

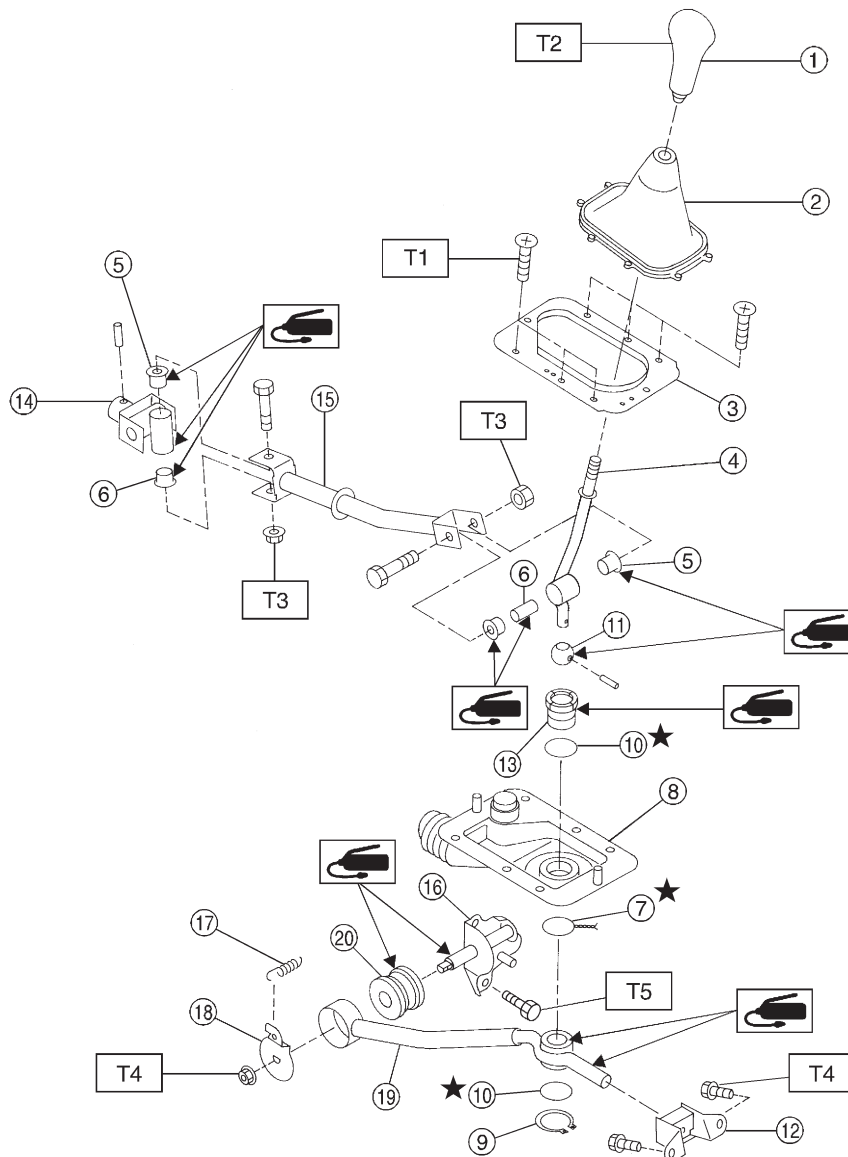
# TRANSMISSION CONTROL SYSTEM

# 3-3

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## 1. Manual Transmission



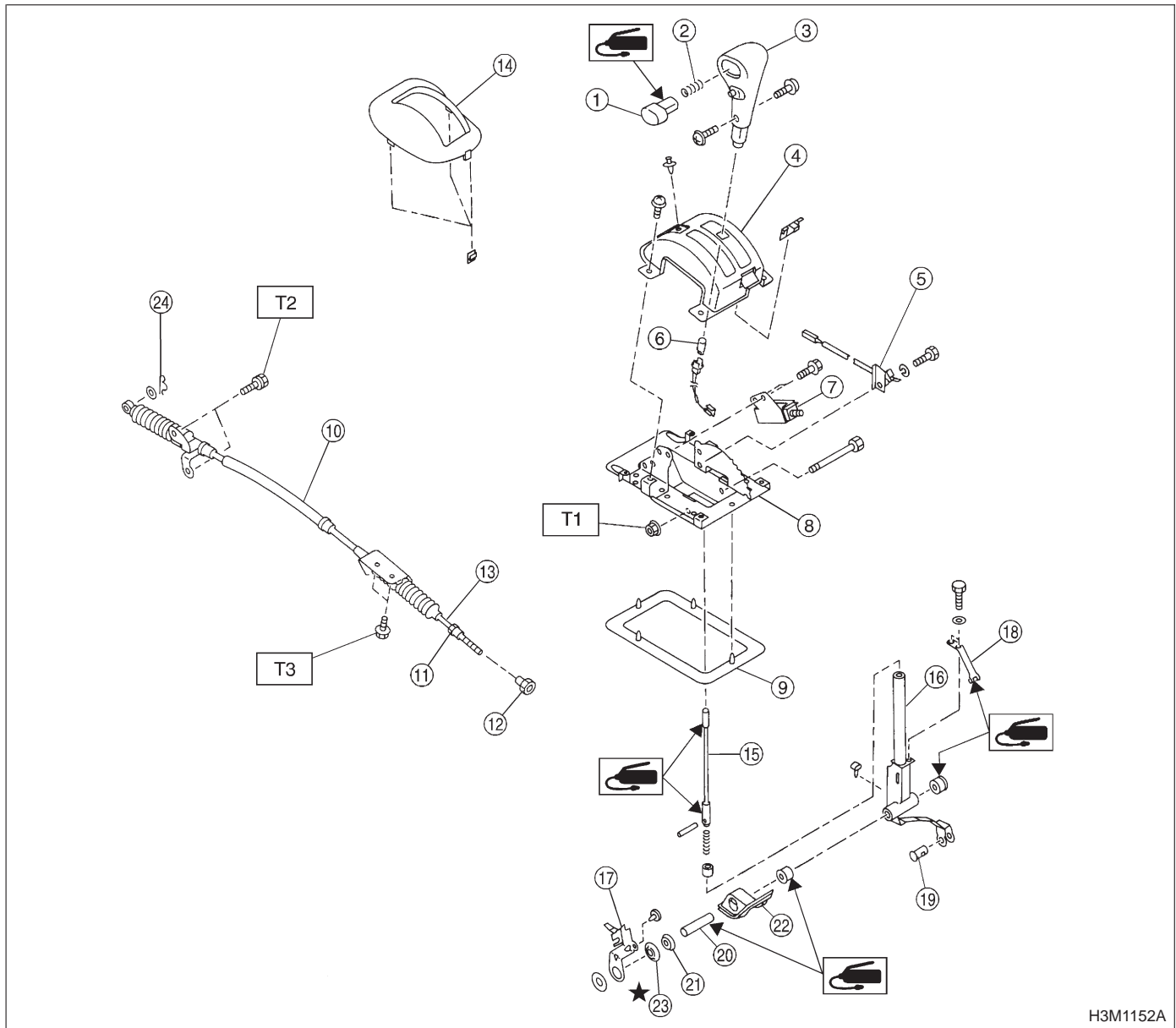
H3M1189A

- ① Gear shift knob
- ② Console boot
- ③ Boot plate
- ④ Gear shift lever
- ⑤ Bush
- ⑥ Spacer
- ⑦ Locking wire
- ⑧ Boot
- ⑨ Snap ring
- ⑩ O-ring
- ⑪ Bush (Shift lever)
- ⑫ Cushion rubber
- ⑬ Bush (Stay rear)
- ⑭ Joint

- ⑮ Rod
- ⑯ Bracket
- ⑰ Spring
- ⑱ Washer
- ⑲ Stay
- ⑳ Bush (Stay front)

**Tightening torque: N·m (kg·m, ft·lb)****T1:  $4.4 \pm 1.5$  (0.45  $\pm$  0.15, 3.3  $\pm$  1.1)****T2: 5 (0.51, 3.7)****T3:  $12 \pm 3$  (1.2  $\pm$  0.3, 8.7  $\pm$  2.2)****T4:  $18 \pm 5$  (1.8  $\pm$  0.5, 13.0  $\pm$  3.6)****T5:  $24.5 \pm 2$  (2.50  $\pm$  0.20, 18.07  $\pm$  1.48)**

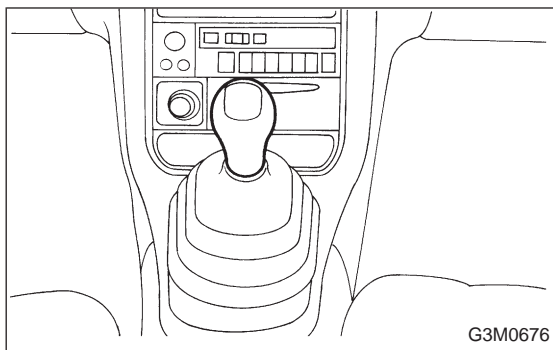
## 2. Automatic Transmission



- ① Button
- ② Spring
- ③ Grip
- ④ Indicator cover
- ⑤ "P" position switch
- ⑥ Indicator light bulb
- ⑦ Shift-lock solenoid
- ⑧ Plate
- ⑨ Packing
- ⑩ Outer cable
- ⑪ Nut
- ⑫ Nut
- ⑬ Inner cable
- ⑭ Panel
- ⑮ Rod

- ⑯ Selector lever
- ⑰ Lock plate
- ⑱ Detention spring
- ⑲ Pin
- ⑳ Spacer
- ㉑ Washer
- ㉒ Boot
- ㉓ Spacer
- ㉔ Snap pin

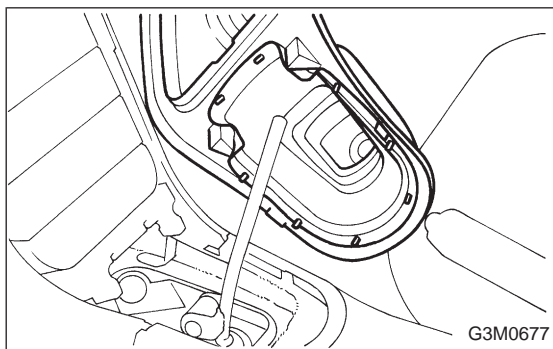
**Tightening torque: N·m (kg-m, ft-lb)****T1: 14±3 (1.43±0.31, 10.3±2.2)****T2: 14±4 (1.43±0.41, 10.3±3.0)****T3: 18±5 (1.84±0.51, 13.3±3.7)**



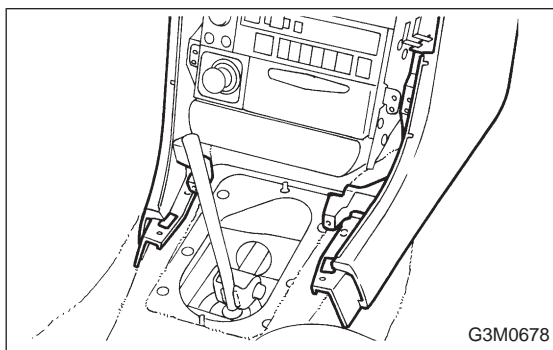
## 1. Manual Transmission

### A: REMOVAL

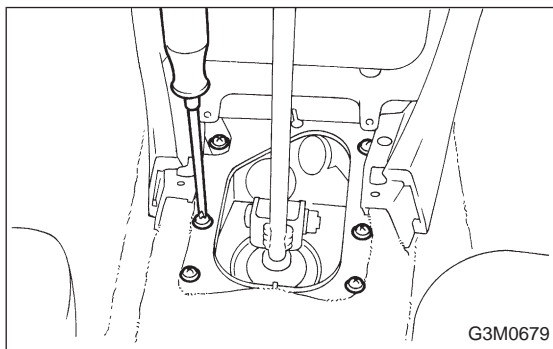
1) Remove knob from gearshift lever.



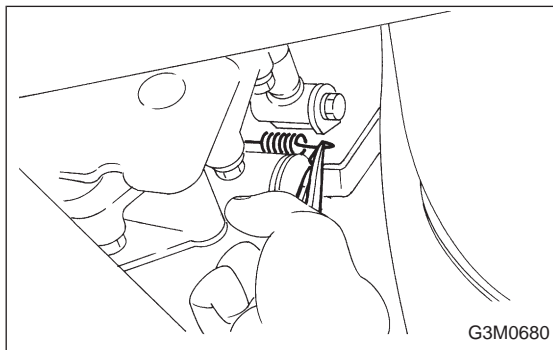
2) Remove console cover and console boot.



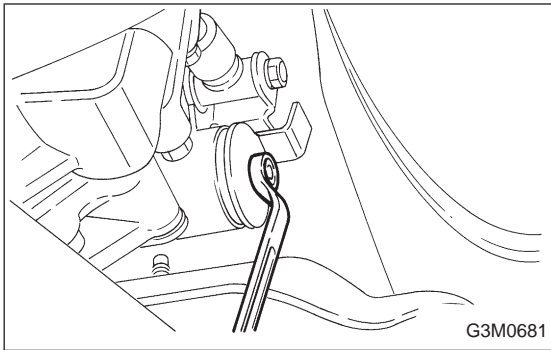
3) Remove rear console box, center console and instrument console.



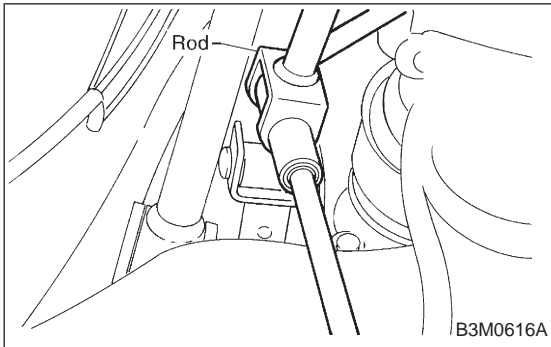
4) Remove boot plate from the body.



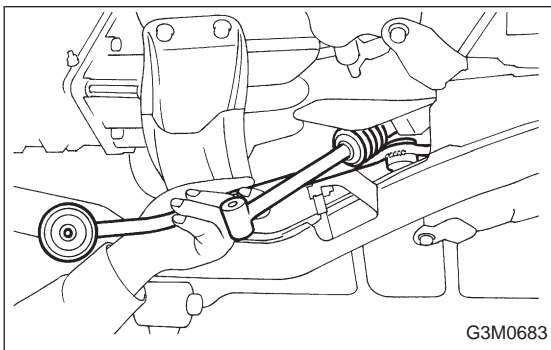
5) Remove the spring between the joint and bracket.



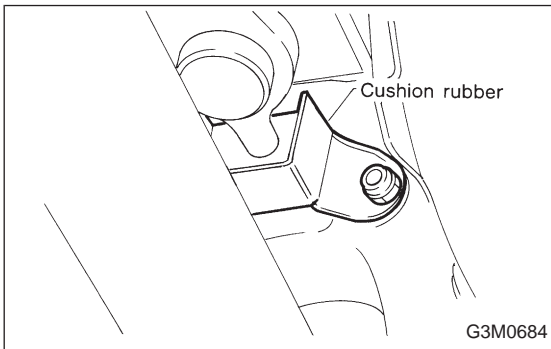
6) Remove stay from bracket.



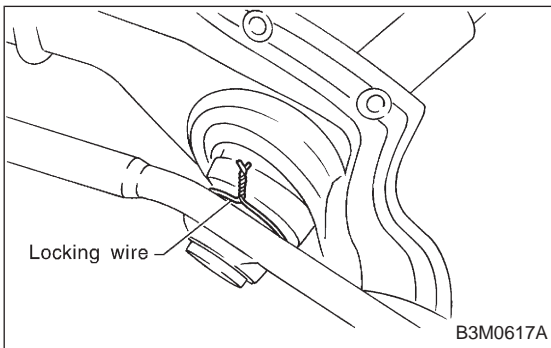
7) Remove rod from joint.



8) Remove gearshift lever.

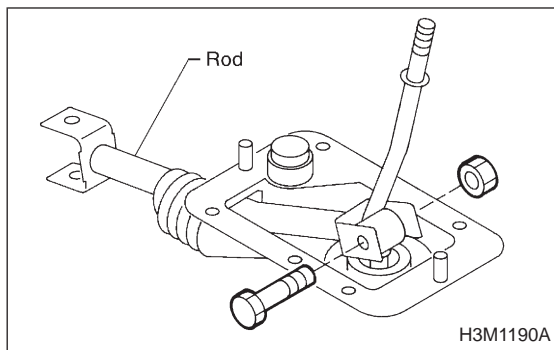


9) Remove the exhaust cover and remove cushion rubber from the body.

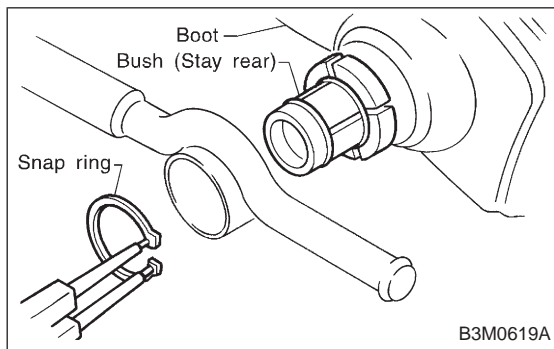


## B: DISASSEMBLY

1) Disconnect locking wire.

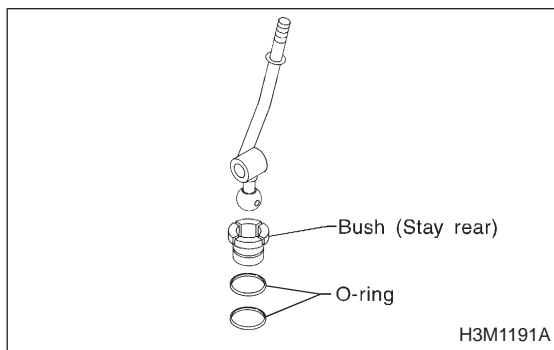


2) Remove rod from gearshift lever.

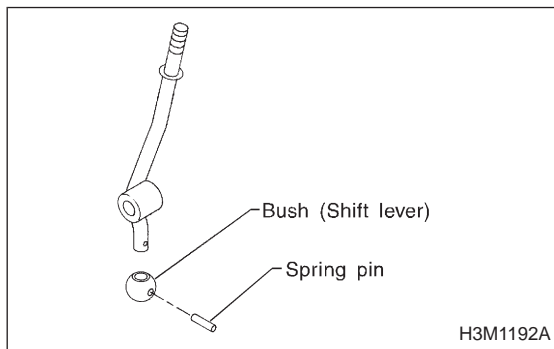


3) Remove snap ring, then disconnect gearshift lever from stay.

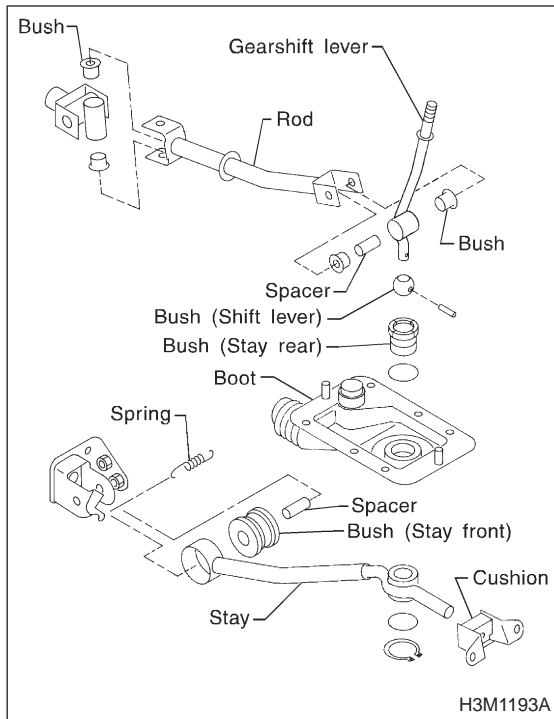
4) Remove boot from gearshift lever.



5) Remove O-ring, then disconnect bush (Stay rear).

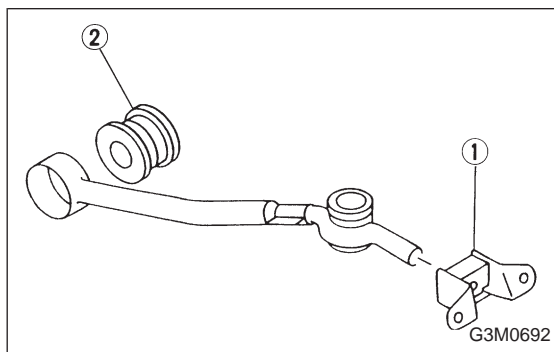


6) Draw out spring pin, then remove bush (Shift lever) from gearshift lever.



## C: INSPECTION

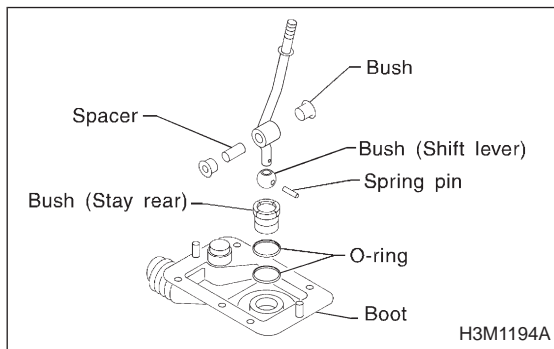
Check each parts (Bush, cushion, spacer, boot, spring, stay and rod etc.) for deformation, damage and wear. Repair or replace any defective parts. Determine defective parts by comparing with new parts.



## D: ASSEMBLY

- 1) Clean all parts before assembly.
- 2) Mount the following parts on the stay.

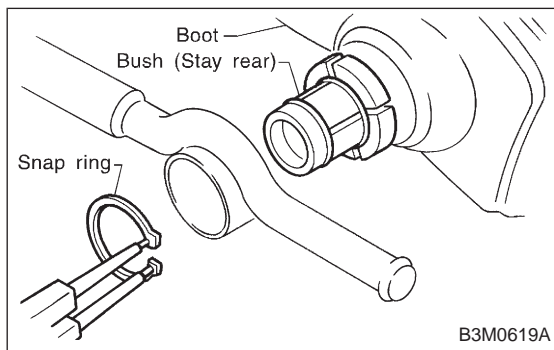
- ① Cushion rubber
- ② Bush (Stay front)



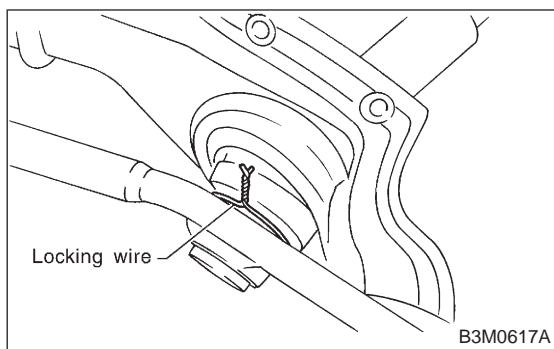
- 3) Mount each parts (Boot, O-ring, bush and spacer) on the gearshift lever.

### CAUTION:

- Always use new O-rings.
- Apply grease [NIGTIGHT LYW No.2 or equivalent] to the inner and side surfaces of the bush when installing spacer.



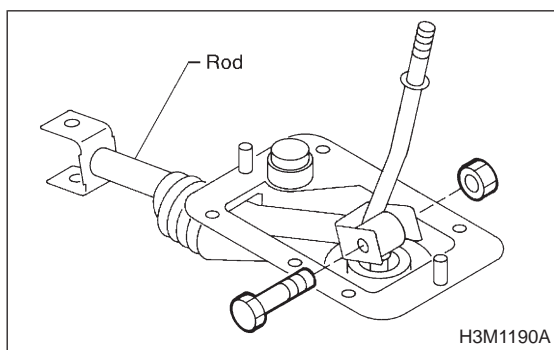
- 4) Insert the gearshift lever into the boot hole.
- 5) Mount gearshift lever on the stay.
- 6) Install snap ring to the bottom of the bush (Stay rear).



7) Tighten with locking wire to the extent that the boot will not come off.

**CAUTION:**

**Always use new locking wire.**



8) Insert the rod into the boot hole.

9) Connect rod to gearshift lever.

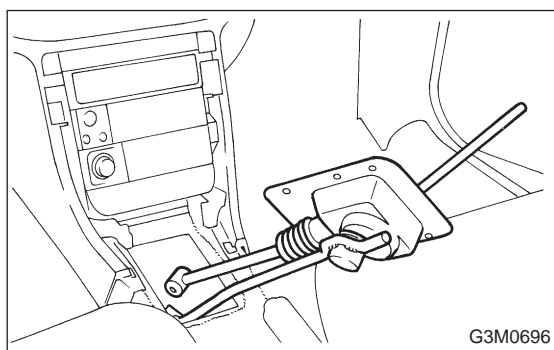
**Tightening torque:**

**$12 \pm 3 \text{ N}\cdot\text{m}$  ( $1.2 \pm 0.3 \text{ kg}\cdot\text{m}$ ,  $8.7 \pm 2.2 \text{ ft}\cdot\text{lb}$ )**

**Rocking torque:**

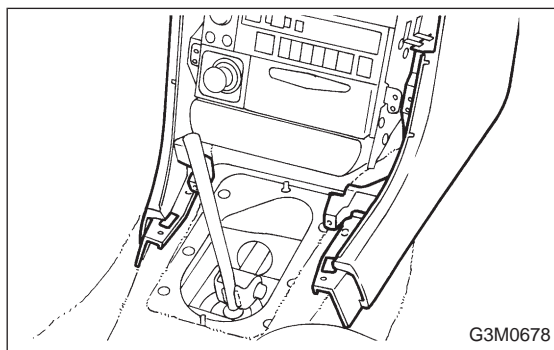
**$0.74 \pm 0.25 \text{ N}\cdot\text{m}$  ( $0.075 \pm 0.025 \text{ kg}\cdot\text{m}$ ,  $0.54 \pm 0.18 \text{ ft}\cdot\text{lb}$ )  
or less**

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



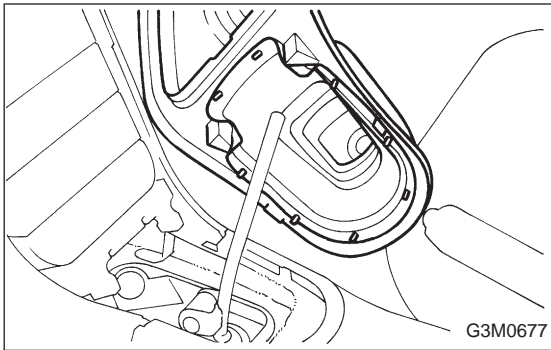
**E: INSTALLATION**

- 1) Put into gearshift lever from passenger compartment.
- 2) Mount boot plate on the body.

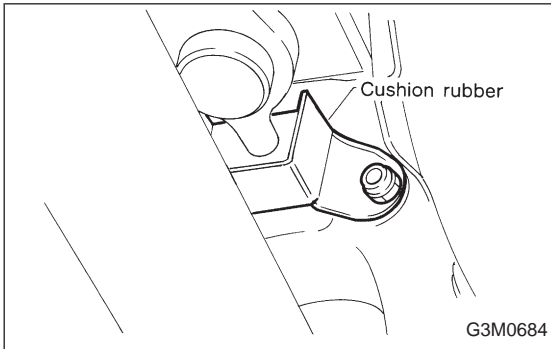


- 3) Install rear console box, center console and instrument console.

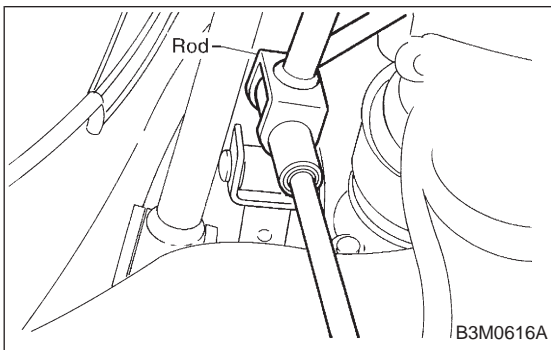




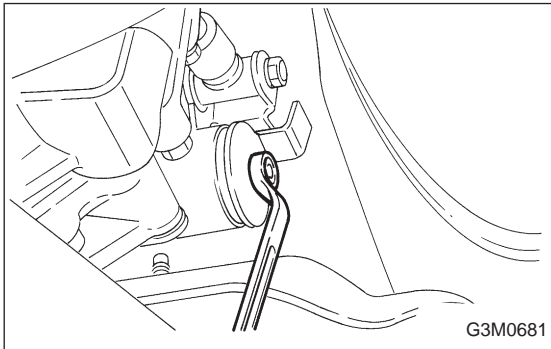
- 4) Install console cover and boot.
- 5) Install gearshift knob.



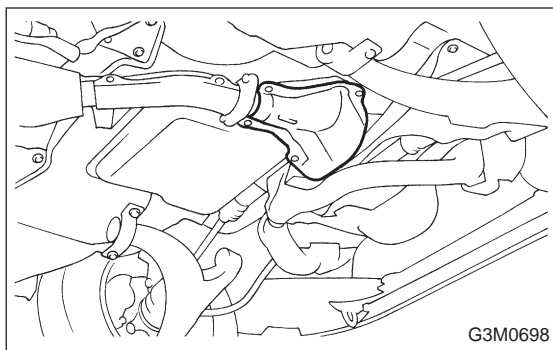
- 6) Mount cushion rubber on the body.
- Tightening torque:**  
 $18 \pm 5 \text{ N}\cdot\text{m}$  ( $1.84 \pm 0.51 \text{ kg}\cdot\text{m}$ ,  $13.3 \pm 3.7 \text{ ft}\cdot\text{lb}$ )



- 7) Connect rod to the joint.
- Tightening torque:**  
 $12 \pm 3 \text{ N}\cdot\text{m}$  ( $1.2 \pm 0.3 \text{ kg}\cdot\text{m}$ ,  $8.7 \pm 2.2 \text{ ft}\cdot\text{lb}$ )



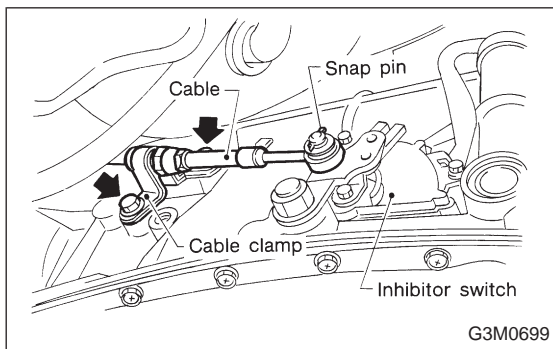
- 8) Connect stay to the bracket.
- Tightening torque:**  
 $18 \pm 5 \text{ N}\cdot\text{m}$  ( $1.84 \pm 0.51 \text{ kg}\cdot\text{m}$ ,  $13.3 \pm 3.7 \text{ ft}\cdot\text{lb}$ )
- 9) Install the exhaust cover.



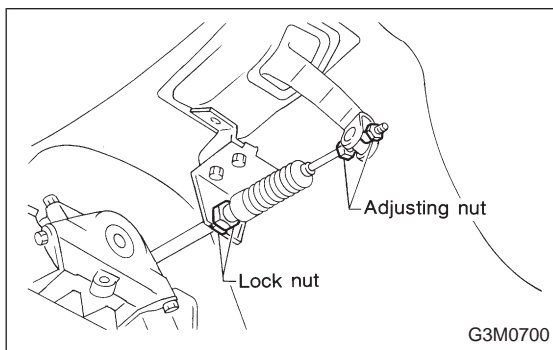
## 2. Automatic Transmission

### A: REMOVAL

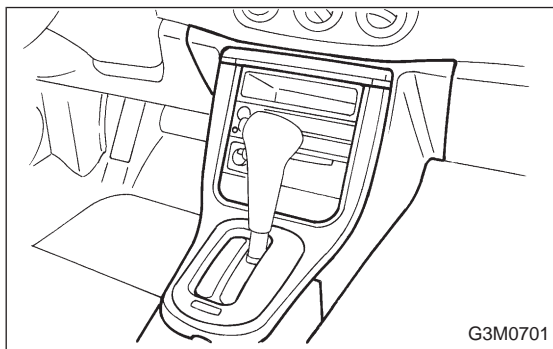
- 1) Remove the cable.
  - (1) Prior to removal, set lever to "N" position.
  - (2) Remove front exhaust pipe.



- (3) Separate cable from transmission lever.
- (4) Remove clamp from transmission case.

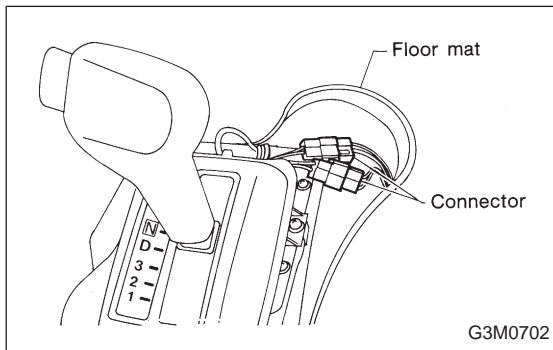


- (5) Disconnect cable from selector lever.

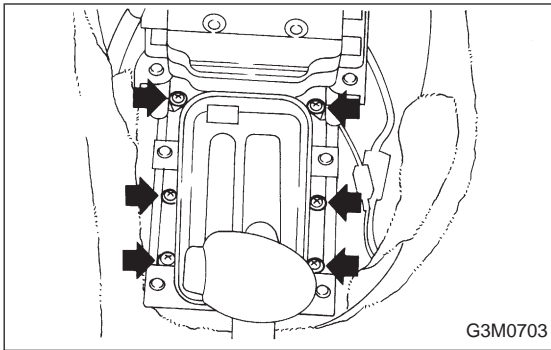


- 2) Remove all of the screws to take off the following console parts.

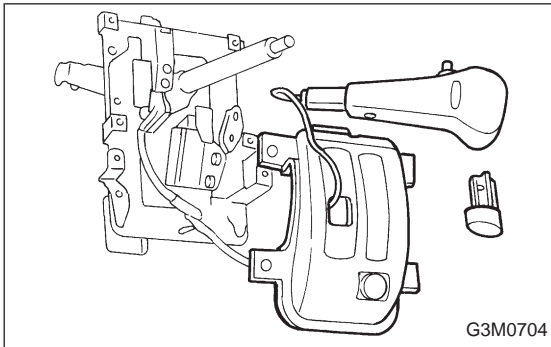
- Instrument console
- Center console
- Rear console box



- 3) Disconnect the connectors.

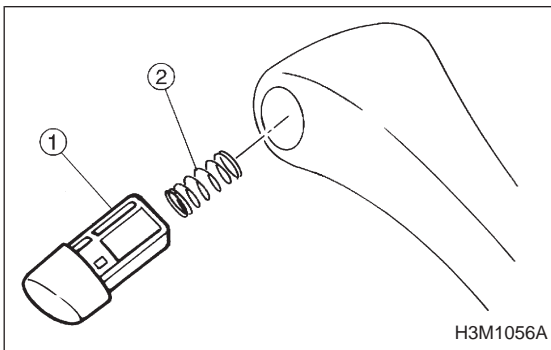


4) Remove the screws to take off the plate from the body.



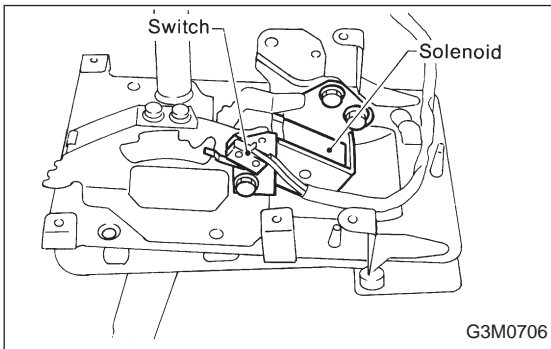
### B: DISASSEMBLY

- 1) Remove grip from selector lever.
- 2) Remove indicator from plate.

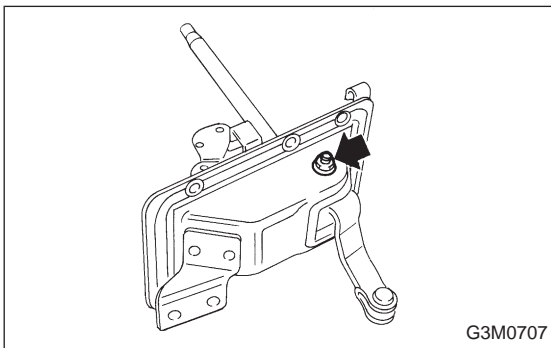


3) Remove the following parts from the grip.

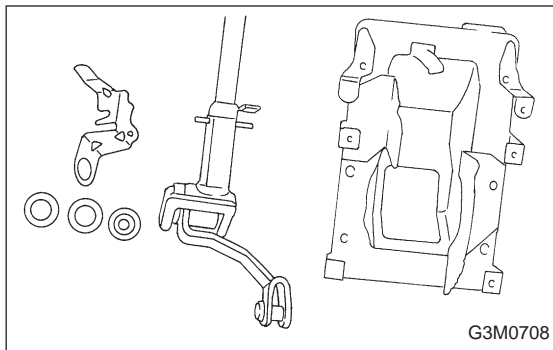
- ① Button
- ② Spring



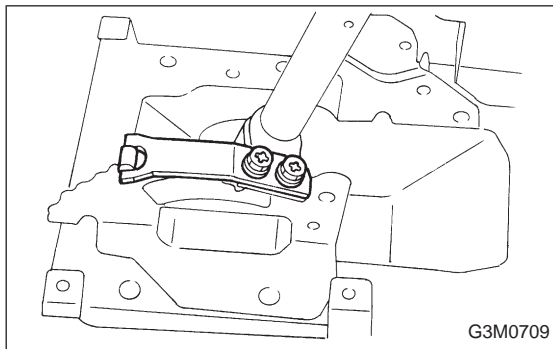
4) Remove shift-lock solenoid and "P" position switch.



5) Remove the bolt to take off the selector lever from the plate.



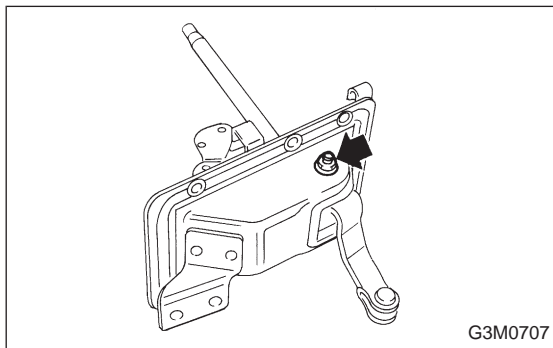
- 6) Remove lock plate.
- 7) Remove selector lever from the plate.



- 8) Remove detention spring.

## C: INSPECTION

- 1) Inspect 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.
  - (1) Sliding condition of the button in the grip ... it should move smoothly.
  - (2) Insertion of the grip on the selector lever ... when pushing the grip on the selector lever by hand, screw holes should be aligned.
  - (3) Operation of selector lever and rod ... they should move smoothly.
  - (4) Insertion of the spacer into the selector lever ... it should be inserted lightly by finger pressure.

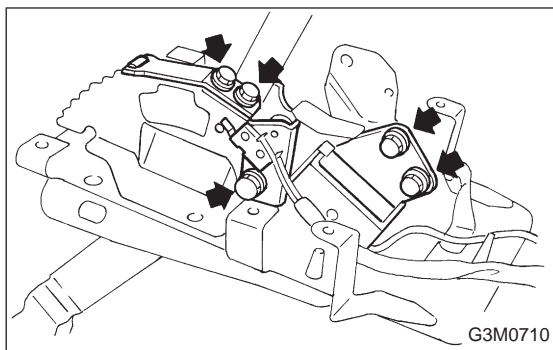


## D: ASSEMBLY

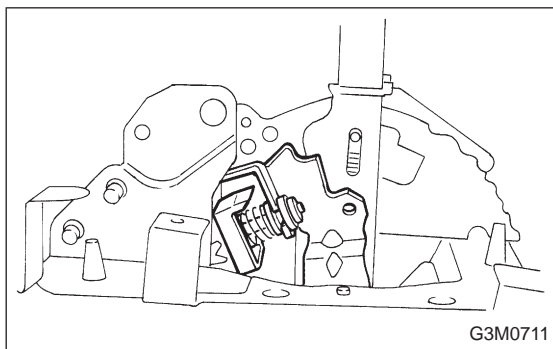
- 1) Clean all parts before assembly.
- 2) Assemble selector lever and lock plate to the plate.
- 3) Insert the bolt and tighten the flange nut to the specified torque.

**Tightening torque (Flange nut):**

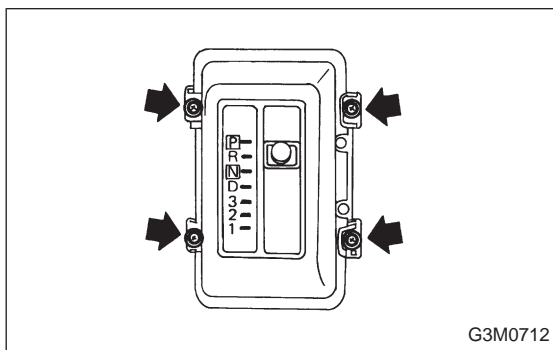
**$14 \pm 3 \text{ N}\cdot\text{m}$  ( $1.43 \pm 0.31 \text{ kg}\cdot\text{m}$ ,  $10.3 \pm 2.2 \text{ ft}\cdot\text{lb}$ )**



4) Assemble detention spring, shift-lock solenoid and "P" position switch.



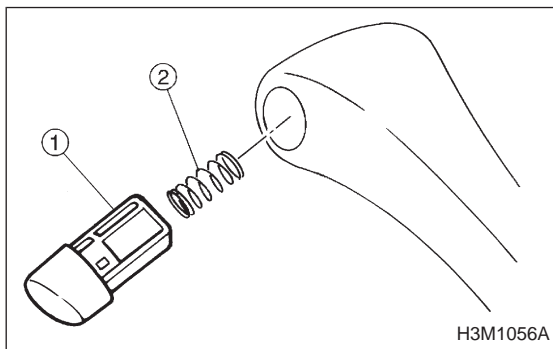
5) Adjust the position of shift-lock plate and solenoid. Then, tighten the bolts.



6) Assemble indicator to the plate.

**Tightening torque:**

**$1.95 \pm 0.65 \text{ N} \cdot \text{m}$  ( $1.999 \pm 0.066 \text{ kg} \cdot \text{m}$ ,  $1.438 \pm 0.479 \text{ ft} \cdot \text{lb}$ )**

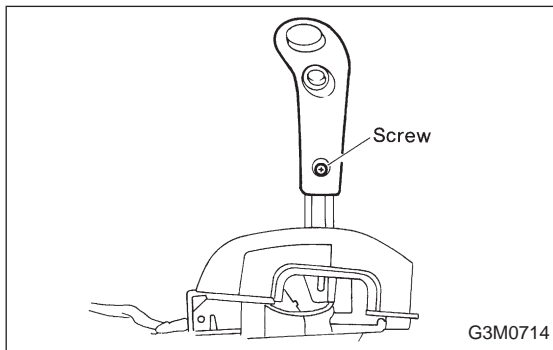


7) Assemble the following parts to the grip.

**CAUTION:**

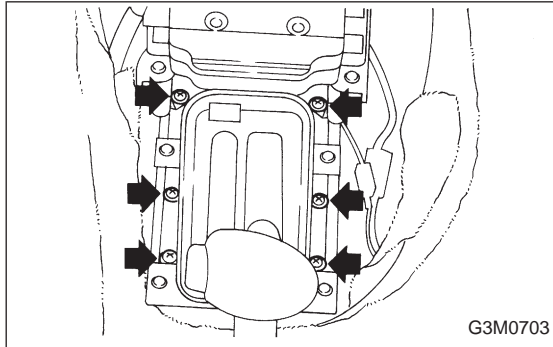
**Apply grease on sliding surfaces of the following parts.**

- ① Button
- ② Spring



8) Assemble the grip to the selector lever.

9) After completion of fitting, transfer selector lever to range "P" ~ "1", pressing the button of the grip; then check whether the indicator and select lever agree, whether the pointer and position mark agree and what the operating force is.

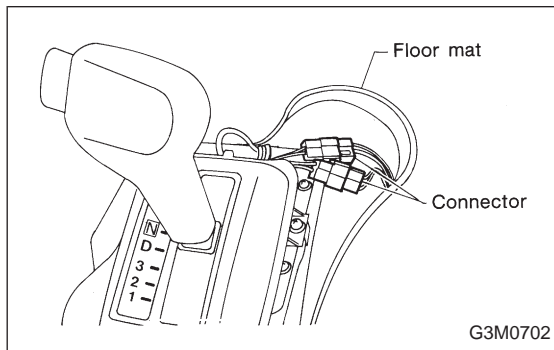


## E: INSTALLATION

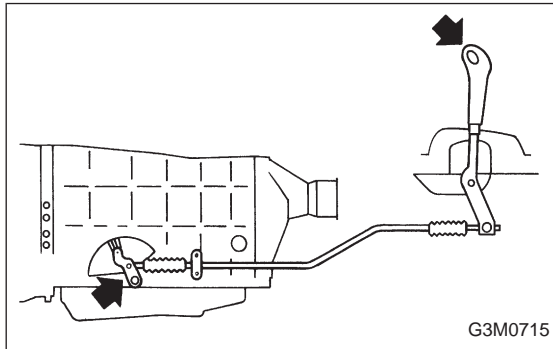
- 1) Mount the selector lever onto the car body.
- 2) Tighten the six bolts to install the selector lever to the car body.

### **Tightening torque:**

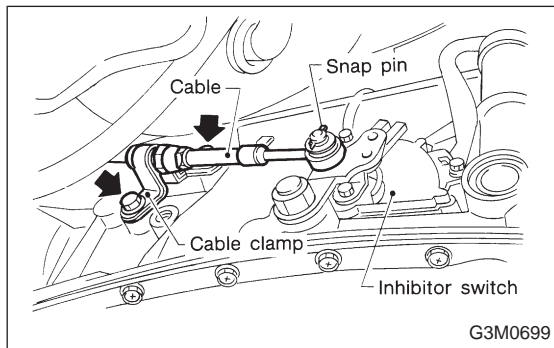
**$4.5 \pm 1.5 \text{ N} \cdot \text{m}$  ( $0.46 \pm 0.153 \text{ kg} \cdot \text{m}$ ,  $3.32 \pm 1.11 \text{ ft} \cdot \text{lb}$ )**



- 3) Connect connectors and install rear console, center console and instrument console.



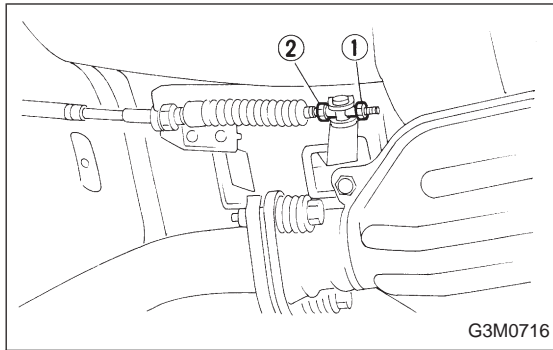
- 4) Set location of selector lever at "N" position.
- 5) Set location of selector arm installed on the transmission body at "N" position.



- 6) Pass inner cable through selector arm pin and then connect it using a washer and snap pin.
- 7) Attach outer cable to transmission case with the bolts.

### **Tightening torque:**

**$14 \pm 4 \text{ N} \cdot \text{m}$  ( $1.43 \pm 0.41 \text{ kg} \cdot \text{m}$ ,  $10.3 \pm 3.0 \text{ ft} \cdot \text{lb}$ )**



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

9) Adjust the inner cable length.

(1) Put connector into contact with nut (2).

(2) Tighten nut (1).

**Tightening torque:**

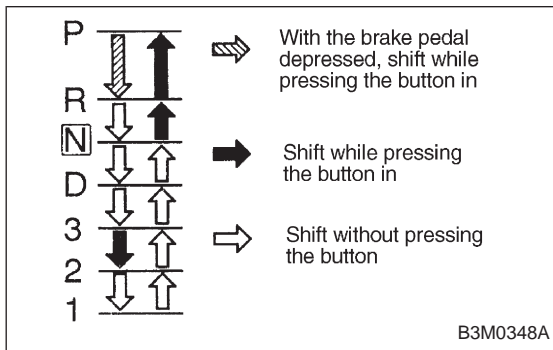
**$7.35 \pm 1.95 \text{ N} \cdot \text{m}$  ( $0.750 \pm 0.199 \text{ kg} \cdot \text{m}$ ,  $5.421 \pm 1.438 \text{ ft} \cdot \text{lb}$ )**

10) After completion of fitting, make sure that the selector lever operates smoothly all across the operating range.

11) Connect the harnesses and check the following items.

(1) The engine starts operating when selector lever is in position "P", but not in other positions.

(2) The back-up light is lit when the selector lever is in position "R", but not in other positions.



12) Check selector lever operation.

**WARNING:**

**Stop the engine while checking operation of selector lever.**

(1) Check that selector lever does not move from "N" to "R" without pushing the button.

(2) Check that selector lever does not move from "R" to "P" without pushing the button.

(3) Check that selector lever does not move from "P" to "R" without pushing the button.

(4) Check that selector lever does not move from "3" to "2" without pushing the button.

13) Check shift lock system.

(1) Ensure ignition switch rotates from "ACC" to "LOCK" when the selector lever is set at "P". Also check that ignition key can be removed from the "LOCK" position only.

(2) Ensure selector lever moves from "P" to any other position when the brake pedal is depressed with ignition key set at "ON" or "START".