

TRANSMISSION SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

CONTROL SYSTEMS**CS****AUTOMATIC TRANSMISSION****4AT****AUTOMATIC TRANSMISSION
(DIAGNOSTICS)****4AT(diag)****AUTOMATIC TRANSMISSION****5AT****AUTOMATIC TRANSMISSION
(DIAGNOSTICS)****5AT(diag)****MANUAL TRANSMISSION AND
DIFFERENTIAL****5MT****CLUTCH SYSTEM****CL**

CONTROL SYSTEMS



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General Description

CONTROL SYSTEMS

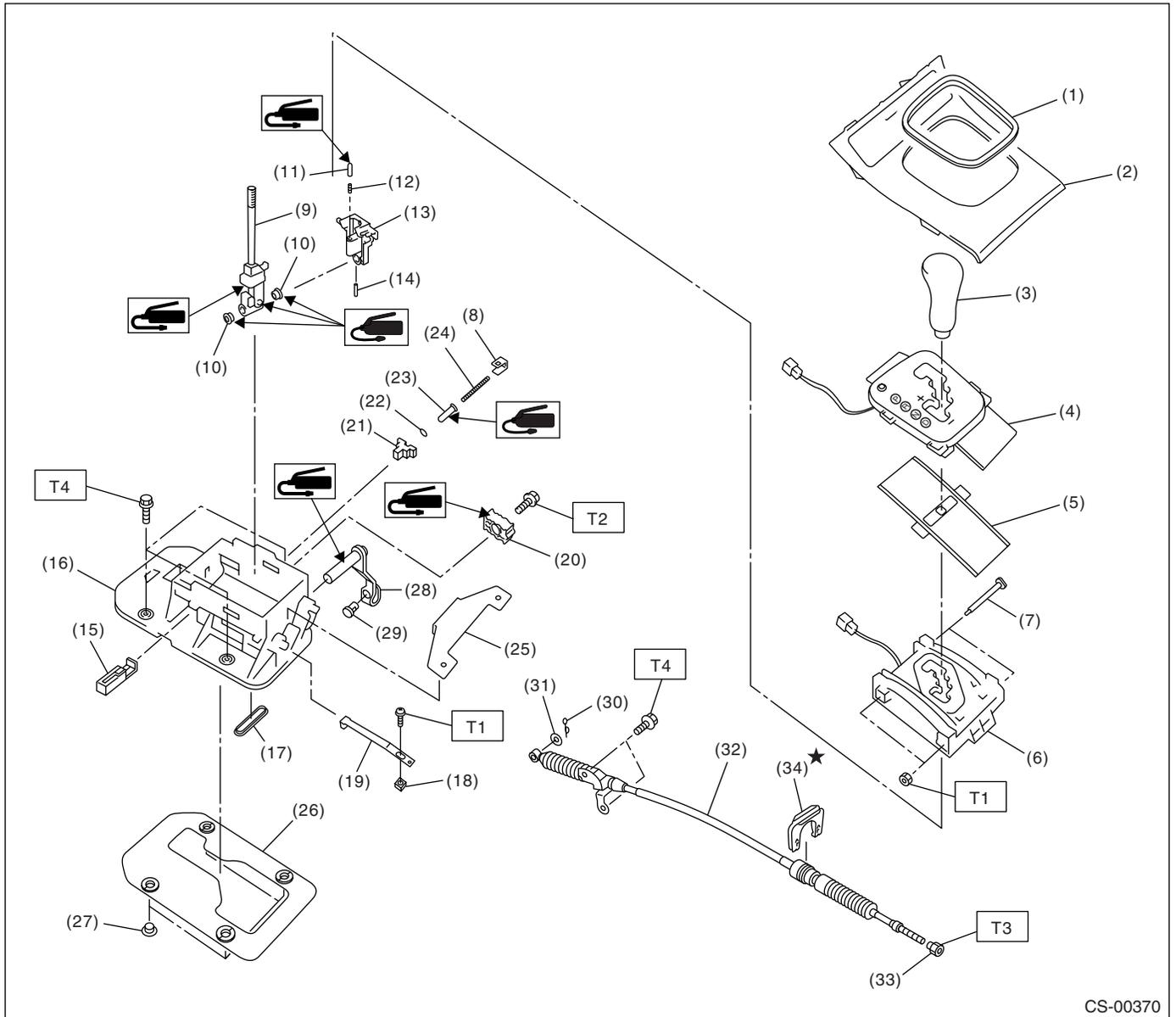
1. General Description

A: SPECIFICATION

Item		Specification
Swing torque of rod against lever	N (kgf, lb)	3.7 (0.38, 0.84) or less

B: COMPONENT

1. AT SELECT LEVER



CS-00370

General Description

CONTROL SYSTEMS

(1) Ring indicator	(15) Shift lock solenoid UNIT	(29) Connector pin
(2) Front cover	(16) Plate	(30) Snap pin
(3) Grip	(17) Grommet	(31) Washer
(4) Indicator cover ASSY	(18) Plate nut	(32) Select cable
(5) Blind	(19) Detent spring	(33) Nut A
(6) Guide plate	(20) Detent plate	(34) Clamp
(7) Pin	(21) Bushing	
(8) Clamp	(22) Packing	
(9) Lever ASSY	(23) Rod	
(10) Bushing	(24) Spring	
(11) Rod	(25) Bracket	
(12) Spring	(26) Packing	
(13) Arm	(27) Spacer	
(14) Spring pin	(28) Arm ASSY	

Tightening torque: N·m (kgf·m, ft·lb)

T1: 2.2 (0.22, 1.62)

T2: 6 (0.61, 4.4)

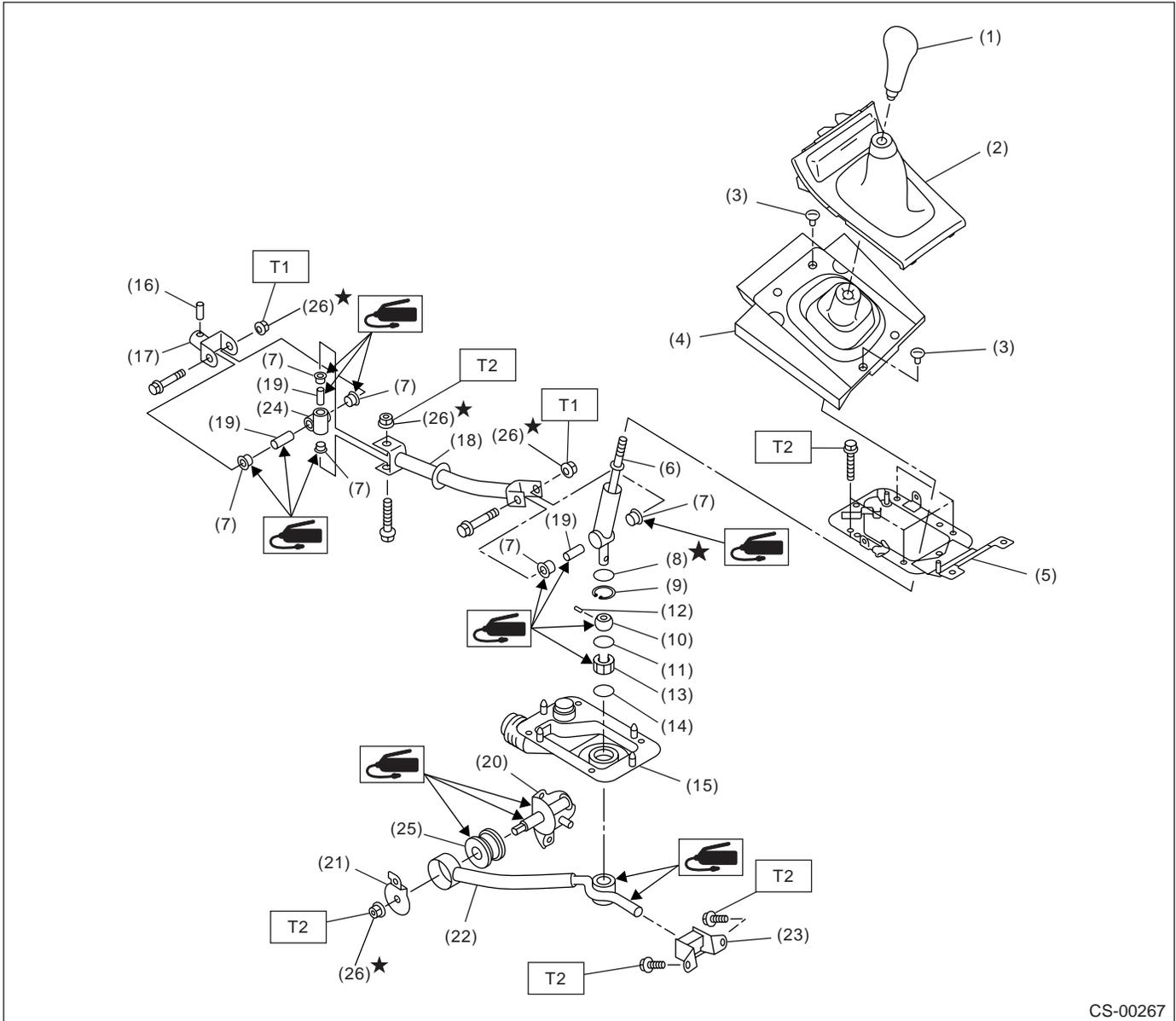
T3: 7.5 (0.76, 5.5)

T4: 18 (1.8, 13.3)

General Description

CONTROL SYSTEMS

2. 5MT GEAR SHIFT LEVER



CS-00267

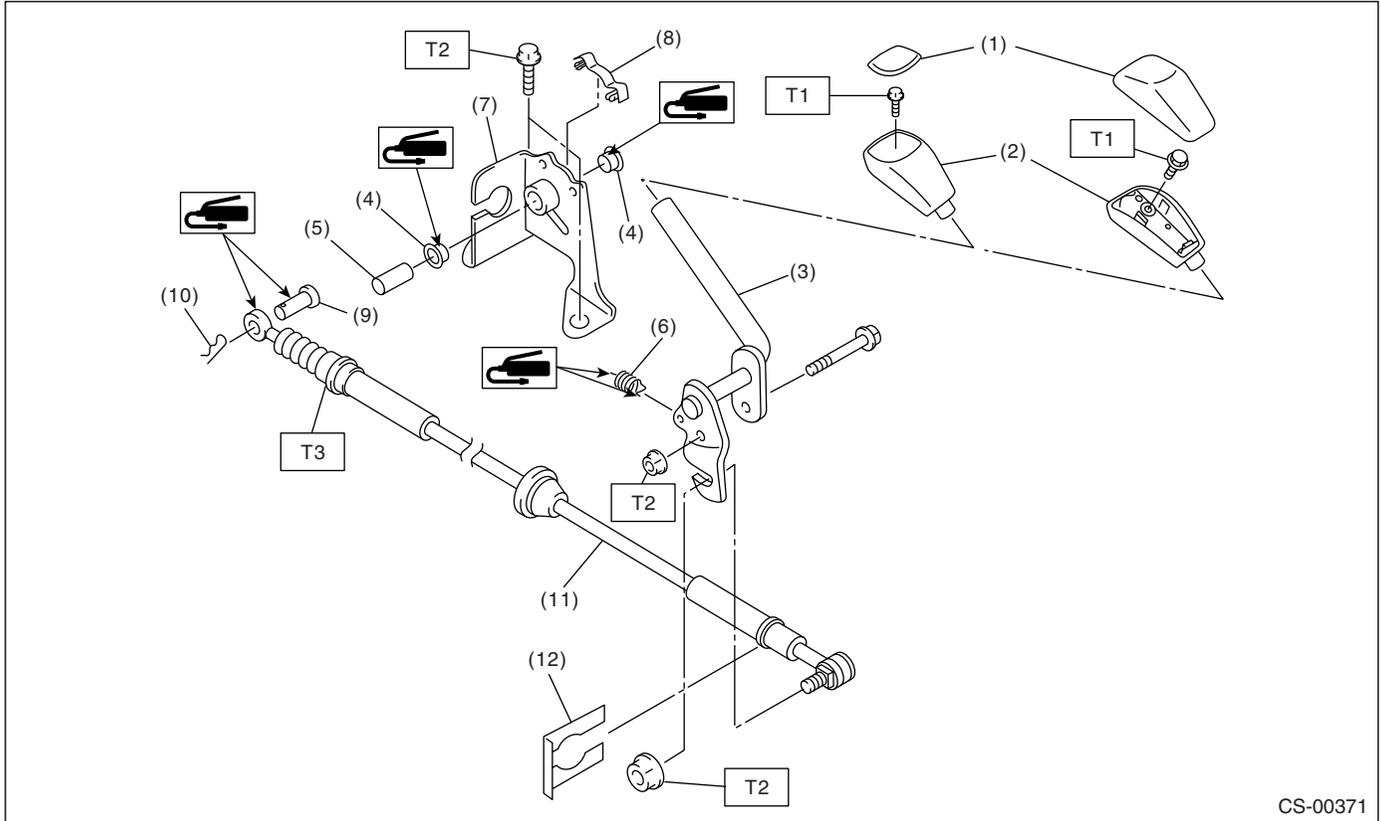
- | | | |
|-----------------------------|-----------------|-----------------------|
| (1) Gear shift knob | (11) O-ring | (21) Washer |
| (2) Front cover ASSY | (12) Spring pin | (22) Stay |
| (3) Clamp | (13) Bushing B | (23) Cushion rubber |
| (4) Boot and insulator ASSY | (14) O-ring | (24) Boss |
| (5) Plate ASSY | (15) Boot | (25) Bushing |
| (6) Lever | (16) Spring pin | (26) Self-locking nut |
| (7) Bushing | (17) Joint | |
| (8) Lock wire | (18) Rod | |
| (9) Snap ring | (19) Spacer | |
| (10) Bushing | (20) Bracket | |

Tightening torque: N·m (kgf·m, ft·lb)

T1: 12 (1.2, 8.9)

T2: 18 (1.8, 13.3)

3. DRIVE SELECT LEVER



CS-00371

- | | |
|----------------|----------------|
| (1) Cover | (7) Plate ASSY |
| (2) Knob | (8) Bushing |
| (3) Lever ASSY | (9) Clevis pin |
| (4) Bushing | (10) Snap pin |
| (5) Spacer | (11) Cable |
| (6) Spring | (12) Clip |

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

T1: 4.5 (0.46, 3.3)

T2: 12 (1.2, 8.9)

T3: 27.5 (2.80, 20.3)

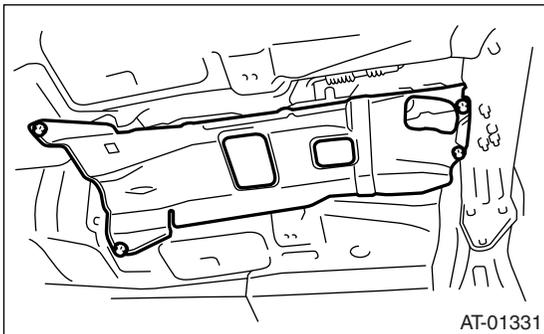
C: CAUTION

- Wear work clothing, including a cap, protective goggles, and protective shoes during operation.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Use SUBARU genuine fluid, grease etc. or equivalent. Do not mix fluid, grease etc. with that of another grade or from other manufacturers.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Apply grease onto sliding or revolution surfaces before installation.
- Before installing O-rings or snap rings, apply sufficient amount of fluid to avoid damage and deformation.
- Before securing a part in a vice, place cushioning material such as wood blocks, aluminum plate, or cloth between the part and vice.
- Before disconnecting electrical connectors, be sure to disconnect the negative terminal from battery.

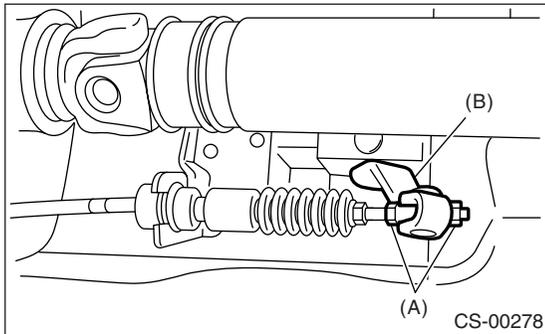
2. Select Lever

A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from battery.
- 3) Shift the select lever to "N" range.
- 4) Lift-up the vehicle.
- 5) Remove the rear exhaust pipe and muffler.
 - SOHC model
<Ref. to EX(H4SO 2.0)-11, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-13, REMOVAL, Muffler.>
 - DOHC non-turbo model
<Ref. to EX(H6DO)-8, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-10, REMOVAL, Muffler.>
 - DOHC turbo model
<Ref. to EX(H4DOTC)-11, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-12, REMOVAL, Muffler.>
- 6) Remove the heat shield cover.

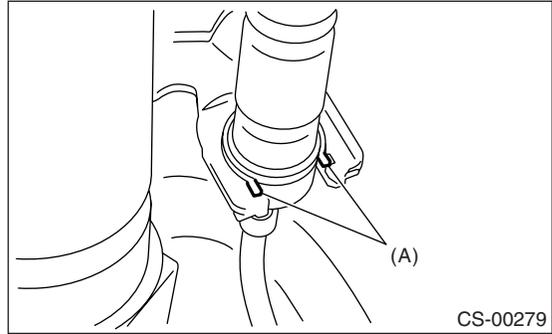


- 7) Remove the cable from arm assembly.



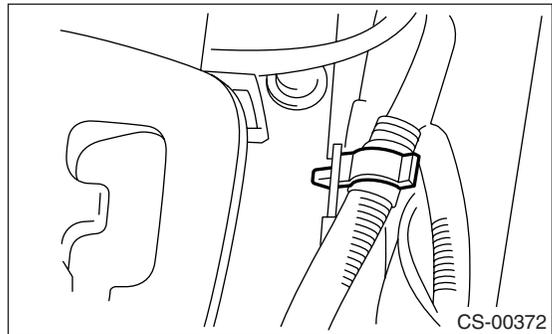
- (A) Adjusting nut
- (B) Arm ASSY

- 8) Raise the pawl of clamp to remove cable.

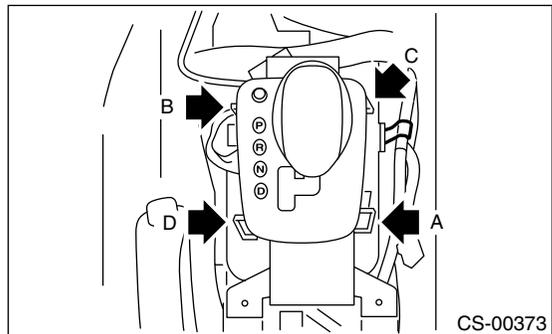


- (A) Claw

- 9) Lower the vehicle.
- 10) Remove the console box. <Ref. to EI-53, REMOVAL, Console Box.>
- 11) Remove the harness clips from bracket.



- 12) Disconnect the connectors, and then remove the four bolts to take out the select lever assembly from vehicle body.



B: INSTALLATION

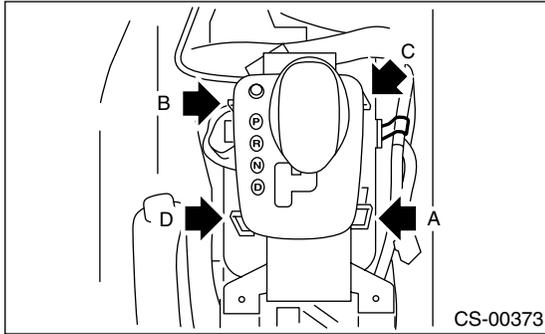
- 1) Set the select lever to vehicle body.
- 2) Tighten the four bolts to install the select lever to vehicle body, and then connect the connector.
 - (1) Temporarily tighten the bolt A.
 - (2) Tighten the bolt B.
 - (3) Tighten the bolt A.
 - (4) Tighten the bolts C and D.

Select Lever

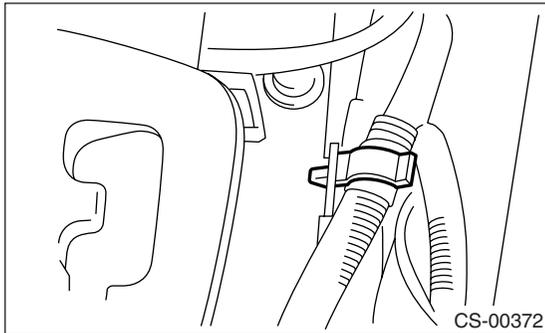
CONTROL SYSTEMS

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



3) Install the harness clips to bracket.



4) Install the console box. <Ref. to EI-53, INSTALLATION, Console Box.>

5) Shift the select lever to "N" range.

6) Lift-up the vehicle.

7) Shift the range select lever to "N" range.

8) Fix the cable to bracket. <Ref. to CS-13, INSTALLATION, Select Cable.>

9) Adjust the select cable position. <Ref. to CS-15, ADJUSTMENT, Select Cable.>

10) After the completion of adjustment, confirm that the select lever operates properly at all range positions.

11) Install the heat shield cover.

12) Install the rear exhaust pipe and muffler.

- SOHC model

<Ref. to EX(H4SO 2.0)-11, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-13, INSTALLATION, Muffler.>

- DOHC non-turbo model

<Ref. to EX(H6DO)-8, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-10, INSTALLATION, Muffler.>

- DOHC turbo model

<Ref. to EX(H4DOTC)-11, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-12, INSTALLATION, Muffler.>

13) Inspect the following items. When malfunctions are found in the inspection, adjust the select cable and inhibitor switch.

NOTE:

Inhibitor switch for 5AT model is not adjustable. <Ref. to CS-15, ADJUSTMENT, Select Cable.> <Ref. to 4AT-52, ADJUSTMENT, Inhibitor Switch.>

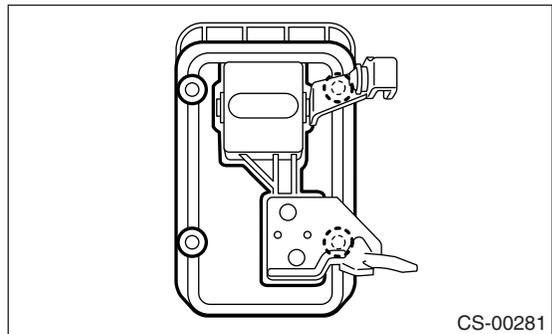
(1) Engine starts when the select lever is in "P" and "N" range, but not in other range.

(2) Back-up light illuminates when the select lever is in "R" range, but not in other range.

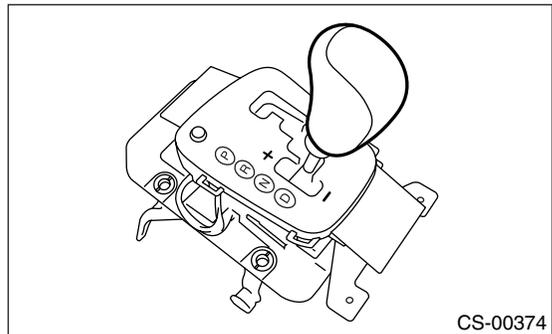
(3) Select lever and indicator positions are matched.

C: DISASSEMBLY

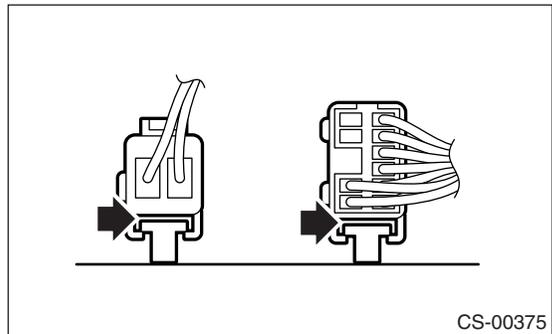
1) Remove the packing and plate.



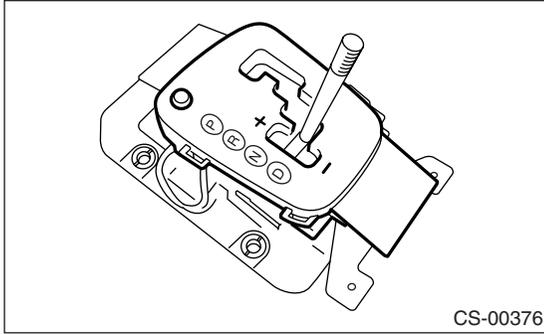
2) Remove the grip.



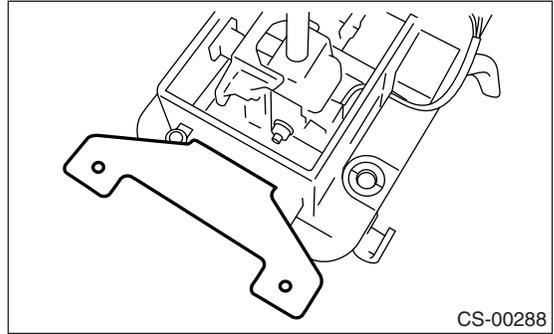
3) Insert a flat-tip screwdriver with thin tip under the connector to disconnect each connector from plate assembly.



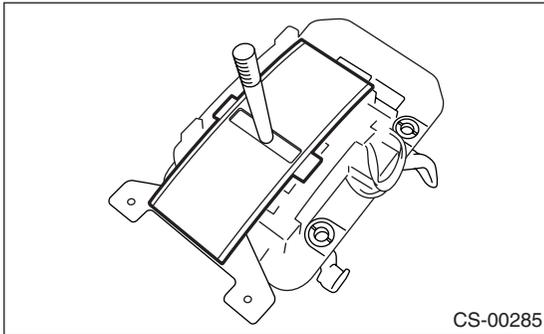
4) Remove the indicator cover.



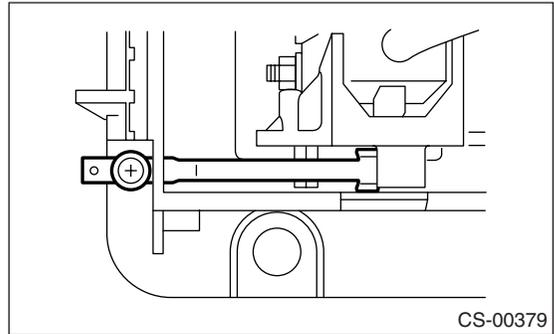
8) Remove the bracket.



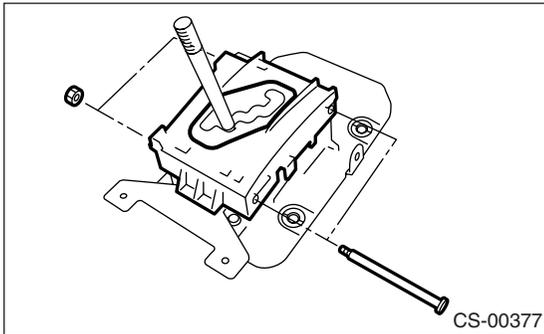
5) Remove the blind.



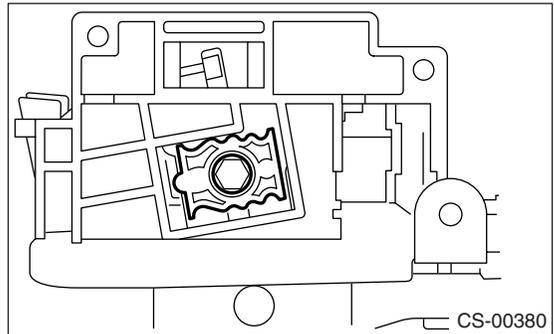
9) Remove the detent spring.



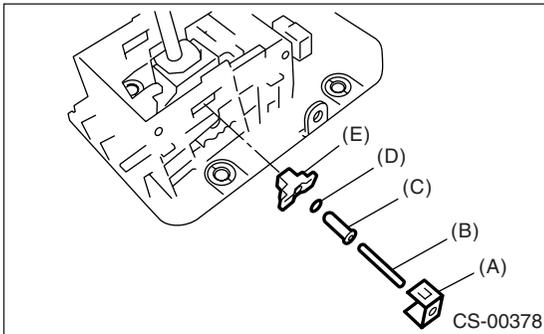
6) Remove the bolts, and then remove the guide plate.



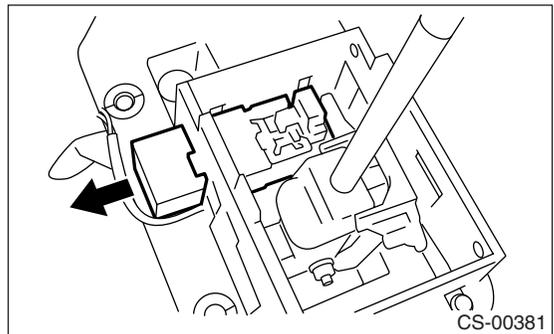
10) Remove the detent plate.



7) Remove the clamp, spring, rod, packing and bushing.



11) Remove the shift lock solenoid assembly.

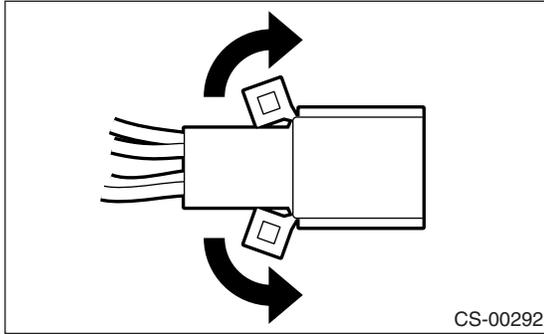


- (A) Clamp
- (B) Spring
- (C) Rod
- (D) Bushing
- (E) Plate

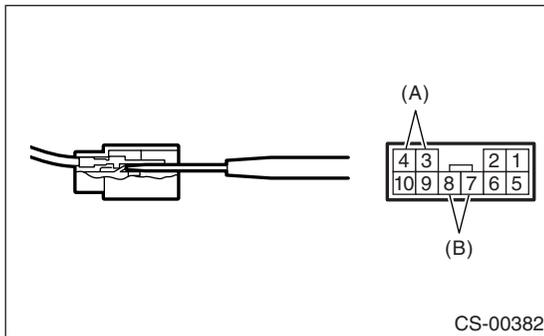
Select Lever

CONTROL SYSTEMS

12) Raise the connector pawl.

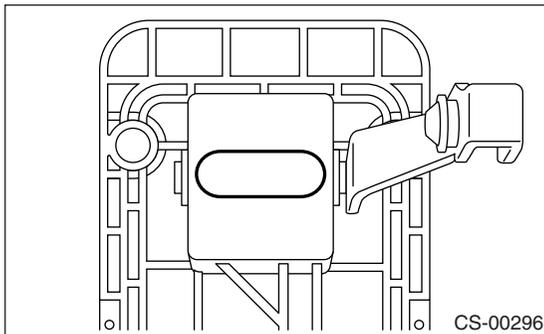


13) Use a flat-tip screwdriver with thin tip to disconnect the connectors from terminals of SPORT mode switch, shift lock solenoid assembly.

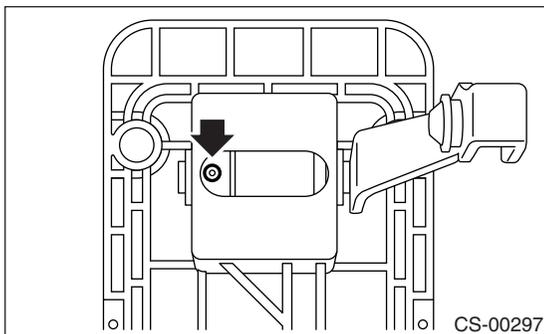


- (A) Shift lock solenoid terminal
- (B) SPORT mode switch terminal

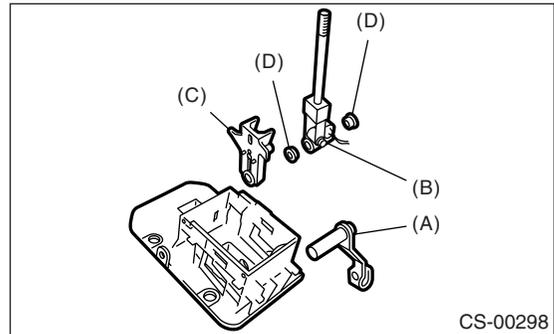
14) Remove the grommet.



15) Remove the spring pin.

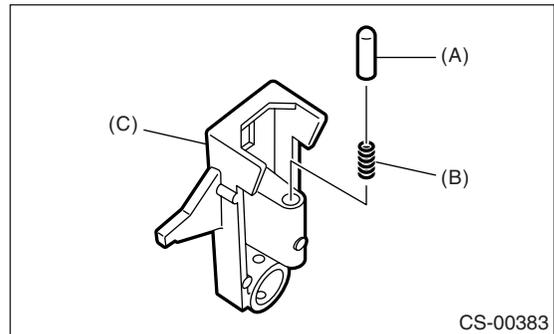


16) Pull out the arm assembly, and then remove the select lever assembly to remove the arm bracket and bushing.



- (A) Arm ASSY
- (B) Select lever ASSY
- (C) Arm bracket
- (D) Bushing

17) Remove the rod and spring from arm bracket.



- (A) Rod
- (B) Spring
- (C) Arm bracket

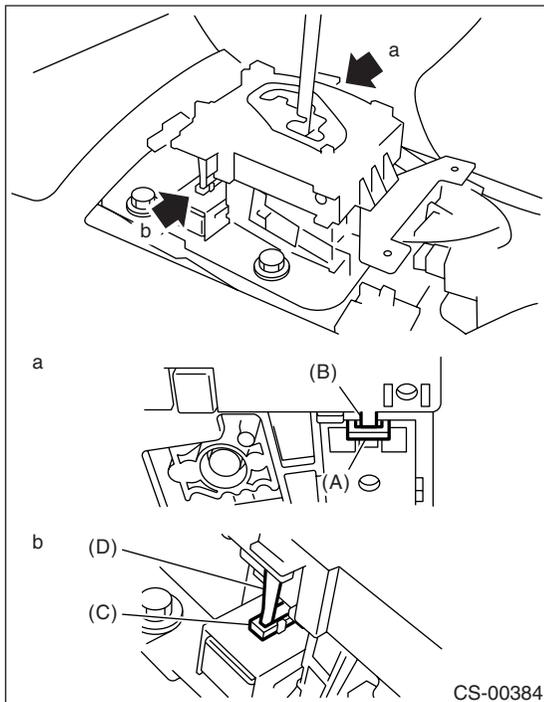
D: ASSEMBLY

- 1) Clean all the parts before assembly.
- 2) Apply grease [SUNLIGHT 2 (Part No. 003602010) or equivalent] to each parts. <Ref. to CS-2, AT SELECT LEVER, COMPONENT, General Description.>
- 3) Assemble in the reverse order of disassembly.

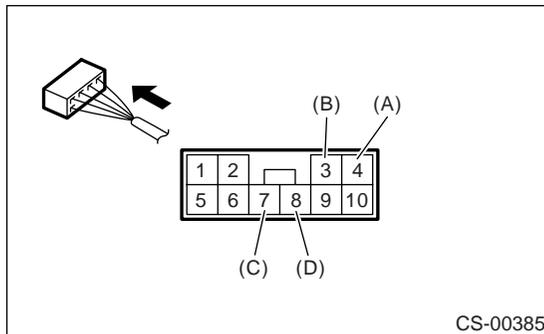
NOTE:

- When installing the guide plate, shift the select lever to "D" range (normal mode position), care should be taken in the following points.
 - Insert the protrusion (B) of guide plate into the hole of shift lock solenoid assembly (A).

- Insert the link (D) of shift lock release into the link (C) of shift lock solenoid assembly.



- Connect the switch and solenoid terminal to connector.



- (A) Shift lock solenoid (Color code: Blue and Red)
- (B) Shift lock solenoid (Color code: Black)
- (C) SPORT mode switch (Color code: White)
- (D) SPORT mode switch (Color code: Black)

4) After completion of installation, shift the select lever from “P” range to “D” range, then check whether the indicator and select lever matches, whether the pointer and position mark matches and what the operating force is.

E: INSPECTION

- 1) Inspect the removed parts by comparing with new ones for deformation, damage and wear. Repair or replace if defective.
- 2) Confirm the select lever operating condition before assembly. Normal if it operates smoothly.

3. Select Cable

A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Shift the select lever to "N" range.
- 3) Disconnect the ground cable from battery.
- 4) Lift-up the vehicle.
- 5) Remove the front, center and rear exhaust pipes and muffler. (SOHC and DOHC non-turbo model)

- SOHC model

<Ref. to EX(H4SO 2.0)-7, REMOVAL, Front Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-10, REMOVAL, Center Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-11, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-13, REMOVAL, Muffler.>

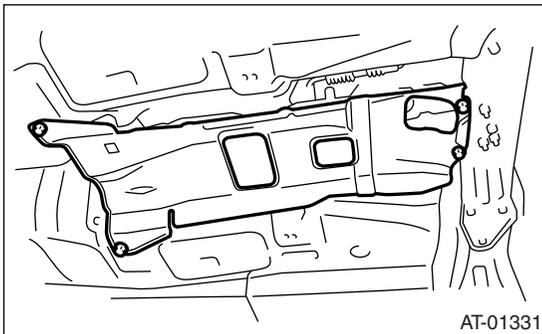
- DOHC non-turbo model

<Ref. to EX(H6DO)-5, REMOVAL, Front Exhaust Pipe.> <Ref. to EX(H6DO)-8, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-10, REMOVAL, Muffler.>

- 6) Remove the center and rear exhaust pipe and muffler. (DOHC turbo model)

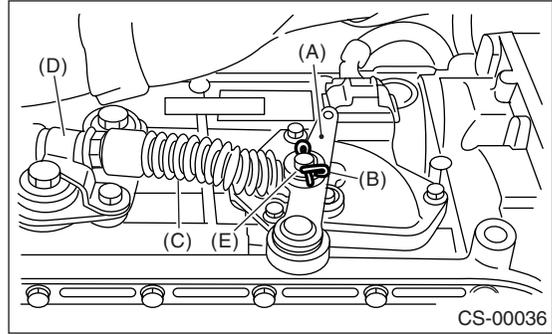
<Ref. to EX(H4DOTC)-6, REMOVAL, Center Exhaust Pipe.> <Ref. to EX(H4DOTC)-11, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-12, REMOVAL, Muffler.>

- 7) Remove the heat shield cover.



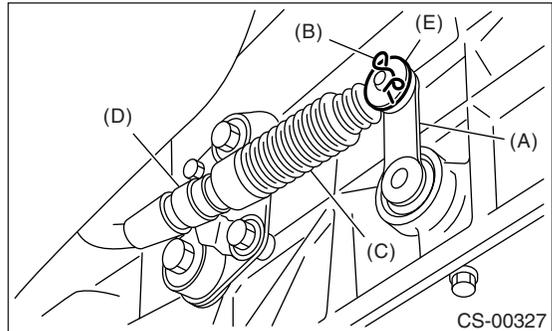
- 8) Remove the snap pin and washer from range select lever.

- 4AT



- (A) Range select lever
- (B) Snap pin
- (C) Select cable
- (D) Bracket
- (E) Washer

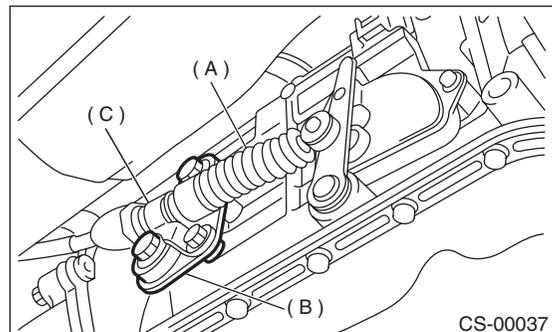
- 5AT



- (A) Range select lever
- (B) Snap pin
- (C) Select cable
- (D) Bracket
- (E) Washer

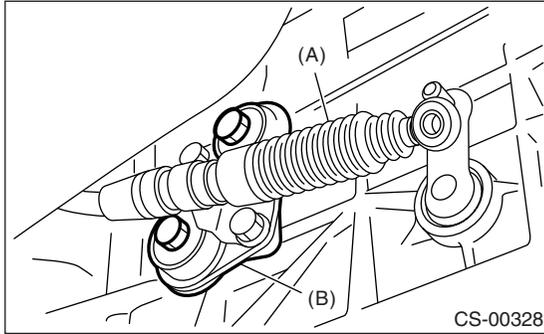
- 9) Remove the plate assembly from transmission case.

- 4AT



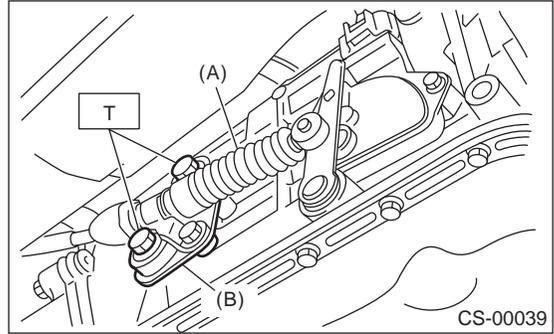
- (A) Select cable
- (B) Plate ASSY
- (C) Bracket

• 5AT



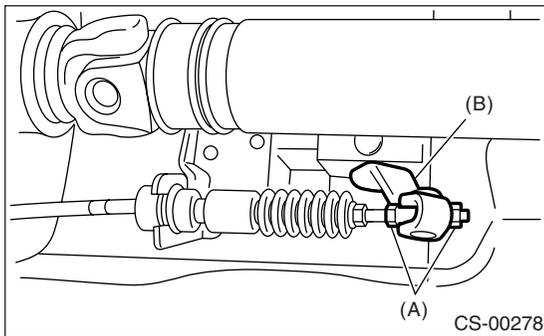
- (A) Select cable
- (B) Plate ASSY

• 4AT



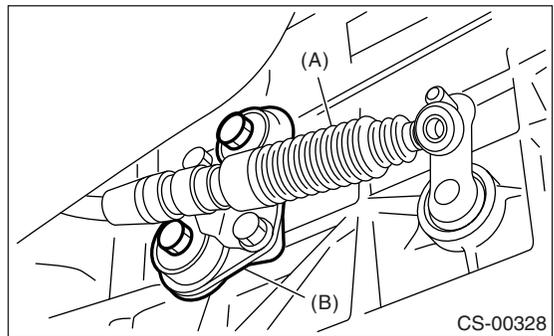
- (A) Select cable
- (B) Plate ASSY

10) Disconnect the cable from arm assembly.



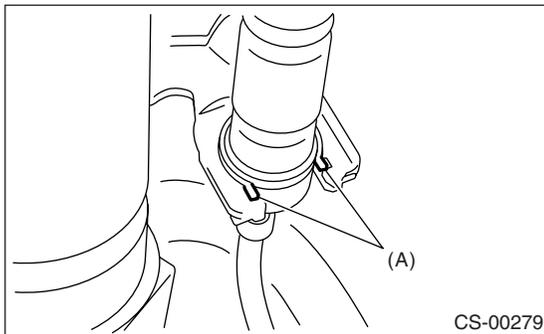
- (A) Adjusting nut
- (B) Arm ASSY

• 5AT



- (A) Select cable
- (B) Plate ASSY

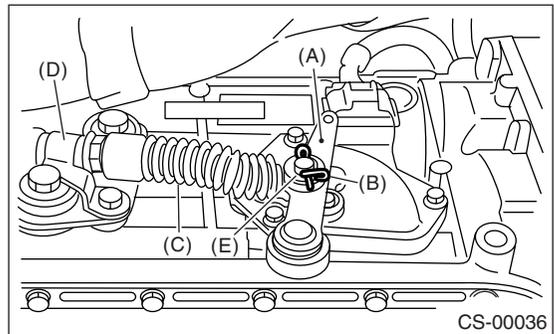
11) Raise the pawl of clamp to remove the cable from bracket.



- (A) Pawl

4) Install the washer and snap pin to range select lever.

• 4AT



- (A) Range select lever
- (B) Snap pin
- (C) Select cable
- (D) Bracket
- (E) Washer

12) Remove the select cable from plate assembly.

B: INSTALLATION

1) Install the select cable to plate assembly.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)

2) Install the select cable to range select lever.

3) Install the plate assembly to transmission.

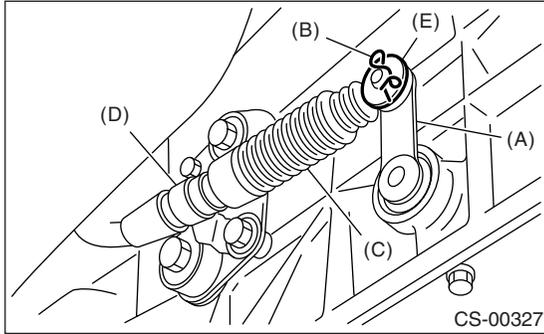
Tightening torque:

T: 24.5 N·m (2.5 kgf-m, 18.1 ft-lb)

Select Cable

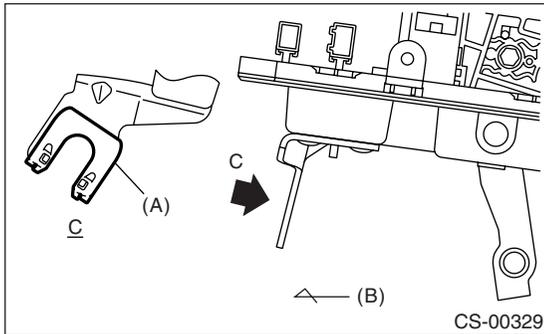
CONTROL SYSTEMS

• 5AT



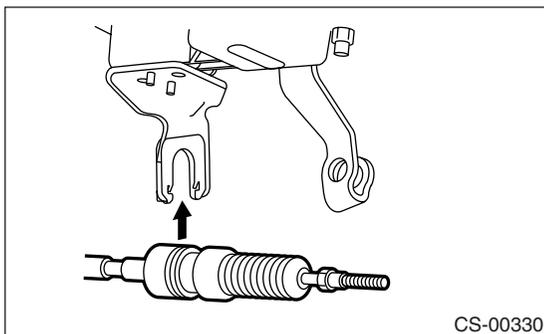
- (A) Range select lever
- (B) Snap pin
- (C) Select lever
- (D) Bracket
- (E) Washer

5) Install a new clamp paying attention to the installing direction.



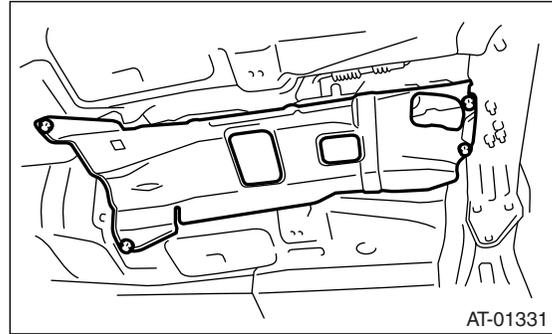
- (A) Clamp
- (B) Forward

6) Insert the tip of inner cable into connector hole of the select lever, and fix the cable to bracket.



7) Shift the select lever to "N" range, and then adjust the select cable position. <Ref. to CS-15, ADJUSTMENT, Select Cable.>

8) Install the heat shield cover.



9) Install the front, center and rear exhaust pipes and muffler. (SOHC and DOHC non-turbo model)

• SOHC model

<Ref. to EX(H4SO 2.0)-8, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-10, INSTALLATION, Center Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-11, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-13, INSTALLATION, Muffler.>

• DOHC non-turbo model

<Ref. to EX(H6DO)-6, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H6DO)-8, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-10, INSTALLATION, Muffler.>

10) Install the center and rear exhaust pipe and muffler. (DOHC turbo model)

<Ref. to EX(H4DOTC)-7, INSTALLATION, Center Exhaust Pipe.> <Ref. to EX(H4DOTC)-11, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-12, INSTALLATION, Muffler.>

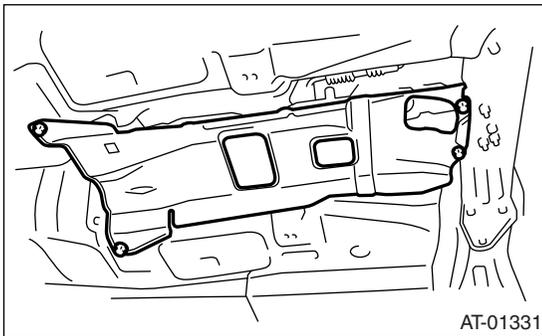
C: INSPECTION

Check the removed cable and replace or adjust if damaged, rusty or malfunctioning.

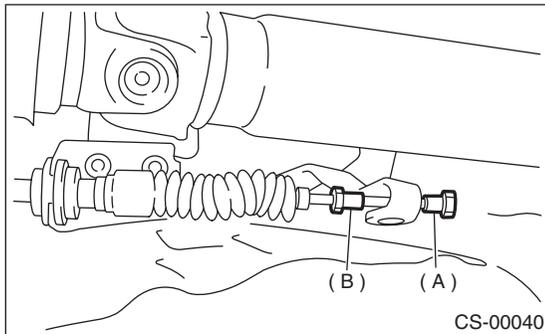
- 1) Check for smooth operation of the cable.
- 2) Check the inner cable for damage and rust.
- 3) Check the outer cable for damage, bends and cracks.
- 4) Check the boot for damage, cracks and deterioration.
- 5) Move the select lever from "P" to "D" range. Check the existence of feel to contact the detents in each range. If the detents cannot be felt or the position pointer is improperly aligned, adjust the cable.
- 6) Check if the starter motor rotates when the select lever is set to "P" range.
- 7) Check the back-up light illumination when the select lever is in "R" range.
- 8) Check the parking lock operation when the select lever is in "P" range.

D: ADJUSTMENT

- 1) Shift the select lever to "N" range.
- 2) Remove the rear exhaust pipe and muffler.
 - SOHC model
<Ref. to EX(H4SO 2.0)-11, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-13, REMOVAL, Muffler.>
 - DOHC non-turbo model
<Ref. to EX(H6DO)-8, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-10, REMOVAL, Muffler.>
 - DOHC turbo model
<Ref. to EX(H4DOTC)-11, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-12, REMOVAL, Muffler.>
- 3) Remove the heat shield cover.

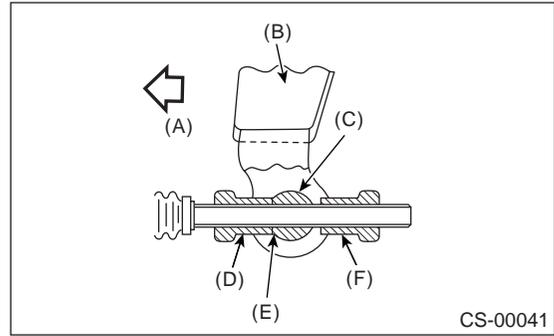


- 4) Loosen the adjusting nuts on both sides.



- (A) Adjusting nut A
- (B) Adjusting nut B

- 5) Turn the adjusting nut B until it lightly touches the connector.

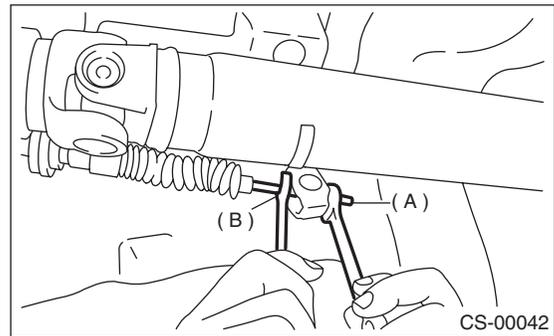


- (A) Forward side
- (B) Select lever
- (C) Connector
- (D) Adjusting nut B
- (E) Contact point
- (F) Adjusting nut A

- 6) Set a spanner wrench to adjusting nut B so that it does not rotate, and then tighten the adjusting nut A.

Tightening torque:

7.5 N·m (0.76 kgf·m, 5.5 ft·lb)



- (A) Adjusting nut A
- (B) Adjusting nut B

- 7) After the completion of adjustment, confirm that the select lever operates normally at all ranges.
- 8) Install in the reverse order of removal.

4. AT Steering Shift Switch

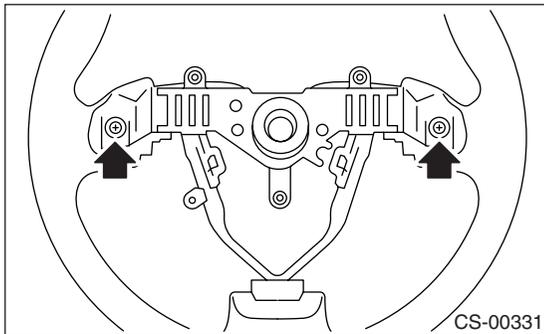
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Set the tire to the straight-ahead position.
- 3) Remove the airbag module. <Ref. to AB-14, REMOVAL, Driver's Airbag Module.>

WARNING:

With the airbag module equipped, always refer to "Airbag System" when performing the airbag module repair service. <Ref. to AB-14, INSPECTION, Driver's Airbag Module.>

- 4) Remove the steering wheel. <Ref. to PS-20, REMOVAL, Steering Wheel.>
- 5) Remove the cover from steering wheel.
- 6) Remove each one of AT steering shift switch mounting screw from the LH and RH side.

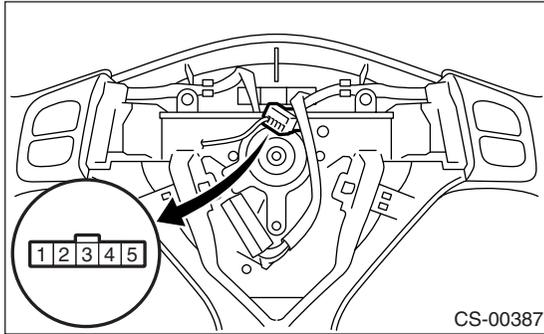


- 7) Remove the steering shift switch.

B: INSTALLATION

- 1) Clean all parts before installation.
- 2) Install in the reverse order of removal.
- 3) After completion of installation, set the select lever to SPORT shift side and confirm that manual mode "1" illuminates on the combination meter.
- 4) Operate the steering shift switch and confirm that the "2" illuminates on combination meter.

C: INSPECTION



Step	Check	Yes	No
1 SHIFT-UP SWITCH CONTINUITY CHECK. 1) Press the shift-up switch. 2) Measure the resistance between shift switch connector terminals. Terminals No. 4 — No. 3:	Is the resistance less than 10 Ω ?	Go to step 2.	Replace the steering shift switch.
2 SHIFT-DOWN SWITCH CONTINUITY CHECK. 1) Press the shift-down switch. 2) Measure the resistance between shift switch connector terminals. Terminals No. 3 — No. 2:	Is the resistance less than 10 Ω ?	Go to step 3.	Replace the steering shift switch.
3 CHECK SHIFT SWITCH INSULATION. 1) Not to operate the shift switch. 2) Measure the resistance between shift switch connector terminals. Terminals No. 3 — No. 2: No. 3 — No. 4:	Is the resistance 1 M Ω ?	Steering shift switch is normal.	Replace the steering shift switch.

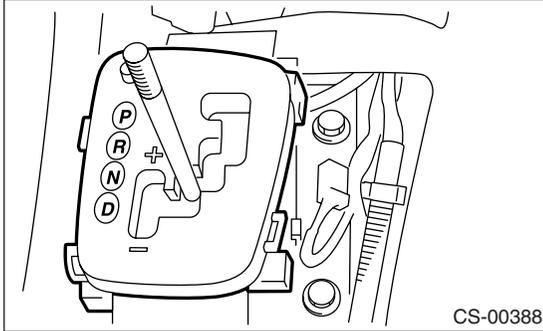
Shift Lock Solenoid

CONTROL SYSTEMS

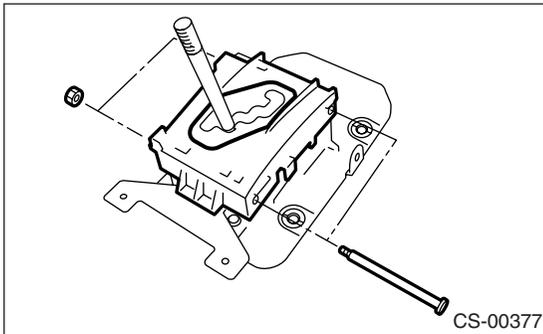
5. Shift Lock Solenoid

A: REMOVAL

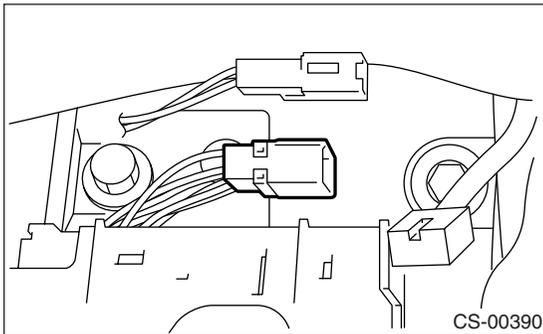
- 1) Remove the console box. <Ref. to EI-53, REMOVAL, Console Box.>
- 2) Disconnect the connector.
- 3) Shift the select lever to "N" range.
- 4) Remove the grip.
- 5) Remove the indicator cover.



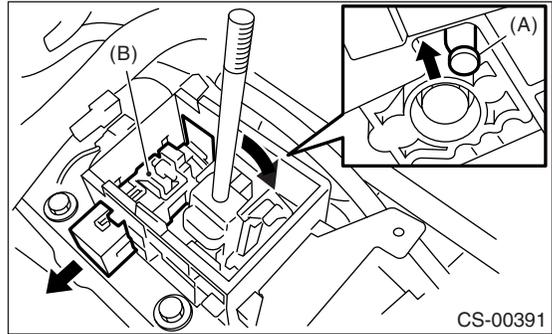
- 6) Remove the blind.
- 7) Remove the bolts, and then remove the guide plate.



- 8) Remove the connector from the plate assembly using a flat-tip screwdriver.

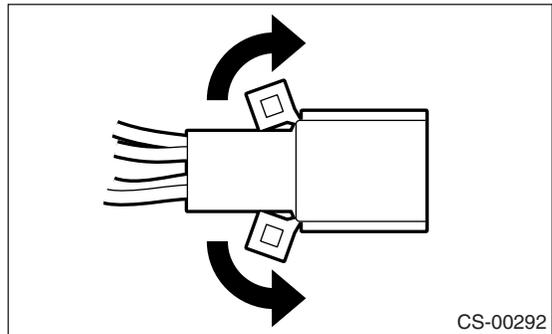


- 9) Press the select lever backward while lifting up the detent spring and remove the shift lock solenoid assembly.

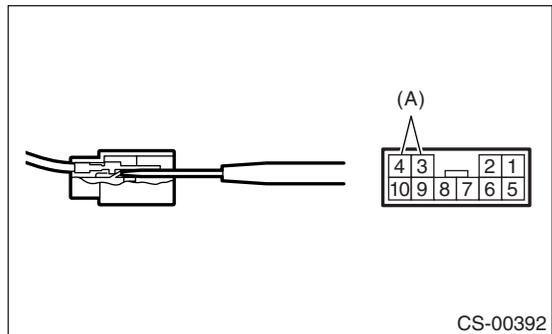


- (A) Detent spring
- (B) Shift lock solenoid ASSY

- 10) Raise the connector pawl.



- 11) Use a flat-tip screwdriver with thin tip to disconnect the connectors from terminals of "P" range switch and shift lock solenoid assembly.



- (A) Shift lock solenoid terminal

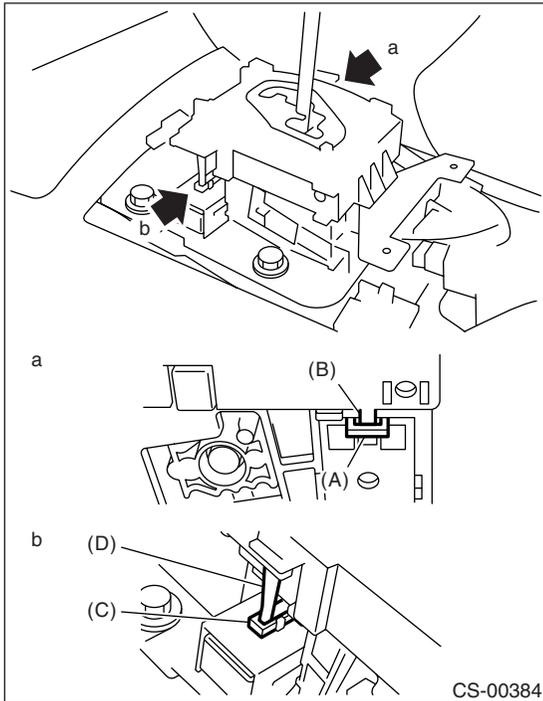
B: INSTALLATION

Install in the reverse order of removal.

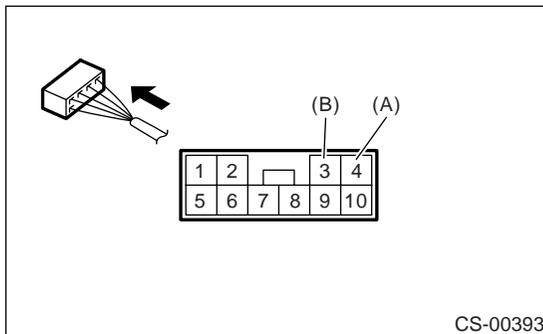
NOTE:

- Refer to COMPONENT for each tightening torque. <Ref. to CS-2, COMPONENT, General Description.>
- When installing the guide plate, shift the select lever to "D" range (normal mode position), care should be taken in the following points.

- Insert the protrusion (B) of guide plate into the hole of shift lock solenoid assembly (A).
- Insert the link (D) of shift lock release into the link (C) of shift lock solenoid assembly.



- Connect the switch and solenoid terminal to connector.



- (A) Shift lock solenoid (Color code: Blue and Red)
- (B) Shift lock solenoid (Color code: Black)

Shift Lock Solenoid

CONTROL SYSTEMS

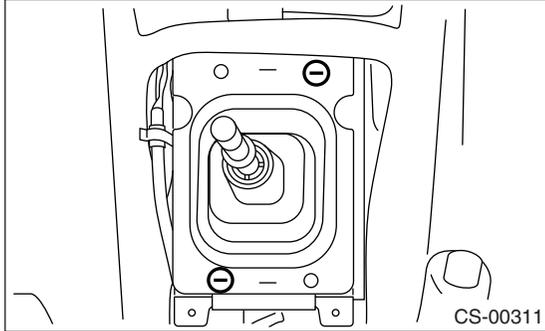
C: INSPECTION

Step	Check	Yes	No
1 CHECK SHIFT LOCK SOLENOID. Measure the resistance of shift lock solenoid connector terminals. <i>Terminals</i> No. 4 — No. 3:	Is the resistance 7 — 18 Ω ?	Go to step 2.	Replace the shift lock solenoid.
2 CHECK SHIFT LOCK SOLENOID. Connect the battery to shift lock solenoid connector terminal, and then operate the solenoid. <i>Terminals</i> No. 3 (+) — No. 4 (-):	Does the shift lock solenoid operate normally?	Normal operation	Replace the shift lock solenoid.

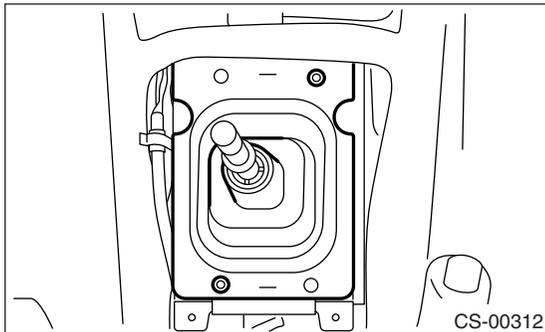
6. MT Gear Shift Lever

A: REMOVAL

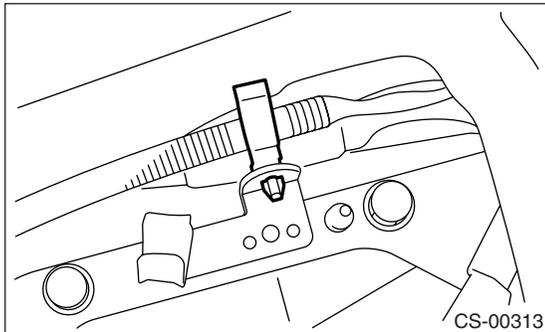
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from battery.
- 3) Remove the gear shift knob.
- 4) Remove the console box. <Ref. to EI-53, REMOVAL, Console Box.>
- 5) Remove the clamp.



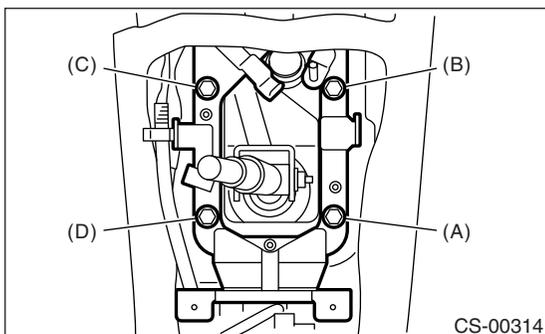
- 6) Remove the boot and insulator assembly.



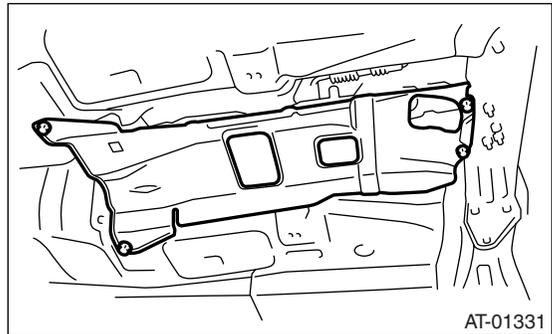
- 7) Remove the harness clamp from plate.



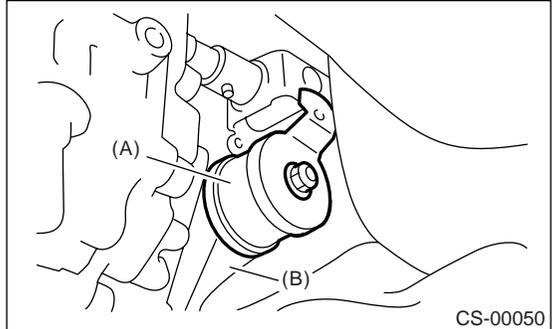
- 8) Remove the plate assembly from vehicle body.



- 9) Lift-up the vehicle.
- 10) Remove the rear exhaust pipe and muffler.
 - SOHC model
<Ref. to EX(H4SO 2.0)-11, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-13, REMOVAL, Muffler.>
 - DOHC non-turbo model
<Ref. to EX(H6DO)-8, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-10, REMOVAL, Muffler.>
 - DOHC turbo model
<Ref. to EX(H4DOTC)-11, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-10, REMOVAL, Joint Pipe.>
- 11) Remove the heat shield cover.

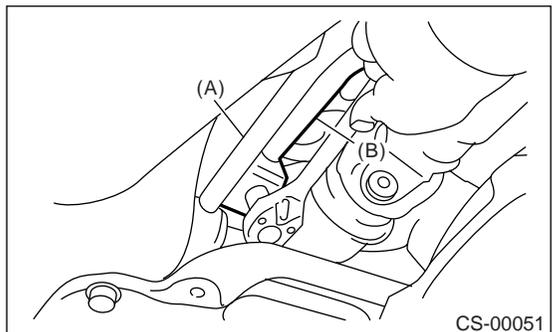


- 12) Remove the stay from transmission bracket.



- (A) Stay
- (B) Transmission bracket

- 13) Remove the rod from joint.

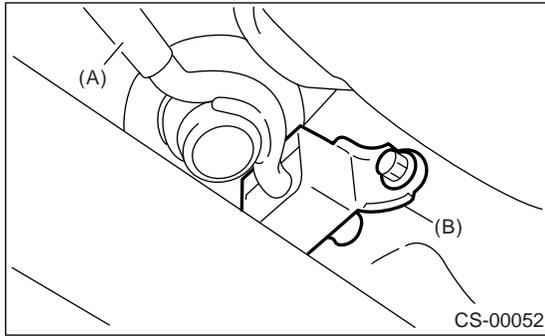


- (A) Stay
- (B) Rod

MT Gear Shift Lever

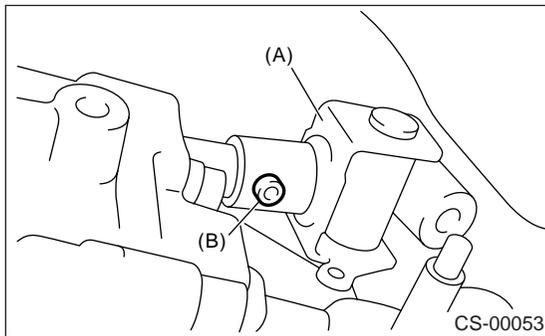
CONTROL SYSTEMS

14) Remove the cushion rubber from vehicle body.



- (A) Stay
- (B) Cushion rubber

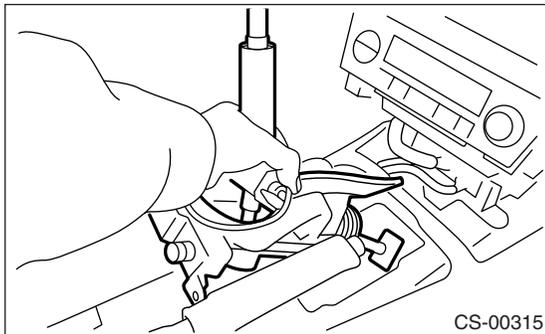
15) Extract the spring pin and remove the joint.



- (A) Joint
- (B) Spring pin

16) Lower the vehicle.

17) Remove the gear shift lever.

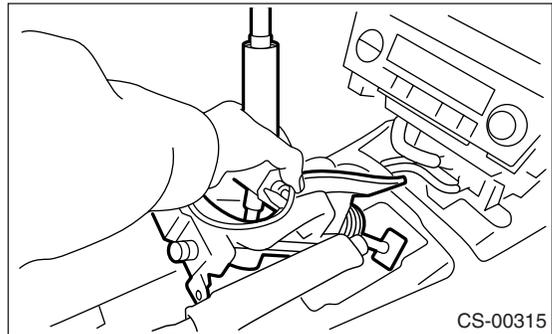


B: INSTALLATION

- 1) Install the joint to transmission and secure with spring pin.
- 2) Insert the gear shift lever from the room side.

NOTE:

Insert the rod and the stay, and then temporarily set them onto transmission mount.

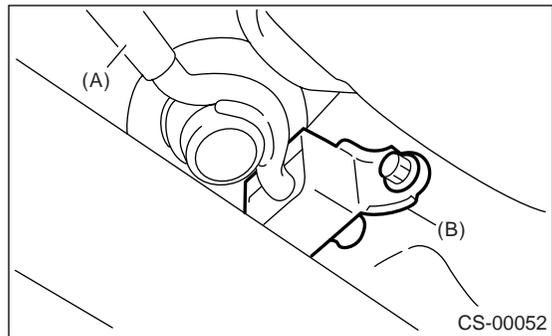


3) Lift-up the vehicle.

4) Mount the cushion rubber on the vehicle body.

Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)

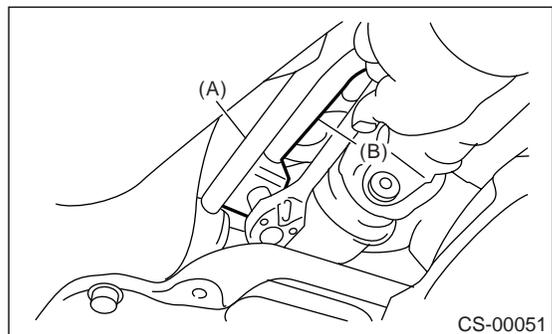


- (A) Stay
- (B) Cushion rubber

5) Using new self-locking nuts, connect the rod to the joint.

Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)

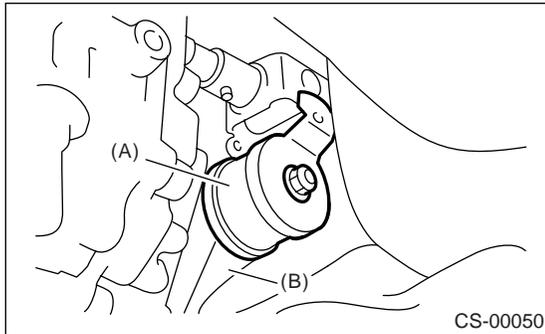


- (A) Stay
- (B) Rod

6) Using new self-locking nuts, connect the stay to transmission bracket.

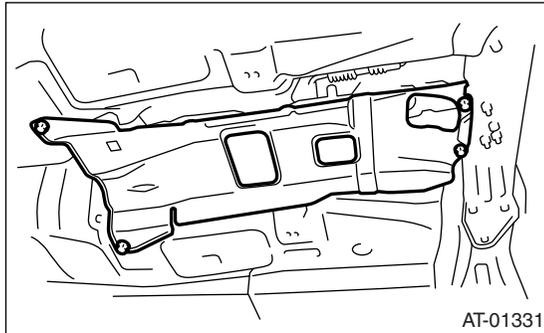
Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)



- (A) Stay
- (B) Transmission bracket

7) Install the heat shield cover.



8) Install the rear exhaust pipe and muffler.

- SOHC model
<Ref. to EX(H4SO 2.0)-11, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4SO 2.0)-13, INSTALLATION, Muffler.>
- DOHC non-turbo model
<Ref. to EX(H6DO)-8, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-10, INSTALLATION, Muffler.>
- DOHC turbo model
<Ref. to EX(H4DOTC)-11, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-12, INSTALLATION, Muffler.>

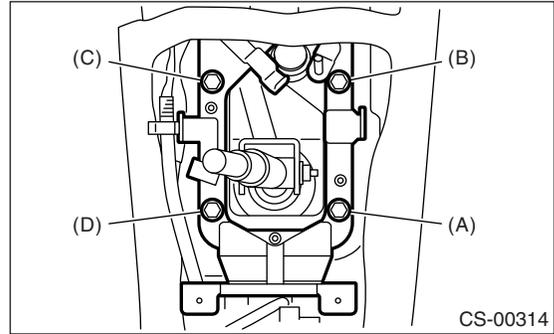
9) Install the plate assembly to vehicle body.

Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)

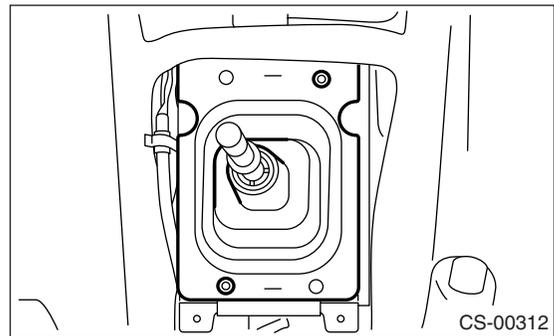
- (1) Set the plate assembly to vehicle.
- (2) Temporarily tighten the bolt (A).
- (3) Tighten the bolt (B).
- (4) Tighten the bolt (A).

(5) Tighten the bolts (C) and (D).



10) Install the harness clamp to plate.

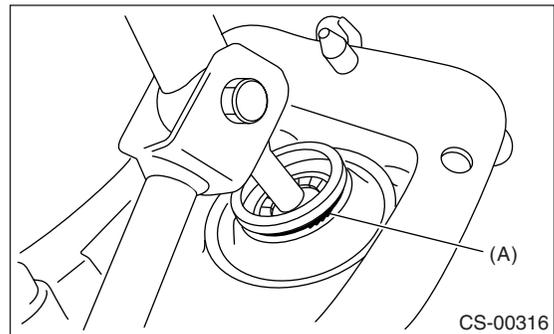
11) Install the boot and insulator assembly, and secure them with clamp.



12) Install the console box. <Ref. to EI-53, INSTALLATION, Console Box.>

C: DISASSEMBLY

1) Remove the lock wires.

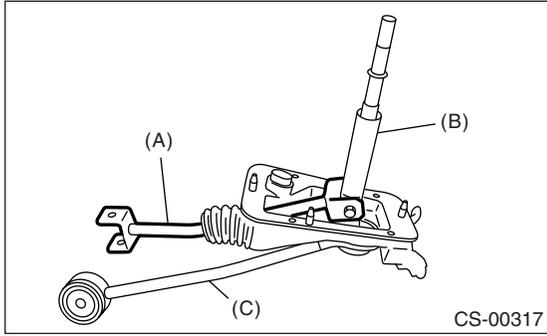


- (A) Lock wire

MT Gear Shift Lever

CONTROL SYSTEMS

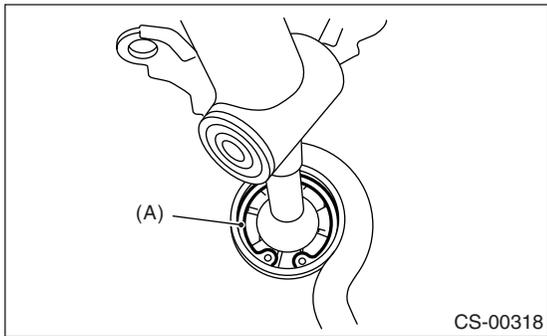
2) Remove the rod from lever.



- (A) Rod
- (B) Lever
- (C) Stay

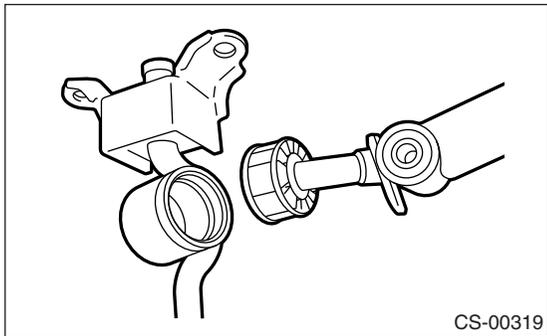
3) Separate the rod and inner boot.

4) Remove the snap ring from the stay.



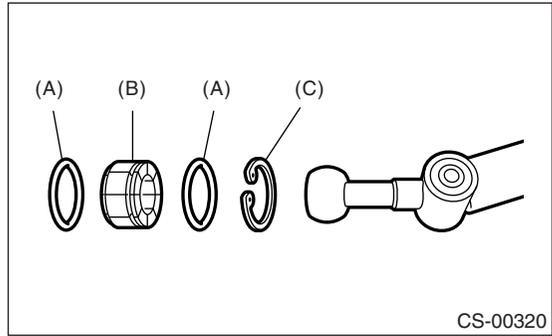
- (A) Snap ring

5) Separate the gear shift lever and the stay.



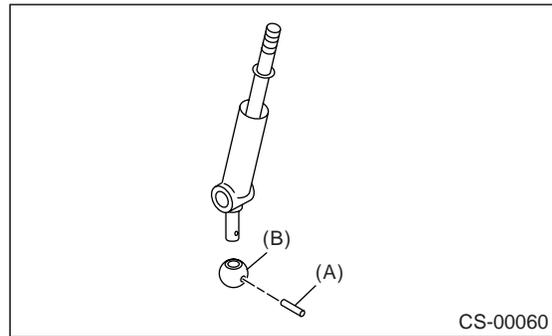
CS-00319

6) Remove the boot, bushing and snap ring from gear shift lever.



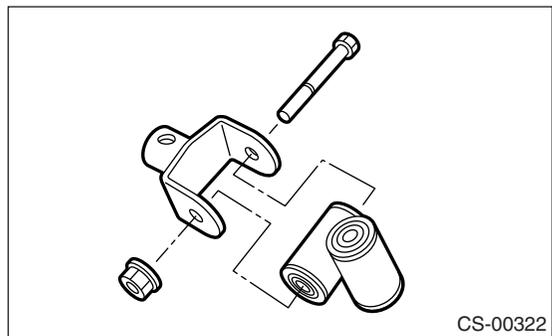
- (A) O-ring
- (B) Bushing
- (C) Snap ring

7) Remove the spring pin, and then remove the bushing and snap ring.



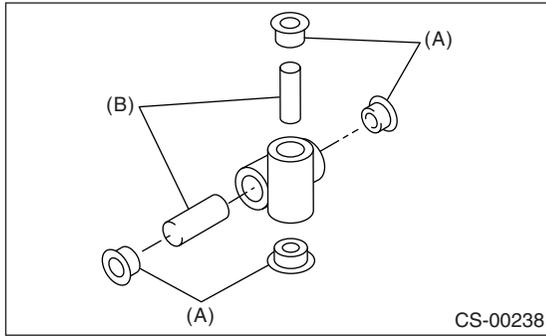
- (A) Spring pin
- (B) Bushing

8) Remove the boss from the joint.



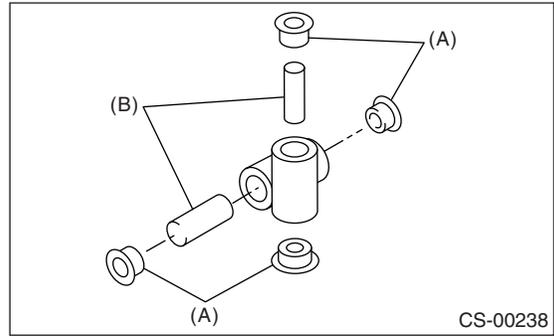
CS-00322

9) Remove the bushing and spacer from boss.



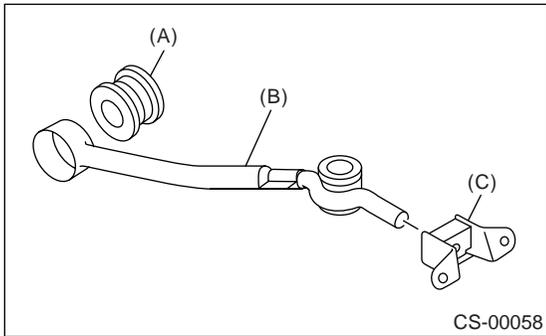
- (A) Bushing
- (B) Spacer

2) Install the bushing and spacer to boss.



- (A) Bushing
- (B) Spacer

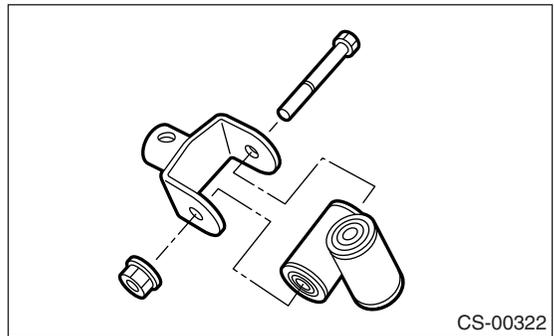
10) Remove the bushing and cushion rubber from the stay.



- (A) Bushing B
- (B) Stay
- (C) Cushion rubber

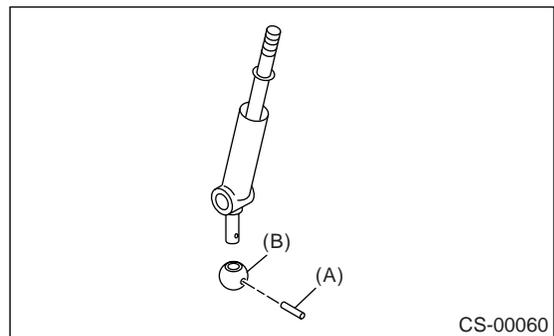
3) Using new self-locking nuts, install the boss to the joint.

Tightening torque:
18 N·m (1.8 kgf·m, 13.3 ft·lb)



4) Install the snap ring to gear shift lever and install the bushing.

NOTE:
 Apply grease to the bushing.



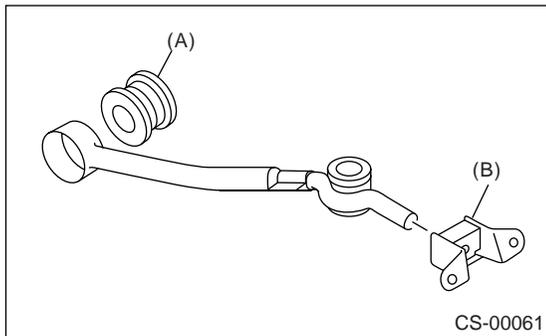
- (A) Spring pin
- (B) Bushing

D: ASSEMBLY

NOTE:

- Clean all the parts before assembly.
- Apply grease [SUNLIGHT 2 (Part No. 003602010) or equivalent] to each part.

1) Mount the bushing and cushion rubber on the stay.

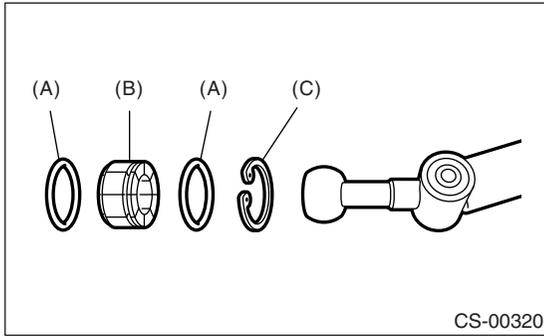


- (A) Bushing
- (B) Cushion rubber

MT Gear Shift Lever

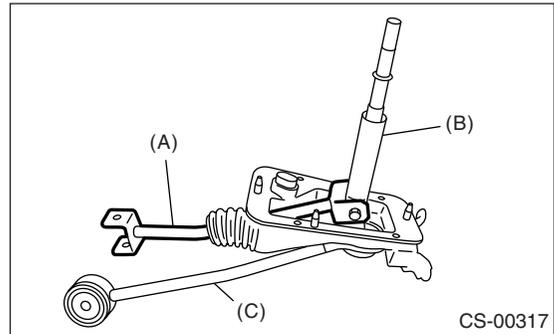
CONTROL SYSTEMS

5) Apply grease to the bushing and O-ring, and then install to the gear shift lever.



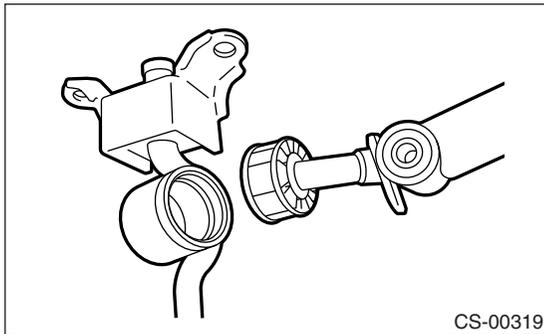
- (A) O-ring
- (B) Bushing
- (C) Snap ring

Tightening torque:
12 N·m (1.2 kgf-m, 8.9 ft-lb)

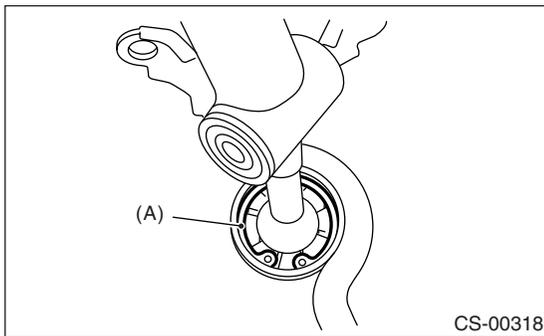


- (A) Rod
- (B) Lever
- (C) Stay

6) Apply sufficient grease into boss, and then install the gear shift lever to the stay.



7) Install the washer and snap ring.

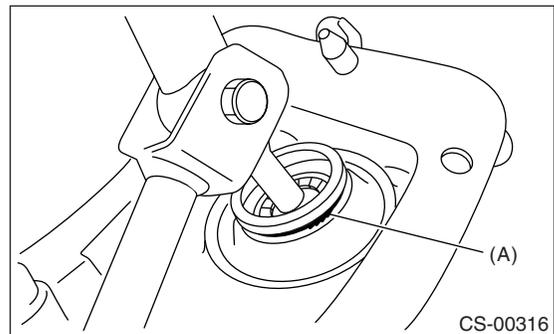


- (A) Snap ring

8) Insert the gear shift lever and rod into boot hole.

9) Install the rod.

10) Install a new lock wire.

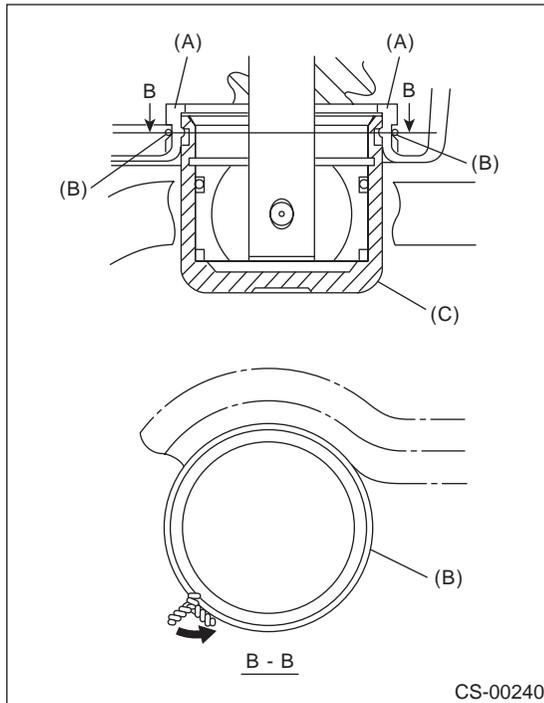


- (A) Lock wire

NOTE:

- Install the lock wire to the stay groove.

- Bend the extra wire to same direction of lock wire winding.

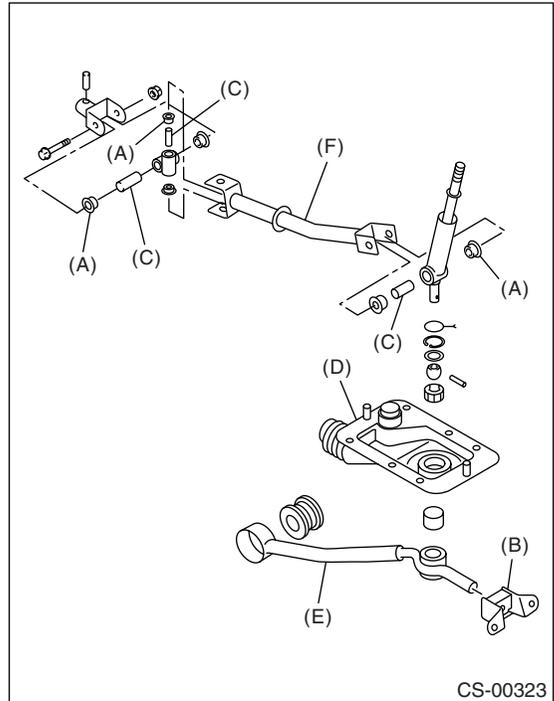


- (A) Inner boot
- (B) Lock wire
- (C) Stay

CS-00240

E: INSPECTION

1) Check the parts (bushing, cushion rubber, spacer, boot, stay and rod, etc.) for deformation, damage and wear. If necessary, repair or replace faulty parts. Compare the removed parts with new ones to judge if there are damages or not.



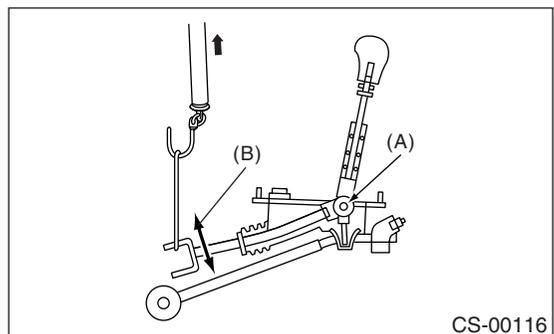
- (A) Bushing
- (B) Cushion rubber
- (C) Spacer
- (D) Boot
- (E) Stay
- (F) Rod

CS-00323

2) Check the swing torque of rod linked with the gear shift lever. If the torque exceeds the specifications, replace the bushing or retighten nuts.

Swing torque:

Less than 3.7 N (0.38 kgf, 0.84 lb)



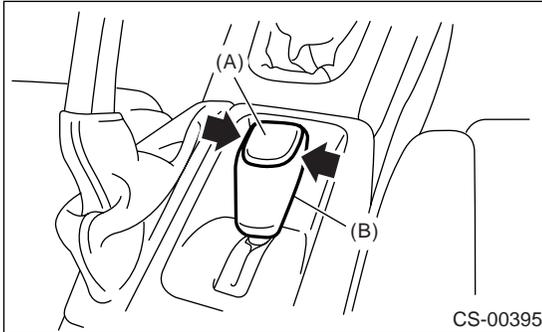
- (A) Pivot
- (B) Swing torque

CS-00116

7. MT Drive Select Lever

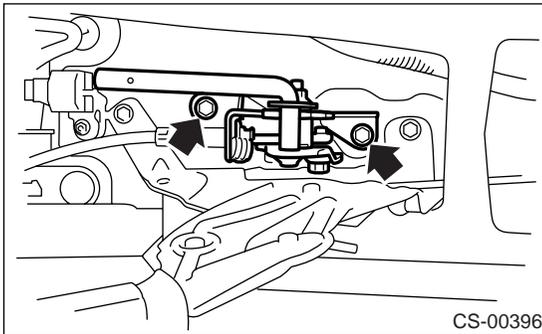
A: REMOVAL

- 1) Place the drive select lever in HI position.
- 2) Push the both sides of knob, and remove the cover. (Rubber type)

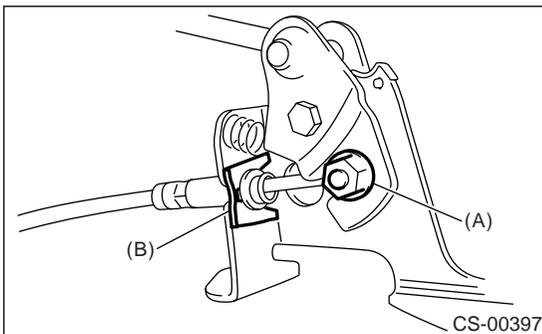


- (A) Cover
- (B) Knob

- 3) Insert a screwdriver with thin tip into the both sides of knob, and push to remove the cover. (Leather type)
- 4) Remove the bolt, and then remove the knob.
- 5) Remove the console box. <Ref. to EI-53, REMOVAL, Console Box.>
- 6) Remove the drive select lever from vehicle body.



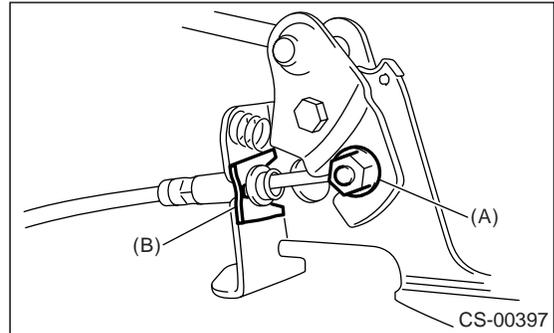
- 7) Remove the flange nut and clip, and then remove the drive select cable.



- (A) Flange nut
- (B) Clip

B: INSTALLATION

- 1) Secure the drive select cable to the lever with clip, and temporary tighten the flange nut.

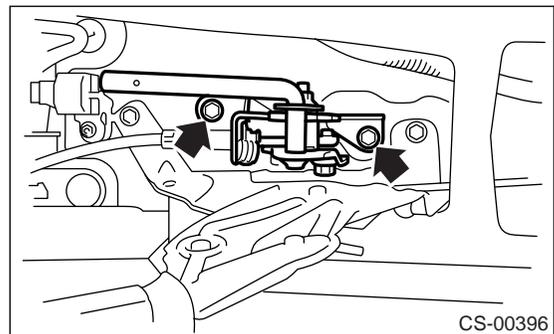


- (A) Flange nut
- (B) Clip

- 2) Install the drive select lever to vehicle.

Tightening torque:

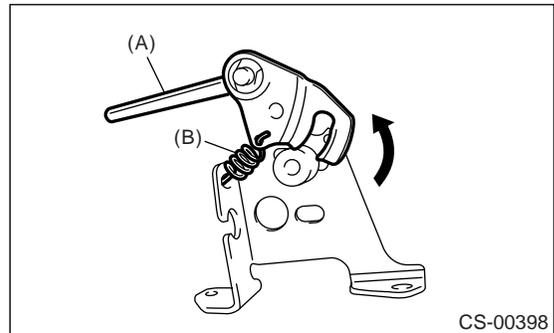
18 N·m (1.8 kgf-m, 13.3 ft-lb)



- 3) Adjust the drive select cable. <Ref. to CS-31, ADJUSTMENT, Drive Select Cable.>
- 4) Install in the reverse order of removal.

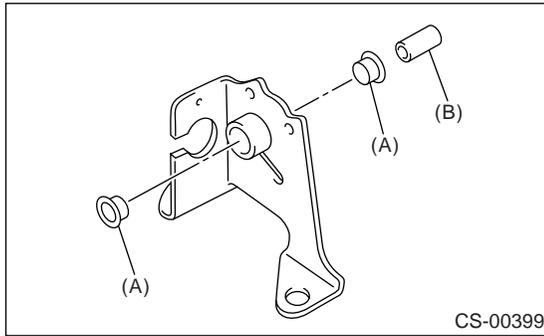
C: DISASSEMBLY

- 1) Remove the bolt and nut.
- 2) Remove the lever and spring.



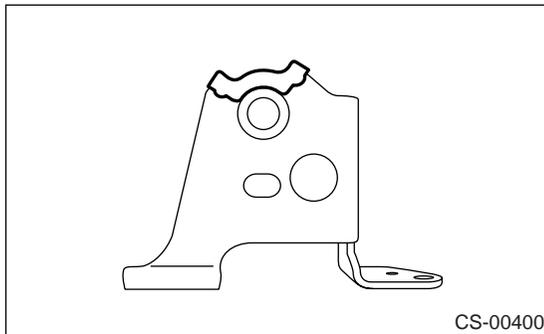
- (A) Lever
- (B) Spring

3) Remove the bushing and spacer from plate assembly.



- (A) Bushing
- (B) Spacer

4) Remove the bushing from plate assembly.



D: ASSEMBLY

1) Assemble in the reverse order of disassembly.

Tightening torque:

12 N·m (1.2 kgf·m, 8.9 ft·lb)

NOTE:

Refer to "COMPONENT" for greasing points. <Ref. to CS-2, COMPONENT, General Description.>

2) Check the select lever for smooth operation.

E: INSPECTION

1) Check the select lever for smooth operation. If not, check the transmission and drive select lever.

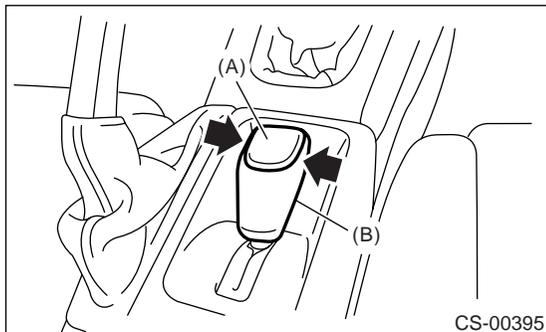
2) Transmission gear switches between HI and LO positions normally. If not, adjust the drive select cable, and inspect the transmission.

3) Check that the drive select lever is not damaged. Repair or replace if it is damaged.

8. Drive Select Cable

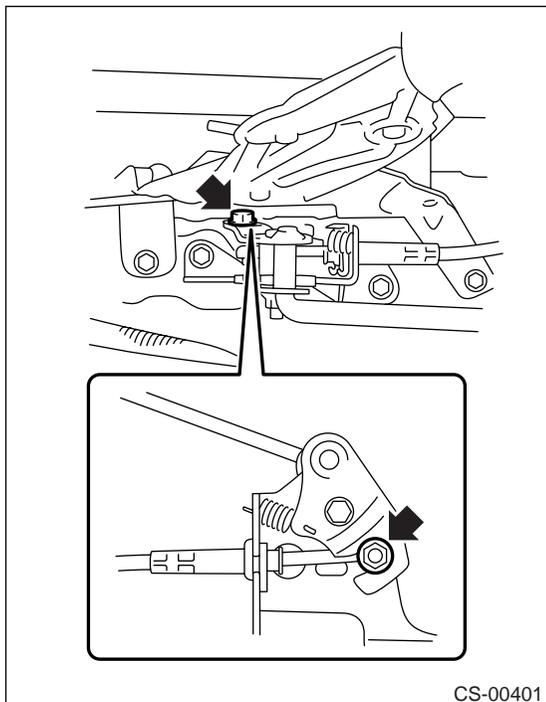
A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Place the drive select lever in HI position.
- 3) Push the both sides of knob, and remove the cover. (Rubber type)

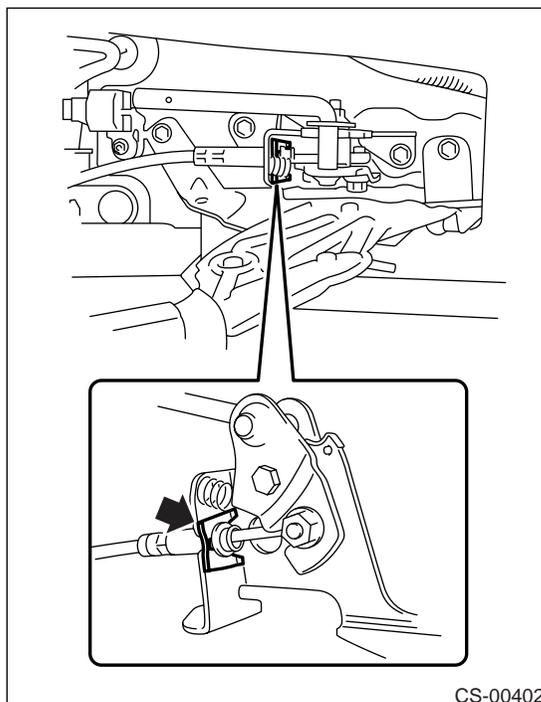


- (A) Cover
- (B) Knob

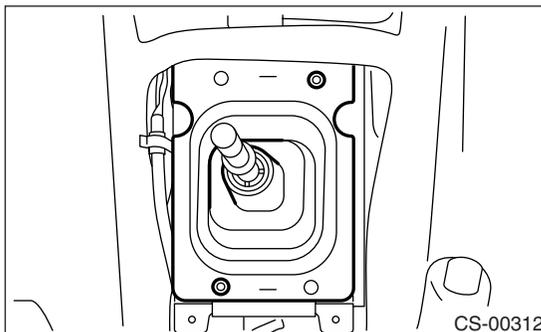
- 4) Insert a screwdriver with thin tip into the both sides of knob, and push to remove the cover. (Leather type)
- 5) Remove the bolt, and then remove the knob.
- 6) Remove the console box. <Ref. to EI-53, REMOVAL, Console Box.>
- 7) Loosen the flange nut.



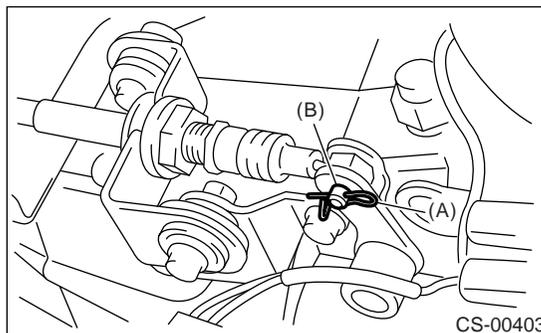
- 8) Remove the clamp, and remove the drive select cable from plate assembly.



- 9) Remove the boot and insulator assembly.

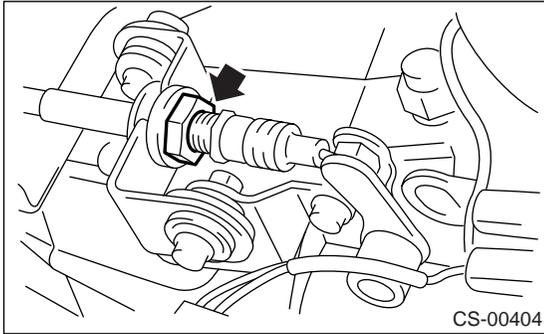


- 10) Remove the air intake chamber and air intake duct. <Ref. to IN(H4SO 2.0)-8, REMOVAL, Air Intake Chamber.> <Ref. to IN(H4SO 2.0)-9, REMOVAL, Air Intake Duct.>
- 11) Remove the snap pin and clevis pin.

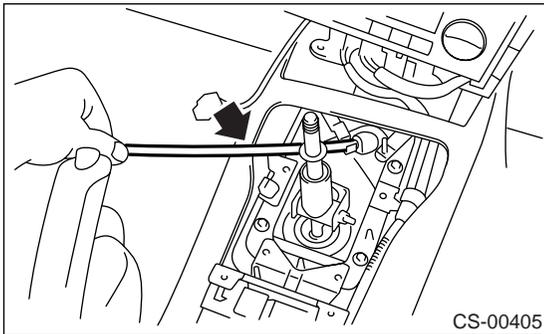


- (A) Snap pin
- (B) Clevis pin

- Loosen the nut, and remove the cable from cable bracket.



- Lift-up the vehicle, and then remove the cable under vehicle.



B: INSTALLATION

- Install in the reverse order of removal.

NOTE:

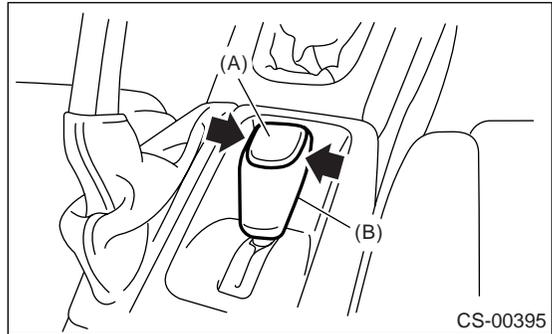
- Adjust the drive select cable. <Ref. to CS-31, ADJUSTMENT, Drive Select Cable.>
- Refer to "COMPONENT" for tightening torque. <Ref. to CS-2, COMPONENT, General Description.>
- Correctly insert the cable end bolt to slit of lever arm.

C: INSPECTION

- Check the transmission is set in HI or LO position according to the operation of drive select lever. <Ref. to CS-31, ADJUSTMENT, Drive Select Cable.>
- Check the cable for damage.
- Check the cable for smooth operation. Replace the cable if it does not operate smoothly.

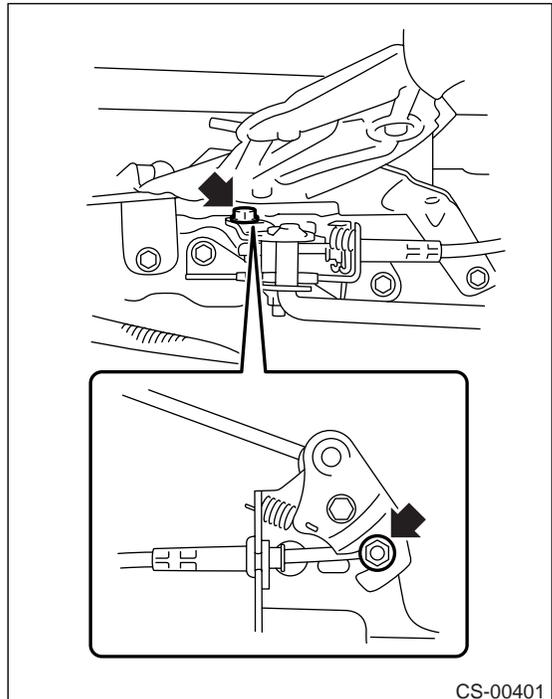
D: ADJUSTMENT

- Place the drive select lever in HI position.
- Push the both sides of knob, and remove the cover. (Rubber type)



- (A) Cover
(B) Knob

- Insert a screwdriver with thin tip into the both sides of knob, and push to remove the cover. (Leather type)
- Remove the bolt, and then remove the knob.
- Remove the console box. <Ref. to EI-53, REMOVAL, Console Box.>
- Loosen the flange nut.



- Verify the transmission gear is set in HI position. If not, pull the cable to set it in HI position.
- Verify the select lever is set in HI position.
- Tighten the flange nut with cable fixed.

Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)

- Install in the reverse order of removal.

General Diagnostic Table

CONTROL SYSTEMS

9. General Diagnostic Table

A: INSPECTION

Symptom	Possible cause	Corrective action
Select lever	Starter does not run.	Adjust the select cable and inhibitor switch, or inspect circuit.
	Back-up light does not illuminate.	Adjust the select cable and inhibitor switch, or inspect circuit.
	Shift lock control system does not operate normally.	Inspect shift lock circuit.
	Manual mode is not engaged.	Adjust the mode switch and select lever, or inspect circuit.
	Up-shift is not engaged at manual mode.	Check the shift-up switch and circuit.
	Down-shift is not engaged at manual mode.	Check the shift-down switch and circuit.
Drive select lever	Does not shift to HI or LO.	Adjust the drive select cable, or inspect transmission.