

## 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)

MANUAL TRANSMISSION AND  
DIFFERENTIAL

5MT

MANUAL TRANSMISSION AND  
DIFFERENTIAL

6MT

MANUAL TRANSMISSION AND  
DIFFERENTIAL (DIAGNOSTICS)

6MT(diag)

CLUTCH SYSTEM

CL

# CONTROL SYSTEMS



---

	<b>Page</b>
1. General Description .....	2
2. Select Lever .....	9
3. Select Cable .....	13
4. MT Gear Shift Lever .....	16
5. Reverse Check Cable .....	29
6. MT Drive Select Lever .....	34
7. Drive Select Cable .....	36
8. General Diagnostic Table .....	37

# General Description

CONTROL SYSTEMS

---

## 1. General Description

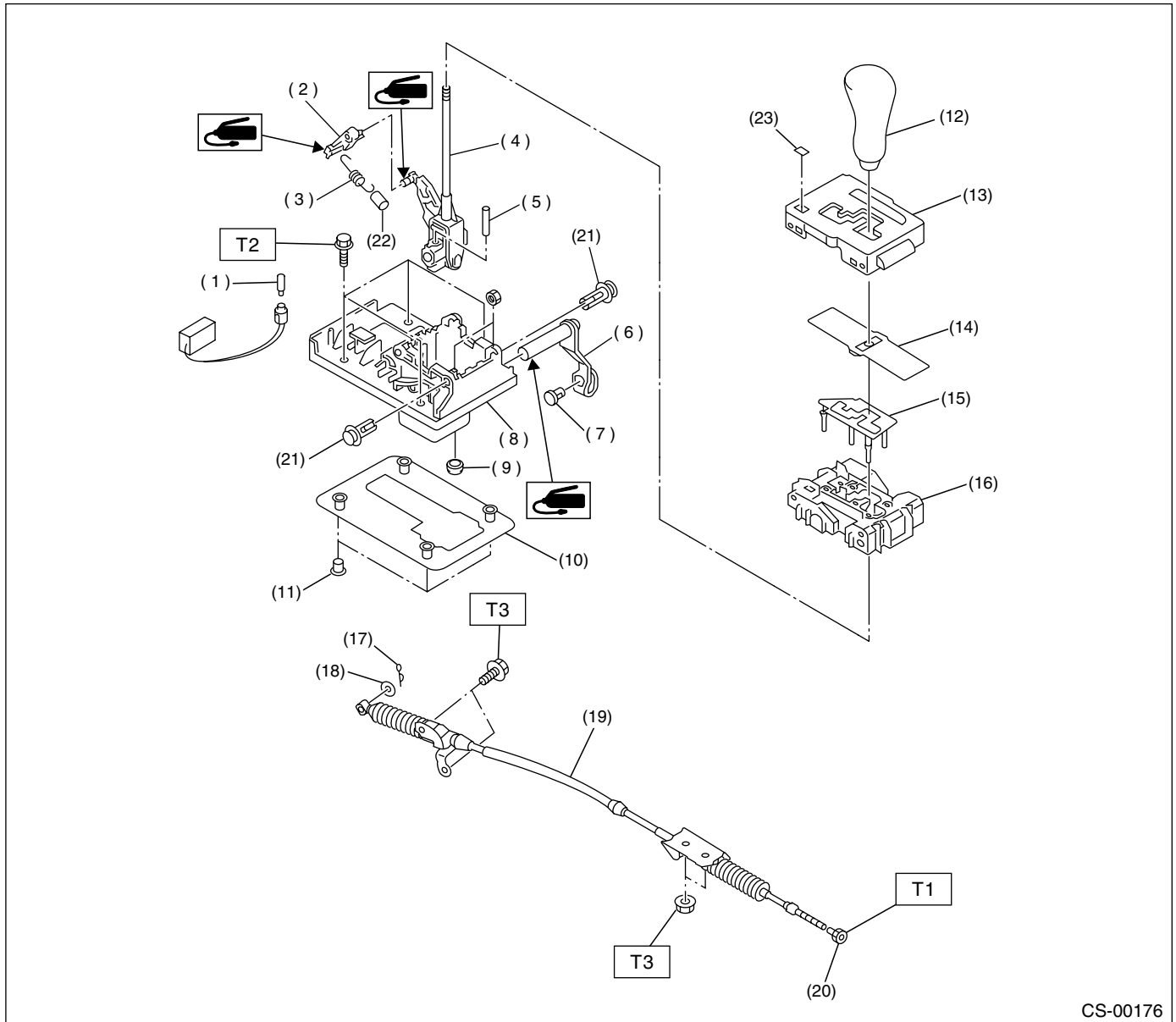
### A: SPECIFICATIONS

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

• EXCEPT SPORT SHIFT MODEL



CS-00176

- |                       |                      |            |
|-----------------------|----------------------|------------|
| (1) Bulb              | (11) Spacer          | (21) Clip  |
| (2) Detent arm        | (12) Grip            | (22) Tube  |
| (3) Detent spring     | (13) Indicator cover | (23) Cover |
| (4) Select lever ASSY | (14) Blind           |            |
| (5) Spring pin        | (15) Cushion plate   |            |
| (6) Arm ASSY          | (16) Guide plate     |            |
| (7) Bushing           | (17) Snap pin        |            |
| (8) Plate             | (18) Washer          |            |
| (9) Grommet           | (19) Selector cable  |            |
| (10) Packing          | (20) Nut A           |            |

**Tightening torque: N·m (kgf·m, ft·lb)**

**T1: 7.5 (0.76, 5.5)**

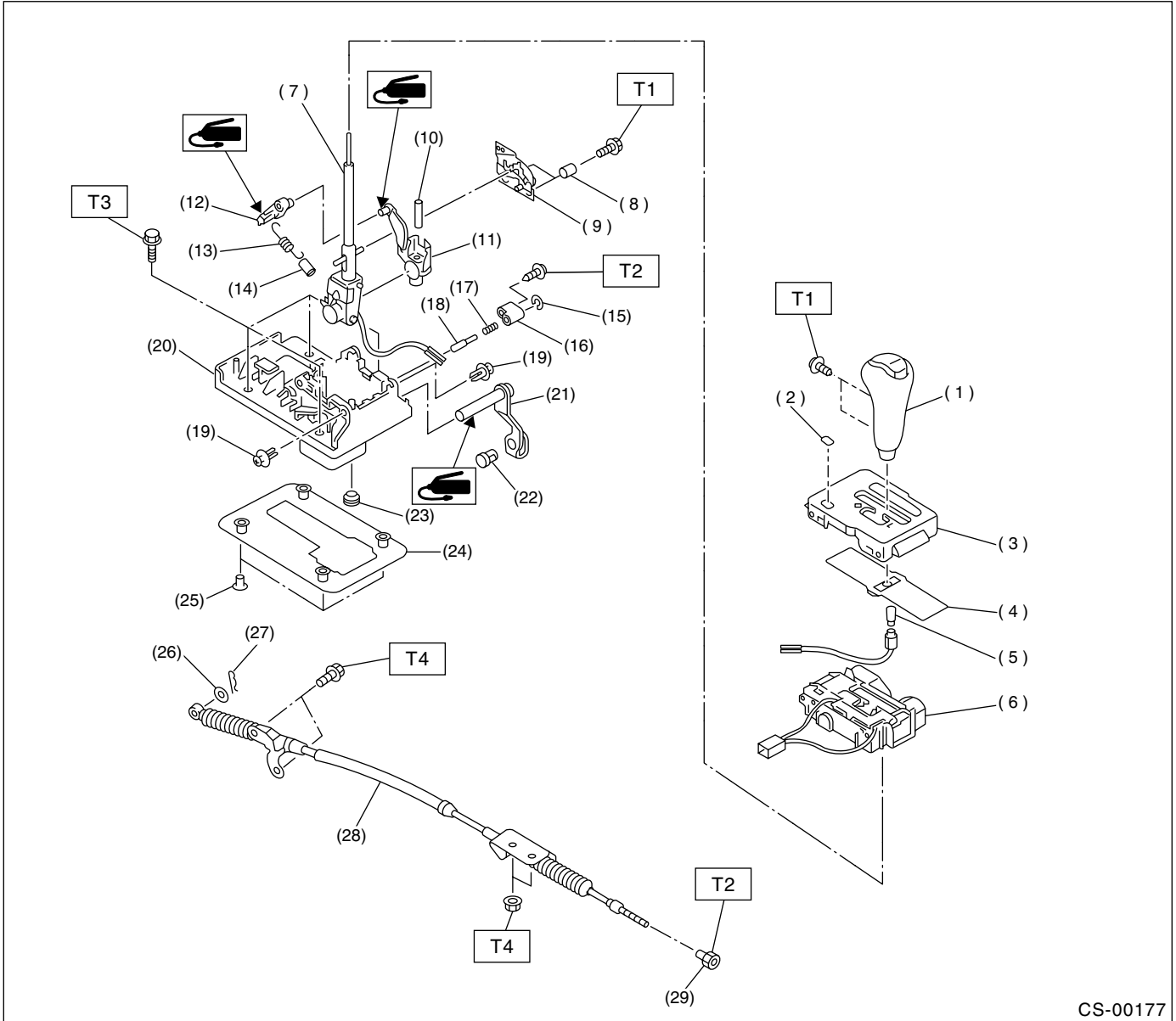
**T2: 13 (1.3, 9.4)**

**T3: 18 (1.8, 13.0)**

# General Description

## CONTROL SYSTEMS

### • SPORT SHIFT MODEL



CS-00177

- |                     |                    |                   |
|---------------------|--------------------|-------------------|
| (1) Grip            | (13) Detent spring | (25) Spacer       |
| (2) Cover           | (14) Tube          | (26) Washer       |
| (3) Indicator cover | (15) Clip          | (27) Snap pin     |
| (4) Blind           | (16) Bushing       | (28) Select cable |
| (5) Bulb            | (17) Spring        | (29) Nut A        |
| (6) Guide plate     | (18) Rod           |                   |
| (7) Lever           | (19) Clip          |                   |
| (8) Spacer          | (20) Base plate    |                   |
| (9) Bracket guide   | (21) Arm           |                   |
| (10) Spring pin     | (22) Bushing       |                   |
| (11) Arm bracket    | (23) Grommet       |                   |
| (12) Detent arm     | (24) Packing       |                   |

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

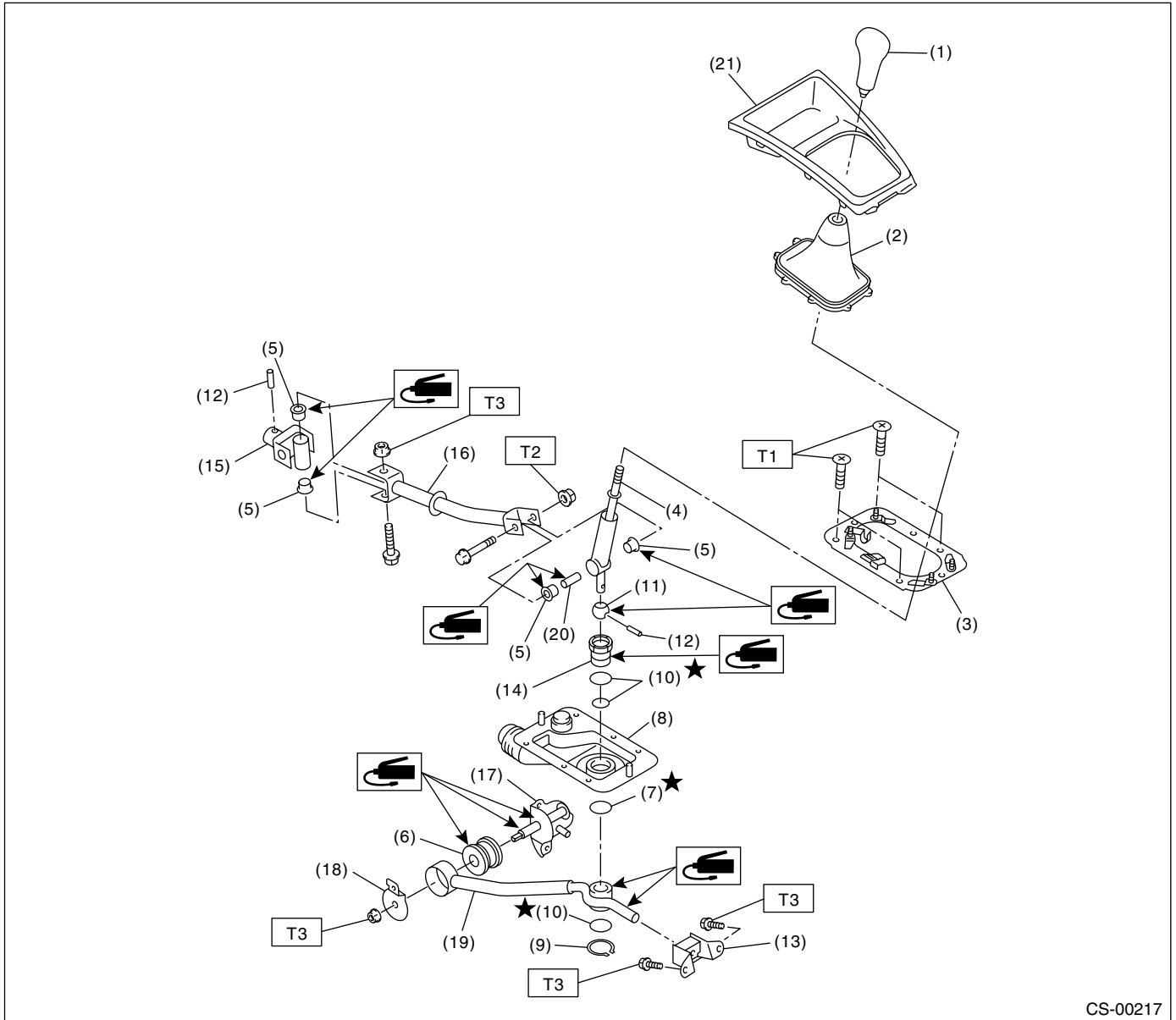
**T1: 2.0 (0.2, 1.4)**

**T2: 7.5 (0.76, 5.5)**

**T3: 13 (1.3, 9.4)**

**T4: 18 (1.8, 13.0)**

## 2. 5MT GEAR SHIFT LEVER



CS-00217

- |                     |                     |                  |
|---------------------|---------------------|------------------|
| (1) Gear shift knob | (10) O-ring         | (19) Stay        |
| (2) Console boot    | (11) Bushing A      | (20) Spacer      |
| (3) Plate ASSY      | (12) Spring pin     | (21) Front cover |
| (4) Lever           | (13) Cushion rubber |                  |
| (5) Bushing         | (14) Bushing B      |                  |
| (6) Bushing         | (15) Joint          |                  |
| (7) Lock wire       | (16) Rod            |                  |
| (8) Boot            | (17) Bracket        |                  |
| (9) Snap ring       | (18) Washer         |                  |

**Tightening torque: N·m (kgf·m, ft·lb)**

**T1: 7.5 (0.76, 5.5)**

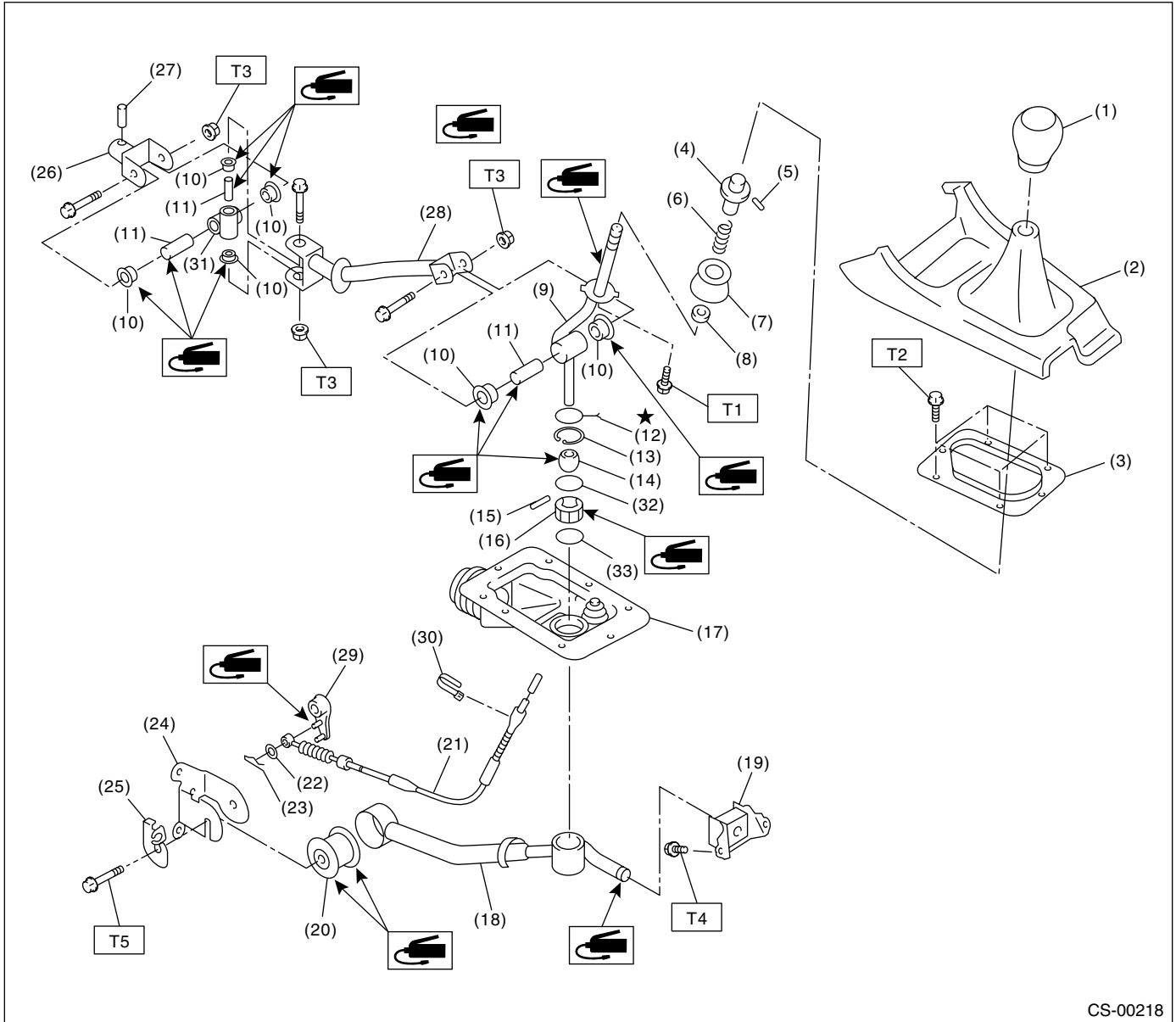
**T2: 12 (1.2, 8.7)**

**T3: 18 (1.8, 13.0)**

# General Description

## CONTROL SYSTEMS

### 3. 6MT GEAR SHIFT LEVER



- |                       |                          |                          |
|-----------------------|--------------------------|--------------------------|
| (1) Gear shift knob   | (15) Spring pin          | (29) Reverse check lever |
| (2) Console box front | (16) Bush                | (30) Band clip           |
| (3) Plate             | (17) Boot                | (31) Boss                |
| (4) Slider            | (18) Stay                | (32) O-ring              |
| (5) Spring pin        | (19) Cushion rubber      | (33) O-ring              |
| (6) Spring            | (20) Bush                |                          |
| (7) Holder            | (21) Reverse check cable |                          |
| (8) Seat cushion      | (22) Washer              |                          |
| (9) Lever             | (23) Snap pin            |                          |
| (10) Bush             | (24) Bracket             |                          |
| (11) Spacer           | (25) Cable plate         |                          |
| (12) Lock wire        | (26) Joint               |                          |
| (13) Snap ring        | (27) Spring pin          |                          |
| (14) Bush             | (28) Rod                 |                          |

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

**T1: 1.3 (0.13, 0.96)**

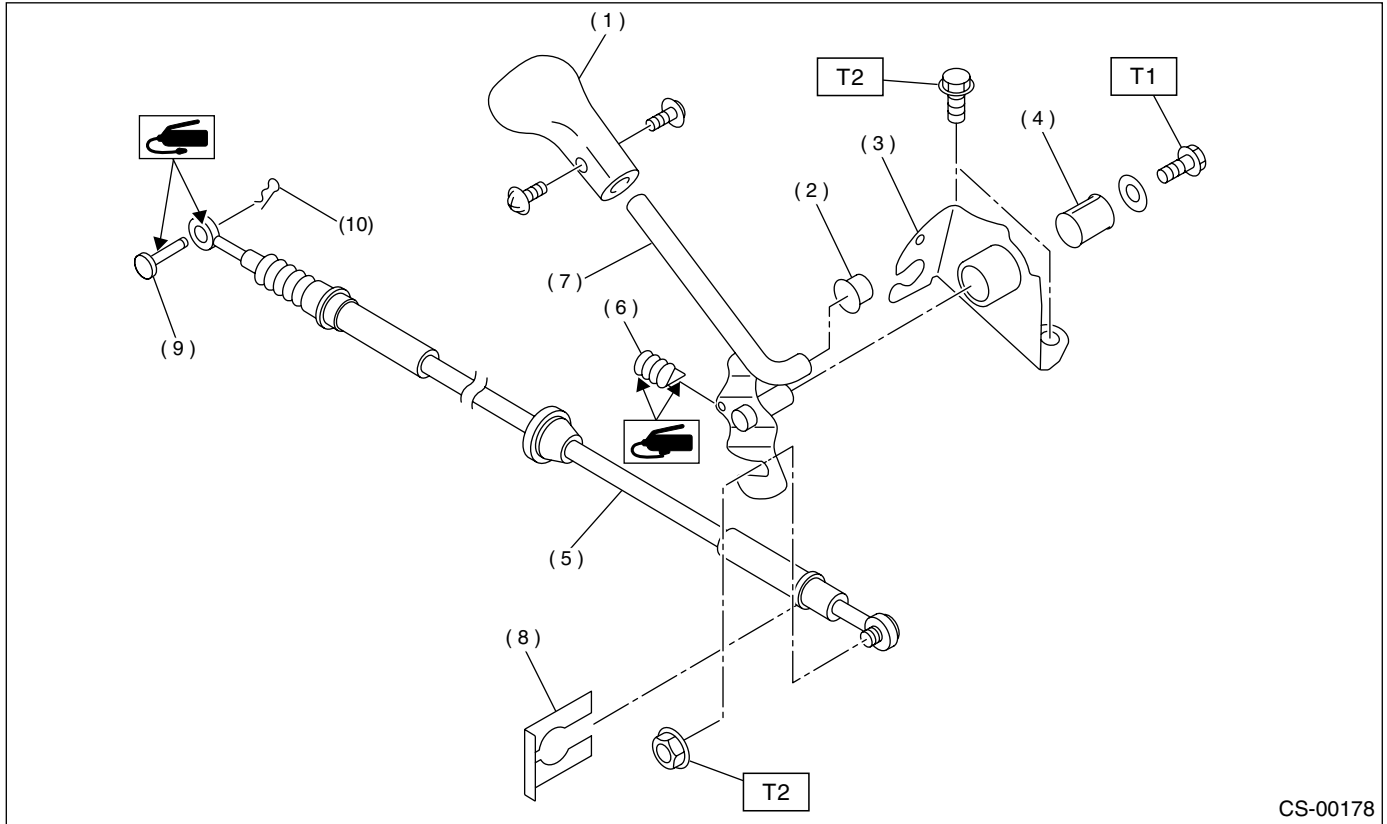
**T2: 7.5 (0.76, 5.5)**

**T3: 11.8 (1.2, 8.7)**

**T4: 18 (1.8, 13.0)**

**T5: 32 (3.3, 23.6)**

## 4. DRIVE SELECT LEVER



CS-00178

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

**Tightening torque: N·m (kgf·m, ft·lb)**

**T1: 1.6 (0.16, 1.2)**

**T2: 18 (1.8, 13.0)**



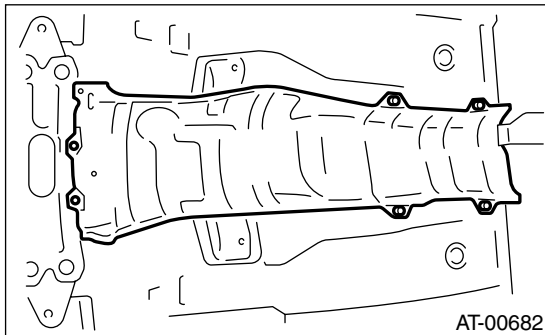
#### **C: CAUTION**

- Wear working 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 or dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly, and replacement.
- Use SUBARU genuine grease etc. or the equivalent. Do not mix 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 grease to avoid damage and deformation.
- Before securing a part on a vise, place cushioning material such as wood blocks, aluminum plate, or shop cloth between the part and the vise.
- Before disconnecting electrical connectors, be sure to disconnect the ground cable from battery.

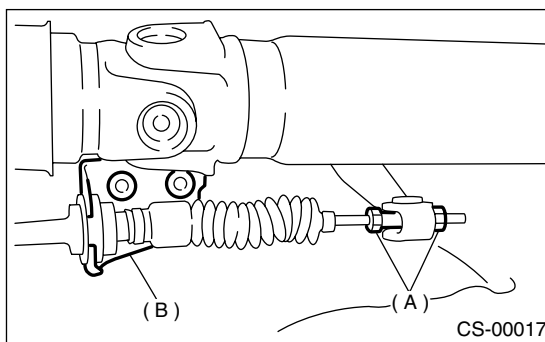
## 2. Select Lever

### A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Disconnect negative cable from battery.
- 3) Set the select lever to the "N" range.
- 4) Lift-up the vehicle.
- 5) Remove rear exhaust pipe and muffler.  
SOHC model  
<Ref. to EX(H4SO)-10, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SO)-12, REMOVAL, Muffler.>  
SOHC without OBD model  
<Ref. to EX(H4SOW/oOBD)-10, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SOW/oOBD)-11, REMOVAL, Muffler.>  
DOHC turbo model  
<Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4DOTC)-15, REMOVAL, Muffler.>
- 6) Remove heat shield cover. (If equipped)



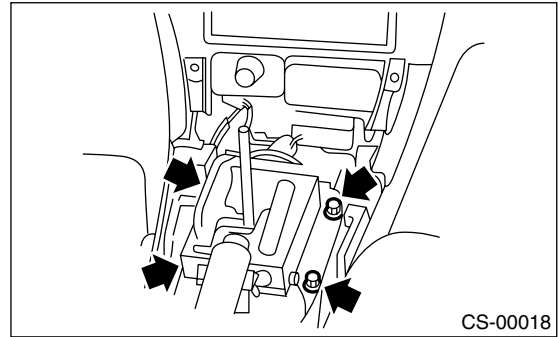
- 7) Disconnect cable from select lever, and then remove the cable bracket.



- (A) Adjusting nuts
- (B) Cable bracket

- 8) Lower the vehicle.
- 9) Remove console box. <Ref. to EI-42, REMOVAL, Console Box.>

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

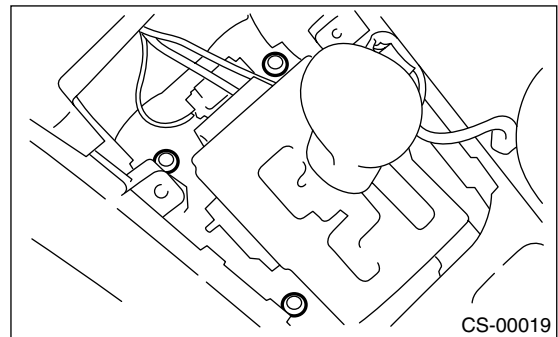


### B: INSTALLATION

- 1) Mount the select lever onto the vehicle body.
- 2) Tighten the four bolts to install the select lever to the vehicle body, then connect connector.

#### Tightening torque:

**13 N·m (1.3 kgf-m, 9.4 ft-lb)**



- 3) Install console box. <Ref. to EI-42, INSTALLATION, Console Box.>
- 4) Set location of select lever at "N" range.
- 5) Lift-up the vehicle.
- 6) Set location of range select lever to "N" range.
- 7) Insert the thread portion of the other inner cable and into the connector hole of the select lever, and fix the other outer cable end to the bracket.

#### Tightening torque:

**18 N·m (1.8 kgf-m, 13.0 ft-lb)**

- 8) Adjust the select cable position. <Ref. to CS-14, ADJUSTMENT, Select Cable.>
- 9) After completion of fitting, make sure that the select lever operates smoothly all across the operating range.
- 10) Install the heat shield cover. (If equipped)
- 11) Install rear exhaust pipe and muffler.  
SOHC model  
<Ref. to EX(H4SO)-10, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4SO)-12, INSTALLATION, Muffler.>  
SOHC without OBD model

# Select Lever

## CONTROL SYSTEMS

<Ref. to EX(H4SOw/oOBD)-10, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4SOw/oOBD)-11, INSTALLATION, Muffler.>

DOHC turbo model

<Ref. to EX(H4DOTC)-14, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4DOTC)-15, INSTALLATION, Muffler.>

12) Inspect the following items. If the following inspection reveals problems, adjust the select cable and inhibitor switch. <Ref. to CS-14, ADJUSTMENT, Select Cable.> and <Ref. to 4AT-52, ADJUSTMENT, Inhibitor Switch.>

(1) The engine starts operating when select lever is in range "P" and "N", but not in other positions.

(2) The back-up light is lit when the select lever is in range "R", but not in other ranges.

(3) Select lever and indicator ranges are matched.

## C: DISASSEMBLY

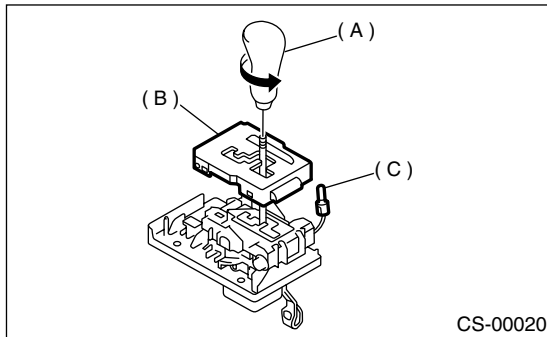
### 1. EXCEPT SPORT SHIFT MODEL

1) Remove the grip.

2) Remove the bulb, and then remove the indicator cover.

#### NOTE:

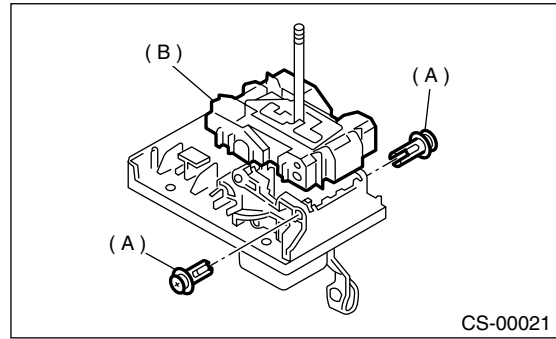
Be careful not to break the bulb during removal.



- (A) Grip
- (B) Indicator cover
- (C) Bulb

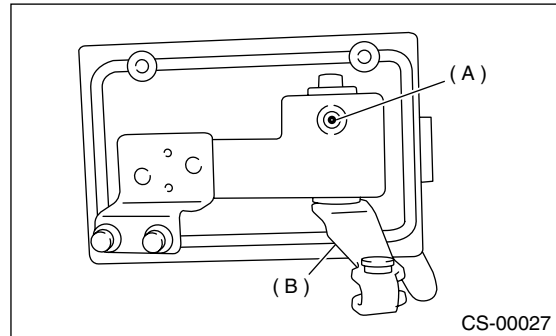
3) Remove blind.

4) Remove the clips, and then remove the guide plate.



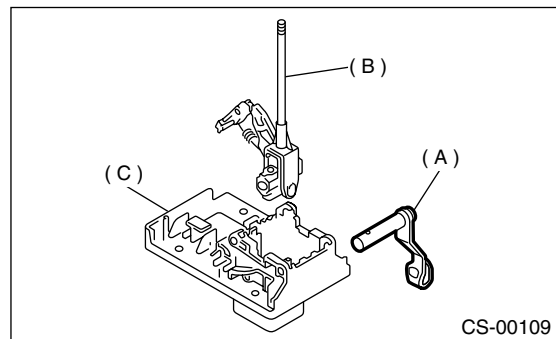
- (A) Clips
- (B) Guide plate

5) Remove the cap, and then the extract spring pin.



- (A) Spring pin
- (B) Arm ASSY

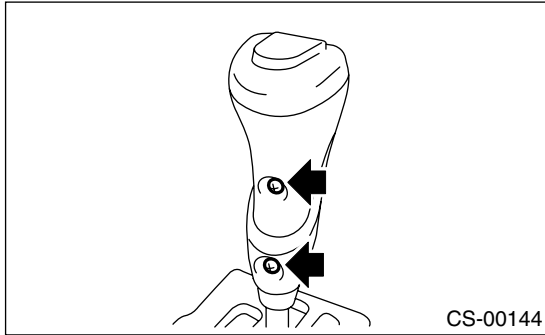
6) Remove the arm assembly, and then take away the lever from base plate.



- (A) Arm ASSY
- (B) Lever
- (C) Base plate

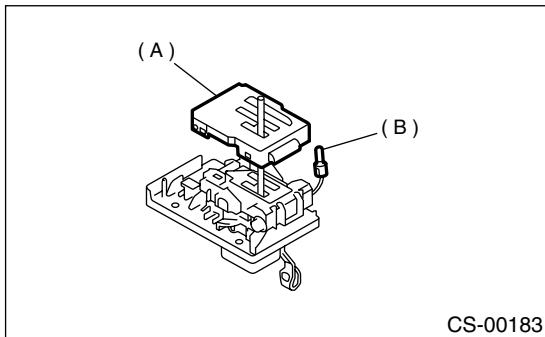
## 2. SPORT SHIFT MODEL

- 1) Remove the packing.
- 2) Remove the grip.



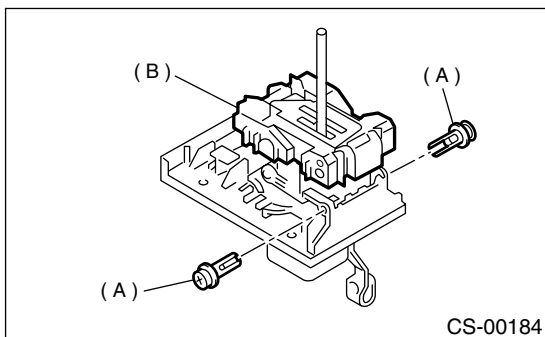
- 3) Remove the bulb, and then remove the indicator cover.

**NOTE:**  
Be careful not to break the bulb during removal.



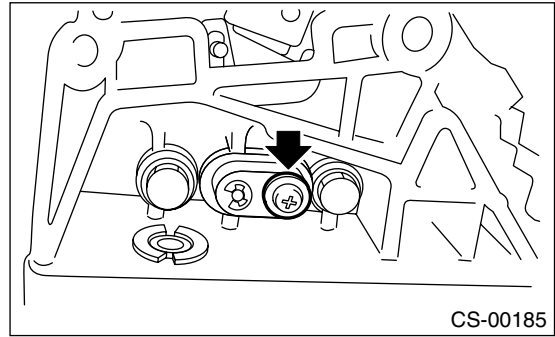
- (A) Indicator cover
- (B) Bulb

- 4) Remove the blind.
- 5) Remove the clips, and then remove the guide plate.

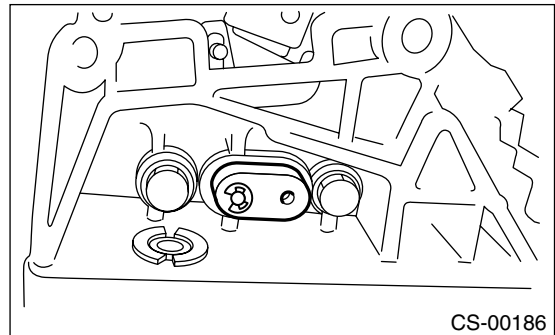


- (A) Clips
- (B) Guide plate

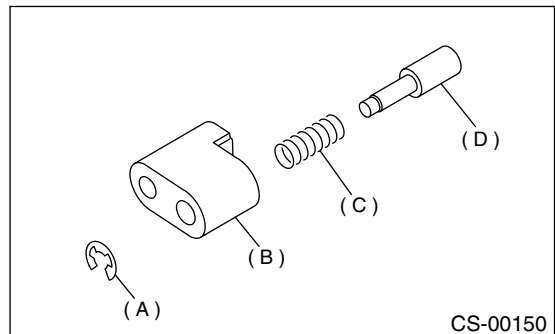
- 6) Remove the screw.



- 7) Remove the bushing.

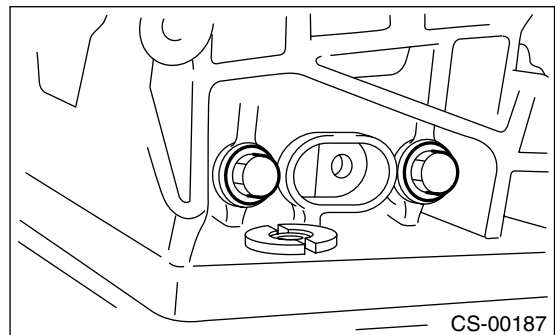


- 8) Remove the clip, and then remove the rod and the spring.



- (A) Clip
- (B) Bushing
- (C) Spring
- (D) Rod

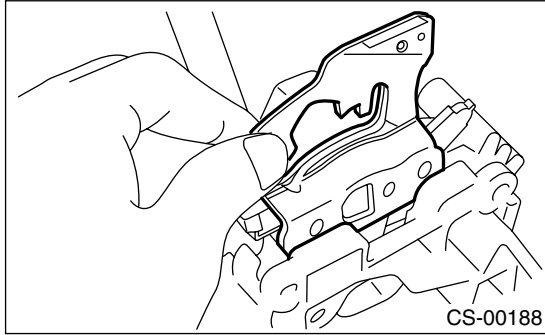
- 9) Remove the bolt.



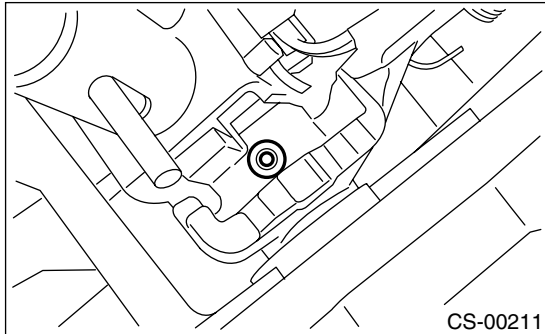
## Select Lever

### CONTROL SYSTEMS

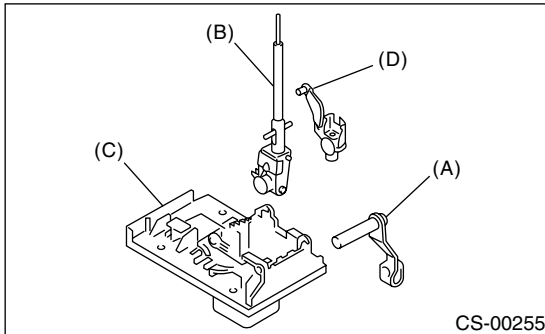
10) Remove the bracket guide assembly.



11) Remove the grommet, and then extract spring pin from the top.



12) Remove the arm assembly and then take away the lever and arm bracket from base plate.



- (A) Arm ASSY
- (B) Lever
- (C) Base plate
- (D) Arm bracket

13) Remove the spring, and then remove the detent arm.

### D: ASSEMBLY

- 1) Clean all parts before assembly.
- 2) Apply grease [SUNLIGHT 2 (Part No. 003602010) or equivalent] to each parts. <Ref. to CS-3, AT SELECT LEVER, COMPONENT, General Description.>
- 3) Assembly is in the reverse order of disassembly.
- 4) After completion of fitting, transfer the select lever to range "P" — "1", then check whether the indicator and select lever agree, whether the pointer and position mark agree and what the operating force is.

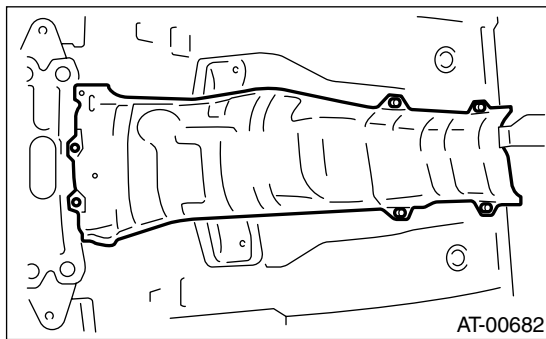
### E: INSPECTION

- 1) Inspect the removed parts by comparing with new ones for deformation, damage and wear. Correct or replace if defective.
- 2) Confirm the following parts for operating condition before assembly. Moving condition of the select lever assembly, it should move smoothly.

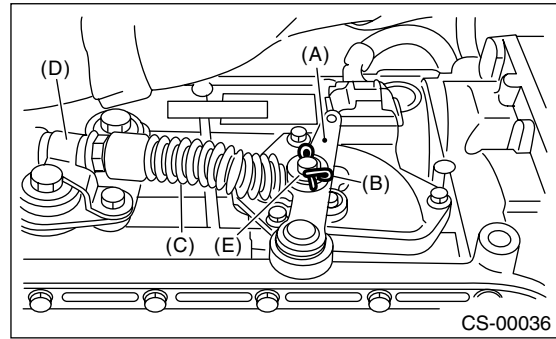
## 3. Select Cable

### A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Set the select lever to "N" range.
- 3) Disconnect negative cable from battery.
- 4) Lift-up the vehicle.
- 5) Remove front, center, rear exhaust pipe and muffler. (Non-turbo model)  
SOHC model  
<Ref. to EX(H4SO)-6, REMOVAL, Front Exhaust Pipe.>, <Ref. to EX(H4SO)-9, REMOVAL, Center Exhaust Pipe.>, <Ref. to EX(H4SO)-10, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SO)-12, REMOVAL, Muffler.>  
SOHC without OBD model  
<Ref. to EX(H4SOW/oOBD)-6, REMOVAL, Front Exhaust Pipe.>, <Ref. to EX(H4SOW/oOBD)-9, REMOVAL, Center Exhaust Pipe.>, <Ref. to EX(H4SOW/oOBD)-10, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SOW/oOBD)-11, REMOVAL, Muffler.>
- 6) Remove the center and rear exhaust pipes and muffler. (DOHC turbo model)  
<Ref. to EX(H4DOTC)-9, REMOVAL, Center Exhaust Pipe.>, <Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4DOTC)-15, REMOVAL, Muffler.>
- 7) Remove the heat shield cover. (If equipped)

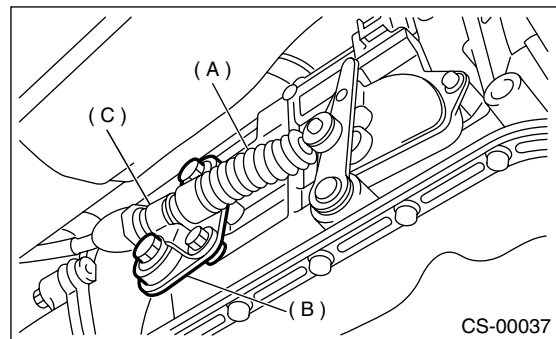


- 8) Remove the snap pin and washer from range select lever.



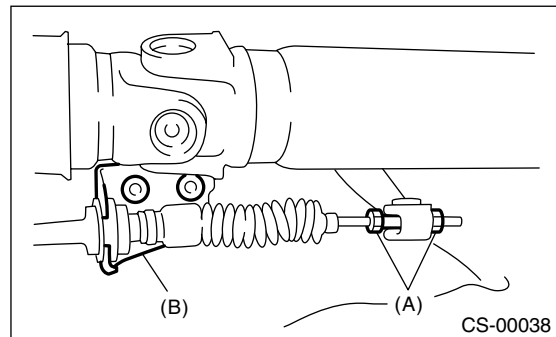
- (A) Range select lever
- (B) Snap pin
- (C) Select cable
- (D) Clamp
- (E) Washer

- 9) Remove the plate assembly from transmission case.



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

- 10) Disconnect the cable from select lever, and then remove the cable bracket.



- (A) Adjusting nuts
- (B) Cable bracket

- 11) Remove the select cable from plate assembly.

# Select Cable

## CONTROL SYSTEMS

### B: INSTALLATION

1) Install the select cable to plate assembly.

**Tightening torque:**

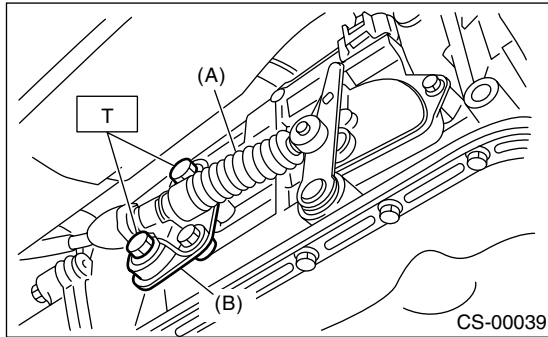
**18 N·m (1.8 kgf·m, 13.0 ft·lb)**

2) Install the select cable to range select lever.

3) Install the plate assembly to transmission.

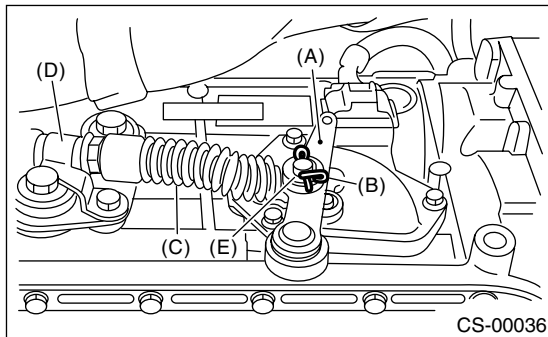
**Tightening torque:**

**T: 24.5 N·m (2.5 kgf·m, 18.1 ft·lb)**



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

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



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

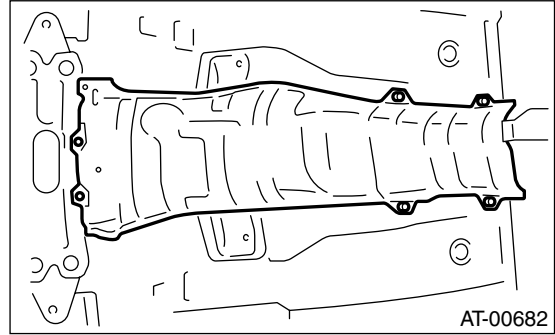
5) Insert the thread portion of other inner cable and into connector hole of select lever, and fix the other outer cable end to the bracket.

**Tightening torque:**

**18 N·m (1.8 kgf·m, 13 ft·lb)**

6) Move the select lever to "N" range, and then adjust the select cable position. <Ref. to CS-14, ADJUSTMENT, Select Cable.>

7) Install the heat shield cover.



8) Install the front, center, rear exhaust pipe and muffler. (Non-turbo model)

SOHC model

<Ref. to EX(H4SO)-7, INSTALLATION, Front Exhaust Pipe.>, <Ref. to EX(H4SO)-9, INSTALLATION, Center Exhaust Pipe.>, <Ref. to EX(H4SO)-10, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4SO)-12, INSTALLATION, Muffler.>

SOHC without OBD model

<Ref. to EX(H4SOW/oOBD)-7, INSTALLATION, Front Exhaust Pipe.>, <Ref. to EX(H4SOW/oOBD)-9, INSTALLATION, Center Exhaust Pipe.>, <Ref. to EX(H4SOW/oOBD)-10, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4SOW/oOBD)-11, INSTALLATION, Muffler.>

9) Install center and rear exhaust pipes and muffler. (DOHC turbo model)

<Ref. to EX(H4DOTC)-10, INSTALLATION, Center Exhaust Pipe.>, <Ref. to EX(H4DOTC)-14, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4DOTC)-15, INSTALLATION, Muffler.>

### C: INSPECTION

Check the removed cable and replace 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" range to "1" range. You should be able to feel the detents in each position. If the detents cannot be felt or the position pointer is improperly aligned, adjust the cable.

### D: ADJUSTMENT

- 1) Set the select lever to "N" range.
- 2) Remove rear exhaust pipe and muffler.

SOHC model

<Ref. to EX(H4SO)-10, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SO)-12, REMOVAL, Muffler.>

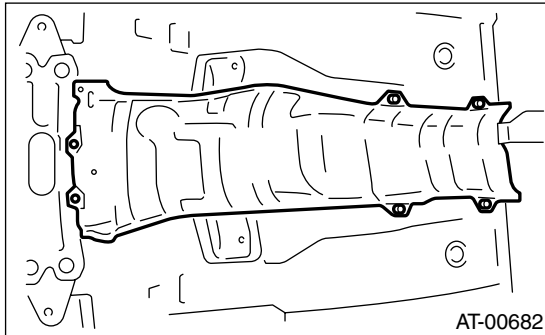
SOHC without OBD model

<Ref. to EX(H4SOw/oOBD)-10, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SOw/oOBD)-11, REMOVAL, Muffler.>

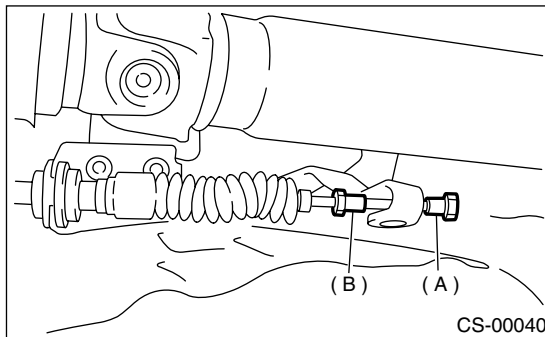
DOHC turbo model

<Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4DOTC)-15, REMOVAL, Muffler.>

3) Remove heat shield cover. (If equipped)

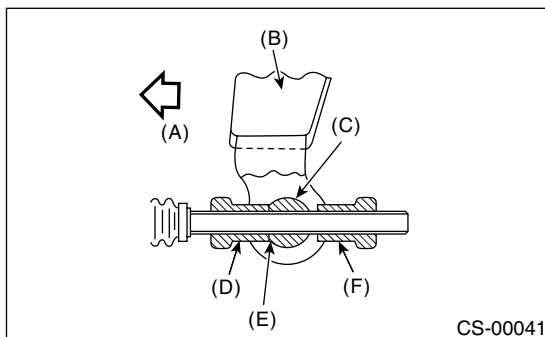


4) Loosen the adjusting nut on each side.



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

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

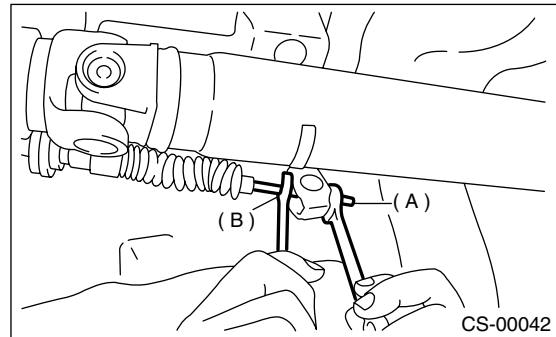


- (A) Front side
- (B) Select lever
- (C) Connector
- (D) Adjusting nut B
- (E) Contact point
- (F) Adjusting nut A

6) While preventing the adjusting nut B from moving with a wrench, 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 completion of fitting, make sure that the select lever operates smoothly all across the operating range.

8) Install in the reverse order of removal.

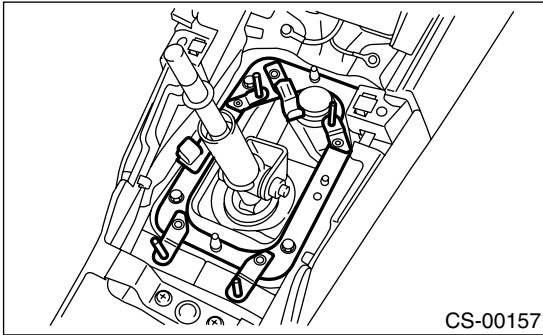


## 4. MT Gear Shift Lever

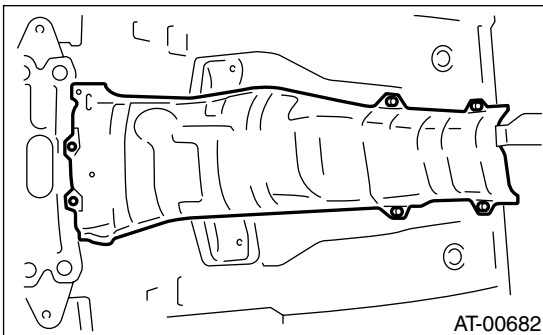
### A: REMOVAL

#### 1. 5MT

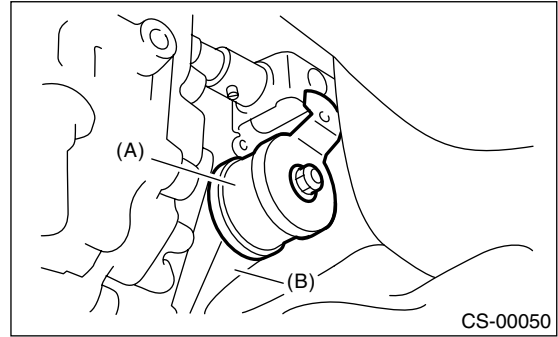
- 1) Set the vehicle on a lift.
- 2) Disconnect the negative cable from battery.
- 3) Remove the gear shift knob.
- 4) Remove the console box. <Ref. to EI-42, REMOVAL, Console Box.>
- 5) Remove the drive select cable. (Dual-range model)  
<Ref. to CS-36, REMOVAL, Drive Select Cable.>
- 6) Remove the plate assembly from body.



- 7) Lift-up the vehicle.
- 8) Remove the rear exhaust pipe and muffler.  
SOHC model  
<Ref. to EX(H4SO)-10, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SO)-12, REMOVAL, Muffler.>  
SOHC without OBD model  
<Ref. to EX(H4SOw/oOBD)-10, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4SOw/oOBD)-11, REMOVAL, Muffler.>  
DOHC turbo model  
<Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.> and <Ref. to EX(H4DOTC)-15, REMOVAL, Muffler.>
- 9) Remove the heat shield cover. (If equipped)

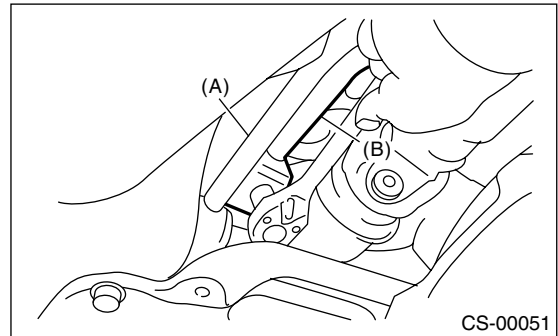


- 10) Remove the stay from transmission bracket.



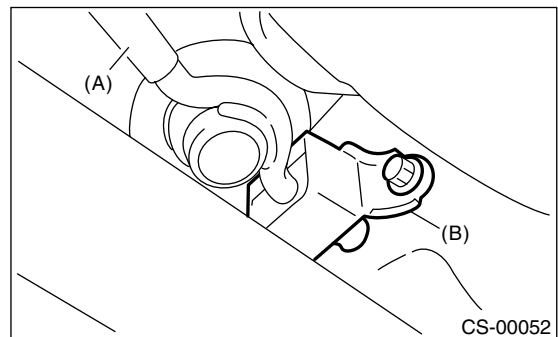
- (A) Stay
- (B) Transmission bracket

- 11) Remove the rod from joint.



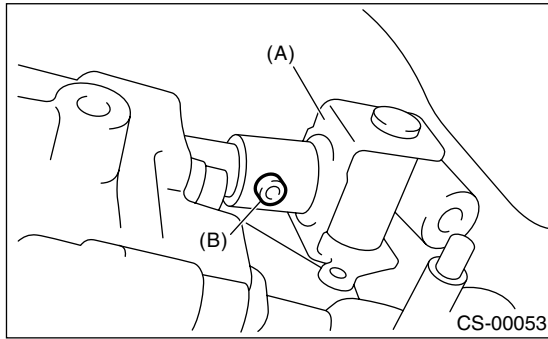
- (A) Stay
- (B) Rod

- 12) Remove the cushion rubber from body.



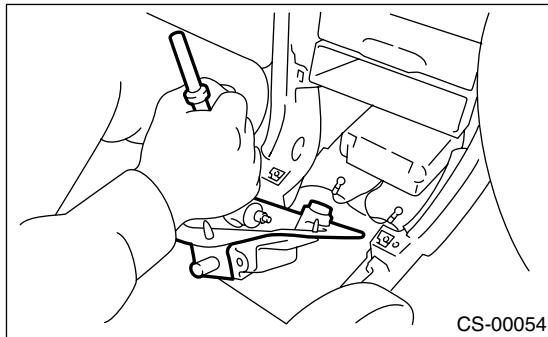
- (A) Stay
- (B) Cushion rubber

13) Remove the joint, and then extract the spring pin.



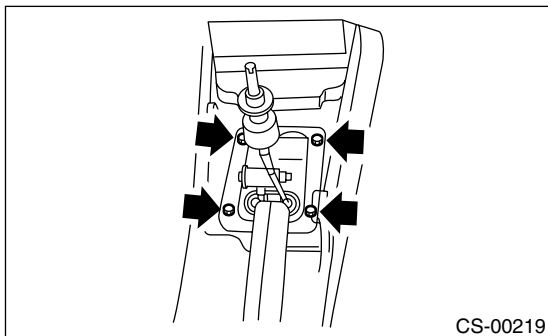
- (A) Joint
- (B) Spring pin

14) Lower the vehicle.  
15) Remove the gear shift lever.



## 2. 6MT

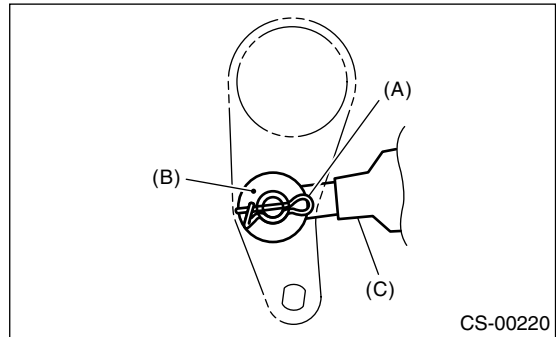
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from battery.
- 3) Remove the gear shift knob.
- 4) Remove the console box front. <Ref. to EI-42, REMOVAL, Console Box.>
- 5) Remove the boot plate from body.



- 6) Lift-up the vehicle.
- 7) Remove the under cover.
- 8) Remove the rear exhaust pipe and muffler. <Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.>, <Ref. to EX(H4DOTC)-15, REMOVAL, Muffler.>

9) Remove the crossmember. <Ref. to 6MT-34, REMOVAL, Transmission Mounting System.>

10) Remove the snap pin and washer, and then remove the reverse check cable from reverse check lever.

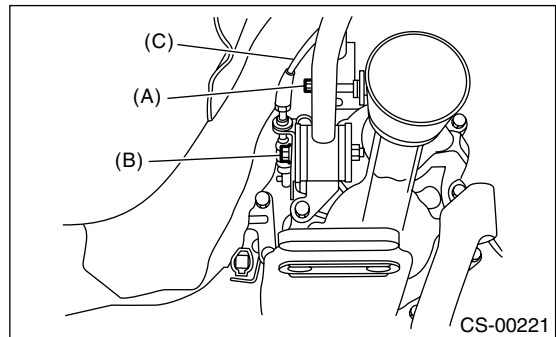


- (A) Snap pin
- (B) Washer
- (C) Reverse check cable

11) Move the transmission to right side, and then remove the joint COMPL, stay bolt and reverse check cable.

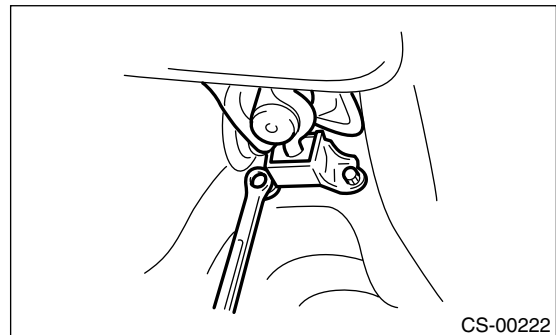
**NOTE:**

If the transmission is not moved, the joint COMPL and stay bolt will contact body and damage may occur.



- (A) Joint COMPL bolt
- (B) Stay bolt
- (C) Reverse check cable

12) Remove the cushion rubber from body.



# MT Gear Shift Lever

## CONTROL SYSTEMS

- 13) Lower the vehicle.
- 14) Remove the gear shift lever.

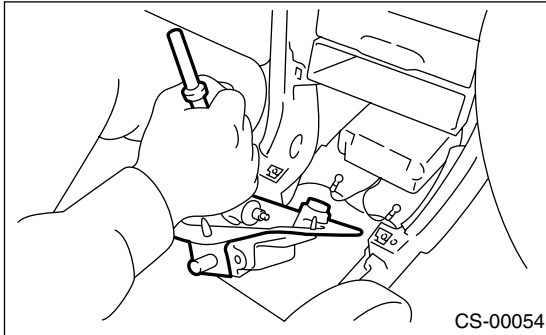
### B: INSTALLATION

#### 1. 5MT

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

#### NOTE:

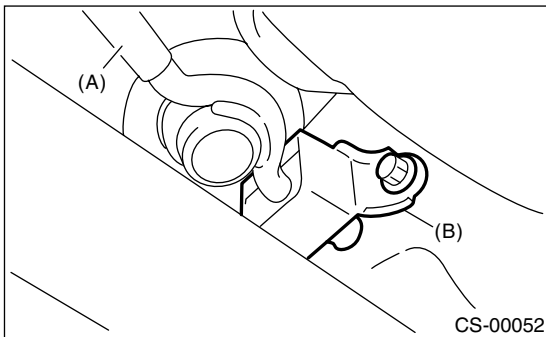
After inserting rod and stay, temporarily put them onto transmission mount.



- 3) Lift-up the vehicle.
- 4) Mount the cushion rubber on body.

#### Tightening torque:

**18 N-m (1.8 kgf-m, 13.0 ft-lb)**

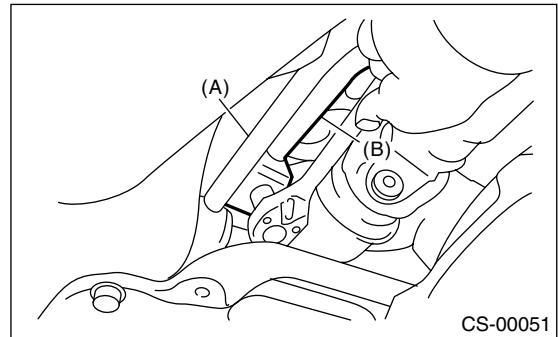


- (A) Stay
- (B) Cushion rubber

- 5) Connect the rod to the joint.

#### Tightening torque:

**18 N-m (1.8 kgf-m, 13.0 ft-lb)**

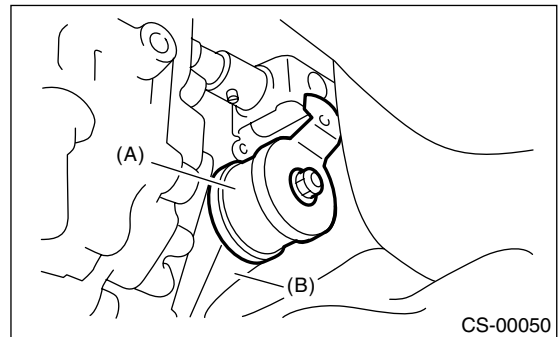


- (A) Stay
- (B) Rod

- 6) Connect the stay to transmission bracket.

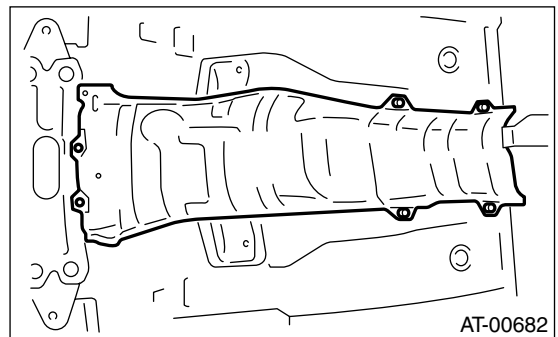
#### Tightening torque:

**18 N-m (1.8 kgf-m, 13.0 ft-lb)**



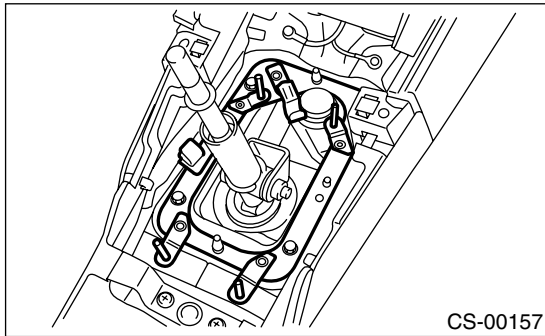
- (A) Stay
- (B) Transmission bracket

- 7) Install the heat shield cover. (If equipped)



- 8) Install rear exhaust pipe and muffler.  
 SOHC model  
 <Ref. to EX(H4SO)-10, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4SO)-12, INSTALLATION, Muffler.>  
 SOHC without OBD model  
 <Ref. to EX(H4SOw/oOBD)-10, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4SOw/oOBD)-11, INSTALLATION, Muffler.>  
 DOHC turbo model  
 <Ref. to EX(H4DOTC)-14, INSTALLATION, Rear Exhaust Pipe.> and <Ref. to EX(H4DOTC)-15, INSTALLATION, Muffler.>
- 9) Install the plate assembly to body.

**Tightening torque:**  
**7.5 N·m (0.76 kgf-m, 5.5 ft-lb)**



- 10) Install the drive select cable. (Dual-range model) <Ref. to CS-36, INSTALLATION, Drive Select Cable.>  
 11) Install console box. <Ref. to EI-42, INSTALLATION, Console Box.>

## 2. 6MT

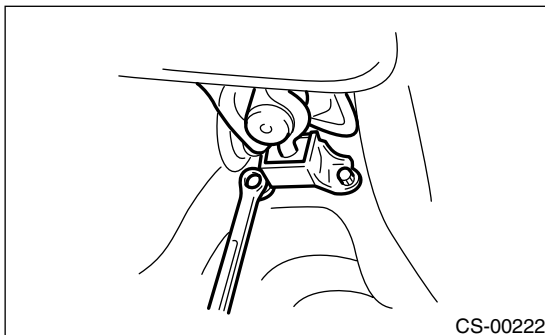
- 1) Insert the gear shift lever from room side.

**NOTE:**

After inserting the rod and stay, temporarily put them onto transmission mount.

- 2) Mount the cushion rubber on body.

**Tightening torque:**  
**18 N·m (1.8 kgf-m, 13.0 ft-lb)**

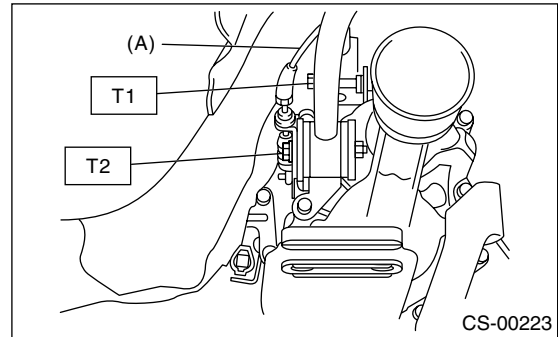


- 3) Move the transmission to right side, and then install the joint COMPL and stay.

**Tightening torque:**

**T1: 11.8 N·m (1.2 kgf-m, 8.7 ft-lb)**

**T2: 32 N·m (3.3 kgf-m, 23.6 ft-lb)**

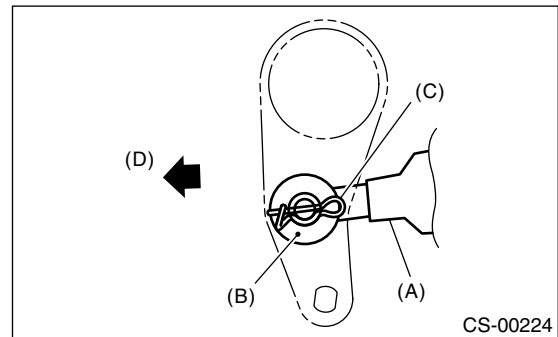


(A) Reverse check cable

- 4) Install the crossmember. <Ref. to 6MT-34, INSTALLATION, Transmission Mounting System.>  
 5) Install the reverse check cable end, washer and snap pin to reverse check lever.

**NOTE:**

- Take care to install the snap pin in proper direction.
- Conduct the adjustment of reverse check cable before installation. <Ref. to CS-31, ADJUSTMENT, Reverse Check Cable.>



(A) Reverse check cable  
 (B) Washer  
 (C) Snap pin  
 (D) Front side

- 6) Install the rear exhaust pipe and muffler. <Ref. to EX(H4DOTC)-14, INSTALLATION, Rear Exhaust Pipe.>, <Ref. to EX(H4DOTC)-15, INSTALLATION, Muffler.>  
 7) Install the under cover.  
 8) Install the boot plate.

**NOTE:**

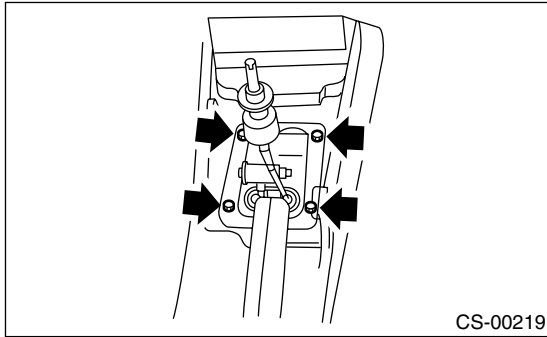
Install the inner boot without any twist.

# MT Gear Shift Lever

## CONTROL SYSTEMS

### Tightening torque:

**7.5 N·m (0.76 kgf·m, 5.5 ft·lb)**



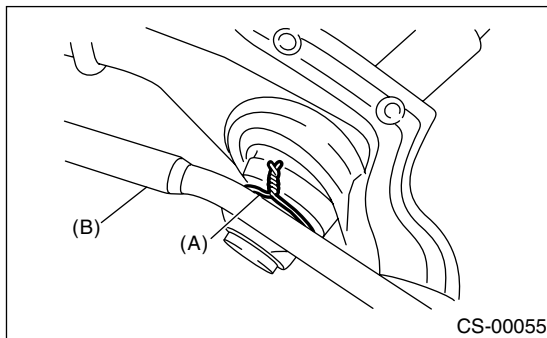
9) Install the console box. <Ref. to EI-42, INSTALLATION, Console Box.>

10) Check that the gear shift is correctly shifted to each gear.

## C: DISASSEMBLY

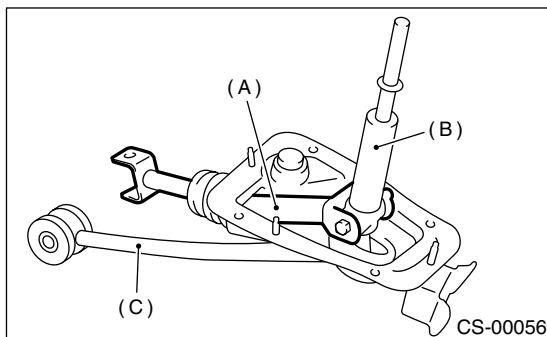
### 1. 5MT

1) Disassemble the lock wire.



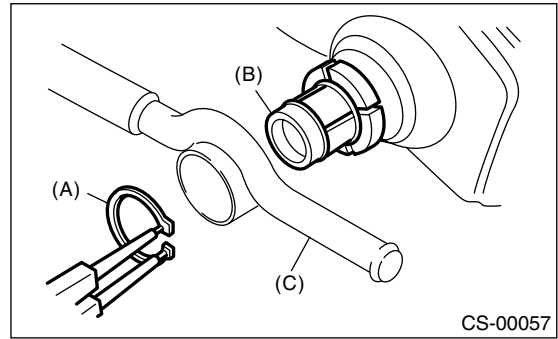
- (A) Lock wire
- (B) Stay

2) Remove the rod from lever.



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

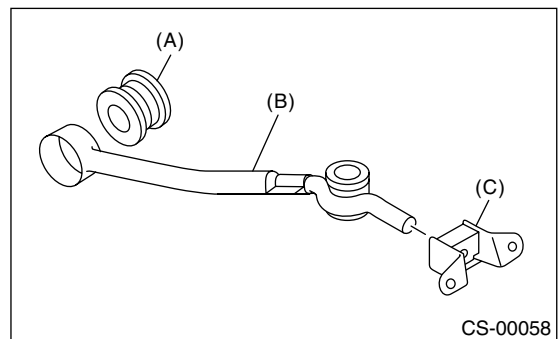
3) Remove the snap ring from bushing B, and then disconnect the stay.



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

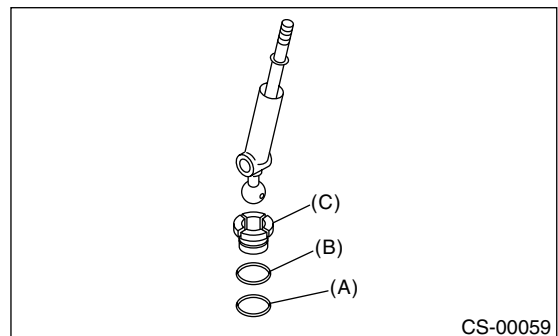
4) Remove the boot from gear shift lever.

5) Remove the bushing and cushion rubber from stay.



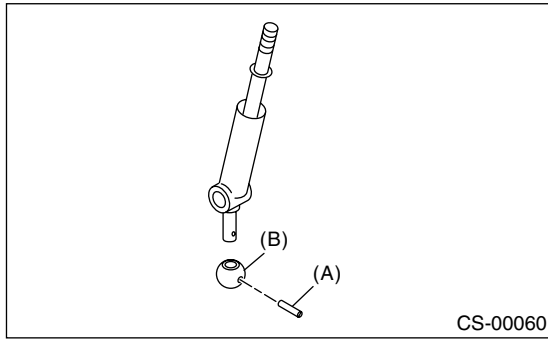
- (A) Bushing
- (B) Stay
- (C) Cushion rubber

6) Remove O-ring, and then disconnect the bushing B.



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

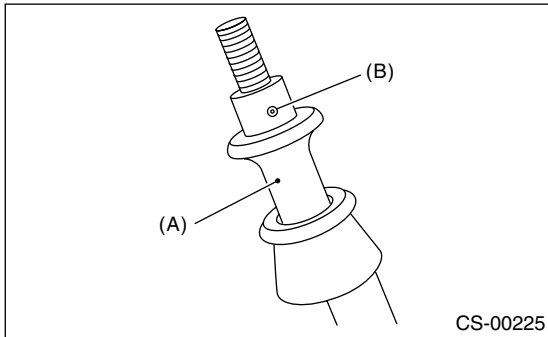
7) Draw out the spring pin, and then remove the bushing A from gear shift lever.



- (A) Spring pin
- (B) Bushing A

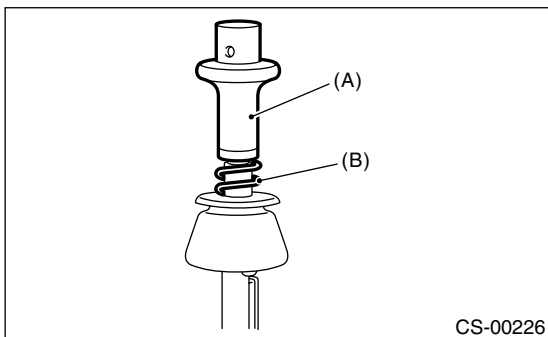
## 2. 6MT

1) Remove the spring pin from slider.



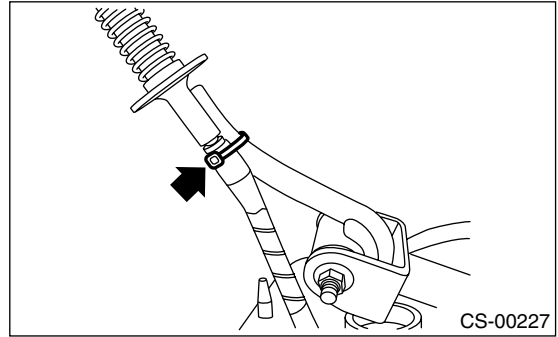
- (A) Slider
- (B) Spring pin

2) Remove the slider and spring.

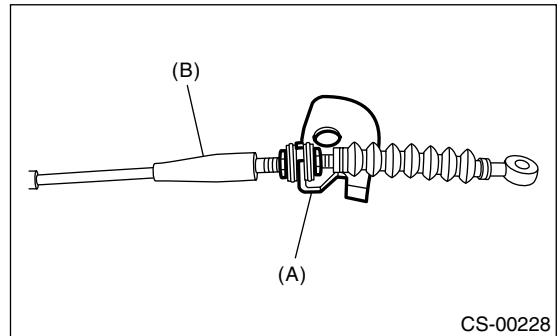


- (A) Slider
- (B) Spring

3) Cut the band clip.

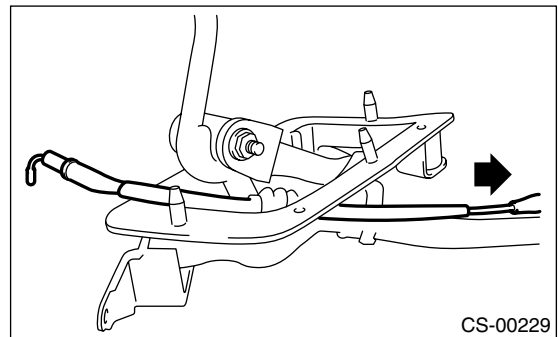


4) Remove the reverse check cable from cable plate.

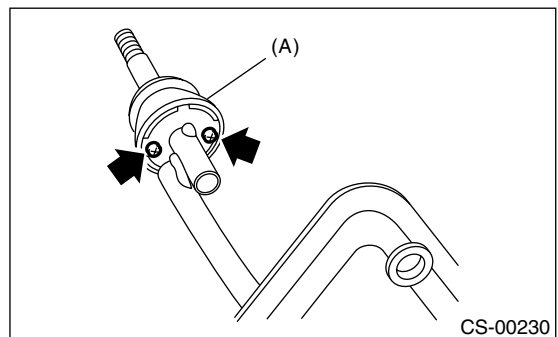


- (A) Cable plate
- (B) Reverse check cable

5) Remove the reverse check cable from gear shift assembly.



6) Remove the holder and spring seat.



- (A) Holder

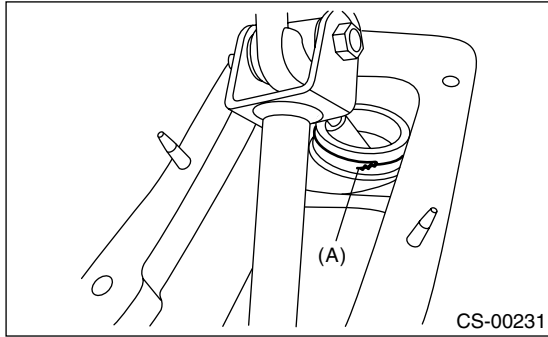
# MT Gear Shift Lever

## CONTROL SYSTEMS

7) Disassemble the lock wire.

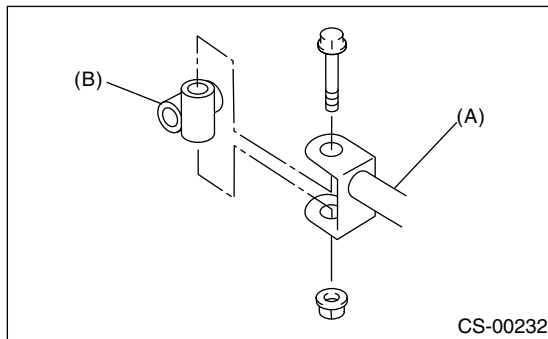
NOTE:

Do not reuse the lock wire.



(A) Lock wire

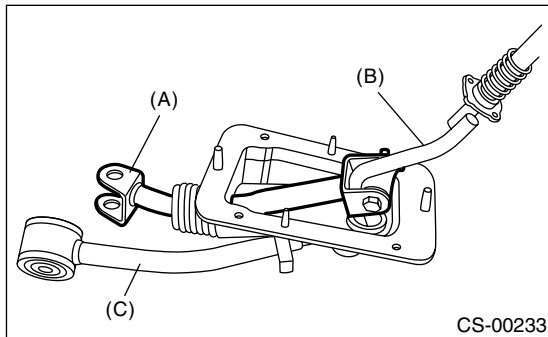
8) Remove the boss from rod.



(A) Rod

(B) Boss

9) Remove the rod from lever.



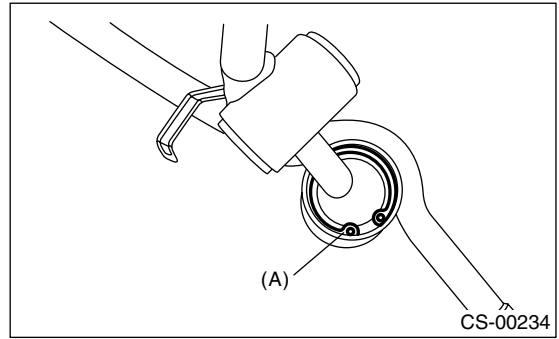
(A) Rod

(B) Lever

(C) Stay

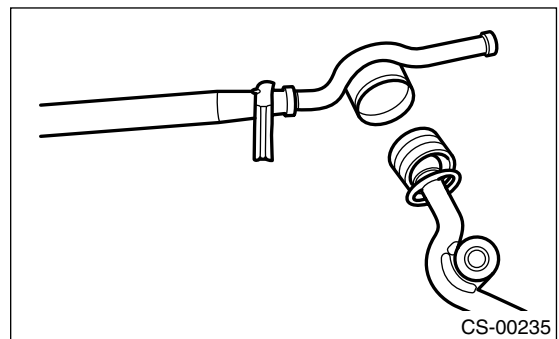
10) Separate the rod and inner boot.

11) Remove the snap ring from stay.

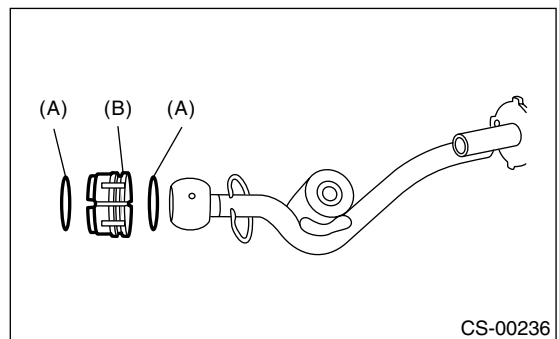


(A) Snap ring

12) Separate the gear shift lever and stay.



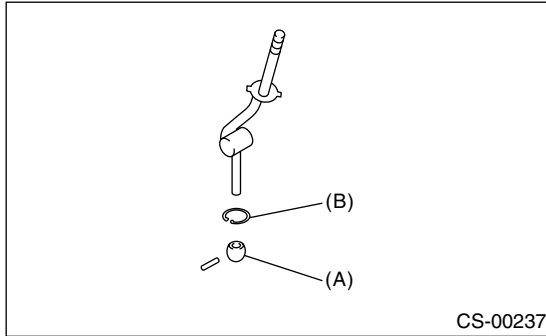
13) Remove the boot and bush from gear shift lever.



(A) O-ring

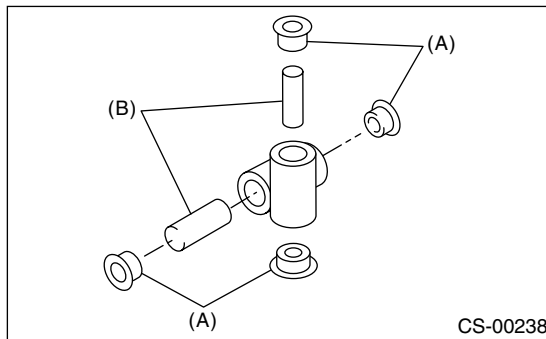
(B) Bush

14) Remove the spring pin, and then remove the bush and snap ring.



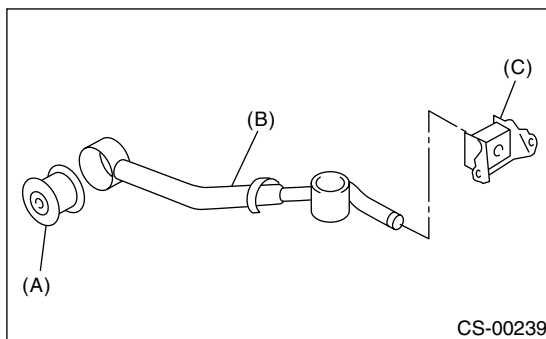
- (A) Bush
- (B) Snap ring

15) Remove the bush and spacer from boss.



- (A) Bush
- (B) Spacer

16) Remove the bush and cushion rubber from stay.

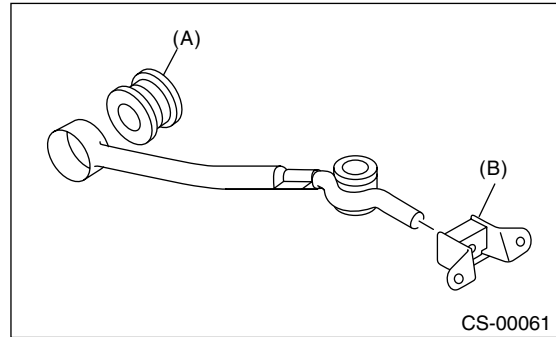


- (A) Bush
- (B) Stay
- (C) Cushion rubber

## D: ASSEMBLY

### 1. 5MT

- 1) Clean all parts before assembly.
- 2) Mount the bushing and cushion rubber on the stay.

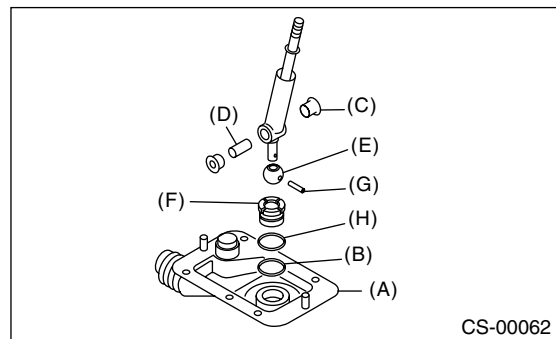


- (A) Bushing
- (B) Cushion rubber

3) Mount each part; boot, O-ring, bushing A, spacer, bushing B, bushing and spring pin on the gear shift lever.

#### NOTE:

- Always use new O-rings.
- Apply grease [SUNLIGHT 2 (Part No. 003602010) or equivalent] to the inner and side surfaces of the bushing when installing the spacer.



- (A) Boot
- (B) O-ring
- (C) Bushing
- (D) Spacer
- (E) Bushing A
- (F) Bushing B
- (G) Spring pin
- (H) O-ring

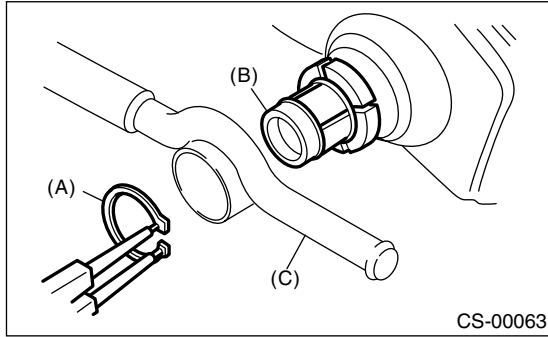
4) Insert the gear shift lever into the boot hole.



# MT Gear Shift Lever

## CONTROL SYSTEMS

5) Install the snap ring and stay to bushing B.

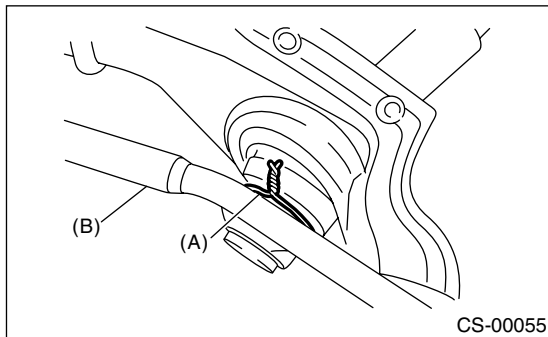


- (A) Snap ring
- (B) Bushing B
- (C) Stay

6) Tighten with lock wire to the extent that the boot will not come off.

### NOTE:

Always use new lock wire.



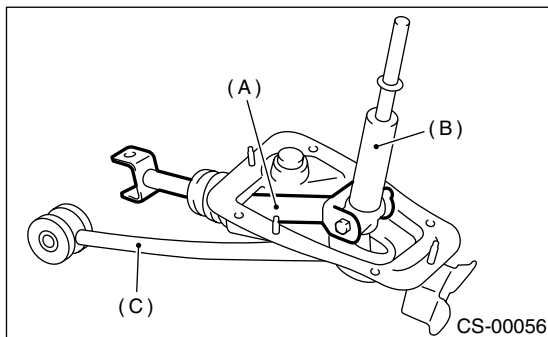
- (A) Lock wire
- (B) Stay

7) Insert the rod into the boot hole.

8) Connect rod to lever.

### Tightening torque:

**11.8 N·m (1.2 kgf-m, 8.7 ft-lb)**



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

9) Check the swing torque of rod in relation to the gear shift lever.

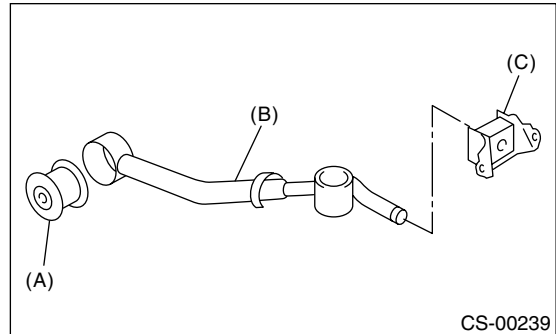
10) Check that there is no excessive play and that parts move smoothly.

## 2. 6MT

### NOTE:

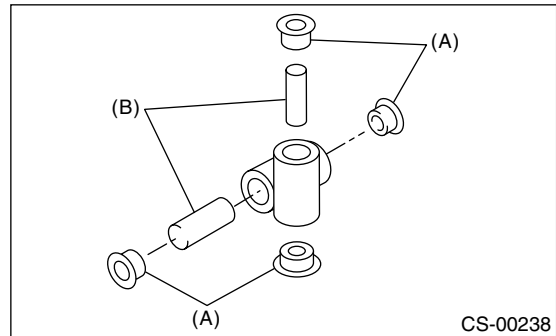
- Clean all parts before assembly.
- Apply SUNLIGHT 2 grease or equivalent to each parts.

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



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

2) Install the bush and spacer to boss.

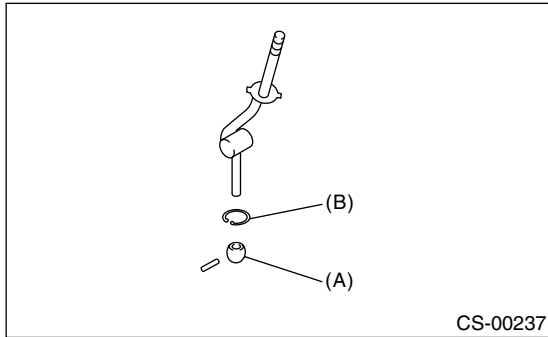


- (A) Bush
- (B) Spacer

3) Install the snap ring to gear shift lever, and then install the bush.

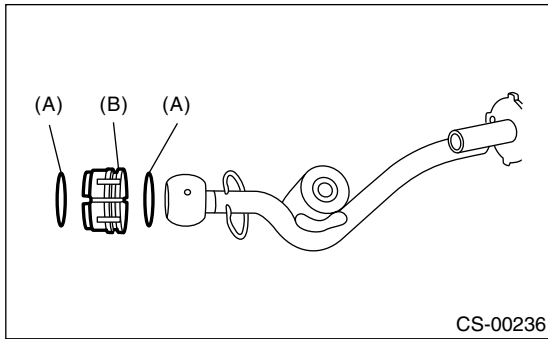
**NOTE:**

Apply grease to the bush.



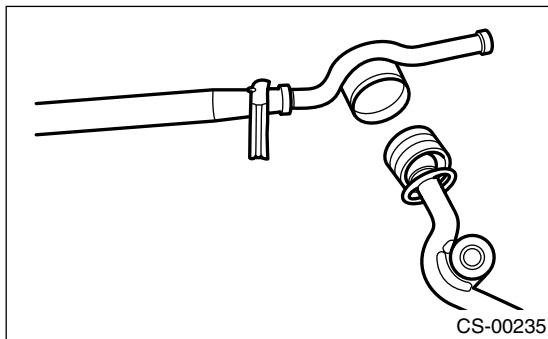
- (A) Bush
- (B) Snap ring

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

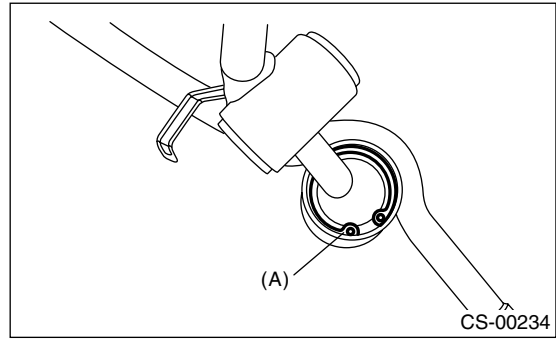


- (A) O-ring
- (B) Bush

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



6) Install the washer and snap ring.

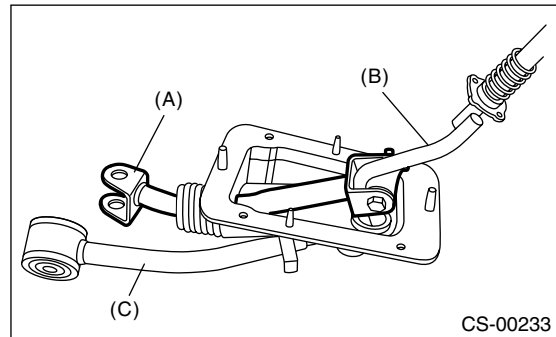


- (A) Snap ring

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

**Tightening torque:**

**11.8 N·m (1.2 kgf·m, 8.7 ft·lb)**

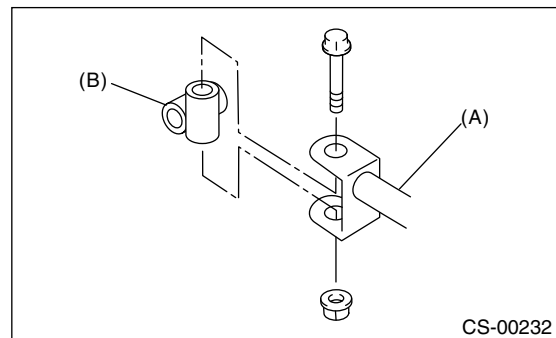


- (A) Rod
- (B) Lever
- (C) Stay

9) Install the boss to rod.

**Tightening torque:**

**11.8 N·m (1.2 kgf·m, 8.7 ft·lb)**

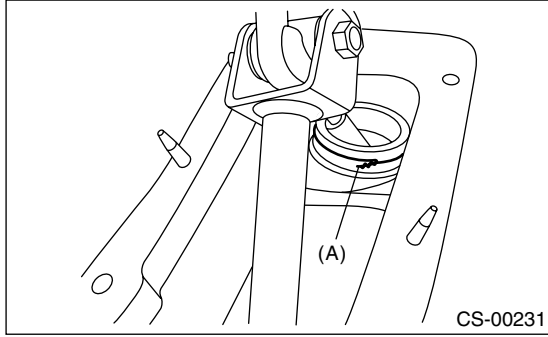


- (A) Rod
- (B) Boss

# MT Gear Shift Lever

## CONTROL SYSTEMS

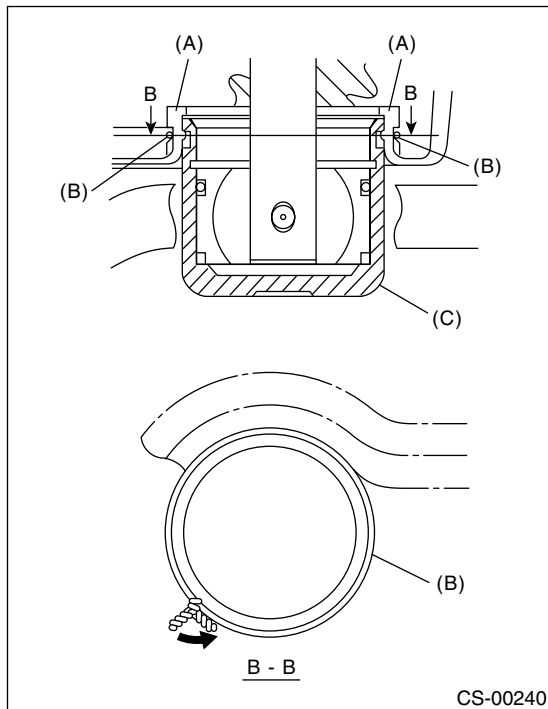
10) Install a new lock wire.



(A) Lock wire

**NOTE:**

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

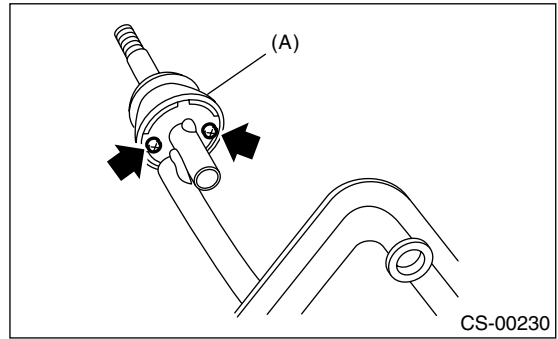


(A) Inner boot  
(B) Lock wire  
(C) Stay

11) Install the holder.

**Tightening torque:**

**1.3 N·m (0.13 kgf-m, 0.96 ft-lb)**

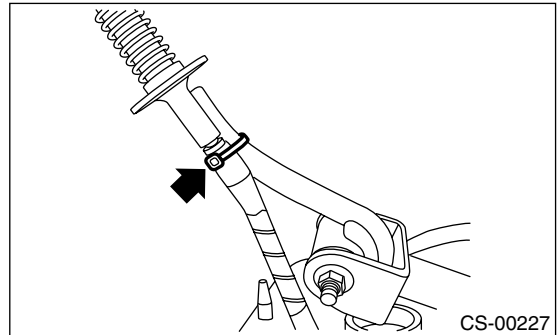


(A) Holder

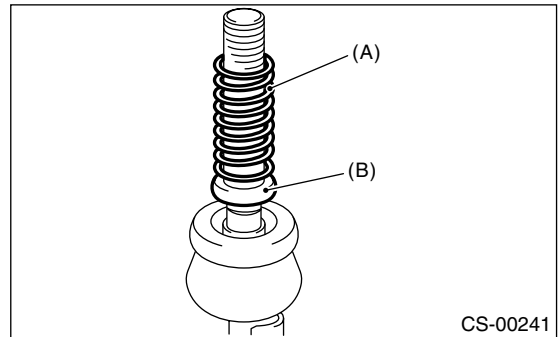
- 12) Insert the reverse check cable into boot hole.  
13) Insert the reverse check cable into gear shift assembly, and fix with band clip.

**NOTE:**

- Cut off the extra band clip.
- Make sure that the reverse check cable is inserted into gear shift lever assembly without any clearance.



14) Install the seat cushion and spring.

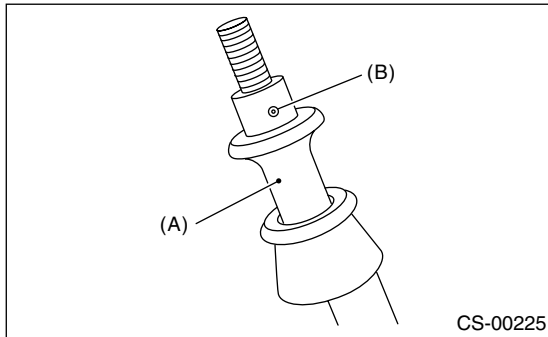


(A) Spring  
(B) Seat cushion

15) Fix the slider and reverse check cable end with spring pin.

**NOTE:**

Apply grease to the sliding part of slider.

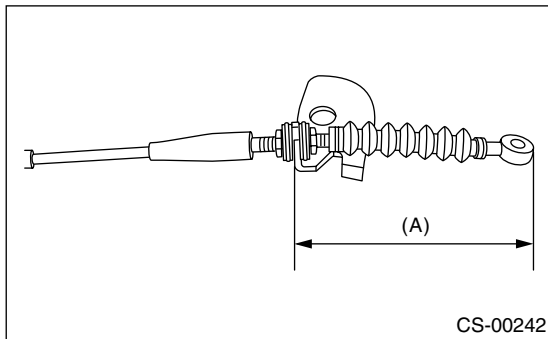


- (A) Slider
- (B) Spring pin

16) With the slider held down to the bottom end or the cable pulled, adjust the length between end of cable plate and reverse check cable to 84 mm (3.31 in), and then tighten the lock nut.

**Tightening torque:**

**6 N·m (0.6 kgf·m, 4.4 ft·lb)**

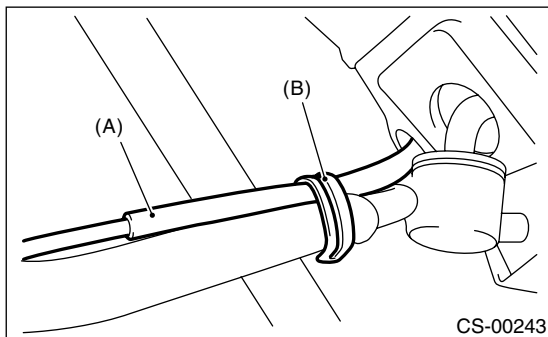


- (A) 84 mm (3.31 in)

17) Fix the reverse check cable to clip of stay.

**NOTE:**

Install the reverse check cable to upper side of stay.

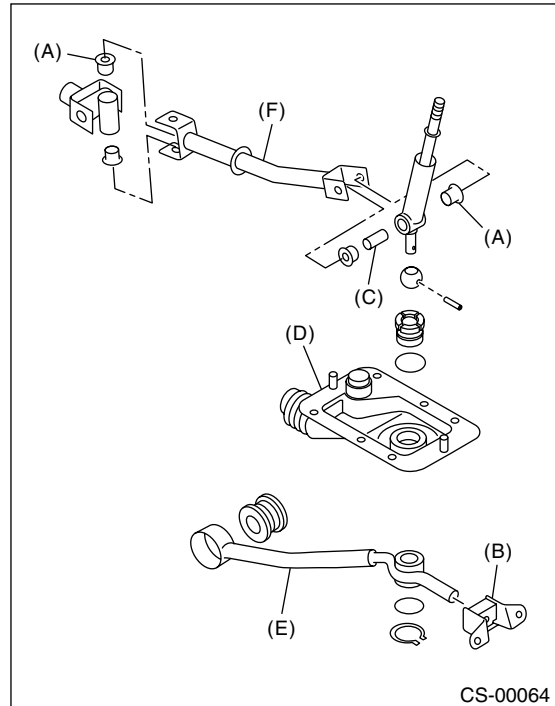


- (A) Reverse check cable
- (B) Clip

**E: INSPECTION**

1) Check each part (bushing, cushion rubber, spacer, boot, stay and rod, etc.) for deformation, damage and wear. Repair or replace any defective part. Determine defective parts by comparing with new parts.

- 5MT

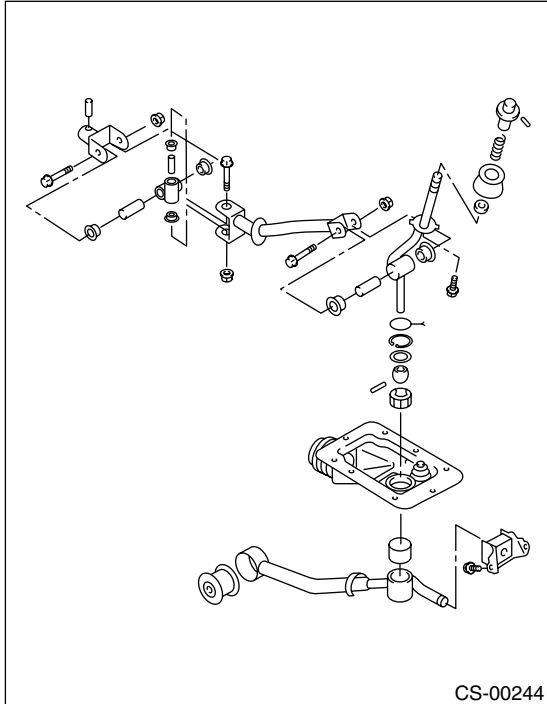


- (A) Bushing
- (B) Cushion rubber
- (C) Spacer
- (D) Boot
- (E) Stay
- (F) Rod

# MT Gear Shift Lever

## CONTROL SYSTEMS

- 6MT

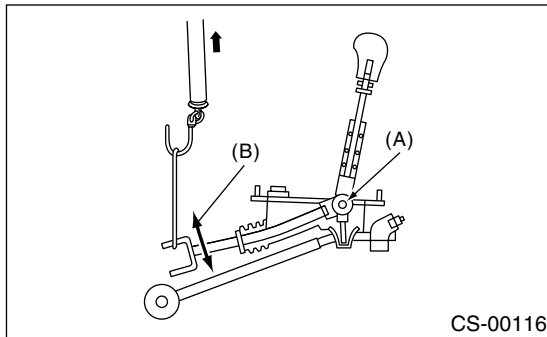


2) Check the swing torque of the rod in relation of the gear shift lever.

If the torque exceeds the specification, replace the bushing or retighten the nuts.

### **Swing torque:**

**3.7 N (0.38 kgf, 0.84 lb) or less**

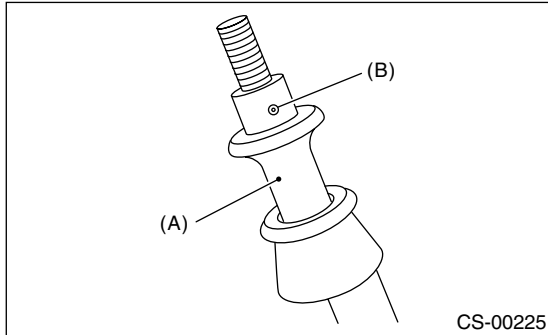


- (A) Center of rotation
- (B) Swing torque

## 5. Reverse Check Cable

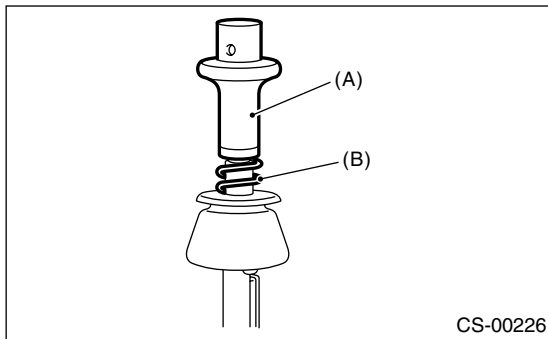
### A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Remove the gear shift knob.
- 3) Remove the console box front. <Ref. to EI-42, REMOVAL, Console Box.>
- 4) Remove the spring pin from slider.



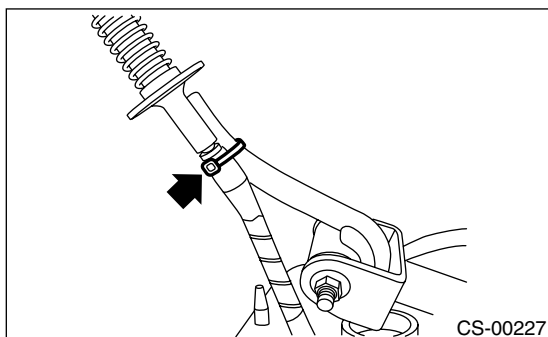
- (A) Slider
- (B) Spring pin

- 5) Remove the slider and spring.



- (A) Slider
- (B) Spring

- 6) Cut the band clip, and then separate the reverse check cable from gear shift lever.

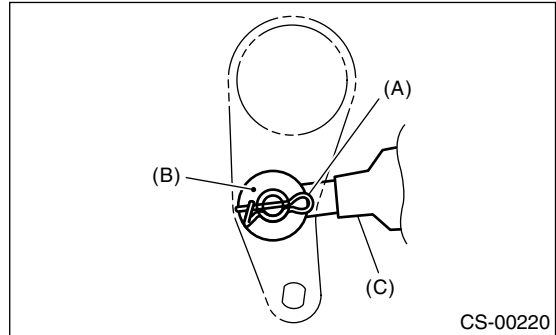


- 7) Lift-up the vehicle.
- 8) Remove the under cover.

- 9) Remove the rear exhaust pipe and muffler. <Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.>, <Ref. to EX(H4DOTC)-15, REMOVAL, Muffler.>

- 10) Remove the crossmember. <Ref. to 6MT-34, REMOVAL, Transmission Mounting System.>

- 11) Remove the snap pin and washer, and then separate the reverse check cable from reverse check lever.

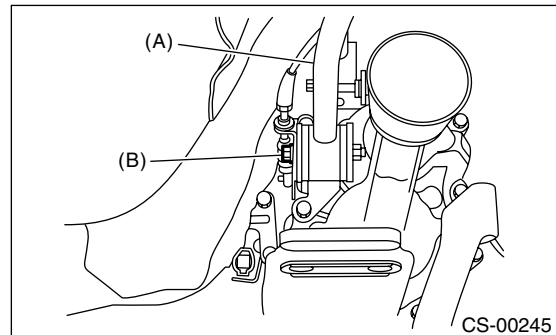


- (A) Snap pin
- (B) Washer
- (C) Reverse check cable

- 12) Move the transmission to right side, and then remove the stay bolt and reverse check cable.

#### NOTE:

If the transmission is not moved, the stay bolt will contact body and damage may occur.

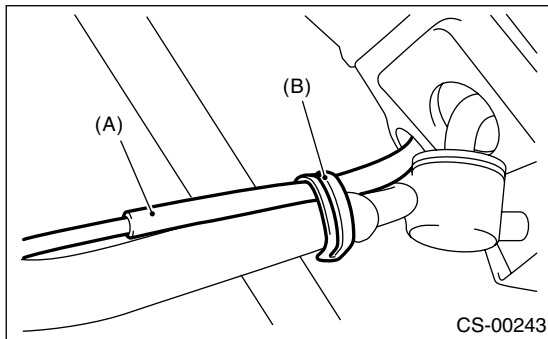


- (A) Stay
- (B) Stay bolt

# Reverse Check Cable

## CONTROL SYSTEMS

13) Raise the clip of stay, and then separate the stay and reverse check cable.



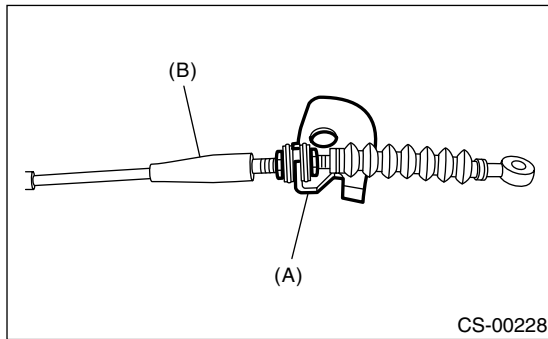
- (A) Reverse check cable
- (B) Clip

14) Remove the reverse check cable by pulling from underneath the vehicle.

### NOTE:

Take care not to damage the inner boot.

15) Loosen the lock nut, then remove the reverse check cable from cable plate.



- (A) Cable plate
- (B) Reverse check cable

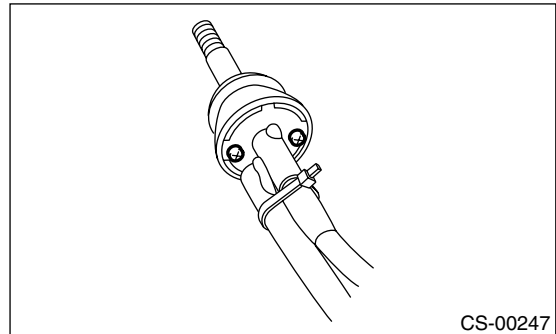
## B: INSTALLATION

1) Insert the reverse check cable to the hole of inner boots from underneath the vehicle.

2) Insert the reverse check cable to the gear shift lever assembly, then fix with the band clip.

### NOTE:

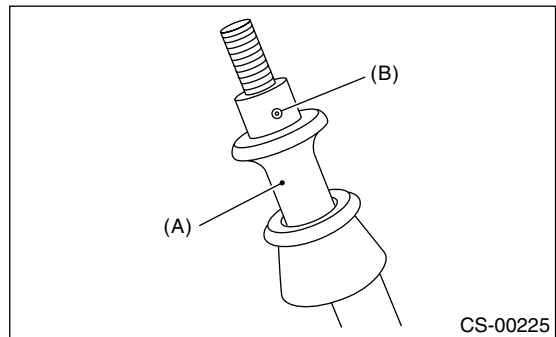
- Cut off the extra band clip.
- Make sure that the reverse check cable is inserted into gear shift lever assembly without any clearance.



3) Fix the slider and reverse check cable end with spring pin.

### NOTE:

Apply grease to the sliding part of slider.



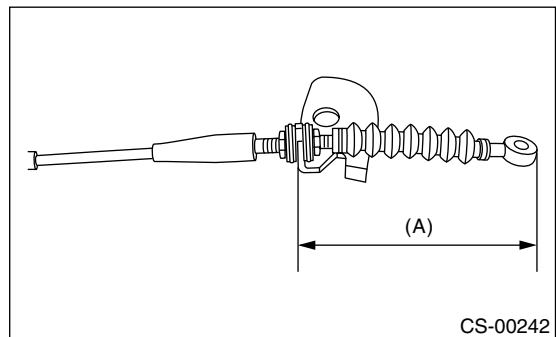
- (A) Slider
- (B) Spring pin

4) Lift-up the vehicle.

5) With the cable pulled, adjust the length between end of cable plate and reverse check cable to 84 mm (3.31 in), and then tighten the lock nut.

### Tightening torque:

**6 N·m (0.6 kgf-m, 4.4 ft-lb)**

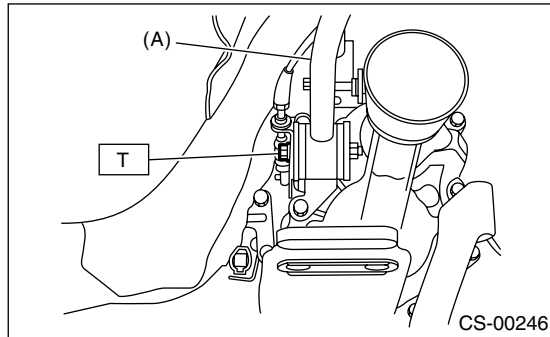


- (A) 84 mm (3.31 in)

6) Move the transmission to right side, and then install the stay.

**Tightening torque:**

**T: 32 N·m (3.3 kgf·m, 23.6 ft·lb)**

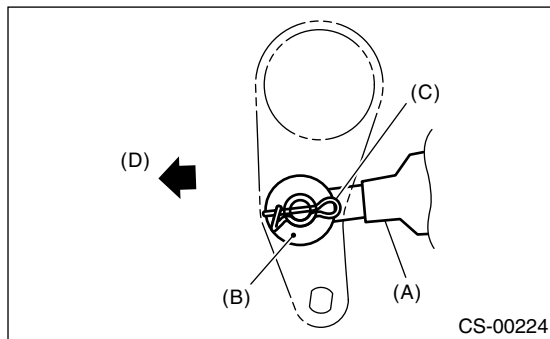


(A) Stay

7) Install the reverse check cable end, washer and snap pin to reverse check lever.

**NOTE:**

Take care to install the snap pin in proper direction.

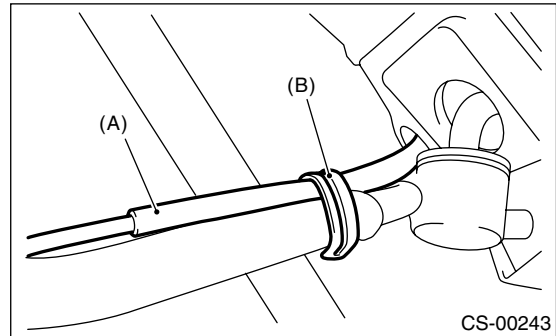


- (A) Reverse check cable
- (B) Washer
- (C) Snap pin
- (D) Front side

8) Fix the reverse check cable to clip of stay.

**NOTE:**

Install the reverse check cable to upper side of stay.



- (A) Reverse check cable
- (B) Clip

9) Install the rear exhaust pipe and muffler. <Ref. to EX(H4DOTC)-14, INSTALLATION, Rear Exhaust Pipe.>, <Ref. to EX(H4DOTC)-15, INSTALLATION, Muffler.>

10) Lower the vehicle.

11) Install the console box. <Ref. to EI-42, INSTALLATION, Console Box.>

**C: INSPECTION**

1) Verify whether the slider moves smoothly. If not, adjust the reverse check cable or check damage of slider. <Ref. to CS-31, ADJUSTMENT, Reverse Check Cable.>

2) Check that the gear can be shift to reverse, when the slider is pulled up. If the gear can not be shift to reverse, adjust the reverse check cable. <Ref. to CS-31, ADJUSTMENT, Reverse Check Cable.>

3) Check that the gear can not be shift to reverse, when the slider is not pulled up. If the gear can be shift to reverse, adjust or replace the reverse check cable. <Ref. to CS-31, ADJUSTMENT, Reverse Check Cable.>

**D: ADJUSTMENT**

1) Set the vehicle on a lift.

2) Remove the under cover.

3) Remove the rear exhaust pipe and muffler. <Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.>, <Ref. to EX(H4DOTC)-15, REMOVAL, Muffler.>

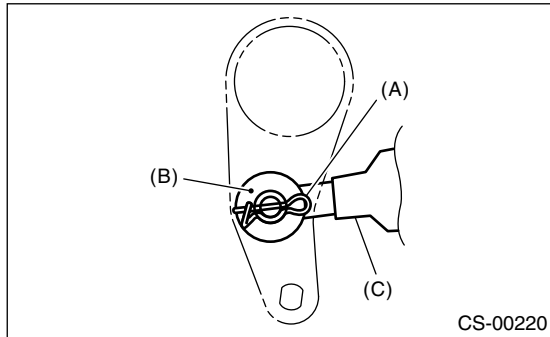
4) Remove the crossmember. <Ref. to 6MT-34, REMOVAL, Transmission Mounting System.>



# Reverse Check Cable

## CONTROL SYSTEMS

5) Remove the snap pin and washer, and then separate the reverse check cable from reverse check lever.

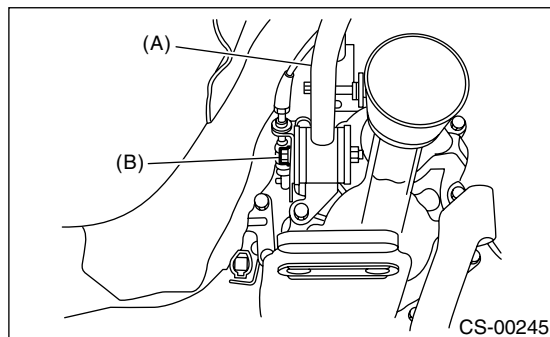


- (A) Snap pin
- (B) Washer
- (C) Reverse check cable

6) Move the transmission to right side, and then remove the stay bolt and reverse check cable.

### NOTE:

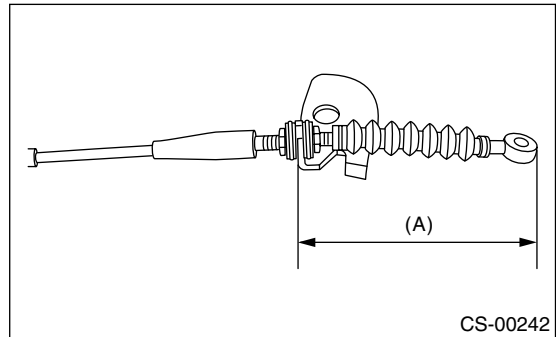
If the transmission is not moved, the stay bolt will contact body and damage may occur.



- (A) Stay
- (B) Stay bolt

7) With the cable pulled, adjust the length between end of cable plate and reverse check cable to 84 mm (3.31 in), and then tighten the lock nut.

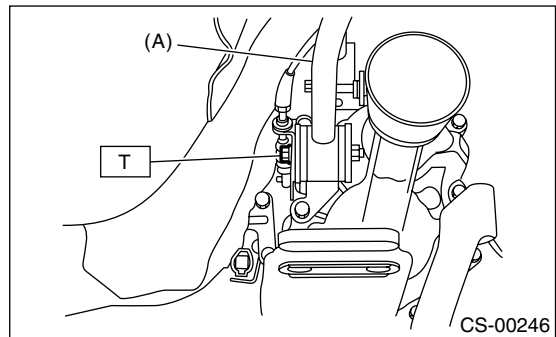
**Tightening torque:**  
**6 N·m (0.6 kgf-m, 4.4 ft-lb)**



- (A) 84 mm (3.31 in)

8) Move the transmission to right side, and then install the stay.

**Tightening torque:**  
**T: 32 N·m (3.3 kgf-m, 23.6 ft-lb)**



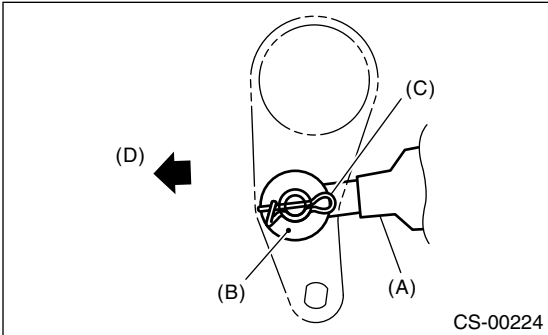
- (A) Stay

9) Install the crossmember. <Ref. to 6MT-34, INSTALLATION, Transmission Mounting System.>

10) Install the rear exhaust pipe and muffler. <Ref. to EX(H4DOTC)-14, INSTALLATION, Rear Exhaust Pipe.>, <Ref. to EX(H4DOTC)-15, INSTALLATION, Muffler.>

11) Install the reverse check cable end, washer and snap pin to reverse check lever.

NOTE:  
Take care to install the snap pin in proper direction.



- (A) Reverse check cable
- (B) Washer
- (C) Snap pin
- (D) Front side

12) Install the under cover.

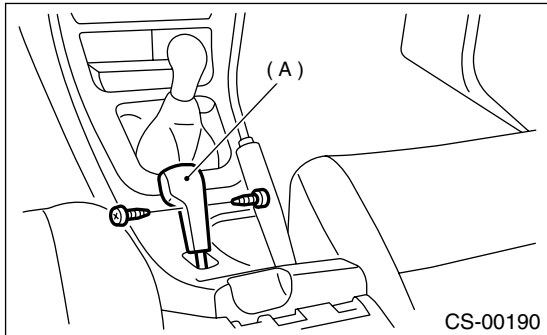
# MT Drive Select Lever

## CONTROL SYSTEMS

### 6. MT Drive Select Lever

#### A: REMOVAL

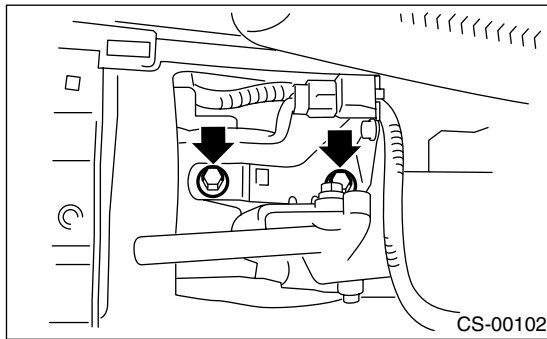
- 1) Set the drive select lever to HI position.
- 2) Remove the knob.



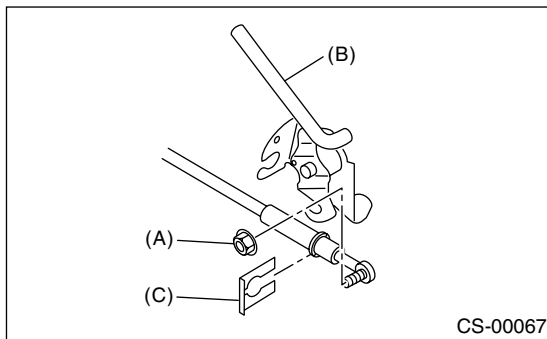
(A) Drive select lever knob

3) Remove the console box. <Ref. to EI-42, REMOVAL, Console Box.>

4) Remove the bolt installing drive select lever assembly on body.



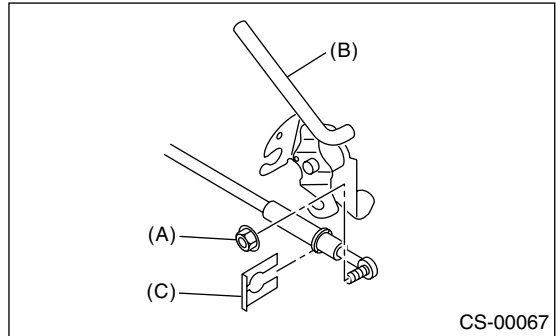
5) Remove the flange nut, clip and then disconnect the cable from lever assembly.



(A) Flange nut  
(B) Lever ASSY  
(C) Clip

#### B: INSTALLATION

1) Attach the drive select cable to the lever assembly and secure with the clamp.



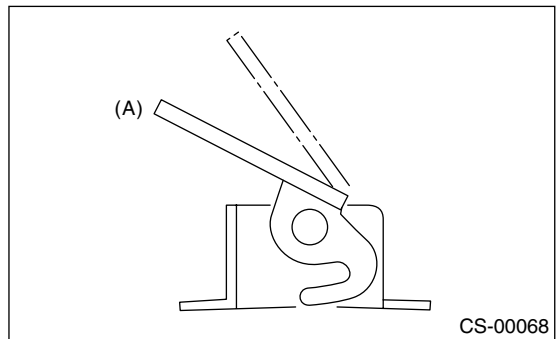
(A) Flange nut  
(B) Lever ASSY  
(C) Clip

2) Install the drive select lever.

**Tightening torque:**

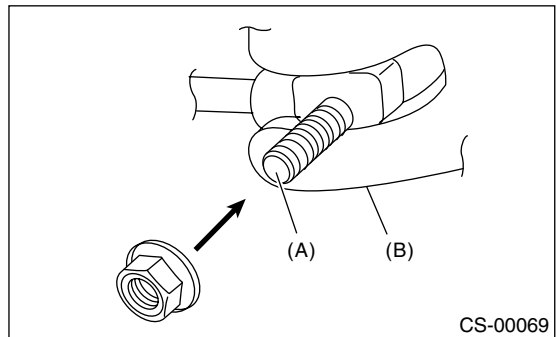
**18 N·m (1.8 kgf-m, 13.0 ft-lb)**

3) Set the drive select lever to HI position.



(A) HI position

4) Be sure to insert the cable end bolt into lever arm slit.



(A) Cable end bolt  
(B) Lever arm

5) Tighten the nut where cable end bolt comes to a stop.

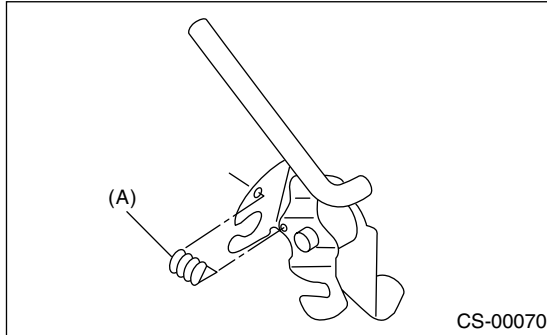
**Tightening torque:**

**18 N-m (1.8 kgf-m, 13.0 ft-lb)**

6) Install in the reverse order of removal.

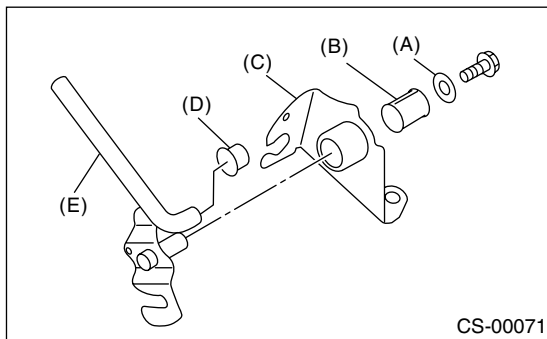
## C: DISASSEMBLY

1) Remove the spring.



(A) Spring

2) Remove the lever, cap and bushing.



- (A) Washer
- (B) Bushing
- (C) Plate ASSY
- (D) Cushion
- (E) Lever ASSY

## D: ASSEMBLY

1) Assemble in the reverse order of disassembly.

**Tightening torque:**

**1.6 N-m (0.16 kgf-m, 1.2 ft-lb)**

2) Make sure the select lever moves smoothly.

## E: INSPECTION

1) Make sure the select lever moves smoothly. If it does not move smoothly, repair or replace it.

2) Make sure the drive select lever is not damaged. If it is damaged, repair or replace it.

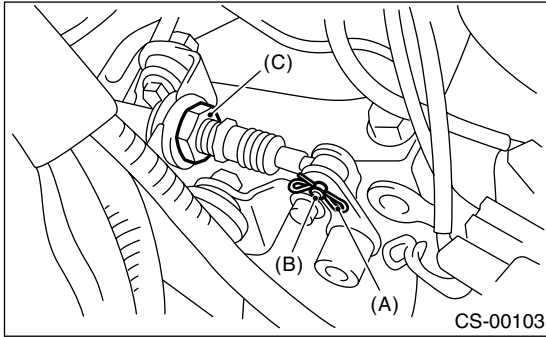
# Drive Select Cable

## CONTROL SYSTEMS

### 7. Drive Select Cable

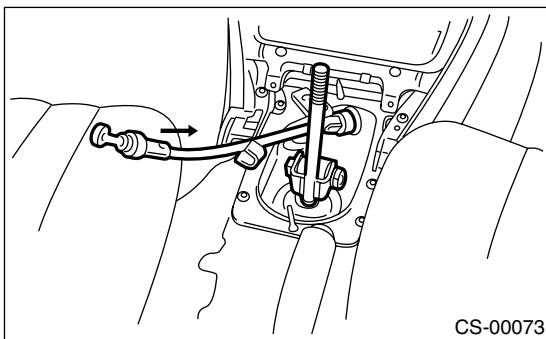
#### A: REMOVAL

- 1) Remove the drive select lever. <Ref. to CS-34, REMOVAL, MT Drive Select Lever.>
- 2) Remove the air cleaner case or air intake duct. <Ref. to IN(H4SO)-5, REMOVAL, Air Cleaner Case.> and <Ref. to IN(H4SO)-6, REMOVAL, Air Intake Duct.>
- 3) Remove the snap pin and clevis pin.



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

- 4) Loosen the nut, and then disconnect the cable from cable bracket.
- 5) Remove the cable from transmission clamp.
- 6) Remove the console box. <Ref. to EI-42, REMOVAL, Console Box.>
- 7) Remove cable from the under side of vehicle.



#### B: INSTALLATION

- 1) Install in the reverse order of removal.
- 2) Make sure the drive select lever operates properly.

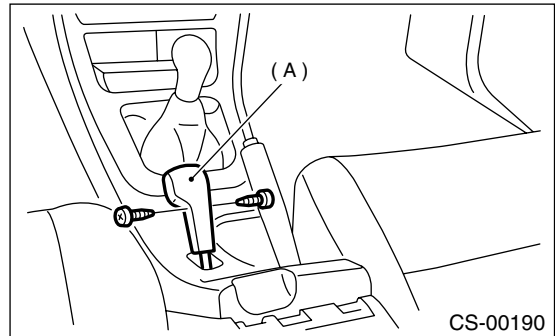
#### C: INSPECTION

- 1) Make sure to move the transmission to HI or LO position by moving the drive select lever. If it doesn't, adjust the cable. <Ref. to CS-36, ADJUSTMENT, Drive Select Cable.>
- 2) Make sure the cable operates smoothly. If it catches or fails to work properly, repair or replace it.

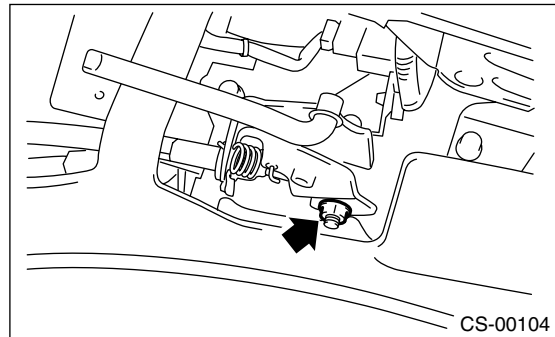
- 3) Check the cable for damage.

#### D: ADJUSTMENT

- 1) Set the drive select lever to HI position.
- 2) Remove the knob (A).



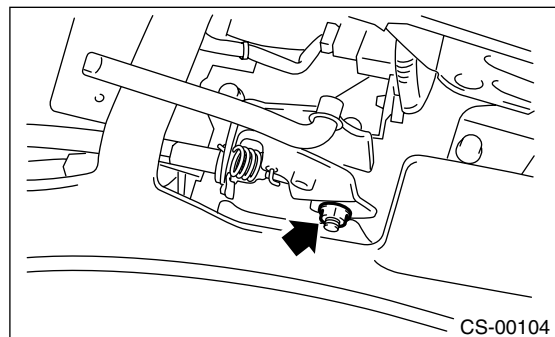
- 3) Remove the console box. <Ref. to EI-42, REMOVAL, Console Box.>
- 4) Loosen the nut.



- 5) Make sure the transmission is in HI position. If isn't, pull on the cable to put transmission in HI position.
- 6) Tighten the nut in location where the cable end bolt stops naturally.

#### Tightening torque:

**18 N·m (1.8 kgf-m, 13.0 ft-lb)**



- 7) Make sure to move the transmission to HI or LO position by moving the drive select lever. If it doesn't, readjust cable.

## 8. General Diagnostic Table

### A: INSPECTION

Symptom	Possible cause	Remedy
1. Select lever	Starter does not run.	Adjust select cable and inhibitor switch. Or inspect circuit.
	Back-up light does not light up.	Adjust select cable and inhibitor switch, or inspect 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.
2. MT gear shift lever (6MT)	Shift into reverse is impossible.	Adjust reverse check cable.
	Shift into reverse is possible without pulling up slider.	Adjust or replace reverse check cable.
	Slider cannot be pulled up. Or slider is pulled up being stuck.	<ul style="list-style-type: none"> <li>• Inspect reverse check system of transmission.</li> <li>• Adjust or replace reverse check cable.</li> </ul>

# General Diagnostic Table

CONTROL SYSTEMS

---