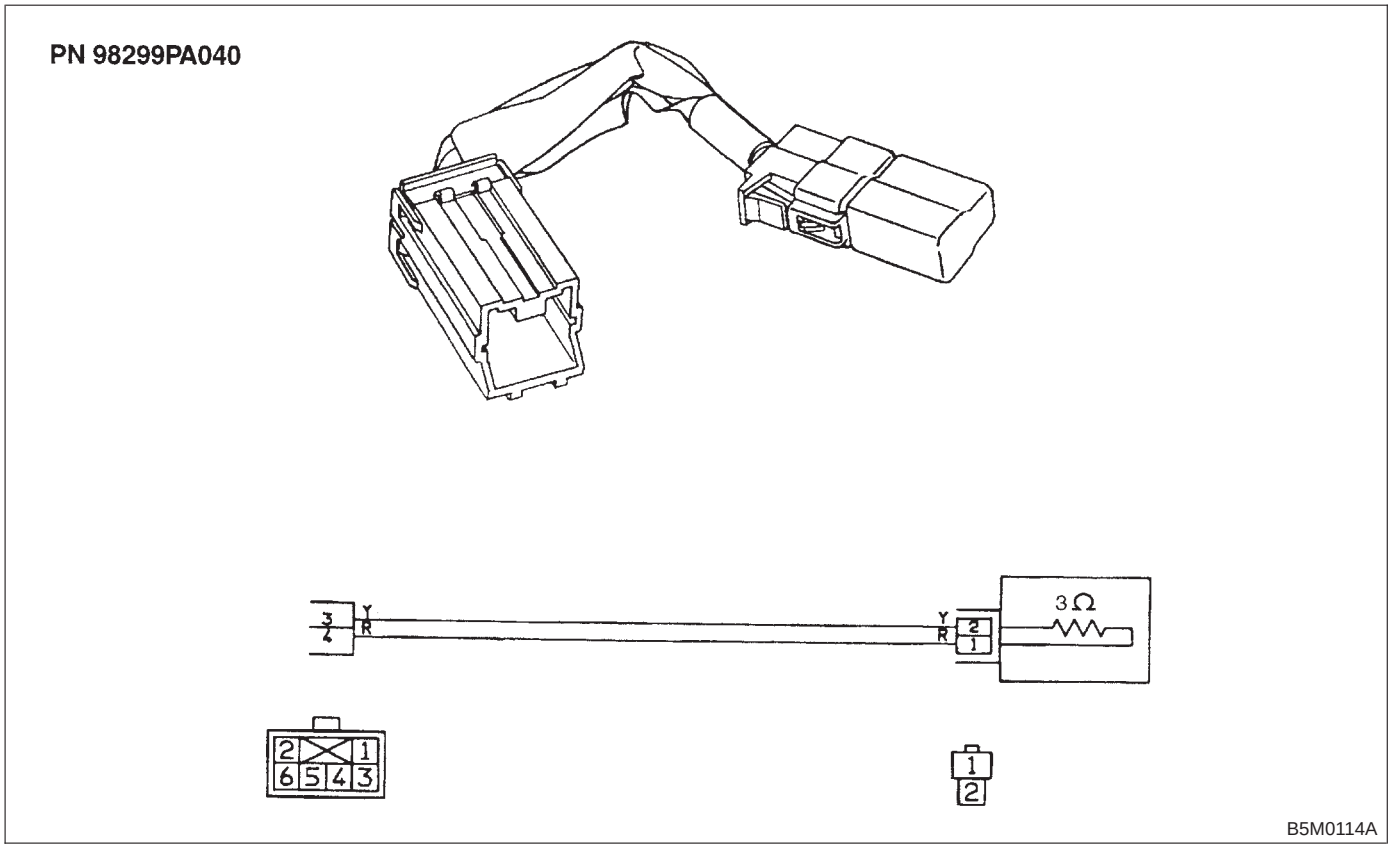
## E: TEST HARNESS H

**PN 98299FA030**



## F: 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.



# 4. Diagnostics Chart for On-board Diagnostic System

## A: BASIC DIAGNOSTICS PROCEDURE

**4A1 : CHECK AIRBAG WARNING LIGHT ILLUMINATES.**

1) Airbag warning light comes ON.
2) Turn ignition switch to ON (engine OFF).
3) Check airbag warning light illuminates.

CHECK : ***Does airbag warning light stay ON after about 7 seconds or remain OFF, or come back ON after 30 seconds?***

YES : Repair and replace. <Ref. to 5-5 [T4D0].>

NO : Go to step **4A2**.

**4A2 : CHECK TROUBLE CODE INDICATES.**

Perform ON-BOARD DIAGNOSTICS. <Ref. to 5-5 [T4B0].>

CHECK : ***Does trouble code indicate? <Ref. to 5-5 [T5A0].>***

YES : Repair and replace. <Ref. to 5-5 [T5O0].> Go to step **4A3**.

NO : Repair and replace. <Ref. to 5-5 [T5P0].> Go to step **4A3**.

**4A3 : CHECK AIRBAG WARNING LIGHT ILLUMINATES.**

1) Turn ignition switch to ON (engine OFF).
2) Check airbag warning light illuminates.

CHECK : ***Does airbag warning light stay ON after about 7 seconds or come back ON after 30 seconds?***

YES : Repair and replace. <Ref. to 5-5 [T4D0].>

NO : Go to step **4A4**.

**4A4 : CHECK AIRBAG WARNING LIGHT ILLUMINATES.**

Check airbag warning light illuminates.

CHECK : ***Does airbag warning light come ON for about 7 seconds, then go out and stay out?***

YES : Perform clear memory. <Ref. to 5-5 [T4C0].>

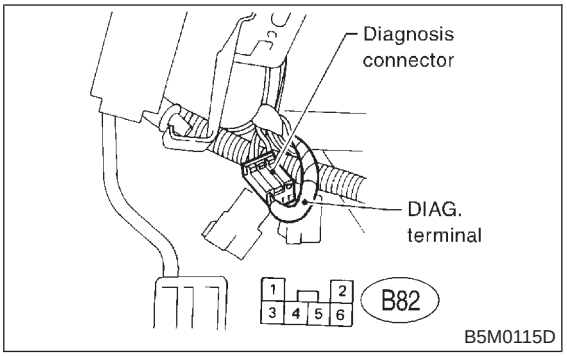
NO : Go to step **4A1**.

## B: ON-BOARD DIAGNOSTIC

When the airbag system is in functioning condition, the airbag warning light will remain on for about 7 seconds and go out when the ignition switch is set to ON.

If there is any malfunction, the airbag warning light will either stay on or off continuously. In such cases, perform on-board diagnostic in accordance with the specified procedure to determine trouble codes.

1) Turn ignition switch ON (with engine OFF).
2) Connect DIAG. terminal to No. 1 terminal of diagnosis connector located inside lower cover.

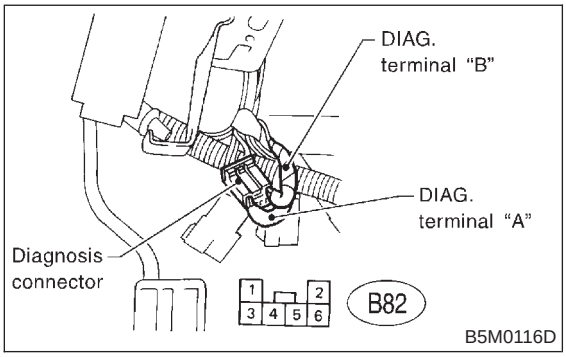



3) Check in accordance with the trouble code indicated by the AIRBAG warning light, and record the trouble codes.
4) Turn the ignition switch “OFF” and remove the DIAG. terminal from No. 1 terminal of diagnosis connector.

## C: CLEAR MEMORY

After eliminating problem as per trouble code, clear memory as follows:

1) Make sure ignition switch is ON (and engine off). Connect one DIAG. terminal “A” on diagnosis connector terminal No. 1.
While warning light is flashing, connect the other DIAG. terminal “B” on terminal No. 2 for at least three seconds.




2) After memory is cleared, normal warning light flashing rate resumes. (Warning light flashes every 0.6 seconds ON-OFF operation.) Memory cannot be cleared if any problem exists.
3) After clear memory and then DIAG. terminals “A” and “B”, extract from diagnosis connector.

## D: DIAGNOSTICS PROCEDURE

**4D1 : CHECK TROUBLE CODE INDICATES.**

1) Perform on-board diagnostic. <Ref. to 5-5 [T4B0].>
2) Check trouble code indicates.

CHECK : ***Are trouble codes 11, 12, 15 or 16 indicated? <Ref. to 5-5 [T5A2].>***
YES : Go to step **4D2**.
NO : Perform diagnostics and repair according to indicated trouble code. <Ref. to 5-5 [T5A0].>

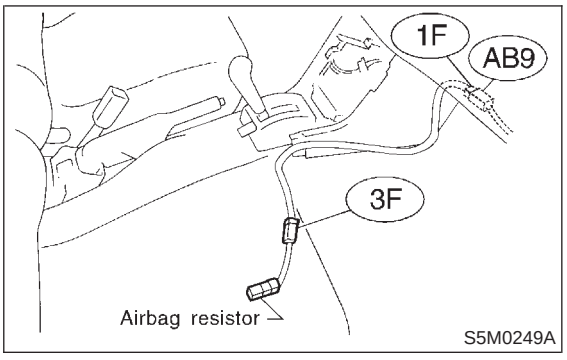
**4D2 : CHECK TROUBLE CODE INDICATES.**

Check trouble code indicates.

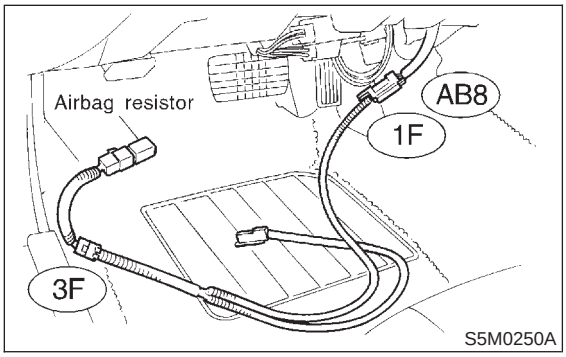
CHECK : ***Are trouble codes 12, 16 indicated? <Ref. to 5-5 [T5A2].>***
YES : Go to step **4D3**.
NO : Go to step **4D4**.

**4D3 : CHECK AIRBAG WARNING LIGHT ILLUMINATES.**

1) Turn ignition switch to OFF. Disconnect battery ground cable, and wait 20 seconds.
2) Remove glove box <Ref. to 5-4 [W1A0].> and disconnect passenger’s airbag module connector (AB9) to (AB10). <Ref. to 5-5 [W3A2].>
3) Connect test harness F connector (1F) to (AB9).
4) Connect airbag resistor to test harness F connector (3F).



5) Remove lower cover panel <Ref. to 5-4 [W1A0].> and connect test harness F connector (1F) to (AB8) with airbag resistor attached to test harness F connector (3F).




6) Connect battery ground cable and turn ignition switch to ON.
7) Check airbag warning light illuminates.

NOTE:
In some cases the airbag warning light will go OFF after about 7 seconds but will turn ON again within 30 seconds. In this case continue diagnostics with the basic diagnostics procedures or trouble code procedures.

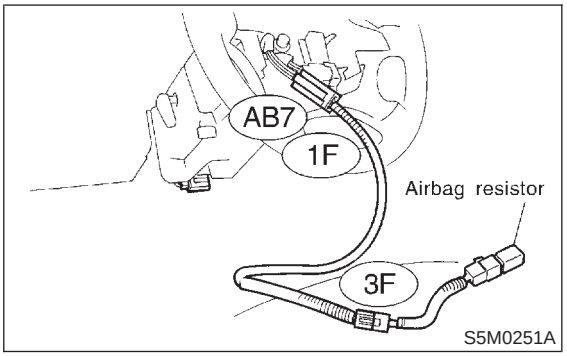
CHECK : ***Does airbag warning light go off after about 7 seconds and remain off for more than 30 seconds?***

YES : Replace with a new passenger's airbag module. <Ref. to 5-5 [W3A2].> Go to step **4D6**.

NO : Perform diagnostics and repair according to indicated trouble code. <Ref. to 5-5 [T5A0].>

**4D4 : CHECK AIRBAG WARNING LIGHT ILLUMINATES.**

1) Turn ignition switch to "OFF". Disconnect battery ground cable, and wait 20 seconds.
2) Connect connector (AB8) to (AB3).
3) Remove driver's airbag module and connect test harness F connector (1F) to (AB7). <Ref. to 5-5 [W3A1].>
4) Connect airbag resistor to test harness F connector (3F).




5) Connect battery ground cable and turn ignition switch to ON.
6) Check airbag warning light illuminates.

NOTE:
In some cases the airbag warning light will go OFF after about 7 seconds but will turn ON again within 30 seconds. In this case continue diagnostics with the basic diagnostics procedures or trouble code procedures.

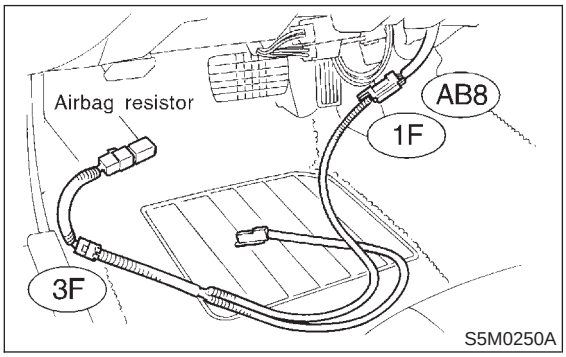
CHECK : ***Does airbag warning light go off after about 7 seconds and remain off for more than 30 seconds?***

YES : Replace with a new driver's airbag module. <Ref. to 5-5 [W3A1].> Go to step **4D6**.

NO : Go to step **4D5**.

**4D5 : CHECK AIRBAG WARNING LIGHT ILLUMINATES.**

1) Turn ignition switch to OFF. Disconnect battery ground cable, and wait 20 seconds.
2) Remove lower cover panel and connect test harness F connector (1F) to (AB8) <Ref. to 5-4 [W1A0].> with airbag resistor attached to test harness F connector (3F).




3) Connect battery ground cable and turn ignition switch to ON.
4) Check airbag warning light illuminates.

NOTE:
In some cases the airbag warning light will go OFF after about 7 seconds but will turn ON again within 30 seconds. In this case continue diagnostics with the basic diagnostics procedures or trouble code procedures.

CHECK : ***Does airbag warning light go off after about 7 seconds and remain off for more than 30 seconds?***

YES : Replace with a new combination switch. <Ref. to 5-5 [W600].> Go to step **4D6**.

NO : Perform diagnostics and repair according to indicated trouble code. <Ref. to 5-5 [T5A0].>

**4D6 : CHECK AIRBAG WARNING LIGHT ILLUMINATES.**

1) Connect battery ground cable and turn ignition switch to ON.
2) Check airbag warning light illuminates.

NOTE:
In some cases the airbag warning light will go OFF after about 7 seconds but will turn ON again within 30 seconds. In this case continue diagnostics with the basic diagnostics procedures or trouble code procedures.

CHECK : ***Does airbag warning light go off after about 7 seconds and remain off for more than 30 seconds?***

YES : Perform clear memory. <Ref. to 5-5 [T4C0].>

NO : Go to step **4D1**.

# 5. Diagnostics Chart with Trouble Code

## A: TROUBLE CODES

### 1. LIST OF TROUBLE CODES

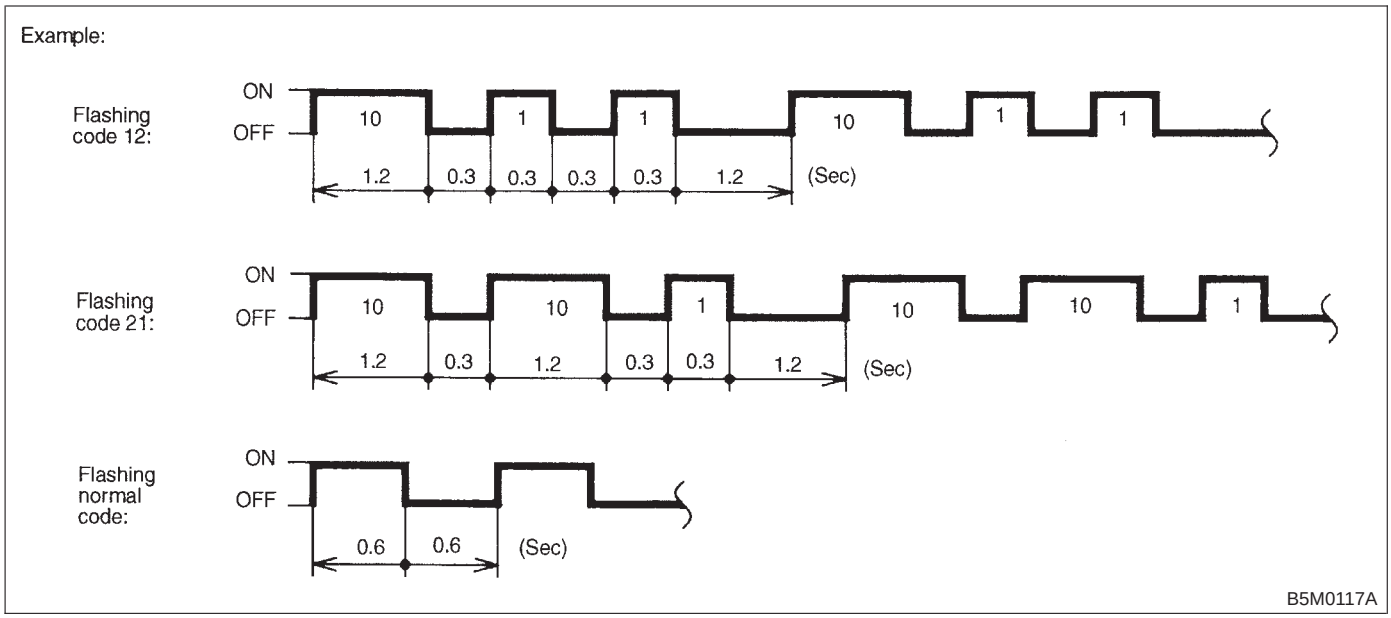
| Trouble code/ Contents of troubles | Memory function | Contents of diagnosis | Index No. |
|---|---|---|---|
| 11 | Provided. | ● Airbag main harness circuit is open, shorted or shorted to ground.<br>● Airbag module harness (driver) circuit is open, shorted or shorted to ground.<br>● Roll connector circuit is open, shorted or shorted to ground.<br>● Airbag control module is faulty. | <Ref. to 5-5 [T5B0].> |
| 12 | Provided. | ● Airbag main harness circuit is open, shorted or shorted to ground.<br>● Airbag module harness (passenger) circuit is open, shorted or shorted to ground.<br>● Airbag control module is faulty. | <Ref. to 5-5 [T5C0].> |
| 15 | Provided. | ● Airbag main harness circuit (driver) is shorted to power supply.<br>● Airbag module harness (driver) is shorted to power supply.<br>● Roll connector is shorted to power supply.<br>● Airbag control module is faulty. | <Ref. to 5-5 [T5D0].> |
| 16 | Provided. | ● Airbag main harness circuit (passenger) is shorted to power supply.<br>● Airbag module harness (passenger) is shorted to power supply.<br>● Airbag control module is faulty. | <Ref. to 5-5 [T5E0].> |
| 21 | Provided. | Airbag control module is faulty. | <Ref. to 5-5 [T5F0].> |
| 22 | Provided. | Front airbag module is inflated. | <Ref. to 5-5 [T5G0].> |
| 23 | Not provided. | (AB6) is not connected properly to airbag control module. | <Ref. to 5-5 [T5H0].> |
| 24 | Not provided. | ● Airbag control module is faulty.<br>● Airbag main harness circuit is open.<br>● Fuse No. 11 (in joint box) is blown.<br>● Body harness circuit is open. | <Ref. to 5-5 [T5I0].> |
| 25 | Provided. | ● Airbag control module is faulty.<br>● Airbag main harness circuit is open.<br>● Fuse No. 6 (in joint box) is blown.<br>● Body harness circuit is open. | <Ref. to 5-5 [T5J0].> |
| 31 | Provided. | ● Front sub sensor harness (RH) circuit is shorted.<br>● Front sub sensor harness (RH) circuit is open.<br>● Front sub sensor (RH) is faulty.<br>● Airbag control module is faulty. | <Ref. to 5-5 [T5K0].> |
| 32 | Provided. | ● Front sub sensor harness (LH) circuit is shorted.<br>● Front sub sensor harness (LH) circuit is open.<br>● Front sub sensor (LH) is faulty.<br>● Airbag control module is faulty. | <Ref. to 5-5 [T5L0].> |
| Airbag warning light remains on. | Not provided. | ● Airbag warning light is faulty.<br>● Airbag control module to airbag warning light harness circuit is shorted or open.<br>● Grounding circuit is faulty.<br>● Airbag control module is faulty.<br>● (AB1) and (B31) are not connected properly.<br>● (AB6) is not connected properly to airbag control module. | <Ref. to 5-5 [T5M0].> |

| Trouble code/ Contents of troubles | Memory function | Contents of diagnosis | Index No. |
|---|---|---|---|
| Airbag warning light remains off. | Not provided. | ● Fuse No. 18 (in joint box) is blown.<br>● Body harness circuit is open.<br>● Airbag warning light is faulty.<br>● Airbag main harness is faulty.<br>● Airbag control module is faulty. | <Ref. to 5-5 [T5N0].> |
| Warning light indicates trouble code, then normal code. (Flashing trouble code.) | Provided. | Airbag system component parts are faulty. | <Ref. to 5-5 [T5O0].> |
| Warning light indicates trouble code, then normal code. (Flashing normal code.) | Not provided. | ● Airbag connector is faulty.<br>● Fuse No. 11 (in joint box) is blown.<br>● Airbag main harness is faulty.<br>● Airbag control module is faulty.<br>● Body harness is faulty. | <Ref. to 5-5 [T5P0].> |

## 2. HOW TO READ TROUBLE CODES

The AIRBAG warning light flashes a code 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”.



## B: TROUBLE CODE 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.
- Airbag control module is faulty.

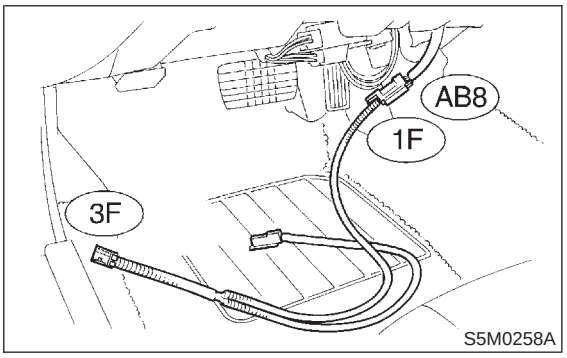
**CAUTION:**

**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground cable and then wait at least 20 seconds.**

**After 20 seconds elapse, remove instrument panel lower cover, and disconnect (AB3) and (AB8), (AB9) and (AB10).**

### 5B1 : AIRBAG MAIN HARNESS INSPECTION

1) Remove lower cover panel <Ref. to 5-4 [W1A0].>, and connect connector (AB8) below steering column to test harness F connector (1F).

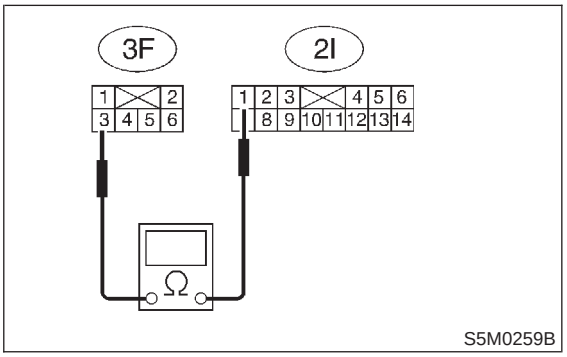



2) Disconnect connector (AB6) <Ref. to 5-5 [W5A0].> from airbag control module, and connect it to test harness I or I2 connector (1I) terminal.

3) Measure resistance between test harness I or I2 connector (2I) and test harness F connector (3F) terminals.

***Connector & terminal***

***(2I) No. 1 — (3F) No. 3:***




CHECK : ***Is resistance less than 10 Ω?***

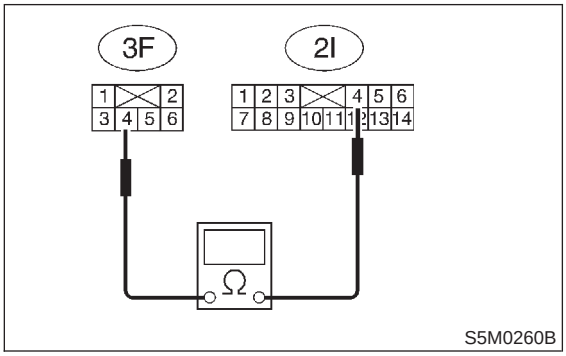
YES : Go to step **5B2**.

NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5B2 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance between test harness I or I2 connector (2I) and test harness F connector (3F) terminals.

***Connector & terminal***
***(2I) No. 4 — (3F) No. 4:***

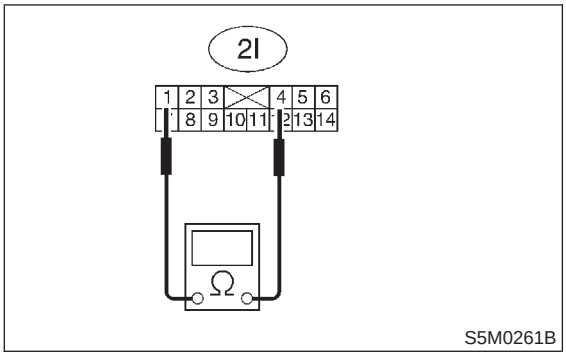



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **5B3**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5B3 : AIRBAG MAIN HARNESS INSPECTION**

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Measure resistance between test harness I or I2 connector (2I) terminal.

***Connector & terminal***
***(2I) No. 1 — No. 4:***

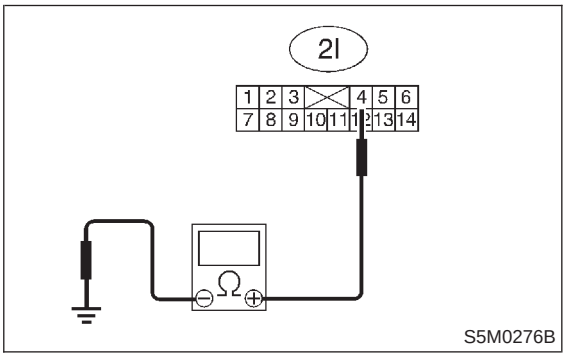



CHECK : ***Is resistance more than 10 kΩ?***
YES : Go to step **5B4**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5B4 : AIRBAG MAIN HARNESS INSPECTION**

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Measure resistance between test harness I or I2 connector (2I) terminals and chassis ground.

***Connector & terminal***
***(2I) No. 4 (+) — Chassis ground (−):***

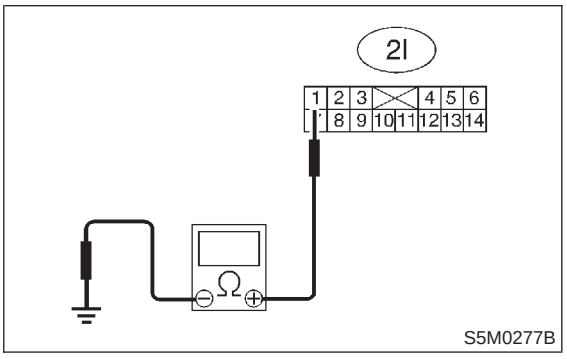



CHECK : ***Is resistance more than 200 Ω?***
YES : Go to step **5B5**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5B5 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance between test harness I or I2 connector (2I) terminals and chassis ground.

***Connector & terminal***
***(2I) No. 1 (+) — Chassis ground (−):***




CHECK : ***Is resistance more than 200 Ω?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

## C: TROUBLE CODE 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.
- Airbag control module is faulty.

**CAUTION:**

**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground cable and then wait at least 20 seconds.**

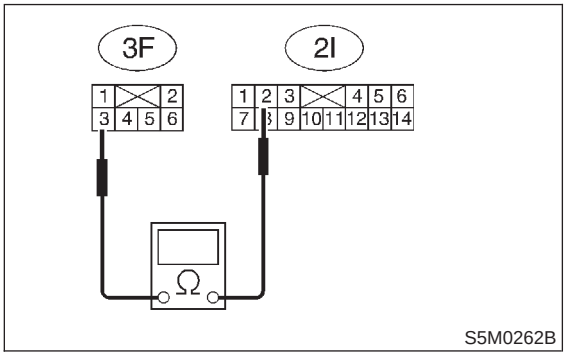
**After 20 seconds elapse, remove instrument panel lower cover, and disconnect (AB3) and (AB8), (AB9) and (AB10).**

**5C1 : AIRBAG MAIN HARNESS INSPECTION**

1) Remove glove box. <Ref. to 5-4 [W1A0].>
2) Disconnect connector (AB9) and (AB10) <Ref. to 5-5 [W3A2].> and connect connector (AB9) to test harness F connector (1F).
3) Disconnect connector (AB6) <Ref. to 5-5 [W5A0].> from airbag control module, and connect it to test harness I or I2 connector (1I) terminal.
4) Measure resistance between test harness I or I2 connector (2I) and test harness F connector (3F) terminals.

***Connector & terminal***

***(2I) No. 2 — (3F) No. 3:***



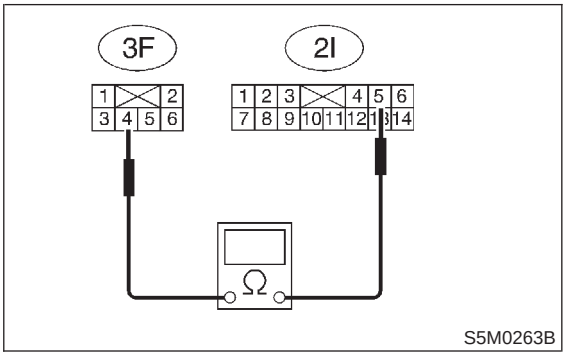

CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **5C2**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5C2 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance between test harness I or I2 connector (2I) and test harness F connector (3F) terminals.

***Connector & terminal***

***(2I) No. 5 — (3F) No. 4:***



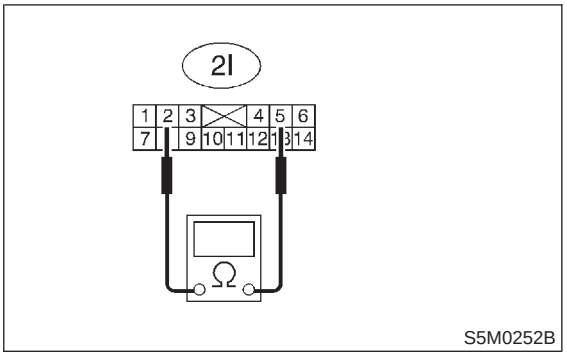

CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **5C3**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5C3 : AIRBAG MAIN HARNESS INSPECTION**

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Measure resistance between test harness I or I2 connector (2I) terminal.

***Connector & terminal***

***(2I) No. 2 — No. 5:***

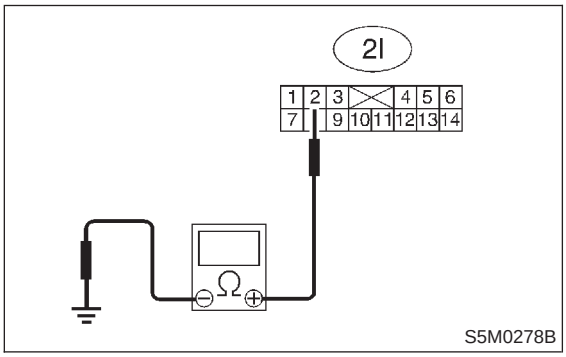



CHECK : ***Is resistance more than 10 kΩ?***
YES : Go to step **5C4**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5C4 : AIRBAG MAIN HARNESS INSPECTION**

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Measure resistance between test harness I or I2 connector (2I) terminals and chassis ground.

***Connector & terminal***
***(2I) No. 2 (+) — Chassis ground (−):***

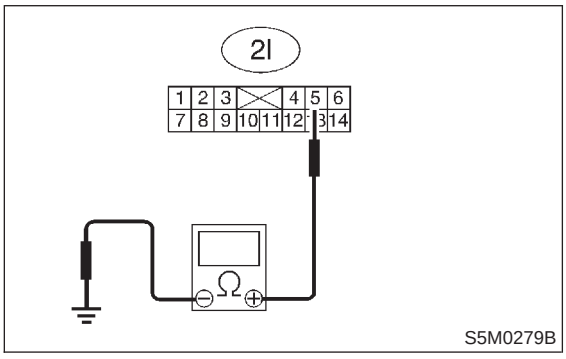



CHECK : ***Is resistance more than 200 Ω?***
YES : Go to step **5C5**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5C5 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance between test harness I or I2 connector (2I) terminals and chassis ground.

***Connector & terminal***
***(2I) No. 5 (+) — Chassis ground (−):***




CHECK : ***Is resistance more than 200 Ω?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

## D: TROUBLE CODE 15

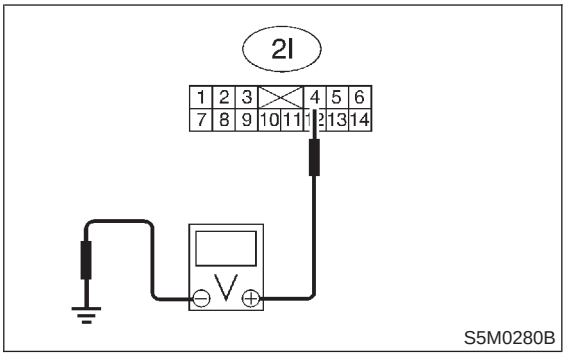
**DIAGNOSIS:**
- Airbag main harness circuit (Driver) is shorted to power supply.
- Airbag module harness (Driver) is shorted to power supply.
- Roll connector is shorted to power supply.
- Airbag control module is faulty.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground terminal and then wait at least 20 seconds.**
**After 20 seconds elapse, remove instrument panel lower cover, and disconnect (AB3) and (AB8), (AB9) and (AB10).**

**5D1 : AIRBAG MAIN HARNESS INSPECTION**

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Connect battery ground cable and turn ignition switch "ON" (engine off).
3) Measure voltage across each test harness I or I2 connector (2I) terminal and chassis ground.

***Connector & terminal***
***(2I) No. 4 (+) — Chassis ground (−):***

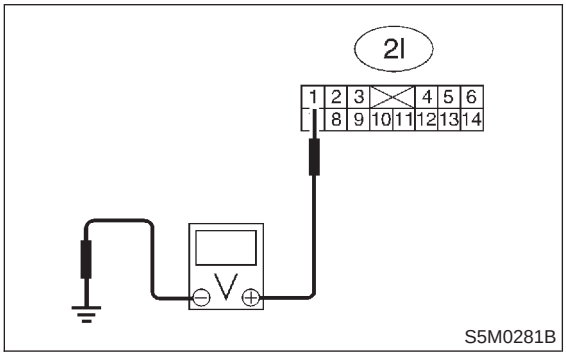



CHECK : ***Is voltage less than 1 V?***
YES : Go to step **5D2**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5D2 : AIRBAG MAIN HARNESS INSPECTION**

Measure voltage across each test harness I or I2 connector (2I) terminal and chassis ground.

***Connector & terminal***
***(2I) No. 1 (+) — Chassis ground (−):***




CHECK : ***Is voltage less than 1 V?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

## E: TROUBLE CODE 16

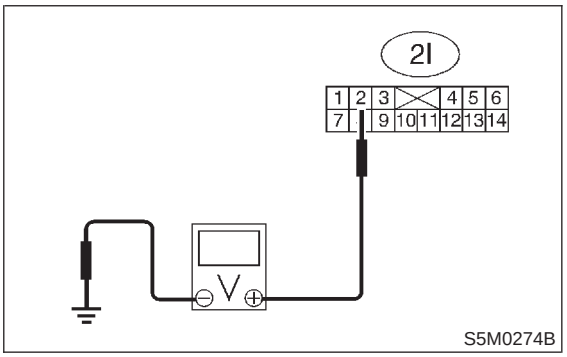
**DIAGNOSIS:**
- Airbag main harness circuit (Passenger) is shorted to power supply.
- Airbag module harness (Passenger) is shorted to power supply.
- Airbag control module is faulty.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground terminal and then wait at least 20 seconds.**
**After 20 seconds elapse, remove instrument panel lower cover, and disconnect (AB3) and (AB8), (AB9) and (AB10).**

**5E1 : AIRBAG MAIN HARNESS INSPECTION**

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Connect battery ground cable and turn ignition switch "ON" (engine off).
3) Measure voltage across each test harness I or I2 connector (2I) terminal and chassis ground.

***Connector & terminal***
***(2I) No. 2 (+) — Chassis ground (−):***

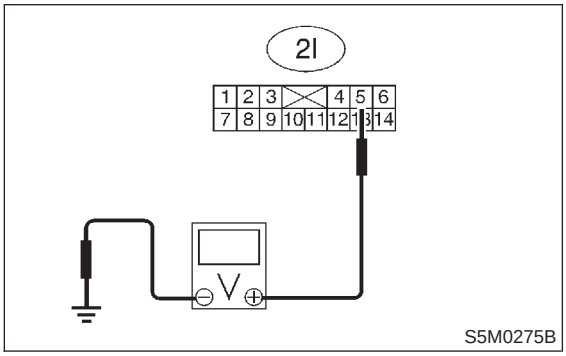



CHECK : ***Is voltage less than 1 V?***
YES : Go to step **5E2**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5E2 : AIRBAG MAIN HARNESS INSPECTION**

Measure voltage across each test harness I or I2 connector (2I) terminal and chassis ground.

***Connector & terminal***
***(2I) No. 5 (+) — Chassis ground (−):***




CHECK : ***Is voltage less than 1 V?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

## F: TROUBLE CODE 21

**DIAGNOSIS:**
Airbag control module is faulty.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground terminal, and then wait at least 20 seconds.**

**5F1 : CHECK IF TROUBLE CODE 21 IS INDICATED.**

Confirm flashing trouble code according to "BASIC DIAGNOSTICS PROCEDURE". <Ref. to 5-5 [T4A0].>

CHECK : ***Is airbag warning light trouble code 21 indicated?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Perform clear memory. <Ref. to 5-5 [T4C0].>

## G: TROUBLE CODE 22

**DIAGNOSIS:**
Front airbag module is inflated.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground terminal, and then wait at least 20 seconds.**

| | |
|---|---|
| **5G1 :** | **CHECK IF TROUBLE CODE 22 IS INDICATED.** |

Confirm flashing trouble code according to "BASIC DIAGNOSTICS PROCEDURE". <Ref. to 5-5 [T4A0].>

CHECK : ***Is airbag warning light trouble code 22 indicated?***

YES : Replace airbag control module <Ref. to 5-5 [W5A0].>, front sub sensor <Ref. to 5-5 [W7A0].>, driver's airbag module <Ref. to 5-5 [W3A1].> and passenger's airbag module. <Ref. to 5-5 [W3A2].>

NO : Perform clear memory. <Ref. to 5-5 [T4C0].>

## H: TROUBLE CODE 23

**DIAGNOSIS:**
(AB6) is not connected properly to airbag control module.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground cable and then wait at least 20 seconds.**

| | |
|---|---|
| **5H1 :** | **CHECK POOR CONTACT IN CONNECTOR (AB6).** |

Check connector (AB6) connected to airbag control module. <Ref. to 5-5 [W5A0].>

CHECK : ***Is there poor contact in connector (AB6)?***

YES : Repair poor contact in connector (AB6).

NO : Replace airbag control module. <Ref. to 5-5 [W5A0].>

# I: TROUBLE CODE 24

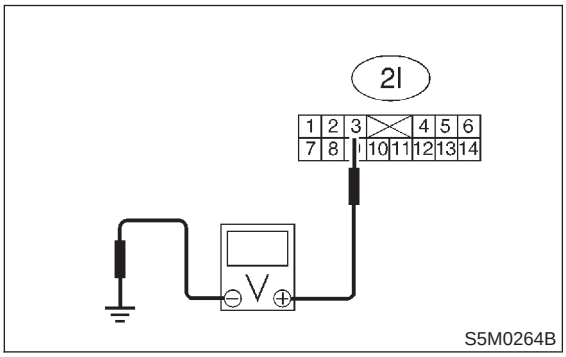
**DIAGNOSIS:**
- Airbag control module is faulty.
- Airbag main harness circuit is open.
- Fuse No. 11 (in joint box) is blown.
- Body harness circuit is open.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground cable and then wait at least 20 seconds.**
**After 20 seconds elapse, remove instrument panel lower cover, and disconnect (AB3) and (AB8), (AB9) and (AB10).**

## 5I1 : AIRBAG CONTROL MODULE INSPECTION

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Connect battery ground cable and turn ignition switch "ON" (engine off).
3) Measure voltage across connector (2I) terminal and chassis ground.

***Connector & terminal***
***(2I) No. 3 (+) — Chassis ground (−):***

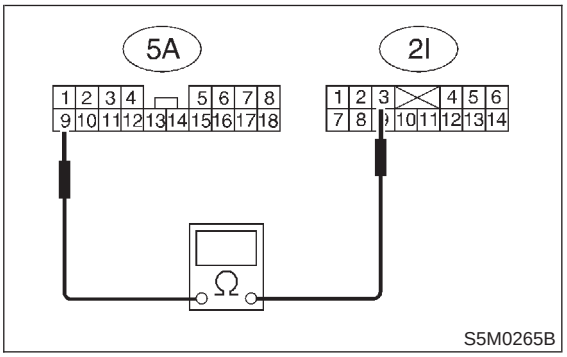



CHECK : ***Is voltage more than 10 V?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Go to step **5I2**.

## 5I2 : AIRBAG MAIN HARNESS INSPECTION

1) Go to following procedure after performing diagnostics on airbag system as per diagnosis procedure under "5I1 AIRBAG CONTROL MODULE INSPECTION" <Ref. to 5-5 [T5I1].> previously outlined.
2) Turn ignition switch "OFF", disconnect battery ground cable and then wait at least 20 seconds.
3) Disconnect connector (AB1) from body harness connector (B31) at front lower pillar (driver side), and connect connector (AB1) to test harness A connector (2A).
4) Measure resistance between test harness A connector (5A) and test harness I or I2 connector (2I) terminals.

***Connector & terminal***
***(5A) No. 9 — (2I) No. 3:***

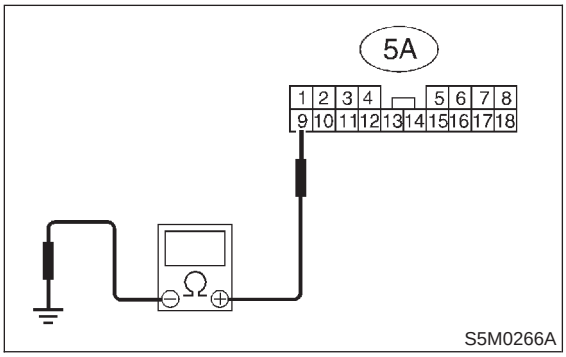



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **5I3**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

### 5I3 : AIRBAG MAIN HARNESS INSPECTION

Measure resistance between each terminal of connectors (5A) and chassis ground.

***Connector & terminal***
***(5A) No. 9 (+) — Chassis ground (−):***

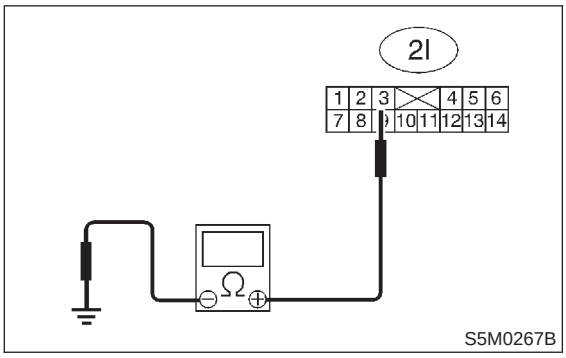



CHECK : ***Is resistance more than 10 kΩ?***
YES : Go to step **5I4**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

### 5I4 : AIRBAG MAIN HARNESS INSPECTION

Measure resistance between each terminal of connectors (2I) and chassis ground.

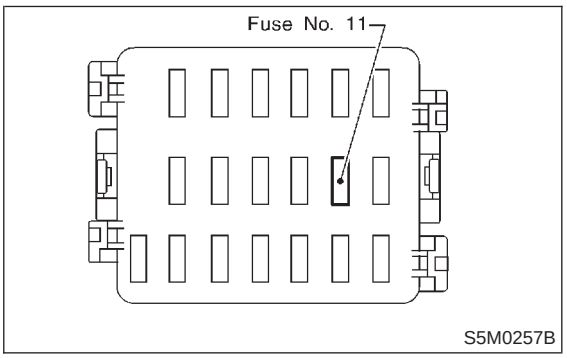
***Connector & terminal***
***(2I) No. 3 (+) — Chassis ground (−):***




CHECK : ***Is resistance more than 10 kΩ?***
YES : Go to step **5I5**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

### 5I5 : FUSE NO. 11 (IN JOINT BOX) INSPECTION

Make sure ignition switch is turned “OFF”, then remove and visually check fuse No. 11 (in joint box).




CHECK : ***Is fuse No. 11 blown?***
YES : Replace fuse No. 11. If fuse No. 11 blows again, repair body harness.
NO : Repair body harness.

## J: TROUBLE CODE 25

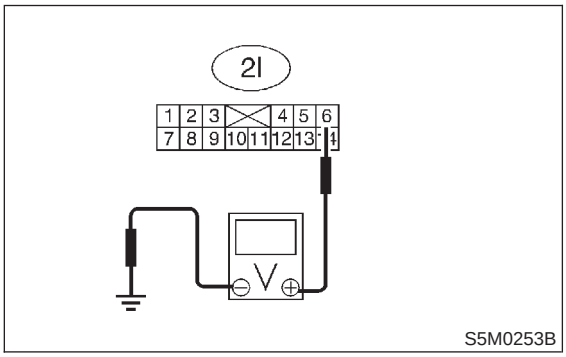
**DIAGNOSIS:**
- Airbag control module is faulty.
- Airbag main harness circuit is open.
- Fuse No. 6 (in joint box) is blown.
- Body harness circuit is open.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground cable and then wait at least 20 seconds.**
**After 20 seconds elapse, remove instrument panel lower cover, and disconnect (AB3) and (AB8), (AB9) and (AB10).**

### 5J1 : AIRBAG CONTROL MODULE INSPECTION

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].> and connect it to test harness I or I2 connector (1I).
2) Connect battery ground cable and turn ignition switch "ON". (engine off)
3) Measure voltage across connector (2I) terminal and chassis ground.

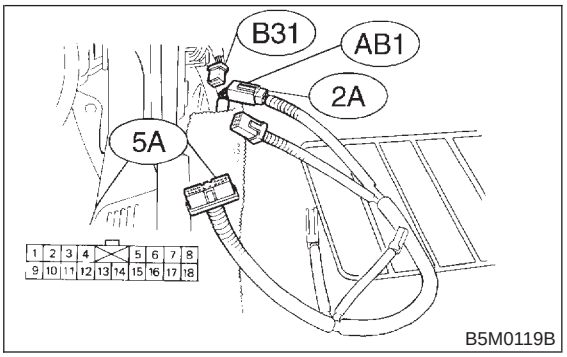
***Connector & terminal***
***(2I) No. 6 (+) — Chassis ground (−):***




CHECK : ***Is voltage more than 10 V?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Go to step **5J2**.

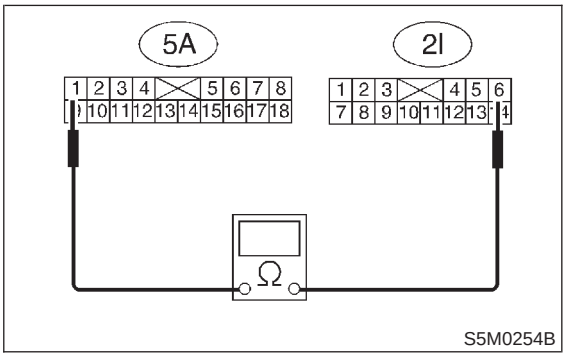
### 5J2 : AIRBAG MAIN HARNESS INSPECTION

1) Go to following procedure after performing diagnostics on airbag system as per diagnosis procedure under "5J1 AIRBAG CONTROL MODULE INSPECTION" <Ref. to 5-5 [T5J1].> previously outlined.
2) Turn ignition switch "OFF", disconnect battery ground terminal and then wait at least 20 seconds.
3) Disconnect body harness connector (B31) from connector (AB1) at front lower pillar, and connect connector (AB1) to test harness A connector (2A).




4) Measure resistance between test harness A connector (5A) terminal and test harness I or I2 connector (2I) terminal.

***Connector & terminal***
***(5A) No. 1 — (2I) No. 6:***

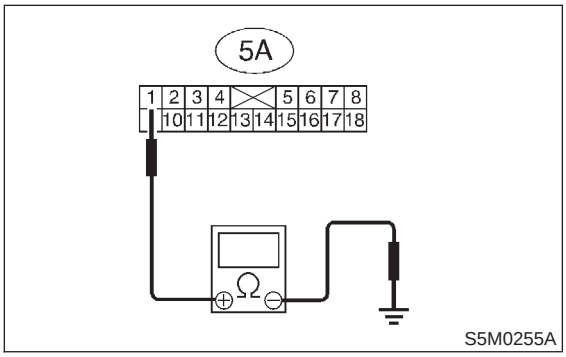



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **5J3**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

### 5J3 : AIRBAG MAIN HARNESS INSPECTION

Measure resistance between (5A) connector terminal and chassis ground.

***Connector & terminal***
***(5A) No. 1 (+) — Chassis ground (−):***

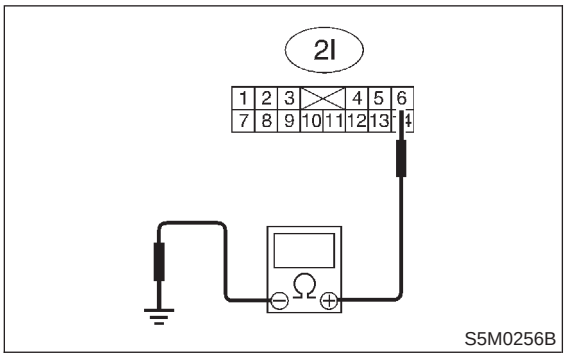



CHECK : ***Is resistance more than 10 kΩ?***
YES : Go to step **5J4**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

### 5J4 : AIRBAG MAIN HARNESS INSPECTION

Measure resistance between (2I) connector terminal and chassis ground.

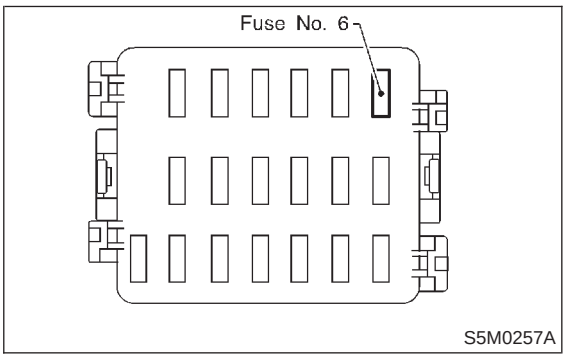
***Connector & terminal***
***(2I) No. 6 (+) — Chassis ground (−):***




CHECK : ***Is resistance more than 10 kΩ?***
YES : Go to step **5J5**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

### 5J5 : FUSE NO. 6 (IN JOINT BOX) INSPECTION

1) Turn ignition switch “OFF”.
2) Remove and visually check fuse No. 6 (in joint box).




CHECK : ***Is fuse No. 6 blown?***
YES : Replace fuse No. 6 if fuse No. 6 blows again, repair body harness.
NO : Repair body harness.

## K: TROUBLE CODE 31

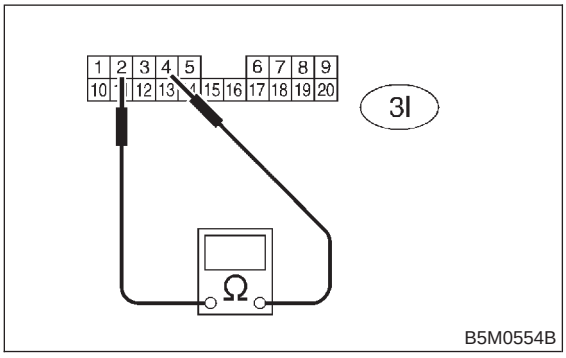
**DIAGNOSIS:**
- Front sub sensor harness (RH) circuit is shorted.
- Front sub sensor harness (RH) circuit is open.
- Front sub sensor (RH) is faulty.
- Airbag control module is faulty.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground terminal, and then wait at least 20 seconds.**

**5K1 : FRONT SUB SENSOR (RH) AND FRONT SUB SENSOR HARNESS (RH) INSPECTION**

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Measure resistance between test harness I or I2 connector (3I) terminal.

***Connector & terminal***
***(3I) No. 2 — No. 4:***

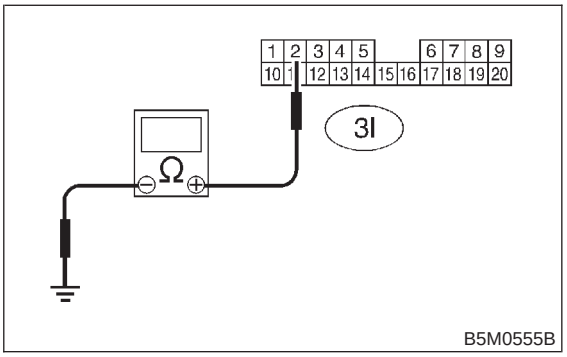



CHECK : ***Is the resistance between 750 Ω and 1 kΩ?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Go to step **5K2**.

**5K2 : FRONT SUB SENSOR (RH) AND FRONT SUB SENSOR HARNESS (RH) INSPECTION**

Measure resistance across test harness I or I2 connector (3I) terminal and chassis ground.

***Connector & terminal***
***(3I) No. 2 (+) — Chassis ground (−):***

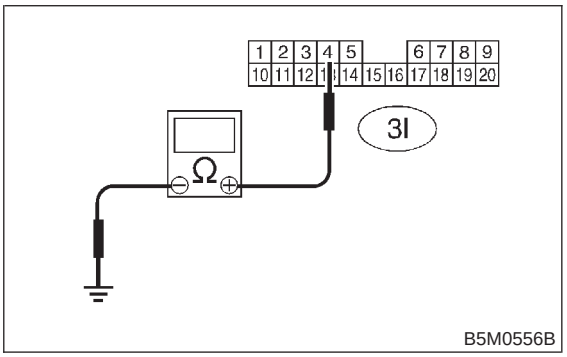



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Go to step **5K3**.

**5K3 : FRONT SUB SENSOR (RH) AND FRONT SUB SENSOR HARNESS (RH) INSPECTION**

Measure resistance across test harness I or I2 connector (3I) terminal and chassis ground.

***Connector & terminal***
***(3I) No. 4 (+) — Chassis ground (−):***

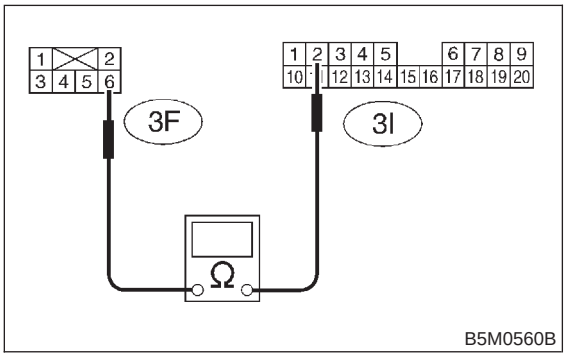



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Go to step **5K4**.

**5K4 : AIRBAG MAIN HARNESS INSPECTION**

1) Disconnect connector (AB14) and (AB15), then connect test harness F connector (2F) and connector (AB14).
2) Measure resistance between test harness I or I2 connector (3I) terminal and test harness F connector (3F) terminal.

***Connector & terminal***
***(3I) No. 2 — (3F) No. 6:***

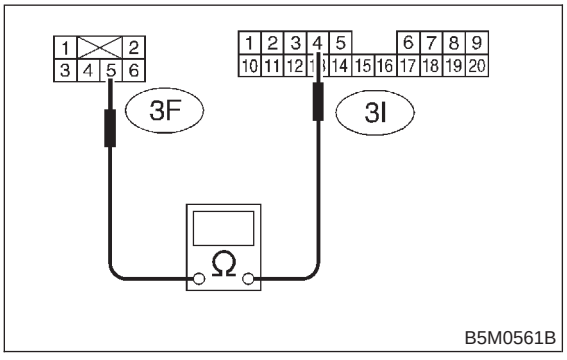



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **5K5**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5K5 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance between test harness I or I2 connector (3I) terminal and test harness F connector (3F) terminal.

***Connector & terminal***
***(3I) No. 4 — (3F) No. 5:***

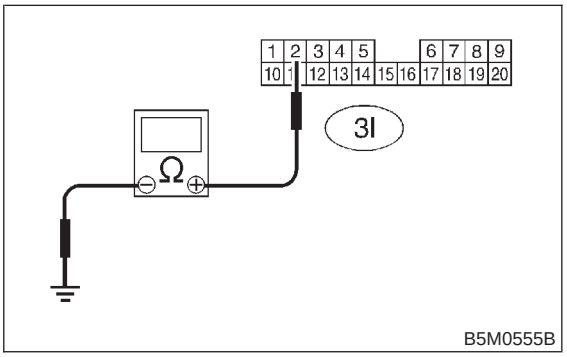



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **5K6**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5K6 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance across test harness I or I2 connector (3I) terminal and chassis ground.

***Connector & terminal***
***(3I) No. 2 (+) — Chassis ground (−):***

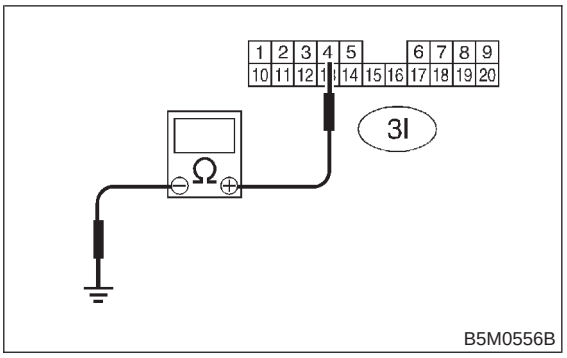



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Go to step **5K7**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5K7 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance across test harness I or I2 connector (3I) terminal and chassis ground.

***Connector & terminal***
***(3I) No. 4 (+) — Chassis ground (−):***

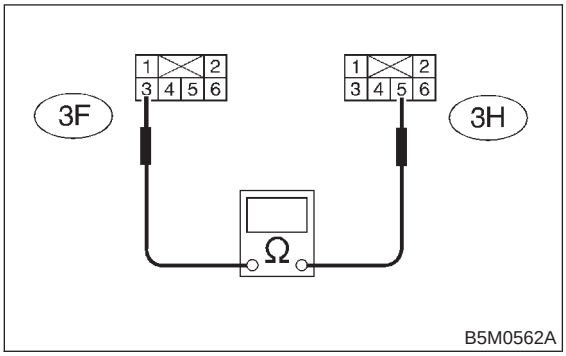



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Go to step **5K8**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5K8 : FRONT SUB SENSOR HARNESS (RH) INSPECTION**

1) Connect test harness F connector (1F) and connector (AB15).
2) Disconnect connector (AB16) from front sub sensor (RH) <Ref. to 5-5 [W7A0].> and then test harness H connector (1H) and connector (AB16).
3) Measure resistance between test harness F connector (3F) terminal and test harness H connector (3H) terminal.

***Connector & terminal***
***(3F) No. 3 — (3H) No. 5:***

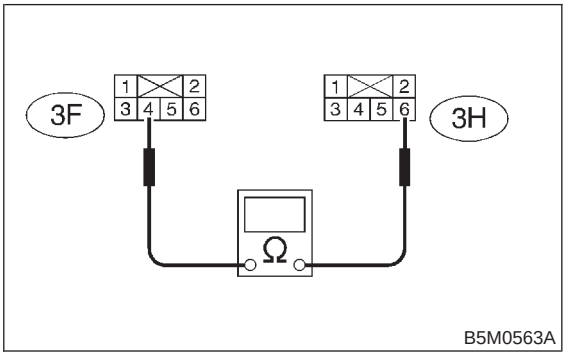



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **5K9**.
NO : Replace front sub sensor harness (RH). <Ref. to 5-5 [W7A0].>

**5K9 : FRONT SUB SENSOR HARNESS (RH) INSPECTION**

Measure resistance between test harness F connector (3F) terminal and test harness H connector (3H) terminal.

***Connector & terminal***
***(3F) No. 4 — (3H) No. 6:***

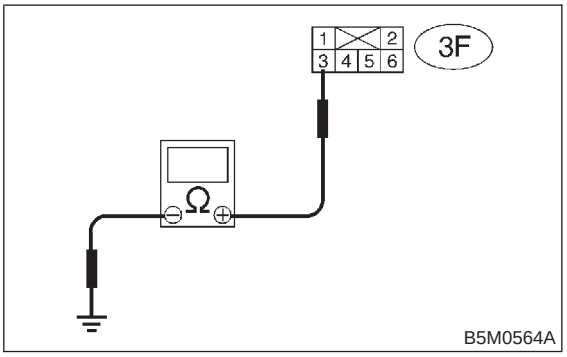



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **5K10**.
NO : Replace front sub sensor harness (RH). <Ref. to 5-5 [W7A0].>

**5K10 : FRONT SUB SENSOR HARNESS (RH) INSPECTION**

Measure resistance across test harness F connector (3F) terminal and chassis ground.

***Connector & terminal***
***(3F) No. 3 (+) — Chassis ground (−):***

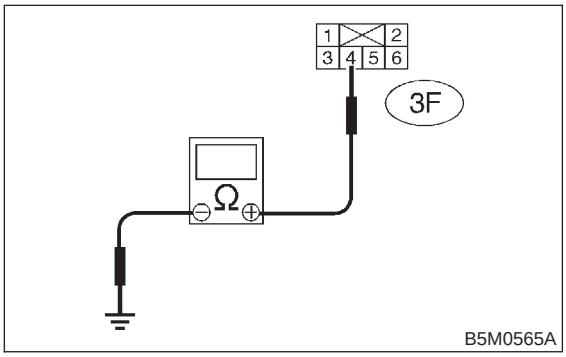



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Go to step **5K11**.
NO : Replace front sub sensor harness (RH). <Ref. to 5-5 [W7A0].>

### 5K11 : FRONT SUB SENSOR HARNESS (RH) INSPECTION

Measure resistance across test harness F connector (3F) terminal and chassis ground.

***Connector & terminal***
***(3F) No. 4 (+) — Chassis ground (−):***

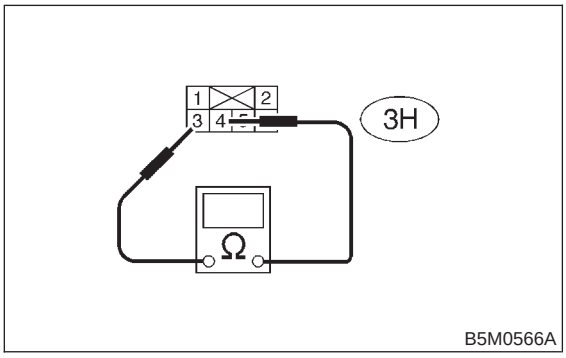



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Go to step **5K12**.
NO : Replace front sub sensor harness (RH). <Ref. to 5-5 [W7A0].>

### 5K12 : FRONT SUB SENSOR (RH) INSPECTION

1) Connect test harness H connector (2H) and front sub sensor (RH).
2) Measure resistance between test harness H connector (3H) terminal.

***Connector & terminal***
***(3H) No. 3 — No. 4:***

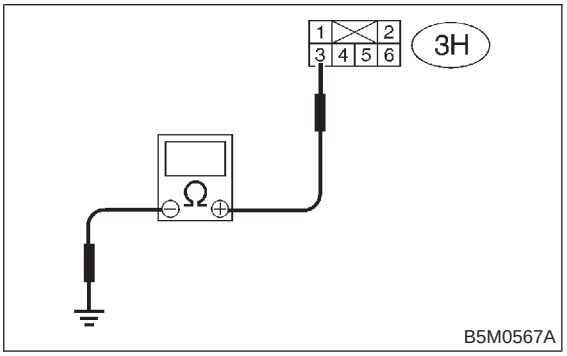



CHECK : ***Is the resistance between 750 Ω and 1 kΩ?***
YES : Go to step **5K13**.
NO : Replace front sub sensor (RH). <Ref. to 5-5 [W7A0].>

### 5K13 : FRONT SUB SENSOR (RH) INSPECTION

Measure resistance across test harness H connector (3H) terminal and chassis ground.

***Connector & terminal***
***(3H) No. 3 (+) — Chassis ground (−):***

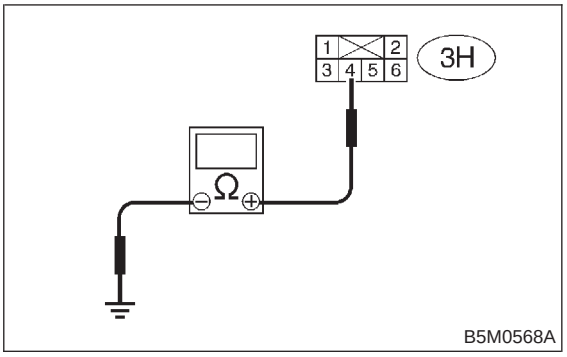



CHECK : ***Is the resistance less than 10 kΩ?***
YES : Go to step **5K14**.
NO : Replace front sub sensor (RH). <Ref. to 5-5 [W7A0].>

### 5K14 : FRONT SUB SENSOR (RH) INSPECTION

Measure resistance across test harness H connector (3H) terminal and chassis ground.

***Connector & terminal***
***(3H) No. 4 (+) — Chassis ground (−):***




CHECK : ***Is the resistance less than 10 kΩ?***
YES : Perform clear memory. <Ref. to 5-5 [T4C0].>
NO : Replace front sub sensor (RH). <Ref. to 5-5 [W7A0].>

## L: TROUBLE CODE 32

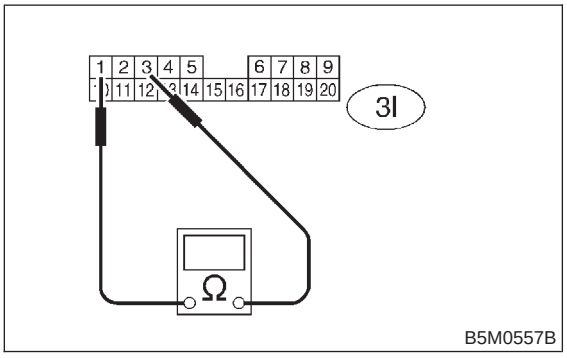
**DIAGNOSIS:**
- Front sub sensor harness (LH) circuit is shorted.
- Front sub sensor harness (LH) circuit is open.
- Front sub sensor (LH) is faulty.
- Airbag control module is faulty.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground terminal, and then wait at least 20 seconds.**

**5L1 : FRONT SUB SENSOR (LH) AND FRONT SUB SENSOR HARNESS (LH) INSPECTION**

1) Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Measure resistance between test harness I or I2 connector (3I) terminal.

***Connector & terminal***
***(3I) No. 1 — No. 3:***

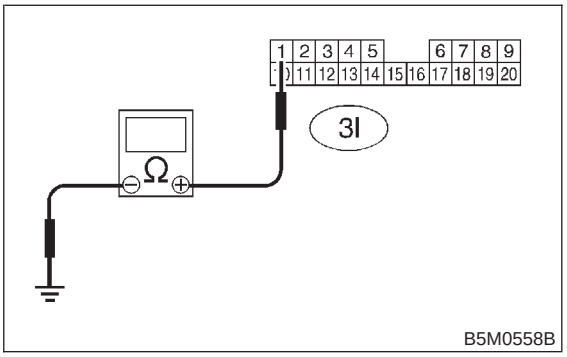



CHECK : ***Is the resistance between 750 Ω and 1 kΩ?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Go to step **5L2**.

**5L2 : FRONT SUB SENSOR (LH) AND FRONT SUB SENSOR HARNESS (LH) INSPECTION**

Measure resistance across test harness I or I2 connector (3I) terminal and chassis ground.

***Connector & terminal***
***(3I) No. 1 (+) — Chassis ground (−):***

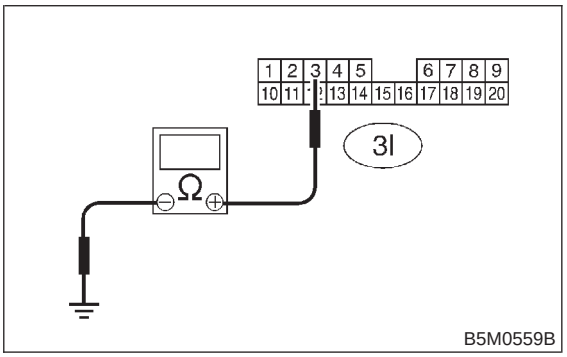



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Go to step **5L3**.

**5L3 : FRONT SUB SENSOR (LH) AND FRONT SUB SENSOR HARNESS (LH) INSPECTION**

Measure resistance across test harness I or I2 connector (3I) terminal and chassis ground.

***Connector & terminal***
***(3I) No. 3 (+) — Chassis ground (−):***

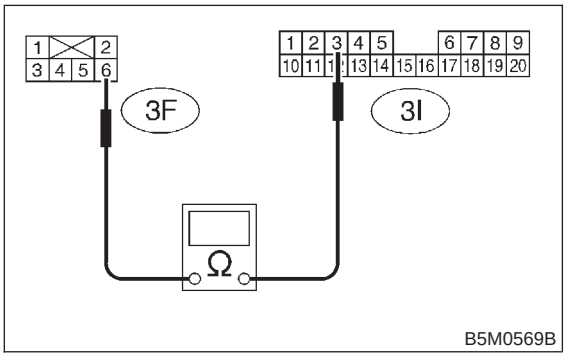



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Go to step **5L4**.

**5L4 : AIRBAG MAIN HARNESS INSPECTION**

1) Disconnect connector (AB11) and (AB12), then connect test harness F connector (2F) and connector (AB11).
2) Measure resistance between test harness I or I2 connector (3I) terminal and test harness F connector (3F) terminal.

***Connector & terminal***
***(3I) No. 3 — (3F) No. 6:***

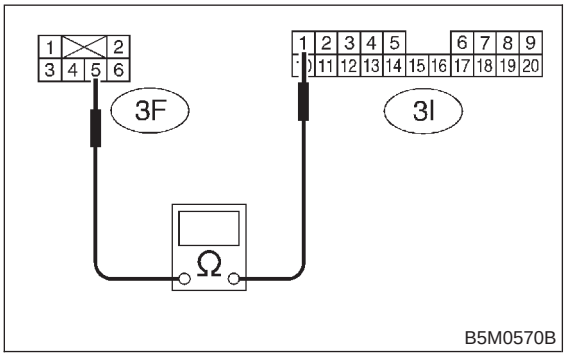



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **5L5**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5L5 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance between test harness I or I2 connector (3I) terminal and test harness F connector (3F) terminal.

***Connector & terminal***
***(3I) No. 1 — (3F) No. 5:***

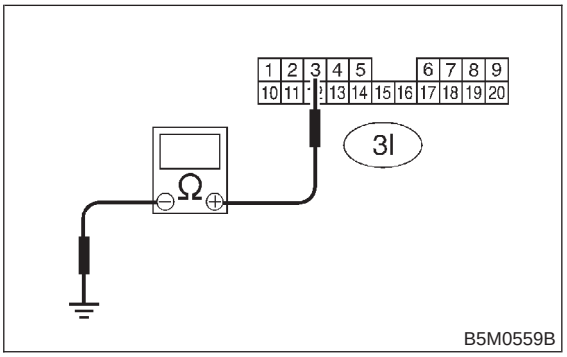



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **5L6**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5L6 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance across test harness I or I2 connector (3I) terminal and chassis ground.

***Connector & terminal***
***(3I) No. 3 (+) — Chassis ground (−):***

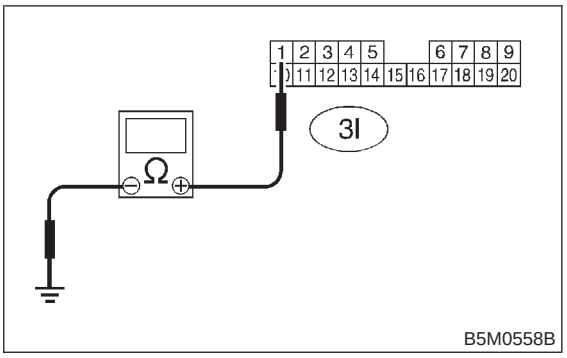



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Go to step **5L7**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

**5L7 : AIRBAG MAIN HARNESS INSPECTION**

Measure resistance across test harness I or I2 connector (3I) terminal and chassis ground.

***Connector & terminal***
***(3I) No. 1 (+) — Chassis ground (−):***

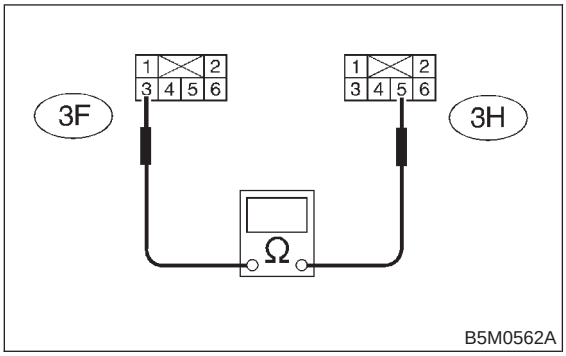



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Go to step **5L8**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

## 5L8 : FRONT SUB SENSOR HARNESS (LH) INSPECTION

1) Connect test harness F connector (1F) and connector (AB12).
2) Disconnect connector (AB13) from front sub sensor (LH) <Ref. to 5-5 [W7A0].> and then test harness H connector (1H) and connector (AB13).
3) Measure resistance between test harness F connector (3F) terminal and test harness H connector (3H) terminal.

***Connector & terminal***
***(3F) No. 3 — (3H) No. 5:***

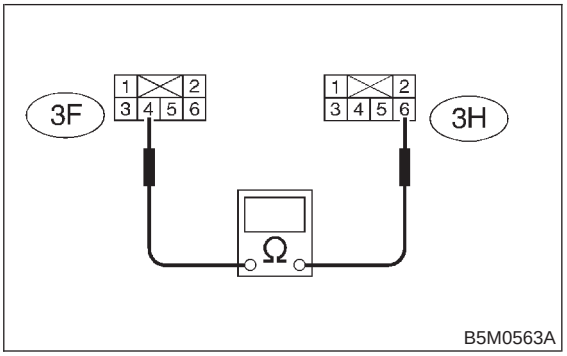



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **5L9**.
NO : Replace front sub sensor harness (LH). <Ref. to 5-5 [W7A0].>

## 5L9 : FRONT SUB SENSOR HARNESS (LH) INSPECTION

Measure resistance between test harness F connector (3F) terminal and test harness H connector (3H) terminal.

***Connector & terminal***
***(3F) No. 4 — (3H) No. 6:***

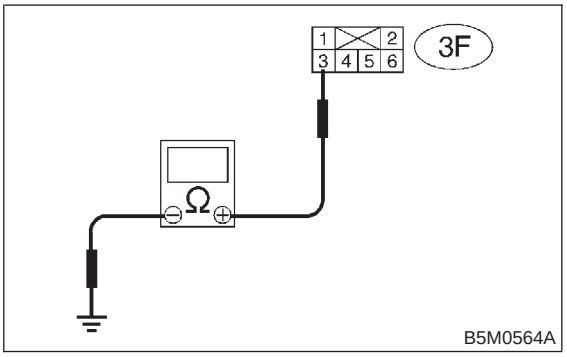



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **5L10**.
NO : Replace front sub sensor harness (LH). <Ref. to 5-5 [W7A0].>

## 5L10 : FRONT SUB SENSOR HARNESS (LH) INSPECTION

Measure resistance across test harness F connector (3F) terminal and chassis ground.

***Connector & terminal***
***(3F) No. 3 (+) — Chassis ground (−):***

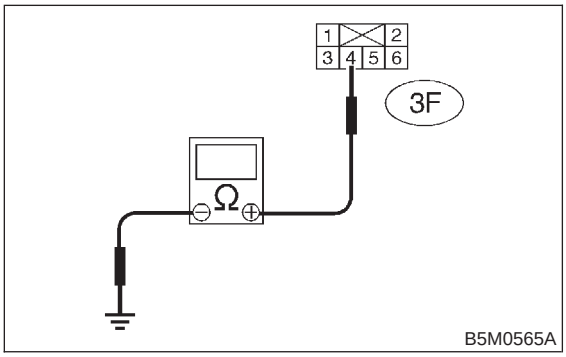



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Go to step **5L11**.
NO : Replace front sub sensor harness (LH). <Ref. to 5-5 [W7A0].>

### 5L11 : FRONT SUB SENSOR HARNESS (LH) INSPECTION

Measure resistance across test harness F connector (3F) terminal and chassis ground.

***Connector & terminal***
***(3F) No. 4 (+) — Chassis ground (−):***

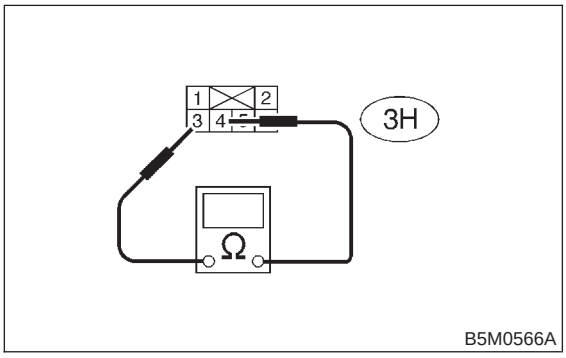



CHECK : ***Is the resistance more than 10 kΩ?***
YES : Go to step **5L12**.
NO : Replace front sub sensor harness (LH). <Ref. to 5-5 [W7A0].>

### 5L12 : FRONT SUB SENSOR (LH) INSPECTION

1) Connect test harness H connector (2H) and front sub sensor (LH).
2) Measure resistance between test harness H connector (3H) terminal.

***Connector & terminal***
***(3H) No. 3 — No. 4:***

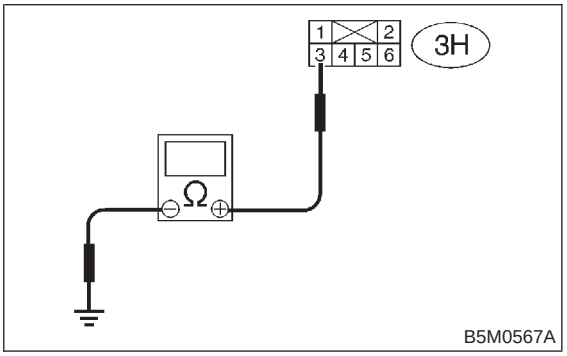



CHECK : ***Is the resistance between 750 Ω and 1 kΩ?***
YES : Go to step **5L13**.
NO : Replace front sub sensor (LH). <Ref. to 5-5 [W7A0].>

### 5L13 : FRONT SUB SENSOR (LH) INSPECTION

Measure resistance across test harness H connector (3H) terminal and chassis ground.

***Connector & terminal***
***(3H) No. 3 (+) — Chassis ground (−):***

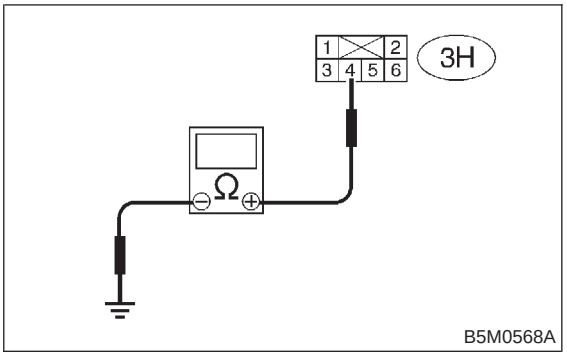



CHECK : ***Is the resistance less than 10 kΩ?***
YES : Go to step **5L14**.
NO : Replace front sub sensor (LH). <Ref. to 5-5 [W7A0].>

### 5L14 : FRONT SUB SENSOR (LH) INSPECTION

Measure resistance across test harness H connector (3H) terminal and chassis ground.

***Connector & terminal***
***(3H) No. 4 (+) — Chassis ground (−):***




CHECK : ***Is the resistance less than 10 kΩ?***
YES : Perform clear memory. <Ref. to 5-5 [T4C0].>
NO : Replace front sub sensor (LH). <Ref. to 5-5 [W7A0].>

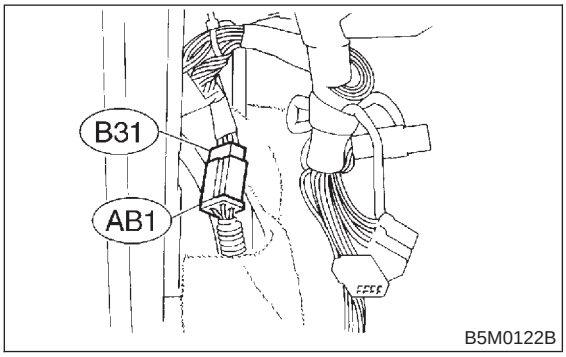
## M: AIRBAG WARNING LIGHT REMAINS ON.

**DIAGNOSIS:**
- Airbag warning light is faulty.
- Airbag control module to airbag warning light harness 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 performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground cable and then wait at least 20 seconds.**

**5M1 : CHECK POOR CONTACT IN CONNECTORS (AB1) AND (B31).**

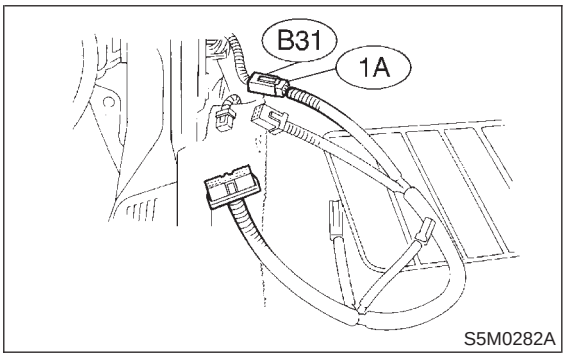
1) Remove front pillar lower trim (Driver side).
2) Check poor contact in connectors (AB1) and (B31).



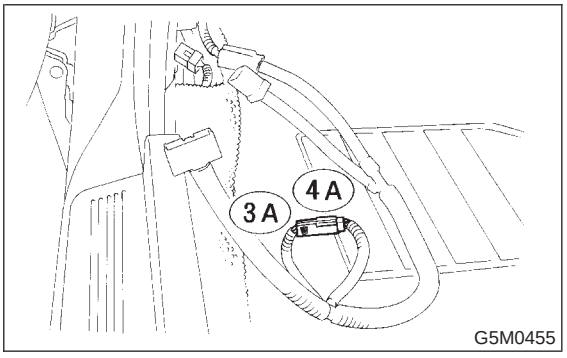

CHECK : ***Is there poor contact in double lock of connectors (AB1) and (B31)?***
YES : Repair poor contact in double lock of connectors (AB1) and (B31).
NO : Go to step **5M2**.

**5M2 : INSPECTION OF AIRBAG WARNING LIGHT**

1) Turn ignition switch "OFF" and connect body harness connector (B31) to test connector A connector (1A).




2) Connect battery ground cable and turn ignition switch "ON", (engine off) and connect connectors (3A) and (4A).

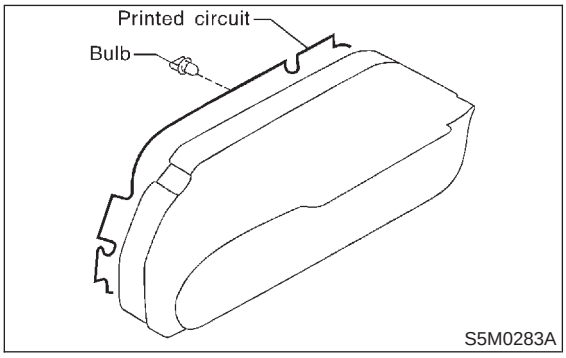



CHECK : ***Does the airbag warning light come off?***
YES : Go to step **5M4**.
NO : Go to step **5M3**.

**5M3 : INSPECTION OF BODY HARNESS**

Check body harness.

NOTE:
After problem has been eliminated, disconnect connectors (3A) and (4A).




CHECK : ***Is there anything unusual to body harness?***
YES : Repair body harness.
NO : Replace airbag warning light bulb <Ref. to 6-2 [W8B0].> or combination meter printed circuit.

**5M4 : CHECK POOR CONTACT IN CONNECTOR (AB6).**

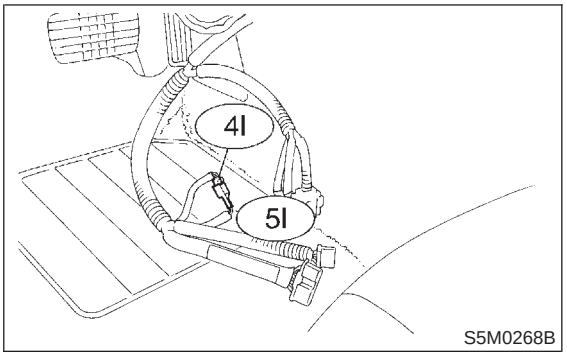
Check connector (AB6) connected to airbag control module. <Ref. to 5-5 [W5A0].>

CHECK : ***Is there poor contact in connector (AB6)?***
YES : Repair poor contact in connector (AB6).
NO : Go to step **5M5**.

**5M5 : INSPECTION OF AIRBAG MAIN HARNESS**

1) Turn ignition switch “OFF”, disconnect battery ground cable and then wait at least 20 seconds, and re-connect connectors (AB1) and (B31).
2) Remove instrument panel lower cover and disconnect (AB3) with (AB8), then disconnect connector (AB6) from airbag control module, <Ref. to 5-5 [W5A0].> and connect it to test harness I or I2 connector (1I).
3) Connect battery ground cable and turn ignition switch “ON”, (engine off) and connect connectors (4I) and (5I).

NOTE:
After problem has been eliminated, disconnect connectors (4I) and (5I).

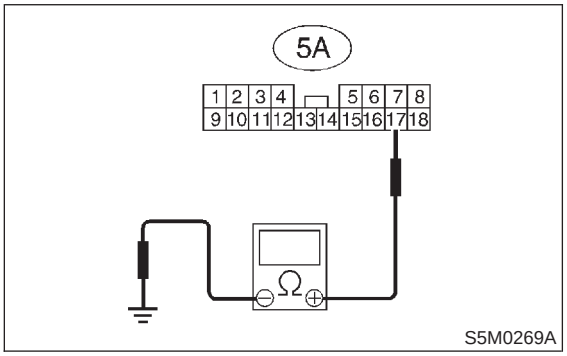



CHECK : ***Does the airbag warning light come off?***
YES : Go to step **5M6**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

## 5M6 : GROUNDING CIRCUIT INSPECTION

1) Turn ignition switch “OFF”, disconnect battery ground cable and then wait at least 20 seconds.
2) Disconnect connector (AB1) from body harness connector (B31), and connect connector (B31) to test harness A connector (1A).
3) Measure resistance between connector (5A) terminal and chassis ground.

***Connector & terminal***
***(5A) No. 17 (+) — Chassis ground (−):***

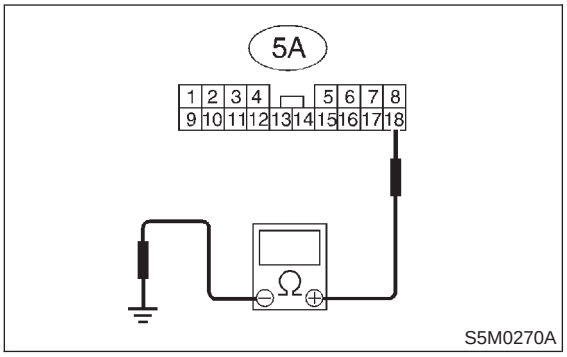



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **5M7**.
NO : Repair body grounding circuit.

## 5M7 : GROUNDING CIRCUIT INSPECTION

Measure resistance between connector (5A) terminal and chassis ground.

***Connector & terminal***
***(5A) No. 18 (+) — Chassis ground (−):***

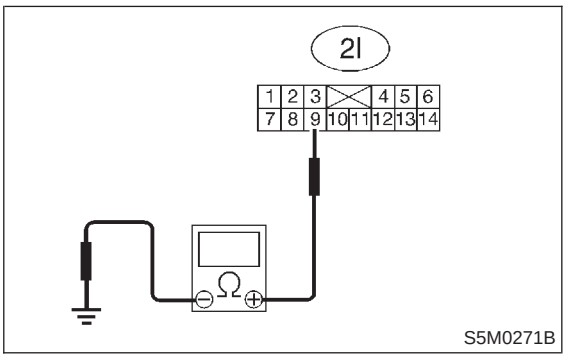



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **5M8**.
NO : Repair body grounding circuit.

## 5M8 : INSPECTION OF AIRBAG MAIN HARNESS

1) Connect connectors (AB1) and (B31). Disconnect connector (AB6) from airbag control module <Ref. to 5-5 [W5A0].>, and connect it to test harness I or I2 connector (1I).
2) Measure resistance between each test harness I or I2 connector (2I) terminal and chassis ground.

***Connector & terminal***
***(2I) No. 9 (+) — Chassis ground (−):***

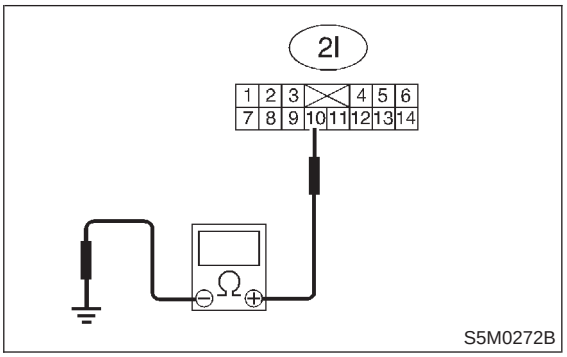



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **5M9**.
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

## 5M9 : INSPECTION OF AIRBAG MAIN HARNESS

Measure resistance between each test harness I or I2 connector (2I) terminal and chassis ground.

***Connector & terminal***
***(2I) No. 10 (+) — Chassis ground (−):***




CHECK : ***Is resistance less than 10 Ω?***
YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>
NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

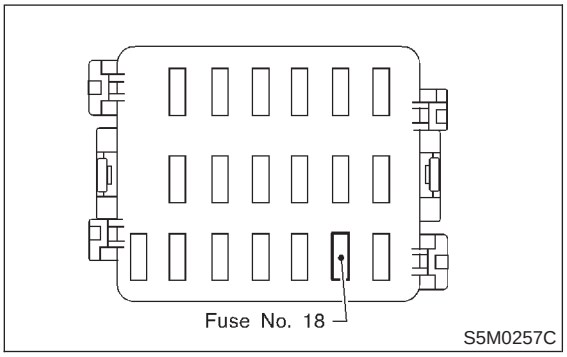
## N: AIRBAG WARNING LIGHT REMAINS OFF.

**DIAGNOSIS:**
- Fuse No. 18 (in joint 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 performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground terminal, and then wait at least 20 seconds.**

### 5N1 : FUSE NO. 18 (IN JOINT BOX) INSPECTION

Remove and visually check fuse No. 5 (In joint box).




CHECK : ***Is fuse No. 18 blown?***
YES : Replace fuse No. 18. If fuse No. 18 blows again, Go to step **5N2**.
NO : Go to step **5N2**.

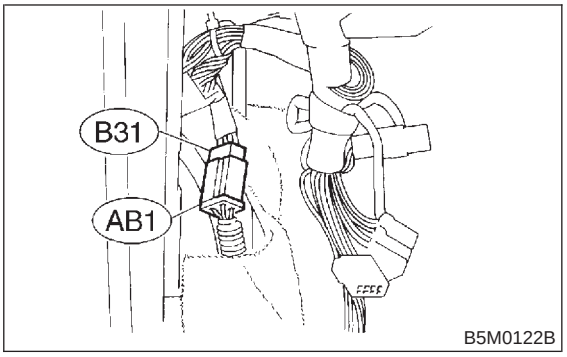
### 5N2 : BODY HARNESS INSPECTION

Turn ignition switch "ON" (engine off) to make sure other warning lights (in combination meter) illuminate.

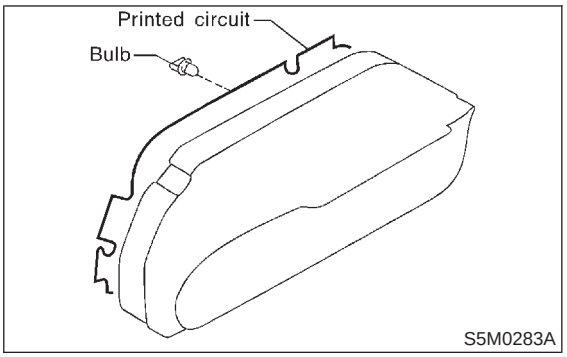
CHECK : ***Do all the warning lights (in combination meter) except airbag warning light come on?***
YES : Go to step **5N3**.
NO : Repair body harness.

### 5N3 : AIRBAG WARNING LIGHT MODULE (IN COMBINATION METER) INSPECTION

1) Turn ignition switch "OFF", disconnect battery ground cable and then wait at least 20 seconds.
2) Disconnect body harness connector (B31) from connector (AB1).



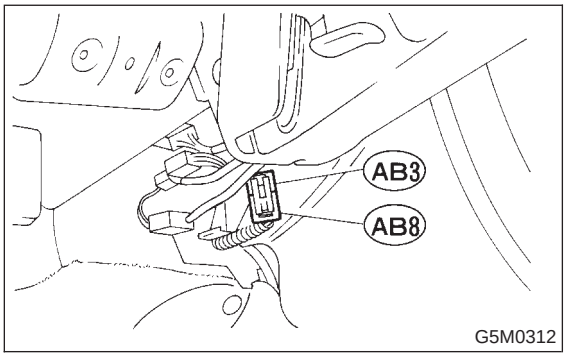

3) Connect battery ground cable and turn ignition switch "ON" (engine off) to make sure airbag warning light illuminates.




CHECK : ***Does the airbag warning light come on?***
YES : Go to step **5N4**.
NO : Replace airbag warning light bulb <Ref. to 6-2 [W8B0].> or combination meter printed circuit.

**5N4 : AIRBAG MAIN HARNESS INSPECTION**

1) Turn ignition switch “OFF”, disconnect battery ground cable and then wait at least 20 seconds.
2) Connect body harness connector (B31) and connector (AB1).
3) Disconnect connectors (AB3) and (AB8) below steering column. <Ref. to 5-5 [M2F2].>




4) Disconnect connector (AB6) from airbag control module. <Ref. to 5-5 [W5A0].>
5) Connect battery ground cable and turn ignition switch “ON” to make sure airbag warning light illuminates.

CHECK : ***Does the airbag warning light come on?***

YES : Replace airbag control module. <Ref. to 5-5 [W5A0].>

NO : Replace airbag main harness. <Ref. to 5-5 [W4A0].>

## O: WARNING LIGHT INDICATES TROUBLE CODE, THEN NORMAL CODE. (FLASHING TROUBLE CODE.)

**DIAGNOSIS:**
Airbag system component parts are faulty.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground cable, and then wait at least 20 seconds.**

### 5O1 : AIRBAG COMPONENT PARTS APPEARANCE INSPECTION

1) Conduct on-board diagnostic and call up trouble codes stored in memory. <Ref. to 5-5 [T4B0].>
2) Select trouble code required to check airbag component parts from those listed in table and reproduce symptom.

| Trouble codes | Check parts | Index. No. |
|---|---|---|
| 5 | ● Airbag module (Driver)<br>● Roll connector<br>● Airbag main harness<br>● Airbag control module | <Ref. to 5-5 [W300].><br><Ref. to 5-5 [W600].><br><Ref. to 5-5 [W400].><br><Ref. to 5-5 [W500].> |
| 11 | ● Roll connector<br>● Airbag module (Driver)<br>● Airbag main harness<br>● Airbag control module | <Ref. to 5-5 [W600].><br><Ref. to 5-5 [W300].><br><Ref. to 5-5 [W400].><br><Ref. to 5-5 [W500].> |
| 12 | ● Airbag module (Passenger)<br>● Airbag main harness<br>● Airbag control module | <Ref. to 5-5 [W300].><br><Ref. to 5-5 [W400].><br><Ref. to 5-5 [W500].> |
| 15 | ● Airbag module (Driver)<br>● Roll connector<br>● Airbag main harness<br>● Airbag control module | <Ref. to 5-5 [W300].><br><Ref. to 5-5 [W600].><br><Ref. to 5-5 [W400].><br><Ref. to 5-5 [W500].> |
| 16 | ● Airbag main harness<br>● Airbag module (Passenger)<br>● Airbag control module | <Ref. to 5-5 [W400].><br><Ref. to 5-5 [W300].><br><Ref. to 5-5 [W500].> |
| 21 | Airbag control module | <Ref. to 5-5 [W500].> |
| 22 | Airbag control module | <Ref. to 5-5 [W500].> |
| 25 | ● Fuse No. 6<br>● Airbag main harness<br>● Airbag control module<br>● Body harness | <Ref. to 5-5 [T5J5].><br><Ref. to 5-5 [W400].><br><Ref. to 5-5 [W500].><br><Ref. to 5-3 [W100].> |
| 31 | ● Airbag main harness<br>● Front sub sensor and front sub sensor harness (RH) | <Ref. to 5-5 [W400].><br><Ref. to 5-5 [W700].> |
| 32 | ● Airbag main harness<br>● Front sub sensor and front sub sensor harness (LH) | <Ref. to 5-5 [W400].><br><Ref. to 5-5 [W700].> |

3) Conduct appearance inspection on parts selected.

NOTE:
Also check connector terminals, wiring harness, case, etc. for damage.

CHECK : ***Is there anything unusual about the appearance of airbag component parts?***
YES : Replace faulty airbag component parts.
NO : Go to step **5O2**.

**5O2 : AIRBAG COMPONENT PARTS VIBRATION INSPECTION**

1) Gently shake check parts (to determine faults).
2) To check airbag module or roll connector, turn and tilt steering wheel.

**CAUTION:**
**Do not shake or vibrate airbag control module.**

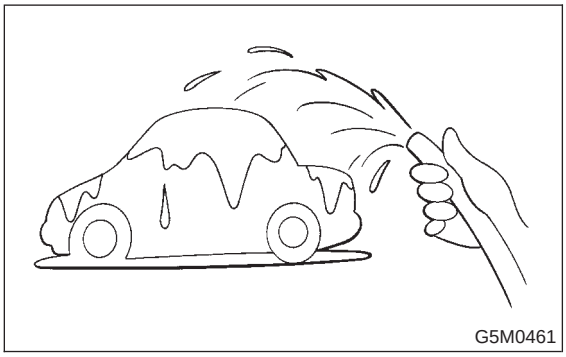
CHECK : ***Does the component malfunction again when shaking?***
YES : Replace faulty airbag component parts.
NO : Go to step **5O3**.

**5O3 : SHOWERING INSPECTION TO BODY**

Spray water on vehicle body.

**CAUTION:**
**Do not directly spray water on airbag components.**

NOTE:
Also check wiring harnesses as water may leak along them and get airbag component parts wet.




CHECK : ***Does water leak into the passenger compartment when showering vehicle?***
YES : Replace faulty airbag component parts.
NO : Perform clear memory. <Ref. to 5-5 [T4C0].>

## P: WARNING LIGHT INDICATES TROUBLE CODE, THEN NORMAL CODE. (FLASHING NORMAL CODE.)

**DIAGNOSIS:**
- Airbag connector is faulty.
- Fuse No. 11 (in joint box) is blown.
- Airbag main harness is faulty.
- Airbag control module is faulty.
- Body harness is faulty.

**CAUTION:**
**Before performing diagnostics on airbag system, turn ignition switch "OFF", disconnect battery ground cable, and then wait at least 20 seconds.**

**5P1 : AIRBAG CONNECTOR APPEARANCE INSPECTION**

Conduct appearance inspection on airbag connectors (AB2) through (AB8). <Ref. to 5-5 [T100].>

NOTE:
Check terminals, case and wiring harnesses for damage.

CHECK : ***Is there anything unusual about the appearance of connectors (AB2) through (AB8)?***
YES : Replace faulty airbag component parts.
NO : Go to step **5P2**.

**5P2 : AIRBAG CONNECTOR VIBRATION INSPECTION**

Conduct vibration inspection on airbag connectors (AB2) through (AB8). <Ref. to 5-5 [T100].>

NOTE:
Gently shake each airbag connector.

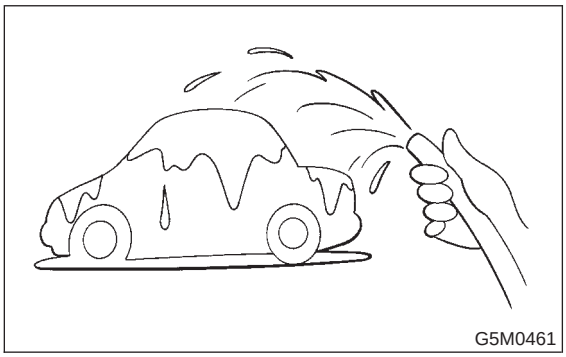
CHECK : ***Do the connectors (AB2) through (AB8) malfunction again when shaking?***
YES : Replace faulty airbag component parts.
NO : Go to step **5P3**.

### 5P3 : SHOWERING INSPECTION TO BODY

Spray water on vehicle body.

**CAUTION:**
**Do not directly spray water on airbag components.**

NOTE:
If leaks are noted, also check wiring harnesses as water may leak along them and wet airbag connectors.




CHECK : ***Does water leak into the passenger compartment when showering vehicle?***
YES : Replace faulty airbag component parts.
NO : Go to step **5P4**.

### 5P4 : FUSE NO. 11 (IN JOINT BOX), AIRBAG MAIN HARNESS, AIRBAG CONTROL MODULE, BODY HARNESS APPEARANCE INSPECTION

Conduct appearance inspection on fuse No. 11 <Ref. to 5-5 [T5I5].>, airbag main harness <Ref. to 5-5 [W4A0].>, airbag control module <Ref. to 5-5 [W5A0].> and body harness.

NOTE:
Also check connectors, terminals, wiring harness and case for damage.

CHECK : ***Is there anything unusual about the appearance of fuse No. 11, airbag main harness, airbag control module or body harness?***
YES : Replace faulty airbag component parts.
NO : Go to step **5P5**.

### 5P5 : FUSE NO. 11 (IN JOINT BOX), AIRBAG MAIN HARNESS, BODY HARNESS VIBRATION INSPECTION

Conduct vibration inspection on fuse No. 11, airbag main harness and body harness.

**CAUTION:**
**Do not shake or vibrate airbag control module.**

NOTE:
Gently shake each part.

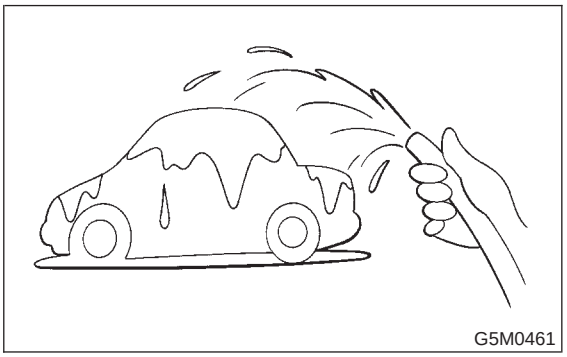
CHECK : ***Do fuse No. 11, airbag main harness or body harness malfunction again when shaking?***
YES : Replace faulty airbag component parts.
NO : Go to step **5P6**.

### 5P6 : SHOWERING INSPECTION TO BODY

Spray water on vehicle body.

**CAUTION:**
**Do not directly spray water on each part.**

NOTE:
If leaks are noted, check wiring harnesses as water may leak along them and get parts wet.




CHECK : ***Does water leak into the passenger compartment when showering vehicle?***
YES : Replace faulty airbag component parts.
NO : Go to step **5P7**.

**5P7 : WARNING LIGHT ILLUMINATION CHECK**

Turn ignition switch “ON” (engine off) and observe airbag warning light.

CHECK : ***Does the airbag warning light come on for about 7 seconds, then go out and stay out?***

YES : Perform clear memory. <Ref. to 5-5 [T4C0].>

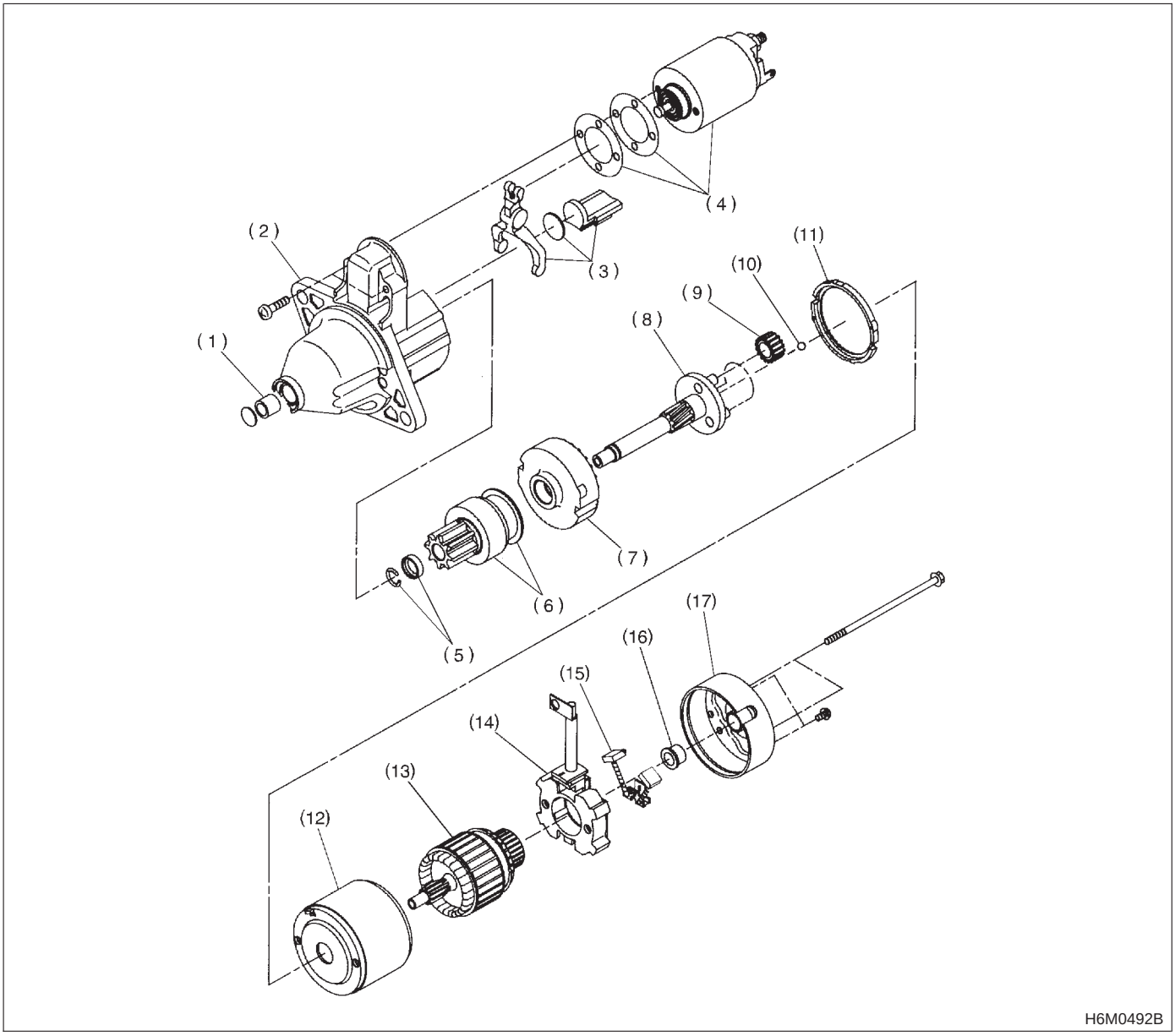
NO : Go to “DIAGNOSTICS PROCEDURE”. <Ref. to 5-5 [T4D0].>

**MEMO:**

# 1. Specifications

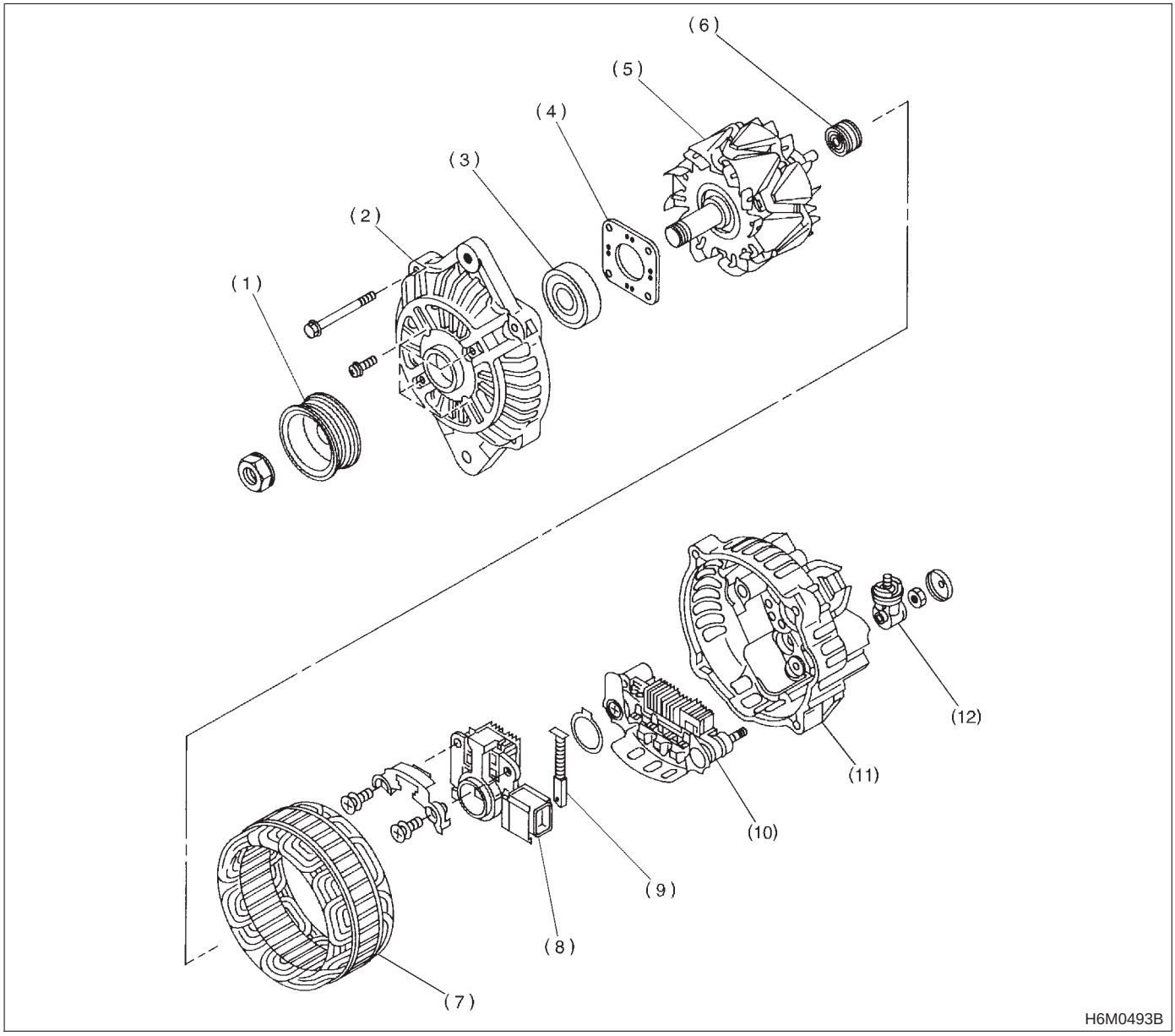
| Item | | | Designation | |
|---|---|---|---|---|
| Starter | Type | | Reduction type | |
| | Model | | MT<br>M000T81681 | AT<br>M001T84481 |
| | Manufacturer | | MITSUBISHI | |
| | Voltage and output | | 12 V — 1.0 kW | 12 V — 1.4 kW |
| | Direction of rotation | | Counterclockwise (when observed from pinion) | |
| | Number of pinion teeth | | 8 | 9 |
| | No-load characteristics | Voltage | 11 V | |
| | | Current | 90 A or less | |
| | | Rotating speed | 3,000 rpm or more | |
| | Load characteristics | Voltage | 8 V | 7.7 V |
| | | Current | 280 A or less | 300 A or less |
| | | Torque | 8.5 N·m (0.87 kg-m, 6.27 ft-lb) | 9.8 N·m (1.00 kg-m, 7.24 ft-lb) |
| | | Rotating speed | 980 rpm or more | 1,000 rpm or more |
| | Lock characteristics | Voltage | 4 V | |
| | | Current | 780 A or less | 980 A or less |
| | | Torque | 17.6 N·m (1.80 kg-m, 13.0 ft-lb) or more | 23 N·m (2.3 kg-m, 17 ft-lb) or more |
| Generator | Type | | Rotating-field three-phase type, Voltage regulator built-in type | |
| | Model | | A2TB2991 | |
| | Manufacturer | | MITSUBISHI | |
| | Voltage and output | | 12 V — 75 A | |
| | Polarity on ground side | | Negative | |
| | Rotating direction | | Clockwise (when observed from pulley side) | |
| | Armature connection | | 3-phase Y-type | |
| | Output current | | 1,500 rpm — 30 A or more<br>2,500 rpm — 64 A or more<br>5,000 rpm — 76 A or more | |
| | Regulated voltage | | $14.5^{+0.3}/_{-0.4}$ V [20°C (68°F)] | |
| Ignition coil and ignitor assembly | Model | | FH0137-01R | |
| | Manufacturer | | DEMCO | |
| | Primary coil resistance | | 0.73 Ω±10% | |
| | Secondary coil resistance | | 12.8 kΩ±15% | |
| | Insulation resistance between primary terminal and case | | More than 10 MΩ | |
| Spark plug | Type and manufacturer | Standard | RC10YC4 ..... CHAMPION | |
| | | Alternate | RC8YC4 ..... CHAMPION<br>BKR6E-11 ..... NGK<br>K20PR-U11 ..... NIPPONDENSO | |
| | Thread size | | 14, P = 1.25 mm | |
| | Spark gap | | 1.0 — 1.1 mm (0.039 — 0.043 in) | |

# 1. Starter



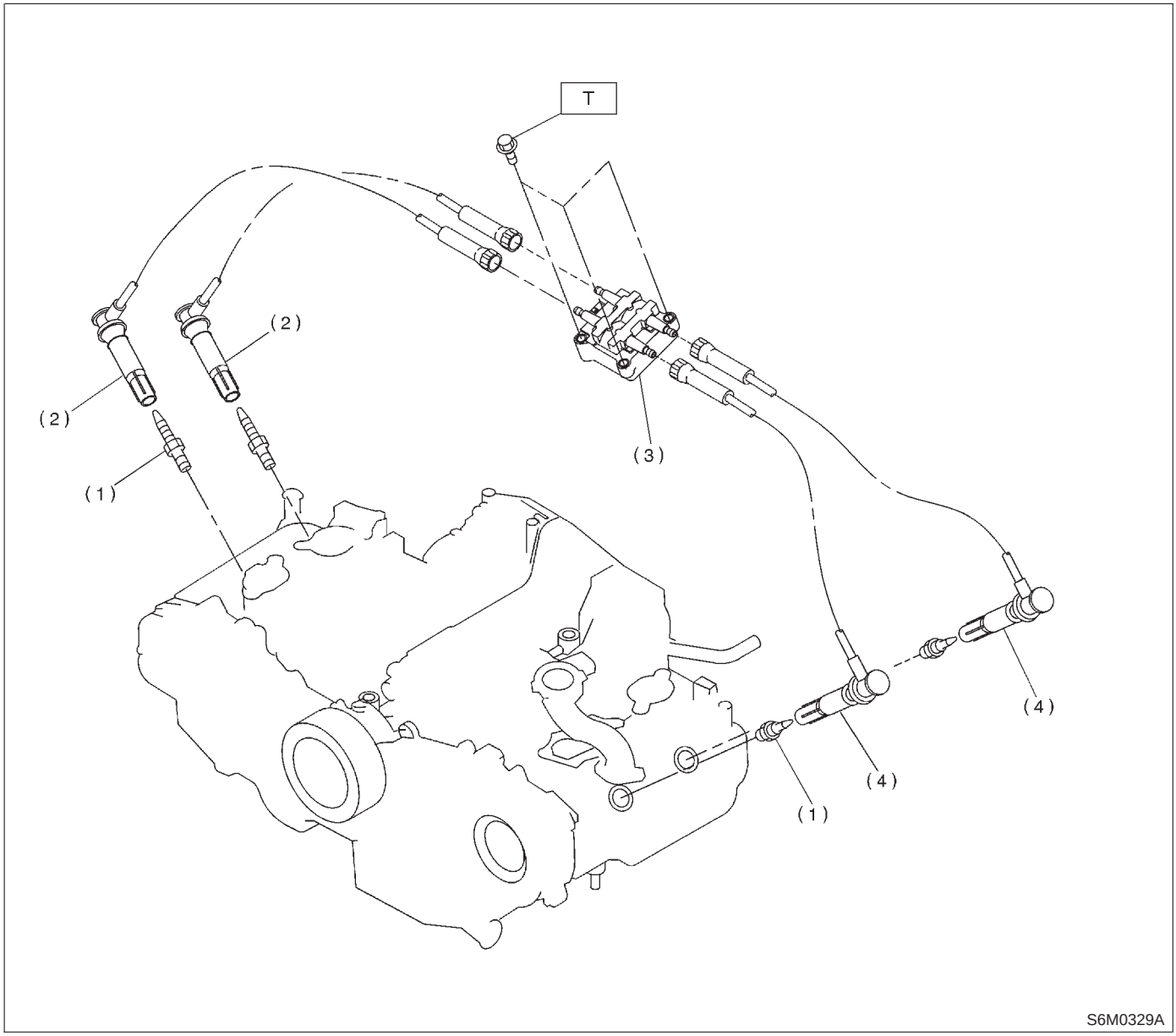

(1) Sleeve bearing
(2) Front bracket
(3) Lever set
(4) Magnet switch ASSY
(5) Stopper set
(6) Over running clutch
(7) Internal gear ASSY
(8) Shaft ASSY
(9) Gear ASSY
(10) Ball
(11) Packing
(12) Yoke
(13) Armature
(14) Brush holder
(15) Brush
(16) Sleeve bearing
(17) Rear bracket

# 2. Generator




(1) Pulley
(2) Front cover
(3) Ball bearing
(4) Bearing retainer
(5) Rotor
(6) Bearing
(7) Stator coil
(8) IC regulator with brush
(9) Brush
(10) Rectifier
(11) Rear cover
(12) Terminal

# 3. Ignition System



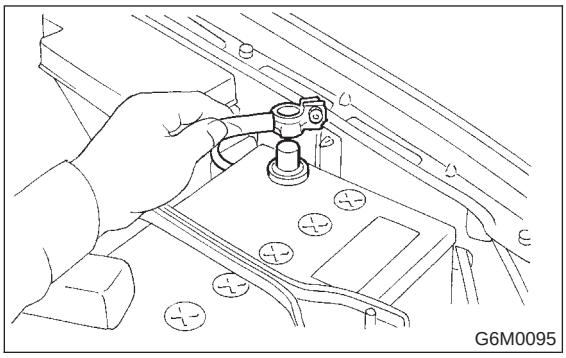

(1) Spark plug
(2) Spark plug cord (#1, #3)
(3) Ignition coil and ignitor ASSY
(4) Spark plug cord (#2, #4)

***Tightening torque: N·m (kg-m, ft-lb)***
***T: 22±2 (2.2±0.2, 15.9±1.4)***

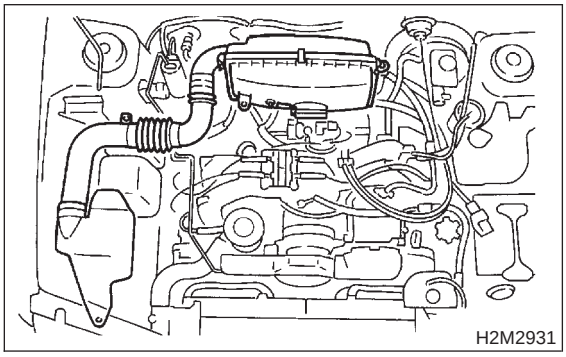
# 1. Starter

## A: REMOVAL AND INSTALLATION

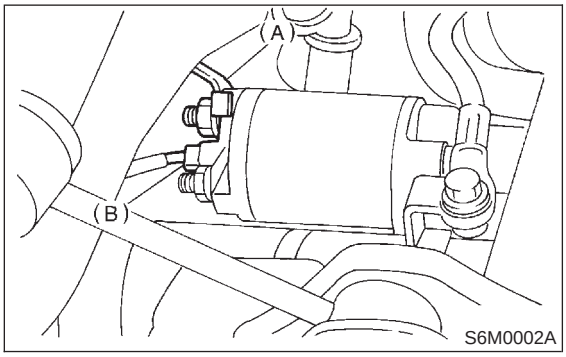
1) Disconnect battery ground cable.


G6M0095

2) Remove air cleaner case and air intake duct. <Ref. to 2-7 [W1A0].>


H2M2931

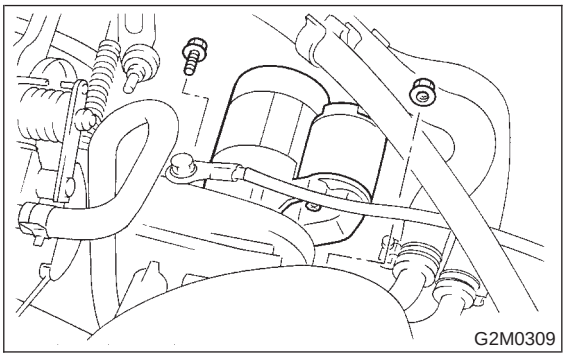
3) Disconnect connector and terminal from starter.



S6M0002A

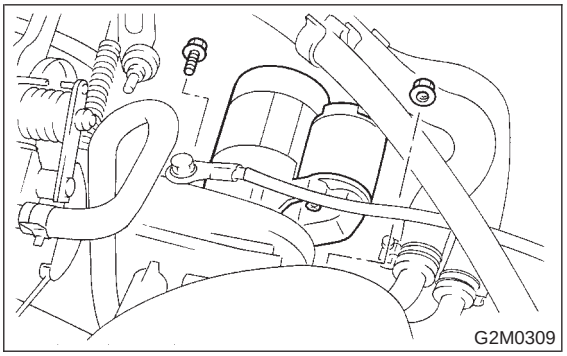
(A) Terminal
(B) Connector

4) Remove starter from transmission.


G2M0309

5) Installation is in the reverse order of removal.

***Tightening torque:***
***50±4 N·m (5.1±0.4 kg-m, 36.9±2.9 ft-lb)***


G2M0309

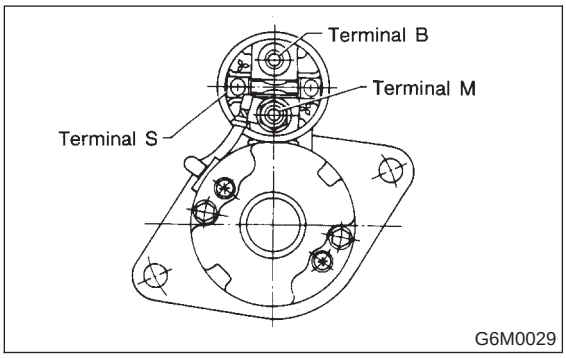
## B: TEST

### 1. SWITCH ASSEMBLY OPERATION

1) Connect terminal S of switch assembly to positive terminal of battery with a lead wire, and starter body to ground terminal of battery. Pinion should be forced endwise on shaft.

**CAUTION:**
**With pinion forced endwise on shaft, starter motor can sometimes rotate because current flows, through pull-in coil, to motor. This is not a problem.**

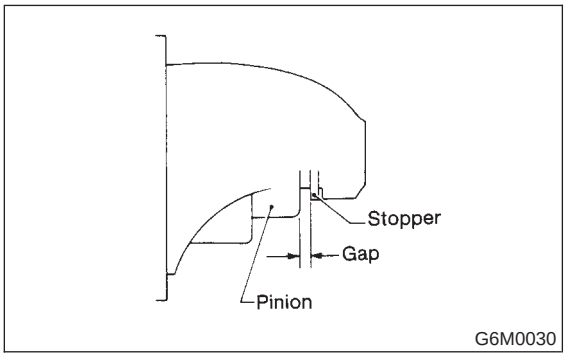
2) Disconnect connector from terminal M, and connect positive terminal of battery and terminal M using a lead wire and ground terminal to starter body.
In this test set up, pinion should return to its original position even when it is pulled out with a screwdriver.




## 2. PINION GAP

1) With pinion forced endwise on shaft, as outlined in step 1) before <Ref. to 6-1 [W1B1].>, measure pinion gap.

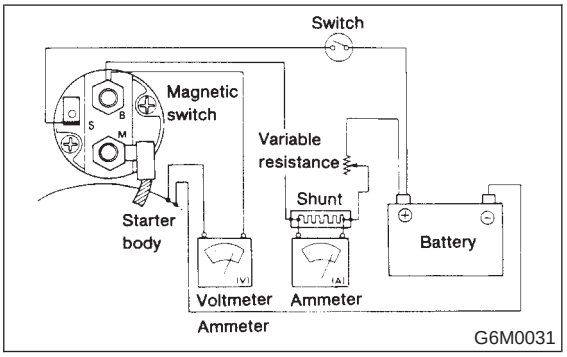
***Pinion gap:***
***0.5 — 2.0 mm (0.020 — 0.079 in)***




2) If motor is running with the pinion forced endwise on the shaft, disconnect connector from terminal M of switch assembly and connect terminal M to ground terminal (−) of battery with a lead wire. Next, gently push pinion back with your fingertips and measure pinion gap.
3) If pinion gap is outside specified range, remove or add number of adjustment washers used on the mounting surface of switch assembly until correct pinion gap is obtained.

## 3. PERFORMANCE TEST

The starter should be submitted to performance tests whenever it has been overhauled, to assure its satisfactory performance when installed on the engine.
Three performance tests, no-load test, load test, and lock test, are presented here; however, if the load test and lock test cannot be performed, carry out at least the no-load test.
For these performance tests, use the circuit shown in figure.




1) No-load test
With switch on, adjust the variable resistance to obtain 11 V, take the ammeter reading and measure the starter speed. Compare these values with the specifications.

***No-load test (Standard):***
***Voltage / Current***
***11 V / 90 A or less***
***Rotating speed***
- ***MT vehicles 2,800 rpm or more***
- ***AT vehicles 2,400 rpm or more***

2) Load test
Apply the specified braking torque to starter. The condition is satisfactory if the current draw and starter speed are within specifications.

***Load test (Standard):***

- ***MT vehicles***
  ***Voltage / Load***
  ***7.5 V / 8.73 N·m (0.89 kg-m, 6.4 ft-lb)***
  ***Current / Speed***
  ***300 A / 890 rpm or more***

- ***AT vehicles***
  ***Voltage / Load***
  ***7.7 V / 16.00 N·m (1.63 kg-m, 11.8 ft-lb)***
  ***Current / Speed***
  ***400 A max. / 740 rpm or more***

3) Lock test
With starter stalled, or not rotating, measure the torque developed and current draw when the voltage is adjusted to the specified voltage.

***Lock test (Standard):***

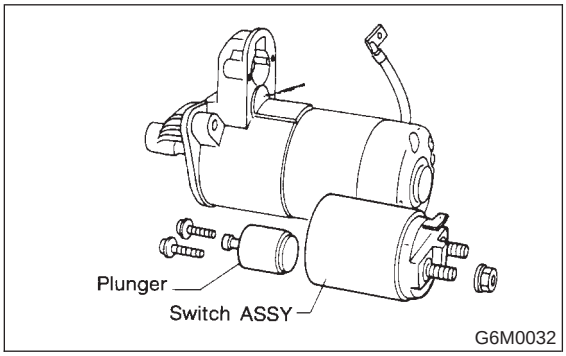
- ***MT vehicles***
  ***Voltage / Load***
  ***4 V / 780 A or less***
  ***Torque***
  ***15.7 N·m (1.60 kg-m, 11.6 ft-lb) or more***
- ***AT vehicles***
  ***Voltage / Current***
  ***3.5 V / 940 A or less***
  ***Torque***
  ***28.9 N·m (2.95 kg-m, 21.3 ft-lb) or more***

## C: DISASSEMBLY

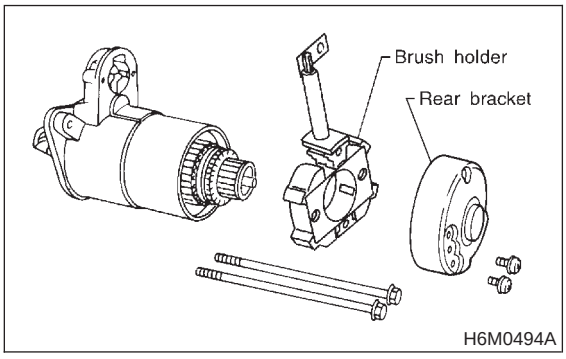
### 1. STARTER ASSEMBLY

1) Loosen nut which holds terminal M of switch assembly, and disconnect connector.
2) Remove bolts which hold switch assembly, and remove switch assembly, plunger and plunger spring from starter as a unit.

**CAUTION:**
**Be careful because pinion gap adjustment washer may sometimes be used on the mounting surface of switch assembly.**

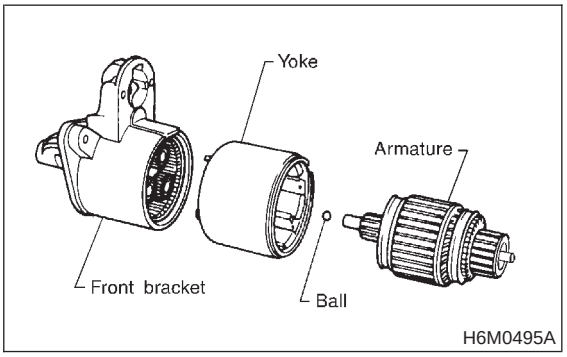



3) Remove both through-bolts and brush holder screws, and detach rear bracket and brush holder.

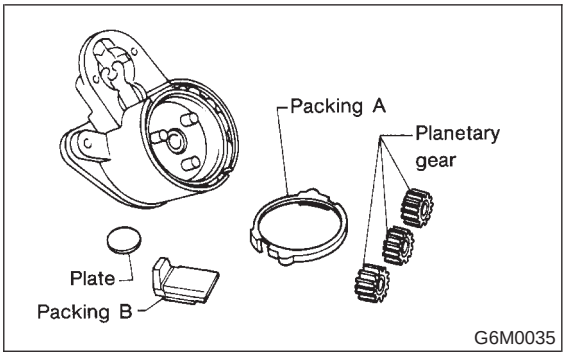



4) Remove armature and yoke. Ball used as a bearing will then be removed from the end of armature.

**CAUTION:**
**Be sure to mark an alignment mark on yoke and front bracket before removing yoke.**

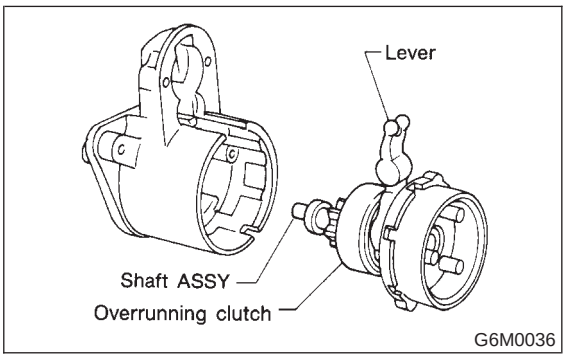



5) Remove packing A, three planetary gears, packing B and plate.

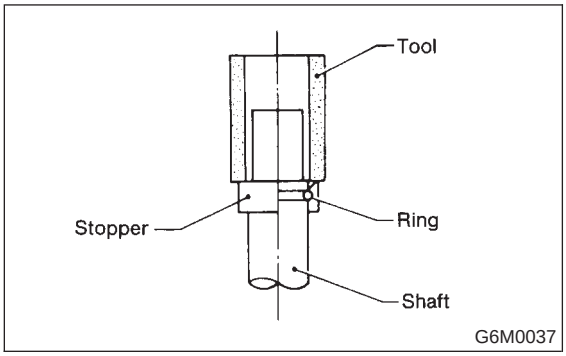



6) Remove shaft assembly and overrunning clutch as a unit.

**CAUTION:**
**Record the direction of lever before removing.**



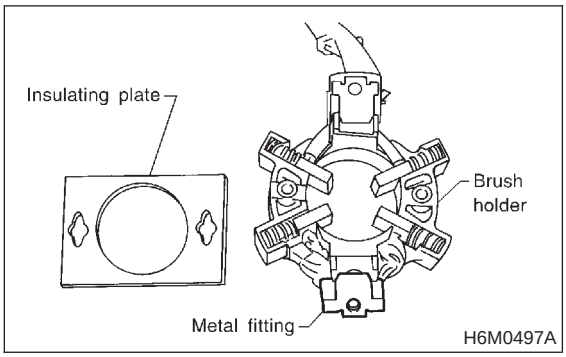
7) Remove overrunning clutch from shaft assembly as follows:
(1) Remove stopper from ring by lightly tapping a fit tool placed on stopper.
(2) Remove ring, stopper and clutch from shaft.




## 2. BRUSH HOLDER

Slightly open the metal fitting holding the insulating plate to the brush holder. Remove the insulating plate.

NOTE:
The brush and spring can be easily removed from the brush holder at this time.

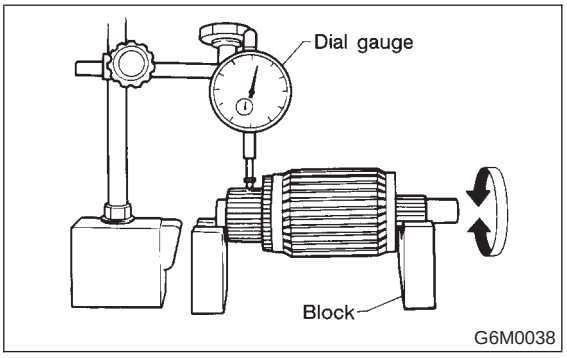



# D: INSPECTION

## 1. ARMATURE

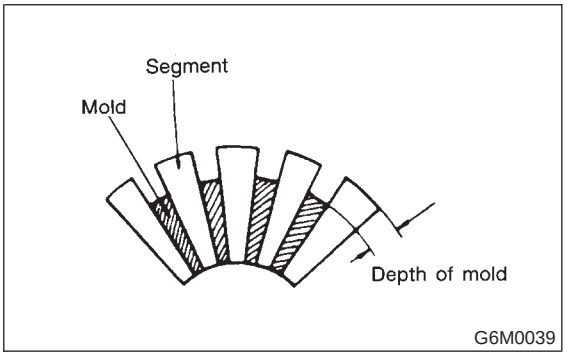
1) Check commutator for any sign of burns of rough surfaces or stepped wear. If wear is of a minor nature, correct it by using sand paper.
2) Run-out test
Check the commutator run-out and replace if it exceeds the limit.

***Commutator run-out:***
***Standard***
***0.05 mm (0.0020 in)***
***Service limit***
***Less than 0.10 mm (0.0039 in)***

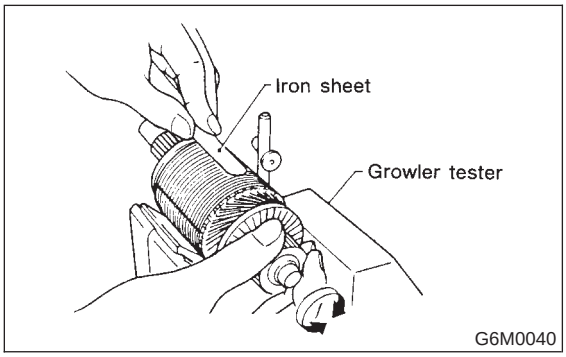



3) Depth of segment mold
Check the depth of segment mold.

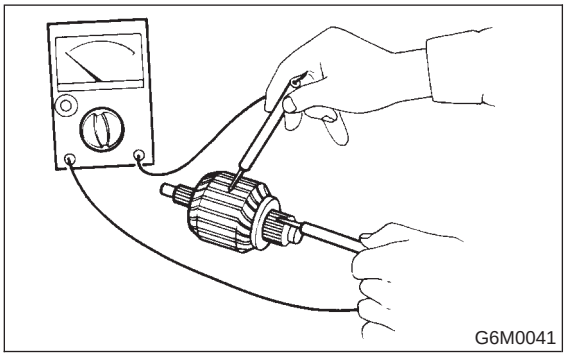
***Depth of segment mold:***
***0.5 mm (0.020 in)***



4) Armature short-circuit test
Check armature for short-circuit by placing it on growler tester. Hold a hacksaw blade against armature core while slowly rotating armature. A short-circuited armature will cause the blade to vibrate and to be attracted to core. If the hacksaw blade is attracted or vibrates, the armature, which is short-circuited, must be replaced or repaired.




5) Armature ground test
Using circuit tester, touch one probe to the commutator segment and the other to shaft. There should be no continuity. If there is a continuity, armature is grounded.
Replace armature if it is grounded.




## 2. YOKE

Make sure pole is set in position.

## 3. OVERRUNNING CLUTCH

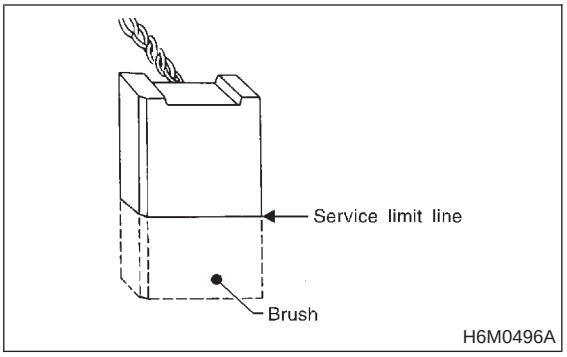
Inspect teeth of pinion for wear and damage. Replace if it damaged. Rotate pinion in direction of rotation (clockwise). It should rotate smoothly. But in opposite direction, it should be locked.

**CAUTION:**
**Do not clean overrunning clutch with oil to prevent grease from flowing out.**

## 4. BRUSH AND BRUSH HOLDER

1) Brush length
Measure the brush length and replace if it exceeds the service limit.
Replace if abnormal wear or cracks are noticed.

***Brush length:***
***Standard 17.0 mm (0.669 in)***
***Service limit 11.5 mm (0.453 in)***



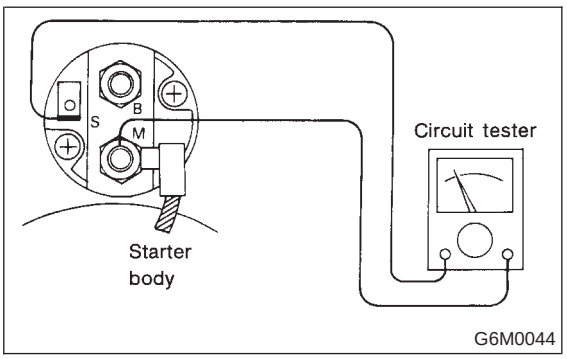

2) Brush movement
Be sure brush moves smoothly inside brush holder.
3) Brush spring force
Measure brush spring force with a spring scale. If it is less than the service limit, replace brush spring.

***Brush spring force:***
***Standard***
***21.6 N (2.2 kg, 4.9 lb) (when new)***
***Service limit***
***5.9 N (0.6 kg, 1.3 lb)***

## 5. SWITCH ASSEMBLY

Be sure there is continuity between terminals S and M, and between terminal S and ground. Use a circuit tester (set in “ohm”).
Also check to be sure there is no continuity between terminal M and B.

***Terminal / Specified resistance:***
***S—M / Continuity***
***S—Ground / Continuity***
***M—B / No continuity***



## E: ASSEMBLY

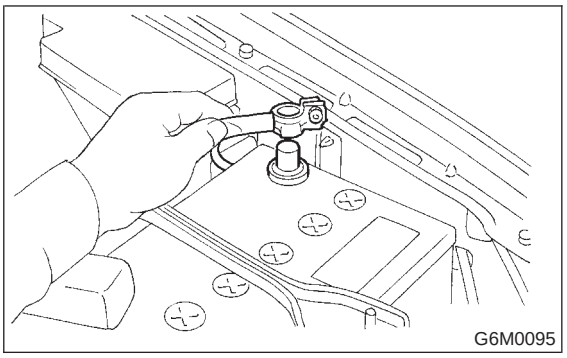
Assembly is in the reverse order of disassembly procedures. Observe the following:
1) Carefully assemble all parts in the order of assembly and occasionally inspect nothing has been overlooked.
2) Apply grease to the following parts during assembly.
- Front bracket sleeve bearing
- Armature shaft gear
- Outer periphery of plunger
- Mating surface of plunger and lever
- Gear shaft splines
- Mating surface of lever and clutch
- Ball at the armature shaft end
- Internal and planetary gears

3) After assembling parts correctly, check to be sure starter operates properly.

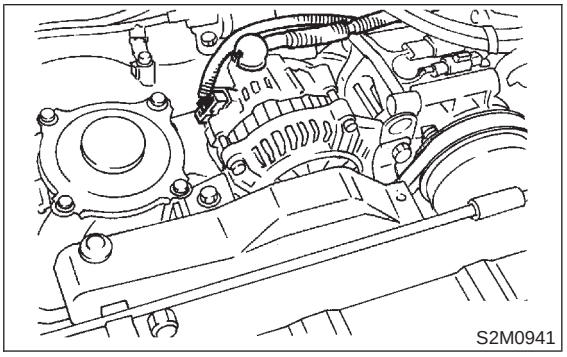
# 2. Generator

## A: REMOVAL AND INSTALLATION

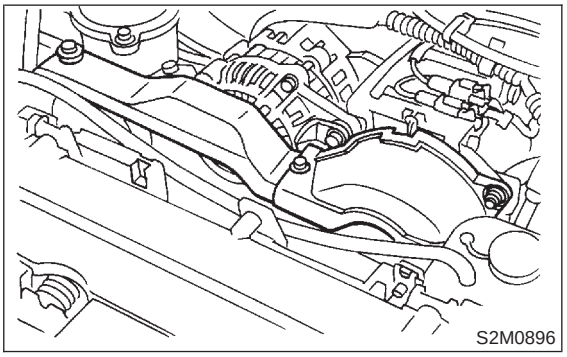
1) Disconnect battery ground cable.


G6M0095

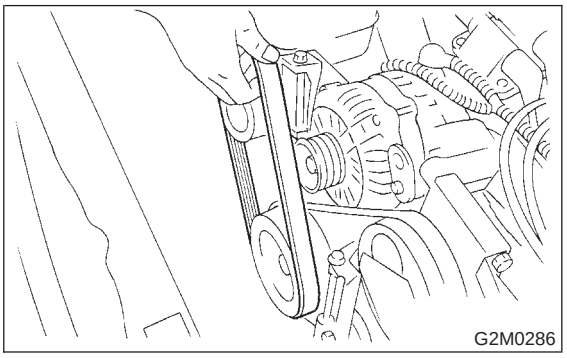
2) Disconnect connector and terminal from generator.


S2M0941

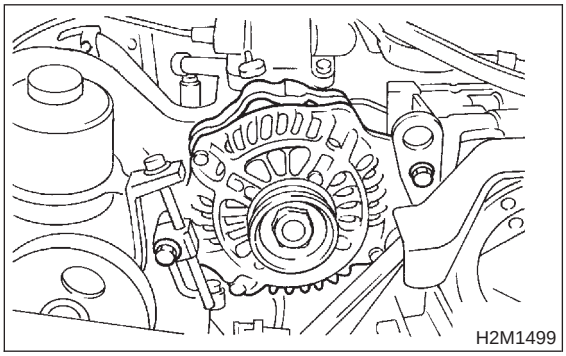
3) Remove V-belt cover.


S2M0896

4) Remove front side V-belt.

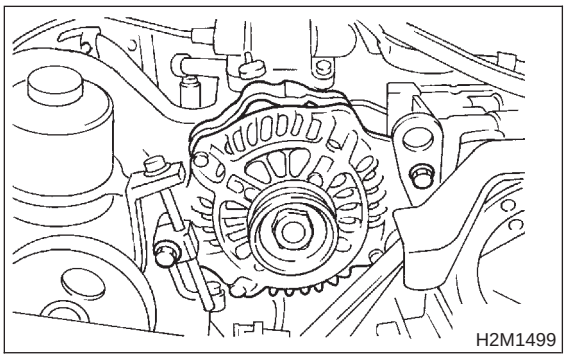

G2M0286

5) Remove bolts which install generator onto bracket.



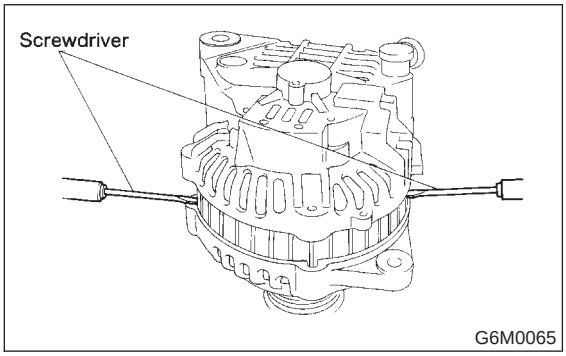

6) Installation is in the reverse order of removal.

**CAUTION:**
**Check and adjust V-belt tension. <Ref. to 1-5 [G2A0].>**

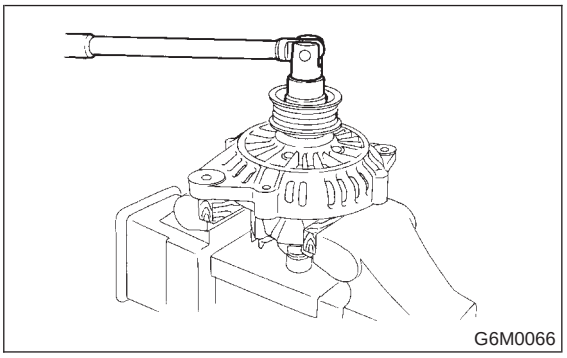



## B: DISASSEMBLY

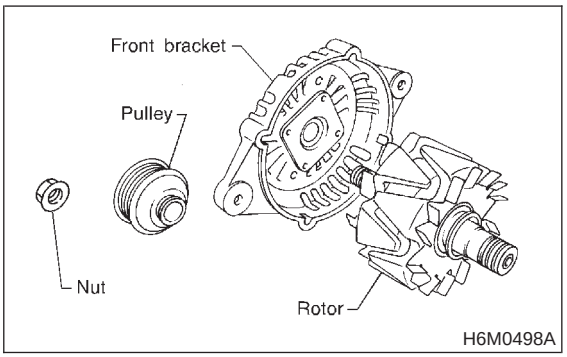
1) Remove the four through bolts. Then insert the tip of a flat-head screwdriver into the gap between the stator core and front bracket. Pry then apart to disassemble.




2) Hold rotor with a vise and remove pulley nut.

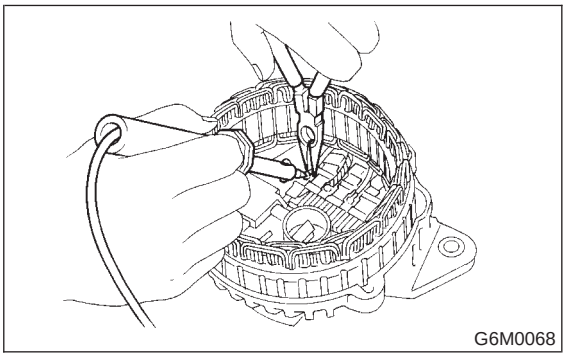



**CAUTION:**
**When holding rotor with vise, insert aluminum plates or wood pieces on the contact surfaces of the vise to prevent rotor from damage.**

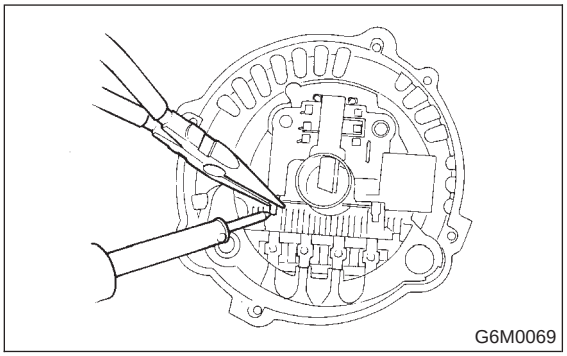



3) Unsolder connection between rectifier and stator coil to remove stator coil.

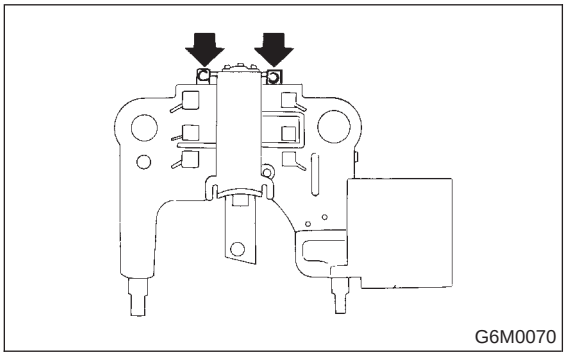
**CAUTION:**
**Finish the work rapidly (less than three seconds) because the rectifier cannot withstand heat very well.**



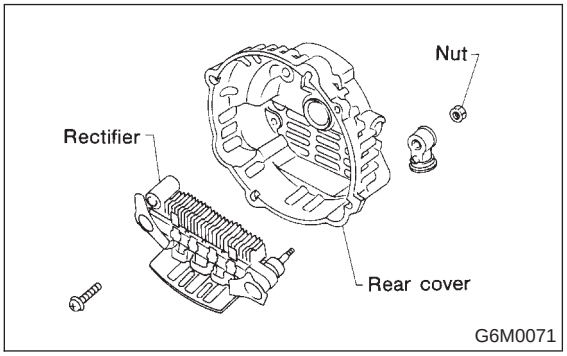
4) Remove screws which secure IC regulator to rear cover, and unsolder connection between IC regulator and rectifier to remove IC regulator.


G6M0069

5) Remove the brushes by unsoldering at the pigtails.


G6M0070

6) Remove the nut and insulating bushing at terminal B. Remove rectifier.



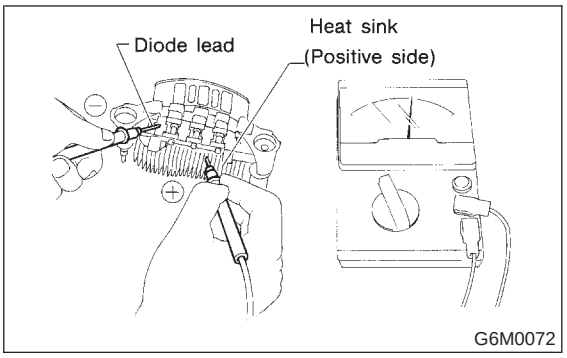
G6M0071

## C: INSPECTION AND REPAIR

### 1. DIODE

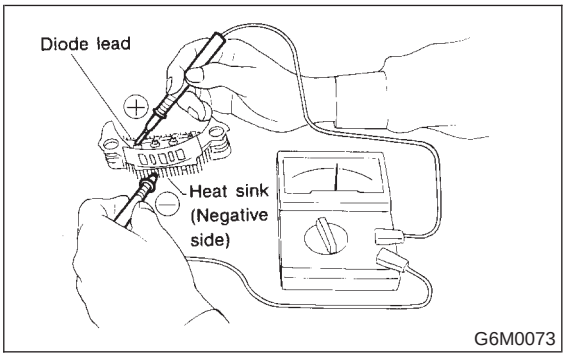
**CAUTION:**
**Never use a megger tester (measuring use for high voltage) or any other similar measure for this test; otherwise, the diodes may be damaged.**

1) Checking positive diode
Check for continuity between the diode lead and the positive side heat sink. The positive diode is in good condition if continuity exists only in the direction from the diode lead to the heat sink.



G6M0072

2) Checking negative diode
Check for continuity between the negative side heat sink and diode lead. The negative diode is in good condition if continuity exists only in the direction from the heat sink to the diode lead.



G6M0073

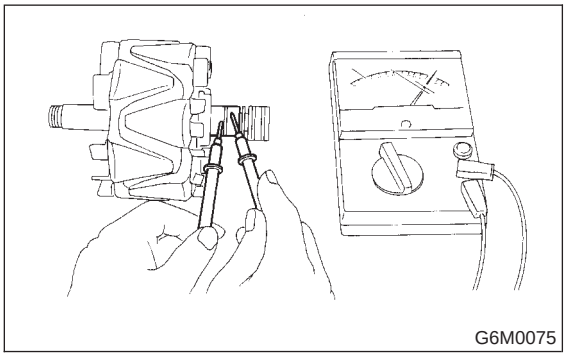
### 2. ROTOR

1) Slip ring surface
Inspect slip rings for contamination or any roughness of the sliding surface. Repair slip ring surface using a lathe or sand paper.
2) Slip ring outer diameter
Measure slip ring outer diameter. If slip ring is worn replace rotor assembly.

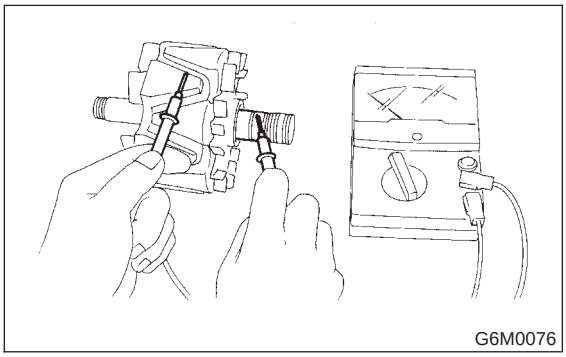
***Slip ring outer diameter:***
***Standard***
***22.7 mm (0.894 in)***
***Limit***
***22.1 mm (0.870 in)***

3) Continuity test
Check resistance between slip rings using circuit tester. If the resistance is not within specification, replace rotor assembly.

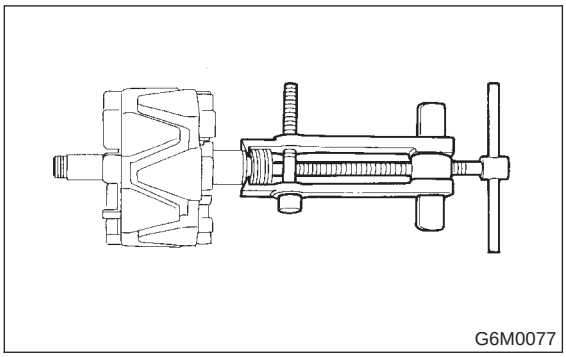
***Specified resistance:***
***Approx. 2.7 — 3.2 Ω***


G6M0075

4) Insulation test
Check continuity between slip ring and rotor core or shaft. If continuity exists, the rotor coil is short-circuited, and so replace rotor assembly.

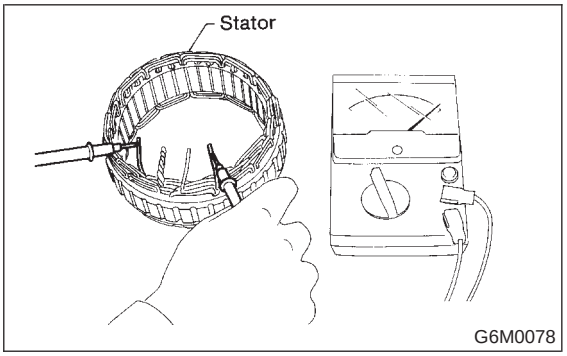

G6M0076

5) Ball bearing (rear side)
(1) Check rear ball bearing. Replace if it is noisy or if rotor does not turn smoothly.
(2) The rear bearing can be removed by using common bearing puller.


G6M0077

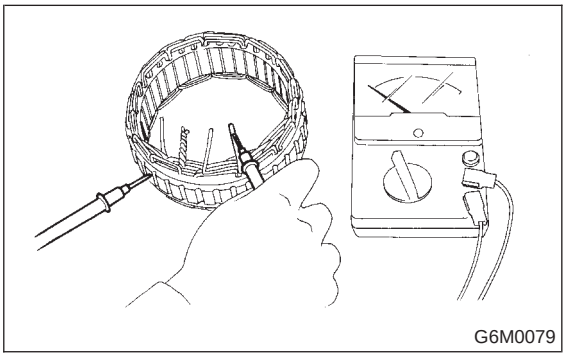
## 3. STATOR

1) Continuity test
Inspect stator coil for continuity between each end of the lead wires. If there is no continuity between individual lead wires, the lead wire is broken, and so replace stator assembly.



G6M0078

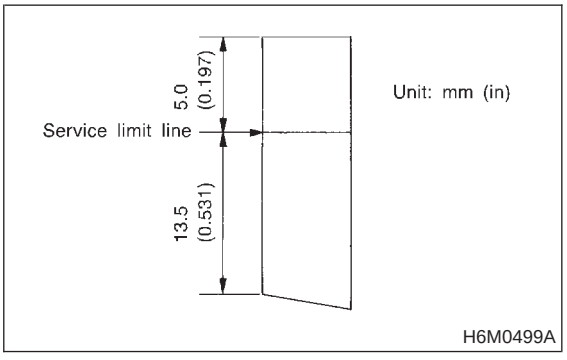
2) Insulation test
Inspect stator coil for continuity between stator core and each end of the lead wire. If there is continuity, the stator coil is short-circuited, and so replace stator assembly.


G6M0079

## 4. BRUSH

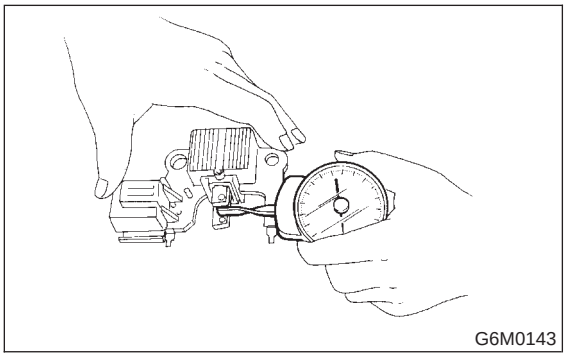
1) Measure the length of each brush. If wear exceeds the service limit, replace the brush. Each brush has the service limit mark on it.

***Brush length:***
***Standard***
***18.5 mm (0.728 in)***
***Service limit***
***5.0 mm (0.197 in)***



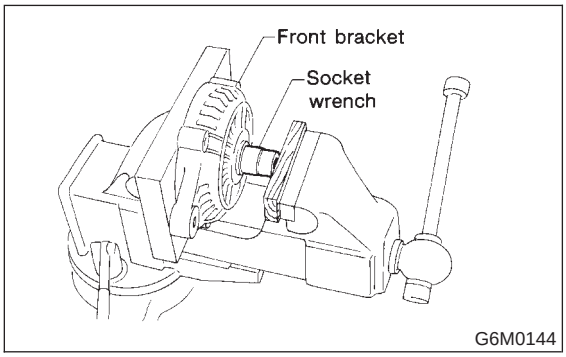
H6M0499A

2) Checking brush spring for proper pressure
Using a spring pressure indicator, push the brush into the brush holder until its tip protrudes 2 mm (0.08 in). Then measure the pressure of the brush spring. If the pressure is less than 2.648 N (270 g, 9.52 oz), replace the brush spring with a new one. The new spring must have a pressure of 4.609 to 5.786 N (470 to 590 g, 16.58 to 20.81 oz).


G6M0143

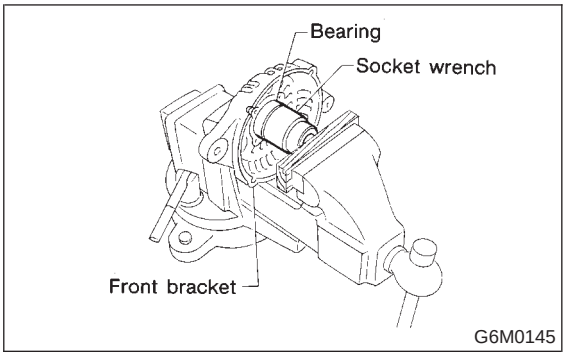
### 5. BEARING (FRONT SIDE)

1) Check front ball bearing. If resistance is felt while rotating, or if abnormal noise is heard, replace the ball bearing.
2) Replacing front bearing
(1) Remove front bearing retainer.
(2) Closely install a fit tool on the bearing inner race. Press the bearing down out of front bracket with a hand press or vise. A socket wrench can serve as the tool.



G6M0144

(3) Set a new bearing and closely install a fit tool on the bearing outer race. Press the bearing down into place with a hand press or vise. A socket wrench can serve as the tool.
(4) Install front bearing retainer.

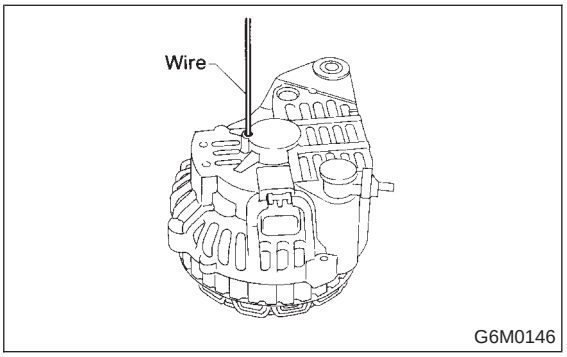


G6M0145

## D: ASSEMBLY

To assemble, reverse order of disassembly.
1) Pulling up brush
Before assembling, press the brush down into the brush holder with your finger and secure in that position by passing a [2 mm (0.08 in) dia. length 4 to 5 cm (1.6 to 2.0 in)] wire through the hole shown in the figure.

**CAUTION:**
**Be sure to remove the wire after reassembly.**



G6M0146

2) Heat the rear bracket [50 to 60°C (122 to 140°F)] and press the rear bearing into the rear bracket. Then lubricate the rear bracket.

**CAUTION:**
**Grease should not be applied for the rear bearing.**
**Remove oil completely if it is found on the bearing box.**

3) After reassembly, turn the pulley by hand to check that the rotor turns smoothly.

# 3. Spark Plug

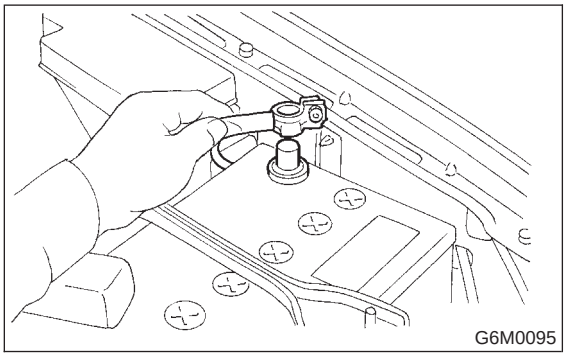
## A: REMOVAL AND INSTALLATION

**CAUTION:**
**All spark plugs installed on an engine, must be of the same heat range.**

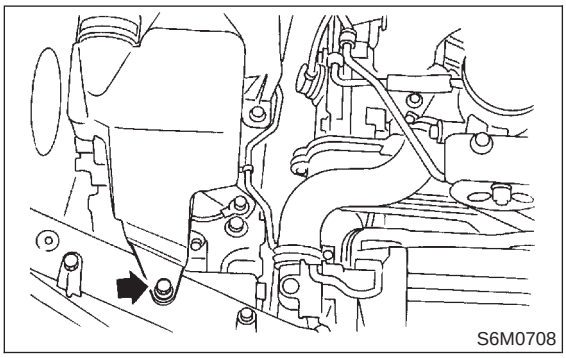
***Spark plug:***
***CHAMPION: RC10YC4***
***(Alternate)***
***CHAMPION: RC8YC4***
***NGK: BKR6E-11***
***NIPPONDENSO: K20PR-U11***

### 1. #1 SPARK PLUG

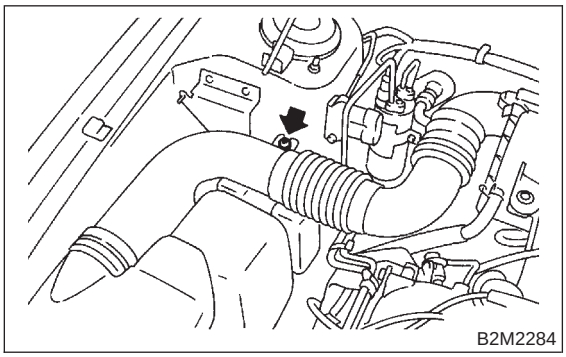
1) Disconnect battery ground cable.


G6M0095

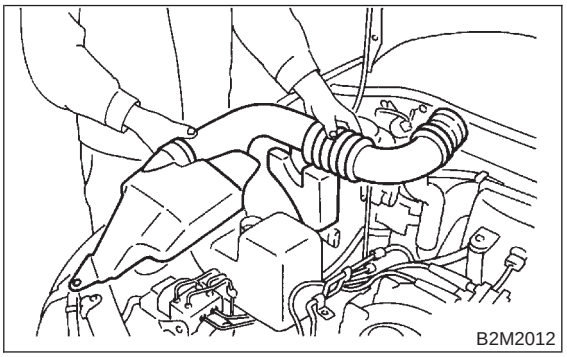
2) Remove air intake duct and resonator chamber.
(1) Remove bolt which installs air intake duct on the front side of body.


S6M0708

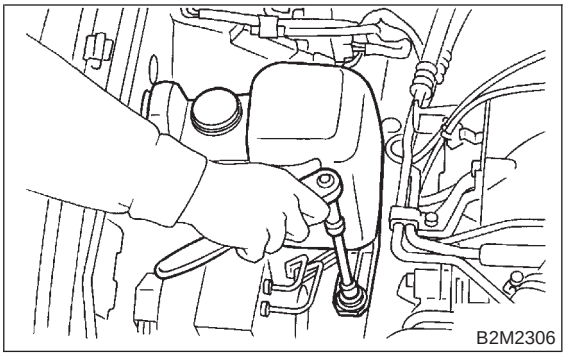
(2) Remove bolt which installs air intake duct on body.


B2M2284

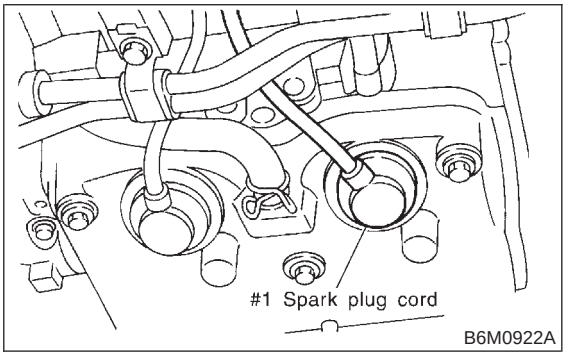
(3) Remove air intake duct as a unit.


B2M2012

(4) Remove resonator chamber.

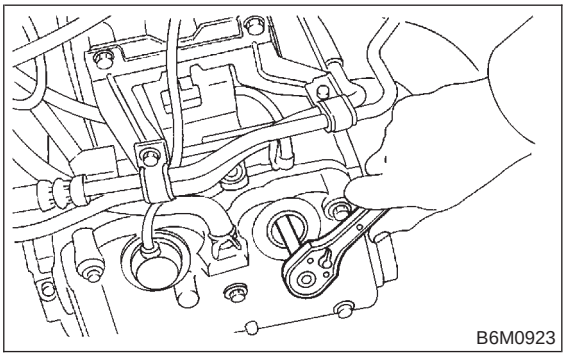

B2M2306

3) Remove #1 spark plug cord by pulling boot, not cord itself.



B6M0922A

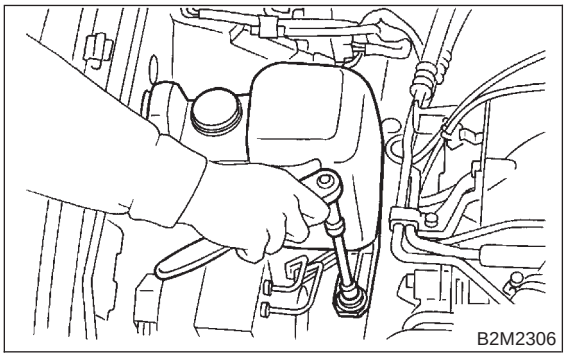
4) Remove spark plug with the spark plug socket.


B6M0923

5) Installation is in the reverse order of removal.

***Tightening torque (Spark plug):***
***20.6±2.9 N·m (2.10±0.30 kg-m, 15.19±2.14 ft-lb)***

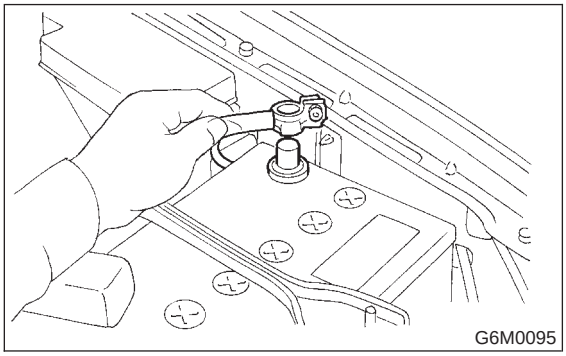
***Tightening torque (Resonator chamber):***
***32±10 N·m (3.3±1.0 kg-m, 24±7 ft-lb)***


B2M2306

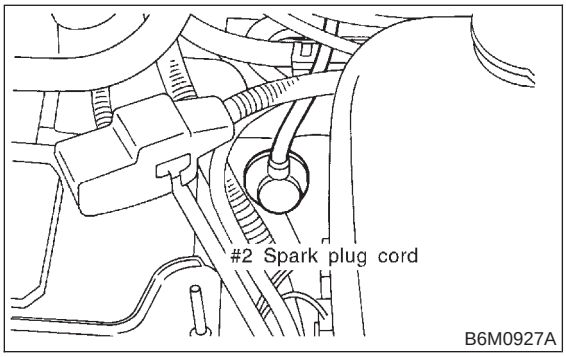
**CAUTION:**
**The above torque should be only applied to new spark plugs without oil on their threads. In case their threads are lubricated, the torque should be reduced by approximately 1/3 of the specified torque in order to avoid over-stressing.**

## 2. #2 SPARK PLUG

1) Disconnect battery ground cable.

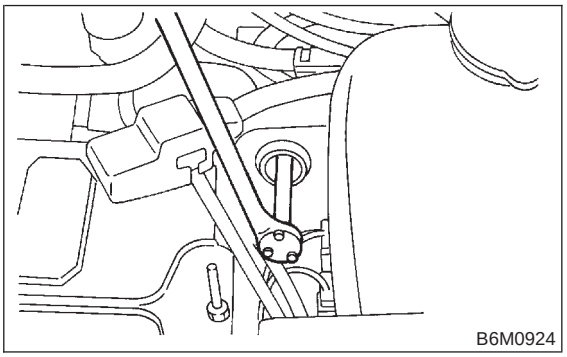

G6M0095

2) Remove #2 spark plug cord by pulling boot, not cord itself.



B6M0927A

3) Remove spark plug with the spark plug socket.


B6M0924

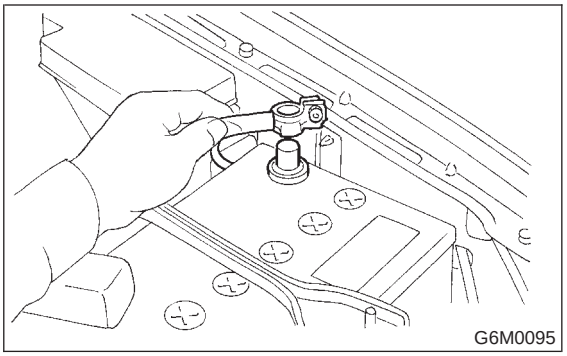
4) Installation is in the reverse order of removal.

***Tightening torque (Spark plug):***
***20.6±2.9 N·m (2.10±0.30 kg-m, 15.19±2.14 ft-lb)***

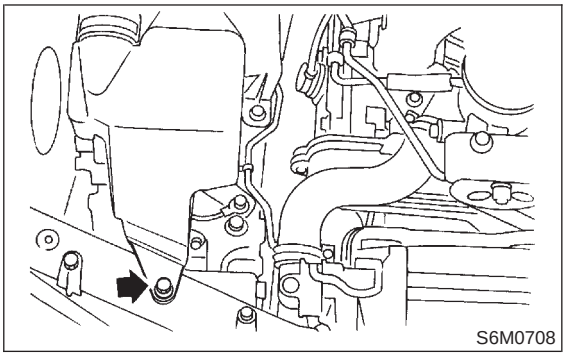
**CAUTION:**
**The above torque should be only applied to new spark plugs without oil on their threads. In case their threads are lubricated, the torque should be reduced by approximately 1/3 of the specified torque in order to avoid over-stressing.**

## 3. #3 SPARK PLUG

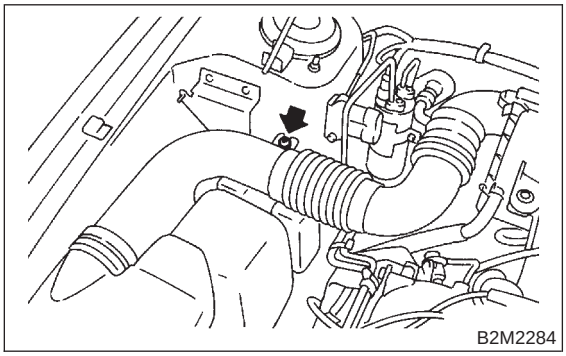
1) Disconnect battery ground cable.


G6M0095

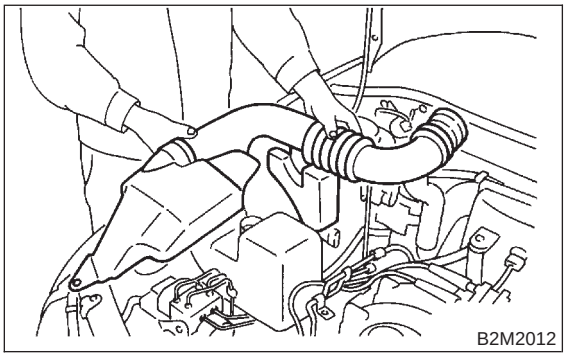
2) Remove air intake duct and resonator chamber.
(1) Remove bolt which installs air intake duct on the front side of body.


S6M0708

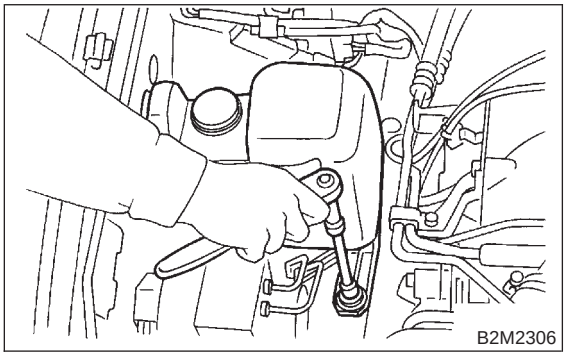
(2) Remove bolt which installs air intake duct on body.


B2M2284

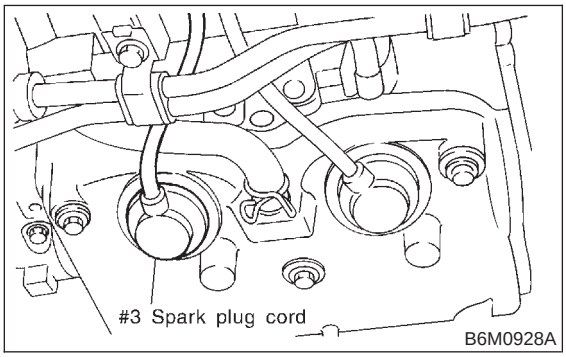
(3) Remove air intake duct as a unit.


B2M2012

(4) Remove resonator chamber.

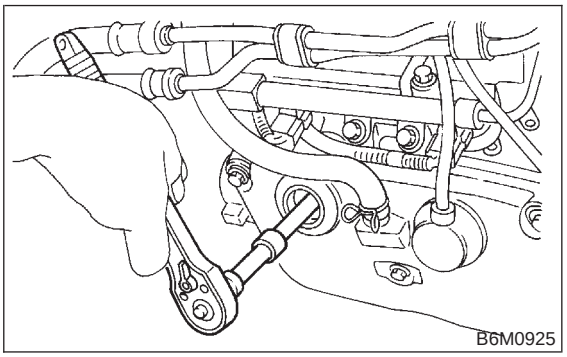

B2M2306

3) Remove #3 spark plug cord by pulling boot, not cord itself.



B6M0928A

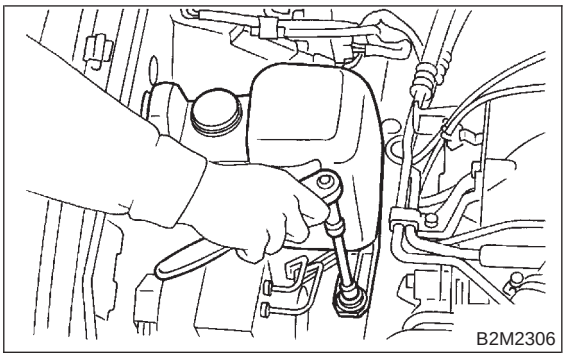
4) Remove spark plug with the spark plug socket.


B6M0925

5) Installation is in the reverse order of removal.

***Tightening torque (Spark plug):***
***20.6±2.9 N·m (2.10±0.30 kg-m, 15.19±2.14 ft-lb)***

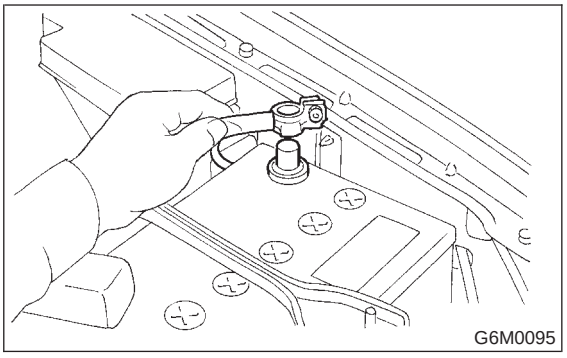
***Tightening torque (Resonator chamber):***
***32±10 N·m (3.3±1.0 kg-m, 24±7 ft-lb)***


B2M2306

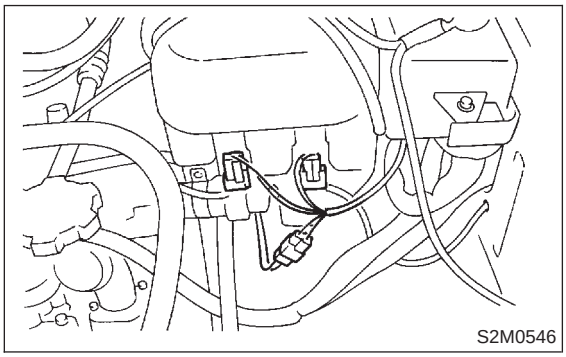
**CAUTION:**
**The above torque should be only applied to new spark plugs without oil on their threads. In case their threads are lubricated, the torque should be reduced by approximately 1/3 of the specified torque in order to avoid over-stressing.**

## 4. #4 SPARK PLUG

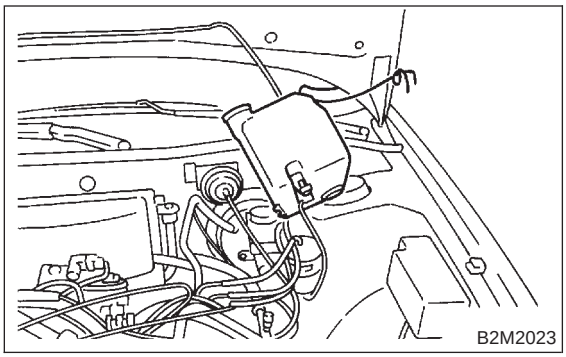
1) Disconnect battery ground cable.


G6M0095

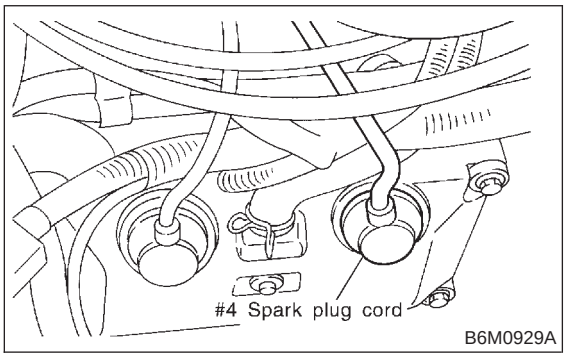
2) Disconnect washer motor connector.



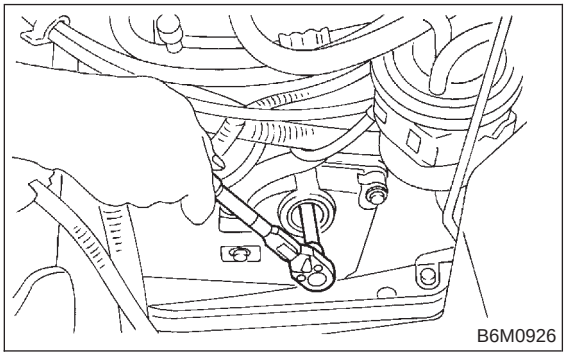

3) Disconnect rear window glass washer hose from washer motor, then plug connection with a suitable cap.
4) Remove the two bolts which hold the washer tank, then take the tank away from the working area.




5) Remove #4 spark plug cord by pulling boot, not cord itself.




6) Remove spark plug with the spark plug socket.



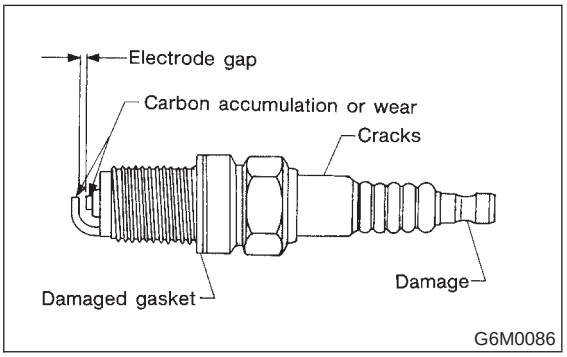

7) Installation is in the reverse order of removal.

***Tightening torque (Spark plug):***
***20.6±2.9 N·m (2.10±0.30 kg-m, 15.19±2.14 ft-lb)***

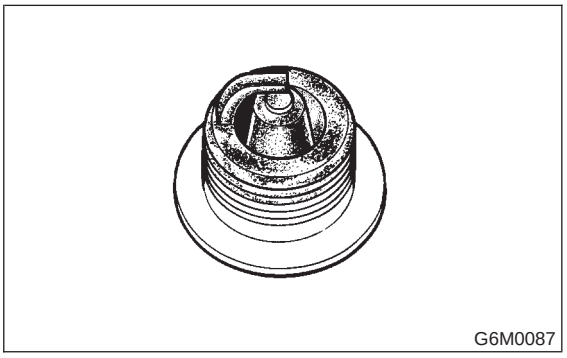
**CAUTION:**
**The above torque should be only applied to new spark plugs without oil on their threads. In case their threads are lubricated, the torque should be reduced by approximately 1/3 of the specified torque in order to avoid over-stressing.**

## B: INSPECTION

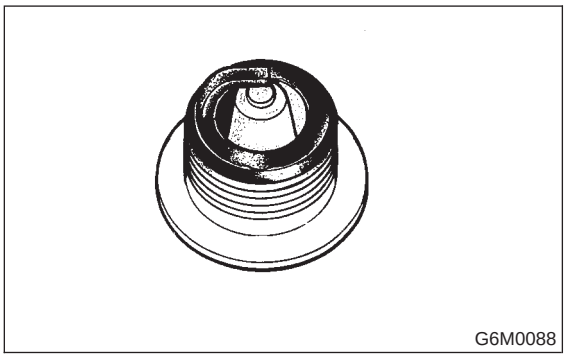
Check electrodes and inner and outer porcelain of plugs, noting the type of deposits and the degree of electrode erosion.



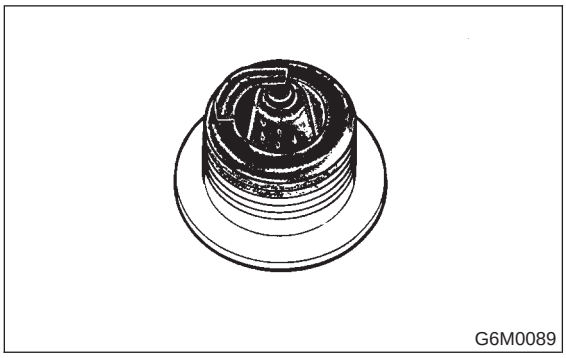

1) Normal
Brown to grayish-tan deposits and slight electrode wear indicate correct spark plug heat range.



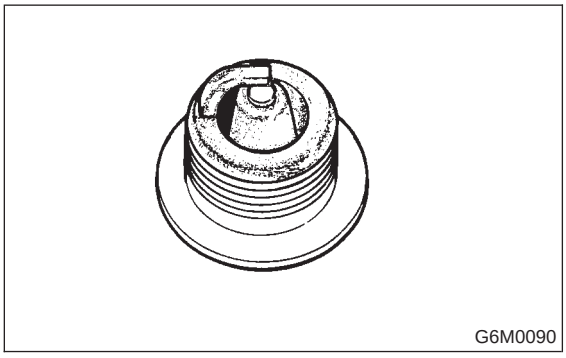
2) Carbon fouled
Dry fluffy carbon deposits on insulator and electrode are mostly caused by slow speed driving in city, weak ignition, too rich fuel mixture, dirty air cleaner, etc.
It is advisable to replace with plugs having hotter heat range.


G6M0088

3) Oil fouled
Wet black deposits show excessive oil entrance into combustion chamber through worn rings and pistons or excessive clearance between valve guides and stems. If same condition remains after repair, use a hotter plug.


G6M0089

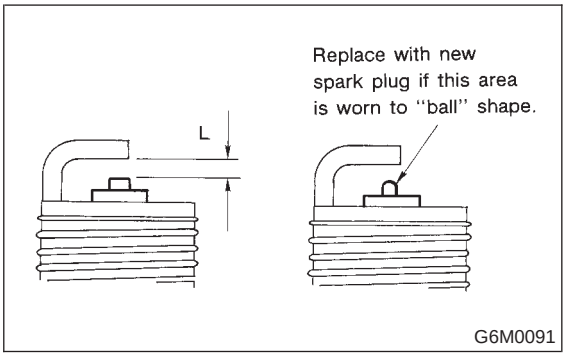
4) Overheating
White or light gray insulator with black or gray brown spots and bluish burnt electrodes indicate engine overheating. Moreover, the appearance results from incorrect ignition timing, loose spark plugs, wrong selection of fuel, hotter range plug, etc. It is advisable to replace with plugs having colder heat range.


G6M0090

## C: CLEANING AND REGAPPING

Clean spark plugs in a sand blast type cleaner.
Avoid excessive blasting. Clean and remove carbon or oxide deposits, but do not wear away porcelain.
If deposits are too stubborn, discard plugs.
After cleaning spark plugs, recondition firing surface of electrodes with file. Then correct the spark plug gap using a gap gauge.

***Spark plug gap: L***
***1.0 — 1.1 mm (0.039 — 0.043 in)***

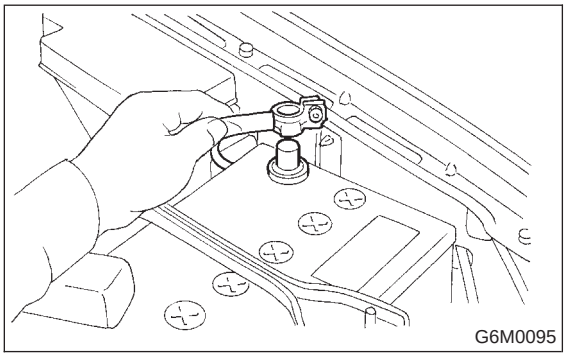


G6M0091

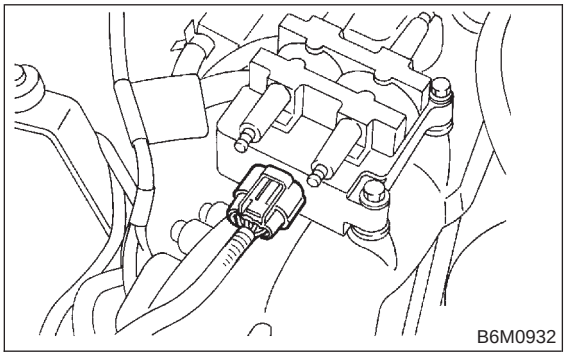
# 4. Ignition Coil and Ignitor Assembly

## A: REMOVAL AND INSTALLATION

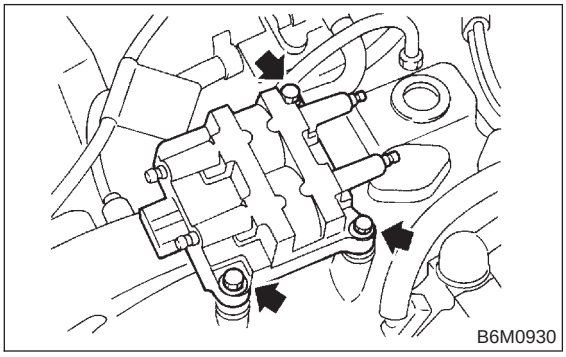
1) Disconnect battery ground cable.




2) Disconnect spark plug cords from ignition coil and ignitor assembly.
3) Disconnect connector from ignition coil and ignitor assembly.




4) Remove ignition coil and ignitor assembly.




5) Installation is in the reverse order of removal.

**CAUTION:**
**Be sure to connect wires to their proper positions. Failure to do so will damage unit.**

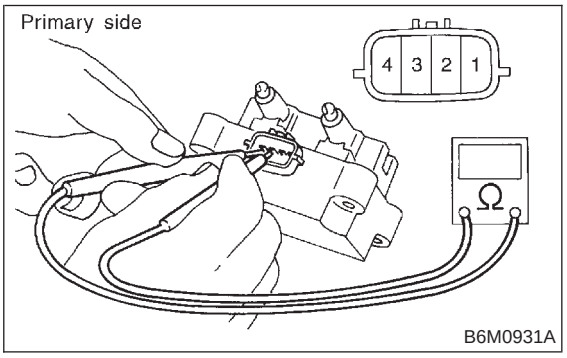
## B: INSPECTION

Using accurate tester, inspect the following items, and replace if defective.
1) Primary resistance
2) Secondary coil resistance

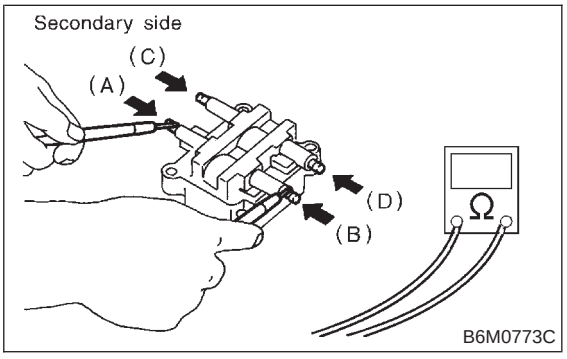
**CAUTION:**
**If the resistance is extremely low, this indicates the presence of a short-circuit.**

***Specified resistance:***

***[Primary side]***
***Between terminal No. 1 and No. 2***
***0.73 Ω±10%***
***Between terminal No. 2 and No. 4***
***0.73 Ω±10%***




***[Secondary side]***
***Between (A) and (B)***
***12.8 kΩ±15%***
***Between (C) and (D)***
***12.8 kΩ±15%***




3) Insulation between primary terminal and case: 10 MΩ or more.

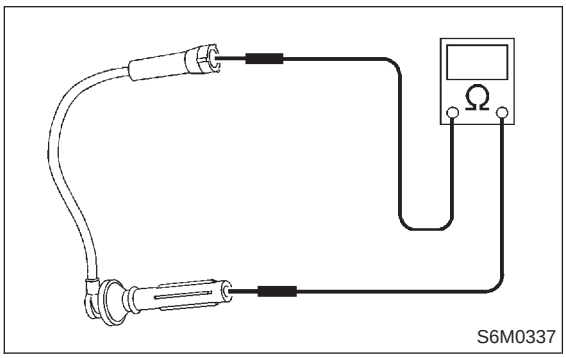
# 5. Spark Plug Cord

## A: INSPECTION

Check for:
1) Damage to cords, deformation, burning or rust formation of terminals
2) Resistance values of cords

***Resistance value:***

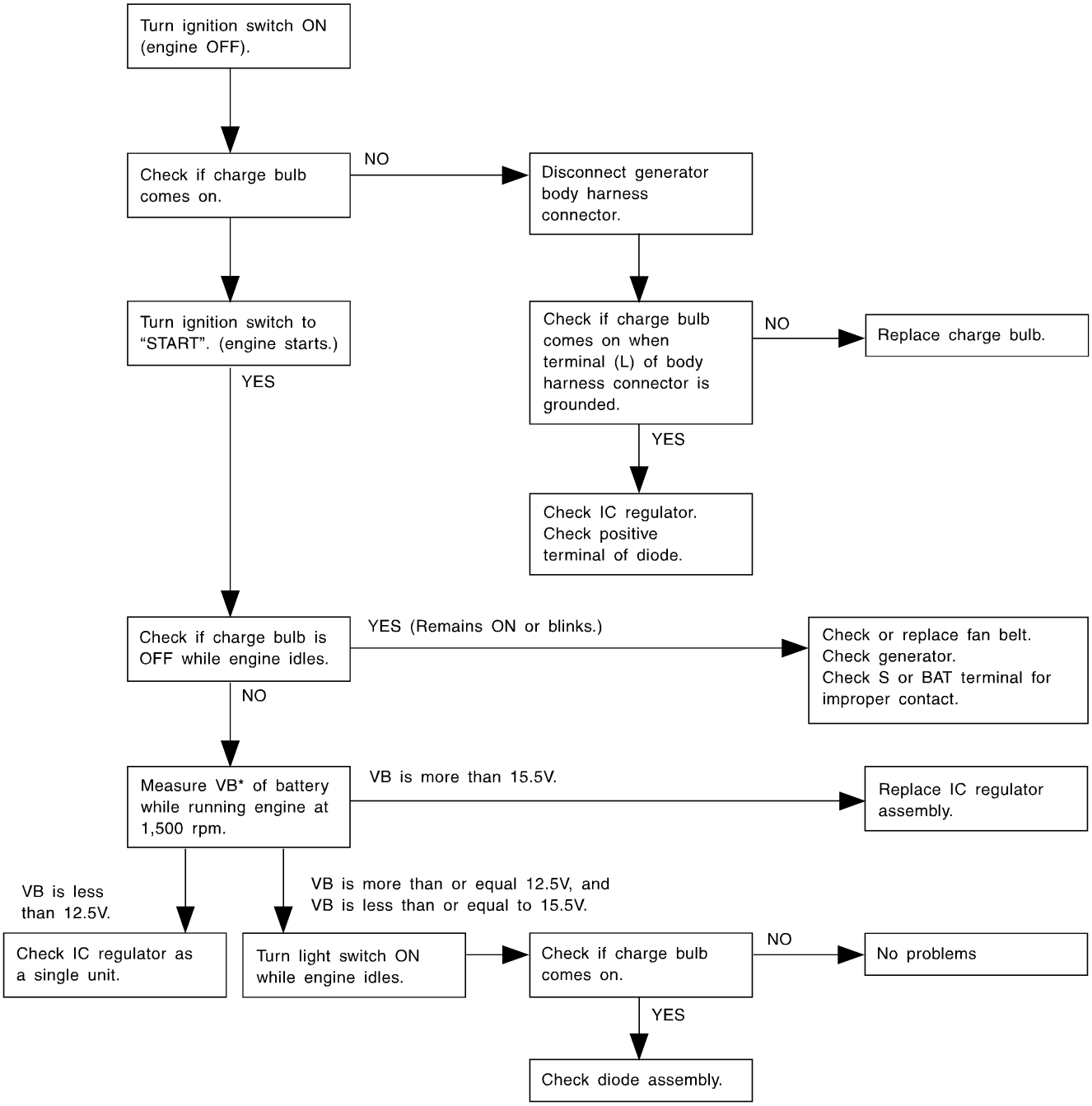
***#1 cord: 7.40 — 17.27***
***#2 cord: 6.24 — 14.56***
***#3 cord: 6.54 — 15.25***
***#4 cord: 6.59 — 15.37***



# 1. Starter

| Trouble | | Probable cause |
|---|---|---|
| Starter does not start. | Magnet switch does not operate. (no clicks are heard.) | Magnet switch poor contact or discontinuity of pull-in coil circuit |
| | | Improper sliding of magnet switch plunger |
| | Magnet switch operates. (clicks are issued.) | Poor contact of magnet switch's main contact point |
| | | Layer short of armature |
| | | Contaminants on armature commutator |
| | | High armature mica |
| | | Improper grounding of yoke field coil |
| | | Insufficient carbon brush length |
| | | Insufficient brush spring pressure |
| Starter starts but does not crank engine. | Failure of pinion gear to engage ring gear | Worn pinion teeth |
| | | Improper sliding of overrunning clutch |
| | | Improper adjustment of stud bolt |
| | Clutch slippage | Faulty clutch roller spring |
| Starter starts but engine cranks too slowly. | | Poor contact of magnet switch's main contact point |
| | | Layer short of armature |
| | | Discontinuity, burning or wear of armature commutator |
| | | Poor grounding of yoke field coil |
| | | Insufficient brush length |
| | | Insufficient brush spring pressure |
| | | Abnormal brush wear |
| Starter overruns. | | Magnet switch coil is a layer short. |

# 2. Generator




*: Terminal voltage

B6M0771

# 1. Body Electrical

| | | | | |
|---|---|---|---|---|
| Battery | Capacity | Reverse capacity | MT model: 99 minutes | AT model: 120 minutes |
| | | Cold cranking ampere | MT model: 356 amperes | AT model: 520 amperes |
| Combination meter | Speedometer | | Electric pulse type | |
| | Temperature gauge | | Thermistor cross coil type | |
| | Fuel gauge | | Resistance cross coil type | |
| | Tachometer | | Electric pulse type | |
| | Turn signal indicator light | | 12 V — 1.4 W | |
| | Charge indicator light | | 12 V — 1.4 W | |
| | Oil pressure indicator light | | 12 V — 1.4 W | |
| | ABS warning light | | 12 V — 1.4 W | |
| | CHECK ENGINE warning light (Malfunction indicator light) | | 12 V — 1.4 W | |
| | HI-beam indicator light | | 12 V — 1.4 W | |
| | Door open warning light | | 12 V — 1.4 W (LED) | |
| | Seat belt warning light | | 12 V — 1.4 W (LED) | |
| | Brake fluid and parking brake warning light | | 12 V — 1.4 W | |
| | FWD indicator light | | 12 V — 1.4 W | |
| | AIRBAG warning light | | 12 V — 1.4 W | |
| | Meter illumination light | | 12 V — 3.4 W, 3.0 W, 1.4 W | |
| | AT OIL TEMP. warning light | | 12 V — 1.4 W | |
| Headlight | | | 12 V — 60/55 W (Halogen) | |
| Front fog light | | | 12 V — 55 W | |
| Front turn signal light | | | 12 V — 27 W | |
| Side turn signal light | | | 12 V — 3.8 W | |
| Side marker/Parking light | | | 12 V — 3.8 W | |
| Rear combination light | | Tail/Stop light | 12 V — 8/27 W | |
| | | Turn signal light | 12 V — 27 W | |
| | | Back-up light | 12 V — 27 W | |
| License plate light | | | 12 V — 3.8 W | |
| High-mount stop light | | | Sedan: 12 V — 18 W | Wagon: 12 V — 13 W |
| Room light | | | 12 V — 8 W | |
| Spot light | | | 12 V — 8 W | |
| Trunk room light | | | 12 V — 5 W | |
| Luggage room light | | | 12 V — 5 W | |
| Front wiper motor | Input | | 12 V — 54 W or less | |
| Rear wiper motor | Input | | 12 V — 42 W or less | |
| Front washer motor | Pump type | | Centrifugal | |
| | Input | | 12 V — 36 W or less | |
| Rear washer motor | Pump type | | Centrifugal | |
| | Input | | 12 V — 36 W or less | |
| Horn | | | 12 V — 350 Hz | |
| Accessory socket | Input | | 12 V — 120 W | |
| Rear window defogger | Input | | 12 V — 160 W | |
| | Indicator light | | 12 V — 50 mA | |
| Cargo socket | Input | | 12 V — 120 W | |

# 1. Precautions

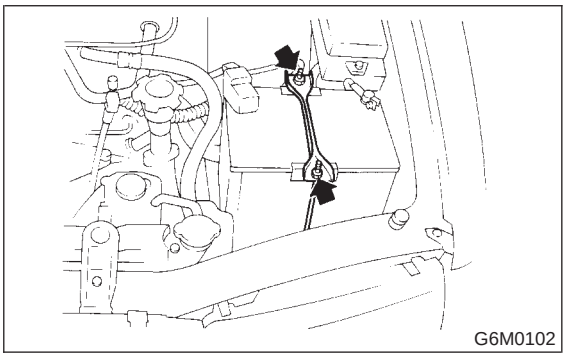
**● Before disassembling or reassembling parts, always disconnect battery ground cable. When repairing radio, control units, etc. which are provided with memory functions, record memory contents before disconnecting battery ground cable. Otherwise, these contents are cancelled upon disconnection.**
**● Reassemble parts in reverse order of disassembly procedure unless otherwise indicated.**
**● Adjust parts to specifications contained in this manual if so designated.**
**● Connect connectors and hoses securely during reassembly.**
**● After reassembly, ensure functional parts operate smoothly.**

**CAUTION:**
**● Airbag system wiring harness is routed near the electrical parts and switch.**
**● 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 ignition key cylinder.**

# 2. Battery

## A: REMOVAL AND INSTALLATION

1) Disconnect the positive (+) terminal after disconnecting the negative (− ) terminal of battery.
2) Remove flange nuts from battery rods and take off battery holder.




3) Remove battery.
4) Installation is in the reverse order of removal.

***Tightening torque:***
***3.4±1.0 N·m (0.35±0.1 kg-m, 2.5±0.7 ft-lb)***

NOTE:
● Clean battery cable terminals and apply grease to retard the formation of corrosion.
● Connect the positive (+) terminal of battery and then the negative (− ) terminal of the battery.

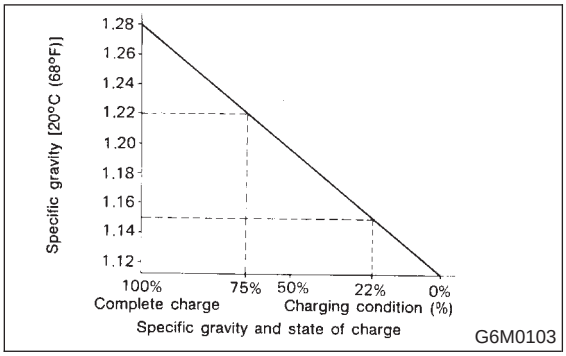
## B: INSPECTION

**WARNING:**
**● Electrolyte has toxicity; be careful handling the fluid.**
**● Avoid contact with skin, eyes or clothing. Especially at contact with eyes, blush with water for 15 minutes and get prompt medical attention.**
**● Batteries produce explosive gasses. Keep sparks, flame, cigarettes away.**
**● Ventilate when charging or using in enclosed space.**
**● For safety, in case an explosion does occur, wear eye protection or shield your eyes when working near any battery. Never lean over a battery.**
**● Do not let battery fluid contact eyes, skin, fabrics, or paint-work because battery fluid is corrosive acid.**
**● To lessen the risk of sparks, remove rings, metal watch-bands, and other metal jewelry. Never allow metal tools to contact the positive battery terminal and anything connected to it while you are at the same time in contact with any other metallic portion of the vehicle because a short circuit will be caused.**

## 1. BATTERY

1) External parts:
Check for the existence of dirt or cracks on the battery case, top cover, vent plugs, and terminal posts. If necessary, clean with water and wipe with a dry cloth. Apply a thin coat of grease on the terminal posts to prevent corrosion.
2) Electrolyte level:
Check the electrolyte level in each cell. If the level is below MIN LEVEL, bring the level to MAX LEVEL by pouring distilled water into the battery cell. Do not fill beyond MAX LEVEL.
3) Specific gravity of electrolyte:
(1) Measure specific gravity of electrolyte using a hydrometer and a thermometer. Specific gravity varies with temperature of electrolyte so that it must be corrected at 20°C (68°F) using the following Equation:

***$S_{20}$ = St + 0.0007 x (t − 20)***
***$S_{20}$:Specific gravity corrected at electrolyte temperature of 20°C***
***St :Measured specific gravity***
***t :Measured temperature (°C)***
***Determine whether or not battery must be charged, according to corrected specific gravity.***
***Standard specific gravity: 1.220 — 1.290 [at 20°C (68°F)]***




(2) Measuring the specific gravity of the electrolyte in the battery will disclose the state of charge of the battery. The relation between the specific gravity and the state of charge is as shown in figure.

# C: CHARGING

**WARNING:**
**● Do not bring an open flame close to the battery at this time.**

**CAUTION:**
**● Prior to charging, corroded terminals should be cleaned with a brush and common baking soda solution.**
**● Be careful since battery electrolyte overflows while charging the battery.**
**● Observe instructions when handling battery charger.**
**● Before charging the battery on vehicle, disconnect battery ground terminal. Failure to follow this rule may damage alternator's diodes or other electrical units.**

## 1. NORMAL CHARGING

Charge the battery at current value specified by manufacturer or at approximately 1/10 of battery's ampere-hour rating.

## 2. QUICK CHARGING

Quick charging is a method in which the battery is charged in a short period of time with a relatively large current by using a quick charger. Since a large current flow raises electrolyte temperature, the battery is subject to damage if the large current is used for prolonged time. For this reason, the quick charging must be carried out within a current range that will not increase the electrolyte temperature above 40°C (104°F). It should be also remembered that the quick charging is a temporary means to bring battery voltage up to a fair value and, as a rule, a battery should be charged slowly with a low current.

**CAUTION:**
**● Observe the items in 1. NORMAL CHARGING.**
**● Never use more than 10 amperes when charging the battery because that will shorten battery life.**

## 3. JUDGMENT OF BATTERY IN CHARGED CONDITION

1) Specific gravity of electrolyte is held at a specific value in a range from 1.250 to 1.290 for more than one hour.
2) Voltage per battery cell is held at a specific value in a range from 2.5 to 2.8 volts for more than one hour.

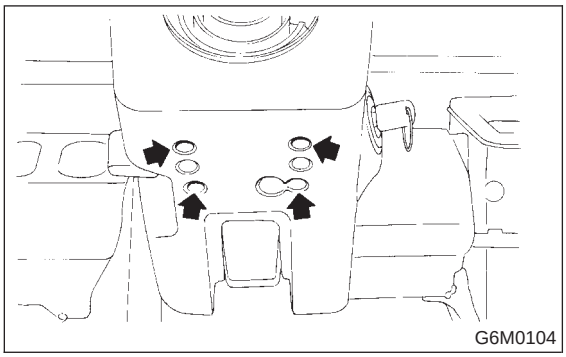
## 4. CHECK HYDROMETER FOR STATE OF CHARGE

| Hydrometer indicator | State of charge | Required action |
|---|---|---|
| Green dot | Above 65% | Load test |
| Dark dot | Below 65% | Charge battery |
| Clear dot | Low electrolyte | Replace battery* (If cranking complaint) |
| *: Check electrical system before replacement. | | |

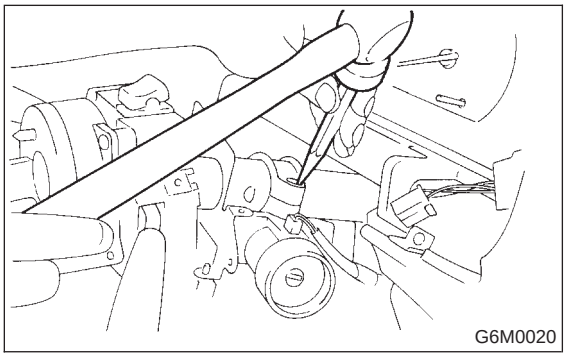
# 3. Ignition Switch

## A: REMOVAL AND INSTALLATION

1) Remove screws, separate upper column cover and lower column cover.

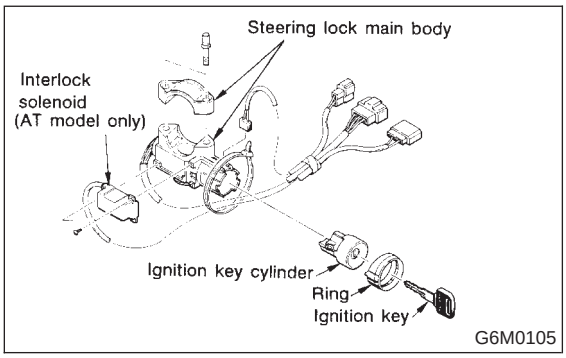

G6M0104

2) Remove knee protector.
3) Remove meter visor.
4) Disconnect ignition switch connector from body harness.
5) Using a drift and hammer, hit the torn bolt head to loosen and remove the ignition switch.


G6M0020

6) Installation is in the reverse order of removal.

NOTE:
When installing, tighten the connecting bolt until its head twists off.



G6M0105

# 4. Lighting

## A: ADJUSTMENT

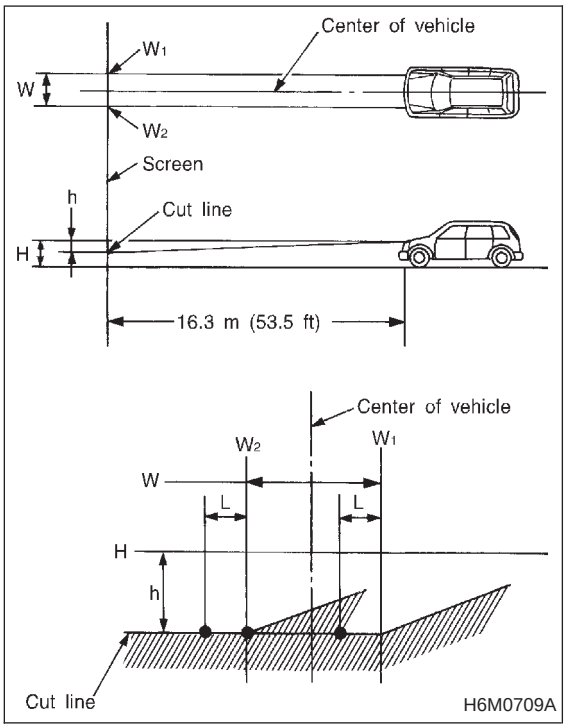
### 1. HEADLIGHT AIMING

**CAUTION:**
**Turn off the light before adjusting headlight aiming. If the light is necessary to check aiming, do not turn on for more than two minutes.**

NOTE:
Before checking the headlight aiming, be sure of the following:
- The area around the headlight has not sustained any accident, damage or other type of deformation.
- Vehicle is parked on level ground.
- The inflation pressure of tires is correct.
- Vehicle's gas tank is fully charged.
- Bounce the vehicle several times to normalize the suspension.
- Make certain that someone is seated in the driver's seat.

1) Place a cloth over the headlight that does not require aiming adjustment.
2) Turn the headlights on. Perform the aiming adjustment for the other headlight as follows:

**CAUTION:**
**Do not perform lateral headlight aiming adjustment.**

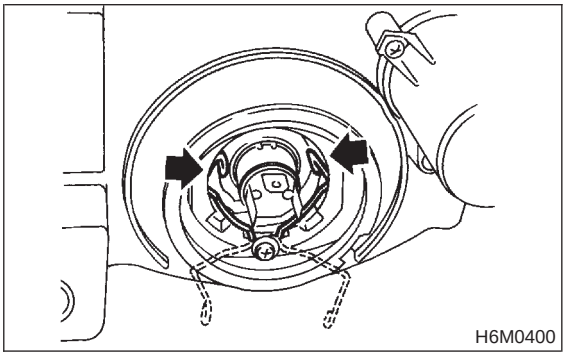



| | W | H | L | h |
|---|---|---|---|---|
| Except OUTBACK | 1,070 mm (42.13 in) | 630 mm (24.80 in) | 712 mm (28.03 in) | 114 mm (4.49 in) |
| OUTBACK | 1,070 mm (42.13 in) | 650 mm (25.59 in) | 712 mm (28.03 in) | 114 mm (4.49 in) |

## B: REMOVAL AND INSTALLATION

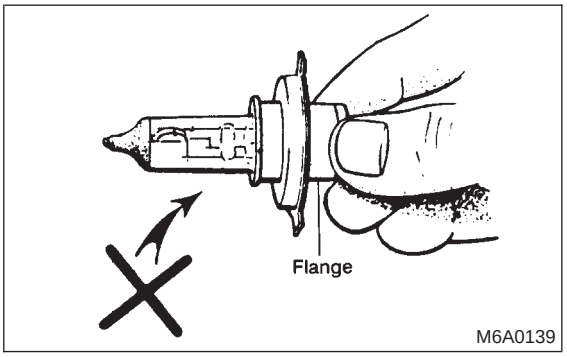
### 1. HEADLIGHT BULB

1) Disconnect the connector from inside of the engine compartment.
2) Remove rubber cap.
3) Remove the light bulb retaining spring to remove the bulb.

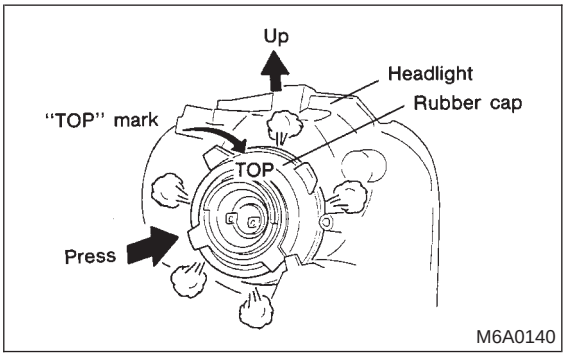



4) Replace the bulb with a new one and hook the spring.
5) Attach the rubber cap and connect the connector.

**CAUTION:**
**● Since the tungsten halogen bulb operates at high temperature, dirt and oil on the bulb surface decreases the bulb's useful life. When replacing the bulb, hold the flange portion and do not touch the glass portion.**



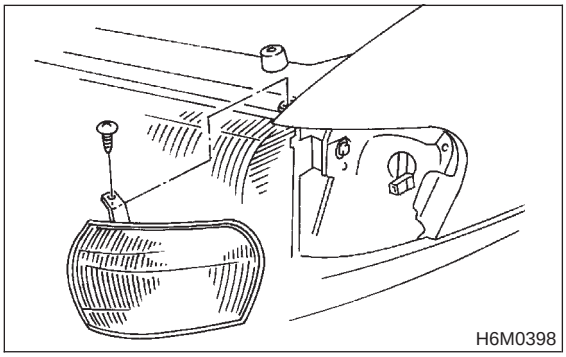

**● Attach the rubber cap with letters TOP on the top so that the drain hole will be on the lower side.**



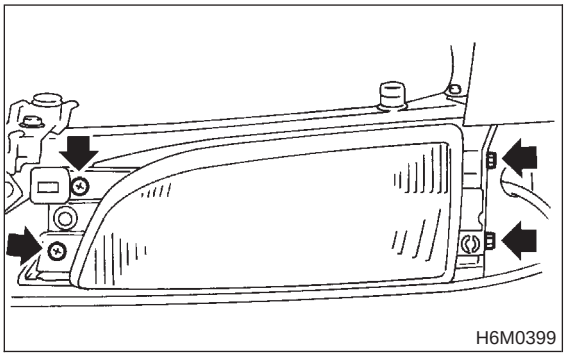
**● To keep water out, correctly engage the groove portion of the rubber cap.**

## 2. HEADLIGHT AND SIDE MARKER LIGHT

1) Remove front grille and disconnect connector from headlight.
2) Remove screw then remove side marker light while disconnecting connector.


H6M0398

3) Remove screws and bolts which secure headlight and remove headlight.


H6M0399

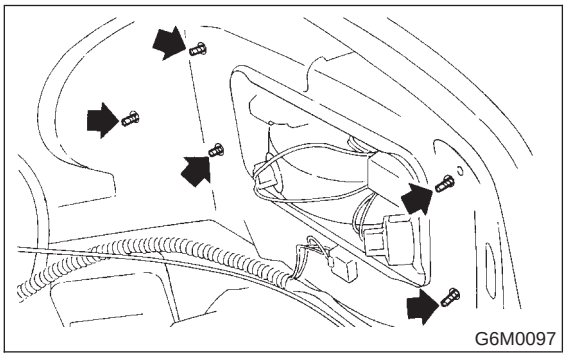
4) Installation is in the reverse order of removal.

***Tightening torque:***
***7.4±2.0 N·m (0.75±0.2 kg-m, 5.4±1.4 ft-lb)***

NOTE:
When installing, securely fit clip (on fender side) into locating (on side marker light side).

## 3. REAR COMBINATION LIGHT

1) Remove rear trim.
2) Remove nuts and disconnect connector.


G6M0097

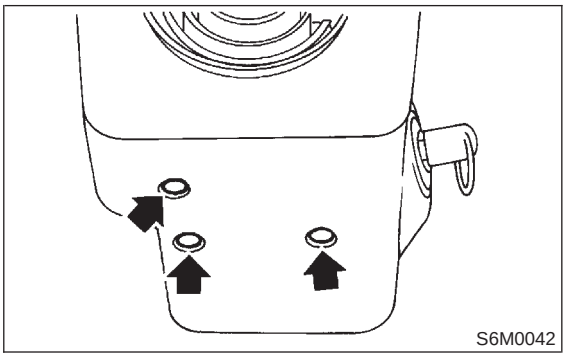
3) Attach adhesive cloth tape to body area around rear combination light.
4) Using a standard screwdriver, carefully pry rear combination light off and away from the front of vehicle.
5) Installation is in the reverse order of removal.

***Tightening torque:***
***4.4±1.5 N·m (0.45±0.15 kg-m, 3.3±1.1 ft-lb)***

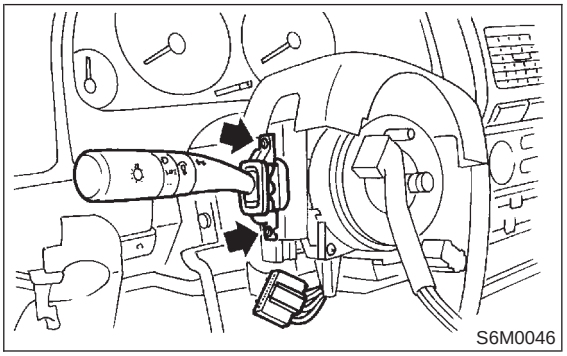
**CAUTION:**
**● Do not pry rear combination light forcefully as this may scratch vehicle body.**
**● Remove all traces of adhesive tape from body before installation.**
**● Attach butyl rubber tape to back of rear combination light before installing rear combination light on body for sealing purposes.**

## 4. COMBINATION SWITCH

1) Remove instrument panel lower cover. <Ref. to 5-4 [W1A0].>
2) Remove screws which secure upper column cover to lower column cover.


S6M0042

3) Disconnect connector from combination switch.
4) Remove screws which secure switch and remove switch.


S6M0046

5) Installation is in the reverse order of removal.

# C: INSPECTION

## 1. COMBINATION SWITCH (LIGHTING)

Move combination switch to respective positions and check continuity between terminals.

**• LIGHTING SWITCH**

| Terminal / Switch position | 16 | 14 | 13 |
|---|---|---|---|
| OFF | | | |
| Tail | ○ | ○ | |
| Head | ○ | ○ | ○ |

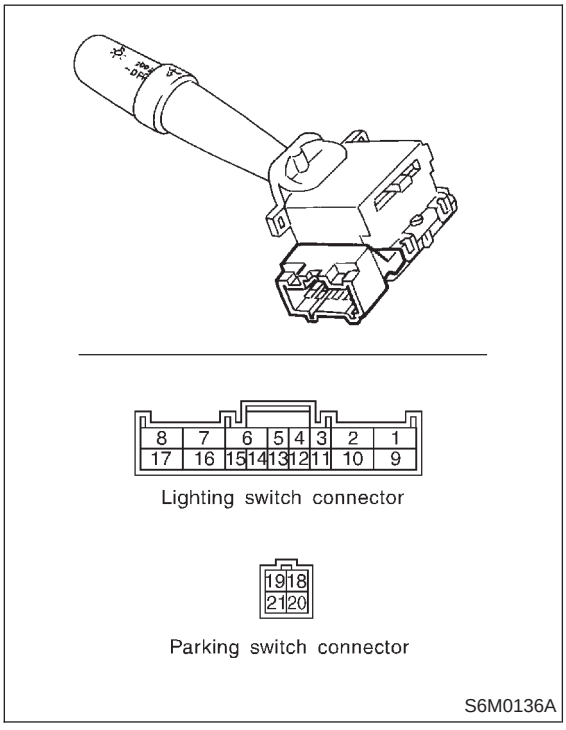
**• PARKING SWITCH**

| Terminal / Switch position | 19 | 21 | 18 |
|---|---|---|---|
| OFF | ○ | ○ | |
| ON | | ○ | ○ |

**• DIMMER AND PASSING SWITCH**

| Terminal / Switch position | 16 | 17 | 7 | 8 |
|---|---|---|---|---|
| Flash | ○ | | ○ | ○ |
| Low beam | ○ | ○ | | |
| HI-beam | ○ | | ○ | |

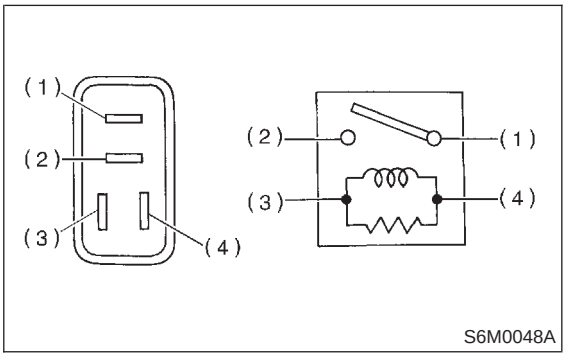
H6M0500B




## 2. HEADLIGHT RELAY

Check continuity between terminals when terminal No. 4 is connected to battery and terminal No. 3 is grounded.

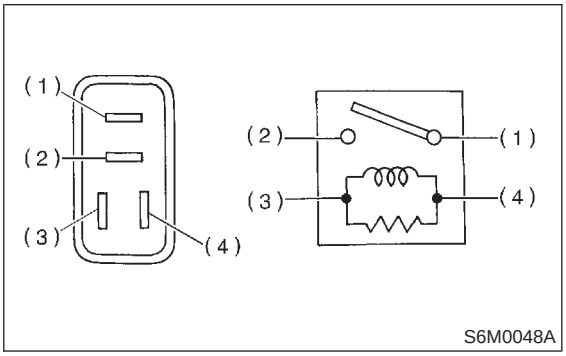
| | | |
|---|---|---|
| When current flows. | Between terminals No. 1 and No. 2 | Continuity exists. |
| When current does not flow. | Between terminals No. 1 and No. 2 | Continuity does not exist. |
| | Between terminals No. 3 and No. 4 | Continuity exists. |




## 3. TAIL AND ILLUMINATION RELAY

Check continuity between terminals (indicated in table) when terminal No. 4 is connected to battery and terminal No. 3 is grounded.

| | | |
|---|---|---|
| When current flows. | Between terminals No. 1 and No. 2 | Continuity exists. |
| When current does not flow. | Between terminals No. 1 and No. 2 | Continuity does not exist. |
| | Between terminals No. 3 and No. 4 | Continuity exists. |

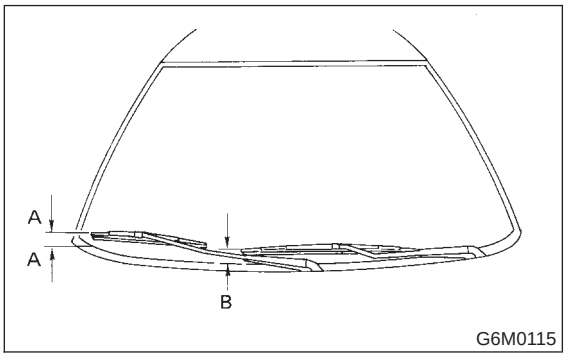


# 5. Front Wiper and Washer

## A: ADJUSTMENT

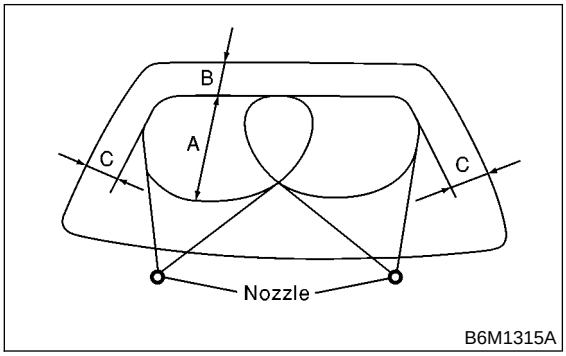
1) Turn the wiper switch to OFF position.
2) Adjust blades in original position as shown in figure by changing wiper arm installation.

***Original position:***
***A: 22.5±7.5 mm (0.886±0.295 in)***
***B: 32.5±7.5 mm (1.280±0.295 in)***




3) Adjust washer ejecting area on windshield glass as shown in figure when vehicle stops.

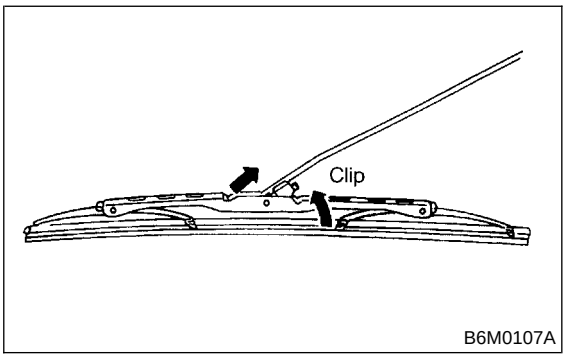
***Ejecting area:***
***A: 400 mm (15.75 in)***
***B: 150 mm (5.91 in)***
***C: 100 mm (3.97 in)***




## B: REMOVAL AND INSTALLATION

### 1. BLADE

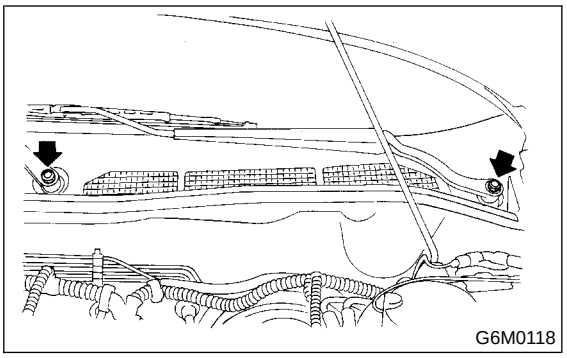
1) Pull out blade following the arrow direction, from arm while pushing up locking clip.




2) Installation is in the reverse order of removal.

### 2. WIPER ARM

1) Open front hood.
2) Remove cap. Remove the nut which secure wiper arm, and remove wiper arm.




3) Installation is in the reverse order of removal.

NOTE:
Remove metal sludge from the wiper arm fixture before installing it.

***Tightening torque:***
***20±3 N·m (2.0±0.3 kg-m, 14.4±2.2 ft-lb)***

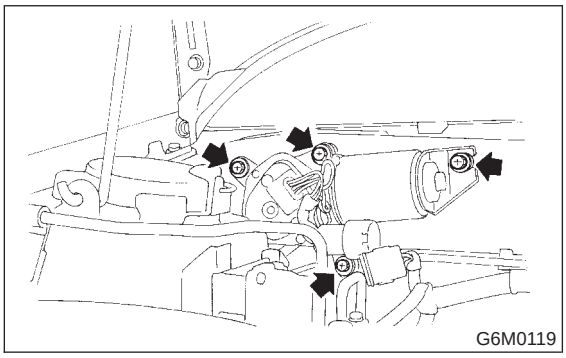
## 3. WIPER MOTOR AND LINK

1) Detach weatherstrip and cowl panel. <Ref. to 5-1 [W12A0].>

NOTE:
Apply silicone oil or soap water to both sides of cowl net to facilitate removal.

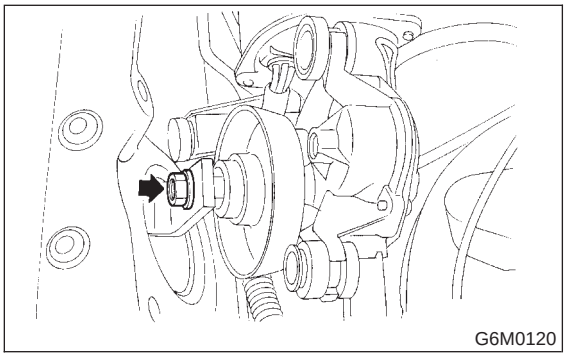
2) Disconnect electric connector, and remove motor attaching bolts.

***Tightening torque:***
***5.9±1.5 N·m (0.6±0.15 kg-m, 4.3±1.1 ft-lb)***


G6M0119

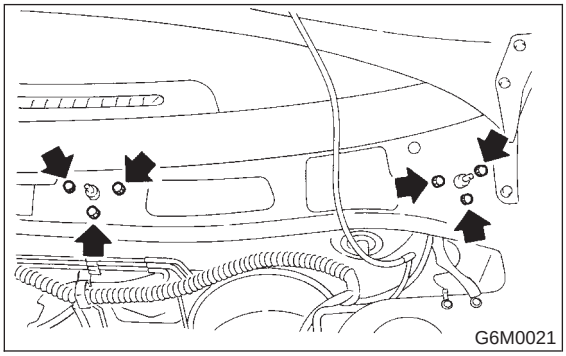
3) Remove nut securing motor link on the back side of motor.

***Tightening torque:***
***15±3 N·m (1.5±0.3 kg-m, 10.8±2.2 ft-lb)***

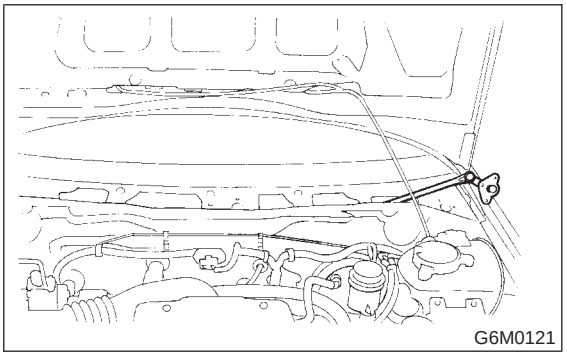

G6M0120

4) Remove nuts which secure sleeve unit.

***Tightening torque:***
***5.9±1.5 N·m (0.6±0.15 kg-m, 4.3±1.1 ft-lb)***


G6M0021

5) Remove wiper link from service hole in front panel.


G6M0121

6) Installation is in the reverse order of removal.

# C: INSPECTION

## 1. COMBINATION SWITCH (ON-CAR)

Set wiper switch to each position and check continuity between terminals.

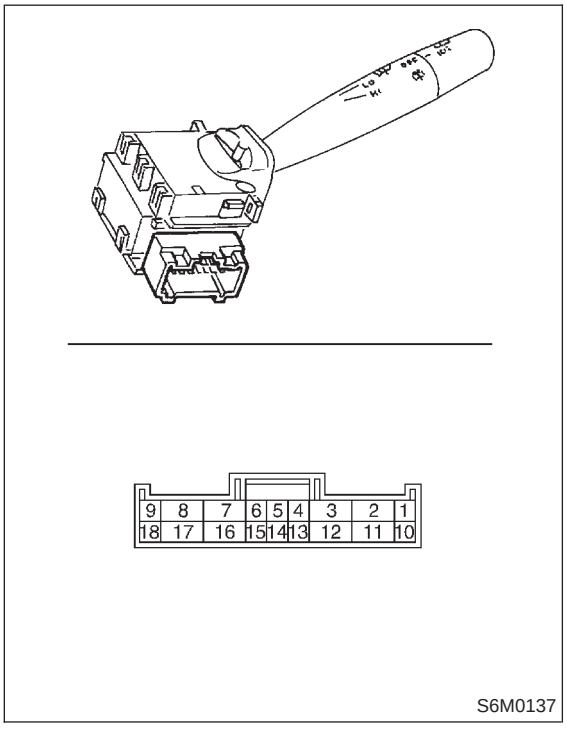
**• Wiper switch**

| Terminal / Switch position | | 16 | 7 | 17 | 8 | INT1 | INT2 |
|---|---|---|---|---|---|---|---|
| OFF | OFF | ○ | ○ | | | | |
| | | × | | × | | | |
| | MIST | | ○ | ○ | | | |
| INT | OFF | ○ | ○ | | | ○ | ○ |
| | | × | | × | | | |
| | MIST | | ○ | ○ | | ○ | ○ |
| | | × | | × | | | |
| LO | OFF | | ○ | ○ | | | |
| | MIST | | ○ | ○ | | | |
| HI | OFF | | | ○ | ○ | | |
| | MIST | | ○ | ○ | ○ | | |

**• Washer switch**

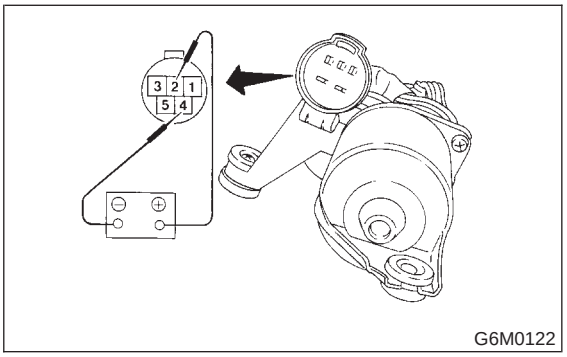
| Terminal / Switch position | 11 | 2 |
|---|---|---|
| OFF | | |
| ON | ○ | ○ |

H6M0501B

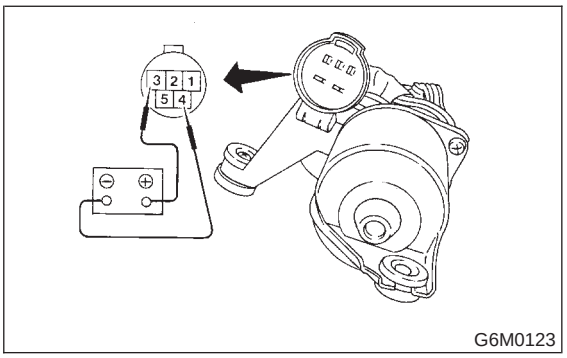



## 2. WIPER MOTOR

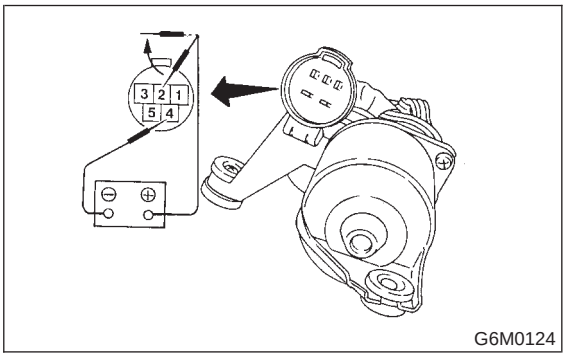
1) Check wiper motor operation at low speed: Connect battery to wiper motor. Check wiper motor for proper operation at low speed.



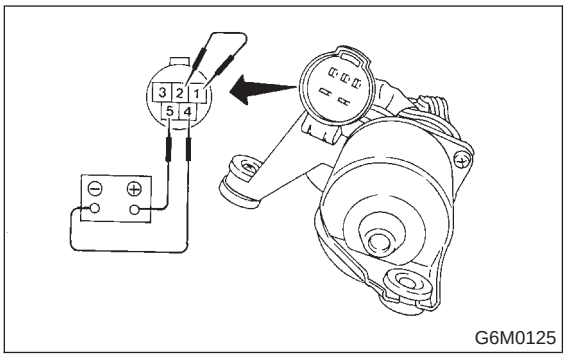

2) Check wiper motor operation at high speed: Connect battery wiper motor. Check wiper motor for proper operation at high speed.




3) Check wiper motor for proper stoppage: Connect battery to wiper motor. After operating wiper motor at low speed, disconnect battery to stop it.



4) Reconnect battery and ensure that wiper motor stops at “AUTO STOP” after operating at low speed.



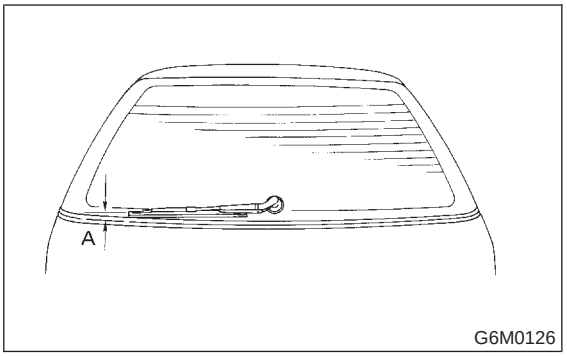
G6M0125

# 6. Rear Wiper and Washer

## A: ADJUSTMENT

1) Adjust wiper blade in original position as shown in figure by changing wiper arm installation.

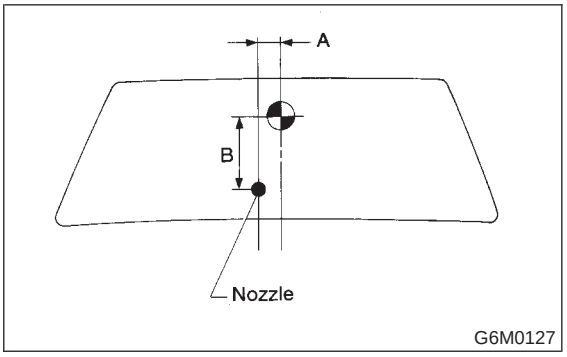
***Original position:***
***A: 30±5 mm (1.18±0.20 in)***



G6M0126

2) Adjust washer ejecting point on rear gate window as shown in figure when the vehicle stops.

***Ejecting point:***
***A: 25 mm (0.98 in)***
***B: 200 — 300 mm (7.87 — 11.81 in)***

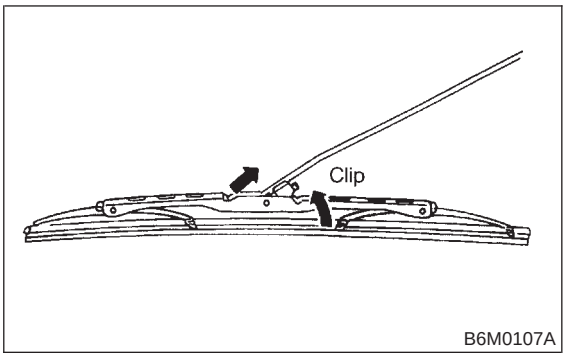


G6M0127

## B: REMOVAL AND INSTALLATION

### 1. BLADE

1) Pull out blade following the arrow direction, from arm while pushing up locking clip.

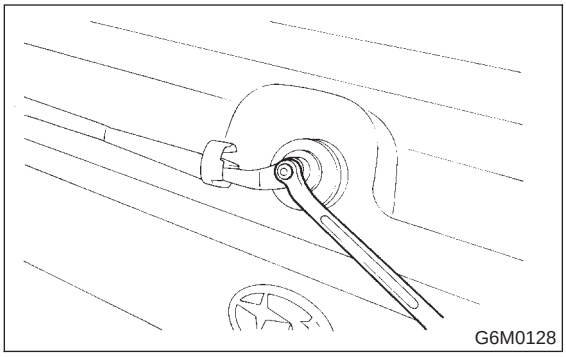


B6M0107A

2) Installation is in the reverse order of removal.

## 2. WIPER ARM

1) Remove head cover.
2) Remove nut and wiper arm.




3) Installation is in the reverse order of removal.

NOTE:
Remove metal sludge from the wiper arm fixture before installing it.

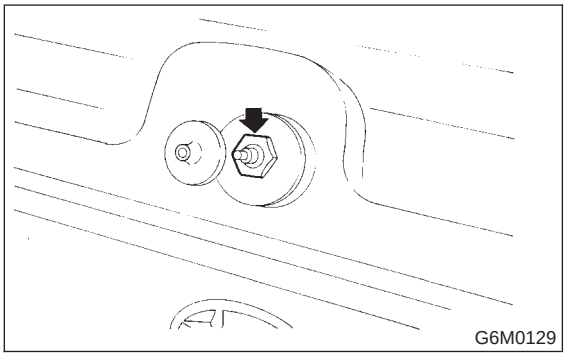
***Tightening torque:***
***5.9±1.5 N·m (0.6±0.15 kg-m, 4.3±1.1 ft-lb)***

## 3. WIPER MOTOR

1) Remove cap and special nut.

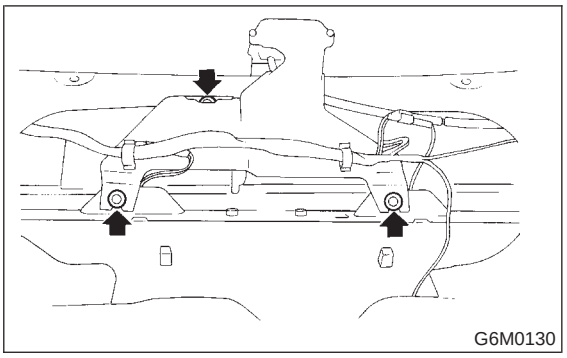
**CAUTION:**
**Be careful not to strike service tool against nozzle during removal.**

***Tightening torque:***
***7.4±1.5 N·m (0.75±0.15 kg-m, 5.4±1.1 ft-lb)***




2) Remove rear gate trim. <Ref. to 5-2 [W3A0].>
3) Undo clips which secure harness, and disconnect connector of wiper motor.
4) Separate washer hoses at joint.
5) Remove attaching screws and take out wiper motor assembly.

**CAUTION:**
**Be careful not to damage O-ring when removing wiper motor assembly.**

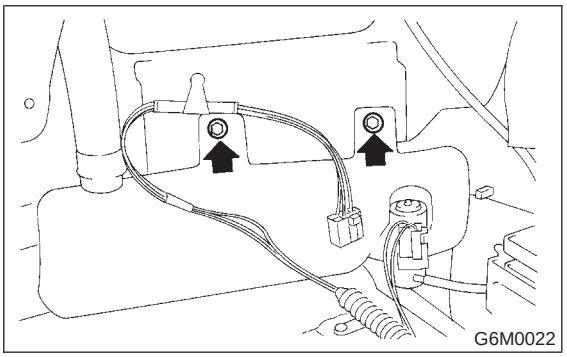



6) Installation is in the reverse order of removal.

***Tightening torque:***
***5.9±1.5 N·m (0.6±0.15 kg-m, 4.3±1.1 ft-lb)***

## 4. WASHER TANK

1) Remove rear quarter trim.
2) Disconnect washer hose and connector.
3) Remove attaching bolts.




4) Installation is in the reverse order of removal.

***Tightening torque:***
***5.9±1.5 N·m (0.6±0.15 kg-m, 4.3±1.1 ft-lb)***

# C: INSPECTION

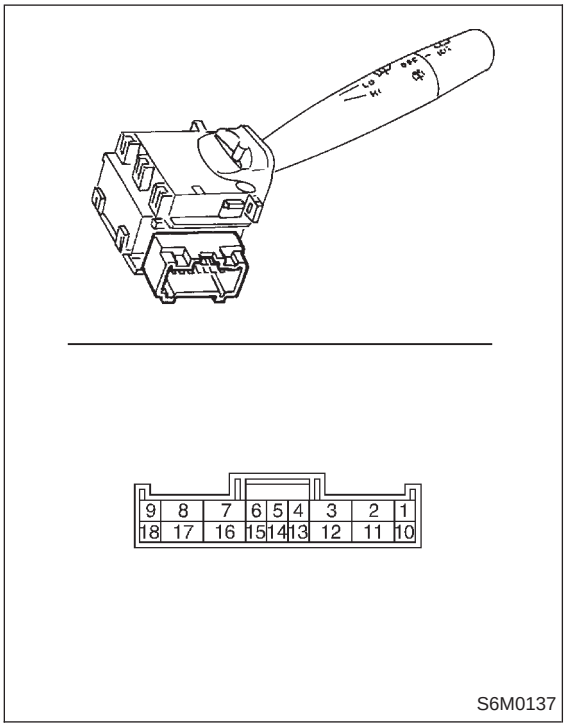
## 1. COMBINATION SWITCH (ON-CAR)

Set rear wiper and washer switch to each position and check continuity between terminals.

• **WITHOUT INTERMITTENT REAR WIPER**

| Terminal / Switch position | 10 | 12 | | 2 |
|---|---|---|---|---|
| WASH | ○ | ○ | | ○ |
| OFF | | | | |
| ON | ○ | | | ○ |
| WASH | ○ | ○ | | ○ |

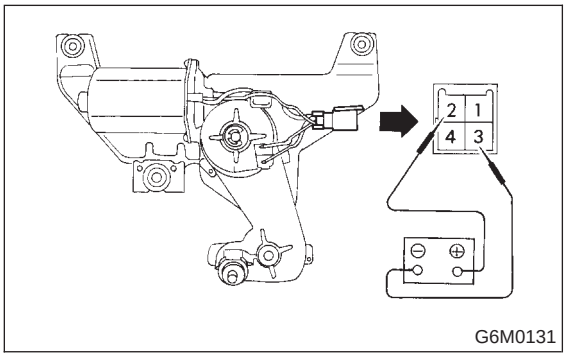
H6M0502B




S6M0137

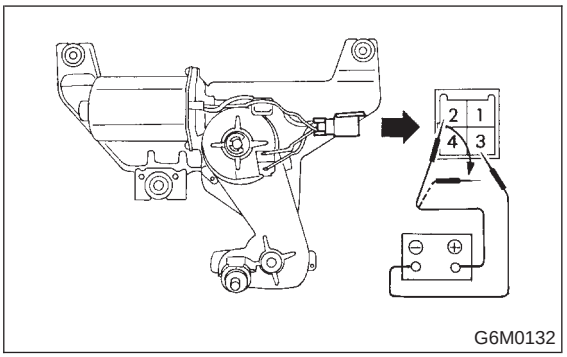
## 2. WIPER MOTOR

1) Operational check:
Connect battery to wiper motor and check operation of wiper motor.



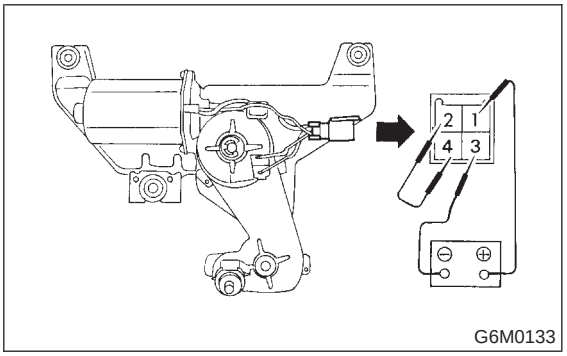

G6M0131

2) Check wiper motor for proper stoppage:
After operating wiper motor, disconnect battery from wiper motor.




G6M0132

3) Reconnect battery and ensure that wiper motor stops at “AUTO STOP” after it has been operated.

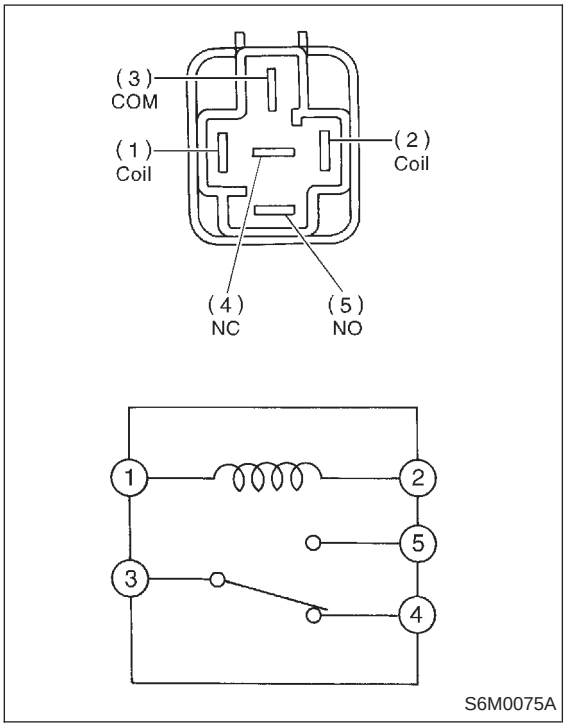



G6M0133

### 3. REAR WIPER RELAY

1) Connect battery to terminal No. 1 and ground terminal No. 2.
2) Check continuity between terminals.

| | | |
|---|---|---|
| When current flows. | Between terminals No. 3 and No. 4 | Continuity does not exist. |
| | Between terminals No. 3 and No. 5 | Continuity exists. |
| When current does not flow. | Between terminals No. 3 and No. 4 | Continuity exists. |
| | Between terminals No. 3 and No. 5 | Continuity does not exist. |
| | Between terminals No. 1 and No. 2 | Continuity exists. |



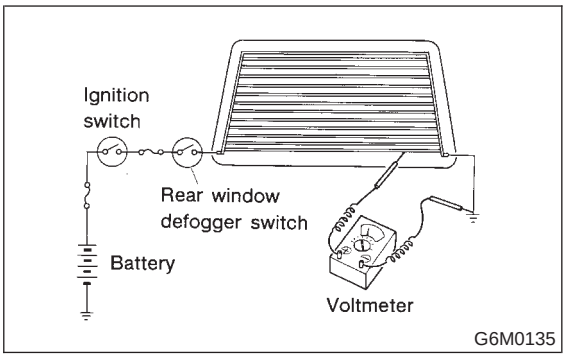

# 7. Rear Window Defogger

## A: INSPECTION

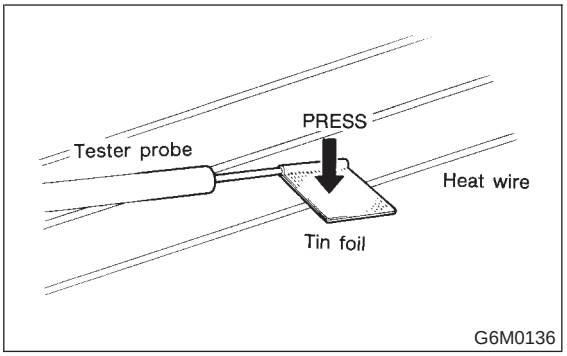
### 1. HEAT WIRES

1) Start the engine so that battery is being charged.
2) Turn defogger switch ON.
3) Check each heat wire at its center position for discontinuity by setting direct current voltmeter.

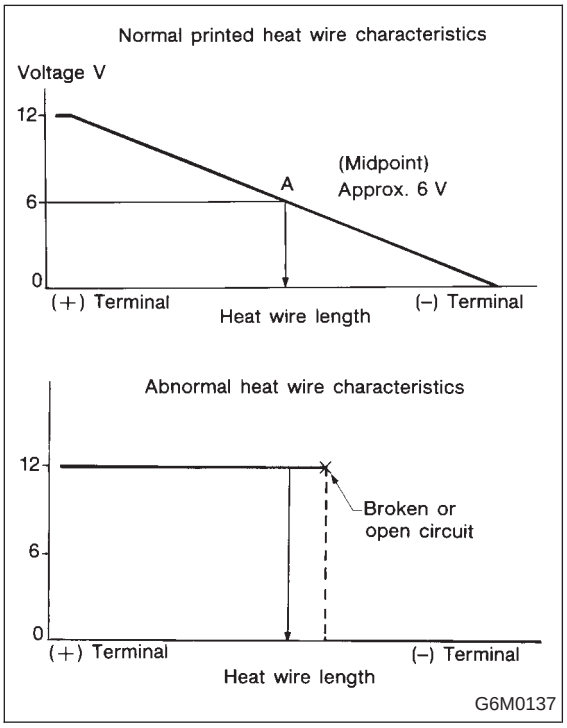
NOTE:
- Normal indication is about 6 volts.




- When measuring voltage, wind a piece of tin foil around the tip of the tester probe and press the foil against the wire with your finger.

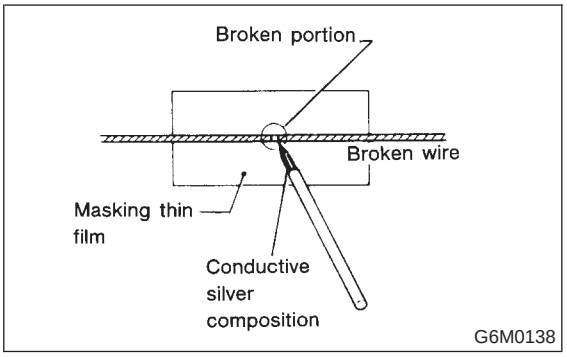


4) When tester indicates 12 volts when its probe reaches point “A”, a broken circuit occurs between point “A” and the negative terminal. Slowly move tester probe toward the negative terminal while contacting it on heat wire to locate point where tester indication changes abruptly (0 volts). This is the point where a broken circuit occurs. When tester indicates 0 volts when its probe reaches point “A”, a broken circuit occurs between point “A” and the positive terminal. Locate a point where tester indication changes abruptly (12 volts) while slowly moving tester probe toward the positive terminal.




## B: REPAIR

1) Clean broken wire and its surrounding area.
2) Cut off slit on (used) thin film by 0.5 mm (0.020 in) width and 10 mm (0.39 in) length.
3) Place the slit on glass along the broken wire, and deposit conductive silver composition (DUPONT No. 4817) on the broken portion.

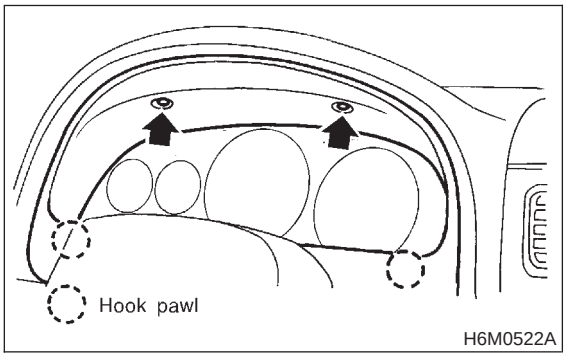



4) Dry out the deposited portion.
5) Inspect the repaired wire for continuity.

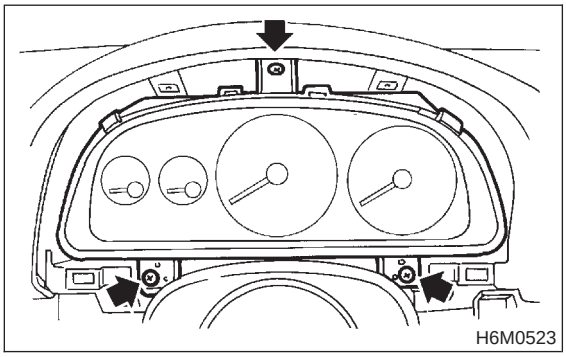
# 8. Combination Meter

## A: REMOVAL AND INSTALLATION

1) Move steering wheel most down.
2) Remove screws which secure visor and remove visor.



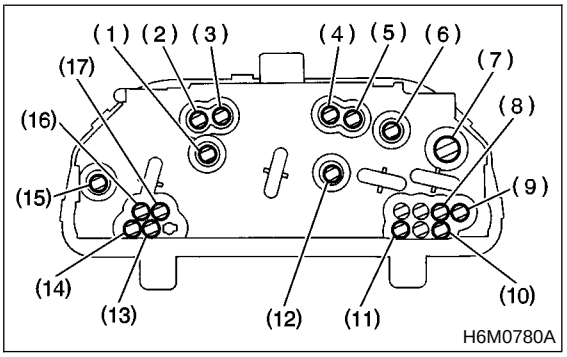

3) Remove screws which secure combination meter, and pull combination meter out.




4) Disconnect connector from back of combination meter.
5) Installation is in the reverse order of removal.

**CAUTION:**
**When installing combination meter, be sure to connect connectors to backside of combination meter.**

## B: BULB REPLACEMENT



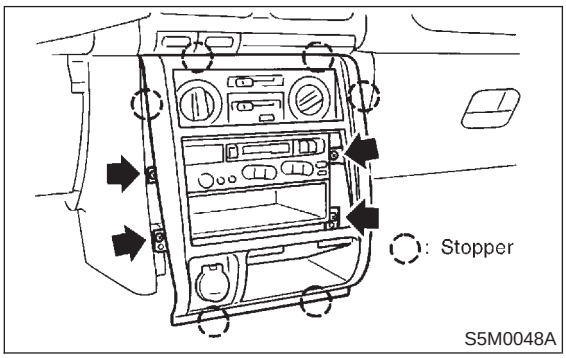

(1) Speedometer and tachometer
(2) HI-beam
(3) Turn RH
(4) Turn LH
(5) Airbag
(6) Clock
(7) Fuel and temperature gauge
(8) ABS
(9) Low fuel
(10) FWD
(11) AT oil temp.
(12) Speedometer
(13) Check engine
(14) Charge
(15) Tachometer
(16) Brake
(17) Oil pressure

# 9. Radio, Speaker and Antenna

## A: REMOVAL AND INSTALLATION

### 1. RADIO BODY

1) Remove console box. <Ref. to 5-4 [W1A0].>
2) Remove AT cover (AT model).
3) Remove center panel.
4) Remove fitting screws, and slightly pull radio out from center console.




5) Disconnect electric connectors and antenna feeder cord.
6) Installation is in the reverse order of removal.

### 2. FRONT SPEAKER

1) Remove front door trim and disconnect connector. <Ref. to 5-2 [W2A2].>
2) Remove screws which secure front speaker.
3) Remove speaker and disconnect connector.
4) Installation is in the reverse order of removal.

### 3. REAR SPEAKER (SEDAN)

1) Remove rear shelf trim panels.
2) Remove screws which secure rear speakers.
3) Disconnect connector and remove speakers.
4) Installation is in the reverse order of removal.

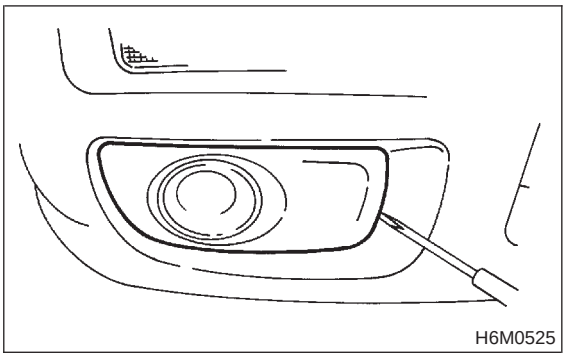
### 4. REAR SPEAKER (WAGON)

1) Remove rear door trim and disconnect connector. <Ref. to 5-2 [W2A2].>
2) Remove screws which secure rear speaker.
3) Remove speaker and disconnect connector.
4) Installation is in the reverse order of removal.

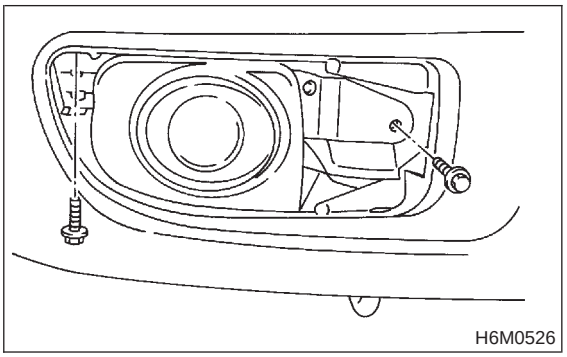
# 10. Front Fog Light

## A: REMOVAL AND INSTALLATION

1) Disconnect ground cable from battery.
2) Remove front fog light cover.



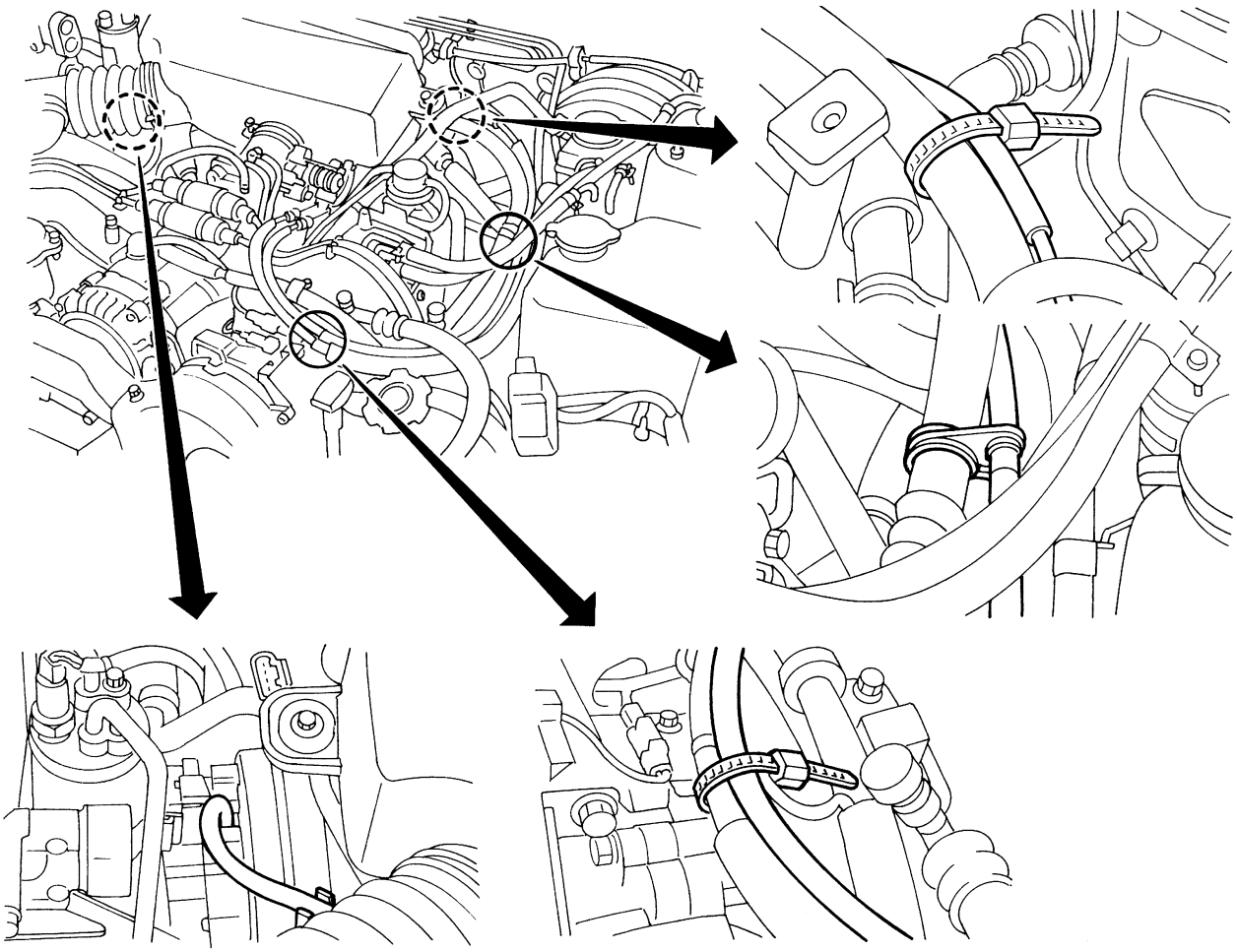

3) Remove the two screws, then draw out the front fog light from front bumper.




4) Disconnect the connector.
5) Installation is in the reverse order of removal.

# 11. Cruise Control

## A: ADJUSTMENT



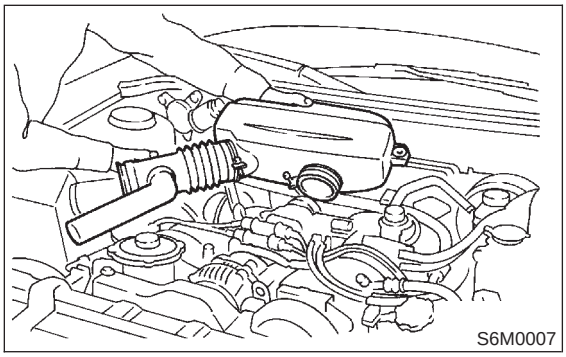

**Tightening torque: N•m (kg-m, ft-lb)**
**T1: 7.4±2.0 (0.75±0.2, 5.4±1.4)**
**T2: 13±3 (1.3±0.3, 9.4±2.2)**

S6M0138A

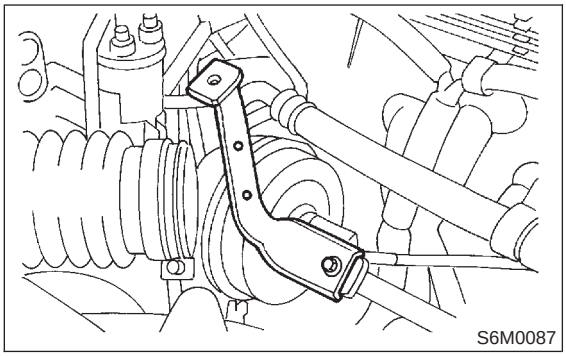
## B: REMOVAL AND INSTALLATION

### 1. ACTUATOR

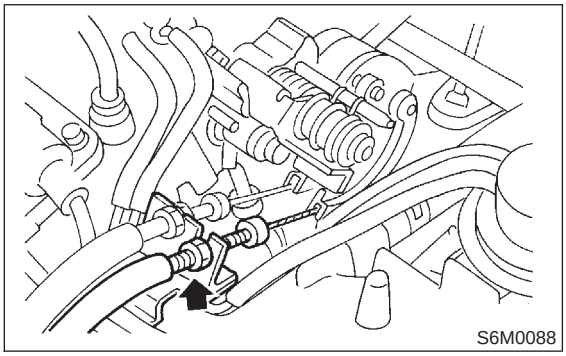
1) Remove air intake chamber.


S6M0007

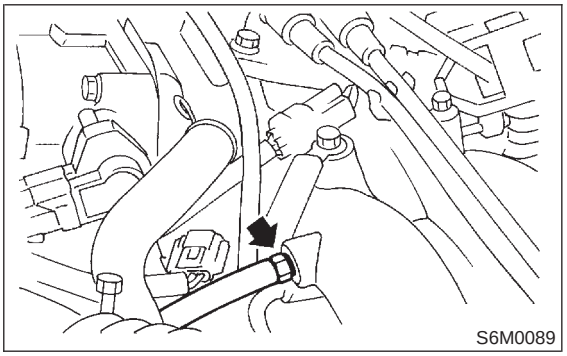
2) Remove air intake chamber stay.
3) Remove clip bands from cruise control cable.


S6M0087

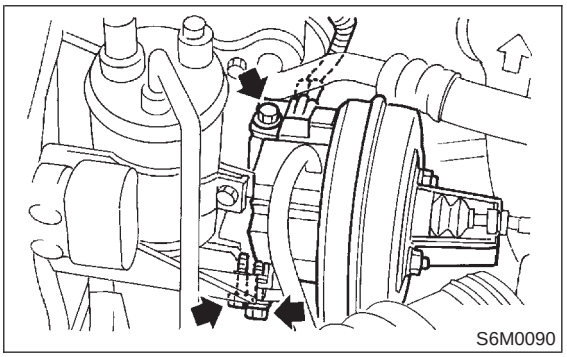
4) Remove cruise control cable end from throttle cam.


S6M0088

5) Disconnect cruise control vacuum hose from intake manifold.


S6M0089

6) Remove actuator attaching bolts.
7) Disconnect connector from actuator, then remove the actuator.


S6M0090

8) Installation is in the reverse order of removal.

***Tightening torque:***
***7.4±2.0 N·m (0.75±0.2 kg-m, 5.4±1.4 ft-lb)***

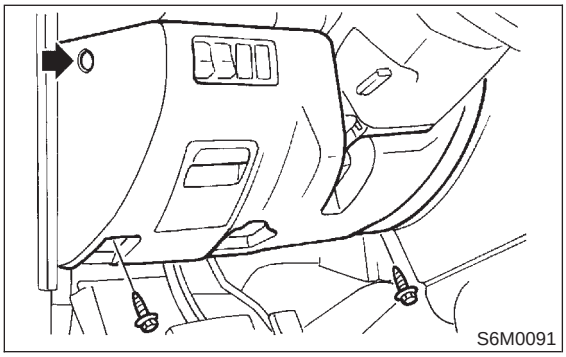
**CAUTION:**
**When inserting vacuum hose to intake manifold, apply sealant to the fitting hose.**

***Fluid packing:***
***THREE BOND 1105 or equivalent***

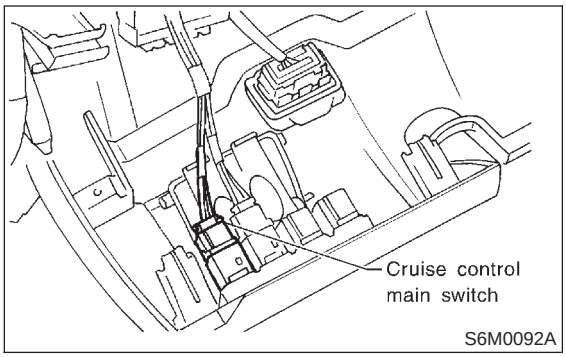
**CAUTION:**
**● Be careful not to apply excessive load to the wire cable when adjusting and/or installing; otherwise, the actuator may be deformed or damaged.**
**● Do not bend cable sharply with a radius less than 100 mm (3.94 in); otherwise, cable may bend permanently, resulting in poor performance.**
**● When installing cable, be careful not to sharply bend or pinch the inner cable; otherwise, the cable may break.**

## 2. CRUISE CONTROL MAIN SWITCH

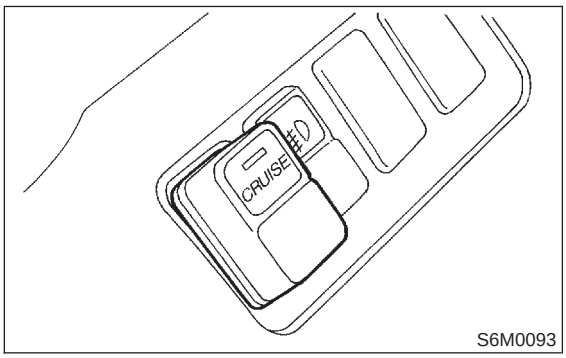
1) Remove screws and clip from instrument panel lower cover.
2) Remove panel lower cover.




3) Disconnect connector from cruise control main switch.




4) Remove main switch by pushing it outward.

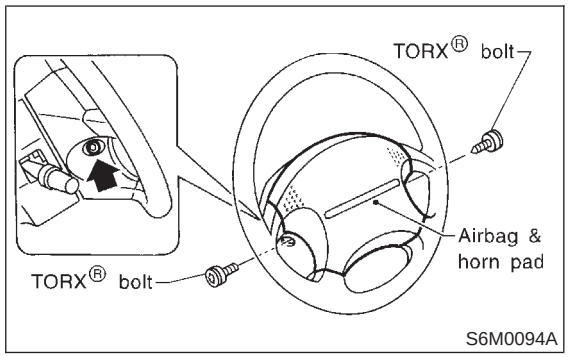



5) Installation is in the reverse order of removal.

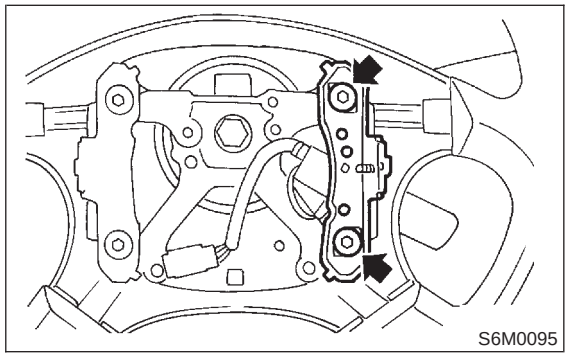
## 3. CRUISE CONTROL COMMAND SWITCH

**CAUTION:**
**Before starting operation carefully read the notes given in Chapter 5-5 for proper handling of the airbag module. <Ref. to 5-5 [W3A0].>**

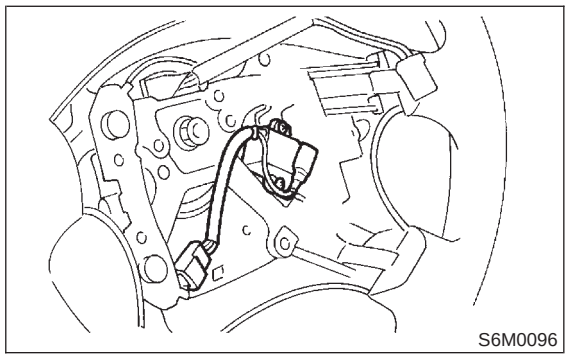
1) Set front wheels in straight ahead position.
2) Turn ignition switch OFF.
3) Disconnect battery ground cable from battery and wait for at least 20 seconds before starting work.
4) Using TORX® BIT T30 (Tamper resistant type), remove two TORX® bolts which secure driver's air-bag module.




5) Disconnect airbag module connector on back of airbag module.
6) Remove horn switch from steering wheel as shown.



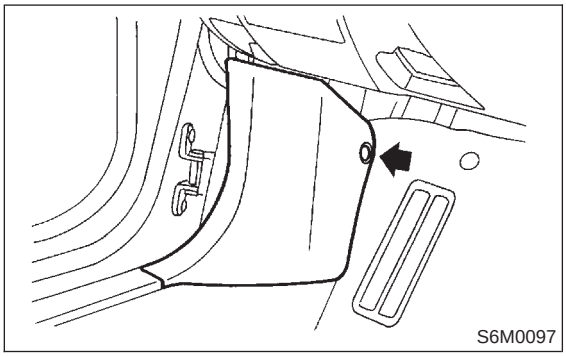

7) Disconnect horn and cruise control command switch connector, then remove cruise control command switch.



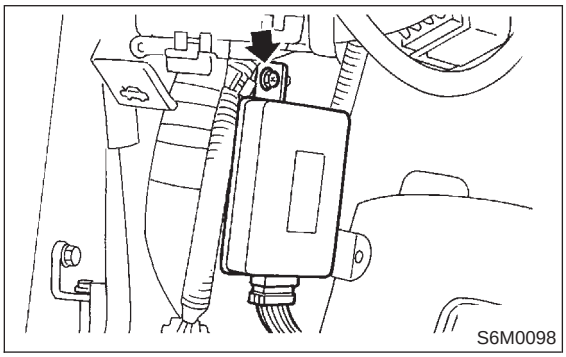

8) Installation is in the reverse order of removal.

## 4. CRUISE CONTROL MODULE

1) Remove front pillar lower trim.




2) Disconnect connector from cruise control module.
3) Remove bolt, then remove cruise control module.




4) Installation is in the reverse order of removal.

## 5. STOP AND BRAKE SWITCH

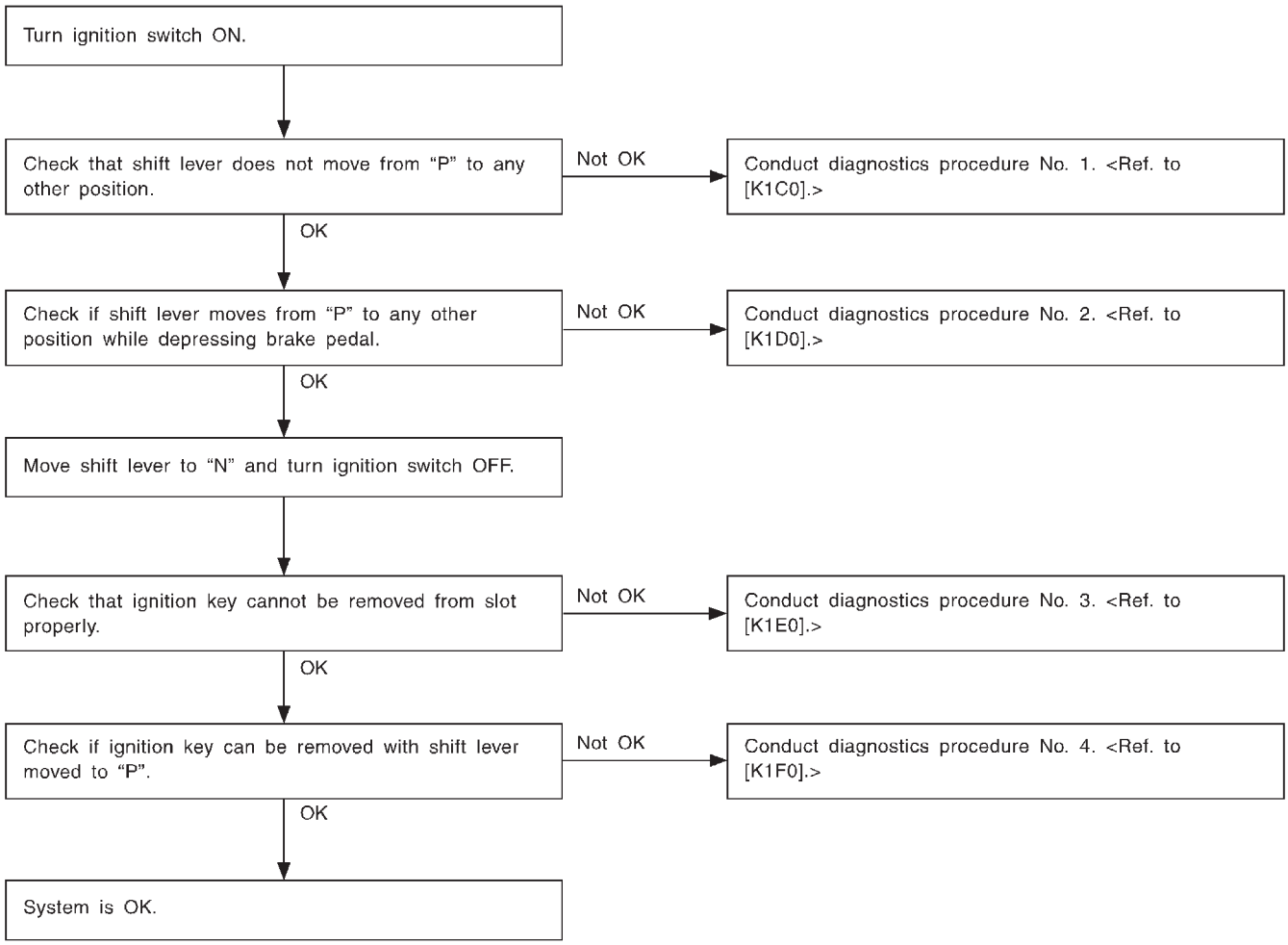
Disconnect connector from switch, then remove the switch. <Ref. to 4-5 [C100].>

## 6. CLUTCH SWITCH

Disconnect connector from switch, then remove the switch. <Ref. to 4-5 [C100].>

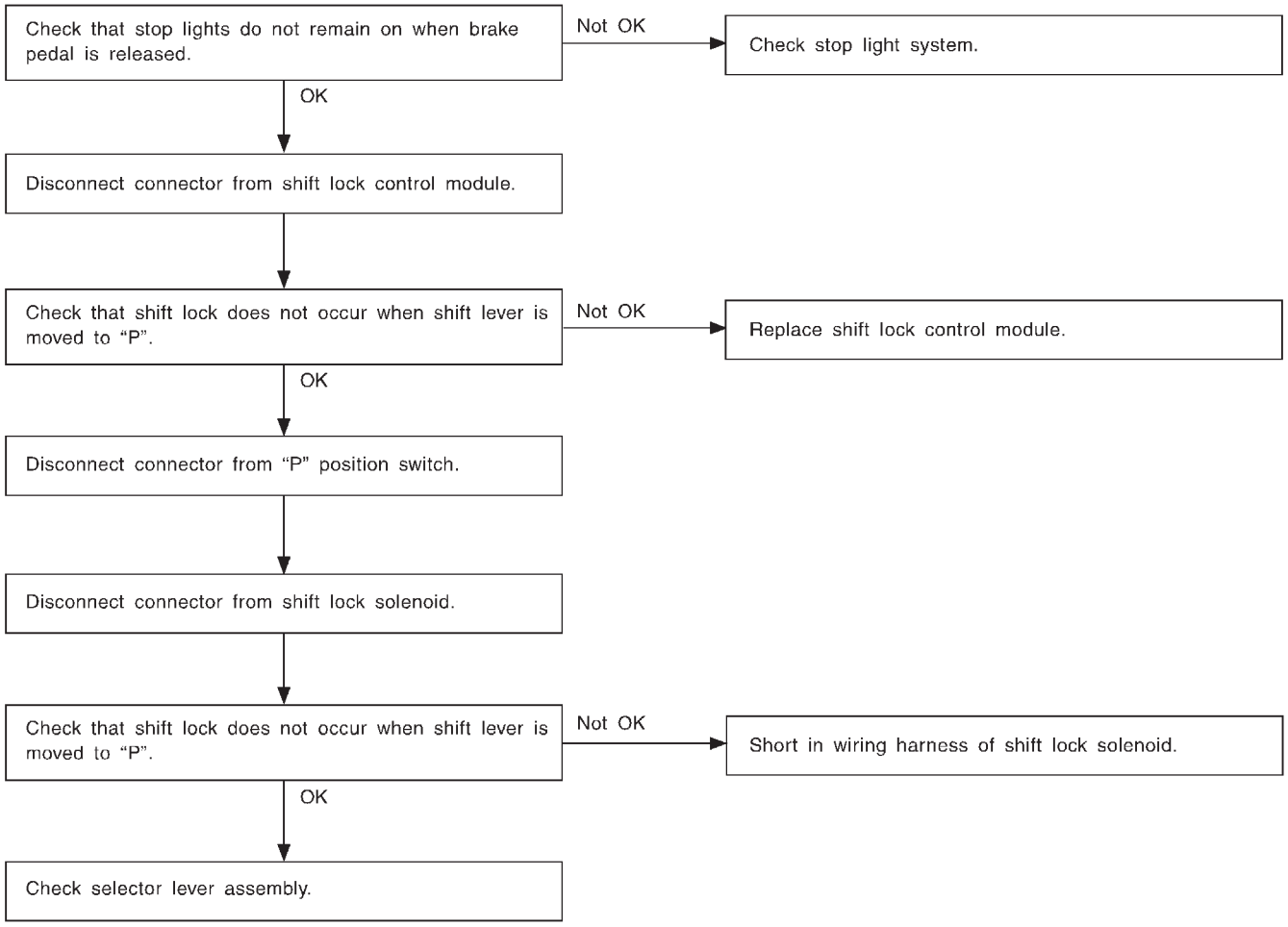
# 1. AT Shift Lock System

## A: BASIC DIAGNOSTICS CHART



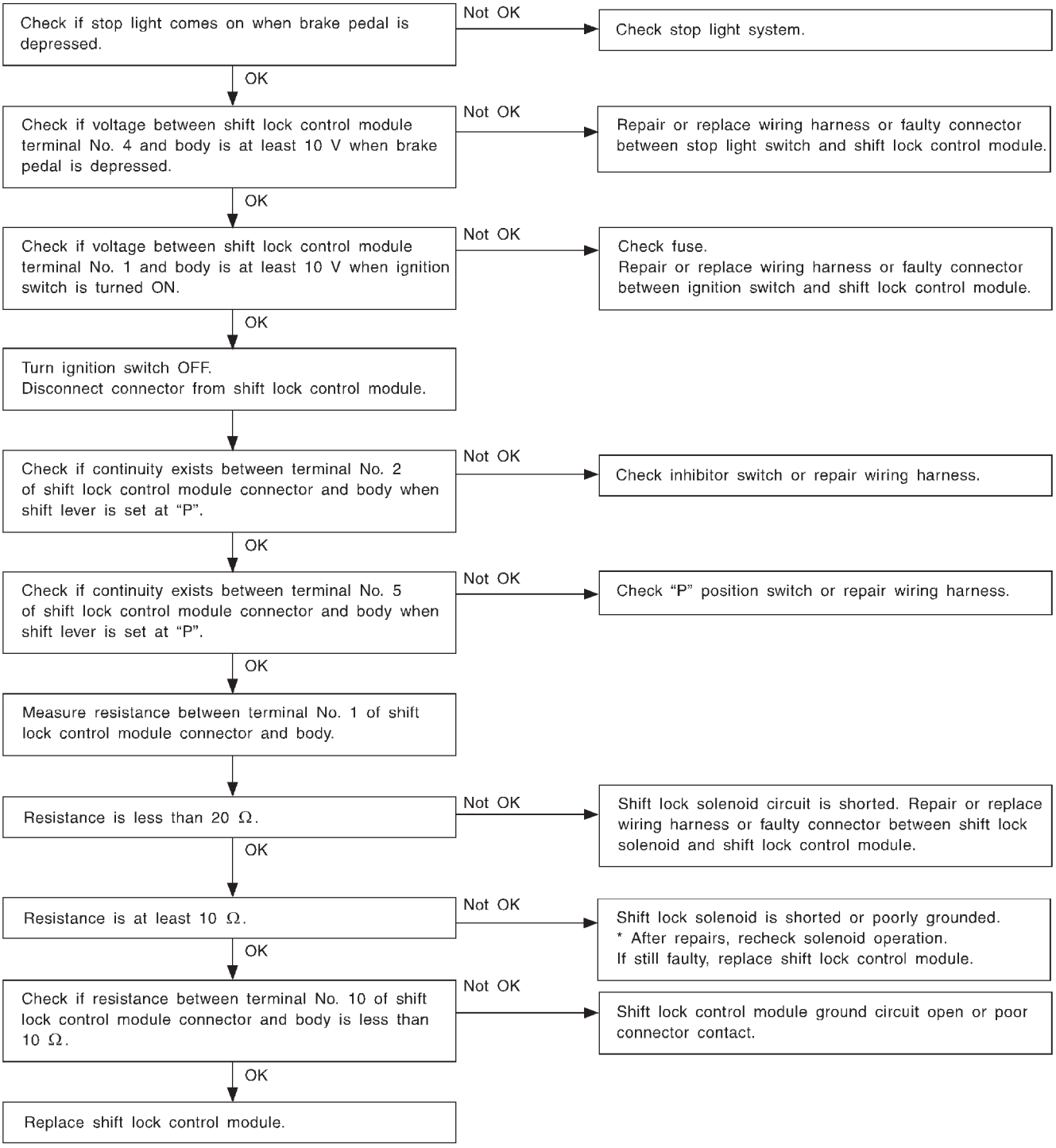

H6M0504

## B: DIAGNOSTICS PROCEDURE NO. 1



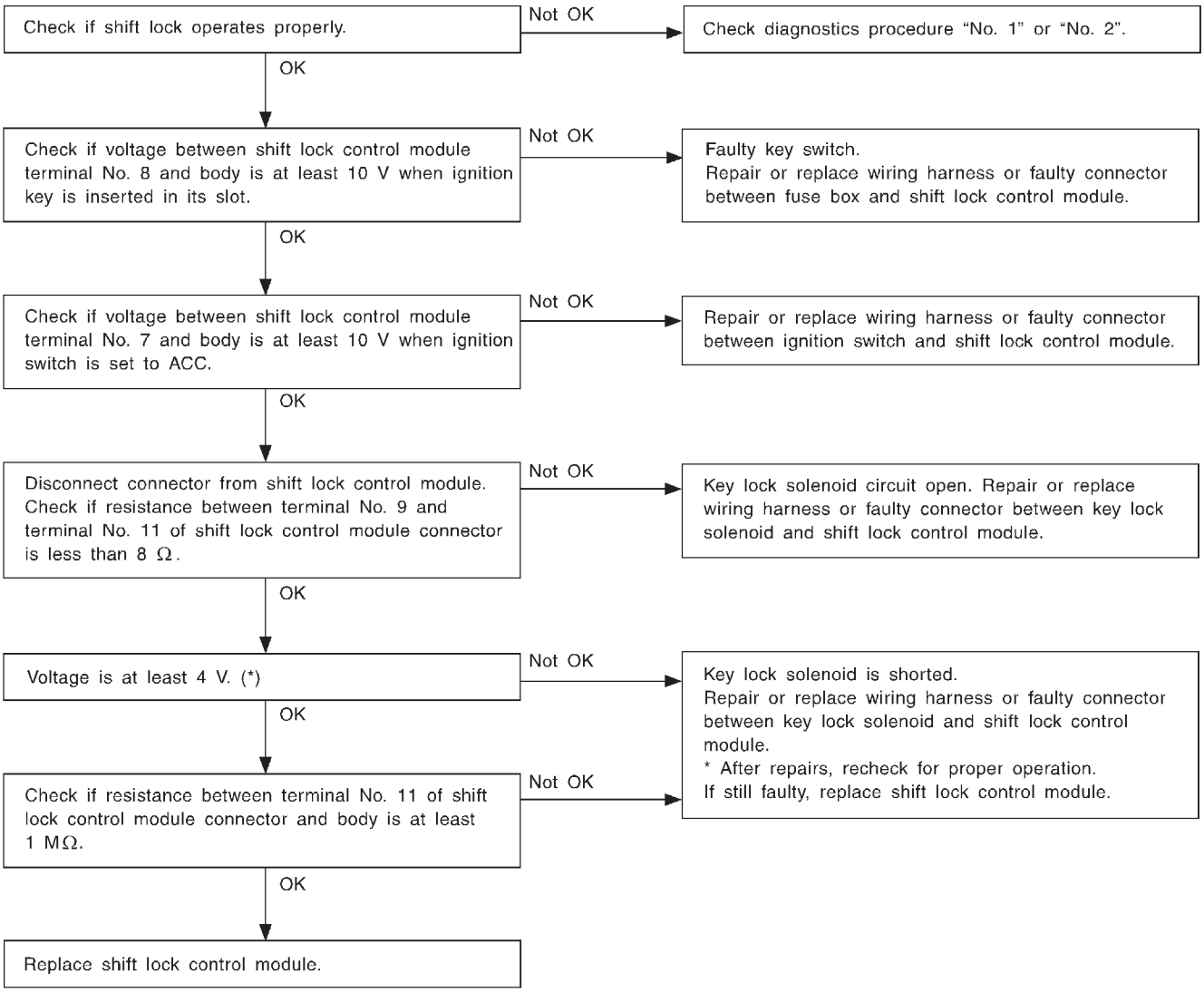

H6M0505

# C: DIAGNOSTICS PROCEDURE NO. 2 (SHIFT LOCK DOES NOT RELEASE.)




H6M0506

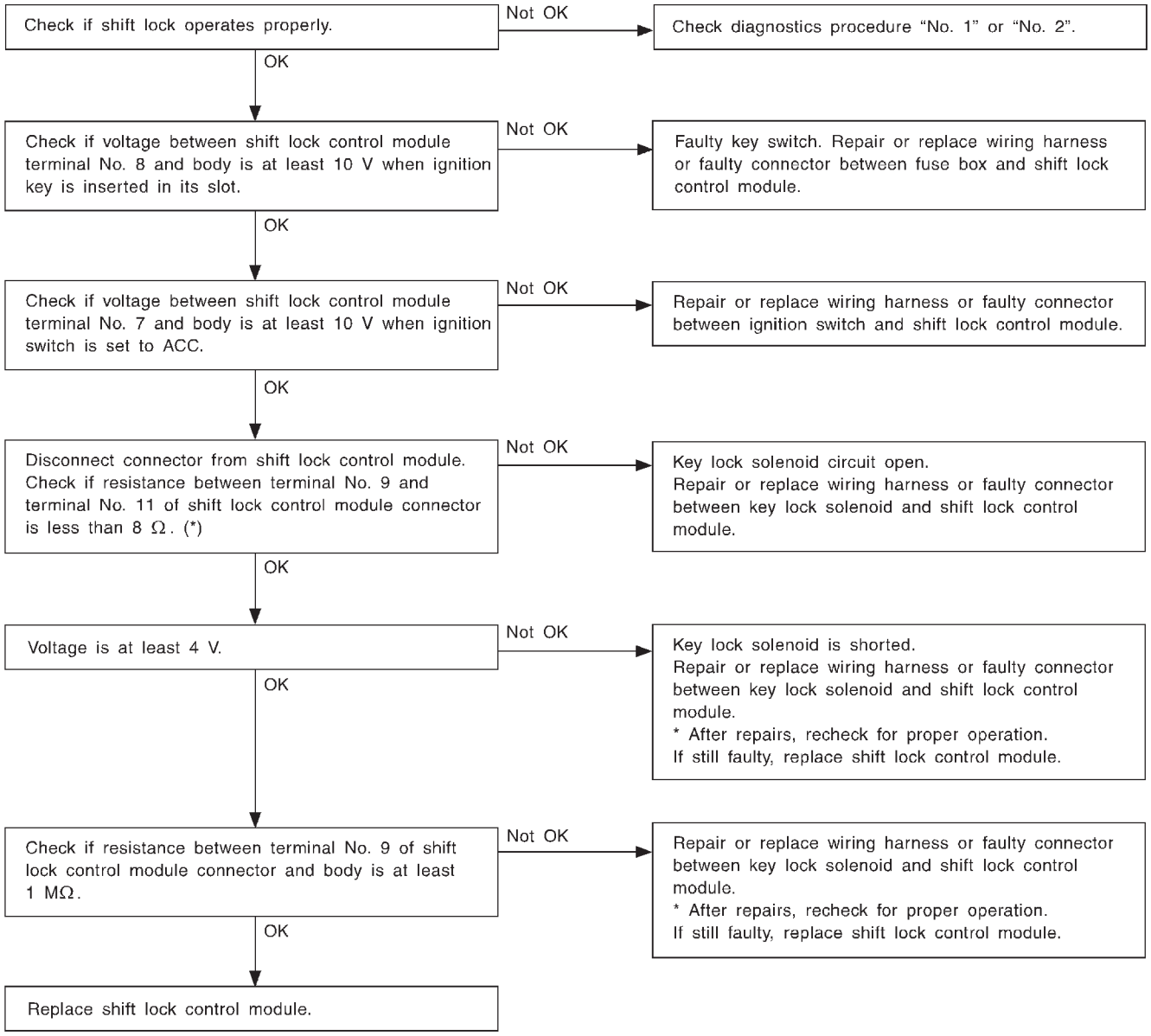
## D: DIAGNOSTICS PROCEDURE NO. 3 (KEY INTERLOCK DOES NOT OPERATE.)




***: When conducting operational checks of the key lock solenoid, do not apply 12 V to solenoid for more than one second, since this may break solenoid circuit.**

H6M0507

# E: DIAGNOSTICS PROCEDURE NO. 4 (KEY INTERLOCK DOES NOT RELEASE.)




***: When conducting operational checks of the key lock solenoid, do not apply 12 V to solenoid for more than one second, since this may break solenoid circuit.**

H6M0508

# 2. Combination Meter

## A: DIAGNOSTICS PROCEDURE

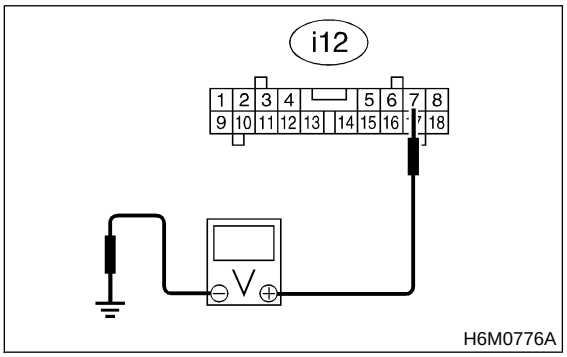
If speedometer does not operate, or operates abnormally, check combination meter circuit.

**CAUTION:**
**Make sure that trouble code of vehicle speed sensor 2 system appears in electrical system on-board diagnosis.**

**2A1 : CHECK POWER SUPPLY FOR COMBINATION METER.**

1) Remove combination meter.
2) Turn ignition switch to ON.
3) Measure voltage between combination meter connector and chassis ground.

***Connector & terminal***
***(i12) No. 7 (+) — Chassis ground (−):***



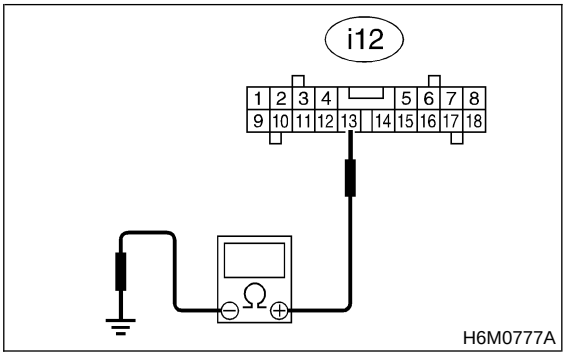

CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **2A2**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between combination meter and battery.
● Poor contact in coupling connectors (i12) and combination meter connector. <Ref. to FOREWORD [T3C0].>

**2A2 : CHECK GROUND CIRCUIT OF COMBINATION METER.**

1) Turn ignition switch to OFF.
2) Measure resistance of harness between combination meter connector and chassis ground.

***Connector & terminal***
***(i12) No. 13 (+) — Chassis ground (−):***




CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **2A3**.
NO : Repair harness and connector.

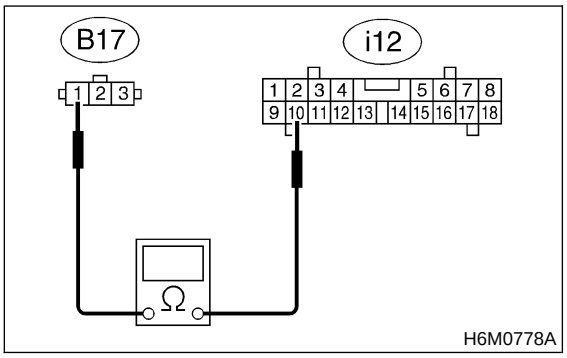
**2A3 : CHECK TRANSMISSION TYPE.**

CHECK : ***Is the transmission type MT?***
YES : Go to step **2A4**.
NO : Go to step **2A8**.

**2A4 : CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND VEHICLE SPEED SENSOR 2.**

1) Disconnect connector from vehicle speed sensor 2.
2) Measure resistance of harness connector between vehicle speed sensor 2 and combination meter.

***Connector & terminal***
***(B17) No. 1 — (i12) No. 10:***

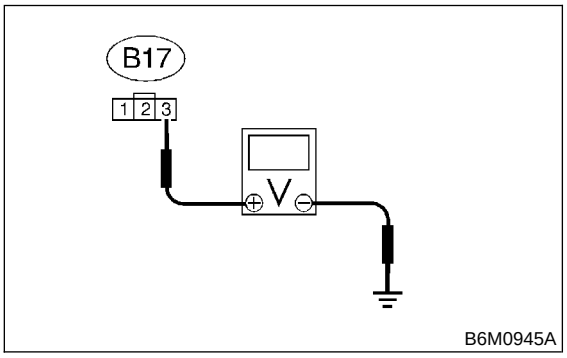



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **2A5**.
NO : Repair wiring harness.

**2A5 : CHECK HARNESS CONNECTOR BETWEEN BATTERY AND VEHICLE SPEED SENSOR 2.**

1) Turn ignition switch to ON.
2) Measure voltage between vehicle speed sensor 2 connector (B17) and chassis ground.

***Connector & terminal***
***(B17) No. 3 (+) — Chassis ground (−):***

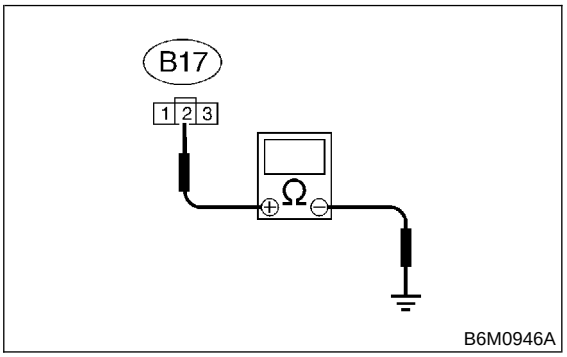



CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **2A6**.
NO : Repair harness connector between battery and vehicle speed sensor 2.

**2A6 : CHECK HARNESS CONNECTOR BETWEEN VEHICLE SPEED SENSOR 2 AND ENGINE GROUND.**

1) Turn ignition switch to OFF.
2) Measure resistance between vehicle speed sensor 2 connector (B17) and engine ground.

***Connector & terminal***
***(B17) No. 2 (+) — Engine ground (−):***



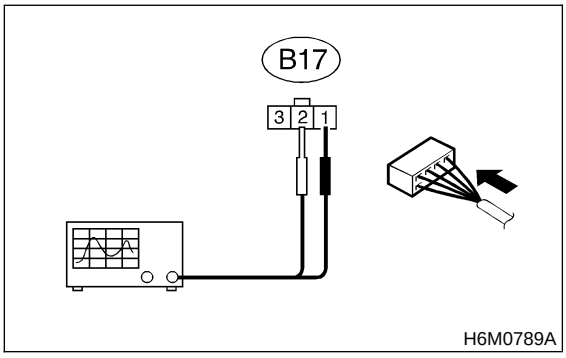

CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **2A7**.
NO : Repair harness connector between vehicle speed sensor 2 and engine ground.

**2A7 : CHECK VEHICLE SPEED SENSOR 2.**

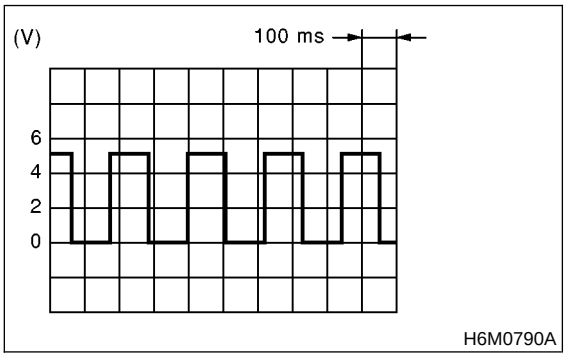
1) Connect connector to vehicle speed sensor 2.
2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands.

**WARNING:**
**Be careful not to be caught up by the running wheels.**

3) Set oscilloscope to vehicle speed sensor 2 connector terminals.
Positive probe; (B17) No. 1
Earth lead; (B17) No. 2




4) Drive the vehicle at speed greater than 20 km/h (12 MPH).
5) Measure signal voltage indicated on oscilloscope.



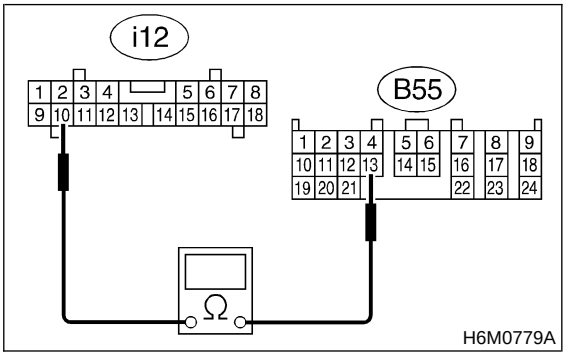

CHECK : ***Is the voltage more than 5 V?***
YES : Repair or replace speedometer.
NO : Replace vehicle speed sensor 2.

**2A8 : CHECK HARNESS CONNECTOR BETWEEN COMBINATION METER AND AUTOMATIC TRANSMISSION CONTROL MODULE.**

1) Disconnect connector from automatic transmission control module.
2) Measure resistance between combination meter connector (i12) and automatic transmission control module connector (B55).

**CAUTION:**
**To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).**

***Connector & terminal***
***(i12) No. 10 — (B55) No. 13:***




CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **2A9**.
NO : Repair harness connector between combination meter and automatic transmission control module.

**2A9 : CHECK AUTOMATIC TRANSMISSION CONTROL MODULE.**

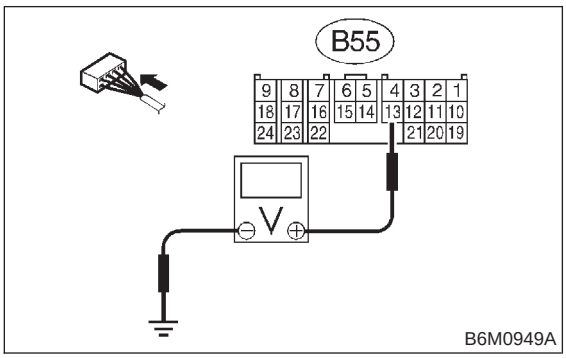
1) Connect connector to automatic transmission control module.
2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands.

**WARNING:**
**Be careful not to be caught by the running wheels.**

3) Drive the vehicle faster than 10 km/h (6 MPH).
4) Measure voltage between automatic transmission control module connector (B55) and chassis ground.

**CAUTION:**
**To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).**

***Connector & terminal***
***(B55) No. 13 (+) — Chassis ground (−):***




CHECK : ***Is the voltage less than 1 V ←→ more than 4 V?***
YES : Repair or replace speedometer.
NO : Replace automatic transmission control module. <Ref. to 3-2 [W2300].>

**MEMO:**

# 1. Precaution

## A: 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.**

# 2. Pre-inspection

## A: FUNCTION TESTS

Conduct road tests by selecting a smooth, flat road or use free rollers for road test simulation.

### 1. CRUISE CONTROL MAIN SWITCH

1) Turn ignition switch to ON.
2) Check that cruise control main switch indicator light comes on when main switch is pressed (ON).
3) Check that main switch indicator light goes out when main switch is pressed again (OFF).
4) Turn ignition switch to OFF with main switch ON (indicated by illumination). Turn ignition switch ON again to ensure that main switch indicator light remains OFF.

### 2. CRUISE CONTROL COMMAND SWITCH

1) Check that cruise control command switch is properly set in “SET/COAST”, “RESUME/ACCEL”, or “CANCEL” mode.
2) Also check that command switch returns to the original position when released.

### 3. CONSTANT SPEED TEST

1) Turn cruise control main switch to ON.
2) Drive the vehicle at a speed greater than 40 km/h (25 MPH).
3) Press command switch to set in “SET/COAST” mode.
4) Ensure that vehicle is maintained at the speed set when command switch was pressed.

### 4. ACCELERATION TEST

1) Set vehicle speed at a speed greater that 40 km/h (25 MPH).
2) Ensure that vehicle continues to accelerate while holding command switch in “RESUME/ ACCEL” mode, and that vehicle maintains that optional speed when command switch is released.

### 5. DECELERATION TEST

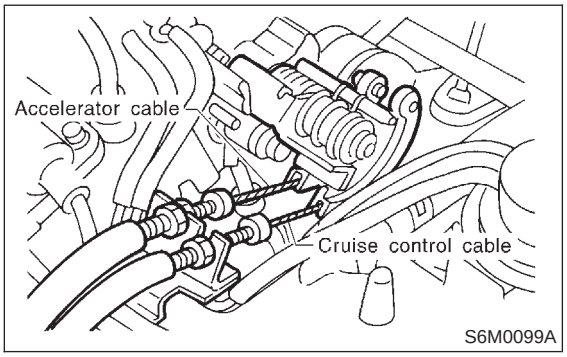
1) Set vehicle speed at an optional speed greater than 40 km/h (25 MPH).
2) Ensure that vehicle continues to decelerate while holding command switch in “SET/COAST” mode, and that it maintains that optional speed when command switch is released.

NOTE:
When vehicle speed reaches the lower speed limit of 30 km/h (19 MPH) during deceleration, cruise control will be released.

## B: CRUISE CONTROL CABLE

**2B1 : CHECK CRUISE CONTROL CABLE.**

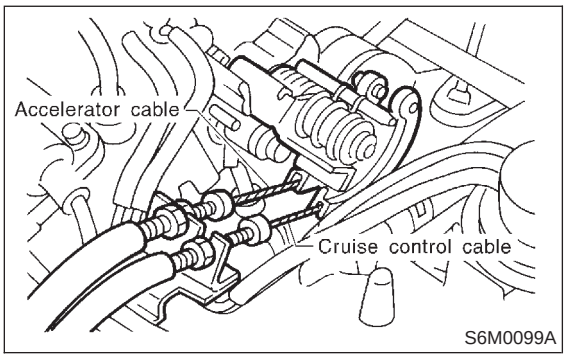
Check cruise control cable installation.




CHECK : ***Is the cruise control cable securely installed to the left of the accelerator cable?***
YES : Go to step **2B2**.
NO : Install cruise control cable securely. Go to step **2B2**.

**2B2 : CHECK ACCELERATOR CABLE.**

Check function of accelerator cable.




CHECK : ***Does the accelerator cable throttle cam move when the cruise control throttle is moved by hand?***
YES : Repair accelerator cable throttle cam. Go to step **2B3**.
NO : Go to step **2B3**.

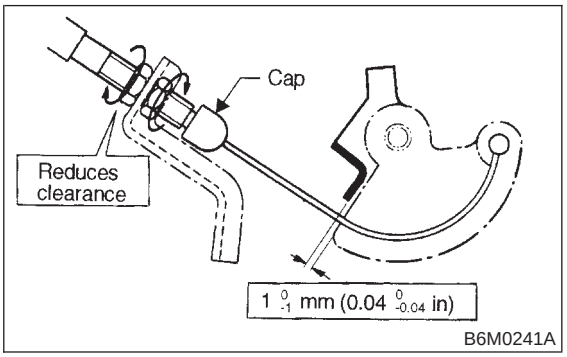
**2B3 : CHECK THROTTLE CAM.**

Check function of throttle cam.

CHECK : ***Does the throttle cam move smoothly?***
YES : Go to step **2B4**.
NO : Repair throttle cam. Go to step **2B4**.

**2B4 : CHECK CABLE FREE PLAY.**

Ensure that throttle cam-to-lever clearance is within specifications.



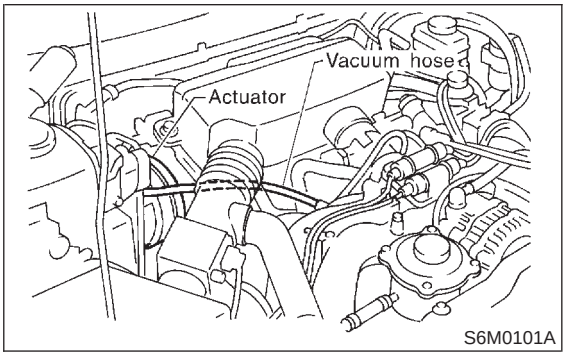

CHECK : ***Is throttle cam-to-lever clearance between 0 and 1 mm (0 and 0.04 in)?***
YES : Go to step **2C1**.
NO : Adjust cable end by adjusting nuts. Go to step **2C1**.

NOTE:
Ensure that cap is positioned in groove.

## C: VACUUM HOSE

**2C1 : CHECK VACUUM HOSE VISUALLY.**

Check vacuum hose (which connects actuator and intake manifold).

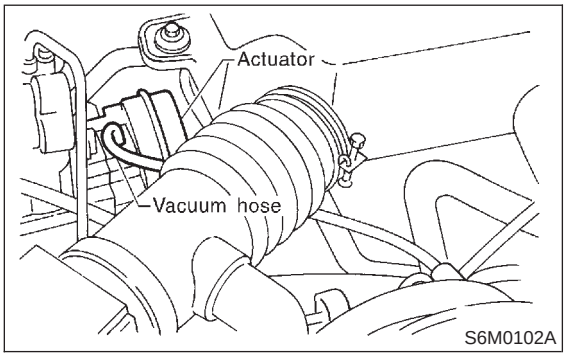



CHECK : ***Is there disconnection or cracks in vacuum hose?***
YES : Replace vacuum hose. Go to step **2D1**.
NO : Go to step **2D1**.

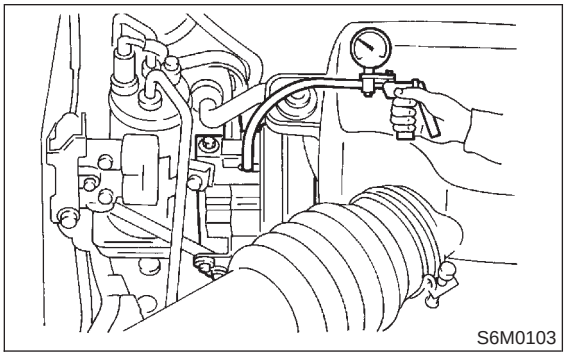
## D: ACTUATOR

**2D1 : CHECK FUNCTION OF ACTUATOR.**

1) Disconnect vacuum hose from actuator.




2) Connect vacuum pump as shown in figure.




3) Make sure that cruise control cable moves smoothly and quickly when a vacuum pressure of 40.0 kPa (300 mmHg, 11.81 inHg) is applied to actuator.

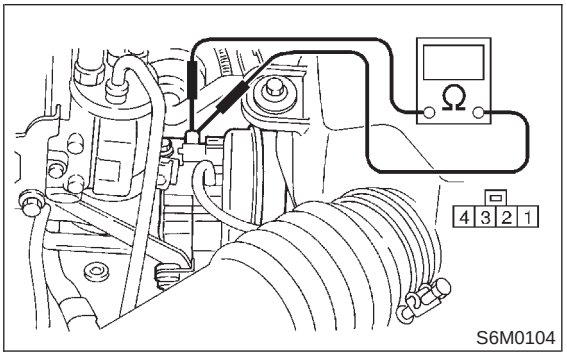
CHECK : ***Does cruise control cable have a stroke of 35 mm (1.38 in)?***
YES : Go to step **2D2**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].> Go to step **2D2**.

NOTE:
- When vacuum pressure is released from condition 3) above, make sure the cable returns to its original position smoothly and quickly.
- After inspection, disconnect vacuum pump and connect vacuum hose.

**2D2 : MEASURE RESISTANCE OF VALVE.**

1) Disconnect connector from actuator.
2) Measure resistance between terminals of actuator.

***Terminals***
***No. 2 — No. 3:***

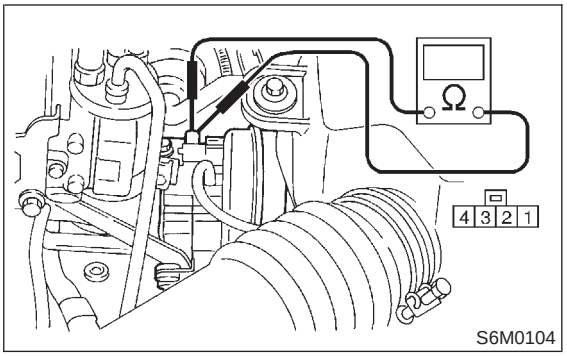



CHECK : ***Is resistance less than 100 Ω?***
YES : Go to step **2D3**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].>

**2D3 : MEASURE RESISTANCE OF VALVE.**

Measure resistance between terminals of actuator.

***Terminals***
***No. 2 — No. 1:***

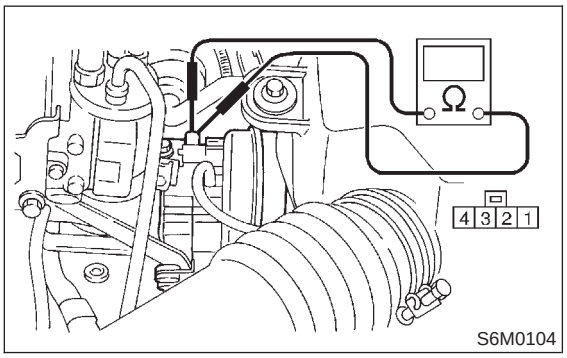



CHECK : ***Is resistance less than 69 Ω?***
YES : Go to step **2D4**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].>

**2D4 : MEASURE RESISTANCE OF VALVE.**

Measure resistance between terminals of actuator.

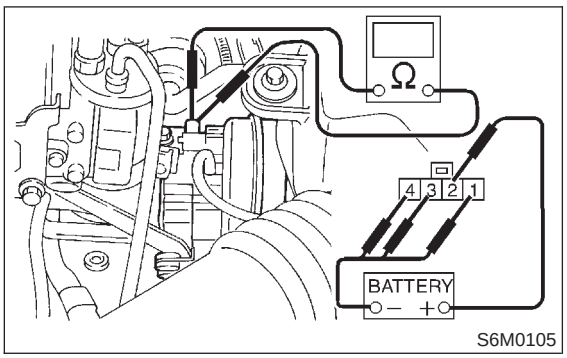
***Terminals***
***No. 2 — No. 4:***




CHECK : ***Is resistance less than 69 Ω?***
YES : Go to step **2D5**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].>

**2D5 : CHECK FOR LEAKAGE AND STICKING OF VALVES.**

1) Disconnect connector from actuator.
2) Make sure that cruise control cable moves smoothly when connecting + (positive) battery cable to terminal No. 2 and − (negative) battery cable to terminals No. 1, 3 and 4 of actuator connector.




CHECK : ***Does cruise control cable have a stroke of 35 mm (1.38 in) within 3 seconds?***
YES : Go to step **2D6**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].> Go to step **2D6**.

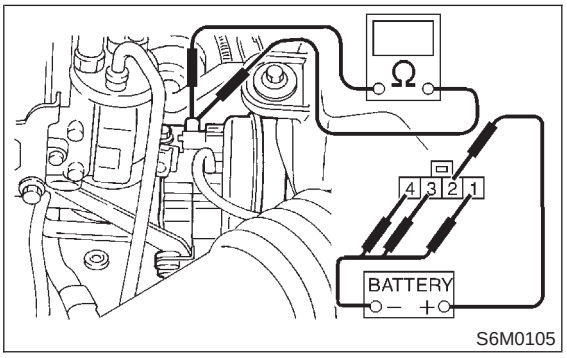
**2D6 : CHECK FOR LEAKAGE AND STICKING OF VALVES.**

When the battery cable is disconnected from former condition <Ref. to 6-2 [T2D5].> Step 2), make sure the cable returns to its original position smoothly.

CHECK : ***Does cruise control cable get back to its original position within 1.5 seconds?***
YES : Go to step **2D7**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].> Go to step **2D7**.

**2D7 : CHECK CABLE MOVEMENT.**

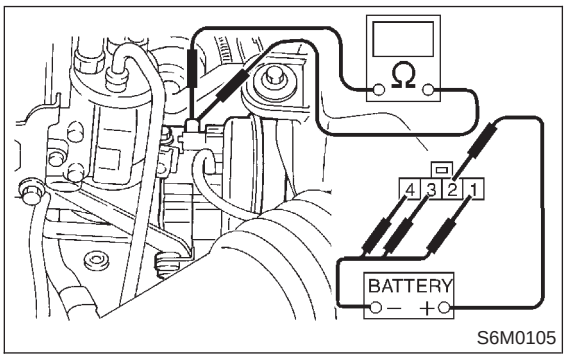
Connect + (positive) battery cable to terminal No. 2 and − (negative) battery cable to terminals No. 1, 3 and 4 of actuator connector.




CHECK : ***Does cruise control perform pull operation?***
YES : Go to step **2D8**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].> Go to step **2D8**.

**2D8 : CHECK CABLE MOVEMENT.**

Connect + (positive) battery cable to terminal No. 2 and − (negative) battery cable to terminals No. 1 and 4 of actuator connector.



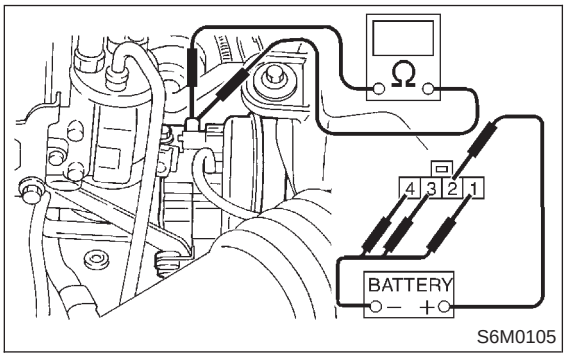

CHECK : ***Does cruise control perform hold operation?***

YES : Go to step **2D9**.

NO : Replace actuator. <Ref. to 6-2 [W11B1].> Go to step **2D9**.

**2D9 : CHECK CABLE MOVEMENT.**

Connect + (positive) battery cable to terminal No. 2 and − (negative) battery cable to terminal No. 4 of actuator connector.




CHECK : ***Does cruise control perform release operation?***

YES : Go to step **2E1**.

NO : Replace actuator. <Ref. to 6-2 [W11B1].> Go to step **2E1**.

## E: POWER SUPPLY

**2E1 : CHECK BATTERY.**

Measure battery specific gravity of electrolyte.

CHECK : ***Is battery specific gravity more than 1.250?***

YES : Go to step **2E2**.

NO : Charge or replace battery. <Ref. to 6-2 [W2A0].> Go to step **2E2**.

**2E2 : CHECK FUSES, CONNECTORS AND HARNESSES.**

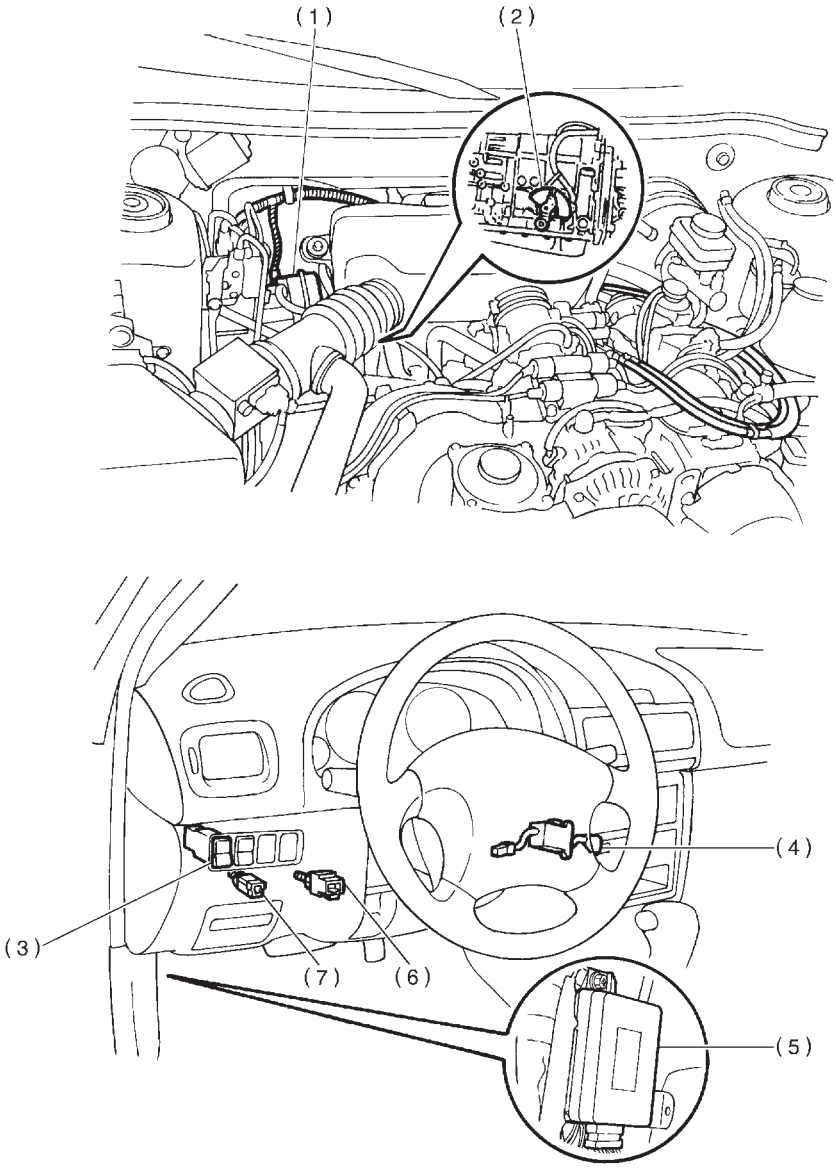
Check the condition of the main and other fuses, and harnesses and connectors. Also check for proper grounding.

CHECK : ***Is there anything unusual about the appearance of main fuse, fuse, harness, connector and grounding?***

YES : Repair or replace faulty parts. End of pre-inspection.

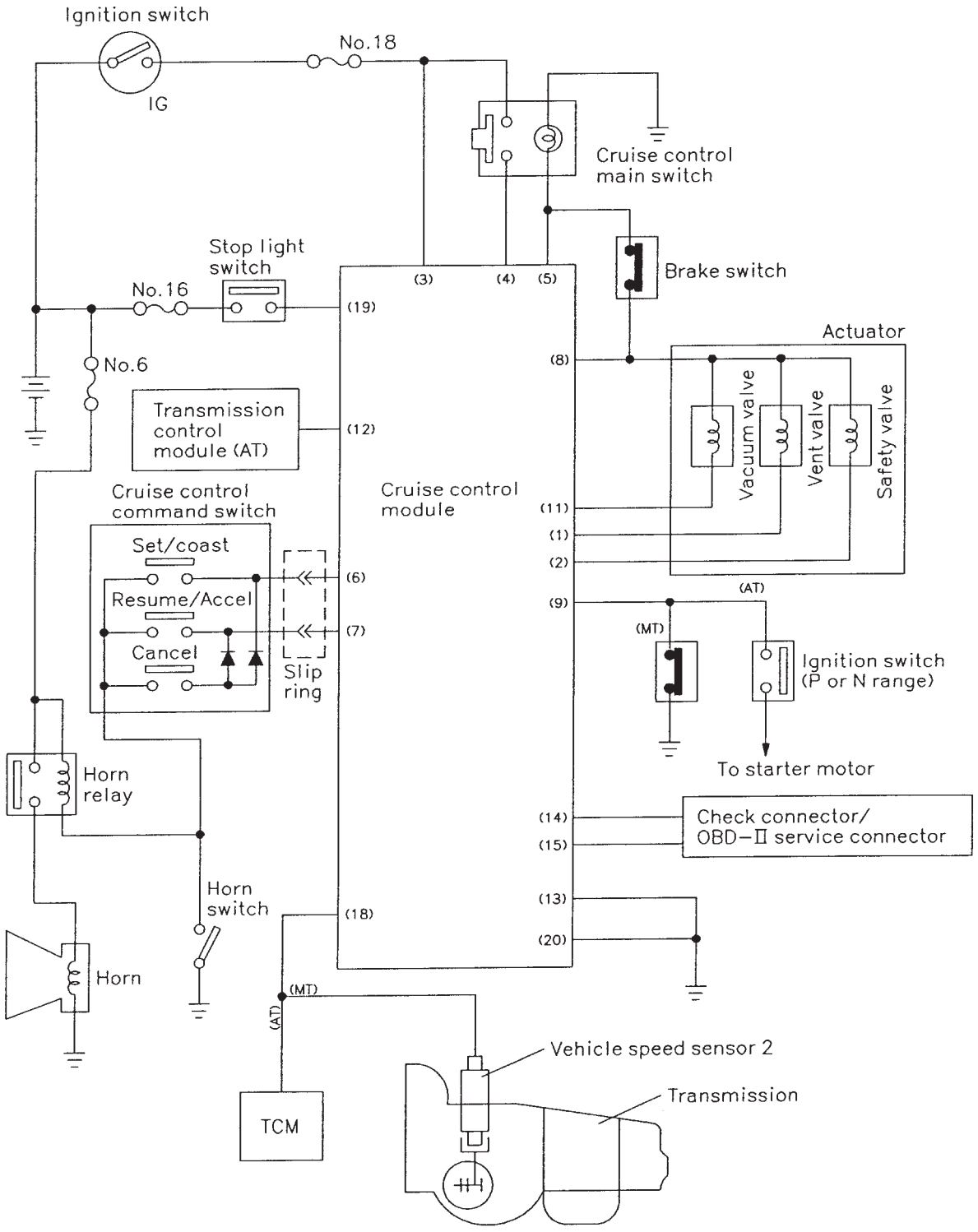
NO : End of pre-inspection.

# 3. Electrical Components Location




(1) Actuator (with valves)
(2) Inhibitor switch (AT)
(3) Cruise control main switch
(4) Cruise control command switch
(5) Cruise control module
(6) Stop and brake switch
(7) Clutch switch (MT)

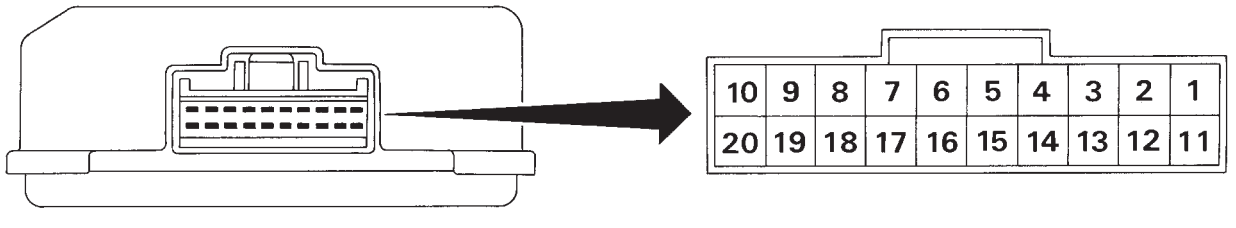
# 4. Schematic




S6M0325

**MEMO:**

# 5. Control Module I/O Signal




G6M0015

| Content | Terminal No. | Measuring conditions and I/O signals (ignition switch ON and engine idling) |
|---|---|---|
| Vent valve | 1 | ● Power supply is ON when vehicle is stopped.<br>● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. |
| Safety valve | 2 | ● Power supply is ON when vehicle is stopped.<br>● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. |
| Ignition switch | 3 | ● Battery voltage is present when ignition switch is turned ON.<br>● “0” volt is present when ignition switch is turned OFF. |
| Cruise control main switch | 4 | ● Battery voltage is present when main power is turned ON.<br>● “0” volt is present when main power is turned OFF. |
| Power supply to vacuum valve, vent valve, safety valve and indicator light | 5 | ● Battery voltage is present when main power is turned ON.<br>● “0” volt is present when main power is turned OFF. |
| SET/COAST switch | 6 | ● Battery voltage is present when command switch is turned to SET/COAST position.<br>● “0” volt is present when command switch is released. |
| RESUME/ACCEL switch | 7 | ● Battery voltage is present when command switch is turned to RESUME/ ACCEL position.<br>● “0” volt is present when command switch is released. |
| Brake switch | 8 | Set selector lever to any position other than “P” or “N” position (AT) / leave clutch pedal released (MT), while cruise control main switch is turned ON. Then check that;<br>● Battery voltage is present when brake pedal is released.<br>● “0” volt is present when brake pedal is depressed, or<br>● Battery voltage is present when clutch pedal is released (MT).<br>● “0” volt is present when clutch pedal is depressed (MT).<br>● Battery voltage is present when selector lever is in any position other than “P” or “N” position (AT).<br>● “0” volt is present when selector lever is set to “P” or “N” position (AT). |
| Clutch switch (MT)/ Inhibitor switch (AT) | 9 | ● Battery voltage is present when clutch pedal is released (MT).<br>● “0” volt is present when clutch pedal is depressed (MT).<br>● Battery voltage is present when selector lever is in any position other than “P” or “N” position (AT).<br>● “0” volt is present when selector lever is set to “P” or “N” position (AT). |
| Vacuum valve | 11 | ● Power supply is ON when vehicle is stopped.<br>● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. |
| Set signal to transmission control module (AT) | 12 | ● TCM emits a ground-level signal while driving vehicle at least 40 km/h (25 MPH) with SET switch ON. |
| Ground | 13 | — |
| Check connector/ OBD-II service connector | 14 | — |
| Check connector/ OBD-II service connector | 15 | — |

| Content | Terminal No. | Measuring conditions and I/O signals (ignition switch ON and engine idling) |
|---|---|---|
| Vehicle speed sensor 2 (MT)<br>Automatic transmission control module (AT) | 18 | 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 | 19 | Turn ignition switch to OFF. Then check that;<br>● Battery voltage is present when brake pedal is depressed.<br>● “0” volt is present when brake pedal is released. |
| Ground | 20 | — |
| NOTE:<br>Voltage at terminals 1, 2, 11 and 12 cannot be checked unless vehicle is driving by cruise control operation. | | |

# 6. Diagnostics Chart for On-board Diagnosis System

## A: BASIC DIAGNOSTIC PROCEDURE

**6A1 : CHECK CRUISE CONTROL MAIN SWITCH.**

1) Trouble occurs.
2) Perform pre-inspection. <Ref. to 6-2 [T200].>
3) Check cruise control main switch.

CHECK : ***Does cruise control main switch turn ON?***
YES : Go to step **6A2**.
NO : Go to "Diagnostics Chart for Power Line". <Ref. to 6-2 [T700].>

**6A2 : CHECK CRUISE SPEED IS SET.**

CHECK : ***Does cruise speed properly set while driving at minimum of 40 km/h (25 MPH)?***
YES : Go to step **6A3**.
NO : Go to "Diagnostics Chart with Trouble Code". <Ref. to 6-2 [T800].>

**6A3 : CHECK CRUISE CONTROL IS RELEASED.**

CHECK : ***Does cruise control properly release during operation?***
YES : Go to step **6A4**.
NO : Go to "Diagnostics Chart with Trouble Code". <Ref. to 6-2 [T800].>

**6A4 : CHECK CRUISE SPEED IS HELD WITHIN SET SPEED.**

CHECK : ***Does cruise speed hold within set speed ±3 km/h (2 MPH)?***
YES : Go to step **6A5**.
NO : Go to pre-inspection of actuator. <Ref. to 6-2 [T2D0].>

**6A5 : CHECK RESUME/ACCEL SWITCH.**

CHECK : ***Does RESUME/ACCEL switch function properly?***
YES : Go to step **6A6**.
NO : Go to "Diagnostics Chart with Trouble Code". <Ref. to 6-2 [T800].>

**6A6 : CHECK SET/COAST SWITCH.**

CHECK : ***Does SET/COAST switch function properly?***
YES : Go to step **6A7**.
NO : Go to "Diagnostics Chart with Trouble Code". <Ref. to 6-2 [T800].>

**6A7 : CHECK CANCEL SWITCH.**

CHECK : ***Does CANCEL switch function properly?***
YES : Go to step **6A8**.
NO : Go to "Diagnostics Chart with Trouble Code". <Ref. to 6-2 [T800].>

**6A8 : CHECK CRUISE SPEED IS RELEASED.**

CHECK : ***Does cruise speed release when brake pedal is depressed?***
YES : Go to step **6A9**.
NO : Go to "Diagnostics Chart with Trouble Code". <Ref. to 6-2 [T800].>

**6A9 : CHECK CRUISE SPEED IS RELEASED.**

CHECK : ***Does cruise speed release when clutch pedal is depressed?***
YES : Cruise control system is in correct order.
NO : Go to "Diagnostics Chart with Trouble Code". <Ref. to 6-2 [T800].>

## B: ON-BOARD DIAGNOSIS WITH SELECT MONITOR

### 1. GENERAL

The on-board diagnosis function of the cruise control system uses an external select monitor.
The on-board diagnosis function operates in two categories, which are used depending on the type of problems;

NOTE:
Select monitor cartridge:
No. 24082AA130

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 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 problems 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) Connect select monitor.
2) Start the engine and turn cruise control main switch to ON.
3) Set select monitor in "All System Diagnosis" mode.

NOTE:
The diagnostic code is also shown in the "Each System Check" mode. This mode is called up on the "Cruise Control Diagnosis" screen by selecting the item "Cancel Code(s) Display".

4) Drive vehicle at least 40 km/h (25 MPH) with cruise speed set.
5) If cruise speed is canceled itself (without doing any cancel operations), a diagnostic code will appear on select monitor display.

**CAUTION:**
**● A diagnostic code 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 code 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) Select the "Current Data Display & Save" mode on the select monitor "Cruise Control Diagnosis" screen.
4) Ensure 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.)
● Turn ON the "SET/COAST" switch.
● Turn ON the "RESUME/ACCEL" switch.
● Depress/release the clutch pedal. (MT)
● Set the selector lever to P or N. (AT)

# 7. Diagnostics Chart for Power Line

## A: BASIC DIAGNOSTICS PROCEDURE

| 7A1 : DRIVE AT CRUISE SPEED. |
|---|

CHECK : ***Can cruise speed be set?***

YES : Go to “CHECK INDICATOR AND CIRCUIT IN CRUISE CONTROL MAIN SWITCH”. <Ref. to 6-2 [T7B0].>

NO : Go to “CHECK CRUISE CONTROL MAIN SWITCH”. <Ref. to 6-2 [T7C0].>

## B: CHECK INDICATOR AND CIRCUIT IN CRUISE CONTROL MAIN SWITCH

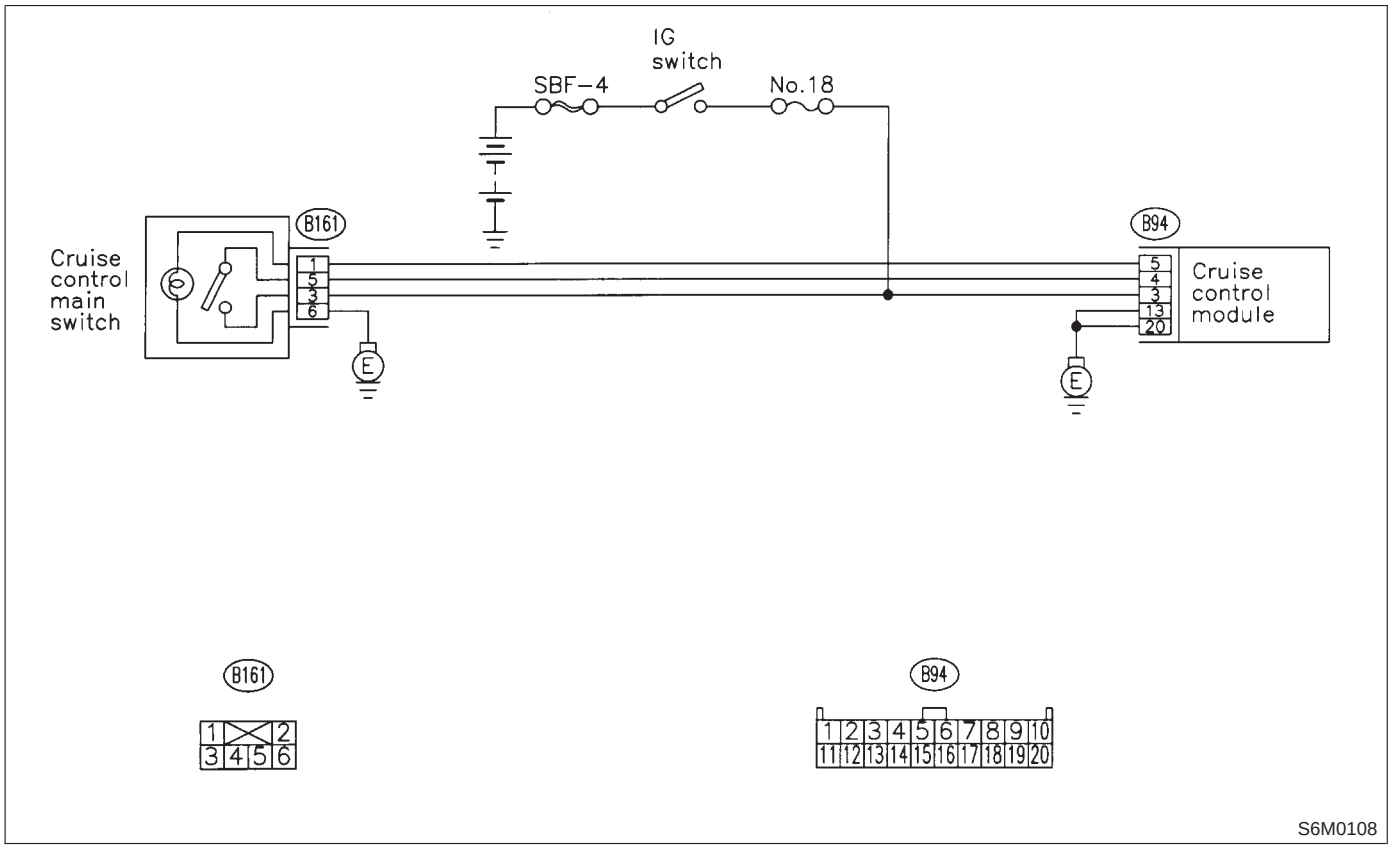
**DIAGNOSIS:**

- Bulb failure or open harness of the indicator circuit in the cruise control main switch.

**TROUBLE SYMPTOM:**

- Cruise control can be set, normally indicator does not come on. (When main switch is pressed.)

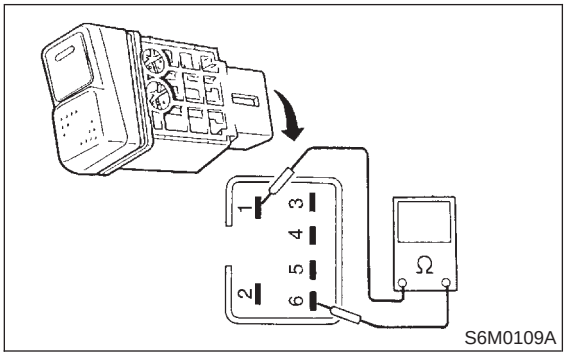
**WIRING DIAGRAM:**



**7B1 : CHECK CRUISE CONTROL MAIN SWITCH.**

1) Remove cruise control main switch.
2) Measure resistance between cruise control main switch terminals.

***Terminals***
***No. 1 — No. 6:***

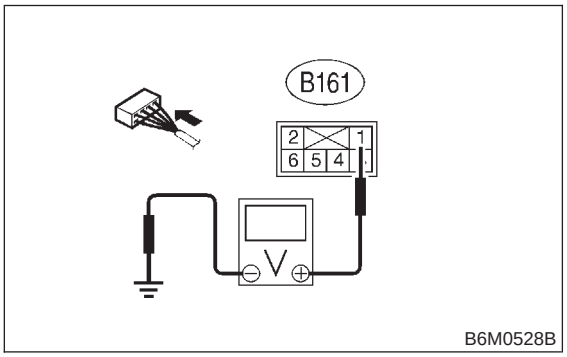



CHECK : ***Is resistance between 10 and 80 Ω?***
YES : Go to step **7B2**.
NO : Replace switch illumination bulb. <Ref. to 6-2 [W11B2].>

**7B2 : CHECK CIRCUIT BETWEEN CRUISE CONTROL MODULE AND CRUISE CONTROL MAIN SWITCH INDICATOR LIGHT.**

1) Turn the ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Measure voltage between cruise control main switch connector and the chassis ground.

***Connector & terminal***
***(B161) No. 1 (+) — Chassis ground (−):***

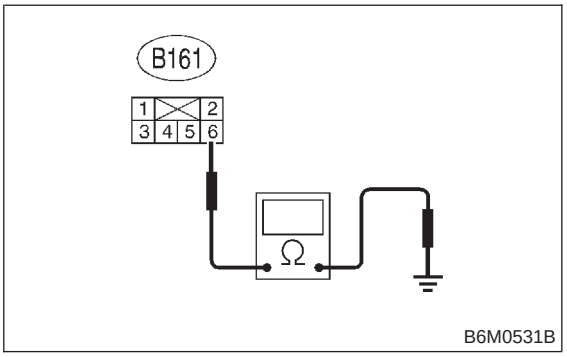



CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7B3**.
NO : Repair or replace wiring harness.

**7B3 : CHECK CIRCUIT BETWEEN CRUISE CONTROL MODULE AND CRUISE CONTROL MAIN SWITCH INDICATOR LIGHT.**

1) Turn the ignition switch and cruise control main switch to OFF.
2) Remove the connector from the cruise control main switch.
3) Measure resistance of ground circuit between the cruise control main switch connector and chassis ground.

***Connector & terminal***
***(B161) No. 6 (+) — Chassis ground (−):***




CHECK : ***Is resistance less than 10 Ω?***
YES : Replace cruise control module. <Ref. to 6-2 [W11B4].>
NO : Repair or replace wiring harness.

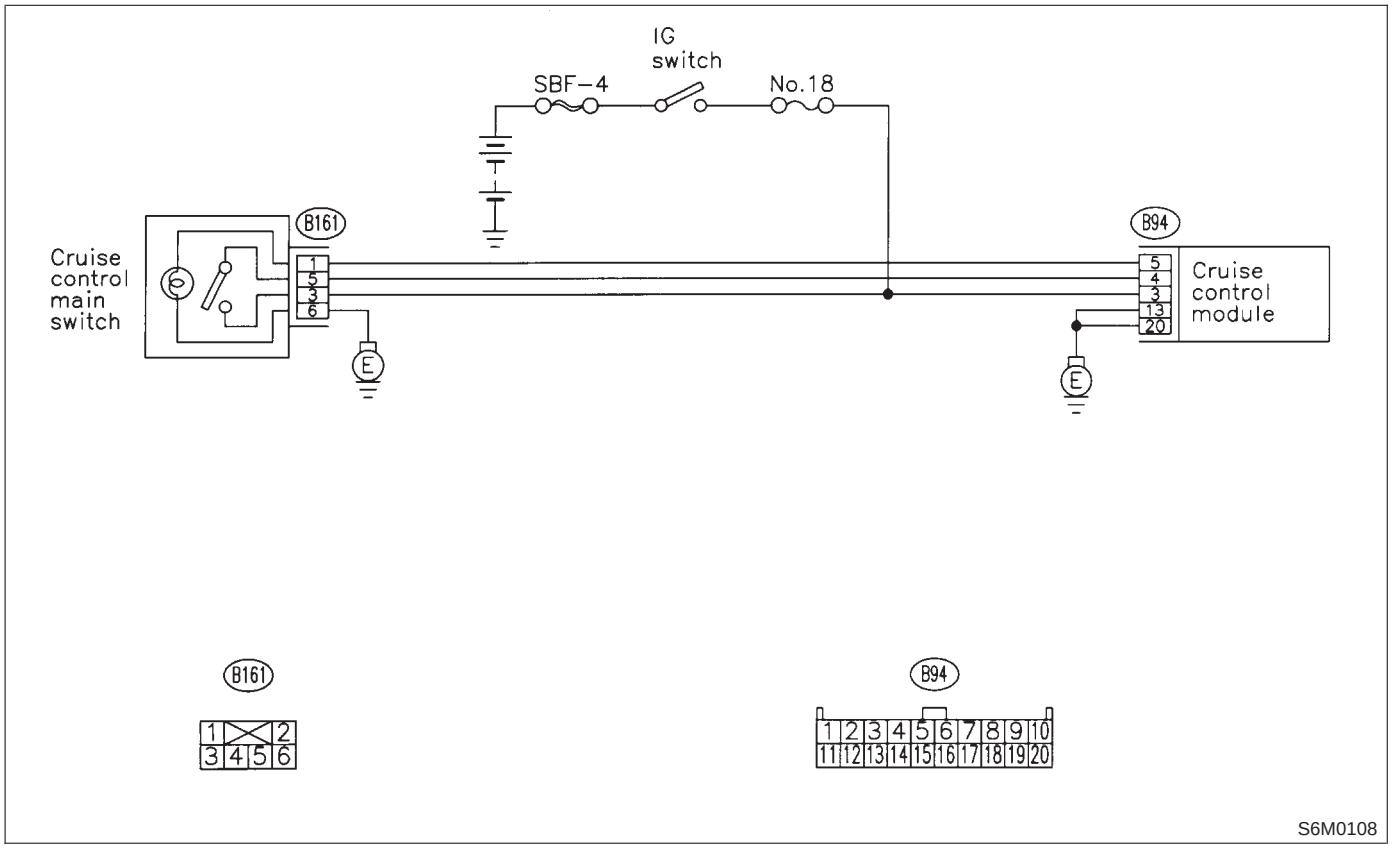
## C: CHECK CRUISE CONTROL MAIN SWITCH

**DIAGNOSIS:**
- Faulty cruise control main switch, or open harness.

**TROUBLE SYMPTOM:**
- Cruise control main switch is not turned ON and cruise control cannot be set.

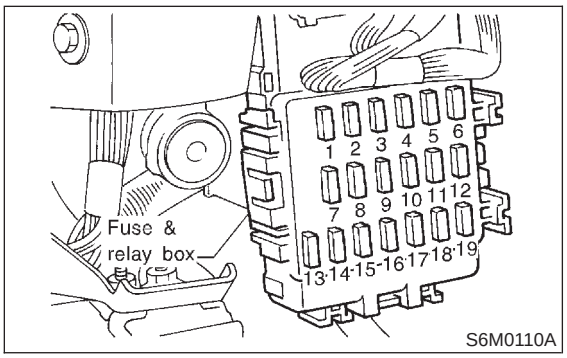
NOTE:
When the main relay (built-in cruise control module) operates, the main switch circuit is in normal condition.
The main relay operation can be checked by hearing the operation sounds.
This operation sounds will be heard when ignition switch and cruise control main switch is turned to ON.

**WIRING DIAGRAM:**



**7C1 : CHECK FUSE.**

Check fuse No. 18.




CHECK : ***Is fuse No. 18 blown?***
YES : Replace fuse No. 18. Go to step **7C2**.
NO : Go to step **7C2**.

**7C2 : CHECK POWER SUPPLY.**

1) Turn ignition switch to ON.
2) Measure voltage between fuse & relay box connector and chassis ground.

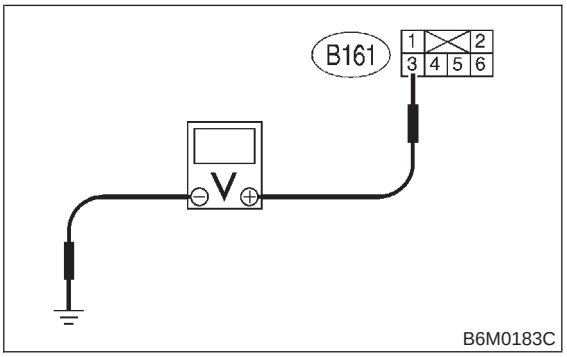
***Connector & terminal***
***(B152) No. 5 (+) — Chassis ground (−):***

CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C3**.
NO : Replace fuse No. 18. When fuse No. 18 is blown again, repair shorted parts of circuit.

**7C3 : CHECK CRUISE CONTROL MAIN SWITCH.**

1) Turn ignition switch to OFF.
2) Remove cruise control main switch and disconnect connector.
3) Turn ignition switch to ON.
4) Measure voltage between cruise control main switch connector and chassis ground.

***Connector & terminal***
***(B161) No. 3 (+) — Chassis ground (−):***

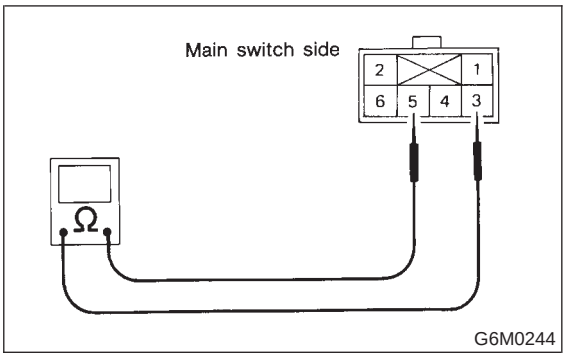



CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C4**.
NO : Replace cruise control main switch. <Ref. to 6-2 [W11B2].>

**7C4 : CHECK CRUISE CONTROL MAIN SWITCH.**

Measure resistance between cruise control main switch terminals.

***Terminals***
***No. 3 — No. 5:***

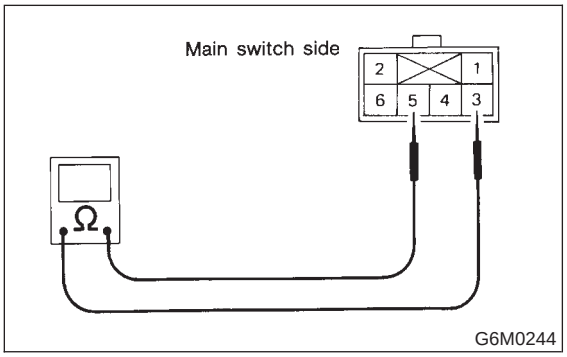



CHECK : ***Is resistance less than 10 Ω? (When switch is ON.)***
YES : Go to step **7C5**.
NO : Replace cruise control main switch. <Ref. to 6-2 [W11B2].>

**7C5 : CHECK CRUISE CONTROL MAIN SWITCH.**

Measure resistance between cruise control main switch terminals.

***Terminals***
***No. 3 — No. 5:***

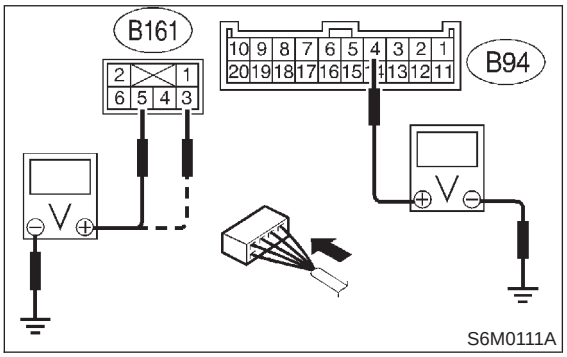



CHECK : ***Is resistance less than 1 MΩ? (When switch is OFF.)***
YES : Go to step **7C6**.
NO : Replace cruise control main switch. <Ref. to 6-2 [W11B2].>

**7C6 : CHECK HARNESS BETWEEN CRUISE CONTROL MAIN SWITCH CONNECTOR AND CHASSIS GROUND.**

1) Connect connector.
2) Turn ignition switch to ON.
3) Turn cruise control main switch to ON.
4) Measure voltage between terminal of cruise control main switch and chassis ground.

***Connector & terminal***
***(B161) No. 3 (+) — Chassis ground (−):***

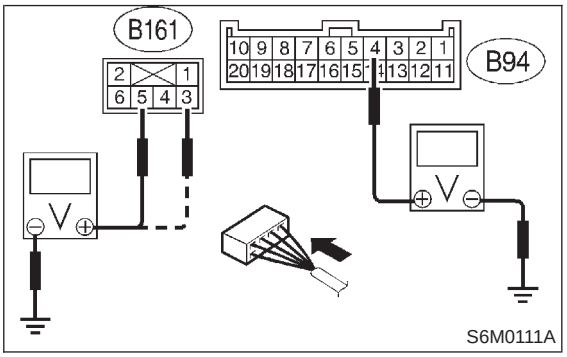



CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C7**.
NO : Repair or replace wiring harness.

**7C7 : CHECK HARNESS BETWEEN CRUISE CONTROL MAIN SWITCH CONNECTOR AND CHASSIS GROUND.**

Measure voltage between terminal of cruise control main switch chassis ground.

***Connector & terminal***
***(B161) No. 5 (+) — Chassis ground (−):***

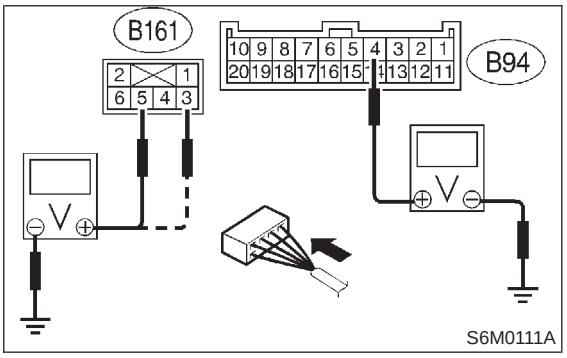



CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C8**.
NO : Repair or replace wiring harness.

**7C8 : CHECK HARNESS BETWEEN CRUISE CONTROL MODULE CONNECTOR AND CHASSIS GROUND.**

Measure voltage between terminal of cruise control module and chassis ground.

***Connector & terminal***
***(B94) No. 4 (+) — Chassis ground (−):***




CHECK : ***Is voltage more than 10 V?***
YES : Replace cruise control module. <Ref. to 6-2 [W11B4].>
NO : Repair or replace wiring harness.

NOTE:
Depress cruise control main switch with fingers while measuring voltage between (B161) No. 5 and chassis ground.

# 8. Diagnostics Chart with Diagnostic Code

## A: DIAGNOSTIC CODE LIST

| Diagnostic code | Item | Contents of diagnosis | Index No. |
|---|---|---|---|
| 11 | BRAKE SW/STOP SW | Input signals from brake switch “OFF”, stop light switch “ON”<br>(Brake pedal is depressed.) | <Ref. to 6-2 [T8B0].> |
| 12 | CLUTCH SW/INHIBITOR SW | Input signals from clutch switch “OFF” (MT), or inhibitor switch “P or N” (AT)<br>[Clutch pedal is depressed (MT), or selector lever is set to P or N position (AT).] | <Ref. to 6-2 [T8C0].> |
| 13 | LOW SPEED LIMIT | Low-speed control limiter | <Ref. to 6-2 [T8D0].> |
| 14 | CANCEL SW | Input signal from cancel switch<br>(faulty SET/COAST switch or RESUME/ACCEL switch) | <Ref. to 6-2 [T8E0].> |
| 21 | VACUUM VALVE | Faulty vacuum valve or valve drive system | <Ref. to 6-2 [T8F0].> |
| 22 | VENT 2 VALVE | Faulty vent 2 valve or valve drive system | <Ref. to 6-2 [T8F0].> |
| 23 | VENT 1 VALVE | Faulty vent 1 valve or valve drive system | <Ref. to 6-2 [T8F0].> |
| 24 | SPEED SENSOR | Faulty vehicle speed sensor 2 (MT) or transmission control module (AT) | <Ref. to 6-2 [T8D0].> |
| 25 | CONTROL MODULE | Faulty CPU RAM included in cruise control module | <Ref. to 6-2 [T8G0].> |

## B: DIAGNOSTIC CODE 11 (BRAKE SWITCH, STOP LIGHT SWITCH)

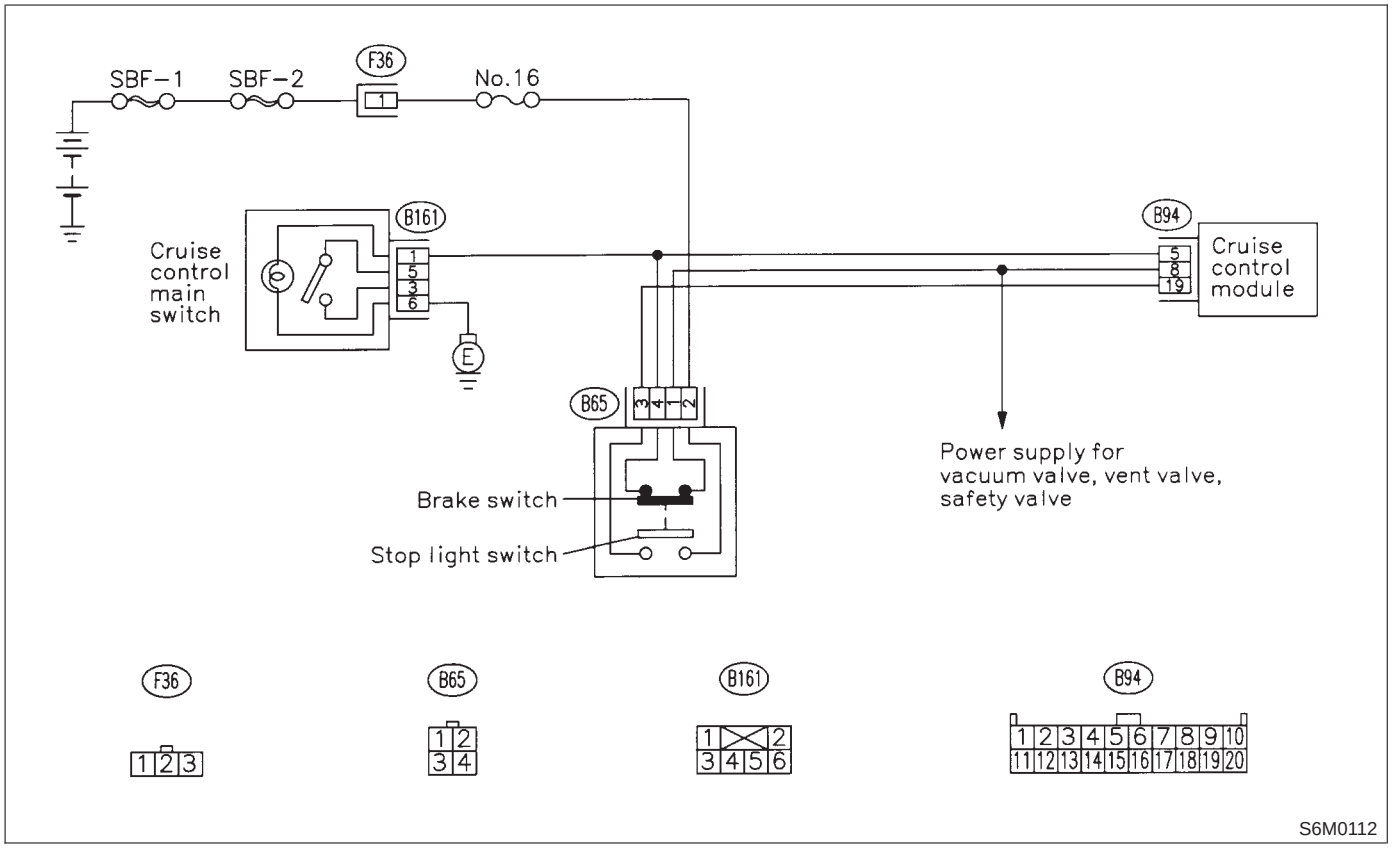
**DIAGNOSIS:**

- Failure or disconnection of the stop light switch and brake switch.

**TROUBLE SYMPTOM:**

- Cruise control cannot be set.

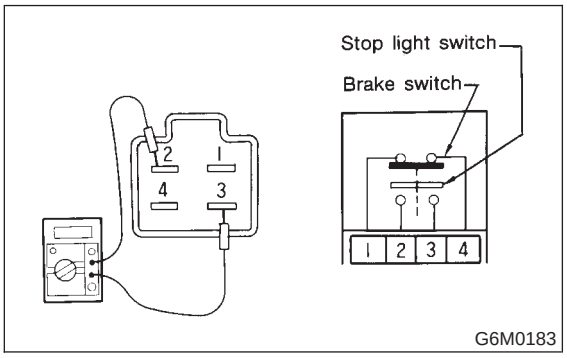
**WIRING DIAGRAM:**



## 8B1 : CHECK BRAKE SWITCH.

1) Turn ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Apply parking brake securely.
4) Set select monitor in “Current Data Display & Save” mode.
5) Depress the brake pedal and check signals for proper operation.
   (1) The Stop Lamp Switch shown on the display turns from “OFF” to “ON”.
   (2) The Brake Switch shown on the display turns from “OFF” to “ON”.
6) Release the brake pedal.
7) Remove connector of stop and brake switch.
8) Check circuit between brake switch terminal.

***Terminals***
***No. 1 — No. 4: (Brake switch)***

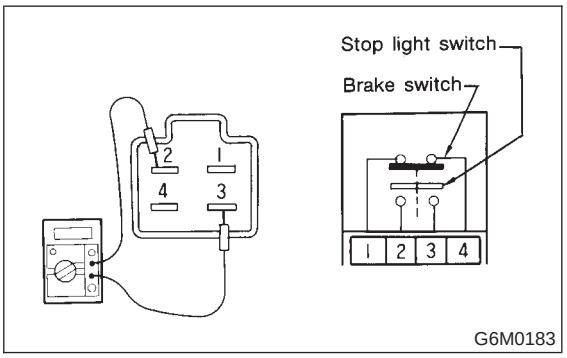



CHECK : ***Is resistance less than 1 Ω? (When brake pedal is released.)***
YES : Go to step **8B2**.
NO : Replace brake and stop light switch. <Ref. to 4-5 [C1A0].>

## 8B2 : CHECK BRAKE SWITCH.

Check circuit between brake switch terminal.

***Terminals***
***No. 1 — No. 4: (Brake switch)***

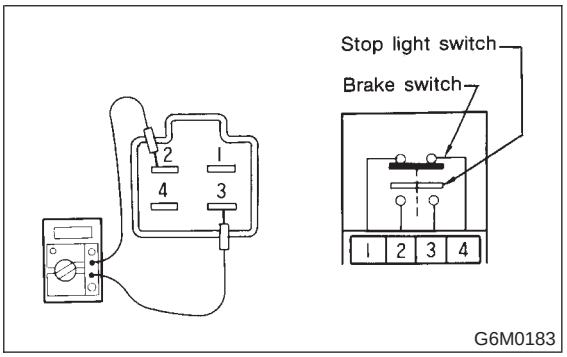



CHECK : ***Is resistance more than 1 MΩ? (When brake pedal is depressed.)***
YES : Go to step **8B3**.
NO : Replace brake and stop light switch. <Ref. to 4-5 [C1A0].>

## 8B3 : CHECK STOP LIGHT SWITCH.

Check circuit between stop light switch terminal.

***Terminals***
***No. 2 — No. 3: (Stop light switch)***

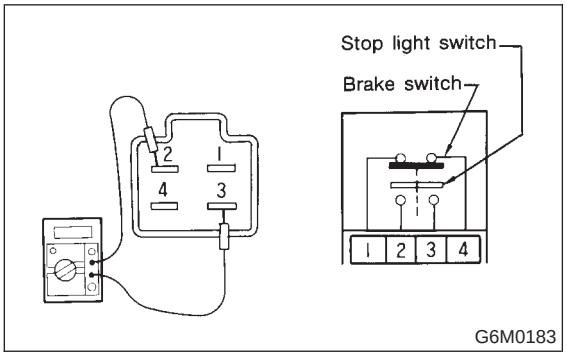



CHECK : ***Is resistance more than 1 MΩ? (When brake pedal is released.)***
YES : Go to step **8B4**.
NO : Replace brake and stop light switch. <Ref. to 4-5 [C1A0].>

**8B4 : CHECK STOP LIGHT SWITCH.**

Check circuit between stop light switch terminal.

***Terminals***
***No. 2 — No. 3: (Stop light switch)***




CHECK : ***Is resistance less than 1 Ω? (When brake pedal is depressed.)***

YES : Replace cruise control module. <Ref. to 6-2 [W11B4].>

NO : Replace brake and stop light switch. <Ref. to 4-5 [C1A0].>

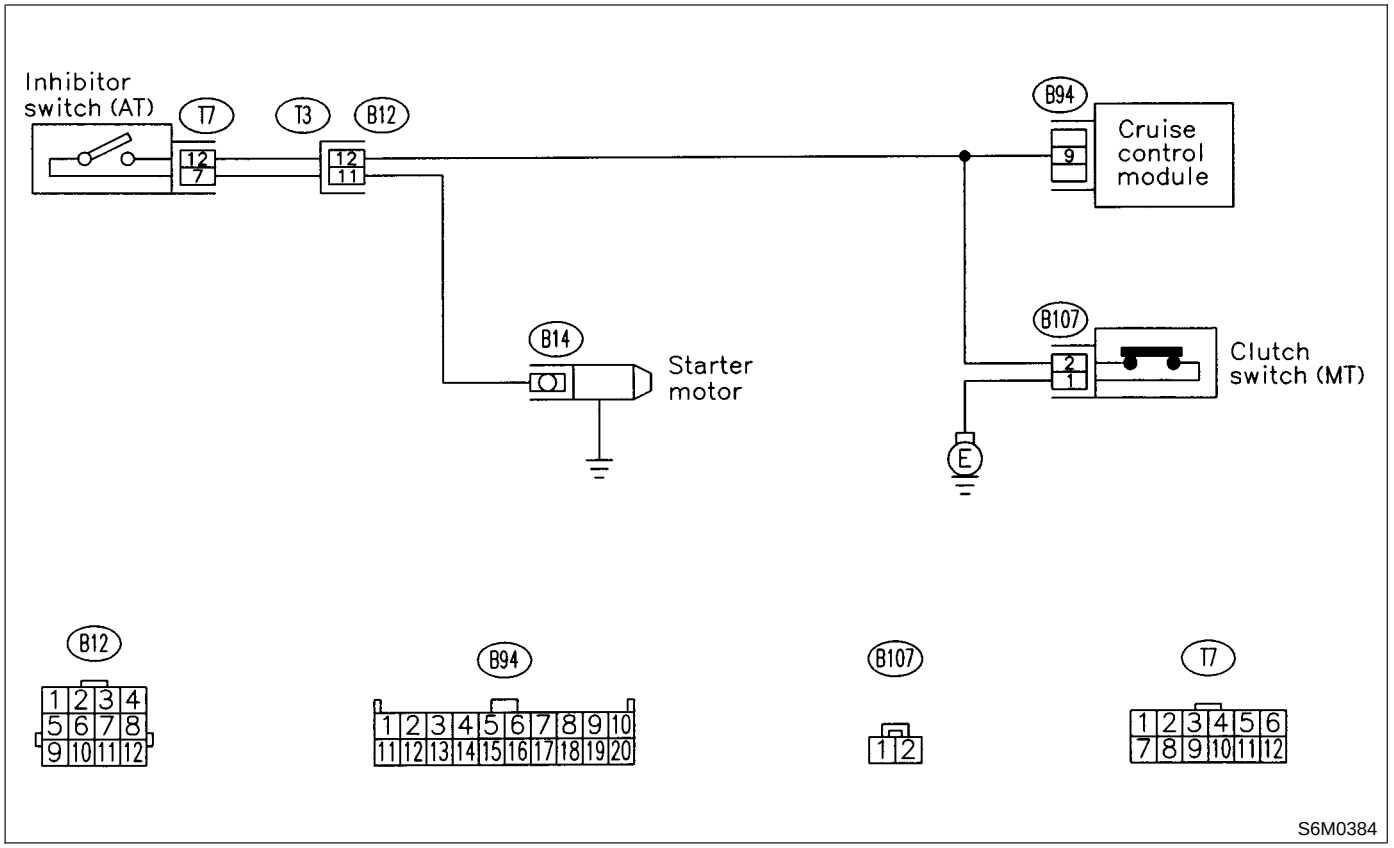
**MEMO:**

## C: DIAGNOSTIC CODE 12 (CLUTCH SWITCH, INHIBITOR SWITCH)

**DIAGNOSIS:**
- Failure or disconnection of the clutch switch. (MT)
- Failure or disconnection of the inhibitor switch. (AT)

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

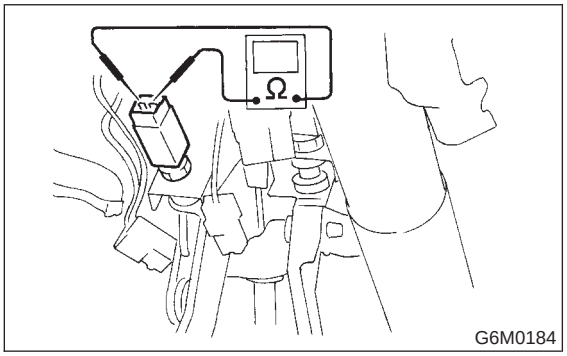
**WIRING DIAGRAM:**



**8C1 : CHECK CLUTCH SWITCH. (MT)**

1) Turn ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Apply parking brake securely.
4) Set select monitor in “Current Data Display & Save” mode.
5) Depress the clutch pedal and check signal for proper operation. (MT)
The Clutch/Inhibitor Switch shown on the display turns from “ON” to “OFF”.
6) Disconnect connector of clutch switch.
7) Check continuity of the clutch switch.

***Terminals***
***No. 1 — No. 2:***

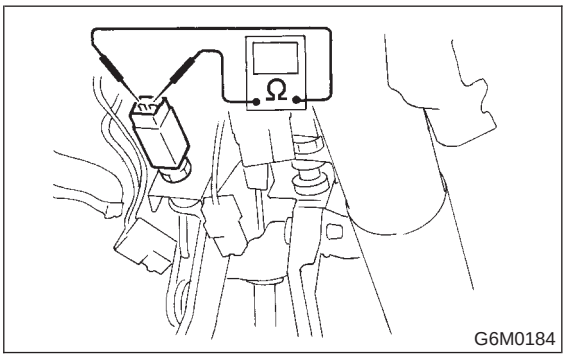



CHECK : ***Is resistance less than 10 Ω? (When clutch pedal is released.)***
YES : Go to step **8C2**.
NO : Replace clutch switch. <Ref. to 4-5 [C1A0].>

**8C2 : CHECK CLUTCH SWITCH. (MT)**

Check continuity of the clutch switch.

***Terminals***
***No. 1 — No. 2:***

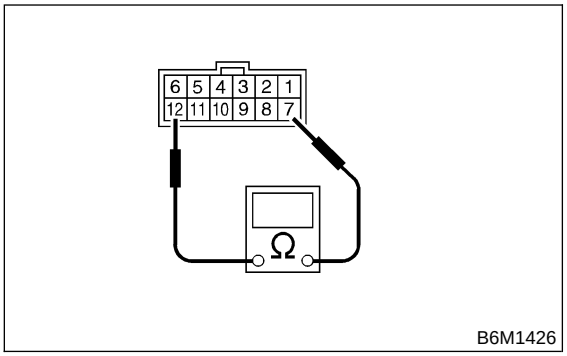



CHECK : ***Is resistance more than 1 MΩ? (When clutch pedal is depressed.)***
YES : Replace cruise control module. <Ref. to 6-2 [W11B4].>
NO : Replace clutch switch. <Ref. to 4-5 [C1A0].>

## 8C3 : CHECK INHIBITOR SWITCH. (AT)

1) Turn ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Apply parking brake securely.
4) Set select monitor in “Current Data Display & Save” mode.
5) Set the selector lever from P or N position to D position and check signal for proper operation. (AT) The Clutch/Inhibitor Switch shown on the display turns from “ON” to “OFF”.
6) Set the selector lever to P or N position.
7) Disconnect connector of inhibitor switch.
8) Check continuity of the inhibitor switch.

***Terminals***
***No. 7 — No. 12:***

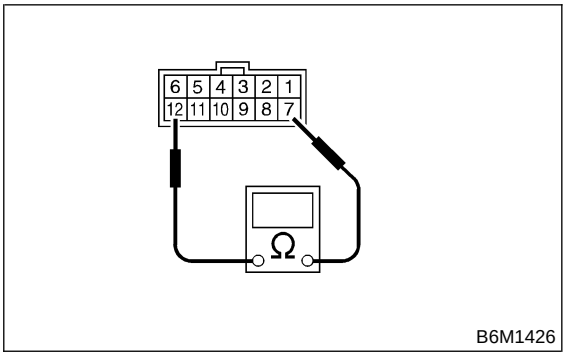



CHECK : ***Is resistance less than 10 Ω? (When selector lever is in P or N.)***
YES : Go to step **8C4**.
NO : Replace inhibitor switch. <Ref. to 3-2 [W2C0].> Repair inhibitor switch wiring harness.

## 8C4 : CHECK INHIBITOR SWITCH. (AT)

Check continuity of the inhibitor switch.

***Terminals***
***No. 7 — No. 12:***




CHECK : ***Is resistance more than 1 MΩ? (When selector lever is not in P or N.)***
YES : Replace cruise control module. <Ref. to 6-2 [W11B4].>
NO : Replace inhibitor switch. <Ref. to 3-2 [W2C0].> Repair inhibitor switch wiring harness.

**MEMO:**

## D: DIAGNOSTIC CODE 13 AND 24 (SPEED SENSOR SYSTEM )

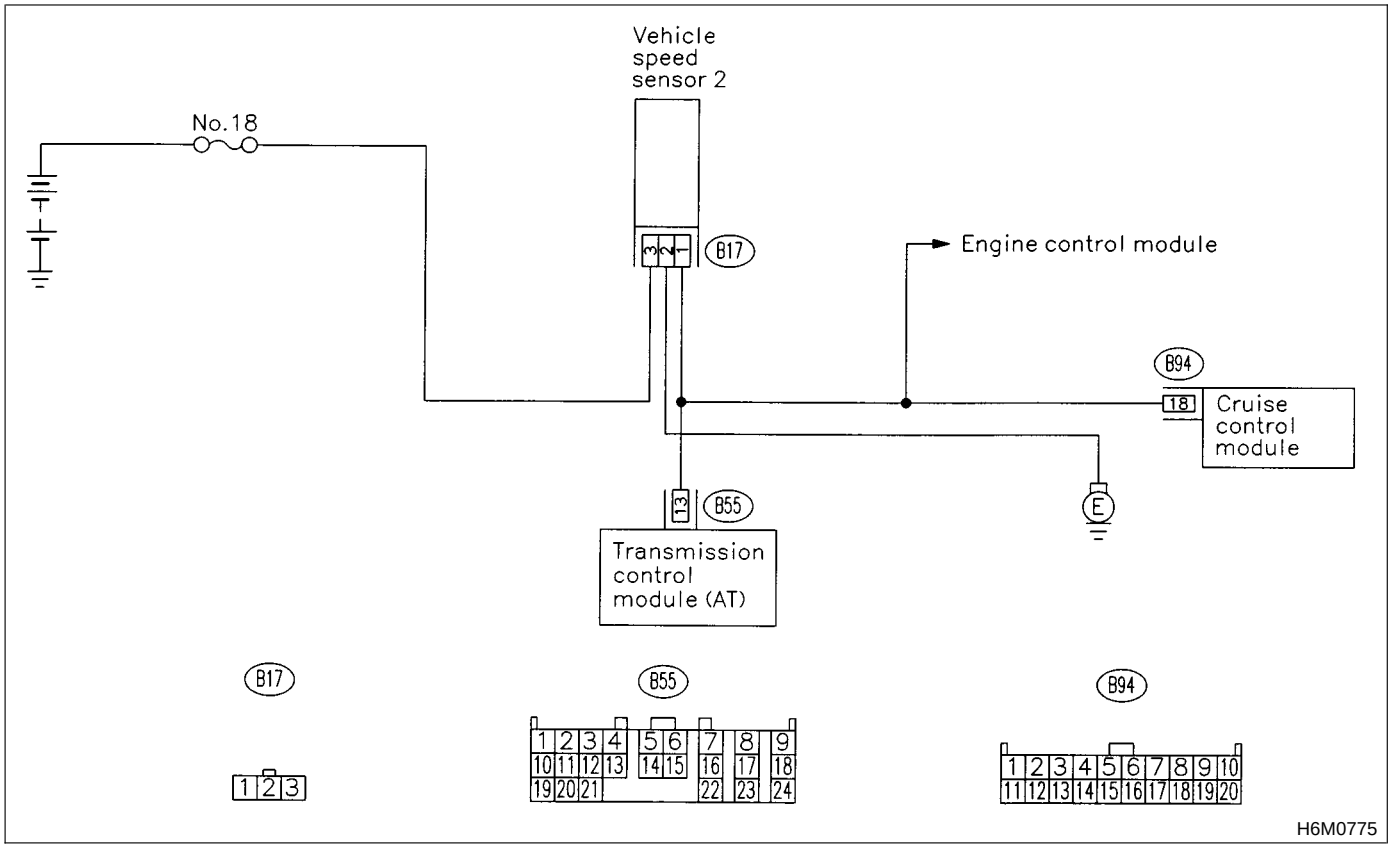
**DIAGNOSIS:**

● Disconnection or short circuit of vehicle speed sensor 2 (MT model) or transmission control module (AT model).

**TROUBLE SYMPTOM:**

● Cruise control cannot be set. (Cancelled immediately.)

**WIRING DIAGRAM:**



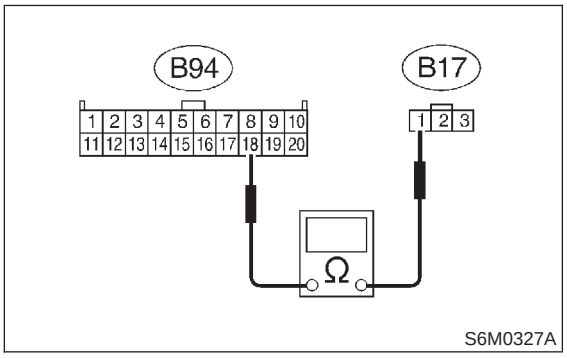
**8D1 : CHECK TRANSMISSION TYPE.**

CHECK : ***Is the transmission type MT?***
YES : Go to step **8D2**.
NO : Go to step **8D6**.

**8D2 : CHECK HARNESS CONNECTOR BETWEEN CRUISE CONTROL MODULE AND VEHICLE SPEED SENSOR 2.**

1) Disconnect connector from vehicle speed sensor 2 and cruise control module.
2) Measure resistance of harness connector between vehicle speed sensor 2 and cruise control module.

***Connector & terminal***
***(B17) No. 1 — (B94) No. 18:***

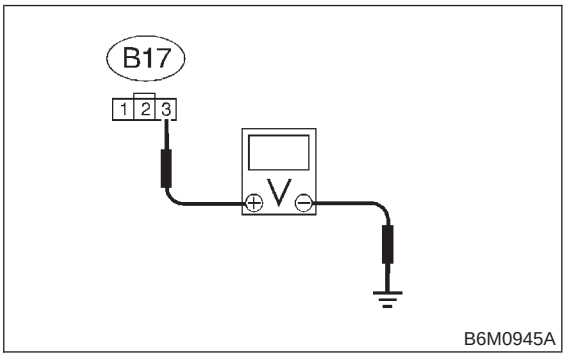



CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **8D3**.
NO : Repair wiring harness.

**8D3 : CHECK HARNESS CONNECTOR BETWEEN BATTERY AND VEHICLE SPEED SENSOR 2.**

1) Turn ignition switch to ON.
2) Measure voltage between vehicle speed sensor 2 connector (B17) and chassis ground.

***Connector & terminal***
***(B17) No. 3 (+) — Chassis ground (−):***

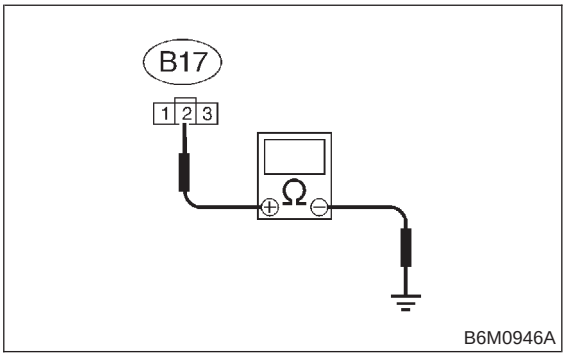



CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **8D4**.
NO : Repair harness connector between battery and vehicle speed sensor 2.

**8D4 : CHECK HARNESS CONNECTOR BETWEEN VEHICLE SPEED SENSOR 2 AND ENGINE GROUND.**

1) Turn ignition switch to OFF.
2) Measure resistance between vehicle speed sensor 2 connector (B17) and engine ground.

***Connector & terminal***
***(B17) No. 2 (+) — Engine ground (−):***



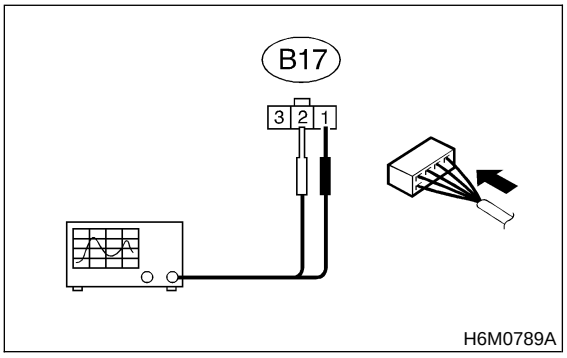

CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **8D5**.
NO : Repair harness connector between vehicle speed sensor 2 and engine ground.

**8D5 : CHECK VEHICLE SPEED SENSOR 2.**

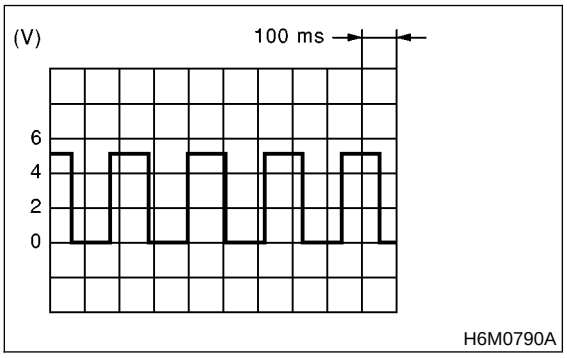
1) Connect connector to vehicle speed sensor 2.
2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands.

**WARNING:**
**Be careful not to be caught up by the running wheels.**

3) Set oscilloscope to vehicle speed sensor 2 connector terminals.
Positive probe; (B17) No. 1
Earth lead; (B17) No. 2




4) Drive the vehicle at speed greater than 20 km/h (12 MPH).
5) Measure signal voltage indicated on oscilloscope.



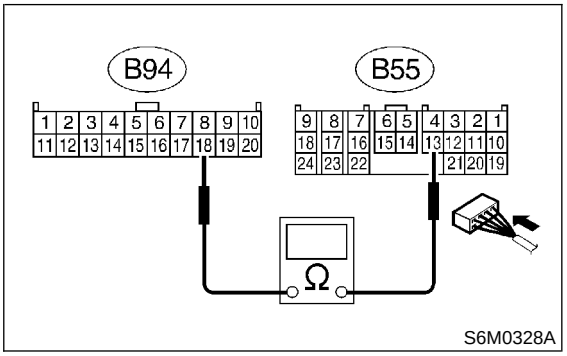

CHECK : ***Is the voltage more than 5 V?***
YES : Replace cruise control module. <Ref. to 6-2 [W11B4].>
NO : Replace vehicle speed sensor 2.

**8D6 : CHECK HARNESS CONNECTOR BETWEEN CRUISE CONTROL MODULE AND AUTOMATIC TRANSMISSION CONTROL MODULE.**

1) Disconnect connector from automatic transmission control module and cruise control module.
2) Measure resistance between cruise control module connector and automatic transmission control module connector.

**CAUTION:**
**To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).**

***Connector & terminal***
***(B94) No. 18 — (B55) No. 13:***




CHECK : ***Is the resistance less than 10 Ω?***
YES : Go to step **8D7**.
NO : Repair harness connector between cruise control module and automatic transmission control module.

**8D7 : CHECK AUTOMATIC TRANSMISSION CONTROL MODULE.**

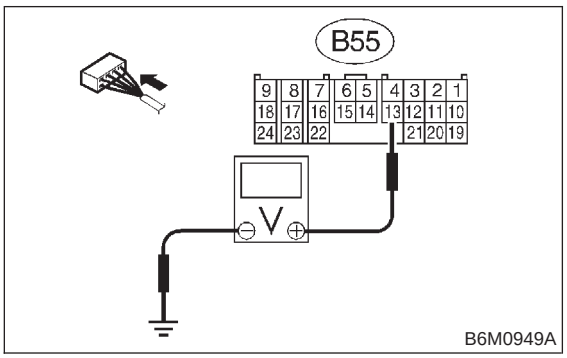
1) Connect connector to automatic transmission control module.
2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands.

**WARNING:**
**Be careful not to be caught by the running wheels.**

3) Drive the vehicle faster than 10 km/h (6 MPH).
4) Measure voltage between automatic transmission control module connector (B55) and chassis ground.

**CAUTION:**
**To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).**

***Connector & terminal***
***(B55) No. 13 (+) — Chassis ground (−):***




CHECK : ***Is the voltage less than 1 V ←→ more than 4 V?***

YES : Replace cruise control module. <Ref. to 6-2 [W11B4].>

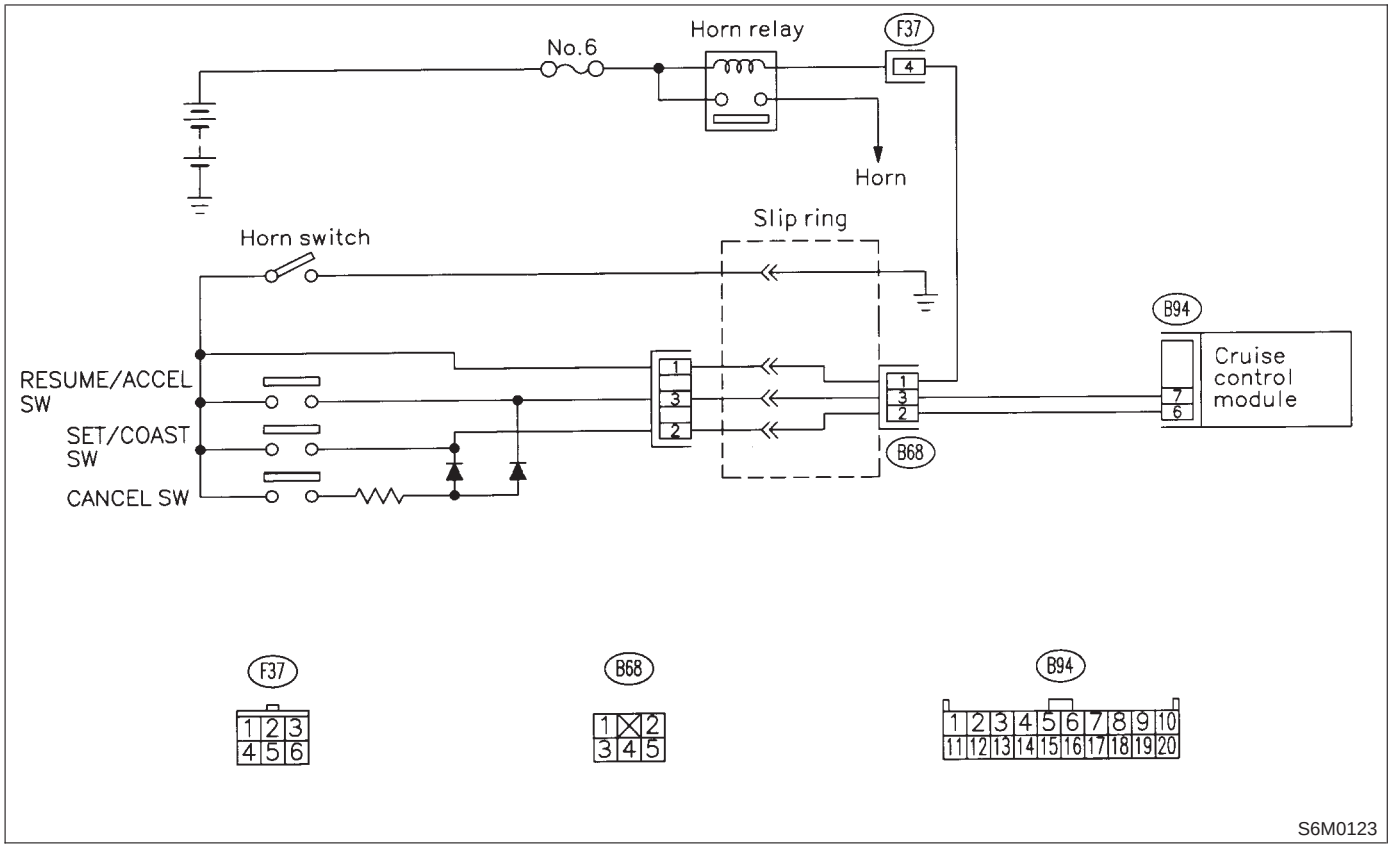
NO : Replace automatic transmission control module. <Ref. to 3-2 [W22A0].>

## E: DIAGNOSTIC CODE 14 (SET/COAST SWITCH, RESUME/ACCEL SWITCH, CANCEL SWITCH)

**DIAGNOSIS:**
- Short circuit inside the SET SW and RESUME SW.

**TROUBLE SYMPTOM:**
- Cruise control cannot be set. (Cancelled immediately.)

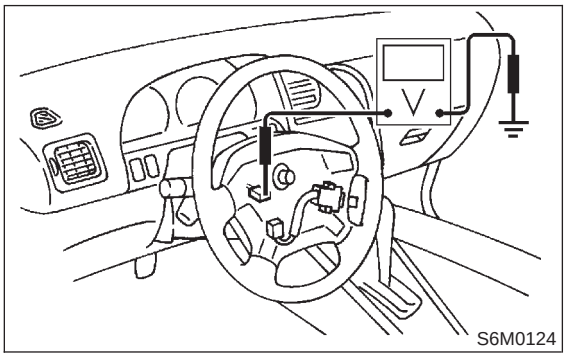
**WIRING DIAGRAM:**



**8E1 : CHECK POWER SUPPLY.**

1) Turn ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Set select monitor in “Current Data Display & Save” mode.
4) Check signals for proper operation.
   (1) When pushing the SET/COAST switch:
   The SET/COAST switch shown on the display turns from “OFF” to “ON”.
   (2) When pushing the RESUME/ACCEL switch:
   The RESUME/ACCEL switch shown on the display turns from “OFF” to “ON”.
5) Turn ignition switch to OFF.
6) Disconnect connector from cruise control command switch.
7) Turn ignition switch to ON.
8) Measure voltage between cruise control command switch connector and chassis ground.

***Terminals***
***No. 1 (+) — Chassis ground (−):***

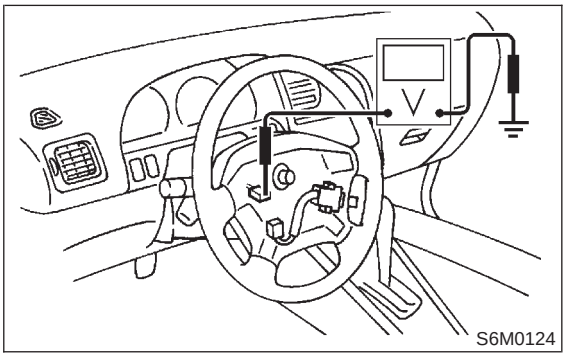



CHECK : ***Is voltage more than 10 V?***
YES : Go to step **8E2**.
NO : Repair or replace wiring harness between fuse & relay box and cruise control command switch. <Ref. to 6-2 [W11B3].>

**8E2 : CHECK CRUISE CONTROL COMMAND SWITCH.**

1) Turn ignition switch to OFF.
2) Connect connector of cruise control command switch.
3) Turn ignition switch to ON.
4) Measure voltage between cruise control command switch connector and chassis ground.

***Terminals***
***No. 2 (+) — Chassis ground (−):***

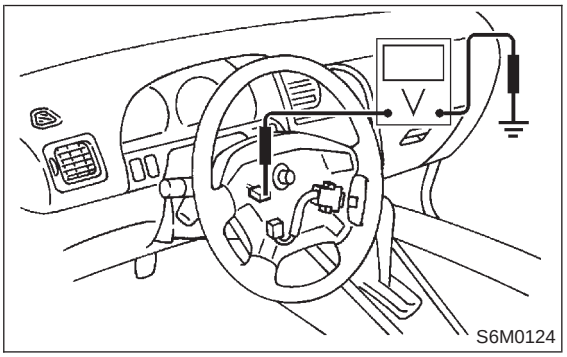



CHECK : ***Is voltage more than 10 V? (When SET/COAST switch is ON.)***
YES : Go to step **8E3**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W11B3].>

**8E3 : CHECK CRUISE CONTROL COMMAND SWITCH.**

Measure voltage between cruise control command switch connector and chassis ground.

***Terminals***
***No. 3 (+) — Chassis ground (−):***

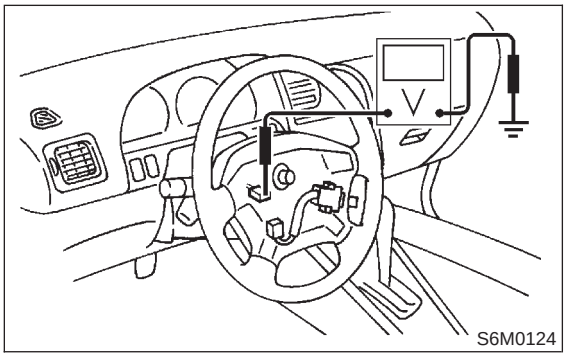



CHECK : ***Is voltage more than 10 V? (When RESUME/ACCEL switch is ON.)***
YES : Go to step **8E4**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W11B3].>

**8E4 : CHECK CRUISE CONTROL COMMAND SWITCH.**

Measure voltage between cruise control command switch connector and chassis ground.

***Terminals***
***No. 2 (+) — Chassis ground (−):***

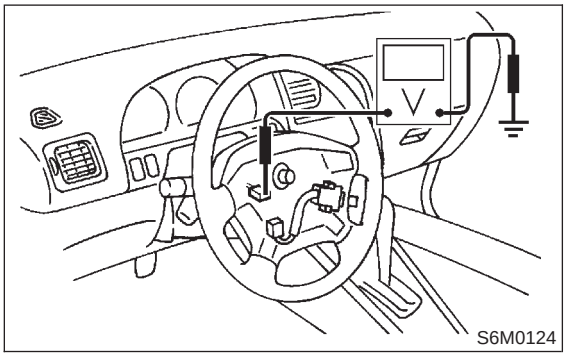



CHECK : ***Is voltage more than 10 V? (When CANCEL switch is ON.)***
YES : Go to step **8E5**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W11B3].>

**8E5 : CHECK CRUISE CONTROL COMMAND SWITCH.**

Measure voltage between cruise control command switch connector and chassis ground.

***Terminals***
***No. 3 (+) — Chassis ground (−):***

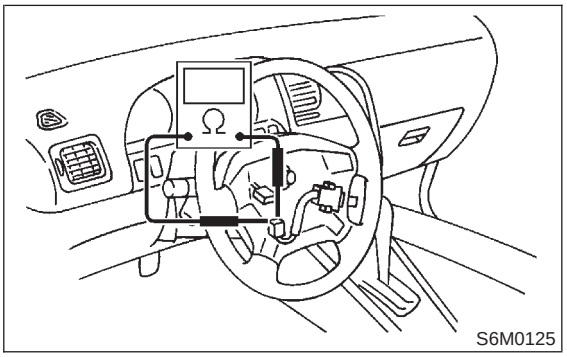



CHECK : ***Is voltage more than 10 V? (When CANCEL switch is ON.)***
YES : Go to step **8E6**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W11B3].>

**8E6 : CHECK CRUISE CONTROL COMMAND SWITCH.**

1) Turn ignition switch to OFF.
2) Disconnect connector from cruise control command switch.
3) Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation.

***Terminals***
***No. 1 — No. 2:***



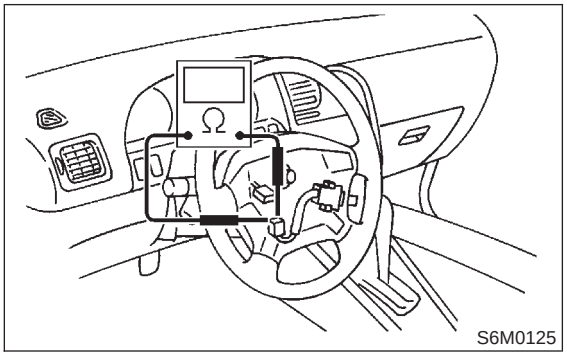

CHECK : ***Is resistance less than 10 Ω? (When SET/COAST switch is ON.)***
YES : Go to step **8E7**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W11B3].>

**8E7 : CHECK CRUISE CONTROL COMMAND SWITCH.**

Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation.

***Terminals***

***No. 1 — No. 2:***




CHECK : ***Is resistance more than 1 MΩ? (When SET/COAST switch is OFF.)***

YES : Go to step **8E8**.

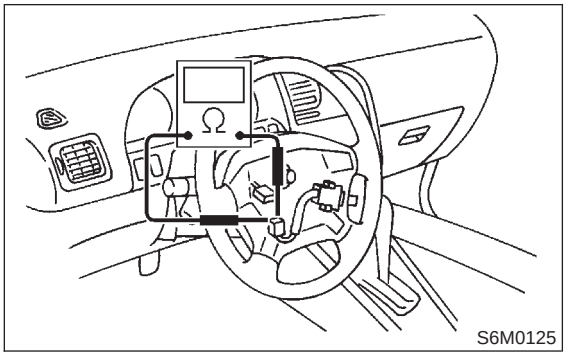
NO : Replace cruise control command switch. <Ref. to 6-2 [W11B3].>

**8E8 : CHECK CRUISE CONTROL COMMAND SWITCH.**

Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation.

***Terminals***

***No. 1 — No. 3:***




CHECK : ***Is resistance less than 10 Ω? (When RESUME/ACCEL switch is ON.)***

YES : Go to step **8E9**.

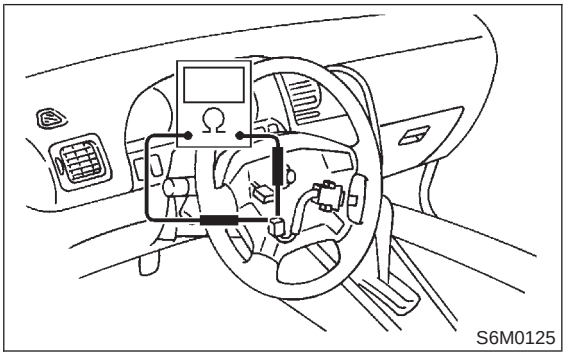
NO : Replace cruise control command switch. <Ref. to 6-2 [W11B3].>

**8E9 : CHECK CRUISE CONTROL COMMAND SWITCH.**

Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation.

***Terminals***

***No. 1 — No. 3:***




CHECK : ***Is resistance more than 1 MΩ? (When RESUME/ACCEL switch is OFF.)***

YES : Go to step **8E10**.

NO : Replace cruise control command switch. <Ref. to 6-2 [W11B3].>

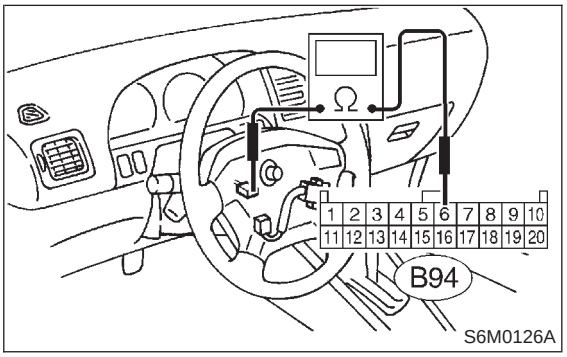
**8E10 : CHECK HARNESS CONNECTOR BETWEEN CRUISE CONTROL COMMAND SWITCH AND CRUISE CONTROL MODULE.**

1) Disconnect connector from cruise control module.

2) Measure resistance of harness connector between cruise control command switch and cruise control module.

***Connector & terminal***

***No. 2 (command switch) — (B94) No. 6:***




CHECK : ***Is resistance less than 10 Ω?***

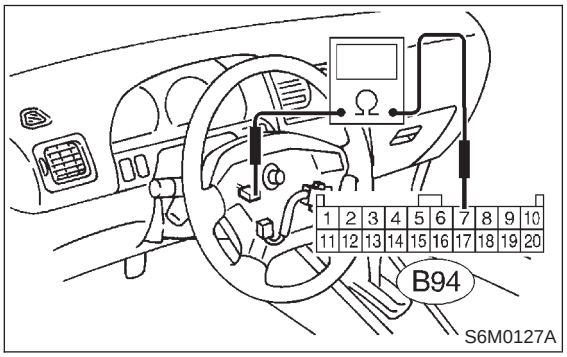
YES : Go to step **8E11**.

NO : Repair or replace wiring harness.

**8E11 : CHECK HARNESS CONNECTOR BETWEEN CRUISE CONTROL COMMAND SWITCH AND CRUISE CONTROL MODULE.**

Measure resistance of harness connector between cruise control command switch and cruise control module.

***Connector & terminal***
***No. 3 (command switch) — (B94) No. 7:***




CHECK : ***Is resistance less than 10 Ω?***
YES : Replace cruise control module. <Ref. to 6-2 [W11B4].>
NO : Repair or replace wiring harness.

**MEMO:**

## F: DIAGNOSTIC CODE 21, 22 AND 23 (VACUUM VALVE, VENT 2 VALVE, VENT 1 VALVE)

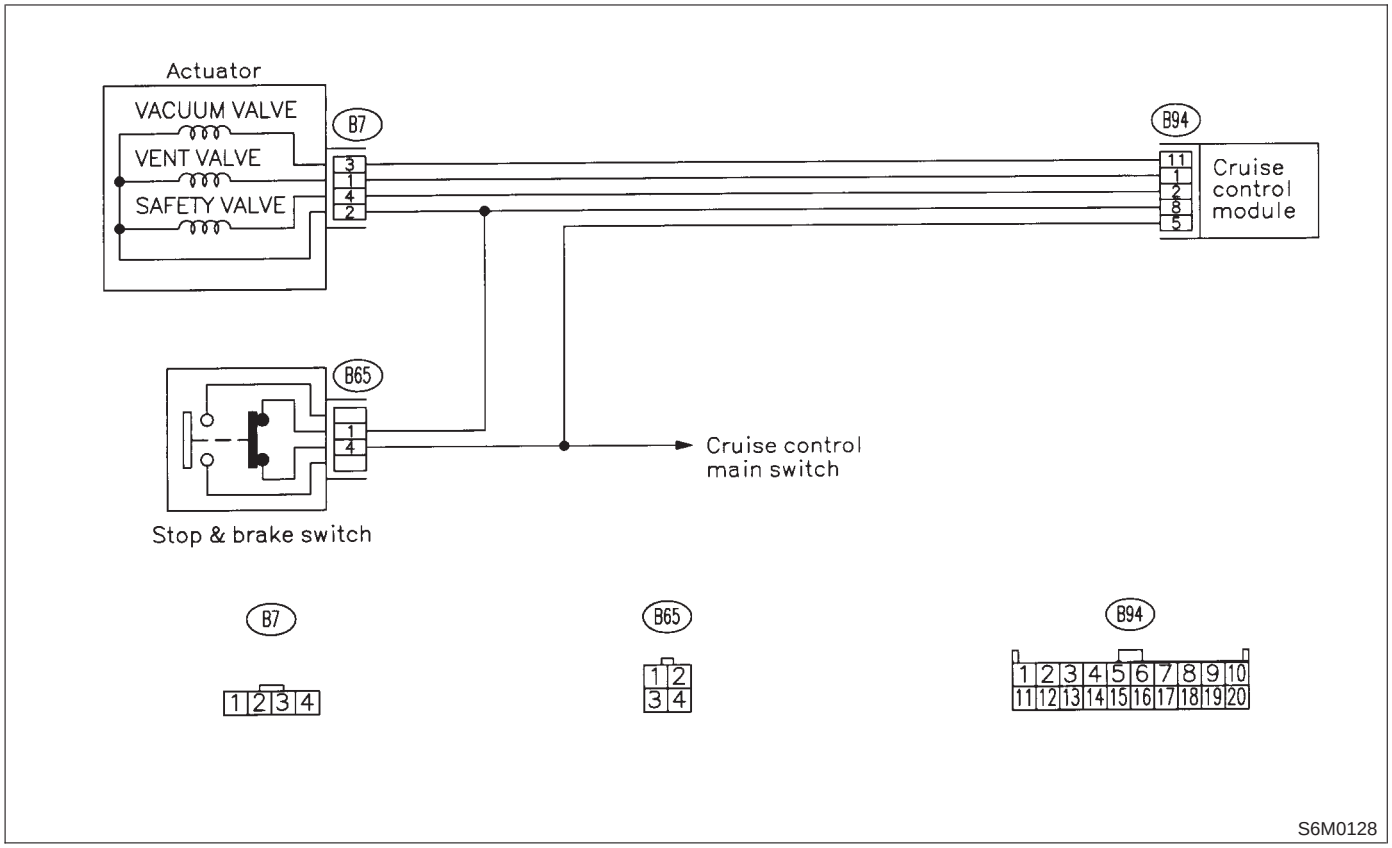
**DIAGNOSIS:**

- Open or poor contact of vacuum valve, vent 2 valve and vent 1 valve.

**TROUBLE SYMPTOM:**

- Cruise control cannot be set. (Cancels immediately.)

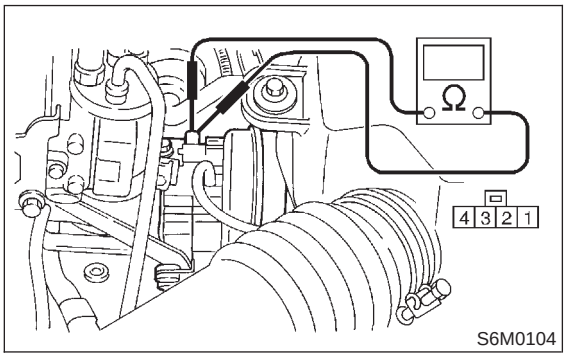
**WIRING DIAGRAM:**



**8F1 : MEASURE RESISTANCE OF VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE.**

1) Disconnect connector from actuator.
2) Measure resistance of vacuum valve, vent 2 valve and vent 1 valve.

***Terminals***
***No. 2 — No. 3:***

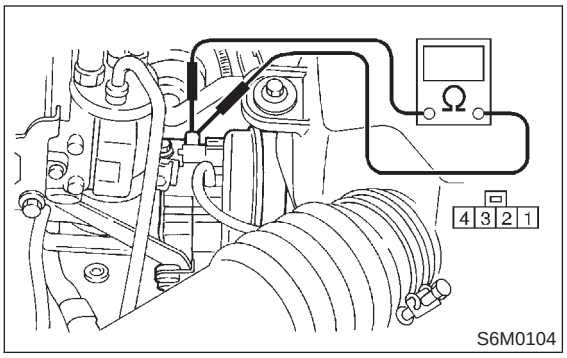



CHECK : ***Is resistance less than 22 Ω?***
YES : Go to step **8F2**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].>

**8F2 : MEASURE RESISTANCE OF VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE.**

Measure resistance of vacuum valve, vent 2 valve and vent 1 valve.

***Terminals***
***No. 2 — No. 1:***

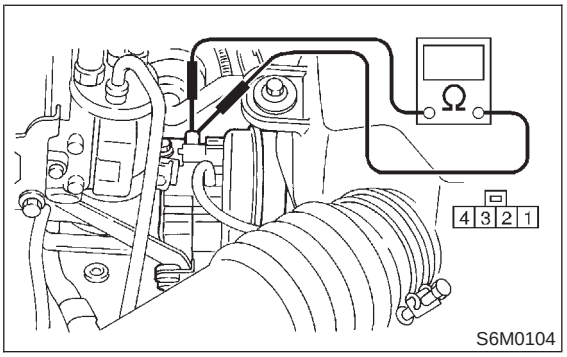



CHECK : ***Is resistance less than 55 Ω?***
YES : Go to step **8F3**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].>

**8F3 : MEASURE RESISTANCE OF VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE.**

Measure resistance of vacuum valve, vent 2 valve and vent 1 valve.

***Terminals***
***No. 2 — No. 4:***

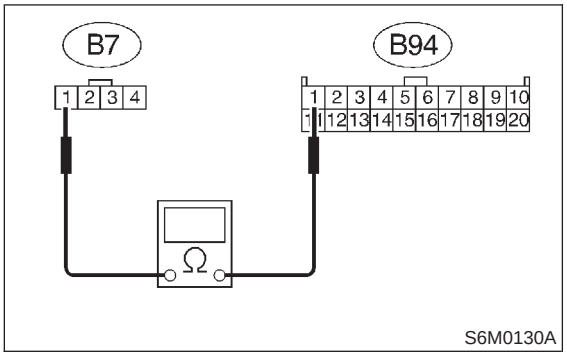



CHECK : ***Is resistance less than 55 Ω?***
YES : Go to step **8F4**.
NO : Replace actuator. <Ref. to 6-2 [W11B1].>

**8F4 : PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR (VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE) AND CRUISE CONTROL MODULE.**

1) Disconnect connector from cruise control module.
2) Measure resistance of harness connector between cruise control module, vacuum valve, vent 2 valve and vent 1 valve.

***Connector & terminal***
***(B7) No. 1 — (B94) No. 1:***

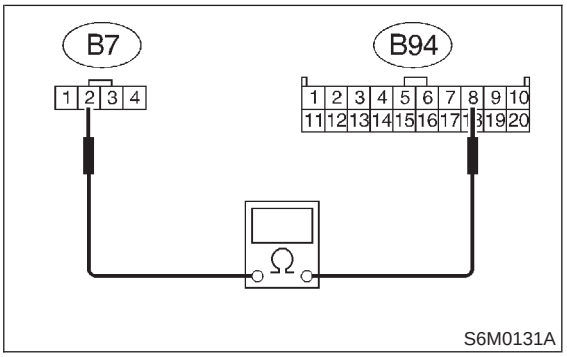



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **8F5**.
NO : Repair or replace wiring harness between actuator <Ref. to 6-2 [W11B1].> and cruise control module <Ref. to 6-2 [W11B4].>.

**8F5 : PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR (VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE) AND CRUISE CONTROL MODULE.**

Measure resistance of harness connector between cruise control module, vacuum valve, vent 2 valve and vent 1 valve.

***Connector & terminal***
***(B7) No. 2 — (B94) No. 8:***

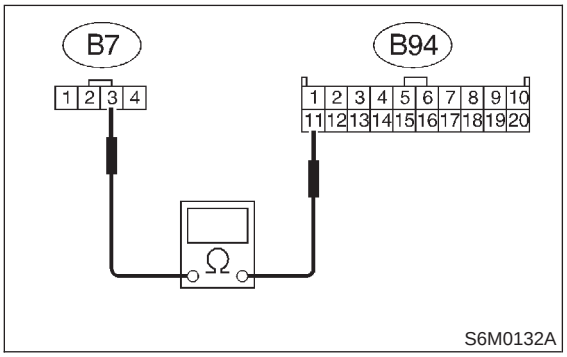



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **8F6**.
NO : Repair or replace wiring harness between actuator <Ref. to 6-2 [W11B1].> and cruise control module <Ref. to 6-2 [W11B4].>.

**8F6 : PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR (VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE) AND CRUISE CONTROL MODULE.**

Measure resistance of harness connector between cruise control module, vacuum valve, vent 2 valve and vent 1 valve.

***Connector & terminal***
***(B7) No. 3 — (B94) No. 11:***

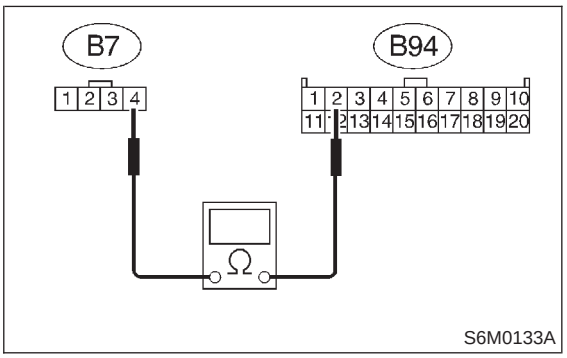



CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **8F7**.
NO : Repair or replace wiring harness between actuator <Ref. to 6-2 [W11B1].> and cruise control module <Ref. to 6-2 [W11B4].>.

**8F7 : PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR (VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE) AND CRUISE CONTROL MODULE.**

Measure resistance of harness connector between cruise control module, vacuum valve, vent 2 valve and vent 1 valve.

***Connector & terminal***
***(B7) No. 4 — (B94) No. 2:***




CHECK : ***Is resistance less than 10 Ω?***
YES : Replace cruise control module.
NO : Repair or replace wiring harness between actuator <Ref. to 6-2 [W11B1].> and cruise control module <Ref. to 6-2 [W11B4].>.

## G: DIAGNOSTIC CODE 25 (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.)

# 9. Diagnostics Chart with Select Monitor

## A: FUNCTION MODE

NOTE:
Applicable select monitor cartridge:
No. 24082AA130

Select the “Cruise Control” system using the select monitor and set the “Current Data Display & Save” mode. The following parameters will then appear on the display.

- Vehicle Speed

The current vehicle speed is shown on the display.

- Stop Lamp Switch

When the brake pedal is depressed, the stop lamp switch shown on the display turns from “OFF” to “ON”.

- Brake Switch

When the brake pedal is depressed, the brake switch shown on the display turns from “OFF” to “ON”.

- “SET/COAST” Switch

When the cruise control command switch is placed in the “SET/COAST” position, the SET/COAST switch shown on the display turns from “OFF” to “ON”.

- “RESUME/ACCEL” Switch

When the cruise control command switch is placed in the “RESUME/ACCEL” position, the RESUME/ACCEL switch shown on the display turns from “OFF” to “ON”.

- Clutch/Inhibitor Switch

When the clutch pedal is depressed, the clutch/inhibitor switch shown on the display turns from “ON” to “OFF”. (MT models)
When the selector lever is moved from the “N” or “P” position to any other position, the clutch/inhibitor switch shown on the display turns from “ON” to “OFF”.