

CONTROL SYSTEMS

CS

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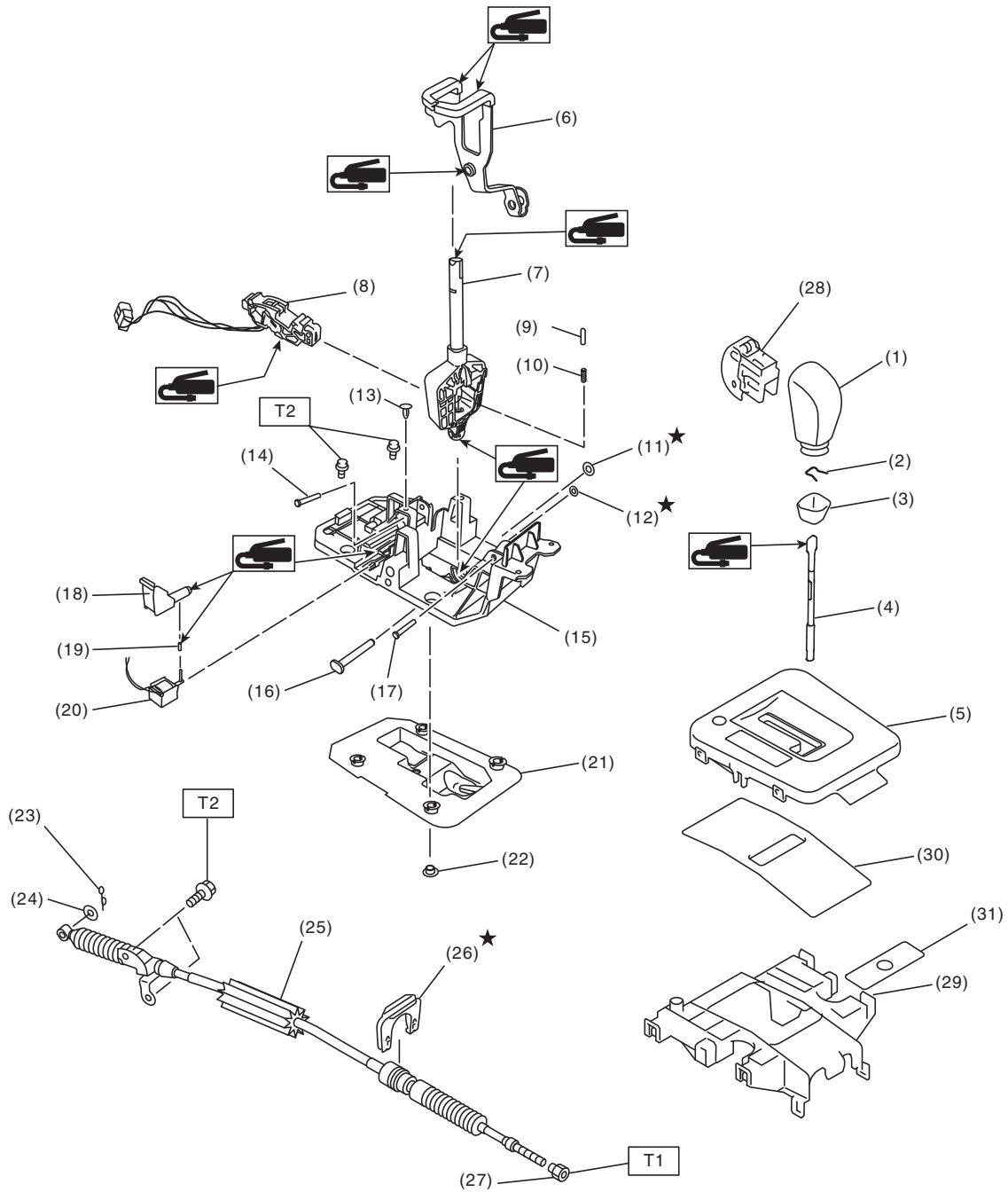
General Description

CONTROL SYSTEMS

1. General Description

A: COMPONENT

1. AT SELECT LEVER



CS-01623

General Description

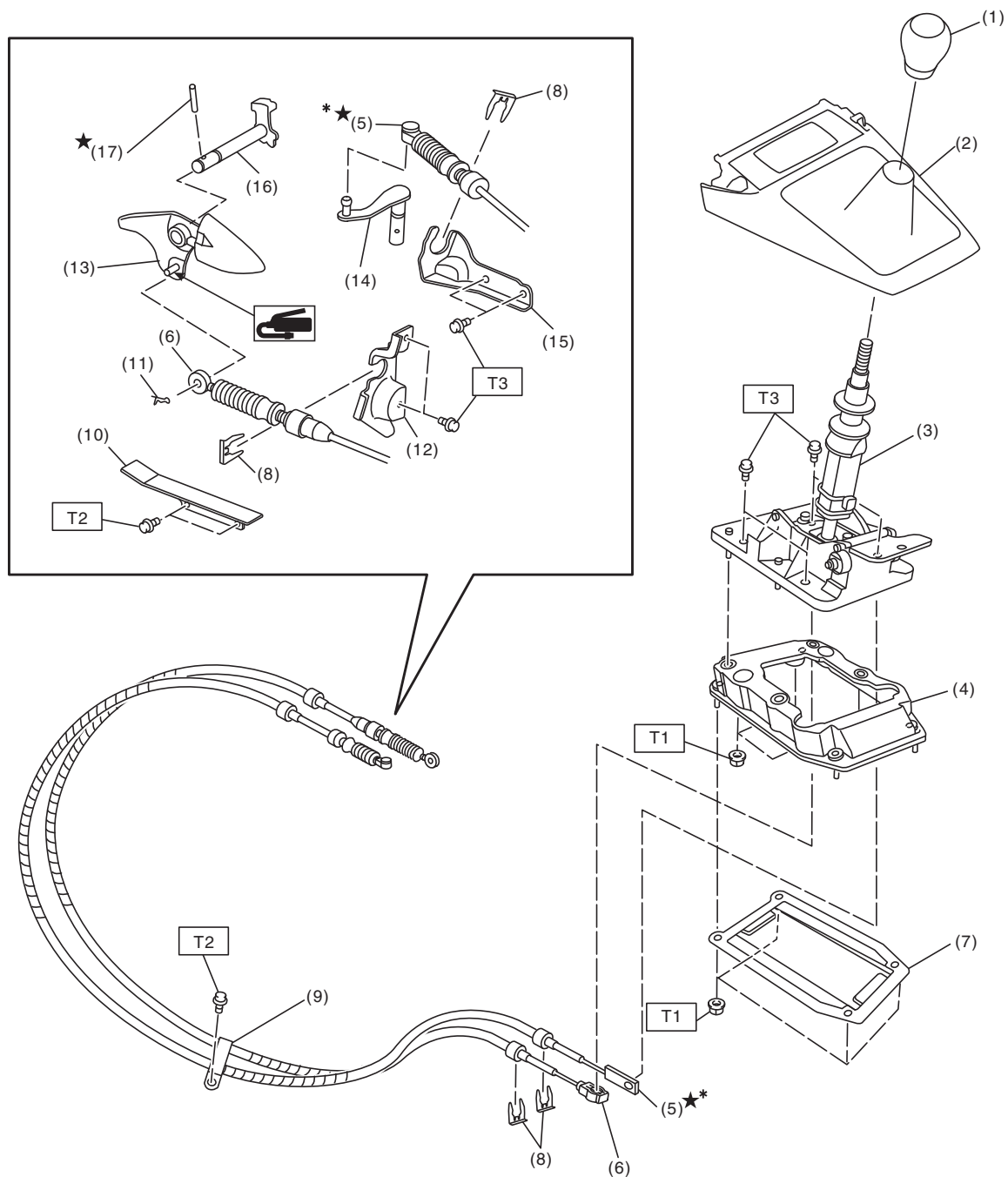
CONTROL SYSTEMS

(1) Grip sub ASSY	(13) Clamp pin	(25) Select cable
(2) Clamp grip pin	(14) Spacer pin guide	(26) Clamp
(3) Cover grip AT	(15) Plate COMPL	(27) Nut
(4) Rod COMPL	(16) Shaft control	(28) Button ASSY-AT
(5) Indicator cover	(17) Spacer pin guide	(29) Housing
(6) Arm COMPL	(18) Rod shift lock	(30) Blind A (model with gate shifter)
(7) Selector lever COMPL	(19) Cushion solenoid	(31) Blind B (model with gate shifter)
(8) Plate guide	(20) Solenoid unit	
(9) Rod detent	(21) Gasket	Tightening torque: N-m (kgf-m, ft-lb)
(10) Detent spring	(22) Spacer plate	T1: 7.5 (0.8, 5.5)
(11) Clamp push nut	(23) Snap pin	T2: 18 (1.8, 13.3)
(12) Clamp push nut	(24) Washer	

General Description

CONTROL SYSTEMS

2. 6MT GEAR SHIFT LEVER



CS-01688

General Description

CONTROL SYSTEMS

- | | |
|---------------------------|---------------------------|
| (1) Shift knob | (9) Cable clamp |
| (2) Cover - shift lever | (10) Dust cover |
| (3) Gear shift lever ASSY | (11) Snap pin |
| (4) Cable cover ASSY | (12) Shift bracket |
| (5) MT gear select cable | (13) Shift lever COMPL |
| (6) MT gear shift cable | (14) Selector lever COMPL |
| (7) Cable cover plate | (15) Select bracket |
| (8) Clamp | (16) Shifter arm No. 2 |

- (17) Spring pin

Tightening torque: N·m (kgf-m, ft-lb)

T1: 7.5 (0.8, 5.5)

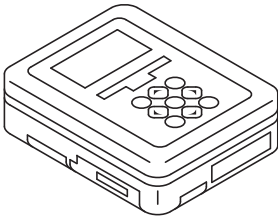
T2: 15 (1.5, 11.1)

T3: 18 (1.8, 13.3)

*: Always use new MT gear select cable if the cable is removed from select lever COMPL of transmission side.

B: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

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

C: CAUTION

- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- 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. of different grades or 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 revolving 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 vise, place cushioning material such as wood blocks, aluminum plate or cloth between the part and the vise.
- Before disconnecting electrical connectors, be sure to disconnect the negative terminal from battery.

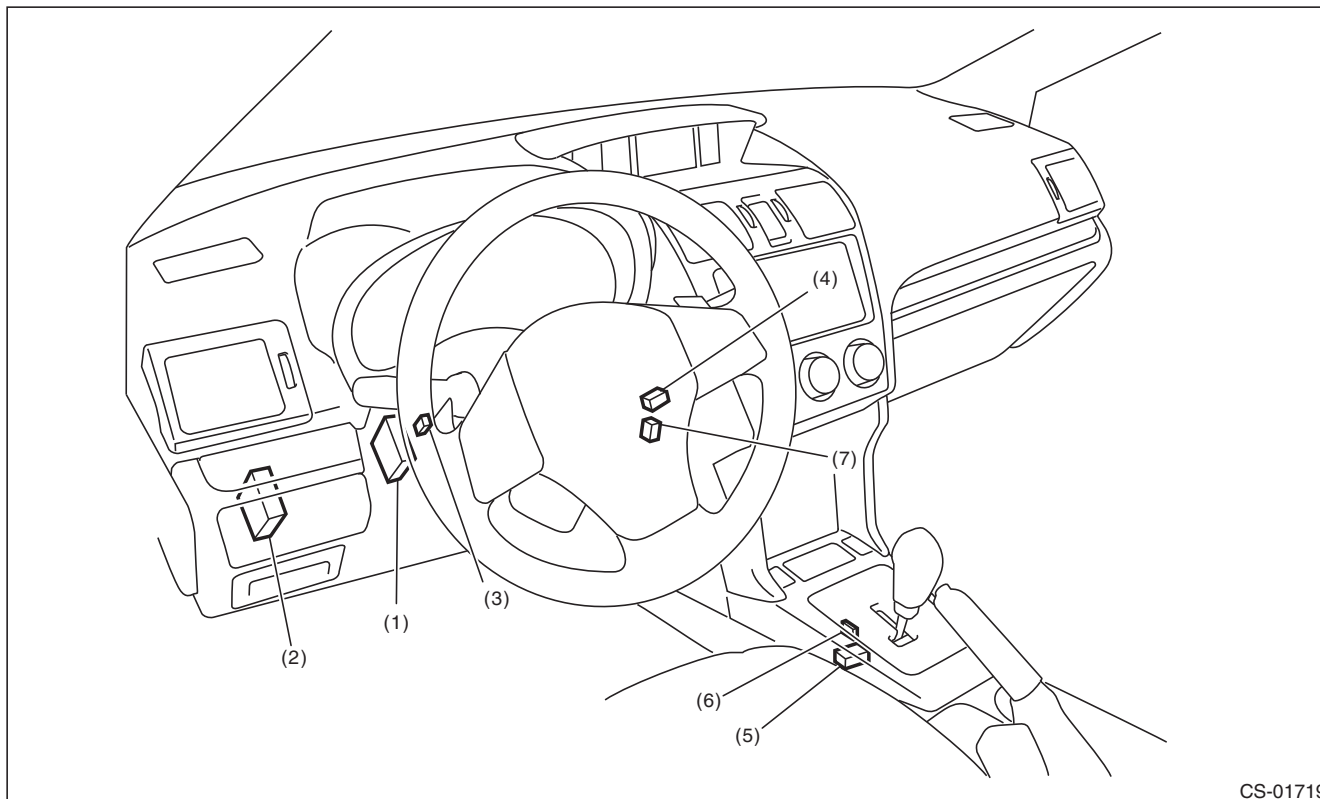
AT Shift Lock Control System

CONTROL SYSTEMS

2. AT Shift Lock Control System

A: LOCATION

1. MODEL WITHOUT PUSH BUTTON IGNITION SWITCH

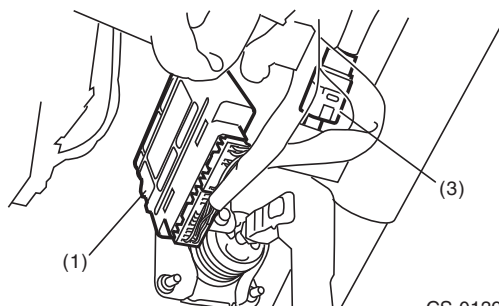


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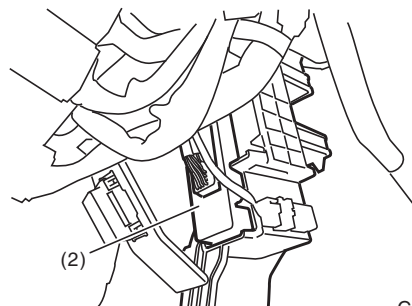
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| (1) TCM ("P" range) | (4) Key cylinder (with built-in key warning switch) | (6) "P" range switch |
| (2) Body integrated unit | (5) Solenoid unit | (7) Key lock solenoid |
| (3) Stop light and brake switch | | |

AT Shift Lock Control System

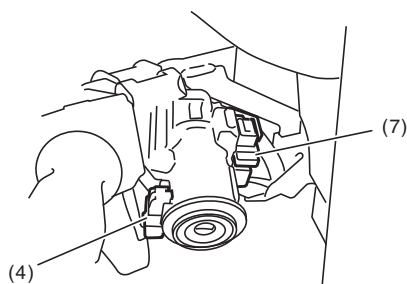
CONTROL SYSTEMS



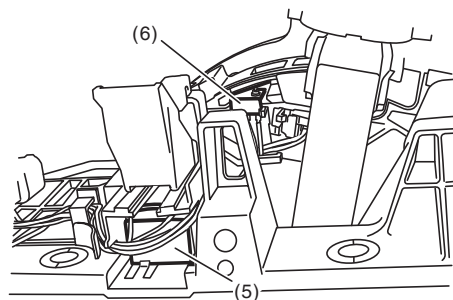
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CS-01399



CS-01400

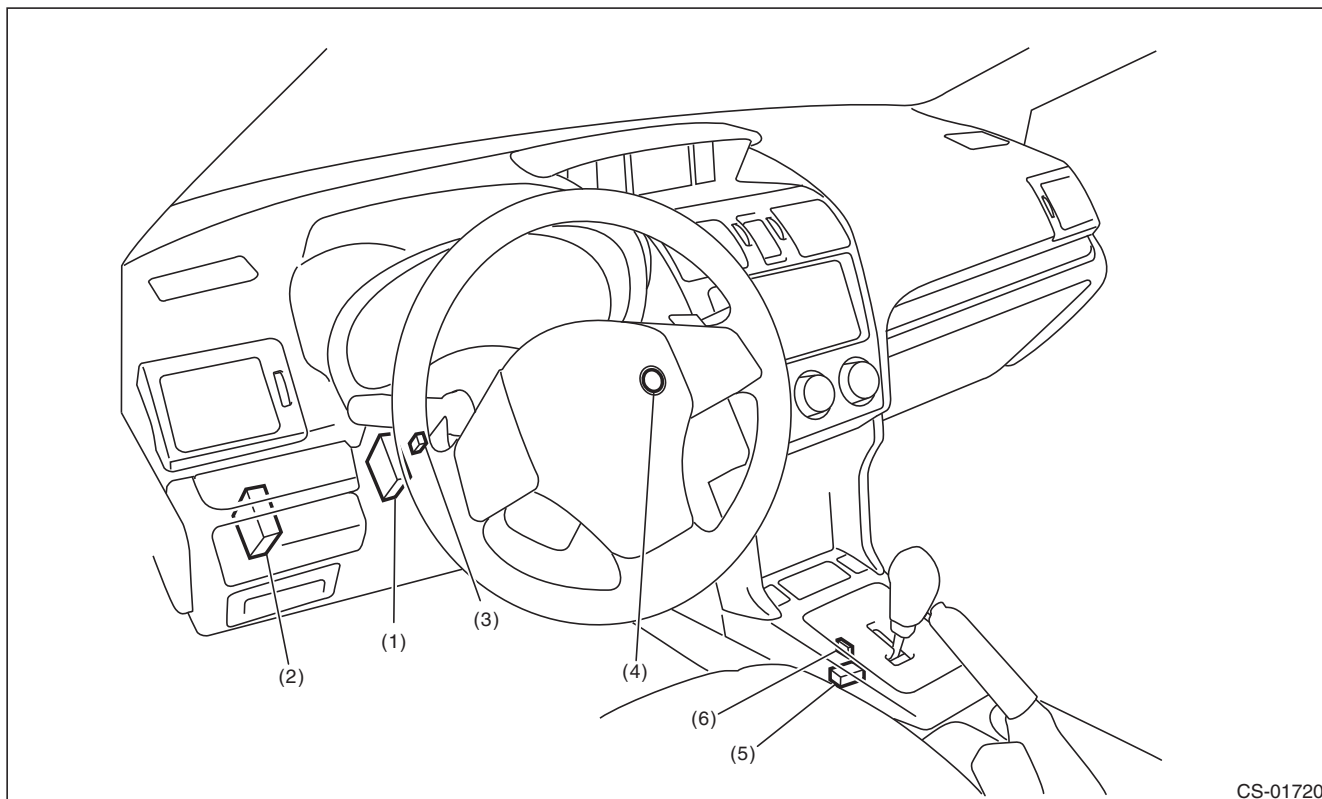


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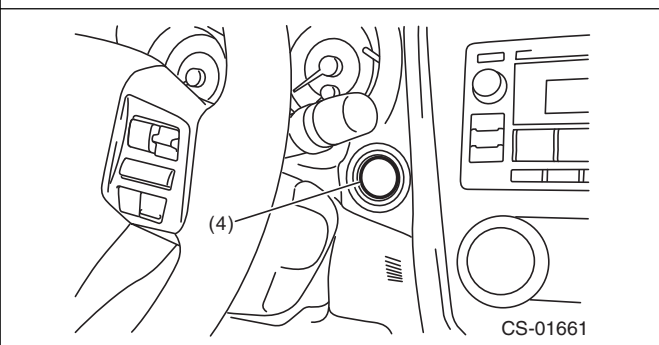
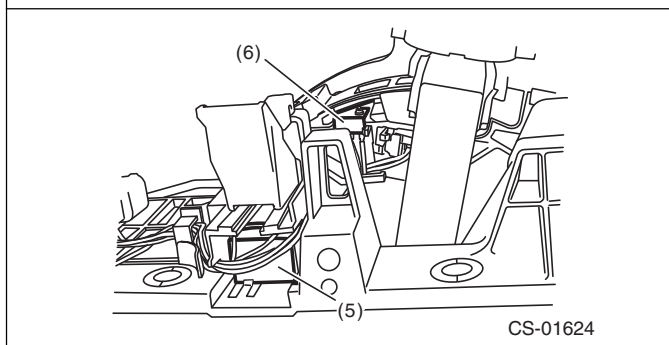
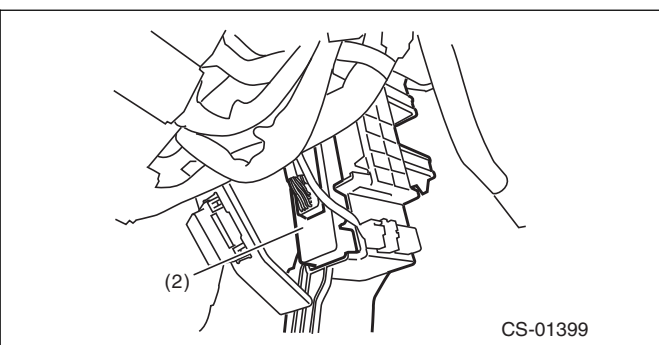
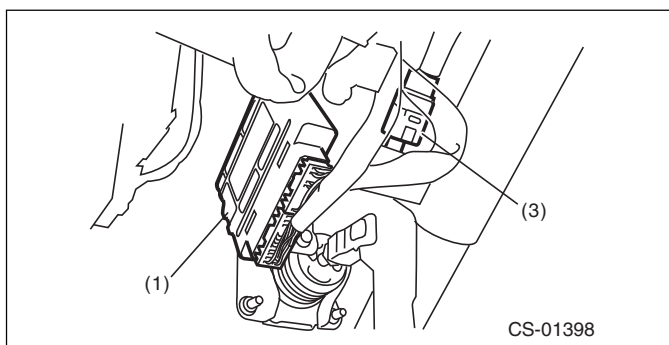
AT Shift Lock Control System

CONTROL SYSTEMS

2. MODEL WITH PUSH BUTTON IGNITION SWITCH



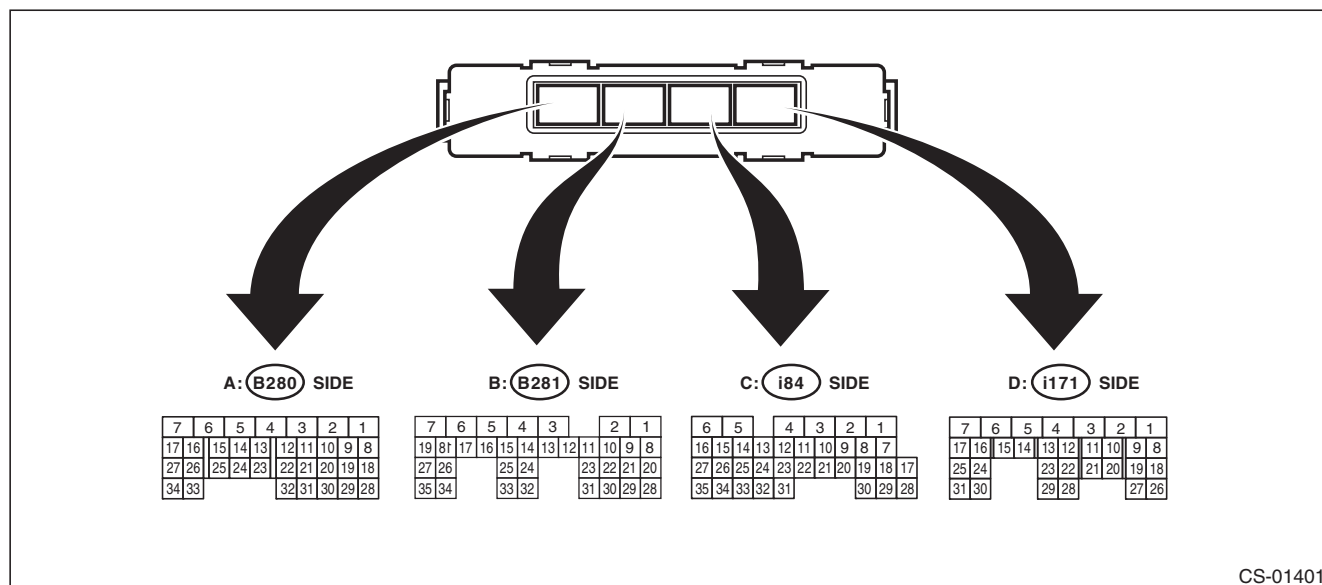
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|--------------------------|---------------------------------|----------------------|
| (1) TCM ("P" range) | (3) Stop light and brake switch | (5) Solenoid unit |
| (2) Body integrated unit | (4) Push button ignition switch | (6) "P" range switch |



AT Shift Lock Control System

CONTROL SYSTEMS

B: ELECTRICAL SPECIFICATION



CS-01401

• Model without push button ignition switch

Item	Connector No.	Terminal No.	Input/Output signal
			Measured value and measuring conditions
Battery power supply	B281	6	9 — 16 V
		7	
	i84	6	
Ignition power supply	B280	32	10 — 15 V when ignition switch is at ACC.
	B281	3	10 — 15 V when ignition switch is at ON or START.
TCM ("P" range)	i84	27	Can not be measured because of digital communication
		35	
Stop light and brake switch	B280	10	9 — 16 V when the stop light & brake switch is ON. 0 V when the stop light & brake switch is OFF.
"P" range switch	B281	18	0 V when select lever is in "P" range. 9 — 16 V when select lever is in other positions than "P" range.
Solenoid unit signal	B281	5	8.5 — 16 V when shift lock is released. 0 V when shift lock is operating.
Key warning switch signal	B280	4	9 — 16 V when key is inserted. 0 V when key is removed.
Key lock solenoid signal	B281	4	7.5 — 16 V when the key is inserted with the select lever shifted in positions other than "P" range. 0 V at other conditions than above.
Ground	B280	1	—
	B281	31	

AT Shift Lock Control System

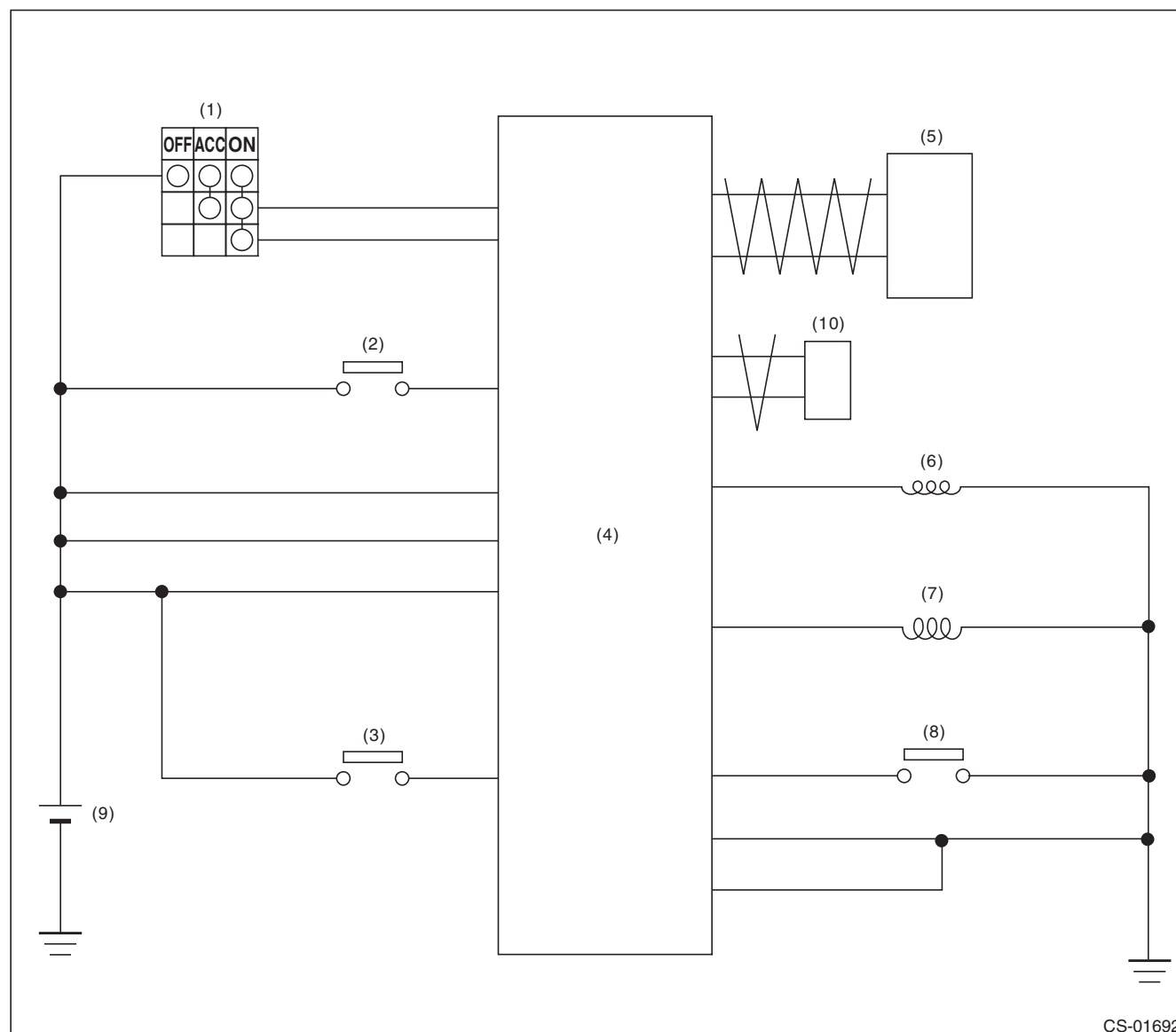
CONTROL SYSTEMS

- Model with push button ignition switch

Item	Connector No.	Terminal No.	Input/Output signal
			Measured value and measuring conditions
Battery power supply	B281	6	9 — 16 V
		7	
	i84	6	
Ignition power supply	B280	32	10 — 15 V when ignition switch is at ACC.
	B281	3	10 — 15 V when ignition switch is at ON or START.
TCM ("P" range)	i84	27	Can not be measured because of digital communication
		35	
Stop light and brake switch	B280	10	9 — 16 V when the stop light & brake switch is ON. 0 V when the stop light & brake switch is OFF.
"P" range switch	B281	18	0 V when select lever is in "P" range. 9 — 16 V when select lever is in other positions than "P" range.
Solenoid unit signal	B281	5	8.5 — 16 V when shift lock is released. 0 V when shift lock is operating.
Ground	B280	1	—
	B281	31	

C: WIRING DIAGRAM

1. MODEL WITHOUT PUSH BUTTON IGNITION SWITCH



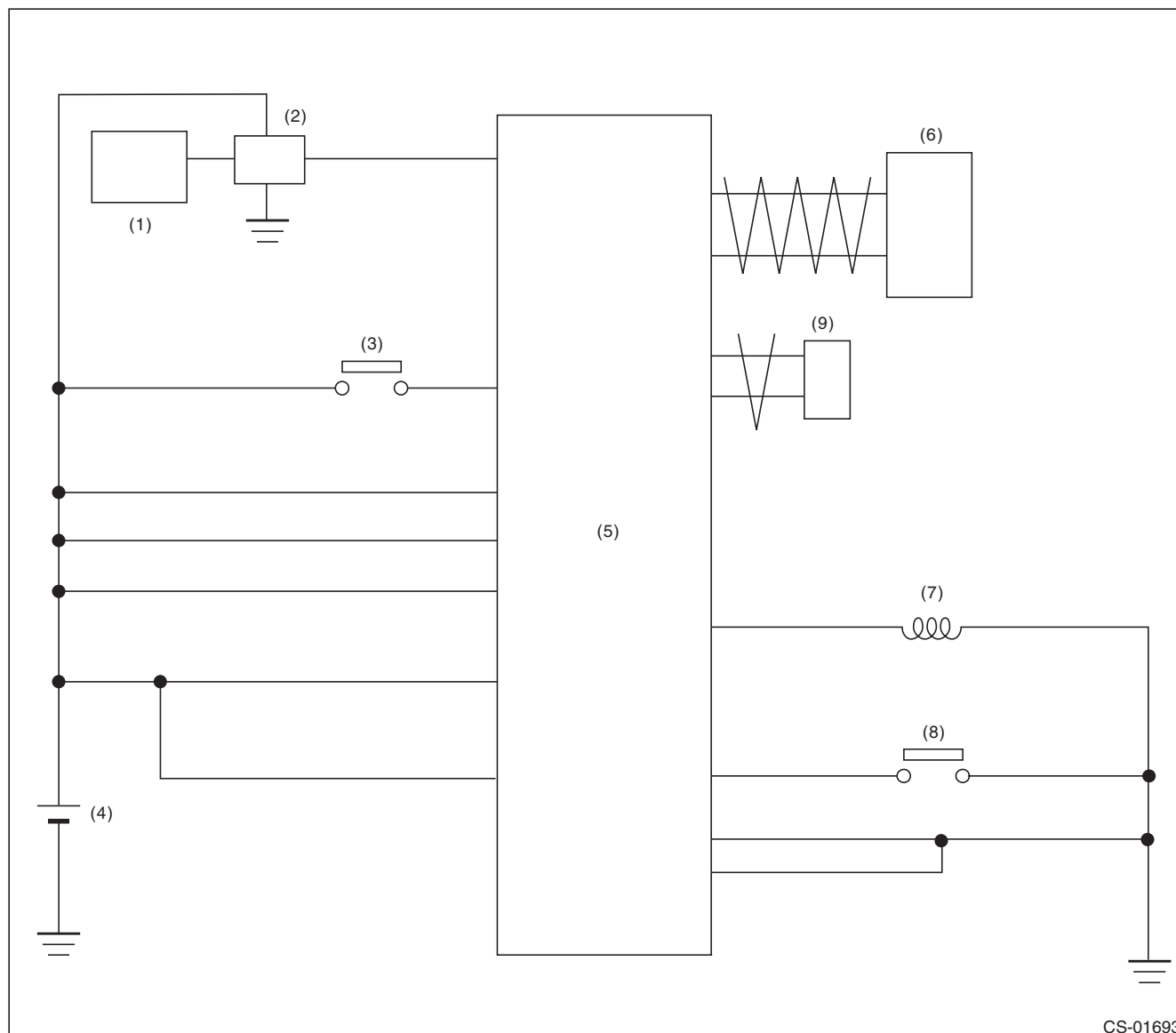
CS-01692

- | | | |
|---------------------------------|-----------------------------------|---|
| (1) Ignition switch | (5) TCM (shift range information) | (9) Battery |
| (2) Stop light and brake switch | (6) Key lock solenoid | (10) VDC CM (vehicle speed information) |
| (3) Key warning switch | (7) Shift lock solenoid | |
| (4) Body integrated unit | (8) "P" range switch | |

AT Shift Lock Control System

CONTROL SYSTEMS

2. MODEL WITH PUSH BUTTON IGNITION SWITCH



- | | | |
|------------------------------------|-----------------------------------|--|
| (1) Keyless access CM | (4) Battery | (7) Shift lock solenoid |
| (2) IG relay 1 (push button start) | (5) Body integrated unit | (8) "P" range switch |
| (3) Stop light and brake switch | (6) TCM (shift range information) | (9) VDC CM (vehicle speed information) |

D: INSPECTION

1. SHIFT LOCK OPERATION

- Model without push button ignition switch

Step	Check	Yes	No
1 CHECK COMMUNICATION OF SUBARU SELECT MONITOR. 1) Turn the ignition switch to ON. 2) Using the Subaru Select Monitor, check whether communication to all systems can be executed normally.	Is the system name displayed?	Go to step 2.	Perform the inspection following the diagnostic procedure in BODY CONTROL SYSTEM (DIAGNOSTICS) section. <Ref. to BC(diag)-2, Basic Diagnostic Procedure.>
2 CHECK SHIFT LOCK. 1) Turn the ignition switch to ON. 2) Shift the select lever to "P" range.	While brake pedal is not depressed, is it possible to move the select lever from the "P" range to other ranges?	Perform the inspection of "SELECT LEVER CANNOT BE LOCKED OR RELEASED". <Ref. to CS-18, SELECT LEVER CANNOT BE LOCKED OR RELEASED, INSPECTION, AT Shift Lock Control System.>	Go to step 3.
3 CHECK SHIFT LOCK.	While brake pedal is depressed, is it possible to move the select lever from the "P" range to other ranges?	Go to step 4.	Perform the inspection of "SELECT LEVER CANNOT BE LOCKED OR RELEASED". <Ref. to CS-18, SELECT LEVER CANNOT BE LOCKED OR RELEASED, INSPECTION, AT Shift Lock Control System.>
4 CHECK SHIFT LOCK. Shift the select lever to "N" range.	Is it possible to move the select lever from the "N" range to the "P" range?	Go to step 5.	Perform the inspection of "SELECT LEVER CANNOT BE LOCKED OR RELEASED". <Ref. to CS-18, SELECT LEVER CANNOT BE LOCKED OR RELEASED, INSPECTION, AT Shift Lock Control System.>



AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
5 CHECK SHIFT LOCK. 1) Shift the select lever to "N" range. 2) Turn the ignition switch to ACC.	While brake pedal is depressed, is it possible to move the select lever from the "N" range to the "P" range?	Go to step 6.	Perform the inspection of "SELECT LEVER CANNOT BE LOCKED OR RELEASED". <Ref. to CS-18, SELECT LEVER CANNOT BE LOCKED OR RELEASED, INSPECTION, AT Shift Lock Control System.>
6 CHECK KEY INTERLOCK. 1) Turn the ignition switch to OFF. 2) Shift the select lever to other than "P" range.	Can the ignition key be removed?	Perform the inspection of "KEY INTERLOCK CANNOT BE LOCKED OR RELEASED". <Ref. to CS-21, KEY INTERLOCK CANNOT BE LOCKED OR RELEASED, INSPECTION, AT Shift Lock Control System.>	Go to step 7.
7 CHECK KEY INTERLOCK. Shift the select lever to "P" range.	Can the ignition key be removed?	AT shift lock system is normal.	Perform the inspection of "KEY INTERLOCK CANNOT BE LOCKED OR RELEASED". <Ref. to CS-21, KEY INTERLOCK CANNOT BE LOCKED OR RELEASED, INSPECTION, AT Shift Lock Control System.>

- Model with push button ignition switch

Step	Check	Yes	No
1 CHECK COMMUNICATION OF SUBARU SELECT MONITOR. 1) Turn the ignition switch to ON. 2) Using the Subaru Select Monitor, check whether communication to all systems can be executed normally.	Is the system name displayed?	Go to step 2.	Perform the inspection following the diagnostic procedure in BODY CONTROL SYSTEM (DIAGNOSTICS) section. <Ref. to BC(diag)-2, Basic Diagnostic Procedure.>

AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
2	CHECK SHIFT LOCK. 1) Turn the ignition switch to ON. 2) Shift the select lever to "P" range.	While brake pedal is not depressed, is it possible to move the select lever from the "P" range to other ranges?	Perform the inspection of "SELECT LEVER CANNOT BE LOCKED OR RELEASED". <Ref. to CS-18, SELECT LEVER CANNOT BE LOCKED OR RELEASED, INSPECTION, AT Shift Lock Control System.>
3	CHECK SHIFT LOCK.	While brake pedal is depressed, is it possible to move the select lever from the "P" range to other ranges?	Go to step 4.
4	CHECK SHIFT LOCK. Shift the select lever to "N" range.	Is it possible to move the select lever from the "N" range to the "P" range?	Perform the inspection of "SELECT LEVER CANNOT BE LOCKED OR RELEASED". <Ref. to CS-18, SELECT LEVER CANNOT BE LOCKED OR RELEASED, INSPECTION, AT Shift Lock Control System.>
5	CHECK SHIFT LOCK. 1) Shift the select lever to "N" range. 2) Turn the ignition switch to ACC.	While brake pedal is depressed, is it possible to move the select lever from the "N" range to the "P" range?	AT shift lock system is normal.



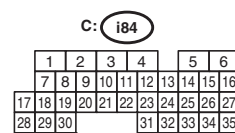
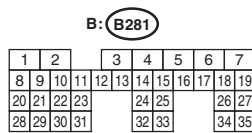
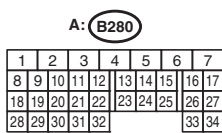
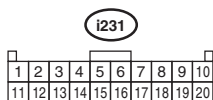
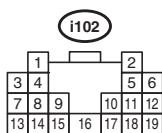
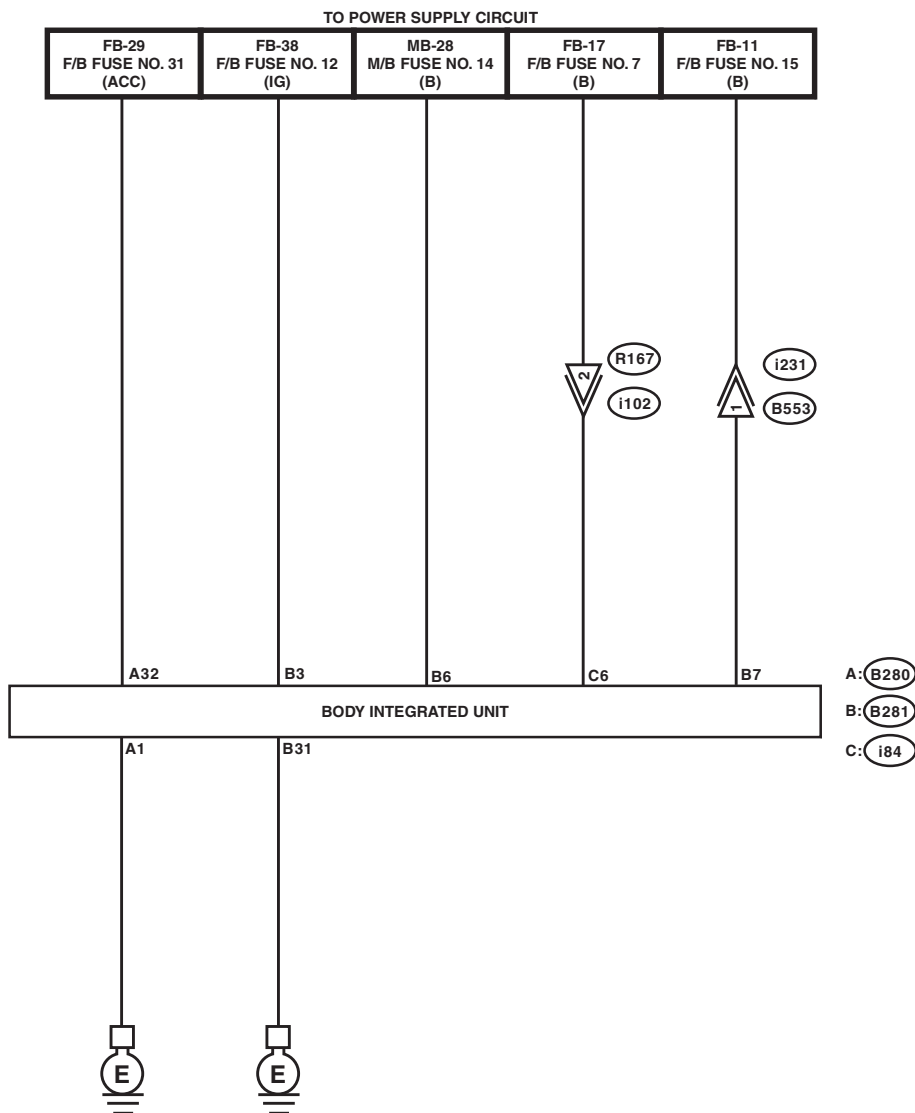
AT Shift Lock Control System

CONTROL SYSTEMS

2. BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT

NOTE:

For the DC power supply circuit, refer to "WIRING DIAGRAMS". <Ref. to WI-24, Power Supply Circuit.>



CS-01723

Step	Check	Yes	No
1	CHECK DTC OF BODY INTEGRATED UNIT. Check DTC of body integrated unit. <Ref. to BC(diag)-9, Read Diagnostic Trouble Code (DTC).>	Is the DTC of power line displayed on body integrated unit? Repair or replace it according to the DTC.	Go to step 2.

AT Shift Lock Control System

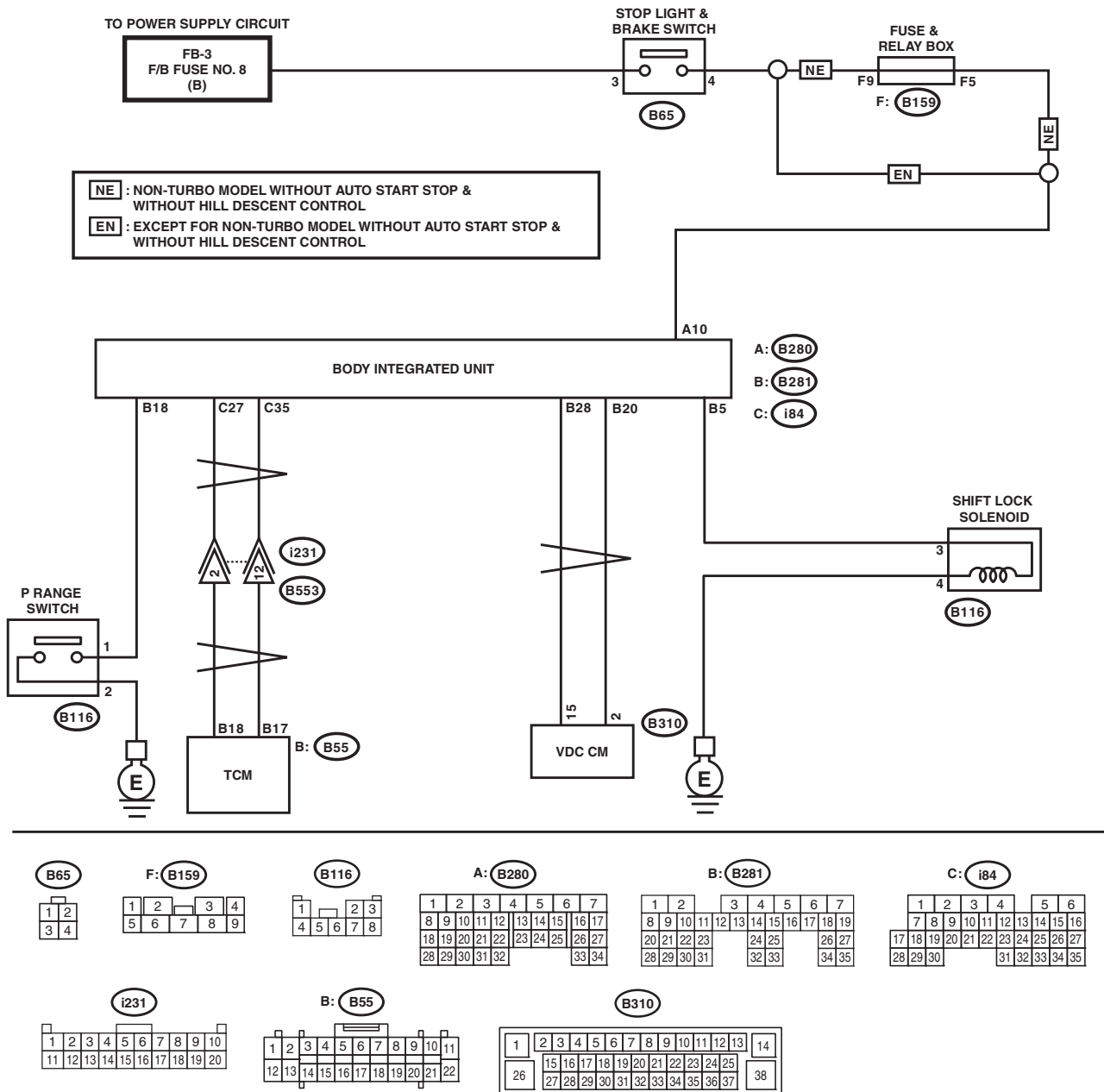
CONTROL SYSTEMS

Step	Check	Yes	No
2 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND BATTERY. 1) Turn the ignition switch to ON. 2) Measure the voltage between body integrated unit and chassis ground. <i>Connector & terminal</i> <i>(B281) No. 3 (+) — Chassis ground (-):</i> <i>(B280) No. 32 (+) — Chassis ground (-):</i> <i>(B281) No. 6 (+) — Chassis ground (-):</i> <i>(B281) No. 7 (+) — Chassis ground (-):</i> <i>(i84) No. 6 (+) — Chassis ground (-):</i>	Is the voltage 9 — 16 V?	Go to step 3.	Check harness for open circuit between the body integrated unit and the battery or a blown fuse.
3 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND CHASSIS GROUND. 1) Turn the ignition switch to OFF. 2) Measure the harness resistance between the body integrated unit and chassis ground. <i>Connector & terminal</i> <i>(B280) No. 1 — Chassis ground:</i> <i>(B281) No. 31 — Chassis ground:</i>	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the open circuit of harness between the body integrated unit and chassis ground.
4 CHECK FOR POOR CONTACT.	Is there poor contact of connector?	Repair the poor contact.	Check body integrated unit.

AT Shift Lock Control System

CONTROL SYSTEMS

3. SELECT LEVER CANNOT BE LOCKED OR RELEASED



CS-01724

Step	Check	Yes	No
1	CHECK BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT. <Ref. to CS-16, BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, AT Shift Lock Control System.>	Is there any fault?	Follow the procedures to perform inspection and repair.
			Go to step 2.

AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
2 CHECK CURRENT DATA. 1) Connect the Subaru Select Monitor. 2) Shift the select lever to "P" range. 3) Turn the ignition switch to ON. 4) Select the current data display and display «P SW». <Ref. to BC(diag)-11, Read Current Data.>	Is the display "ON" in the P range and "OFF" in ranges other than P?	Go to step 3.	Go to step 8.
3 CHECK CURRENT DATA. Select the current data display and display «Stop Light Switch». <Ref. to BC(diag)-11, Read Current Data.>	Is "ON" displayed when the brake pedal is depressed and "OFF" displayed when the brake pedal is released?	Go to step 4.	Go to step 11.
4 CHECK BODY INTEGRATED UNIT DTC. Check the DTC of the body integrated unit when the brake pedal is pressed and when it is released. (Hold each condition for 5 seconds or more.)	Is there a DTC of a current malfunction?	Follow the DTC to perform inspection and repair.	Go to step 5.
5 CHECK CURRENT DATA. Select the current data display and display «Shift Lock Solenoid». <Ref. to BC(diag)-11, Read Current Data.>	Is "ON" displayed when the brake pedal is depressed and "OFF" displayed when the brake pedal is released?	Go to step 6.	Replace the body integrated unit.
6 CHECK CURRENT DATA. Select the current data display and display «Shift Position». <Ref. to BC(diag)-11, Read Current Data.>	Is the display "P" in the P range and other than "P" in ranges other than P?	Go to step 7.	Check the following items. • Inhibitor switch • Harness between inhibitor switch and TCM • TCM input signal • TCM CAN communication • Body integrated unit CAN receive
7 CHECK CURRENT DATA. 1) Select the current data display and display «Front Wheel Speed». <Ref. to BC(diag)-11, Read Current Data.> 2) Start the engine. 3) Raise vehicle speed gradually up to approximately 20 km/h (12 MPH).	Is a figure equivalent to the speedometer being indicated?	Go to step 12.	Check the following items. • Wheel speed sensor • CAN communication by VDC unit • Body integrated unit CAN receive Replace the wheel speed sensor, VDC unit or body integrated unit, or both.
8 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND "P" RANGE SWITCH. 1) Disconnect the connector from body integrated unit. 2) Disconnect the connector of "P" range switch. 3) Check for open circuit of harness, short circuit to battery or short circuit to ground between the body integrated unit and "P" range switch. Connector & terminal (B281) No. 18 — (B116) No. 1:	Is there any fault in the harness?	Repair or replace the harness between the body integrated unit and the "P" range switch.	Go to step 9.

AT Shift Lock Control System

CONTROL SYSTEMS

	Step	Check	Yes	No
9	CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND. Measure the resistance of harness between "P" range switch and chassis ground. <i>Connector & terminal</i> <i>(B116) No. 2 — Chassis ground:</i>	Is it less than 10 Ω ?	Go to step 10.	Repair the harness between the "P" range switch and chassis ground.
10	CHECK "P" RANGE SWITCH. Measure the resistance between "P" range switch connector terminals. <i>Terminals</i> <i>No. 2 — No. 1:</i>	Is it less than 10 Ω in the "P" range, and 1 M Ω or more in ranges other than "P"?	Replace the body integrated unit.	Replace the "P" range switch.
11	CHECK STOP LIGHT SWITCH INPUT SIGNAL. 1) Disconnect the connector from body integrated unit. 2) Measure the voltage between the body integrated unit connector terminal and chassis ground. <i>Connector & terminal</i> <i>(B280) No. 10 (+) — Chassis ground (-):</i>	Is the voltage 9 V to 16 V when the brake pedal is depressed, and approx. 0 V when not depressed?	Replace the body integrated unit.	Check the stop light system.
12	CHECK SOLENOID UNIT OPERATION. Connect the battery to the solenoid unit connector terminal, and operate the solenoid unit. <i>Terminals</i> <i>No. 3 (+) — No. 4 (-):</i>	Does the solenoid unit operate normally?	Check the lock mechanism of the select lever body.	Replace the solenoid unit.

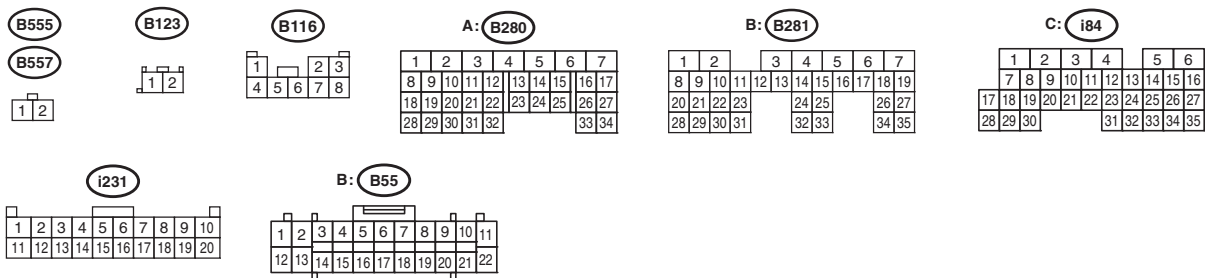
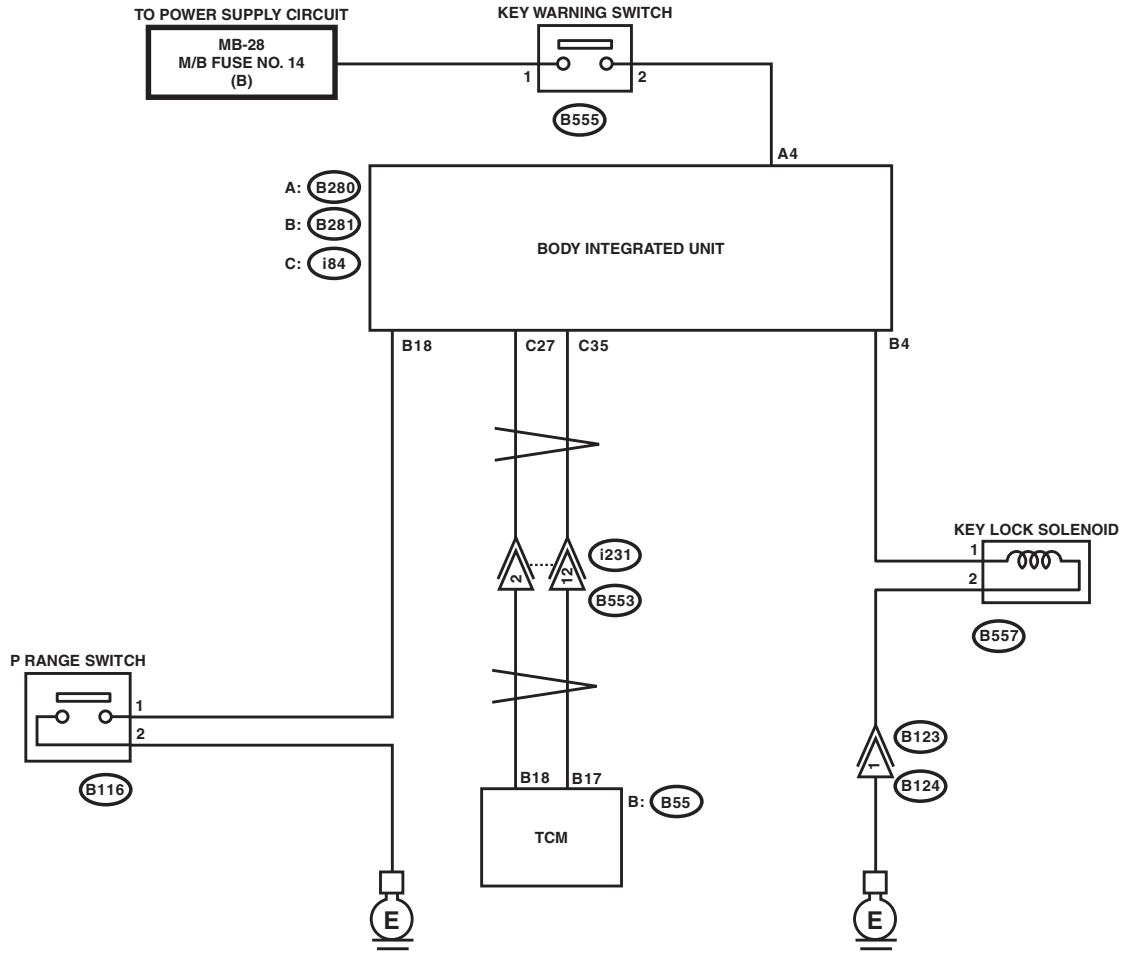
AT Shift Lock Control System

CONTROL SYSTEMS

4. KEY INTERLOCK CANNOT BE LOCKED OR RELEASED

NOTE:

Check of this item only applies to models without a push button ignition switch.



CS-01725

Step	Check	Yes	No
1	CHECK D CHECK FUSE. Check that the D check fuse is disconnected.	Is the D check fuse disconnected?	Go to step 2.
			Remove the D check fuse and then turn the ignition switch to ON.

AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
2	CHECK BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT. <Ref. to CS-16, BODY INTEGRATED UNIT POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, AT Shift Lock Control System.>	Is there any fault? Follow the procedures to inspect and repair.	Go to step 3.
3	CHECK CURRENT DATA. 1) Connect the Subaru Select Monitor. 2) Shift the select lever to "P" range. 3) Turn the ignition switch to ON. 4) Select the current data display and display «P SW». <Ref. to BC(diag)-11, Read Current Data.>	Is the display "ON" in the P range and "OFF" in ranges other than P? Go to step 4.	Go to step 7.
4	CHECK CURRENT DATA. 1) Select the current data display and display the «key-lock warning SW». <Ref. to BC(diag)-11, Read Current Data.> 2) Turn the ignition switch to OFF.	Does the display change from "ON" ↔ "OFF" when the key is inserted and removed? Go to step 5.	Go to step 10.
5	CHECK CURRENT DATA. 1) Turn the ignition switch to ON. 2) Select the current data display and display «Key locking output». <Ref. to BC(diag)-11, Read Current Data.>	Is the display "OFF" in the P range and "ON" in ranges other than P? Go to step 11.	Go to step 6.
6	CHECK DTC OF BODY INTEGRATED UNIT. 1) Set the select lever to other than "P" range. 2) Check DTC of body integrated unit.	Is B1105 (key interlock circuit abnormal) a current malfunction? Follow the DTC to perform inspection and repair.	Go to step 11.
7	CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND "P" RANGE SWITCH. 1) Disconnect the connector from body integrated unit. 2) Disconnect the connector of "P" range switch. 3) Check for open circuit of harness, short circuit to battery or short circuit to ground between the body integrated unit and "P" range switch. Connector & terminal (B281) No. 18 — (B116) No. 1:	Is there any fault in the harness? Repair or replace the harness between the body integrated unit and the "P" range switch.	Go to step 8.
8	CHECK HARNESS BETWEEN "P" RANGE SWITCH AND CHASSIS GROUND. Measure the resistance of harness between "P" range switch and chassis ground. Connector & terminal (B116) No. 2 — Chassis ground:	Is it less than 10 Ω? Go to step 9.	Repair the harness between the "P" range switch and chassis ground.
9	CHECK "P" RANGE SWITCH. Measure the resistance between "P" range switch connector terminals. Terminals No. 2 — No. 1:	Is it less than 10 Ω in the "P" range, and 1 MΩ or more in ranges other than "P"? Replace the body integrated unit.	Replace the "P" range switch.
10	CHECK HARNESS BETWEEN BATTERY AND KEY WARNING SWITCH AND BODY INTEGRATED UNIT. 1) Disconnect the connector from body integrated unit. 2) Measure the voltage between body integrated unit and chassis ground. Connector & terminal (B280) No. 4 (+) — Chassis ground (-):	Is the display 9 V or more when the key is inserted, and less than 1.5 V with the key removed? Replace the body integrated unit.	Check the following items. • Key warning switch • Harness/fuse • Ignition circuit



AT Shift Lock Control System

CONTROL SYSTEMS

Step	Check	Yes	No
11 CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND KEY LOCK SOLENOID. 1) Disconnect the connector from body integrated unit. 2) Disconnect the connector of key lock solenoid. 3) Check for open circuit of harness, short circuit to battery or short circuit to ground between the body integrated unit and key lock solenoid. Connector & terminal (B281) No. 4 — (B557) No. 1:	Is there any fault in the harness?	Repair or replace the harness between the body integrated unit and the key lock solenoid.	Go to step 12.
12 CHECK HARNESS BETWEEN KEY LOCK SOLENOID AND CHASSIS GROUND. Measure the resistance of harness between key lock solenoid and chassis ground. Connector & terminal (B557) No. 2 — Chassis ground:	Is it less than 10 Ω ?	Go to step 13.	Repair or replace the harness between the key lock solenoid and chassis ground.
13 CHECK KEY LOCK SOLENOID OPERATION. Connect the battery to the key lock solenoid connector terminal, and operate the solenoid. Terminals No. 2 (+) — No. 1 (-):	Does the key lock solenoid operate normally?	Go to step 14.	Replace the key lock solenoid.
14 CHECK OUTPUT OF BODY INTEGRATED UNIT. 1) Connect all connectors. 2) Insert the key. 3) Measure the voltage between body integrated unit and chassis ground. Connector & terminal (B281) No. 4 — Chassis ground:	Is it 7.5 V to 16 V in ranges other than "P", and 0 V in the "P" range?	Check the lock mechanism of the steering lock body.	Replace the body integrated unit.



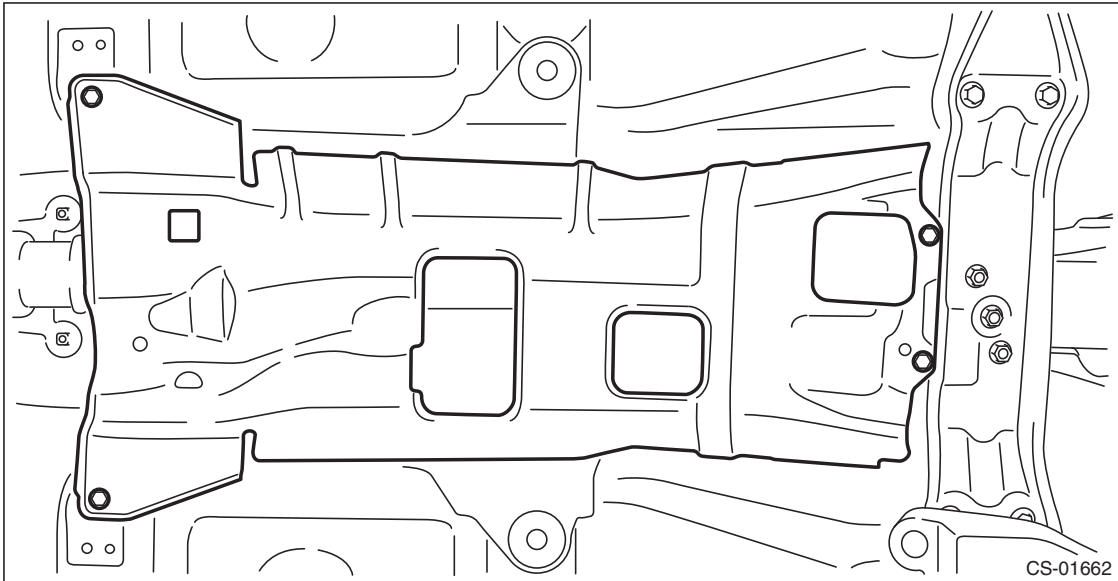
Select Lever

CONTROL SYSTEMS

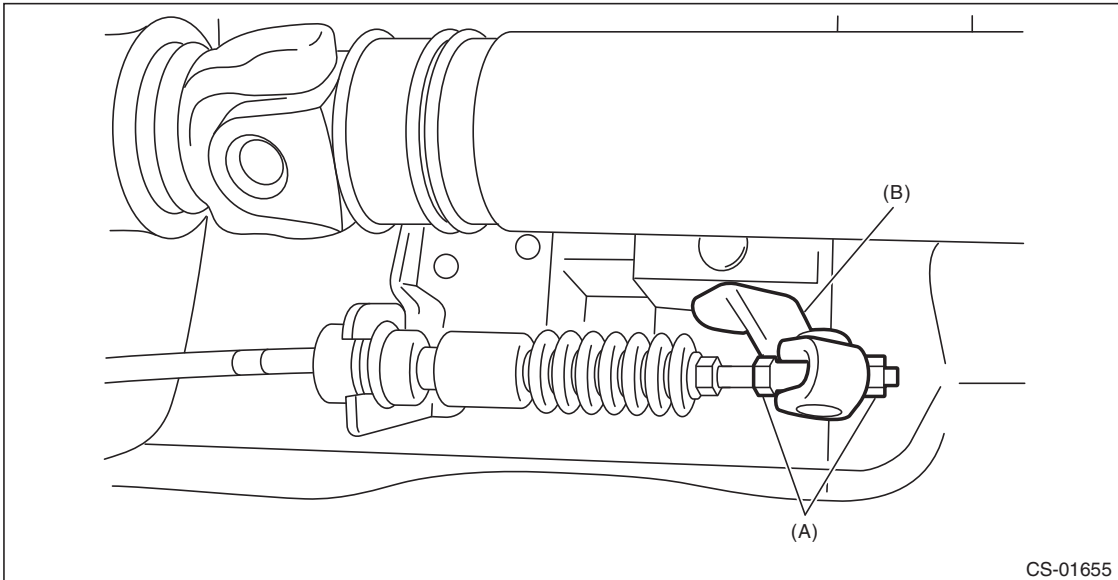
3. Select Lever

A: REMOVAL

- 1) Shift the select lever to "N" range.
- 2) Disconnect the ground cable from battery.
- 3) Lift up the vehicle.
- 4) Remove the center exhaust pipe. (Non-turbo model) <Ref. to EX(H4DO)-14, REMOVAL, Center Exhaust Pipe.>
- 5) Remove the center exhaust pipe (rear). (Turbo model) <Ref. to EX(H4DOTC)-30, REMOVAL, Center Exhaust Pipe.>
- 6) Remove the center exhaust cover.



- 7) Disconnect the cable from the arm COMPL.



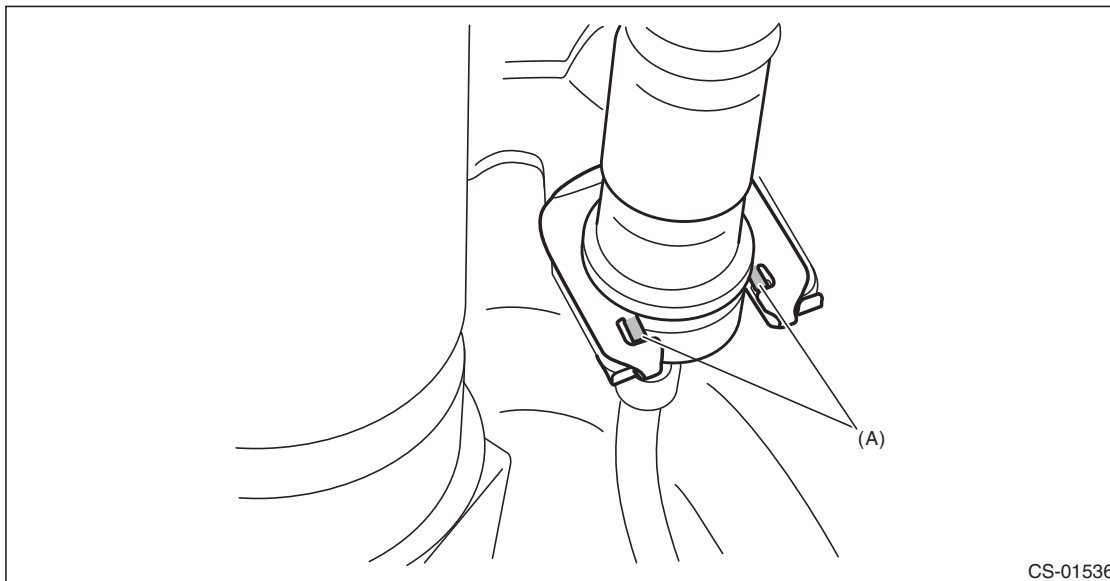
(A) Adjusting nut

(B) Arm COMPL

Select Lever

CONTROL SYSTEMS

8) Raise the claw of clamp and remove the cable.

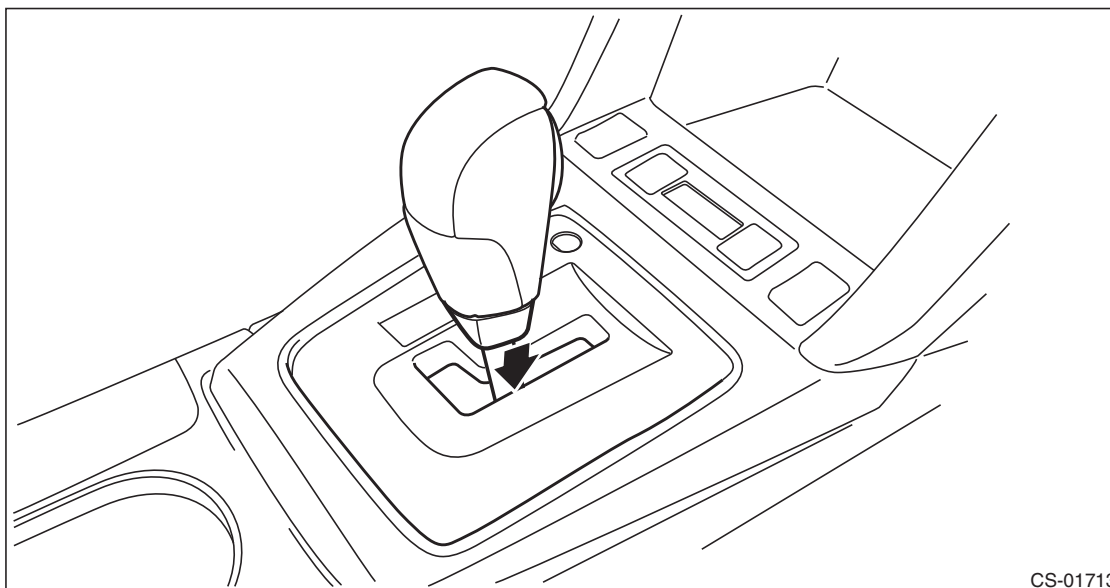


(A) Claw

9) Lower the vehicle.

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

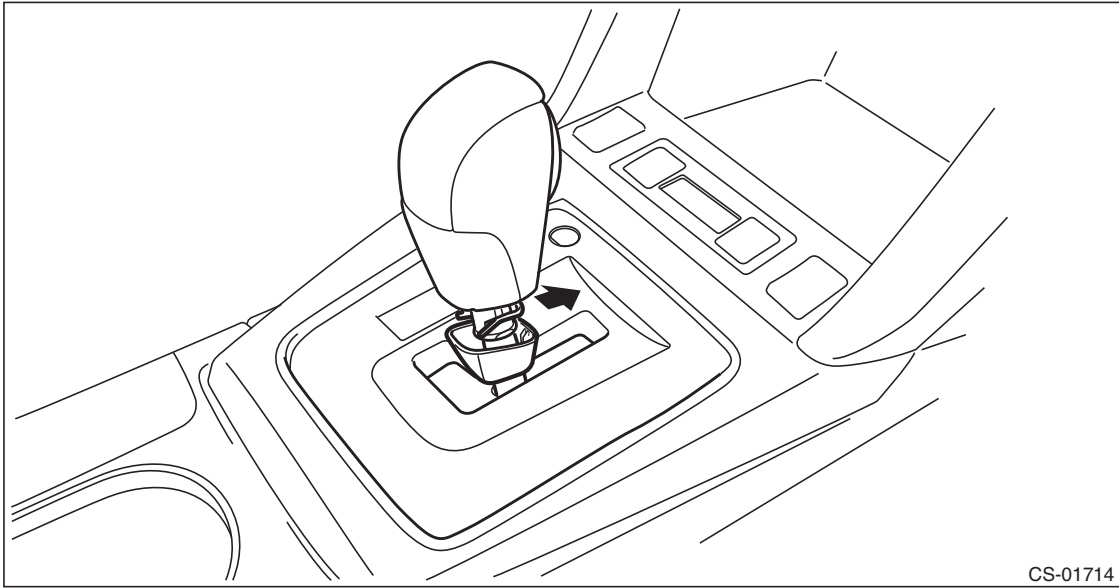
11) Lower the cover grip AT vertically toward the lever.



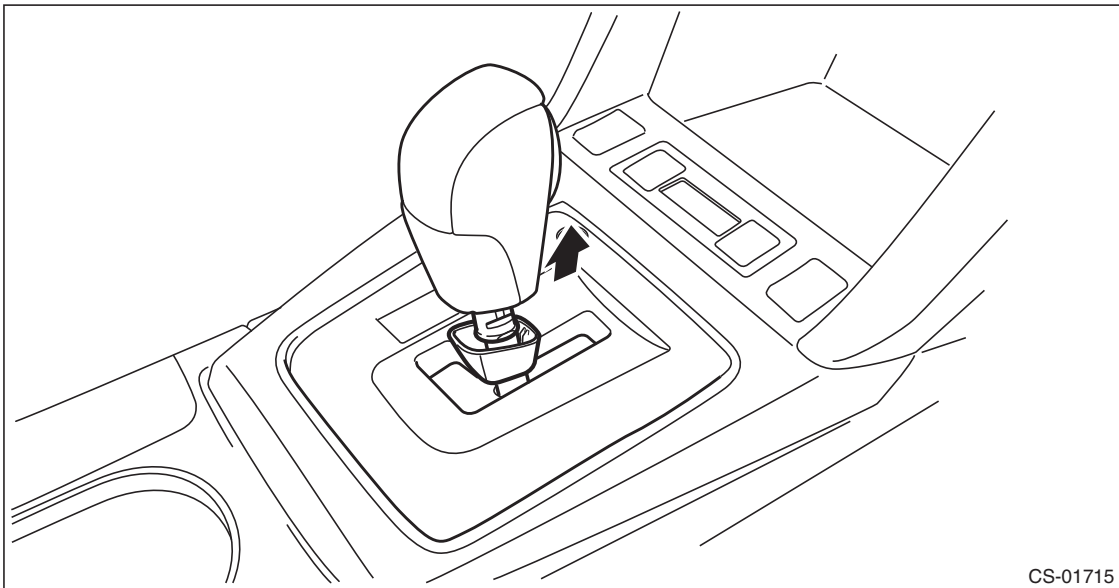
Select Lever

CONTROL SYSTEMS

- 12) Remove the clamp grip pin.



- 13) Remove the grip assembly.

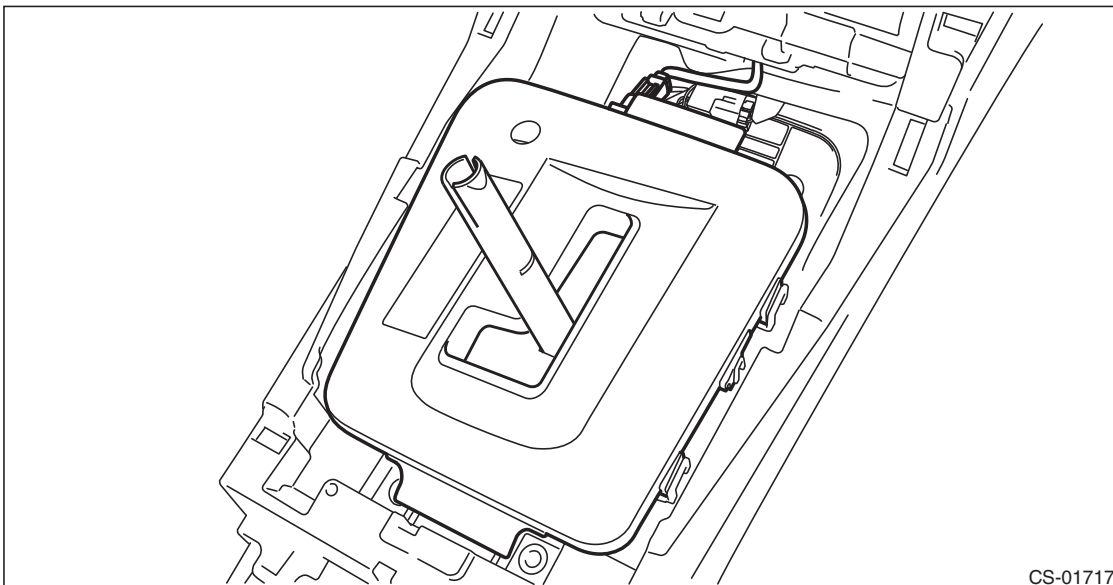


- 14) Remove the ornament panel - consoles LH and RH. <Ref. to EI-65, REMOVAL, Console Box.>
15) Remove the cover - shift lever. <Ref. to EI-65, REMOVAL, Console Box.>
16) Remove the console box assembly. <Ref. to EI-65, REMOVAL, Console Box.>

Select Lever

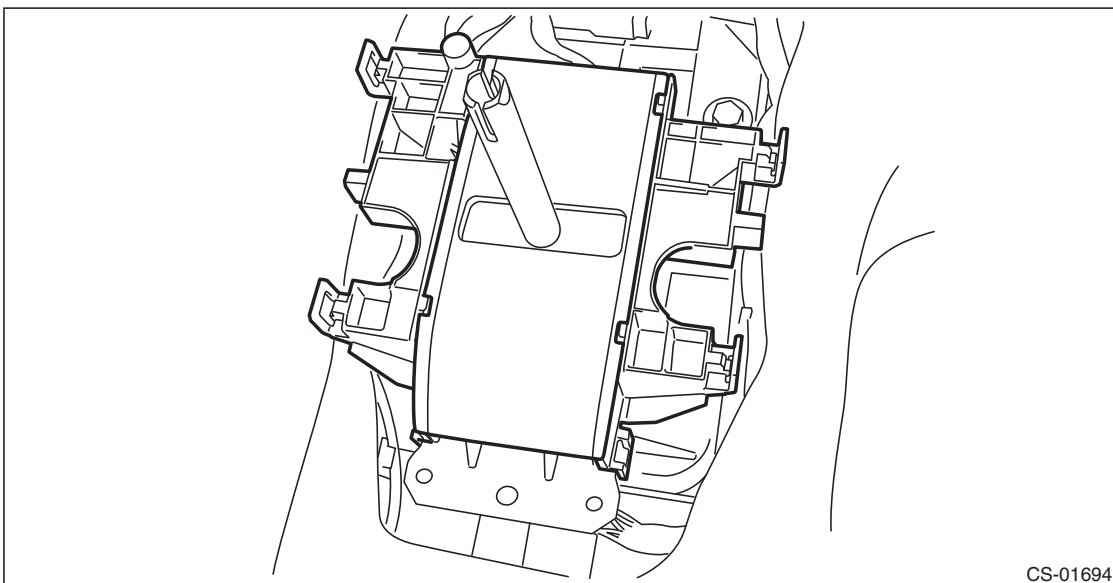
CONTROL SYSTEMS

- 17) Disconnect the connector, and remove the indicator cover from the housing.



- 18) Remove the panel center LWR LH and RH. <Ref. to EI-65, REMOVAL, Console Box.>

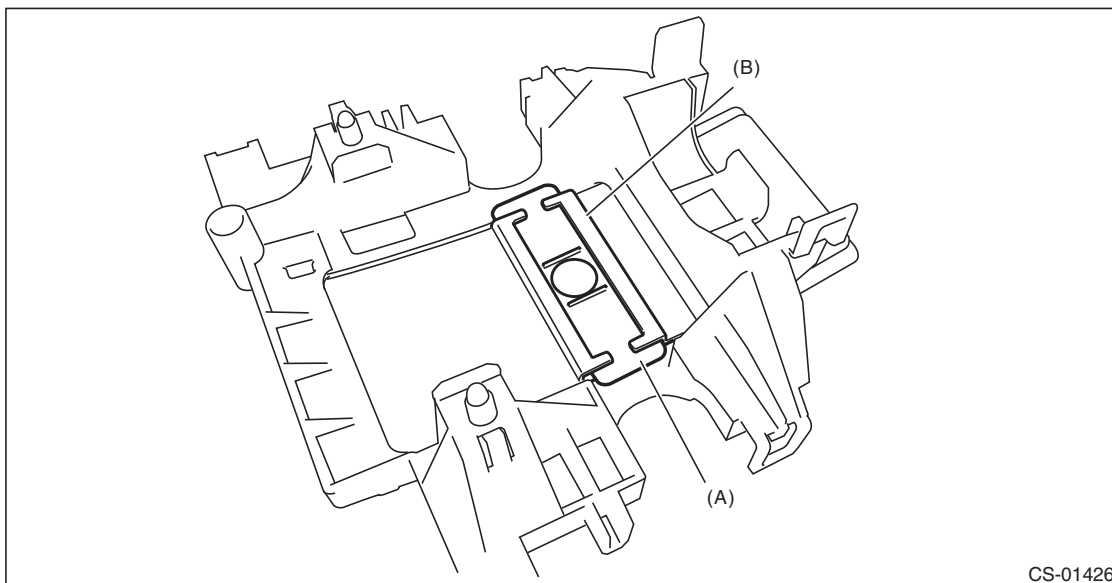
- 19) Remove the housing with the blind A and blind B.



Select Lever

CONTROL SYSTEMS

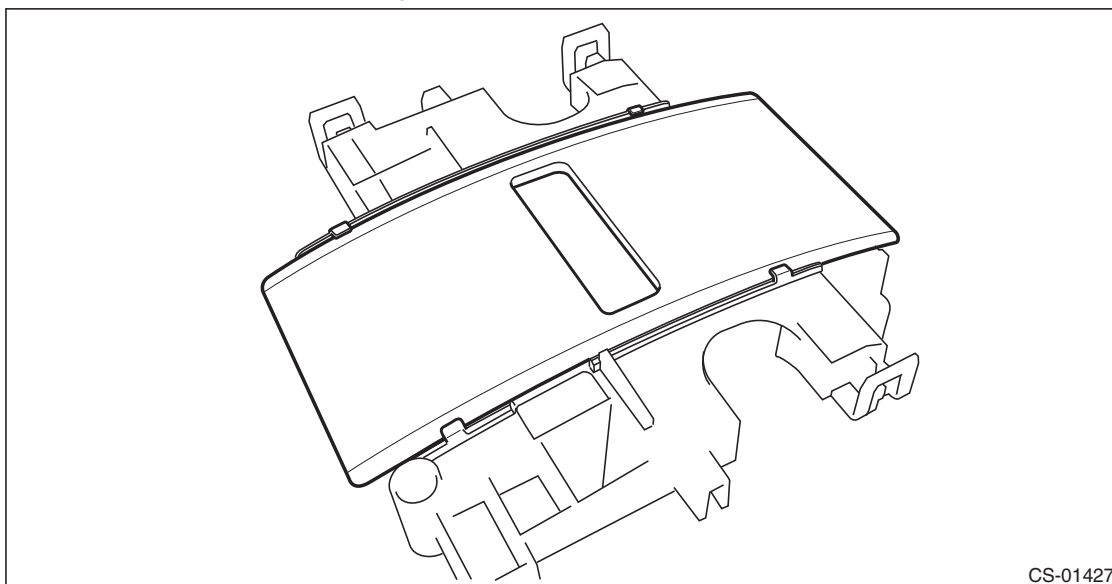
20) Remove the blind B.



(A) Blind B

(B) Blind A

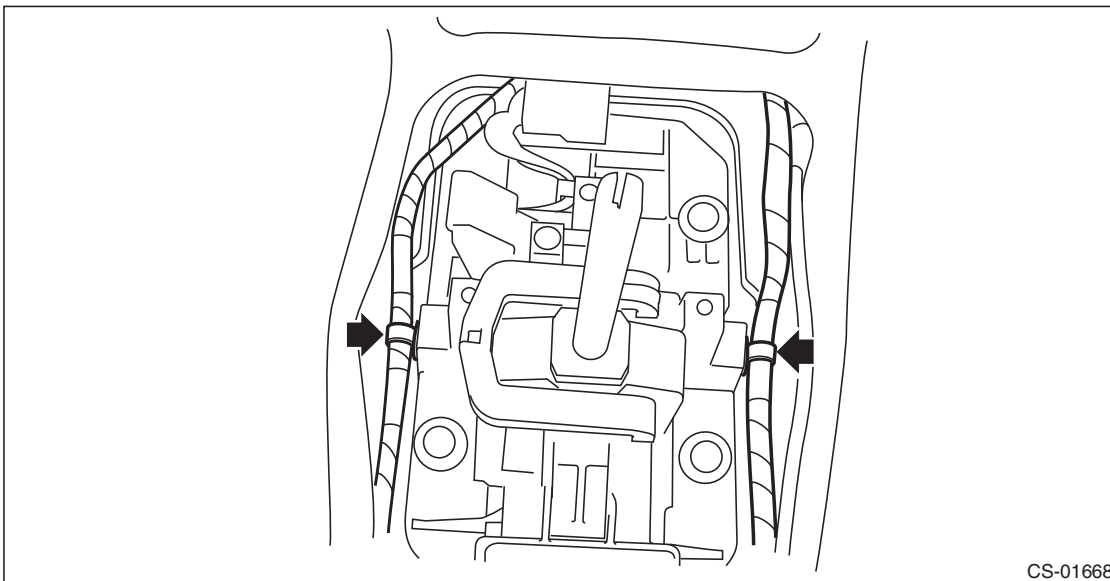
21) Remove the blind A from the housing.



Select Lever

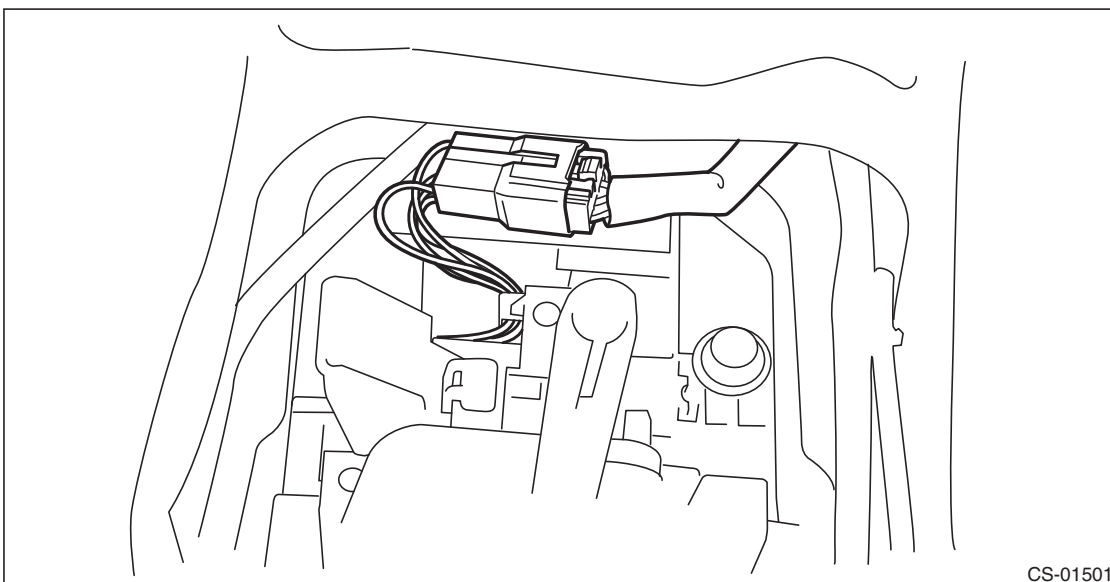
CONTROL SYSTEMS

22) Remove the harness clip from the select lever assembly.



CS-01668

23) Disconnect the harness connector.



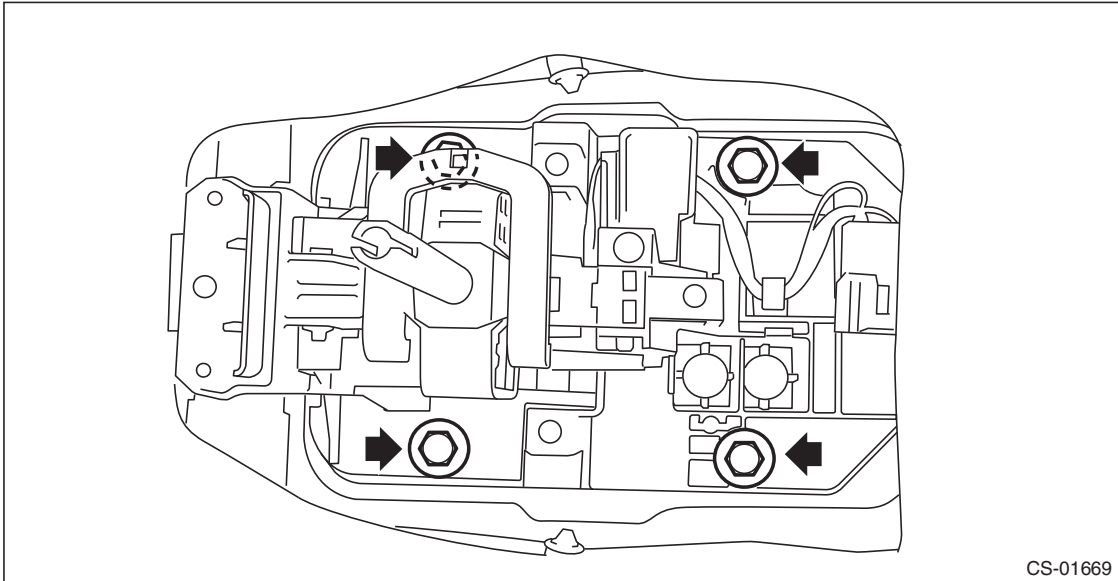
CS-01501



Select Lever

CONTROL SYSTEMS

24) Remove the four bolts to remove the select lever assembly.



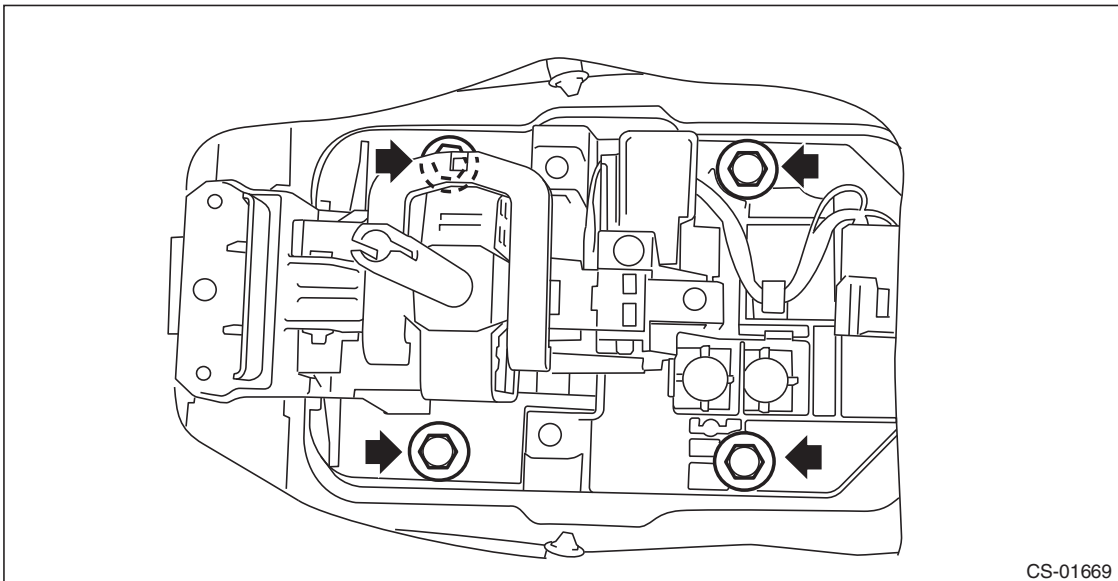
CS-01669

B: INSTALLATION

- 1) Set the select lever assembly to the vehicle body.
- 2) Tighten the four mounting bolts to attach the select lever assembly to the vehicle body.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)

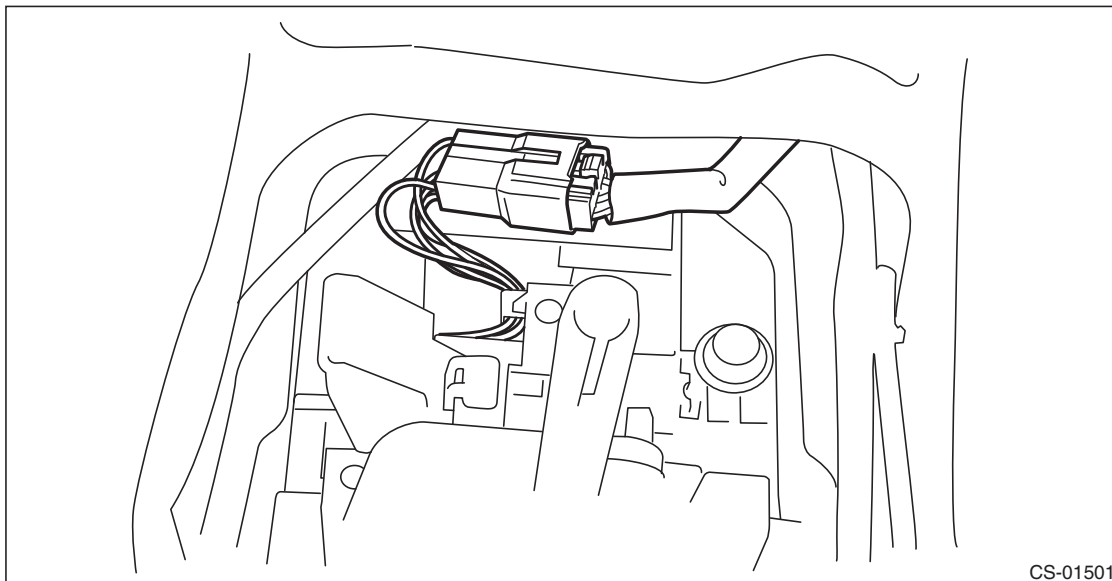


CS-01669

Select Lever

CONTROL SYSTEMS

3) Connect the harness connector.



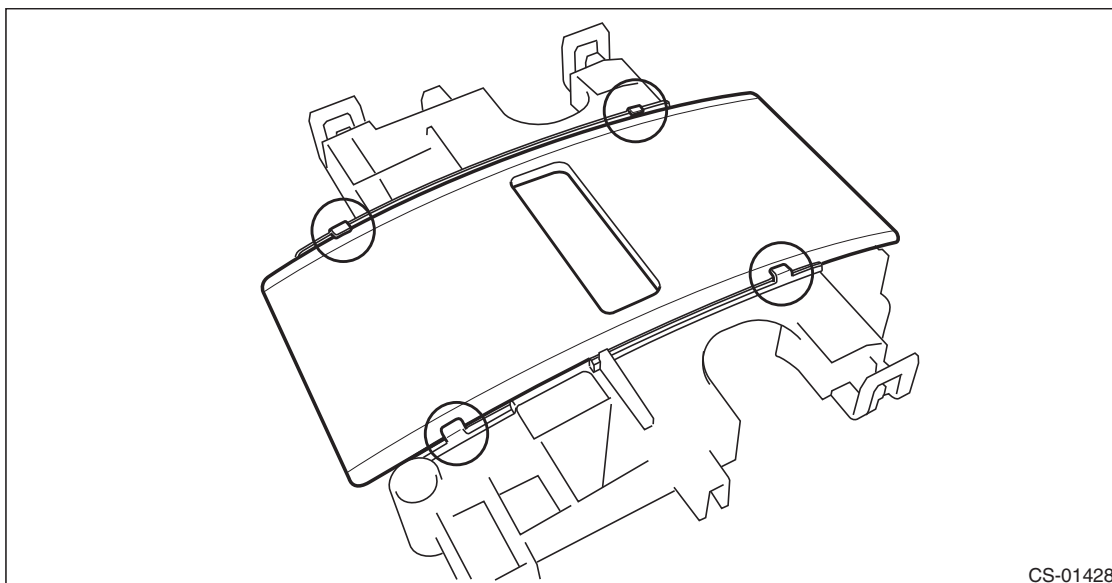
4) Install the harness clip to the select lever assembly.

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

6) Install the blind A to the housing.

NOTE:

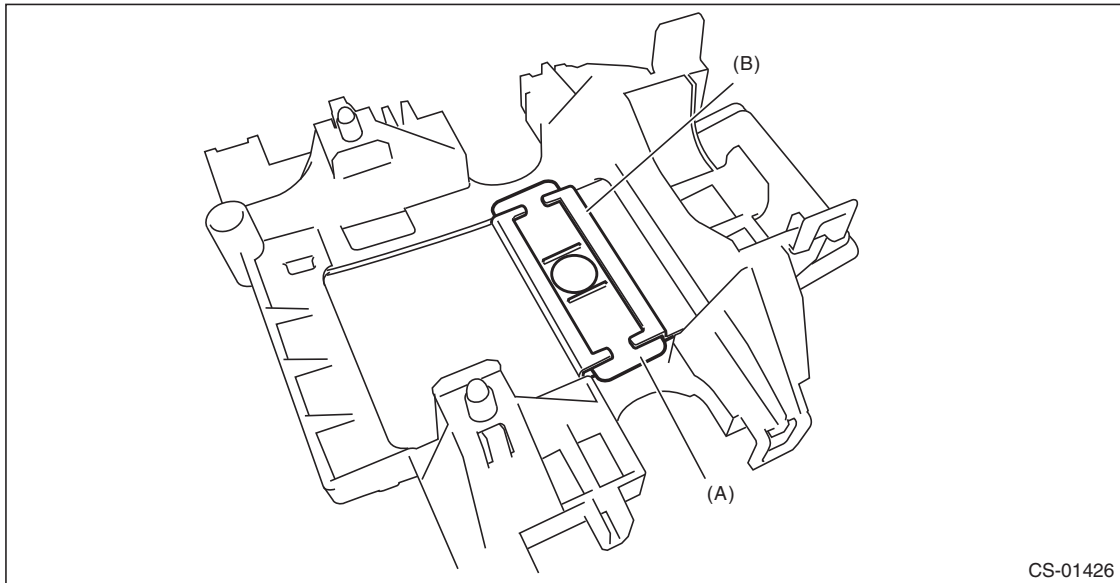
The blind A should be installed so that it is securely caught inside the tab of the housing.



Select Lever

CONTROL SYSTEMS

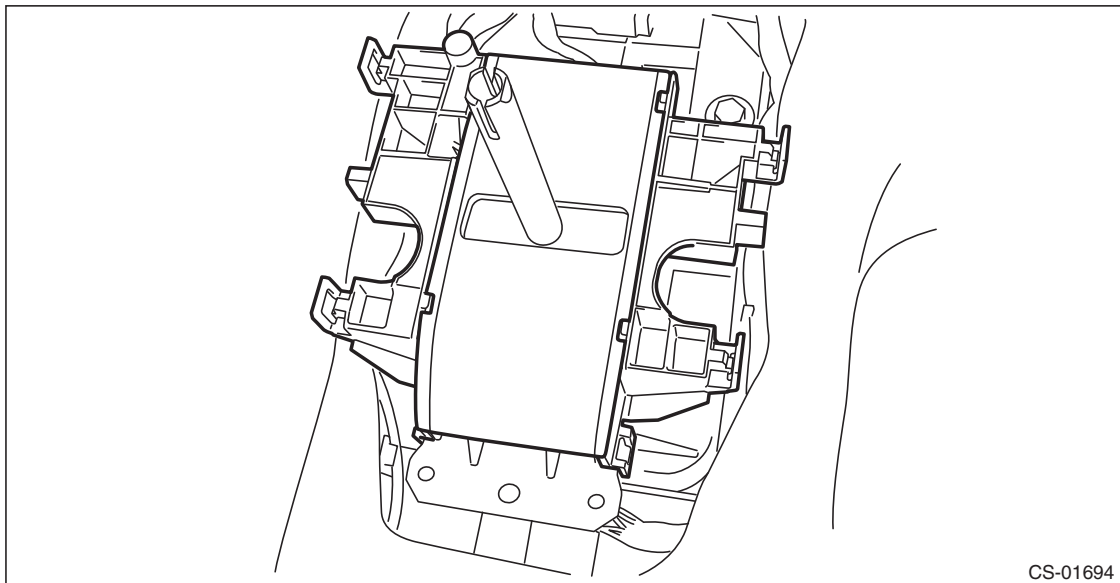
7) Install the blind B behind the blind A.



(A) Blind B

(B) Blind A

8) Install the housing.

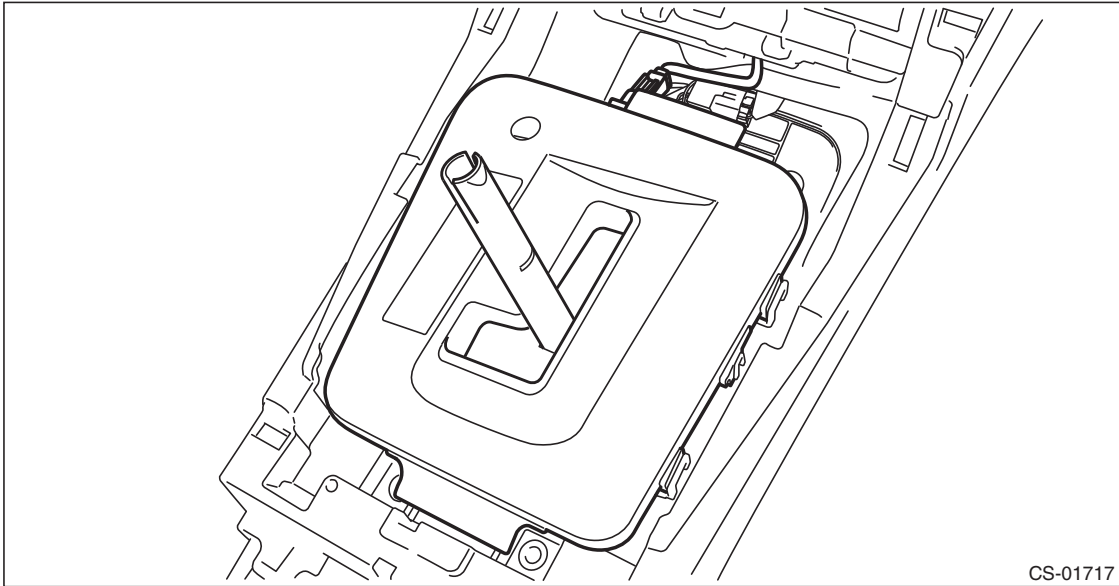


9) Install the panel center LWR LH and RH. <Ref. to EI-68, INSTALLATION, Console Box.>

Select Lever

CONTROL SYSTEMS

10) Install the indicator cover, then connect the connector.

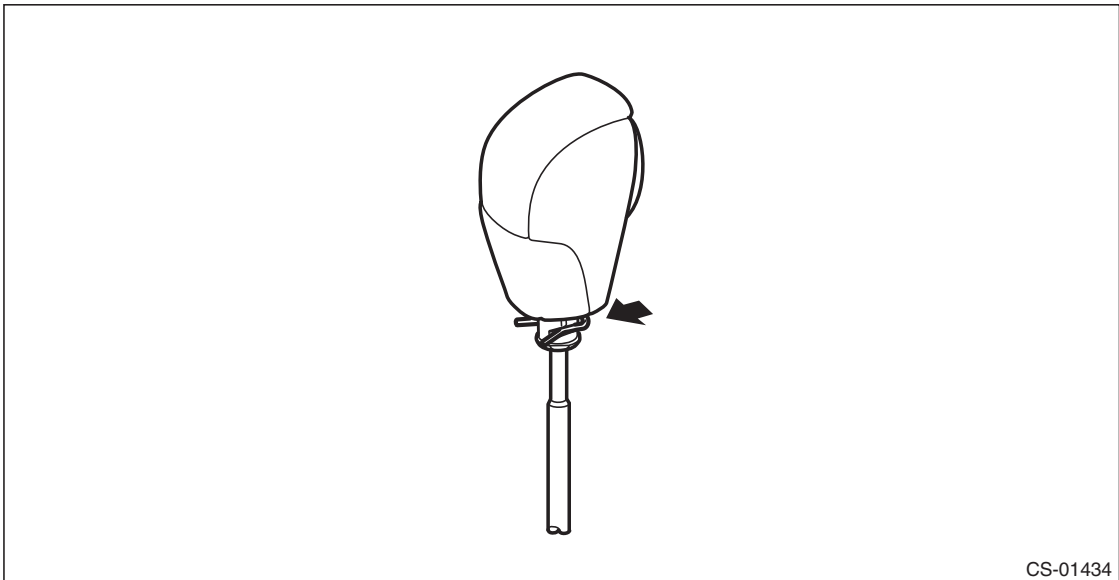


11) Install the console box assembly. <Ref. to EI-68, INSTALLATION, Console Box.>

12) Install the cover - shift lever. <Ref. to EI-68, INSTALLATION, Console Box.>

13) Install the ornament panel - consoles LH and RH. <Ref. to EI-68, INSTALLATION, Console Box.>

14) Accessing from the button side of the grip, attach the clamp grip pin.



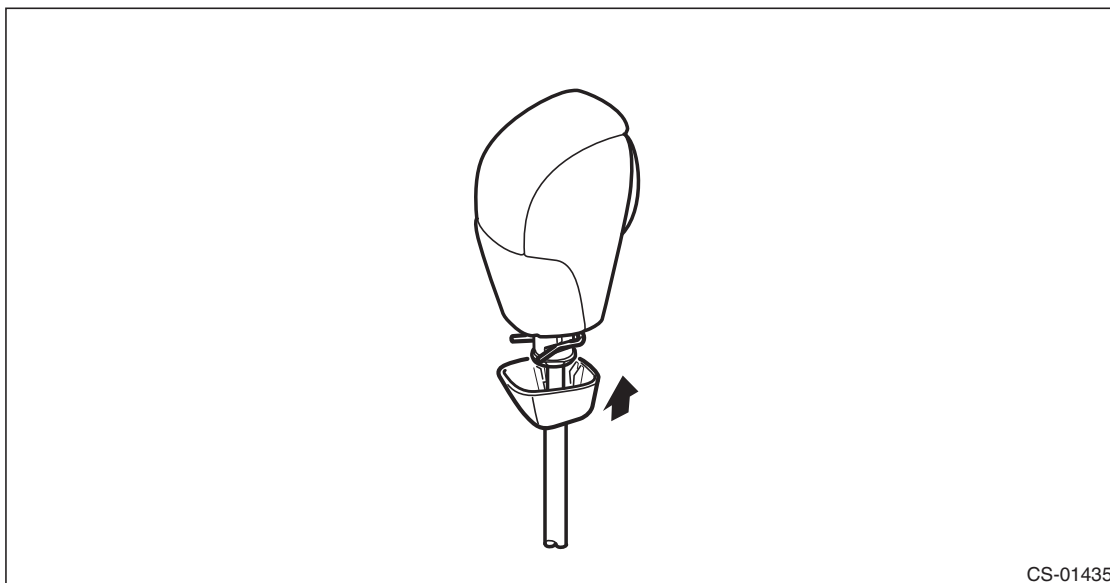
Select Lever

CONTROL SYSTEMS

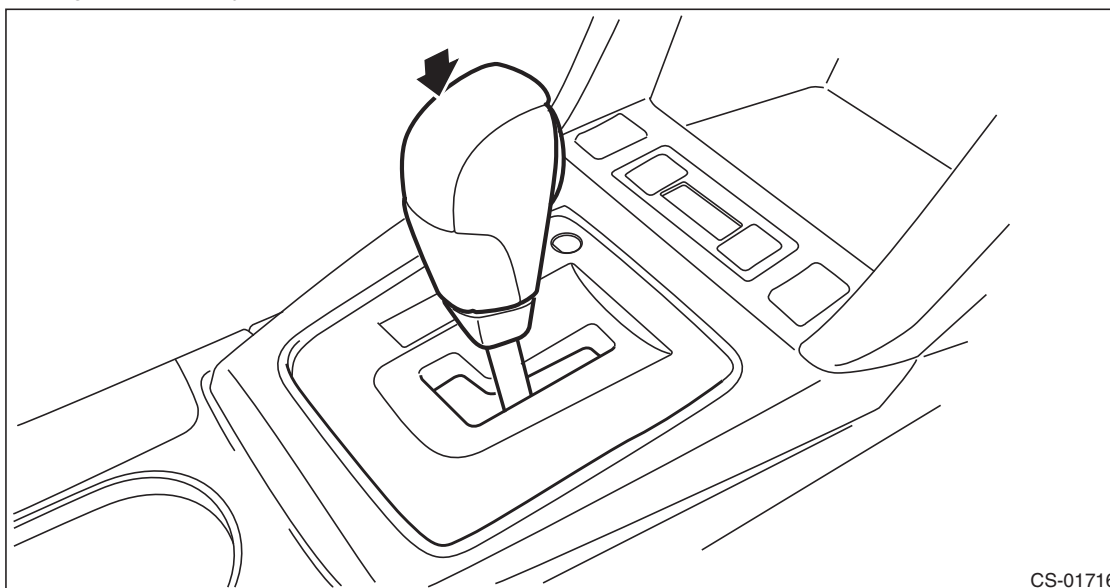
15) Install the cover grip AT securely.

NOTE:

After installation, check that the cover grip AT cannot be detached.



16) Insert the grip assembly to the select lever and press it down until a click is heard.



17) After installation of grip, check the following points.

- The grip will not come off.
- The button on the grip operates normally.

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

19) Lift up the vehicle.

20) Secure the cable to the bracket. <Ref. to CS-48, INSTALLATION, Select Cable.>

21) Adjust the select cable position. <Ref. to CS-52, ADJUSTMENT, Select Cable.>

22) After adjustment, confirm that the select lever operates properly at all range positions using the shift lock release button.

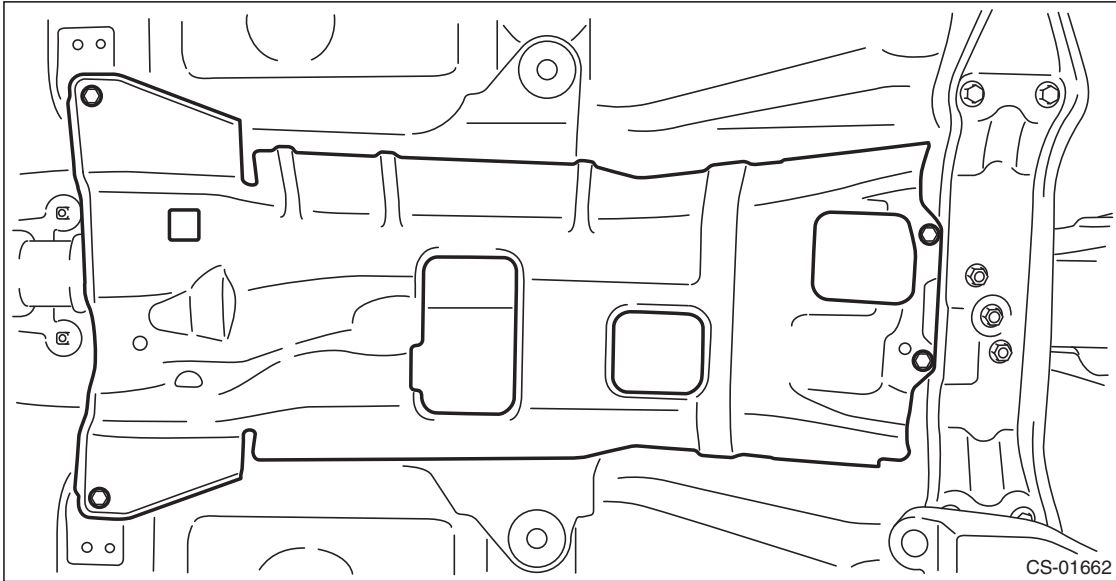
Select Lever

CONTROL SYSTEMS

23) Install the center exhaust cover.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



24) Install the center exhaust pipe. (Non-turbo model) <Ref. to EX(H4DO)-15, INSTALLATION, Center Exhaust Pipe.>

25) Install the center exhaust pipe (rear). (Turbo model) <Ref. to EX(H4DOTC)-35, INSTALLATION, Center Exhaust Pipe.>

26) Lower the vehicle.

27) Connect the battery ground terminal.

28) Inspect the following items. If a malfunction is found in the inspection, adjust the select cable or inhibitor switch.

(1) The shift lock operates normally. <Ref. to CS-13, SHIFT LOCK OPERATION, INSPECTION, AT Shift Lock Control System.>

(2) Engine starts when the select lever is in "P" or "N" range, but not in other ranges.

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

(4) Select lever and indicator positions are matched.

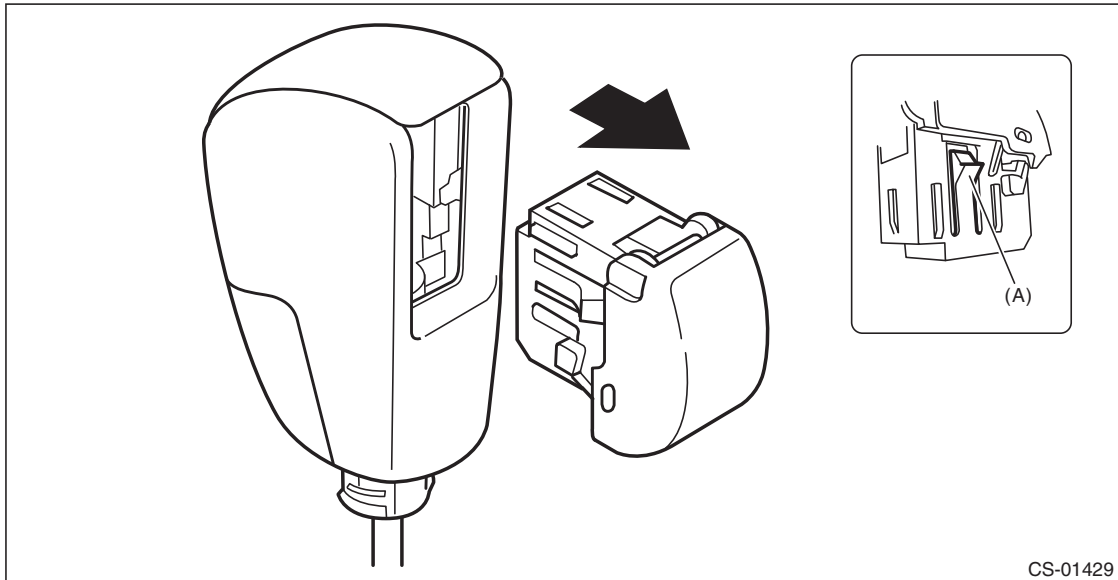
Select Lever

CONTROL SYSTEMS

C: DISASSEMBLY

1. GRIP ASSY

- 1) Remove the button assembly_AT.

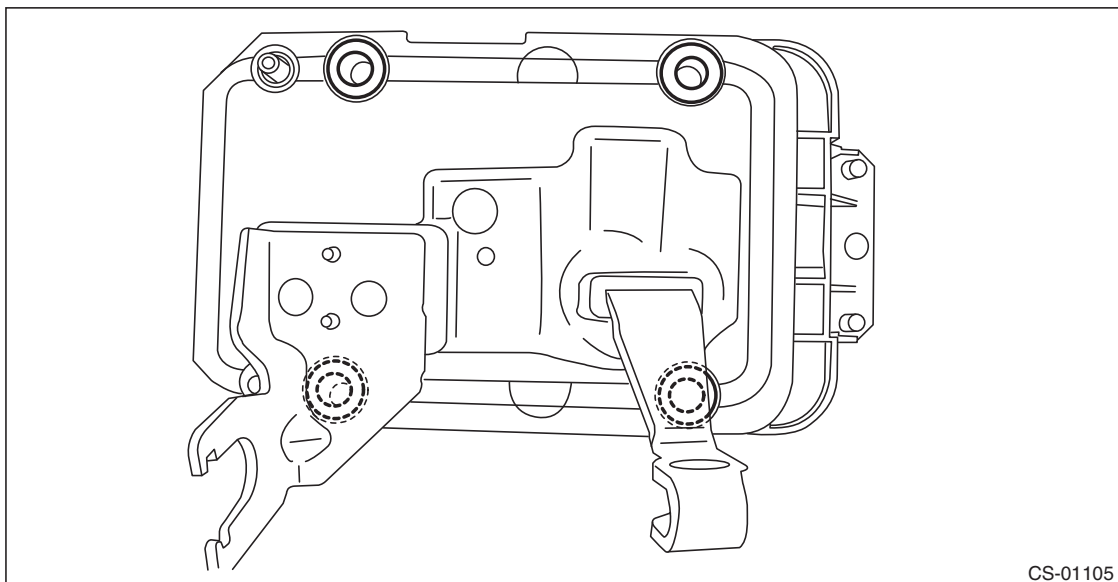


(A) Claw

- 2) Remove the rod COMPL.

2. AT SELECT LEVER ASSEMBLY

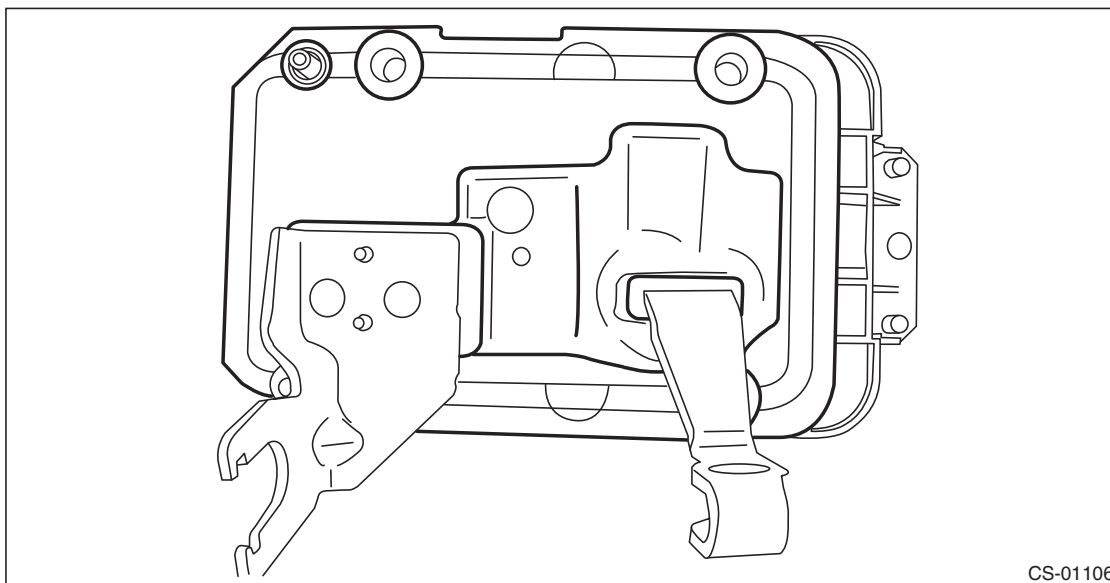
- 1) Remove the spacer plate.



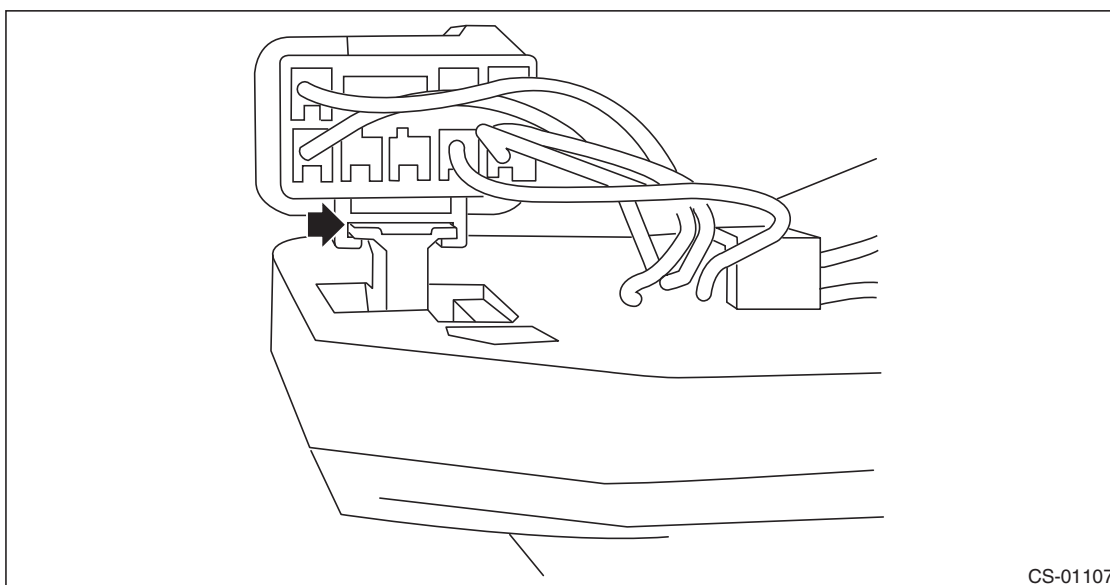
Select Lever

CONTROL SYSTEMS

2) Remove the gasket.



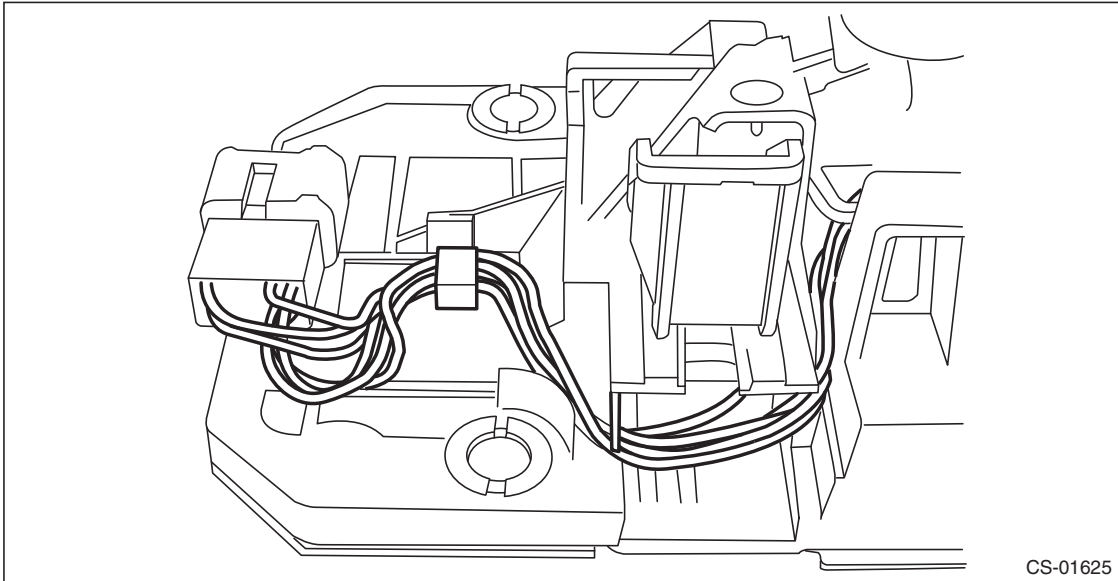
3) Insert a flat tip screwdriver with a thin tip under the connector and disconnect the harness connector from the plate COMPL.



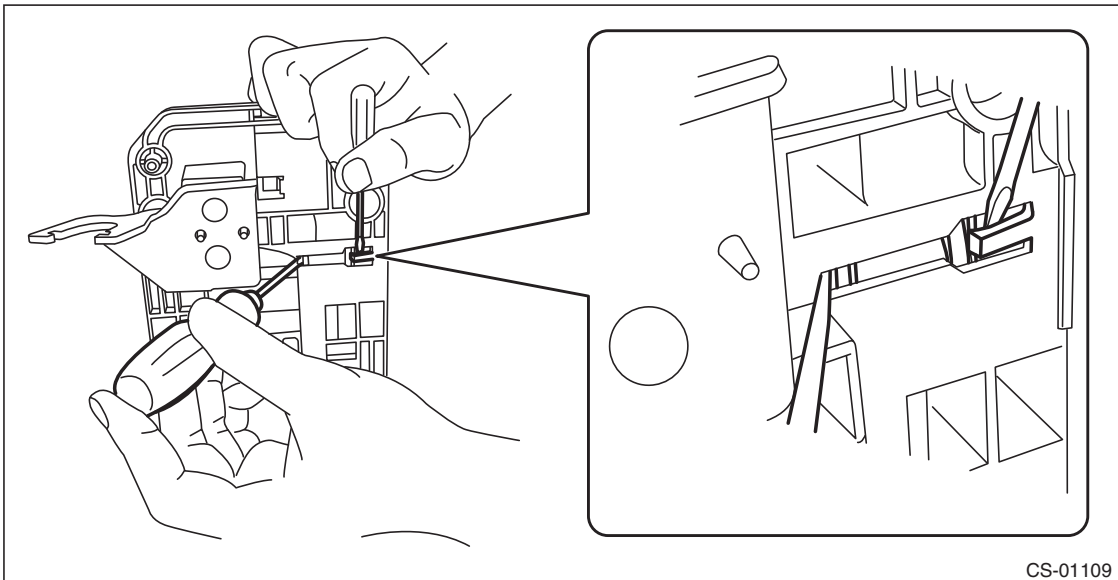
Select Lever

CONTROL SYSTEMS

4) Remove the harness from the plate COMPL.



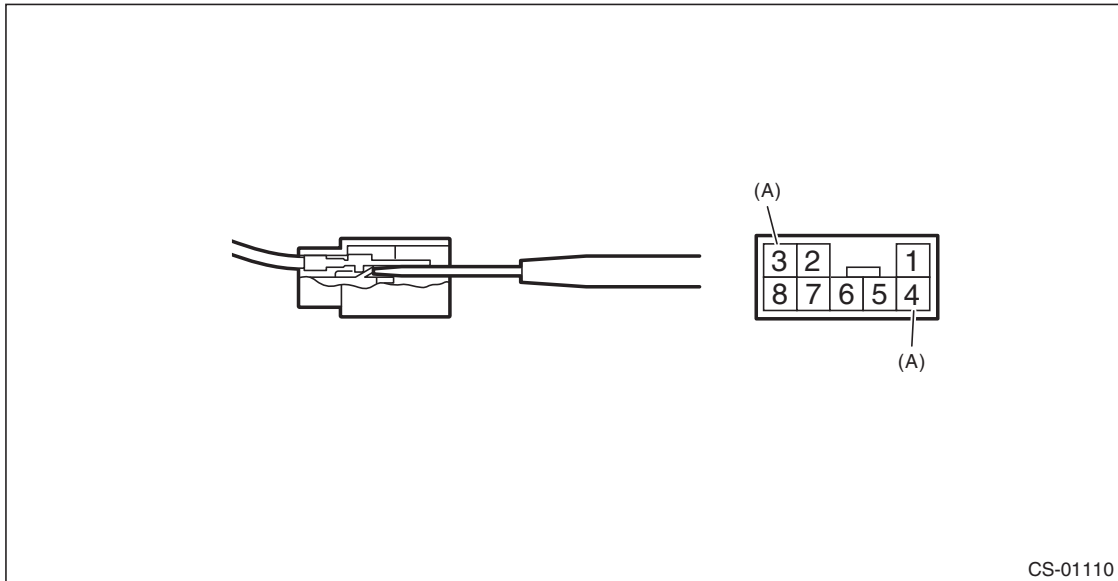
5) Raise the claw with a flat tip screwdriver with a thin tip and remove the solenoid unit.



Select Lever

CONTROL SYSTEMS

6) Using a flat tip screwdriver with a thin tip, remove the solenoid unit terminals from the connector.

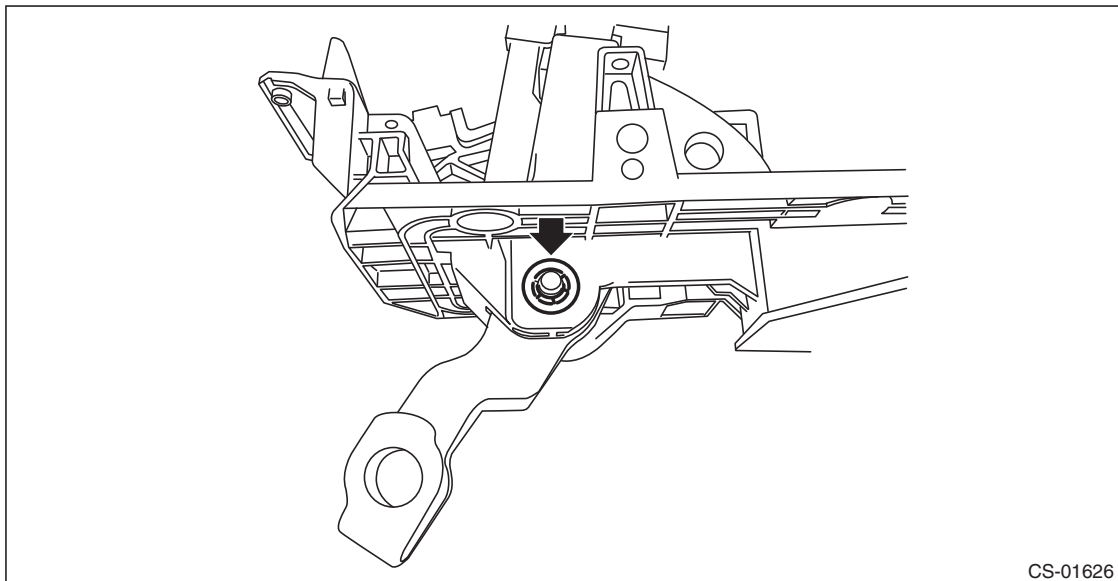


(A) Solenoid unit terminals

7) Remove the clamp push nut.

NOTE:

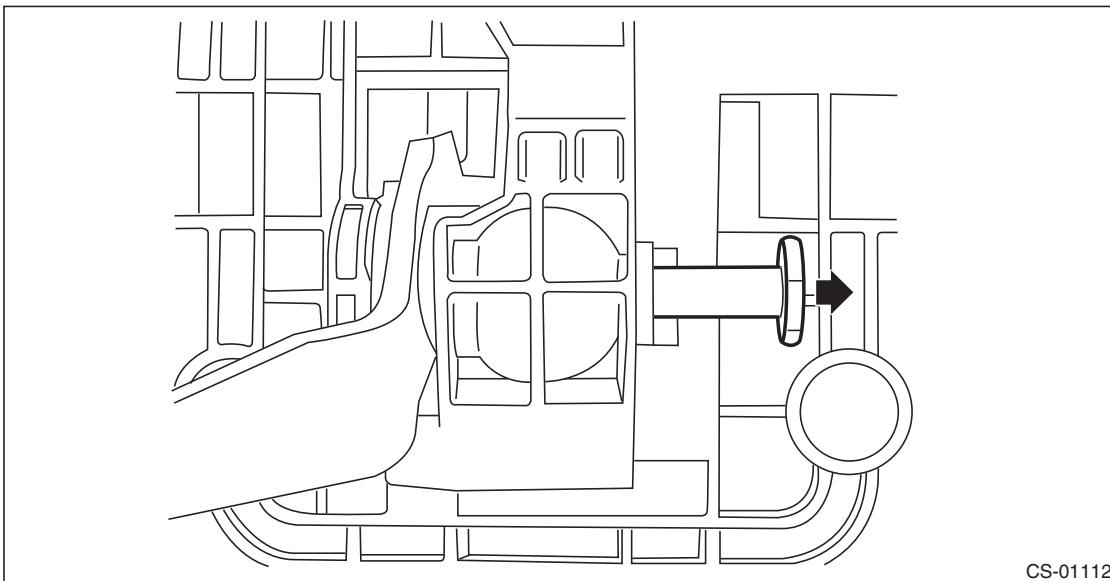
Replace the clamp push nut with a new part.



Select Lever

CONTROL SYSTEMS

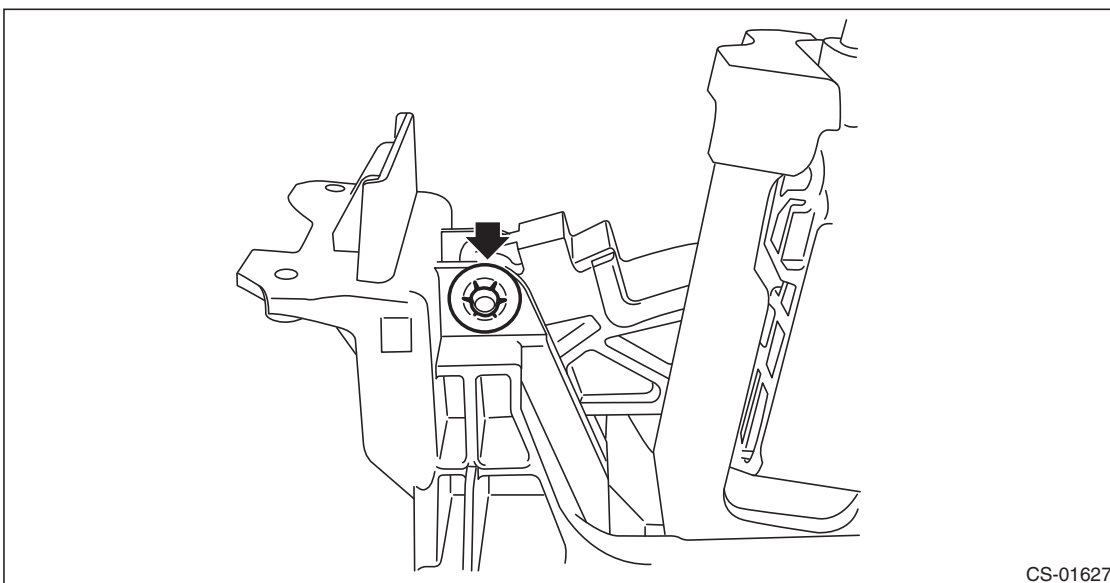
8) Pull out shaft control.



9) Remove the clamp push nut.

NOTE:

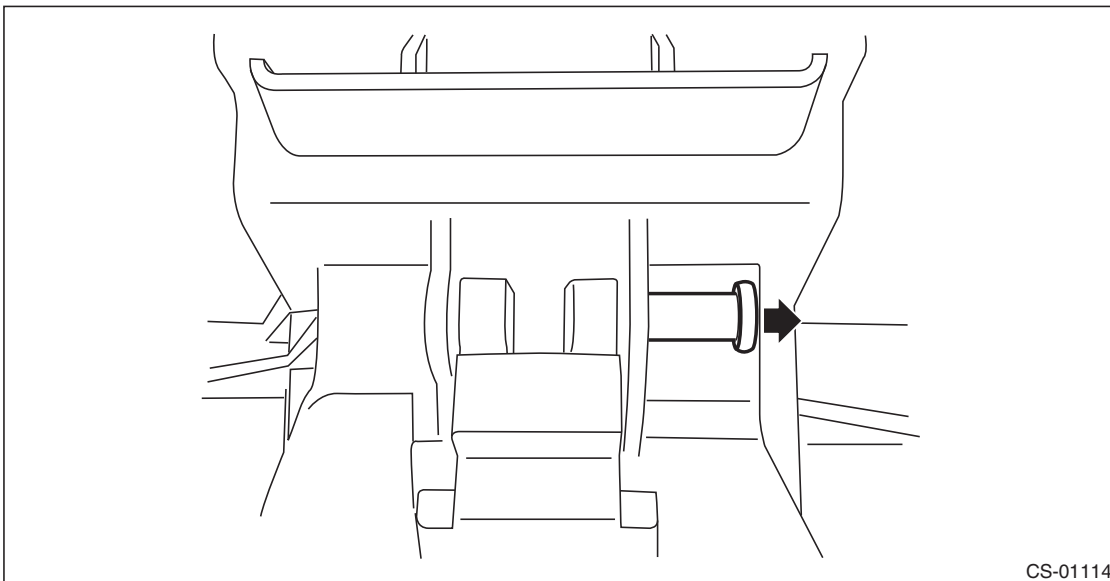
Replace the clamp push nut with a new part.



Select Lever

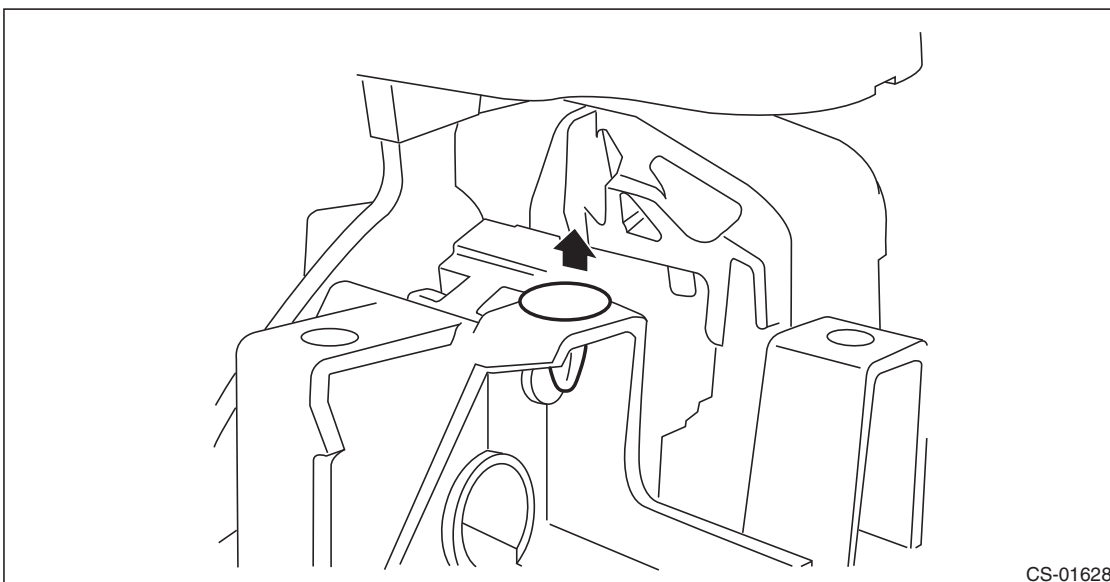
CONTROL SYSTEMS

10) Pull out spacer pin guide.



CS-01114

11) Remove the clamp pin.



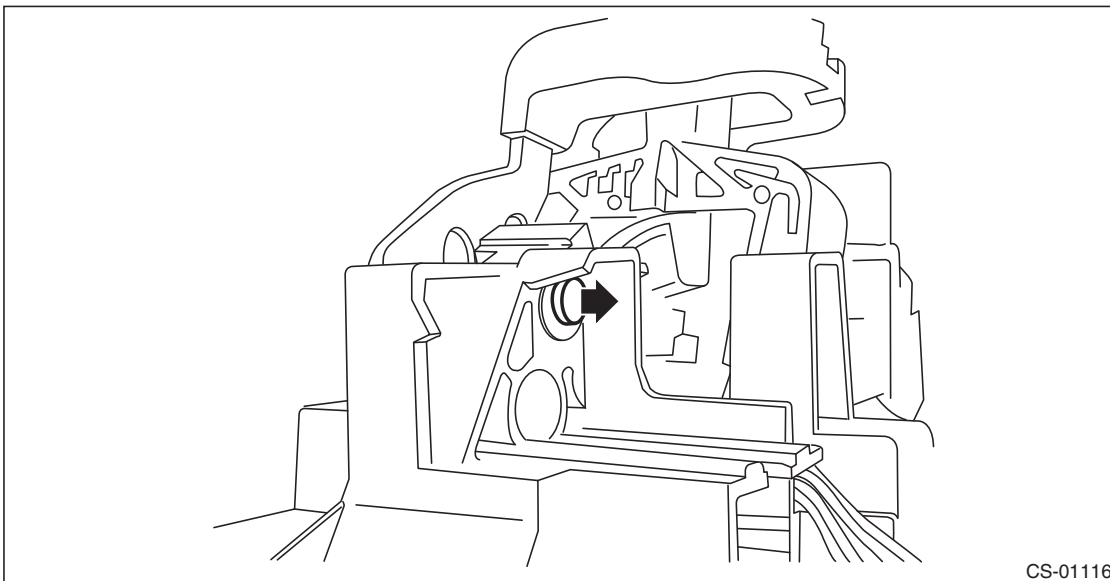
CS-01628



Select Lever

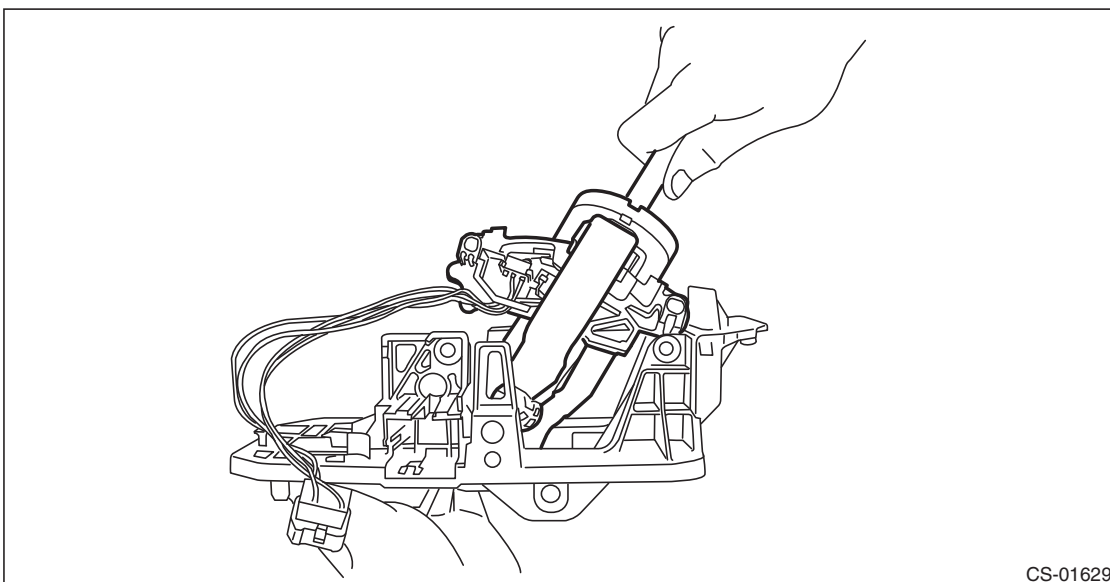
CONTROL SYSTEMS

12) Remove the spacer pin guide.



CS-01116

13) Remove the select lever COMPL from the plate COMPL.

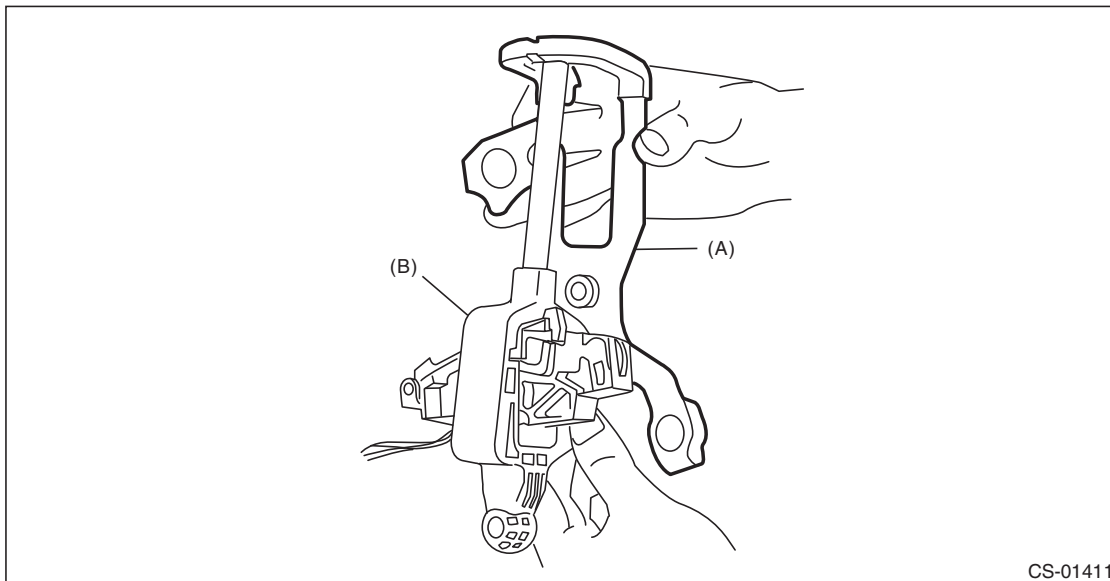


CS-01629

Select Lever

CONTROL SYSTEMS

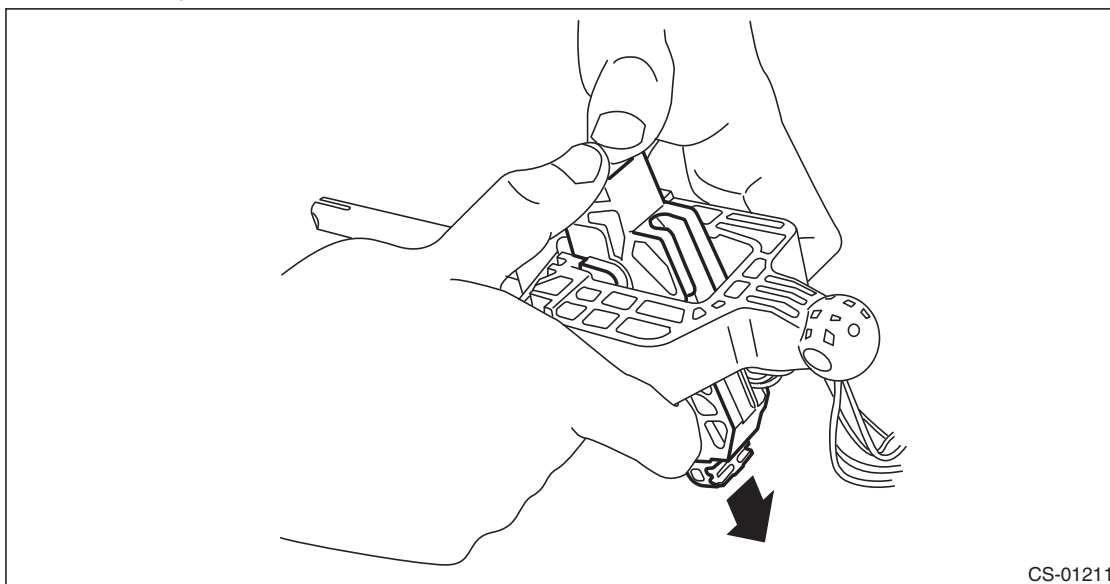
14) Remove the arm COMPL.



(A) Arm COMPL

(B) Selector lever COMPL

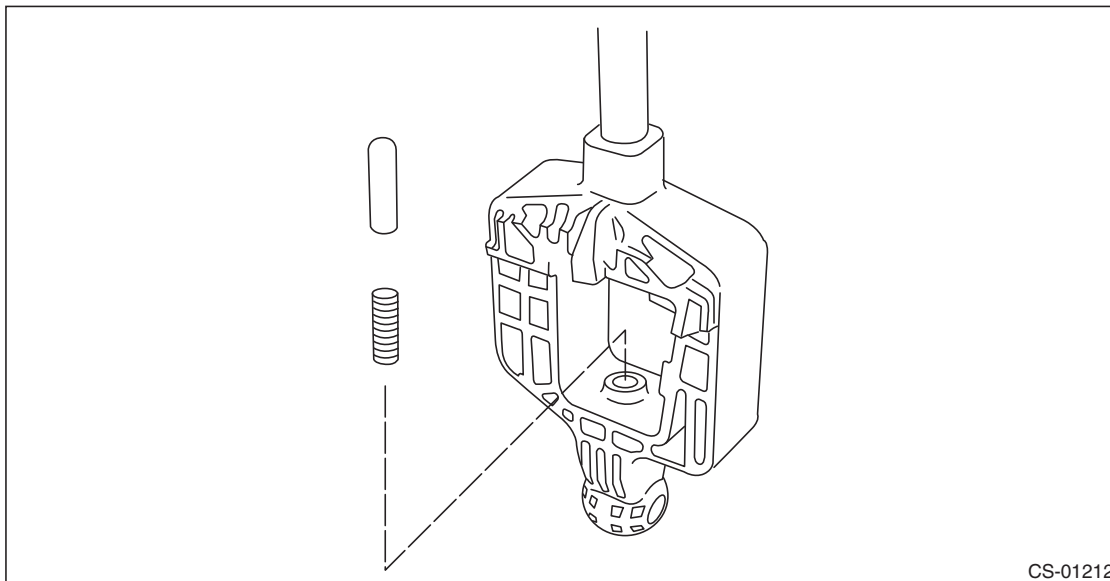
15) Remove the plate guide from the select lever COMPL.



Select Lever

CONTROL SYSTEMS

16) Remove the rod detent and detent spring from the select lever COMPL.



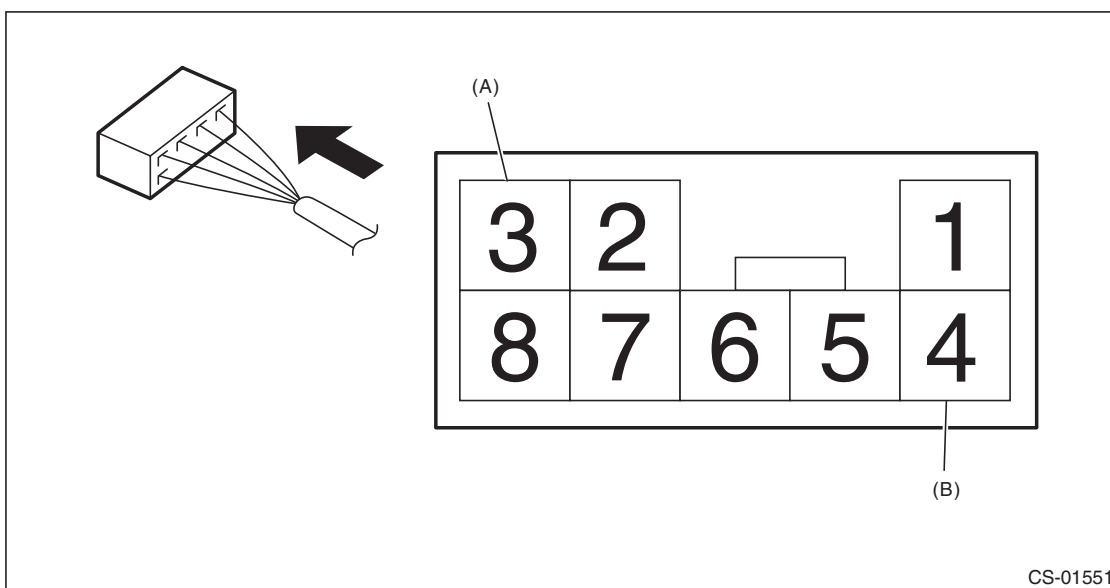
CS-01212

D: ASSEMBLY

- 1) Clean all the parts before assembly.
- 2) Apply Multemp D or equivalent to the sliding portion of each part.
- 3) Assemble in the reverse order of disassembly.

NOTE:

Insert the solenoid unit terminals to the harness connector.



CS-01551

(A) Solenoid unit (color code: blue)

(B) Solenoid unit (color code: black)

4) After installation, check the following points.

- The select indicator matches the select lever position when the select lever is changed from "P" range to "D" range.
- The select lever position and the position mark match each other.
- Operating force to move the select lever from "P" to "D" range.

E: INSPECTION

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

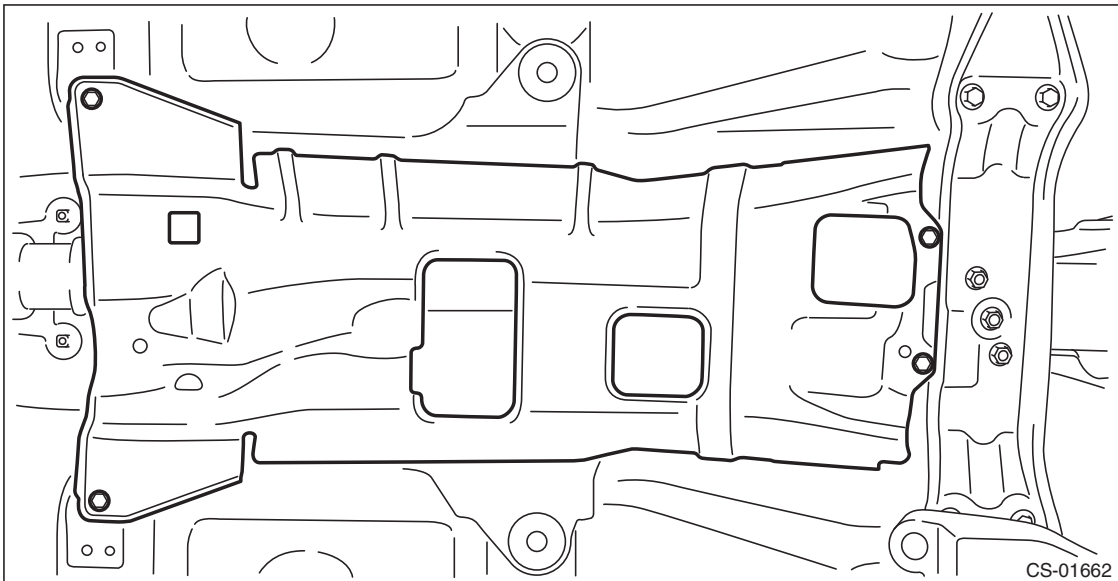
Select Cable

CONTROL SYSTEMS

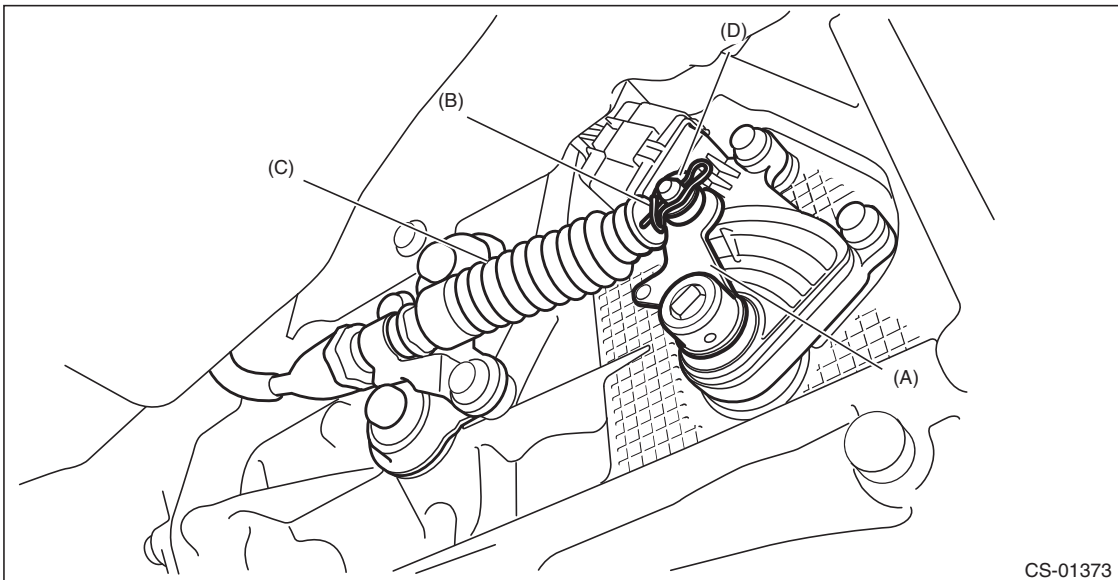
4. Select Cable

A: REMOVAL

- 1) Shift the select lever to "N" range.
- 2) Disconnect the ground cable from battery.
- 3) Lift up the vehicle.
- 4) Remove the center exhaust pipe. (Non-turbo model) <Ref. to EX(H4DO)-14, REMOVAL, Center Exhaust Pipe.>
- 5) Remove the center exhaust pipe (rear). (Turbo model) <Ref. to EX(H4DOTC)-30, REMOVAL, Center Exhaust Pipe.>
- 6) Remove the center exhaust cover.



- 7) Remove the snap pin and washer from the shifter arm.



- (A) Shifter arm
(B) Snap pin

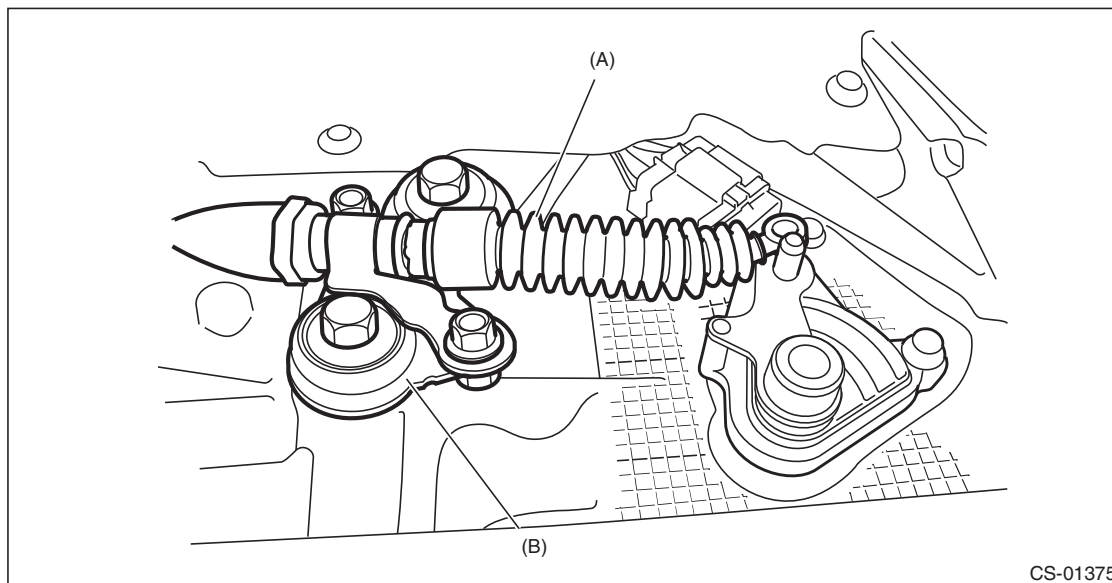
(C) Select cable

(D) Washer

Select Cable

CONTROL SYSTEMS

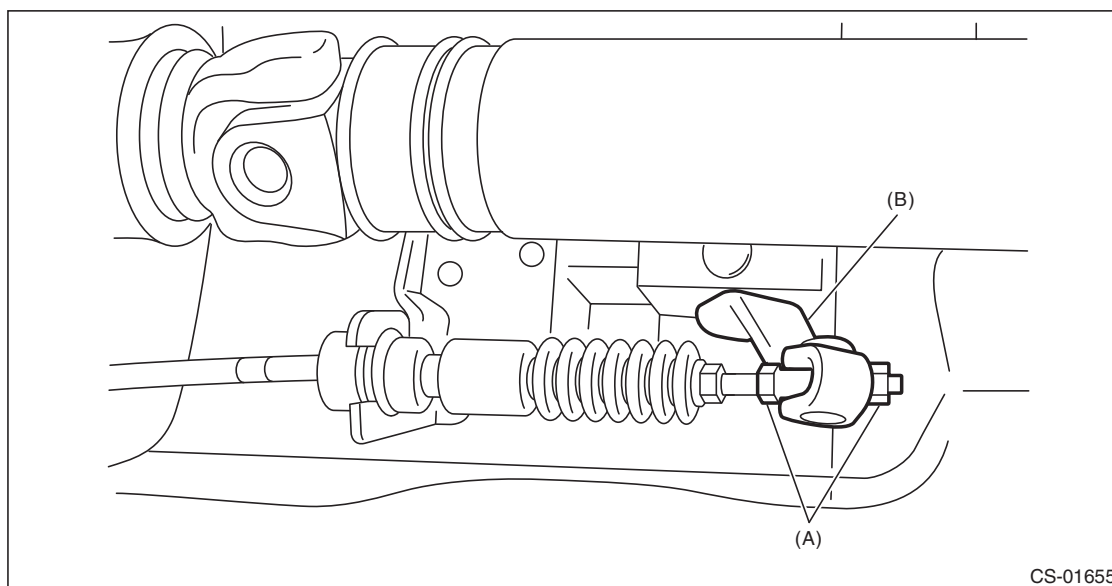
8) Remove the plate assembly from the transmission case.



(A) Select cable

(B) Plate ASSY

9) Disconnect the cable from arm COMPL.



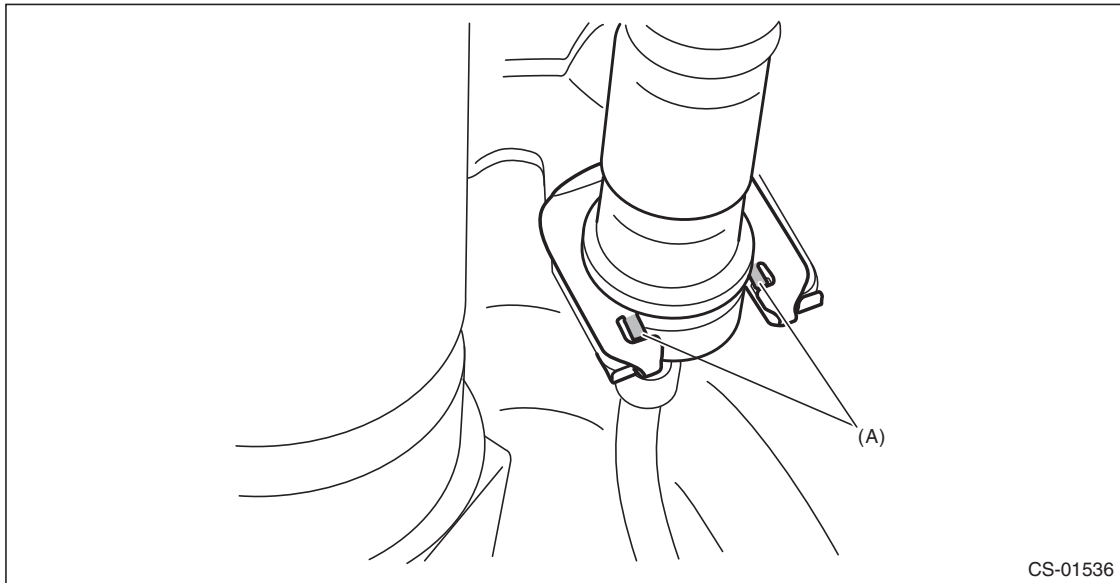
(A) Adjusting nut

(B) Arm COMPL

Select Cable

CONTROL SYSTEMS

10) Raise the claw of clamp to remove the cable from bracket.



(A) Claw

11) Remove the select cable from plate assembly.

B: INSTALLATION

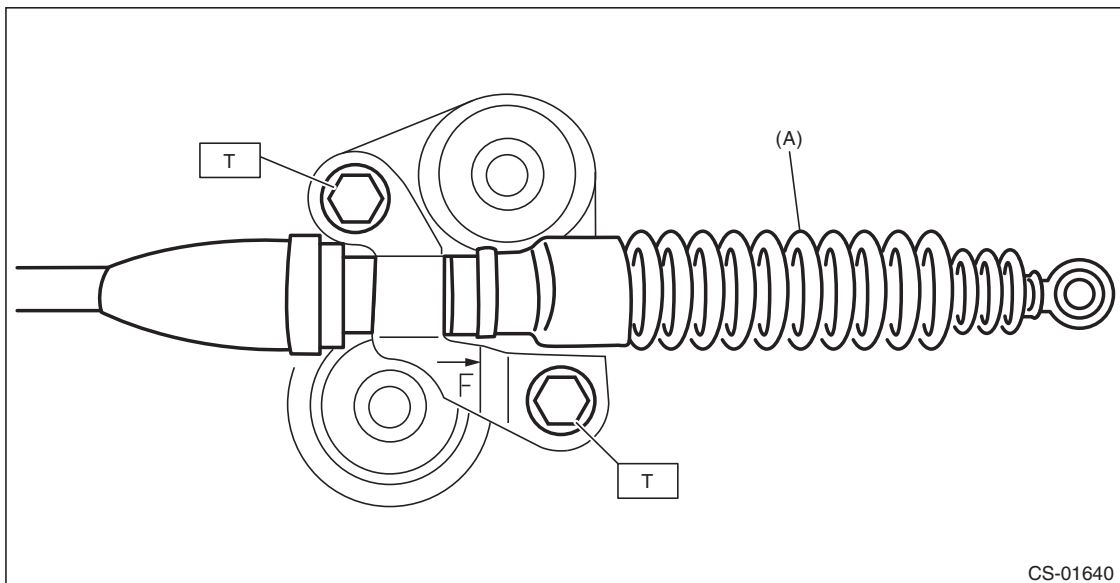
1) Position the select cable as shown in the figure, and install it to the plate assembly.

CAUTION:

- If the cable is installed in the wrong direction, loosen the bracket bolts, and then reinstall the cable in the correct direction.
- Do not forcibly turn the cable (wire side) to align the direction correctly.

Tightening torque:

T: 18 N·m (1.8 kgf·m, 13.3 ft·lb)



(A) Select cable

2) Install the select cable to the shifter arm.

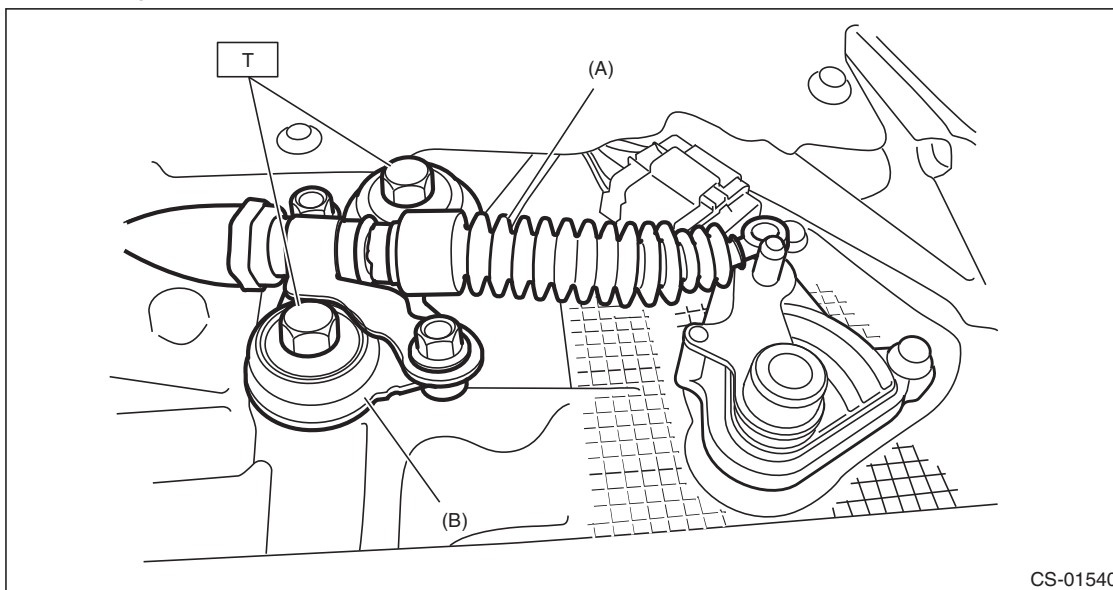
Select Cable

CONTROL SYSTEMS

3) Install the plate assembly to transmission.

Tightening torque:

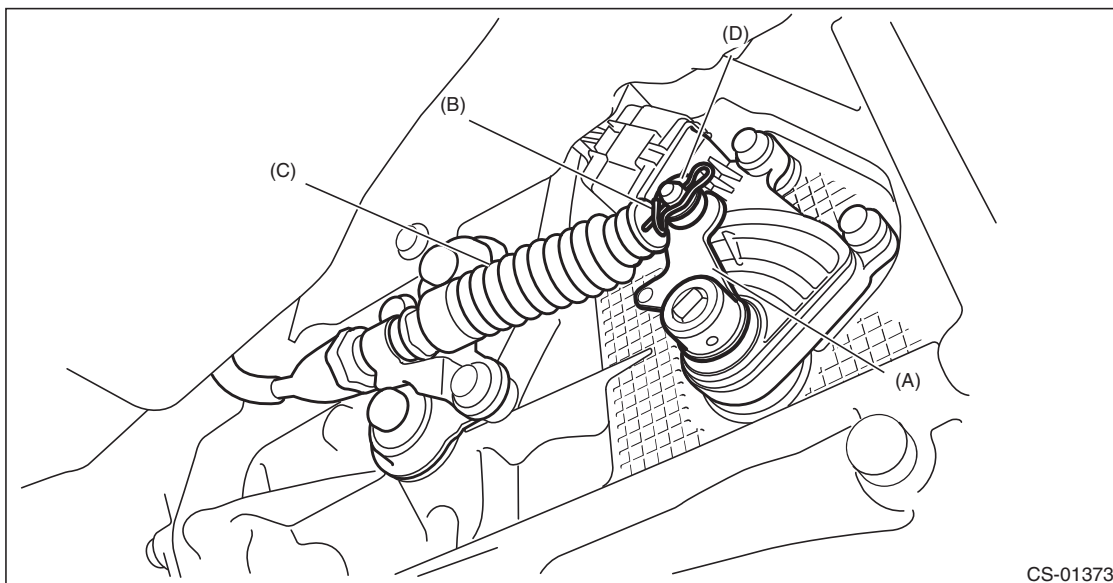
T: 25 N·m (2.5 kgf-m, 18.4 ft-lb)



(A) Select cable

(B) Plate ASSY

4) Install the washer and snap pin to the shifter arm.



(A) Shifter arm

(C) Select cable

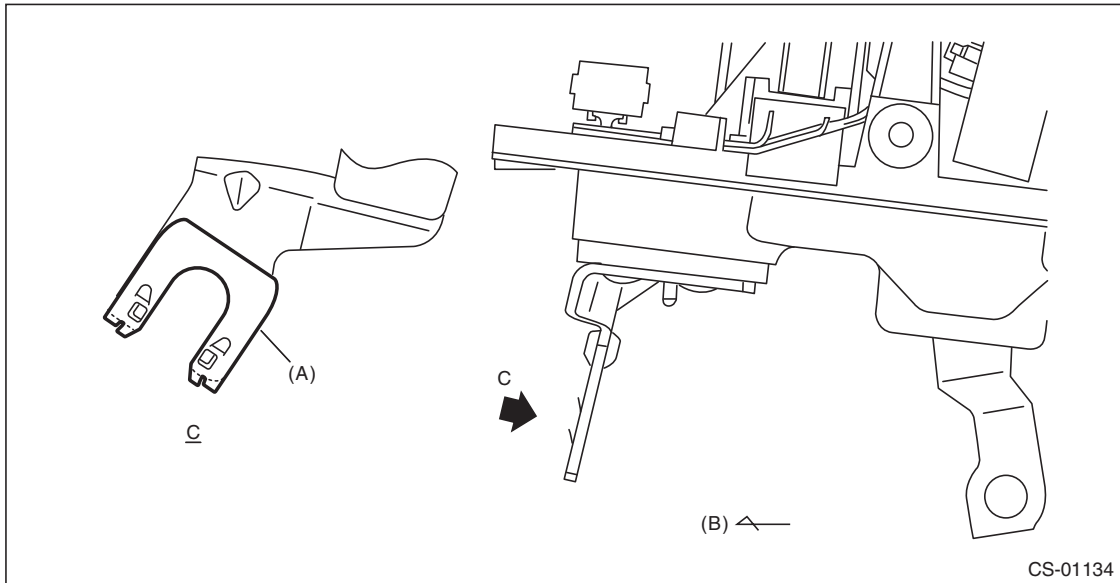
(D) Washer

(B) Snap pin

Select Cable

CONTROL SYSTEMS

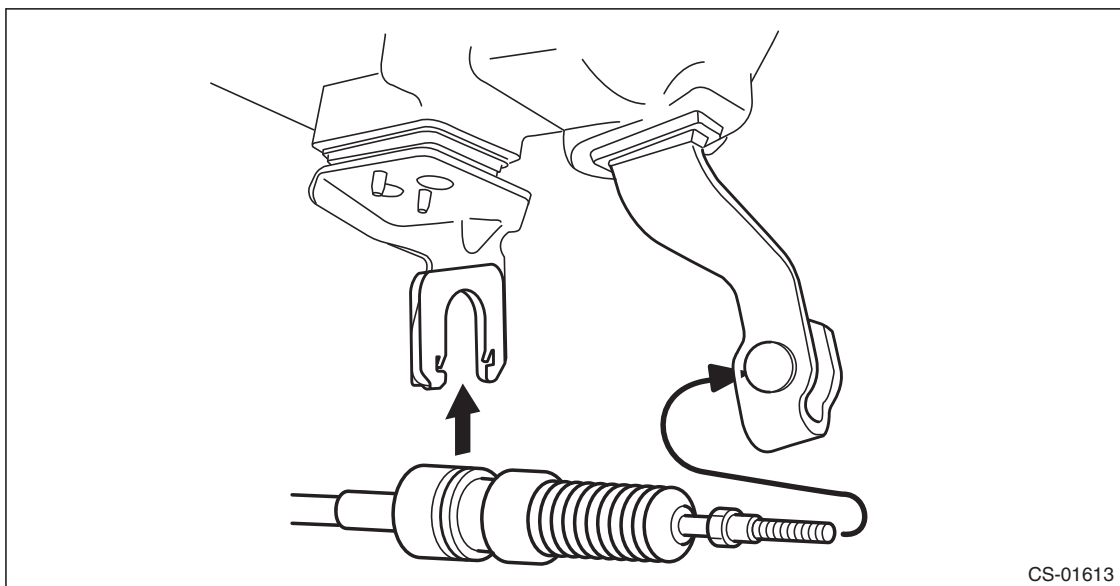
5) Install new clamp paying attention to the installing direction.



(A) Clamp

(B) Forward

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



7) Shift the select lever to the "N" range, and then adjust the select cable position. <Ref. to CS-52, ADJUSTMENT, Select Cable.>

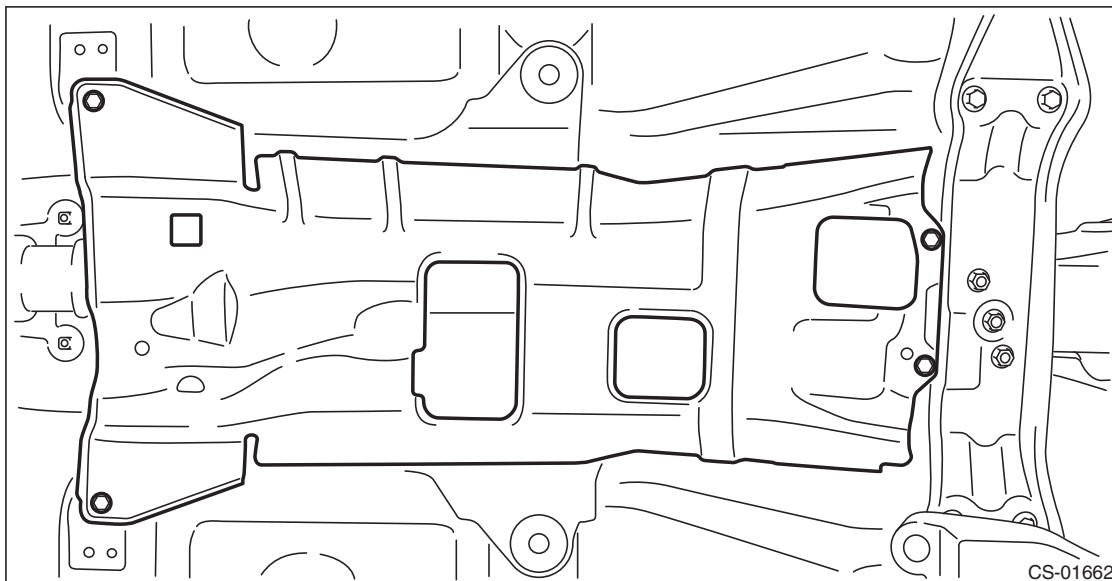
Select Cable

CONTROL SYSTEMS

8) Install the center exhaust cover.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



9) Install the center exhaust pipe. (Non-turbo model) <Ref. to EX(H4DO)-15, INSTALLATION, Center Exhaust Pipe.>

10) Install the center exhaust pipe (rear). (Turbo model) <Ref. to EX(H4DOTC)-35, INSTALLATION, Center Exhaust Pipe.>

11) Lower the vehicle.

12) Connect the battery ground terminal.

C: INSPECTION

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

1) Check the cable for smooth operation.

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.

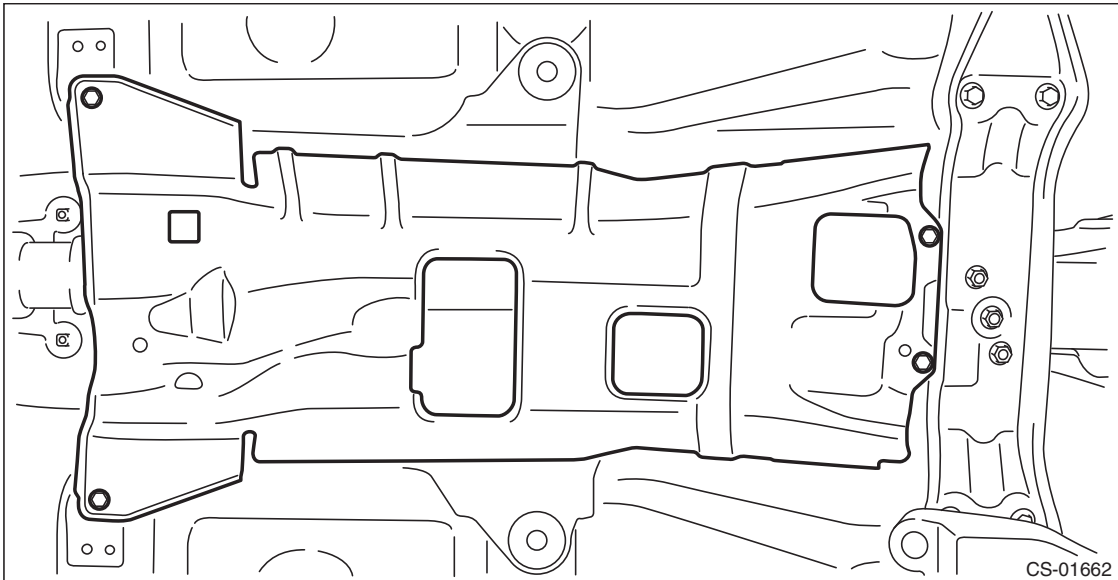
8) Check the parking lock operation when the select lever is in "P" range.

Select Cable

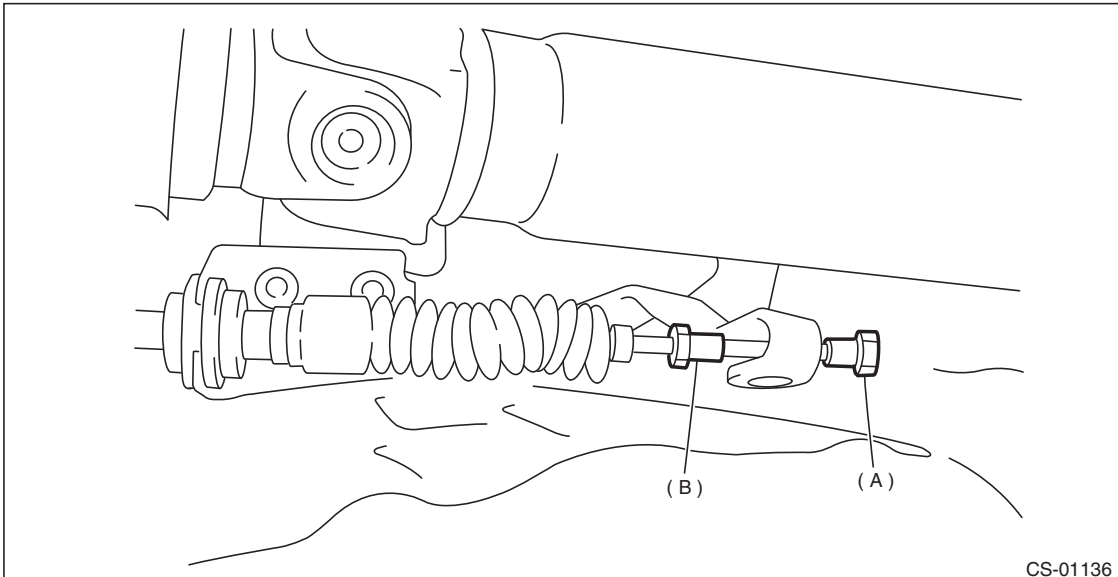
CONTROL SYSTEMS

D: ADJUSTMENT

- 1) Shift the select lever to "N" range.
- 2) Lift up the vehicle.
- 3) Remove the center exhaust pipe. (Non-turbo model) <Ref. to EX(H4DO)-14, REMOVAL, Center Exhaust Pipe.>
- 4) Remove the center exhaust pipe (rear). (Turbo model) <Ref. to EX(H4DOTC)-30, REMOVAL, Center Exhaust Pipe.>
- 5) Remove the center exhaust cover.



- 6) Loosen the adjusting nuts on both sides.



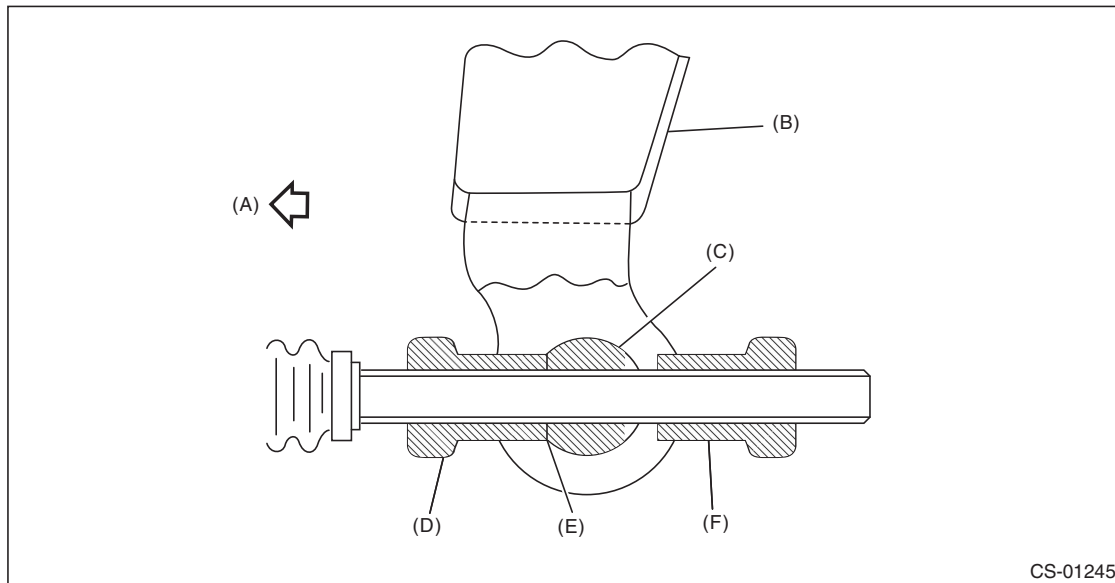
(A) Adjusting nut A

(B) Adjusting nut B

Select Cable

CONTROL SYSTEMS

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



(A) Forward side
(B) Select lever

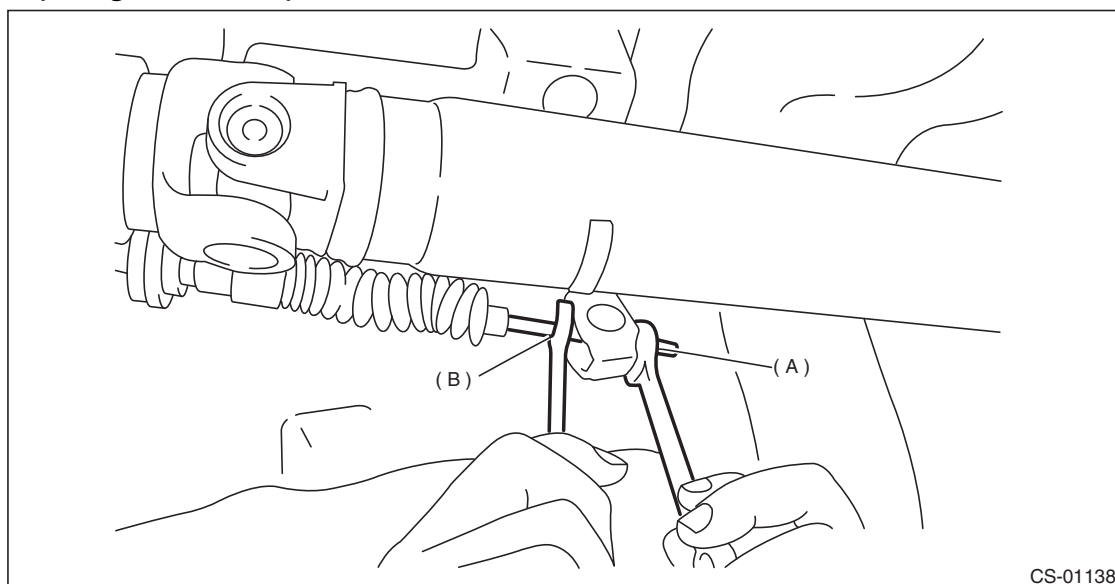
(C) Connector
(D) Adjusting nut B

(E) Contact point
(F) Adjusting nut A

8) 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 (0.8 kgf-m, 5.5 ft-lb)



(A) Adjusting nut A

(B) Adjusting nut B

9) After the completion of adjustment, confirm that the select lever operates normally at all ranges.
10) Installing procedure hereafter is in the reverse order of removal.

AT Shift Lock Solenoid and "P" Range Switch

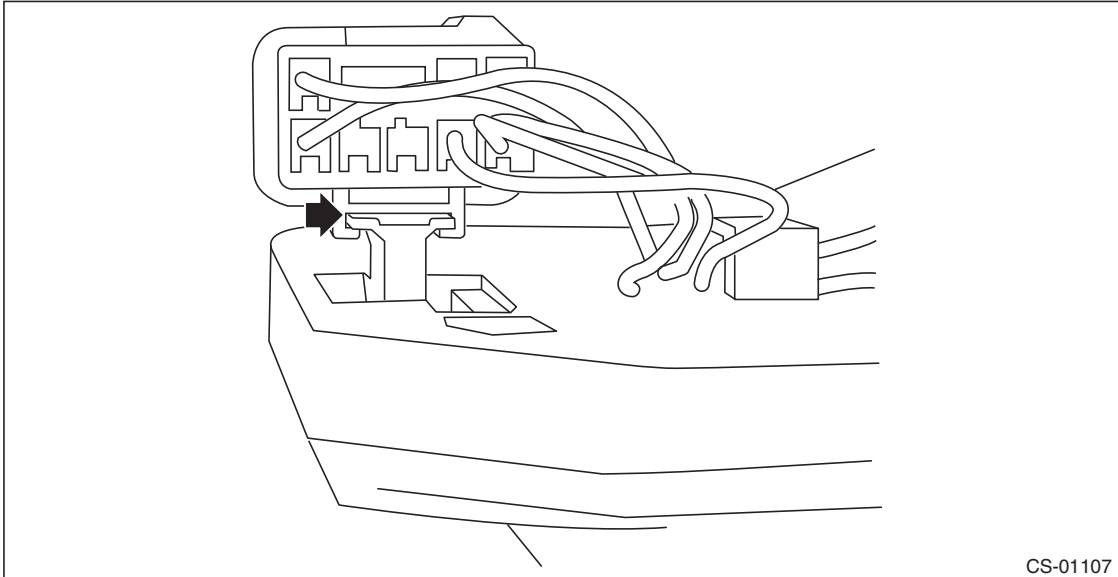
CONTROL SYSTEMS

5. AT Shift Lock Solenoid and "P" Range Switch

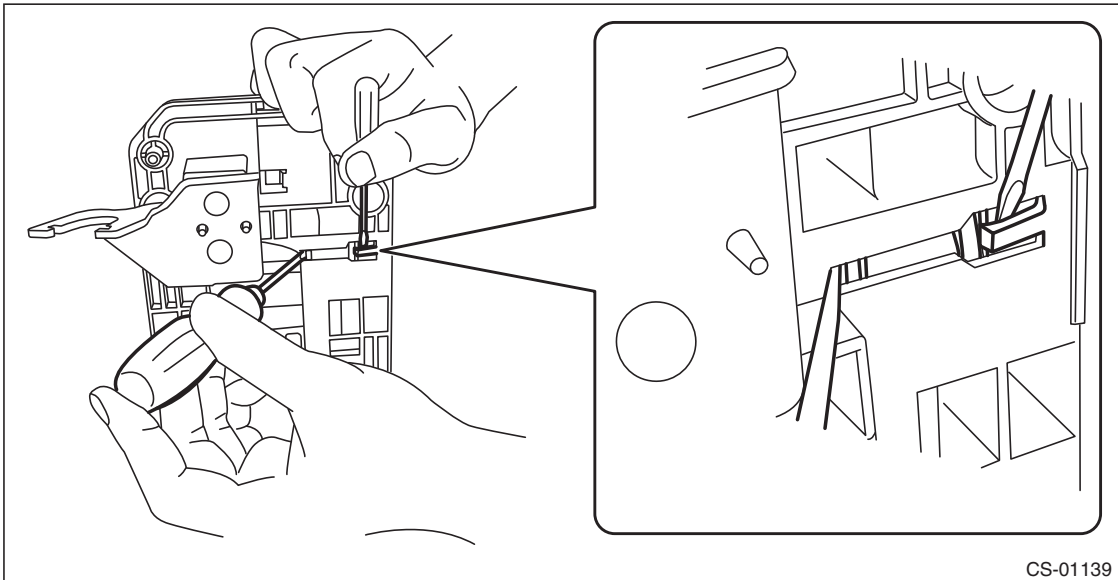
A: REMOVAL

1. SOLENOID UNIT

- 1) Remove the AT select lever. <Ref. to CS-24, REMOVAL, Select Lever.>
- 2) Remove the spacer and gasket. <Ref. to CS-36, DISASSEMBLY, Select Lever.>
- 3) Using a flat tip screwdriver with a thin tip, remove the harness connector from the plate COMPL.



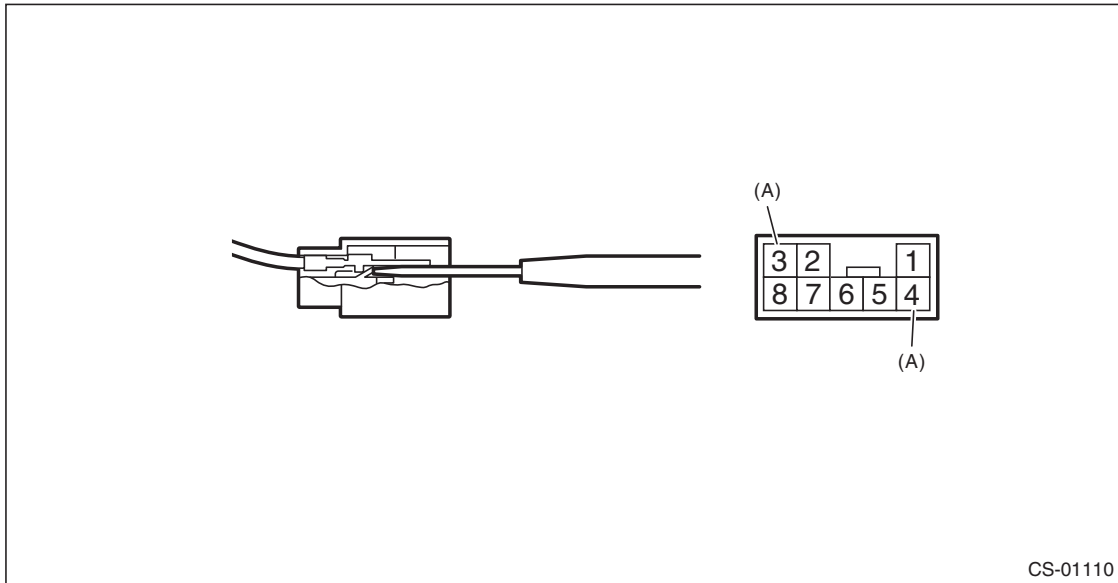
- 4) Raise the claw using a flat tip screwdriver with a thin tip, and remove the solenoid unit from the plate COMPL.



AT Shift Lock Solenoid and "P" Range Switch

CONTROL SYSTEMS

5) Using a flat tip screwdriver with a thin tip, remove the solenoid unit terminals from the harness connector.



(A) Solenoid unit terminals

2. "P" RANGE SWITCH

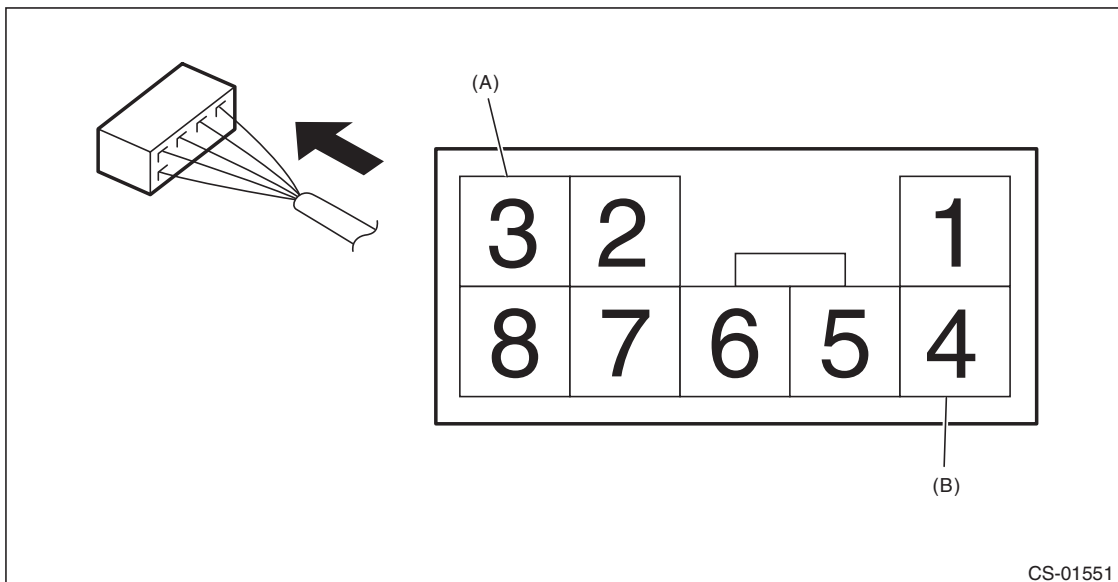
For the removal of "P" range switch, refer to the procedure for AT select lever. <Ref. to CS-36, DISASSEMBLY, Select Lever.>

B: INSTALLATION

Install in the reverse order of removal.

NOTE:

Insert the solenoid unit terminals to the harness connector.



(A) Solenoid unit (color code: blue)

(B) Solenoid unit (color code: black)

AT Shift Lock Solenoid and "P" Range Switch

CONTROL SYSTEMS

C: INSPECTION

Step	Check	Yes	No
1 CHECK SOLENOID UNIT. Measure the resistance of solenoid unit connector terminals. <i>Terminals</i> No. 4 — No. 3:	Is the resistance 27.6 — 30.5 Ω ?	Go to step 2.	Replace the solenoid unit. <Ref. to CS-54, AT Shift Lock Solenoid and "P" Range Switch.>
2 CHECK SOLENOID UNIT. Connect the battery to the solenoid unit connector terminals, and then operate the solenoid. <i>Terminals</i> No. 3 (+) — No. 4 (-):	Does the solenoid unit operate normally?	Go to step 3.	Replace the solenoid unit. <Ref. to CS-54, AT Shift Lock Solenoid and "P" Range Switch.>
3 CHECK "P" RANGE SWITCH. 1) Shift the select lever to "P" range. 2) Measure the resistance between "P" range switch connector terminals. <i>Terminals</i> No. 1 — No. 2:	Is the resistance less than 1 Ω ?	Go to step 4.	Replace the "P" range switch. <Ref. to CS-54, AT Shift Lock Solenoid and "P" Range Switch.>
4 CHECK "P" RANGE SWITCH. 1) Set the select lever to other than "P" range. 2) Measure the resistance between "P" range switch connector terminals. <i>Terminals</i> No. 1 — No. 2:	Is the resistance 1 M Ω or more?	Normal	Replace the "P" range switch. <Ref. to CS-54, AT Shift Lock Solenoid and "P" Range Switch.>



6. Body Integrated Unit

A: NOTE

Refer to “Body Integrated Unit” for removal and installation procedure. <Ref. to SL-74, Body Integrated Unit.>

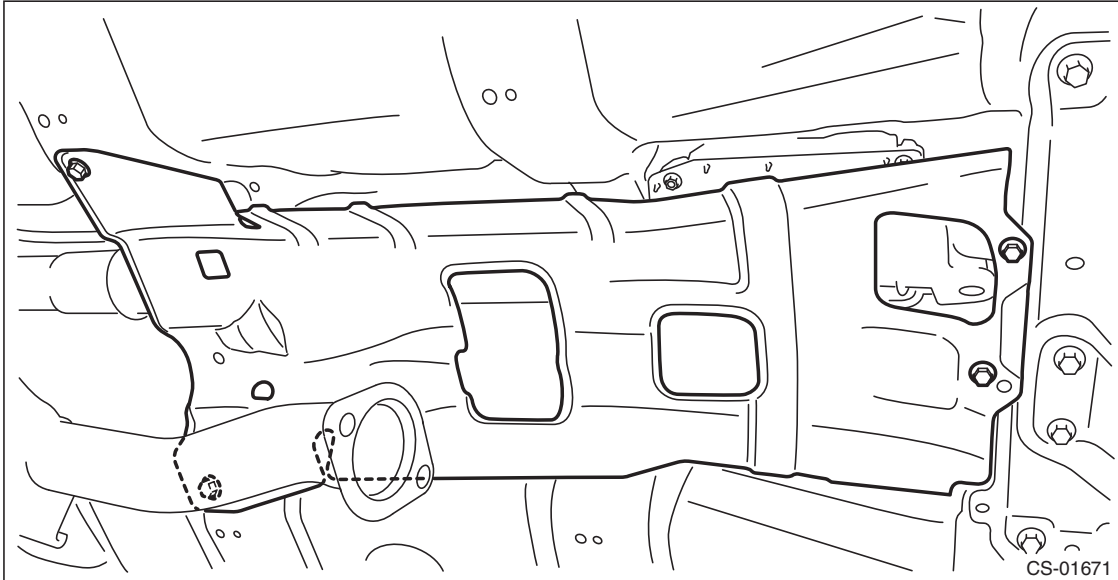
MT Gear Shift Lever

CONTROL SYSTEMS

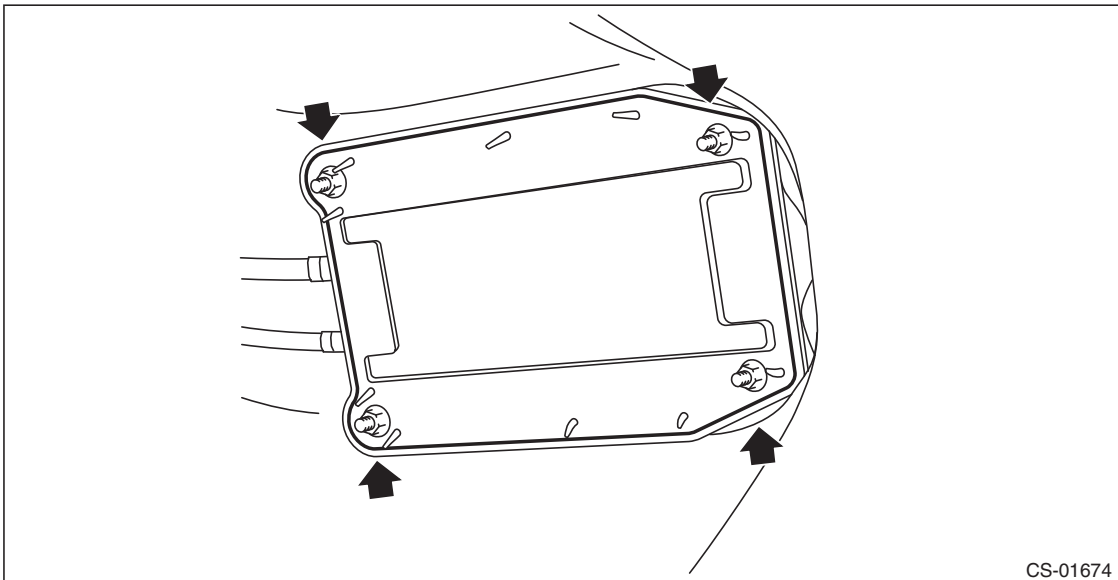
7. MT Gear Shift Lever

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Lift up the vehicle.
- 3) Remove the center exhaust pipe. <Ref. to EX(H4DO)-14, REMOVAL, Center Exhaust Pipe.>
- 4) Remove the center exhaust cover.



- 5) Remove the cable cover plate.



MT Gear Shift Lever

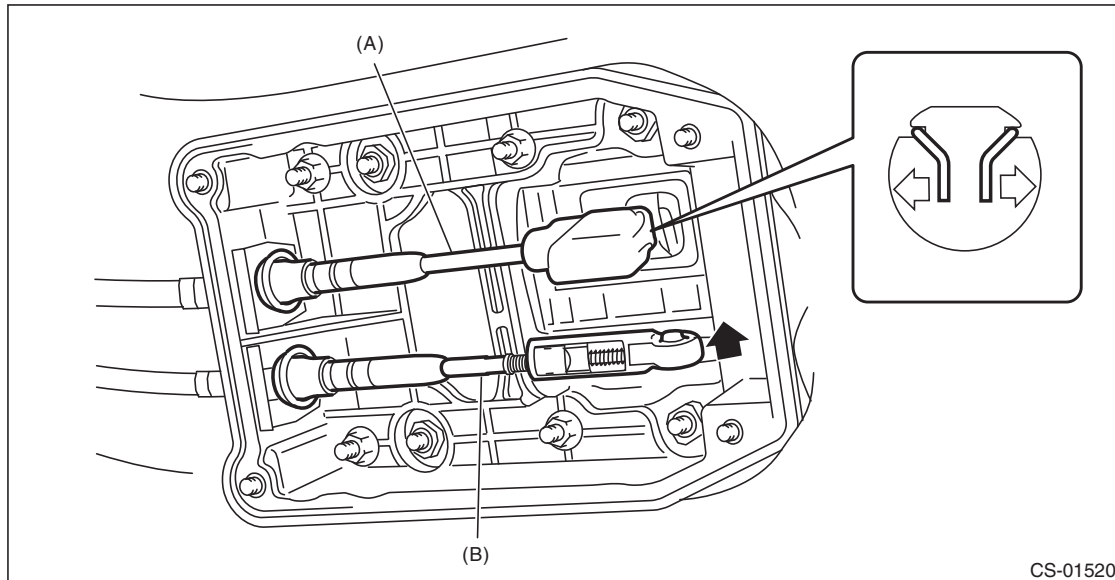
CONTROL SYSTEMS

6) Disconnect the MT gear shift cable and MT gear select cable from the gear shift lever assembly.

CAUTION:

Be careful not to deform the cable inner.

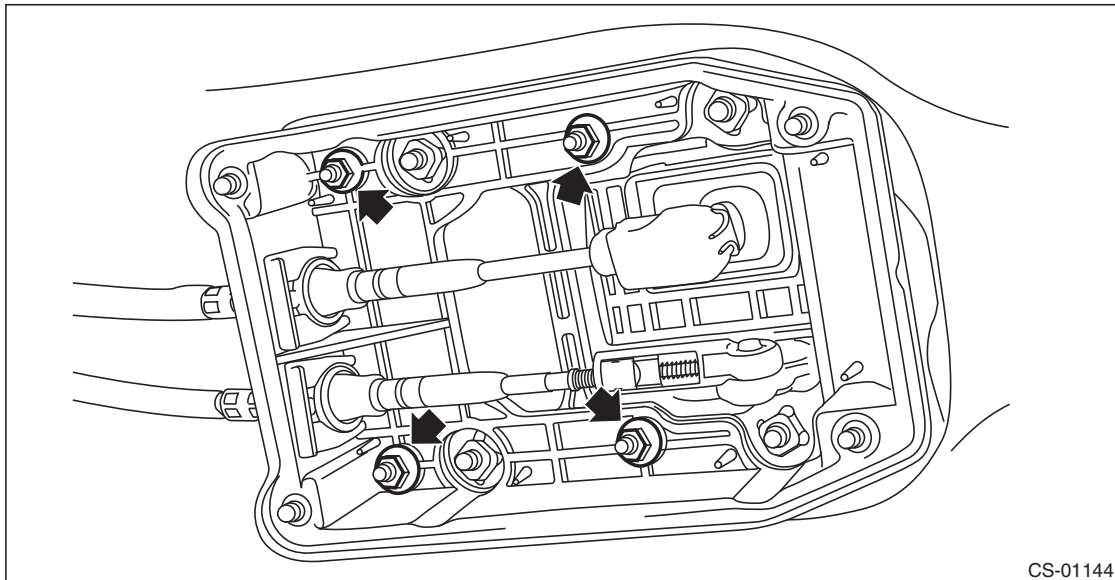
- (1) Pull out down the MT gear shift cable to spread the spring.
- (2) Push the MT gear select cable in the direction of arrow, and remove it.



(A) MT gear shift cable

(B) MT gear select cable

7) Remove the cable cover assembly.



8) Lower the vehicle.

9) Remove the ornament panel - consoles LH and RH. <Ref. to EI-65, REMOVAL, Console Box.>

10) Remove the gear shift knob and remove the cover - shift lever. <Ref. to EI-65, REMOVAL, Console Box.>

11) Remove the console box assembly. <Ref. to EI-65, REMOVAL, Console Box.>

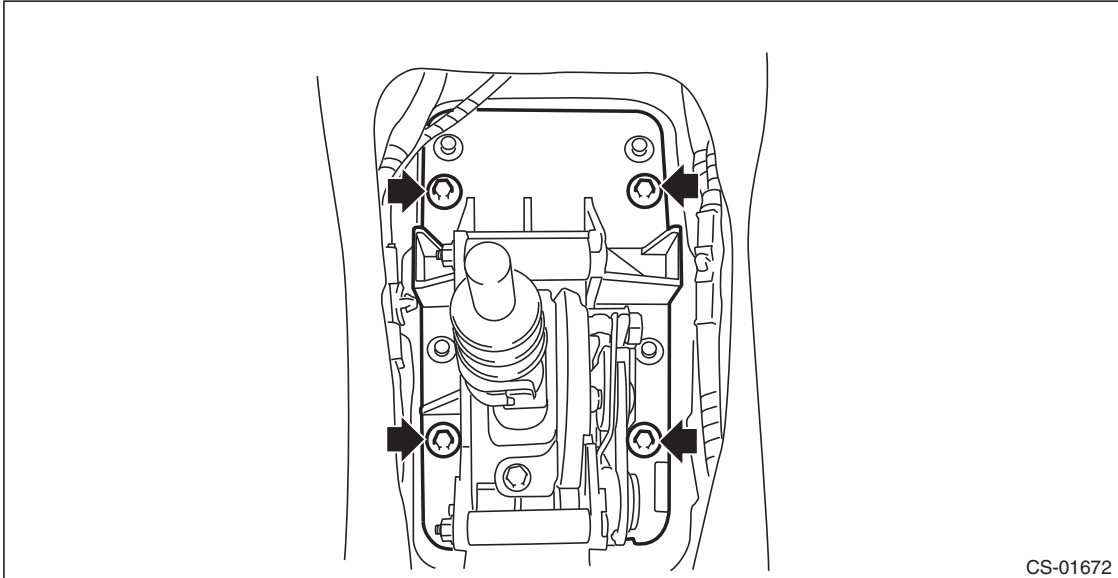
12) Remove the panel center LWR LH and RH. <Ref. to EI-65, REMOVAL, Console Box.>

13) Remove the harness clamp.

MT Gear Shift Lever

CONTROL SYSTEMS

14) Remove the gear shift lever assembly mounting bolt and remove the gear shift lever assembly from the vehicle.



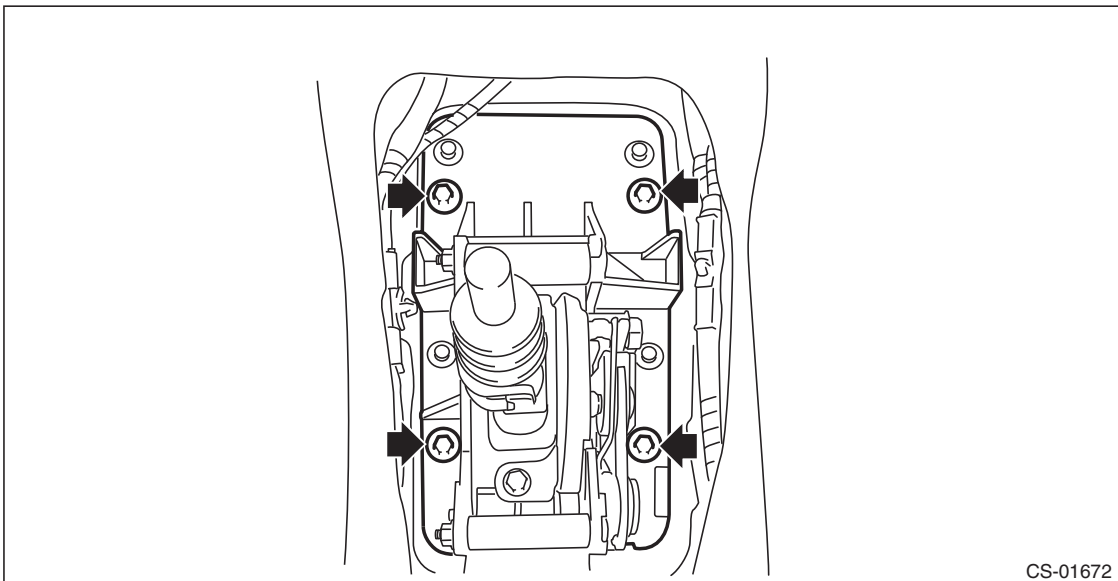
CS-01672

B: INSTALLATION

1) Install the gear shift lever assembly.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



CS-01672

2) Install the harness clamp.

3) Lift up the vehicle.

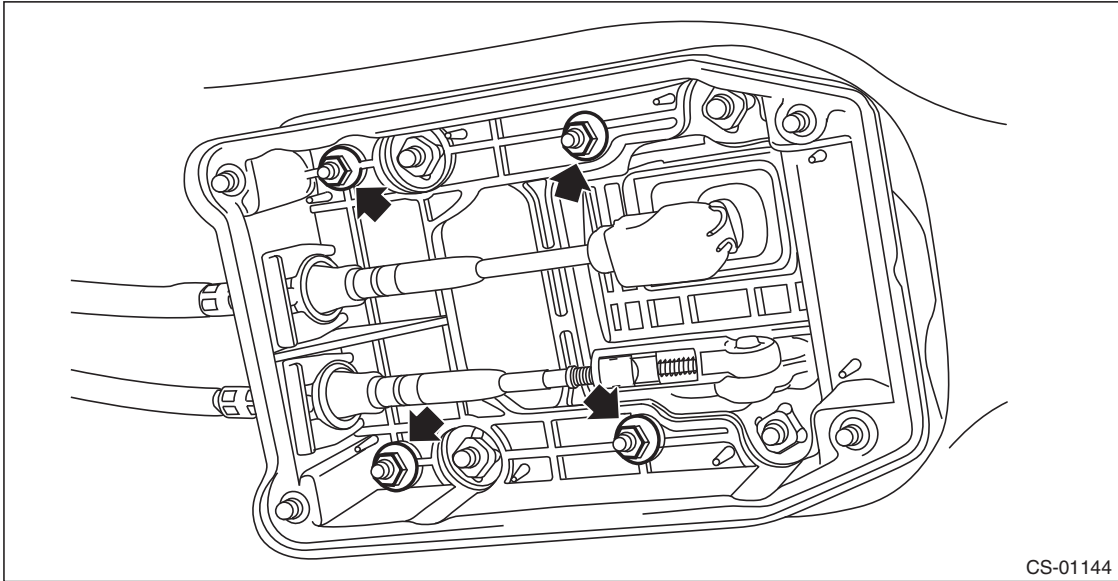
MT Gear Shift Lever

CONTROL SYSTEMS

4) Install the cable cover assembly.

Tightening torque:

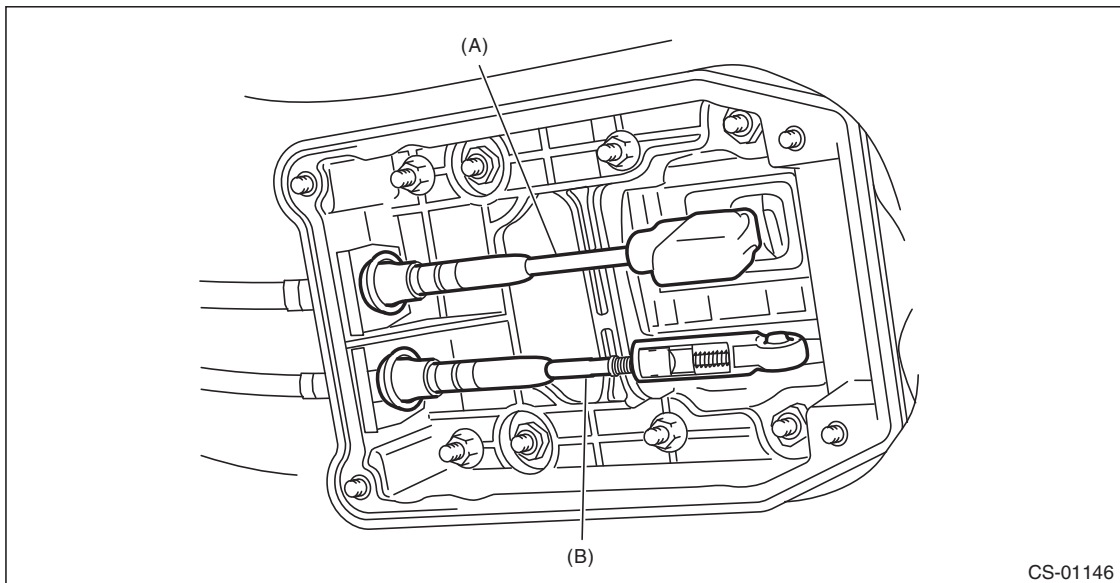
7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



5) Connect the MT gear shift cable and MT gear select cable.

CAUTION:

Be careful not to deform the cable inner.



(A) MT gear shift cable

(B) MT gear select cable

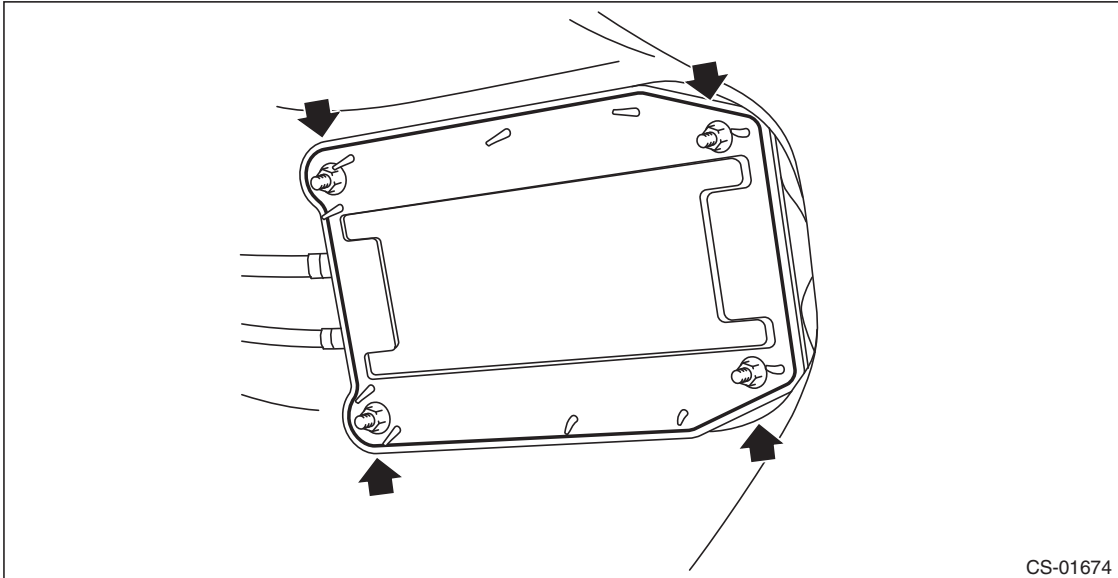
MT Gear Shift Lever

CONTROL SYSTEMS

6) Attach the cable cover plate.

Tightening torque:

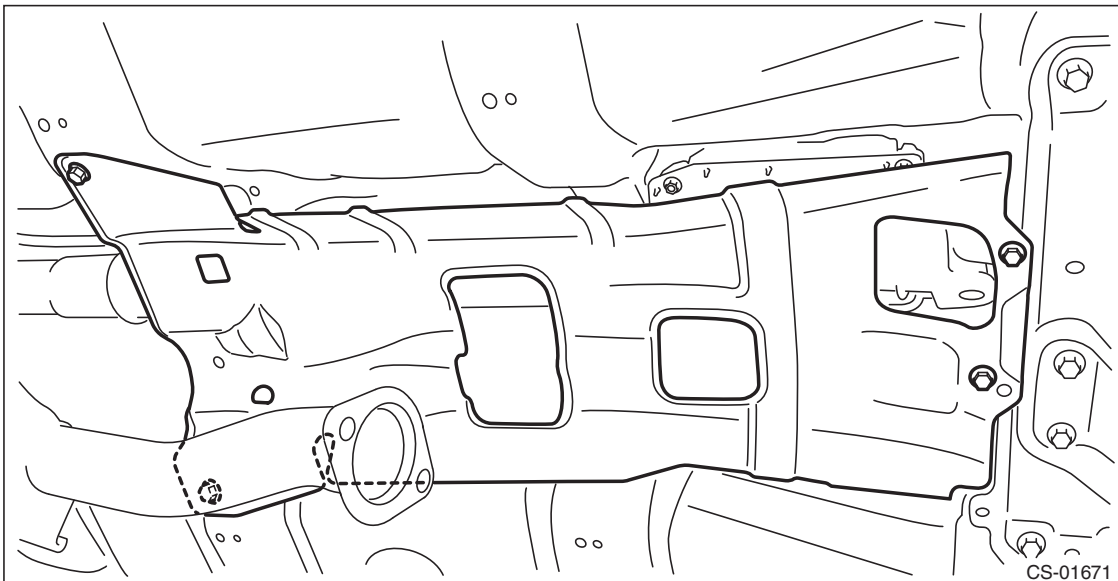
7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



7) Install the center exhaust cover.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



8) Install the center exhaust pipe. <Ref. to EX(H4DO)-15, INSTALLATION, Center Exhaust Pipe.>

9) Lower the vehicle.

10) Install the panel center LWR LH and RH. <Ref. to EI-68, INSTALLATION, Console Box.>

11) Install the console box assembly. <Ref. to EI-68, INSTALLATION, Console Box.>

12) Install the cover - shift lever, and install the gear shift knob. <Ref. to EI-68, INSTALLATION, Console Box.>

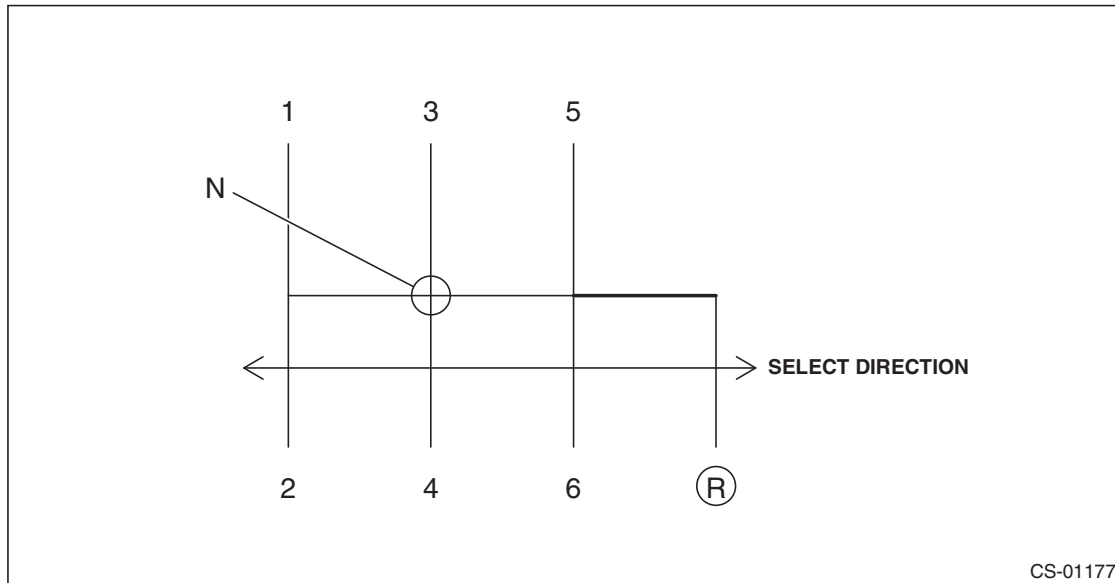
13) Install the ornament panel - consoles LH and RH. <Ref. to EI-68, INSTALLATION, Console Box.>

14) Make sure the gears can be shifted accurately into each gear. Adjust the MT gear select lever, if the gears cannot be shifted correctly. <Ref. to CS-89, ADJUSTMENT, MT Gear Select Cable.>

15) Connect the battery ground terminal.

C: INSPECTION

- 1) Check the parts for deformation, damage and wear. Repair or replace if necessary. Compare the removed parts with new parts to confirm if there are damages or not.
- 2) Check that selecting to the reverse direction is disable unless the slider is pulled up.
- 3) Check that selecting to the reverse direction is possible when the slider is pulled up to the full.
- 4) Check that the shift lever moves to initial position, when the slider backs to "N" position from step 3).



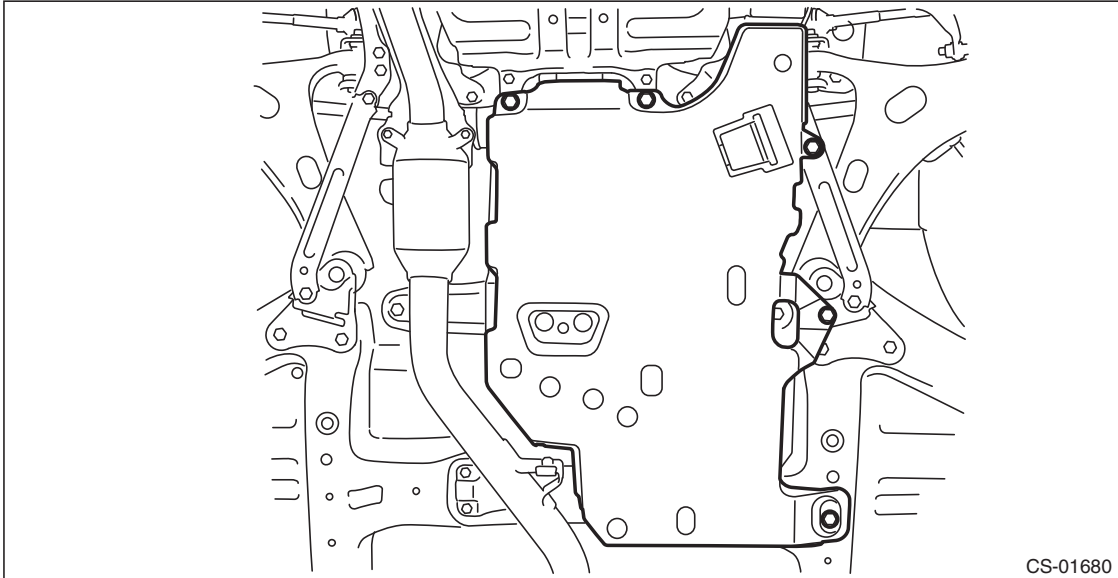
MT Gear Shift Cable

CONTROL SYSTEMS

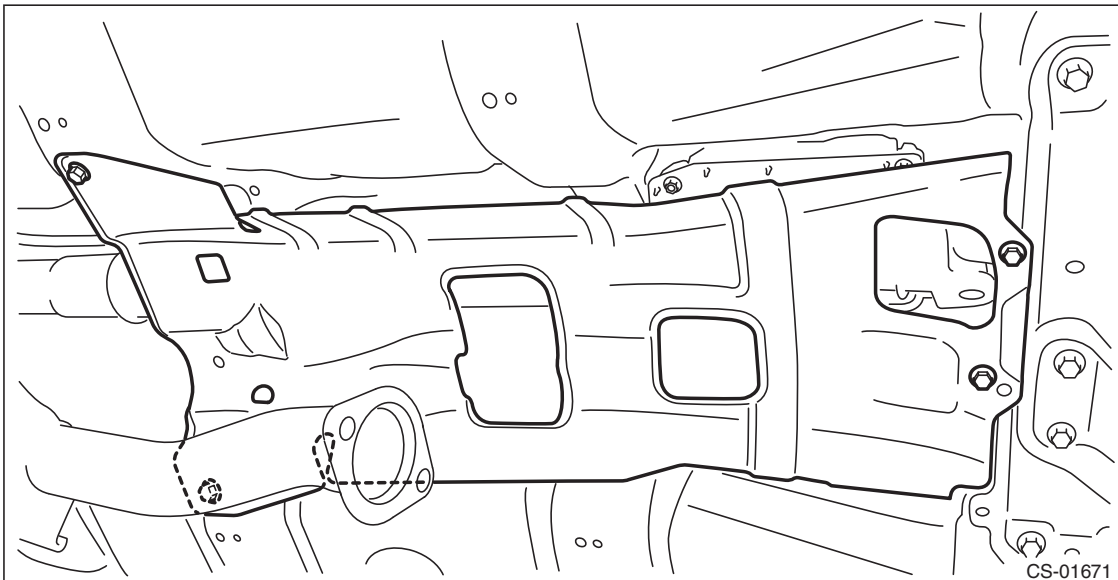
8. MT Gear Shift Cable

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Lift up the vehicle.
- 3) Remove the transmission under cover.



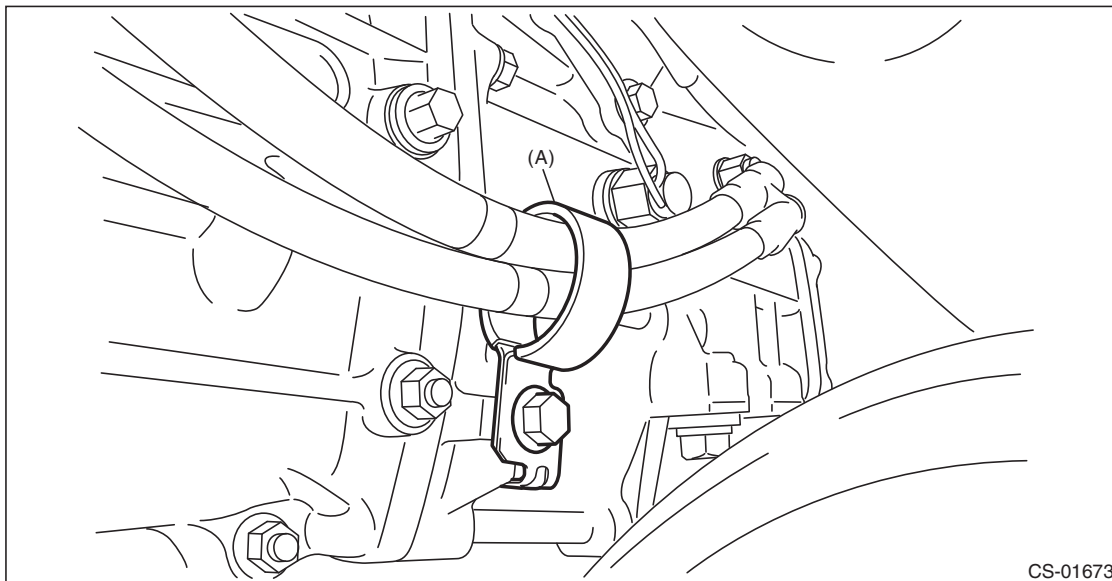
- 4) Remove the center exhaust pipe. <Ref. to EX(H4DO)-14, REMOVAL, Center Exhaust Pipe.>
- 5) Remove the center exhaust cover.



MT Gear Shift Cable

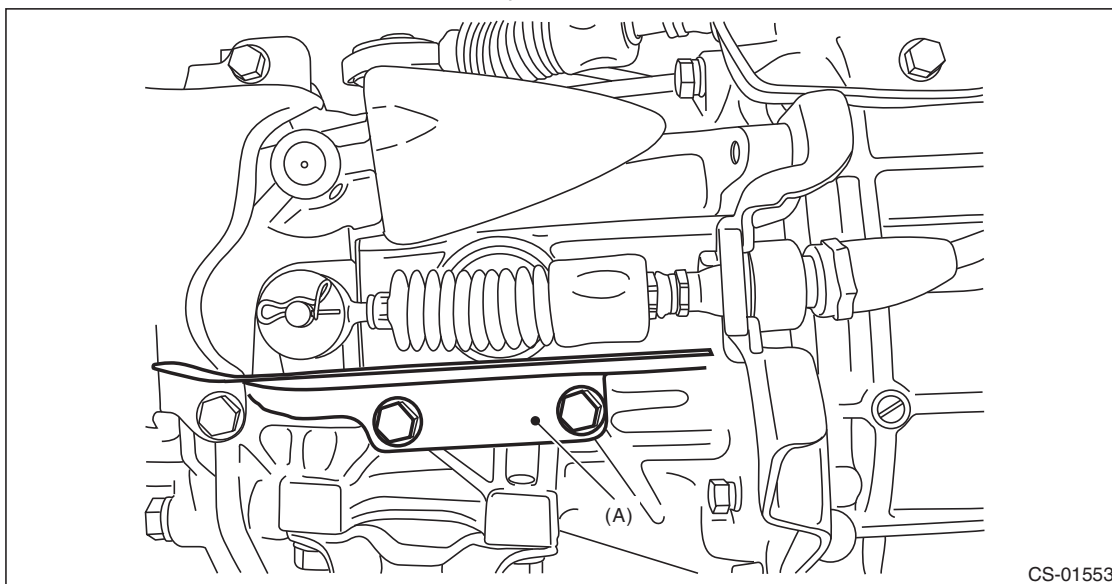
CONTROL SYSTEMS

- 6) Remove the cable clamp and take out the MT gear shift cable from the clamp.



(A) Cable clamp

- 7) Remove the dust cover from transmission body.

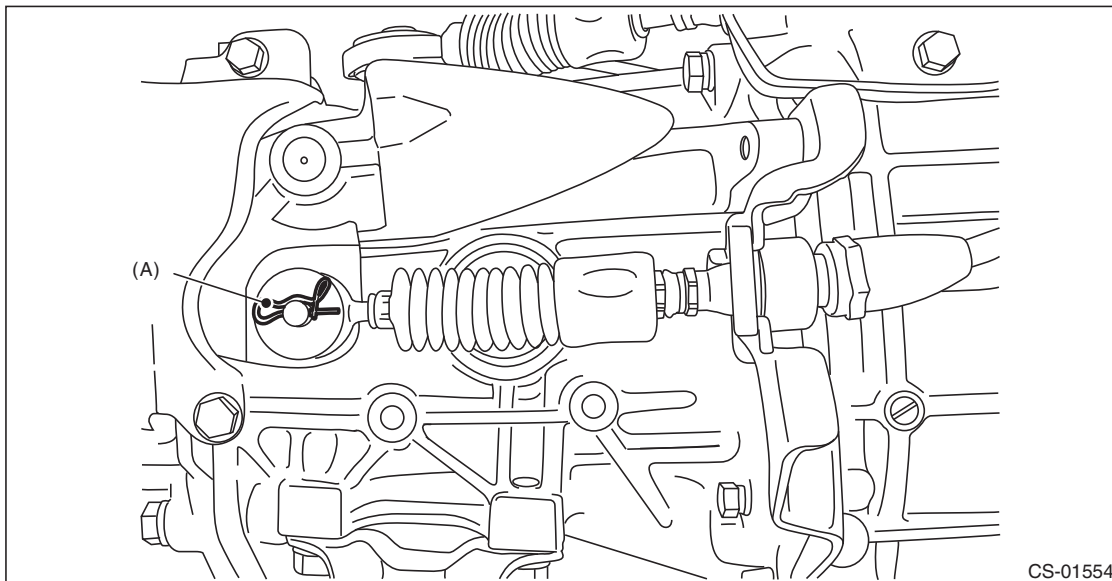


(A) Dust cover

MT Gear Shift Cable

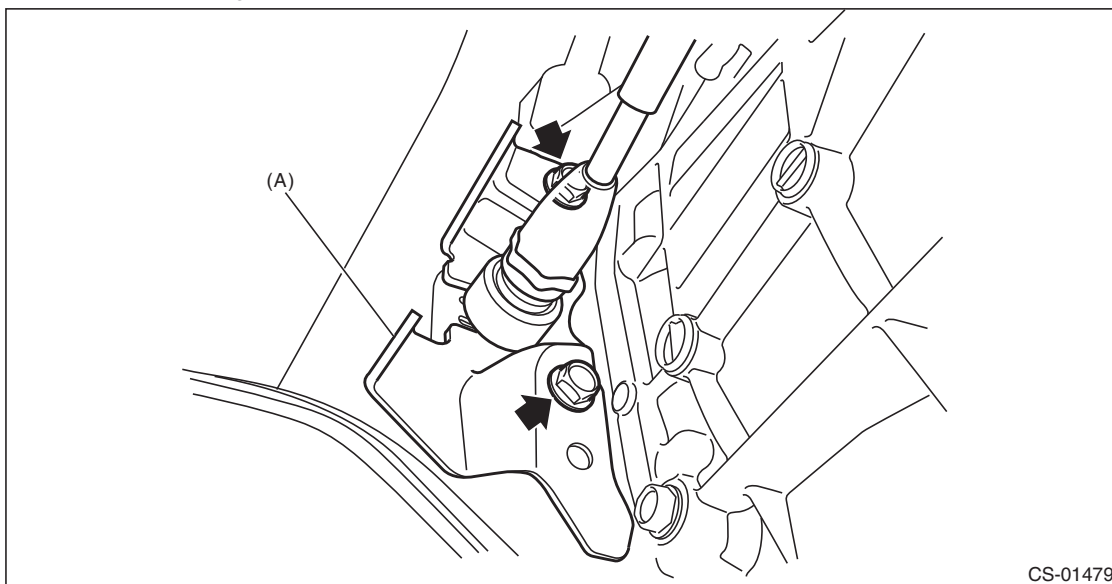
CONTROL SYSTEMS

8) Remove the snap pin from the shift lever COMPL.



(A) Snap pin

9) Remove the bolts holding the shift bracket.

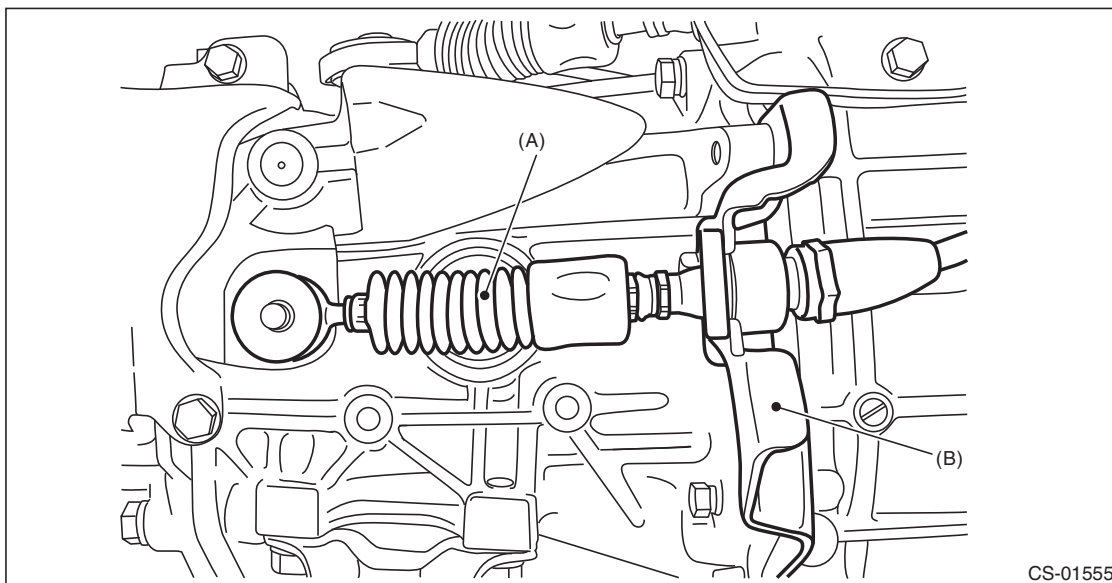


(A) Shift bracket

MT Gear Shift Cable

CONTROL SYSTEMS

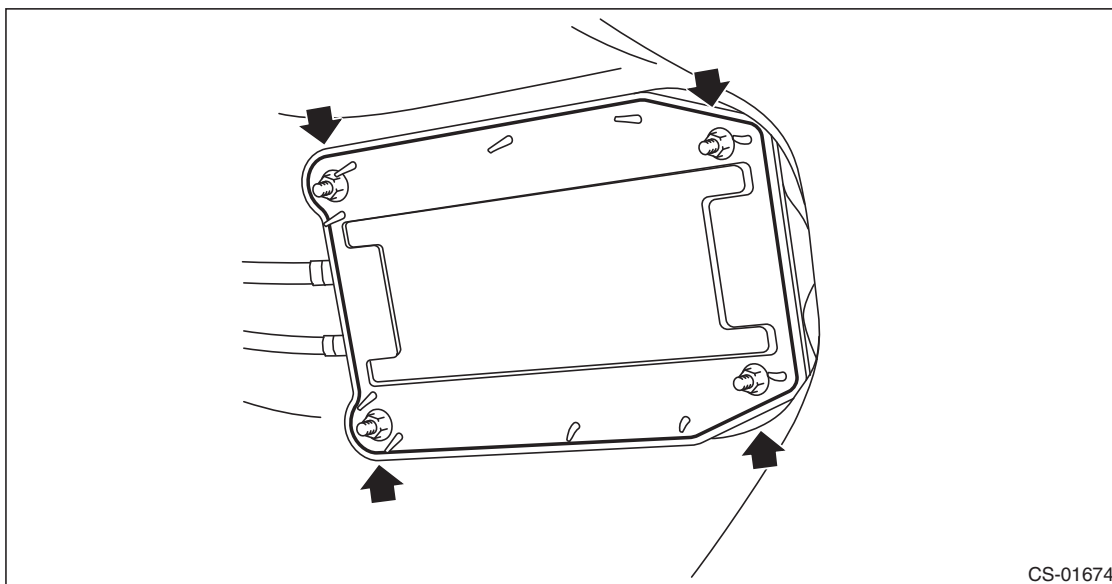
10) Remove the shift bracket and MT gear shift cable as a single unit from the transmission body.



(A) MT gear shift cable

(B) Shift bracket

11) Remove the cable cover plate.



MT Gear Shift Cable

CONTROL SYSTEMS

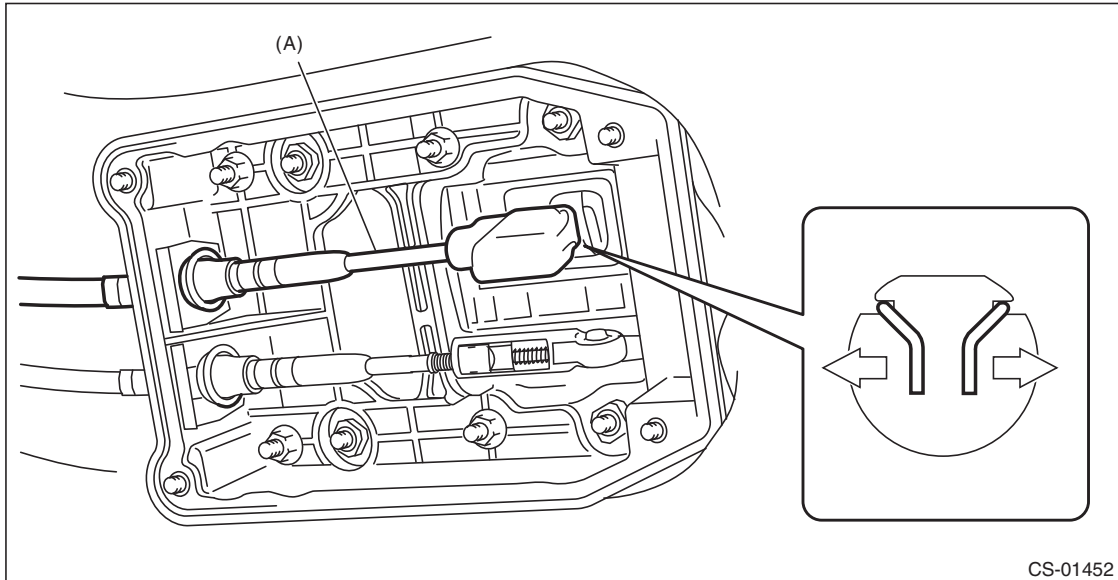
12) Disconnect the MT gear shift cable.

CAUTION:

Be careful not to deform the cable inner.

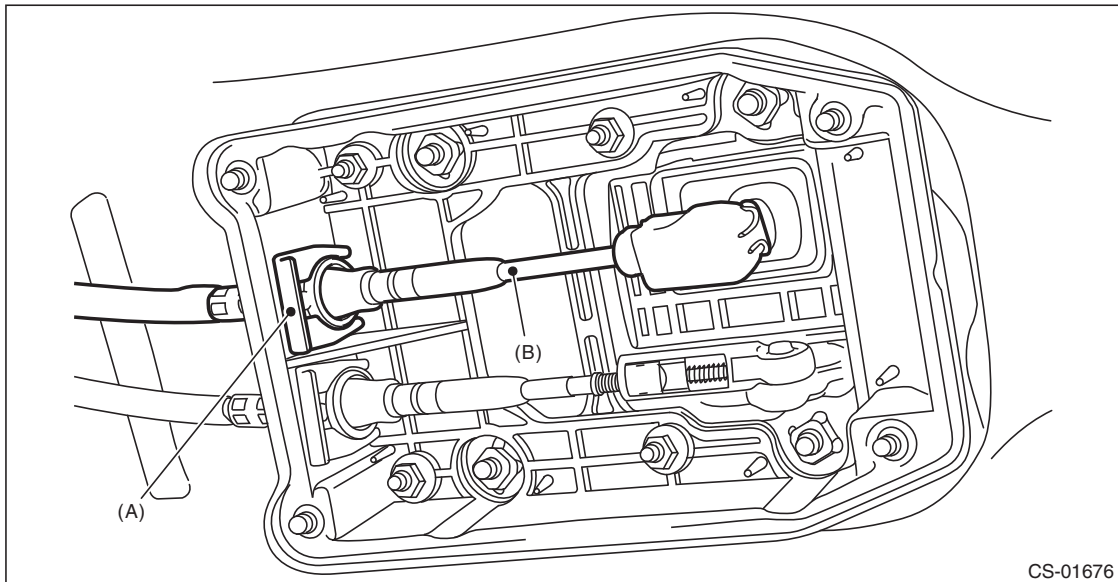
NOTE:

Pull out down the MT gear shift cable to spread the spring.



(A) MT gear shift cable

13) Remove the clamp which holds the MT gear shift cable.



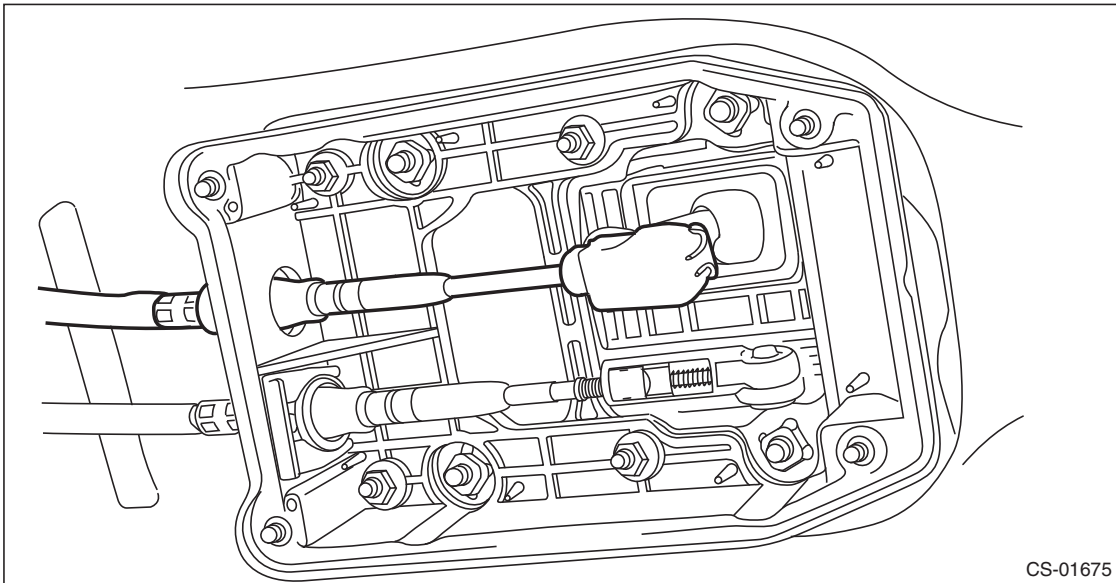
(A) Clamp

(B) MT gear shift cable

MT Gear Shift Cable

CONTROL SYSTEMS

14) Pull out the MT gear shift cable from cable cover assembly.



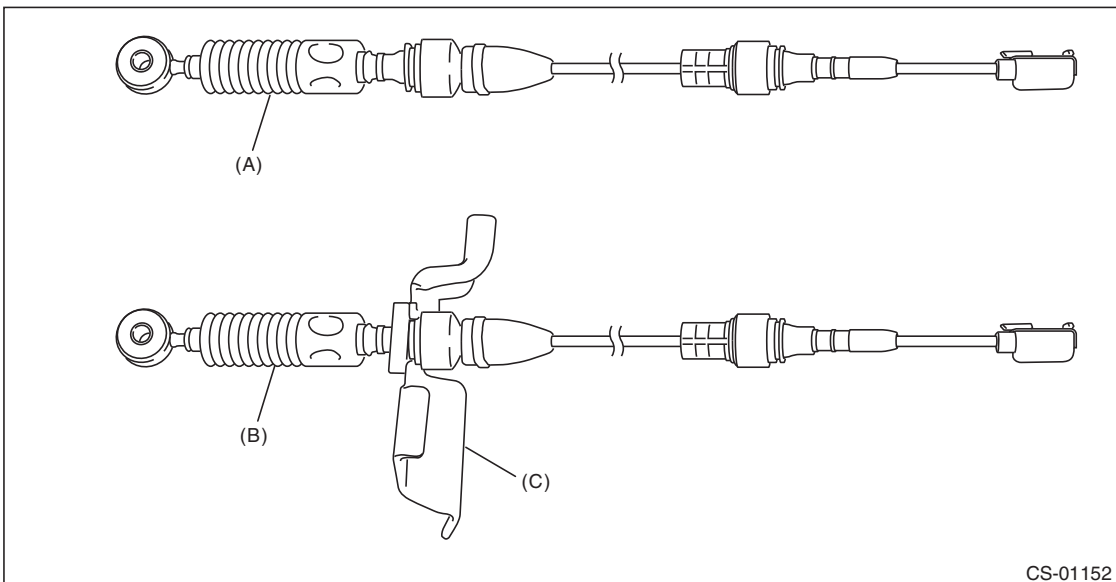
CAUTION:

- Do not bend MT gear shift cable at a sharp angle.
- Do not twist the cable inner excessively.

B: INSTALLATION

CAUTION:

- Do not bend MT gear shift cable at a sharp angle.
- When replacing the new MT gear shift cable, secure it to shift bracket with the clamps, be careful not to mistake the installing direction.



(A) Old MT gear shift cable

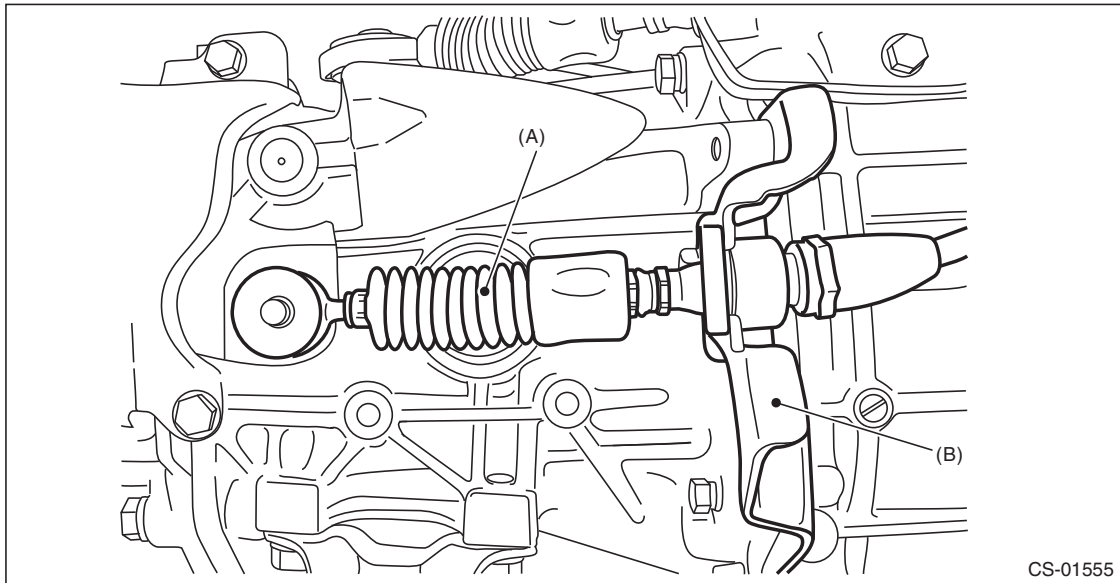
(B) New MT gear shift cable

(C) Shift bracket

MT Gear Shift Cable

CONTROL SYSTEMS

- 1) Install the MT gear shift cable and shift bracket as a single unit onto transmission.

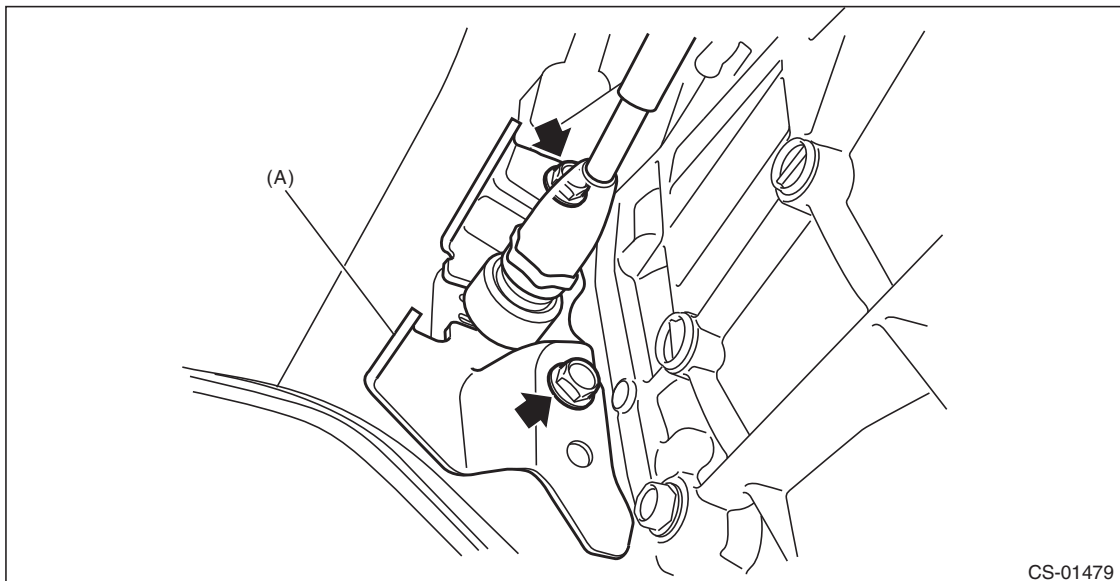


- (A) MT gear shift cable (B) Shift bracket

- 2) Tighten the shift bracket with specified torque.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)

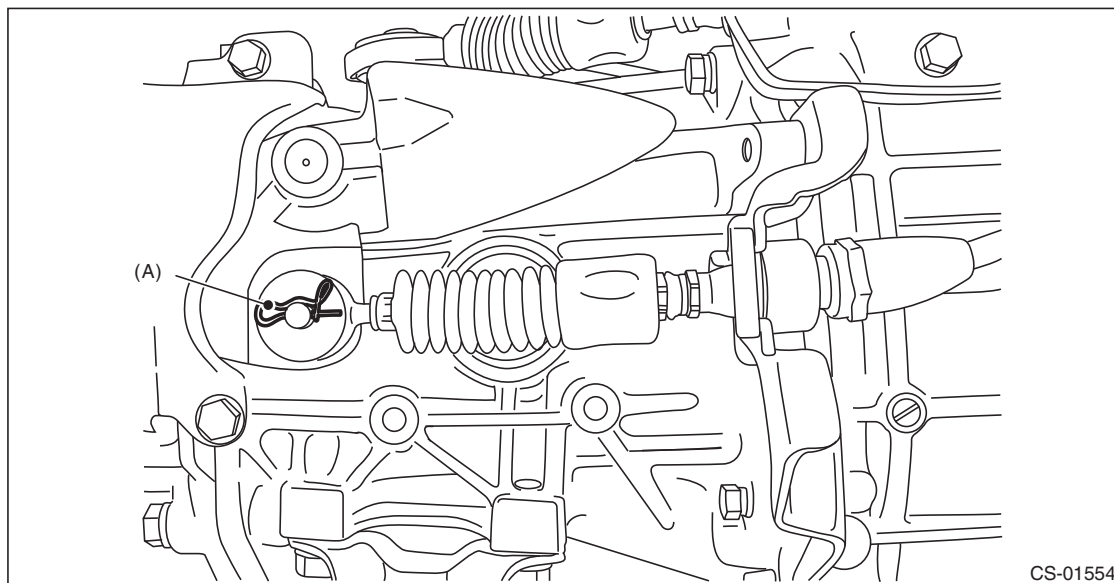


- (A) Shift bracket

MT Gear Shift Cable

CONTROL SYSTEMS

- 3) Install the snap pin to the shift lever COMPL.

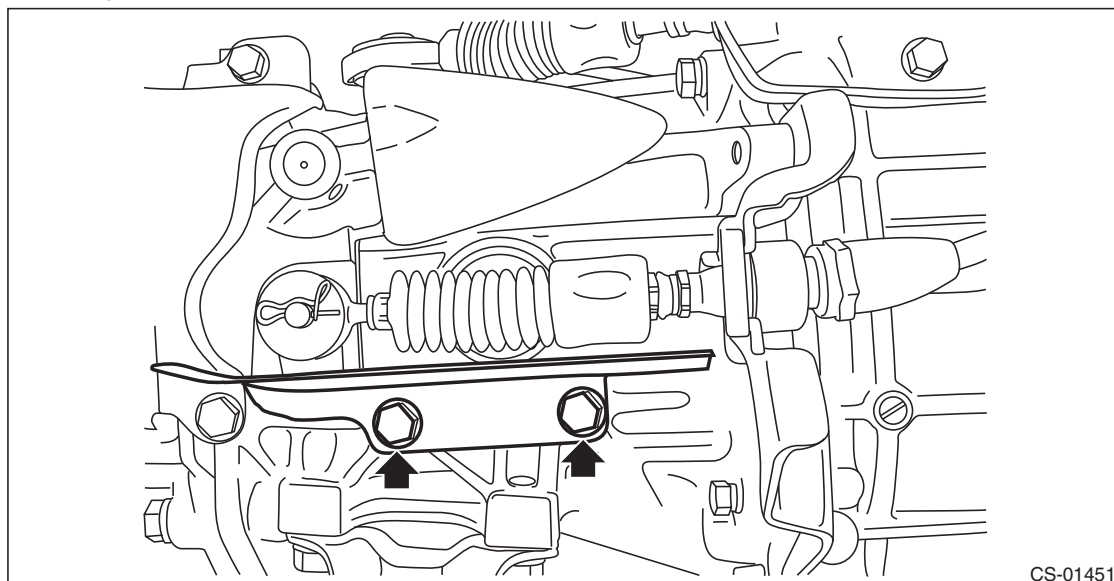


(A) Snap pin

- 4) Install the dust cover to the transmission body.

Tightening torque:

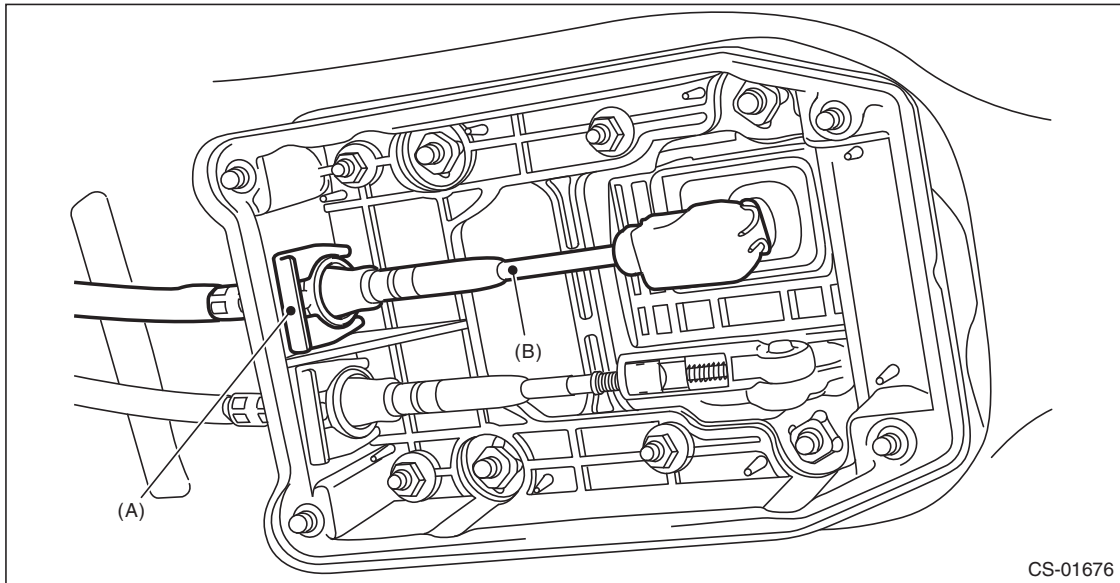
15 N·m (1.5 kgf-m, 11.1 ft-lb)



MT Gear Shift Cable

CONTROL SYSTEMS

5) Insert the MT gear shift cable into cable cover assembly, and secure it with the clamp.



(A) Clamp

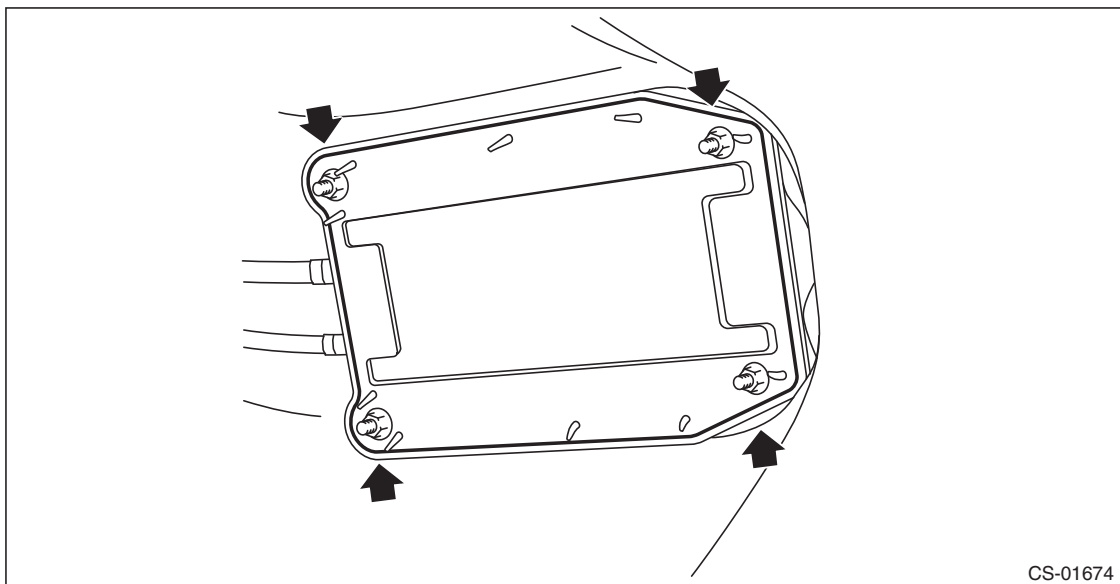
(B) MT gear shift cable

6) Connect the MT gear shift cable.

7) Attach the cable cover plate.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



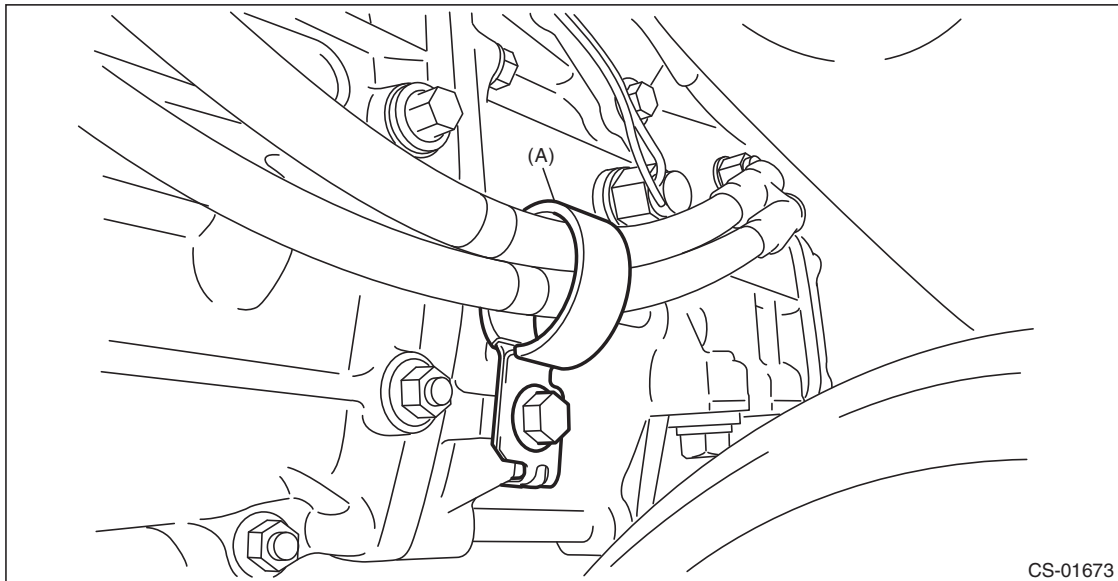
MT Gear Shift Cable

CONTROL SYSTEMS

8) Insert the MT gear shift cable into cable clamp, and install to the transmission.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



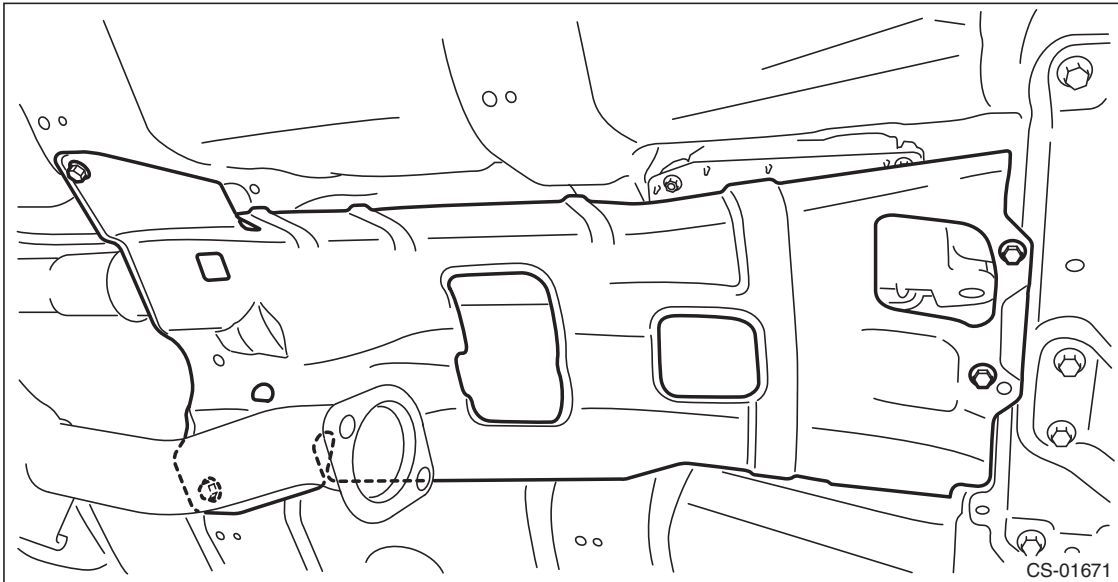
CS-01673

(A) Cable clamp

9) Install the center exhaust cover.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



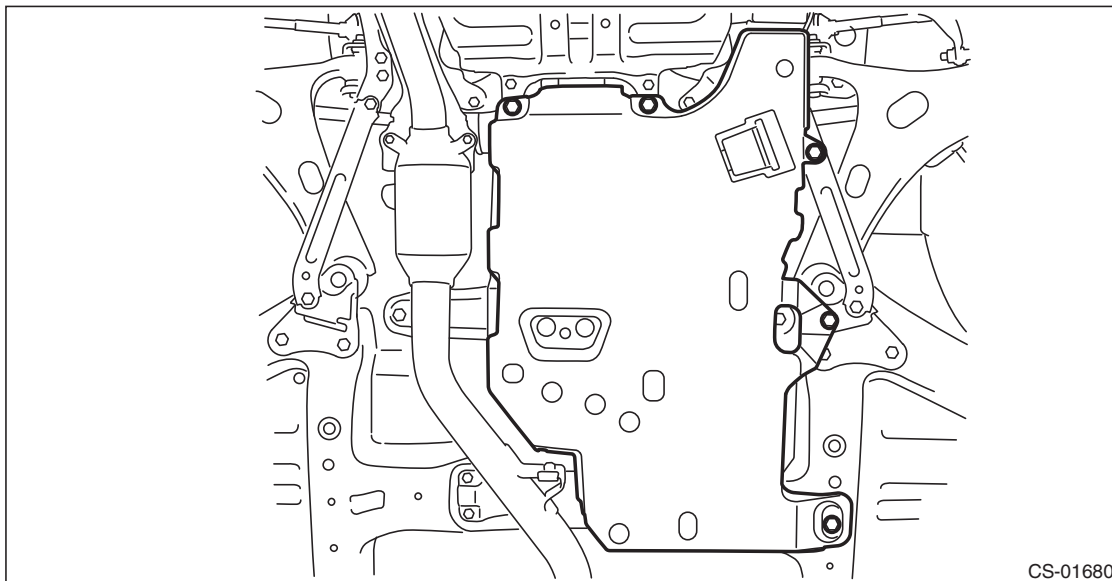
CS-01671

10) Install the center exhaust pipe. <Ref. to EX(H4DO)-15, INSTALLATION, Center Exhaust Pipe.>

MT Gear Shift Cable

CONTROL SYSTEMS

11) Install the transmission under cover.



12) Lower the vehicle.

13) Connect the battery ground terminal.

14) Make sure the gears can be shifted accurately into each gear.



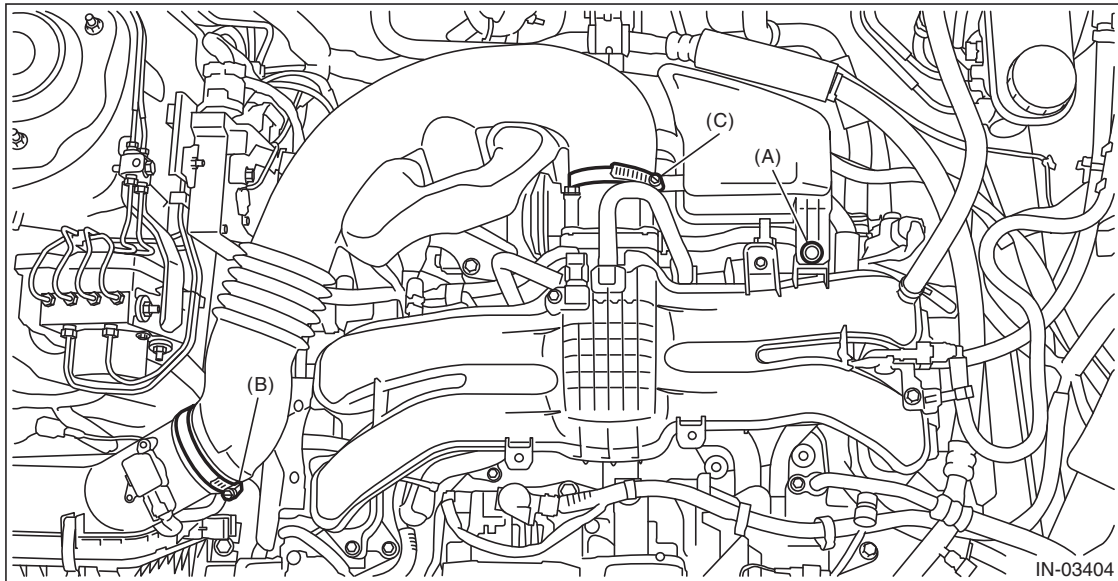
9. MT Gear Select Cable

A: REMOVAL

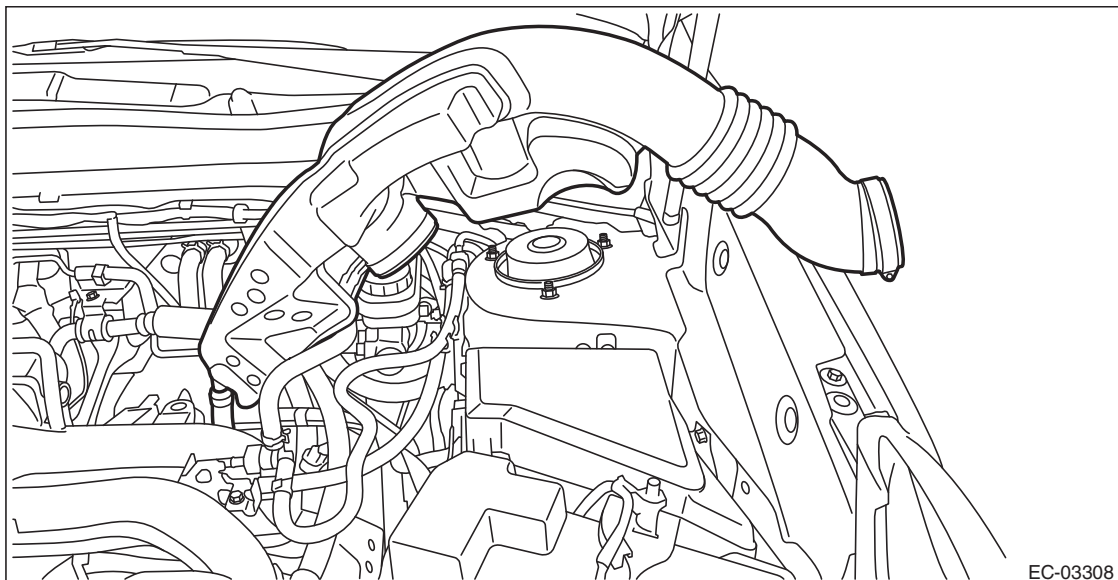
CAUTION:

Always use new MT gear select cable if the cable is removed from selector lever COMPL of transmission side.

- 1) Disconnect the ground cable from battery.
- 2) Remove the clip (A) from the air intake boot.
- 3) Loosen the clamp (B) connecting the air intake boot and air cleaner case (rear).
- 4) Loosen the clamp (C) which connects the air intake boot and throttle body.



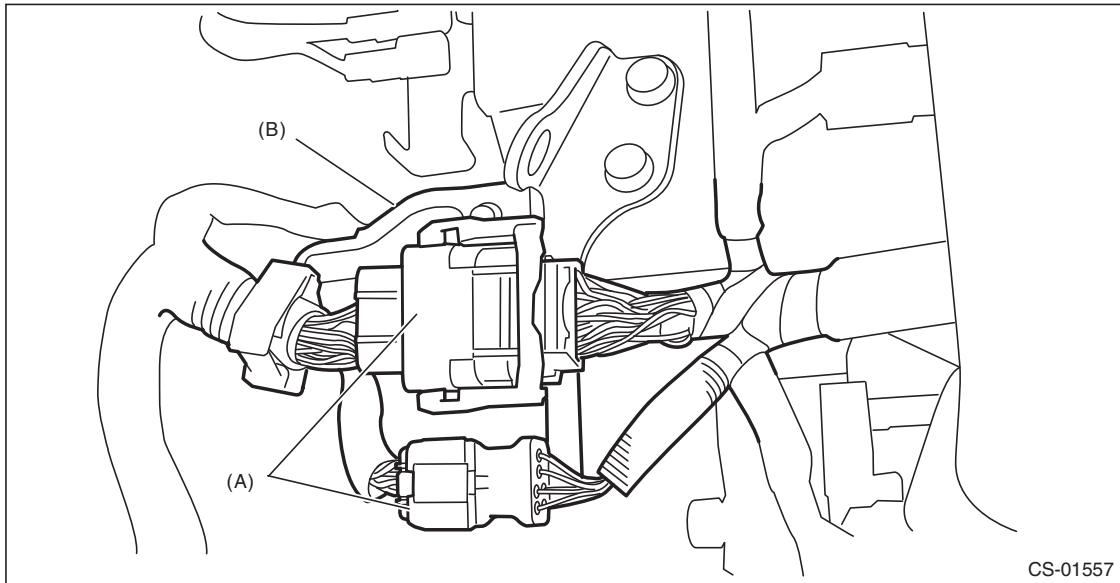
- 5) Remove the air intake boot from the throttle body, and move it to the left side wheel apron.



MT Gear Select Cable

CONTROL SYSTEMS

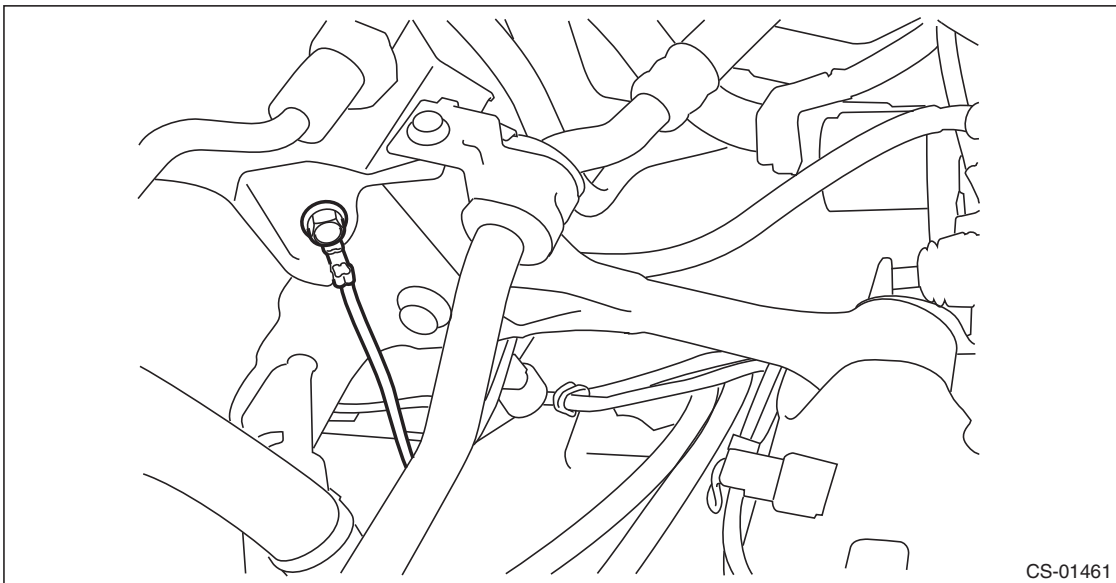
6) Disconnect the engine harness connectors, then remove the harness bracket.



CS-01557

(A) Engine harness connectors (B) Harness bracket

7) Disconnect the transmission radio ground cord terminal.

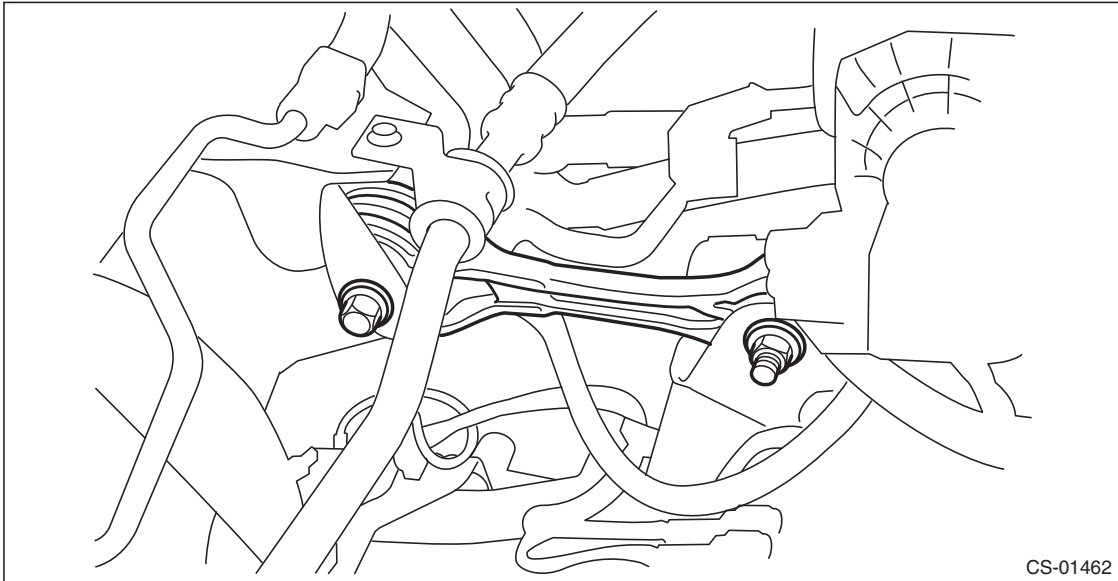


CS-01461

MT Gear Select Cable

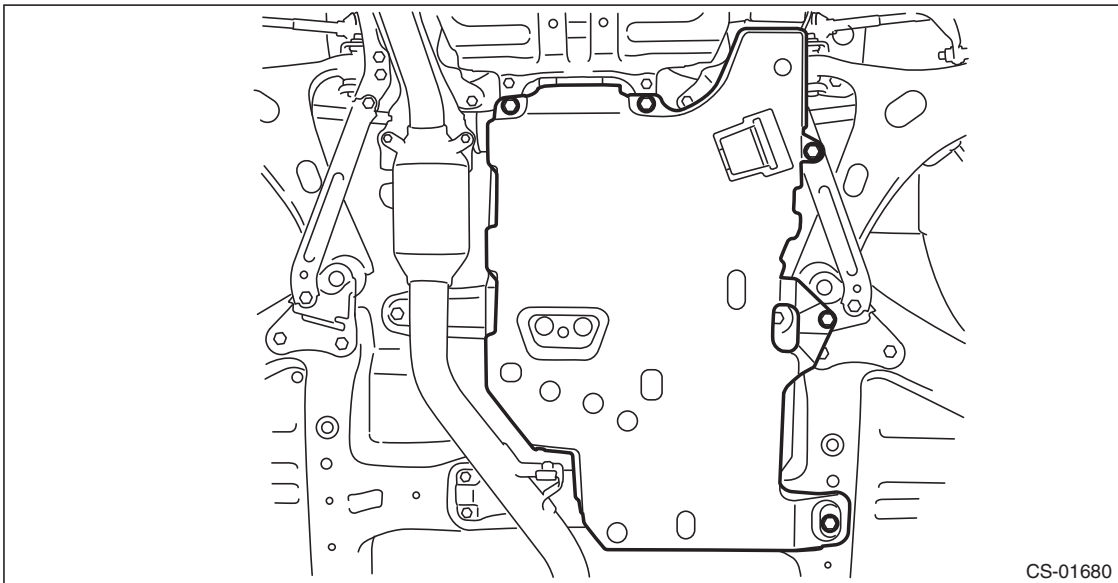
CONTROL SYSTEMS

8) Remove the pitching stopper.



9) Lift up the vehicle.

10) Remove the transmission under cover.

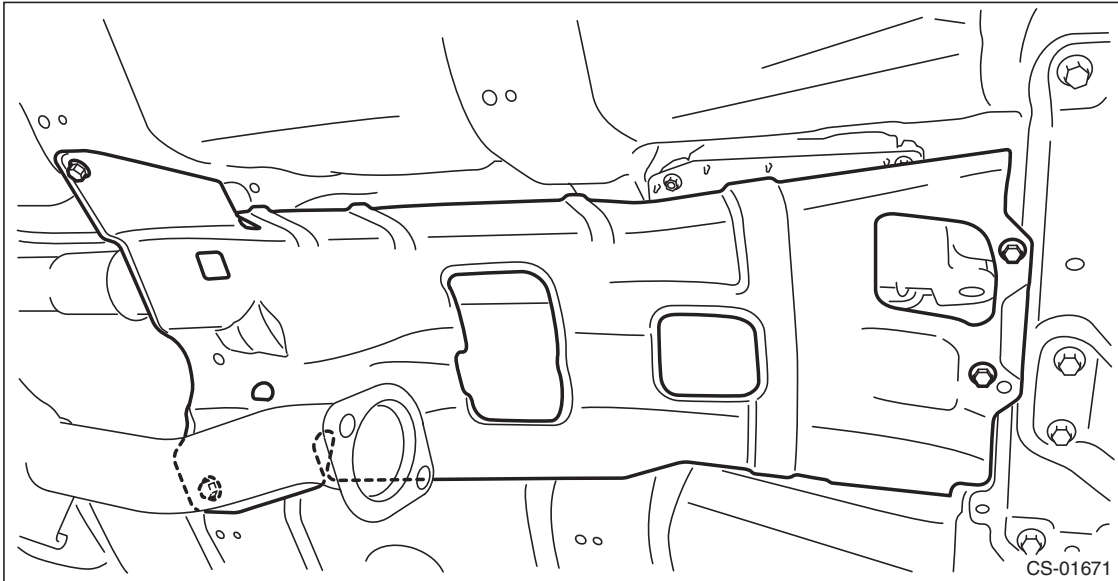


11) Remove the center exhaust pipe. <Ref. to EX(H4DO)-14, REMOVAL, Center Exhaust Pipe.>

MT Gear Select Cable

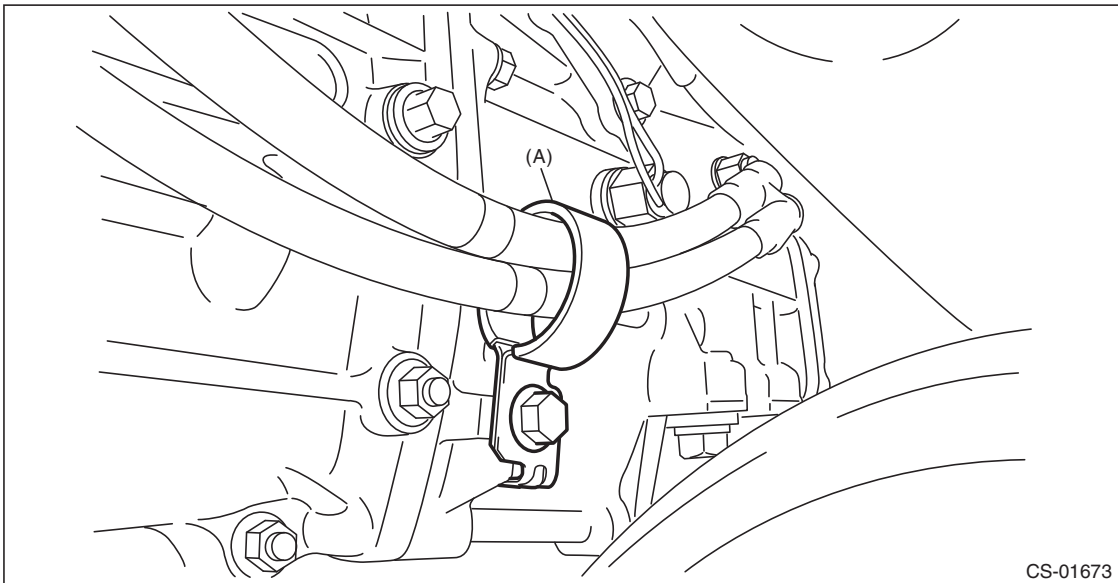
CONTROL SYSTEMS

12) Remove the center exhaust cover.



13) Remove the propeller shaft. <Ref. to DS-11, REMOVAL, Propeller Shaft.>

14) Remove the cable clamp and take out the MT gear select cable from the clamp.



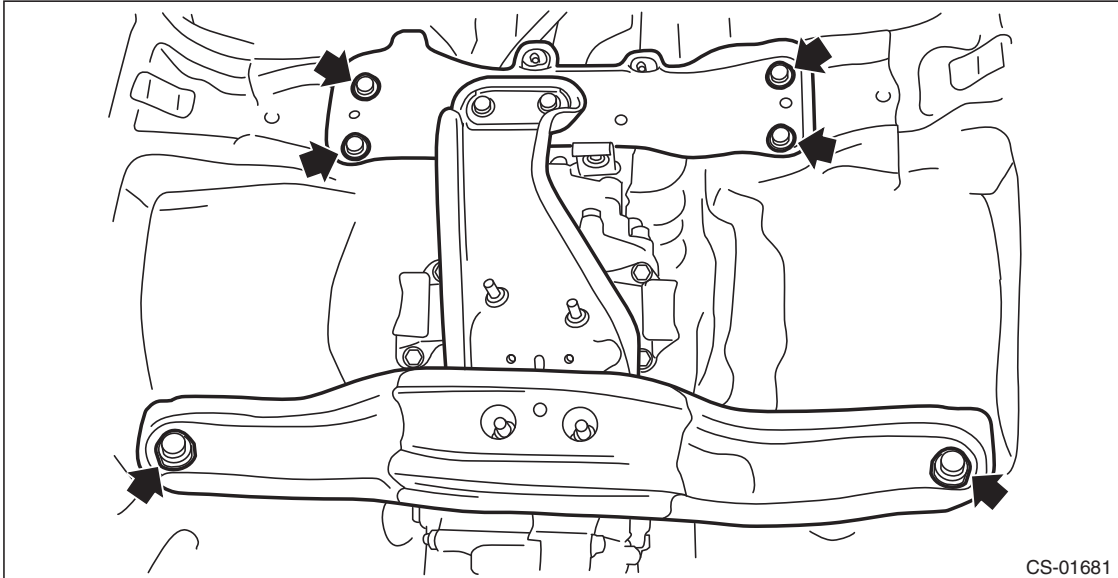
(A) Cable clamp

15) Place the transmission jack under the transmission.

MT Gear Select Cable

CONTROL SYSTEMS

16) Remove the mounting bolt of front crossmember and rear crossmember, and lower the transmission approx. 100 mm (4 in).

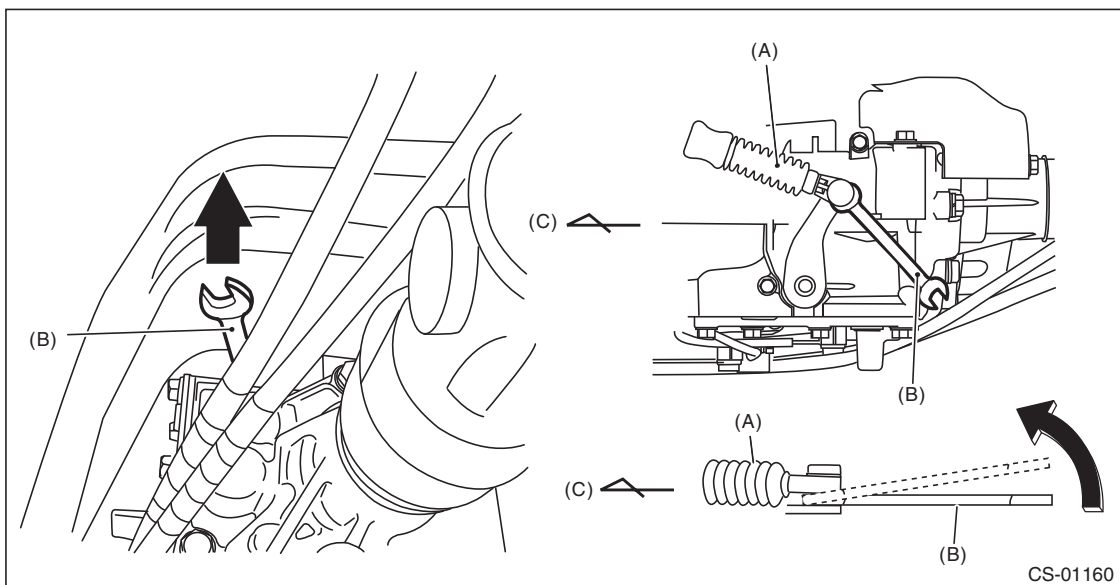


CS-01681

17) Insert a spanner between the selector lever COMPL and the MT gear select cable, and remove the MT gear select cable by raising the handle.

NOTE:

- Use a spanner with 11 to 13 in size.
- The thickness of the spanner must not exceed 6 mm (0.2 in).



CS-01160

(A) MT gear select cable

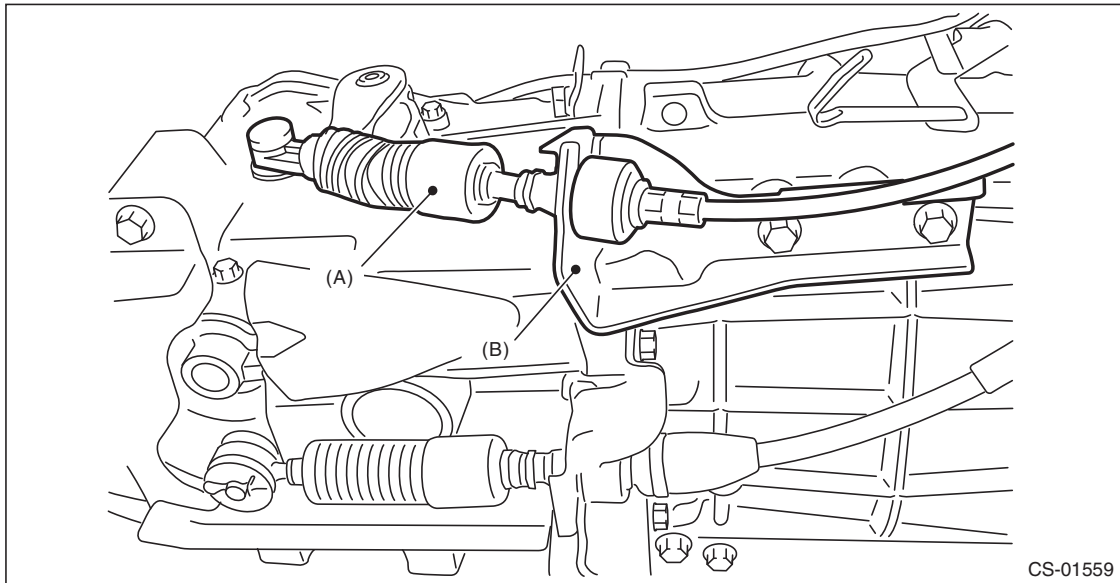
(B) Spanner

(C) Forward

MT Gear Select Cable

CONTROL SYSTEMS

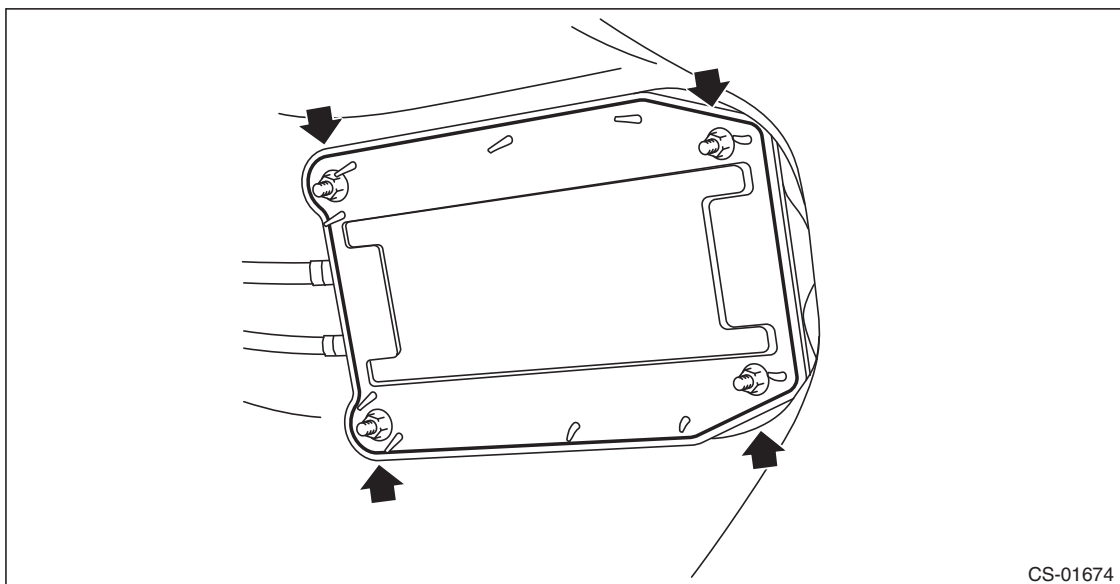
18) Remove the MT gear select cable and select bracket as a single unit from the transmission body.



(A) MT gear select cable

(B) Select bracket

19) Remove the cable cover plate.



MT Gear Select Cable

CONTROL SYSTEMS

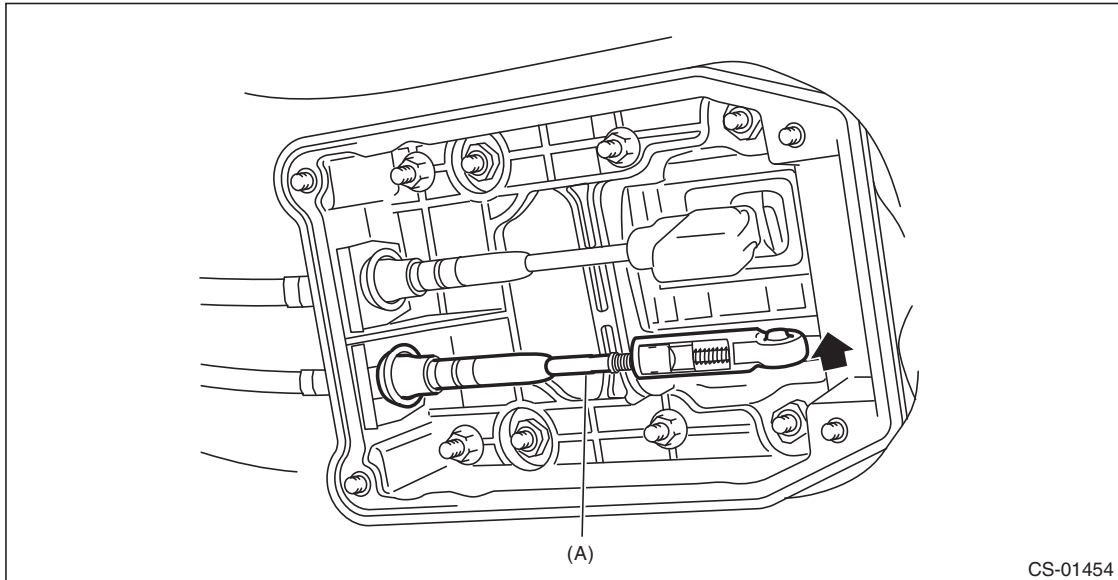
20) Disconnect the MT gear select cable.

CAUTION:

Be careful not to deform the cable inner.

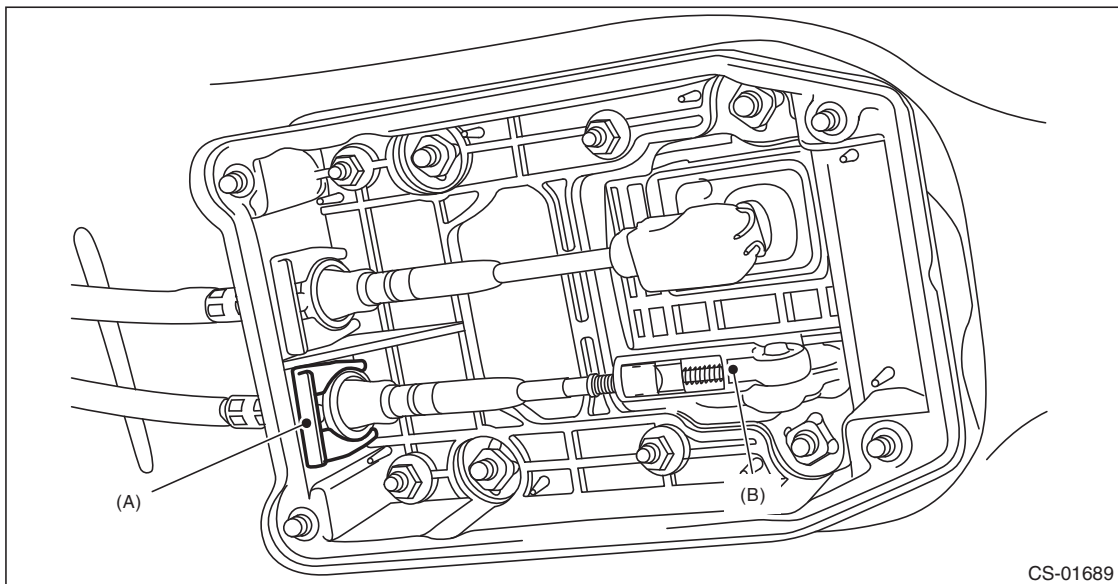
NOTE:

Push the MT gear select cable in the direction of arrow, and remove it.



(A) MT gear select cable

21) Remove the clamp which holds the MT gear select cable.



(A) Clamp

(B) MT gear select cable

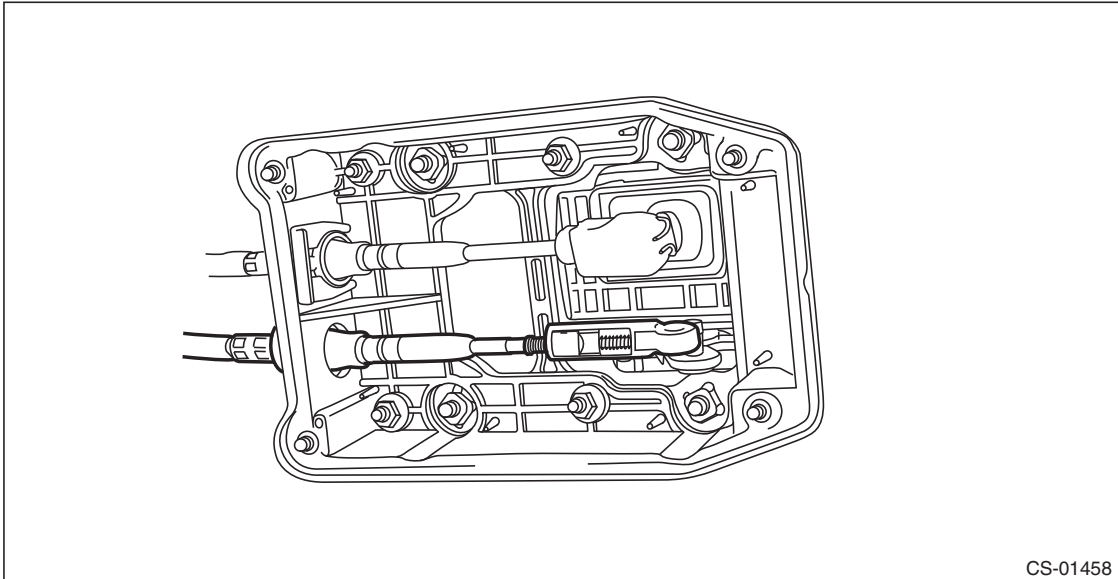
MT Gear Select Cable

CONTROL SYSTEMS

22) Pull out the MT gear select cable from cable cover assembly.

CAUTION:

Do not bend the MT gear select cable sharply.



B: INSTALLATION

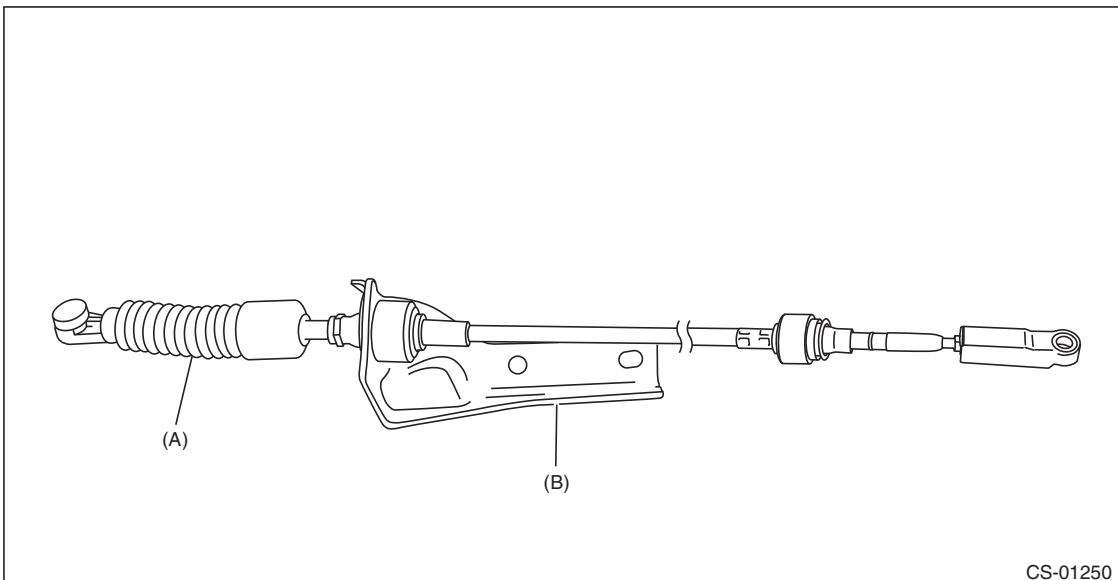
CAUTION:

- Always use new MT gear select cable if the cable is removed from selector lever COMPL of transmission side.
- Do not bend the MT gear select cable sharply.
- Do not twist the inner cable excessively.

1) Remove the MT gear select cable from the select bracket.

CAUTION:

Check for assembling position before removing the MT gear select cable from the select bracket.



(A) MT gear select cable

(B) Select bracket

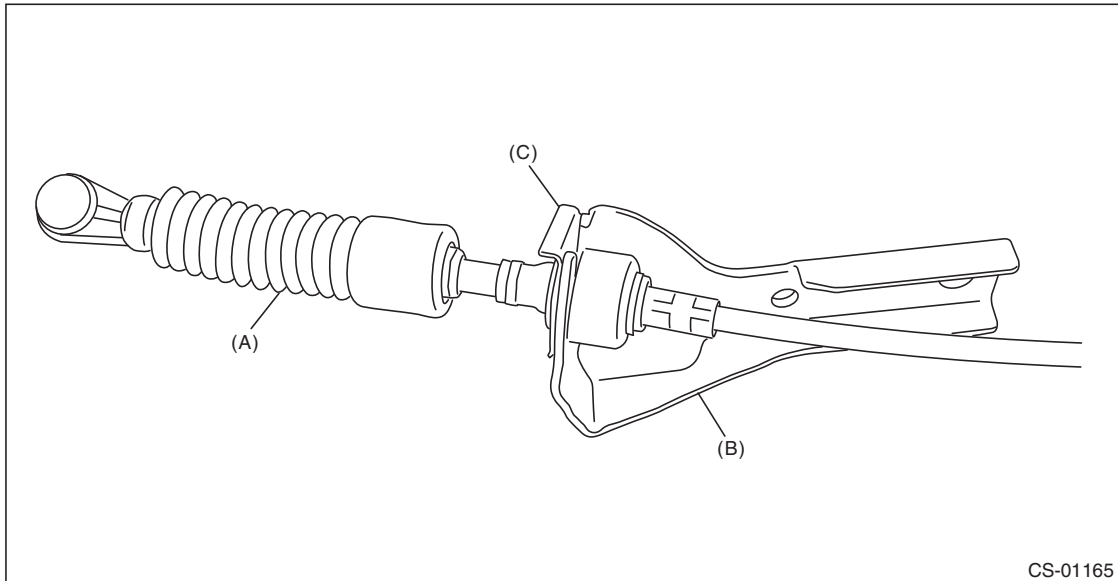
MT Gear Select Cable

CONTROL SYSTEMS

2) Set to the new MT gear select cable to the select bracket and secure it with the clamp.

CAUTION:

Be careful not to mistake the MT gear select cable installing direction.



(A) MT gear select cable

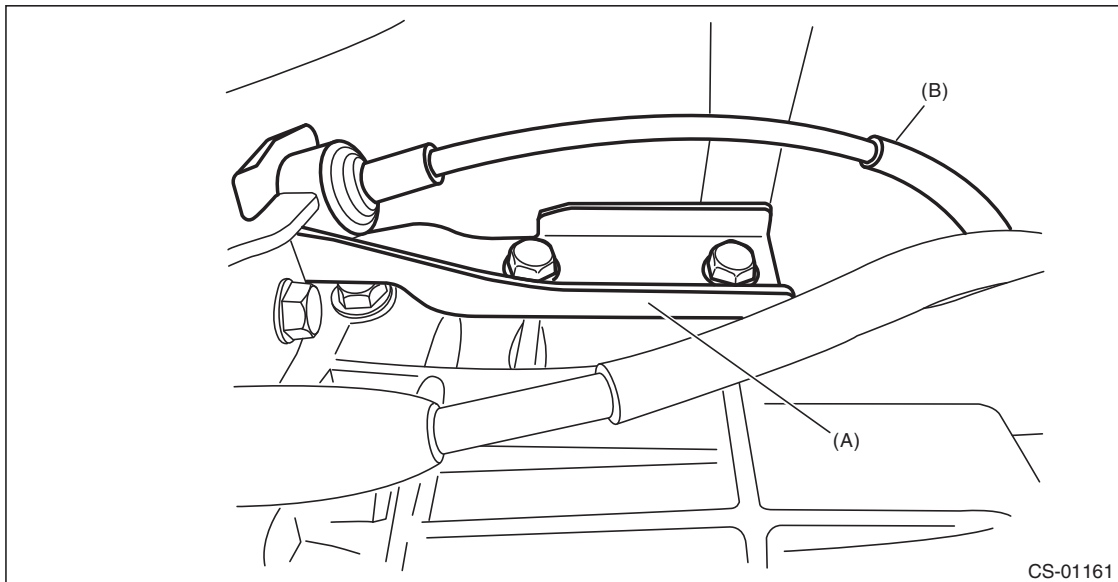
(B) Select bracket

(C) Clamp

3) Install the MT gear select cable and select bracket as a single unit to the transmission body.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



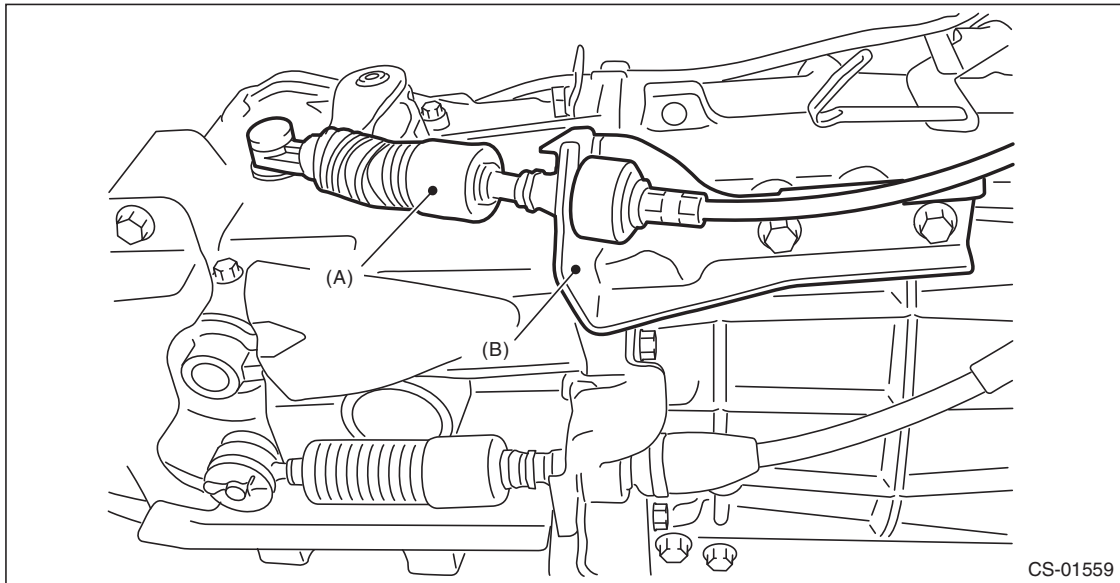
(A) Select bracket

(B) MT gear select cable

MT Gear Select Cable

CONTROL SYSTEMS

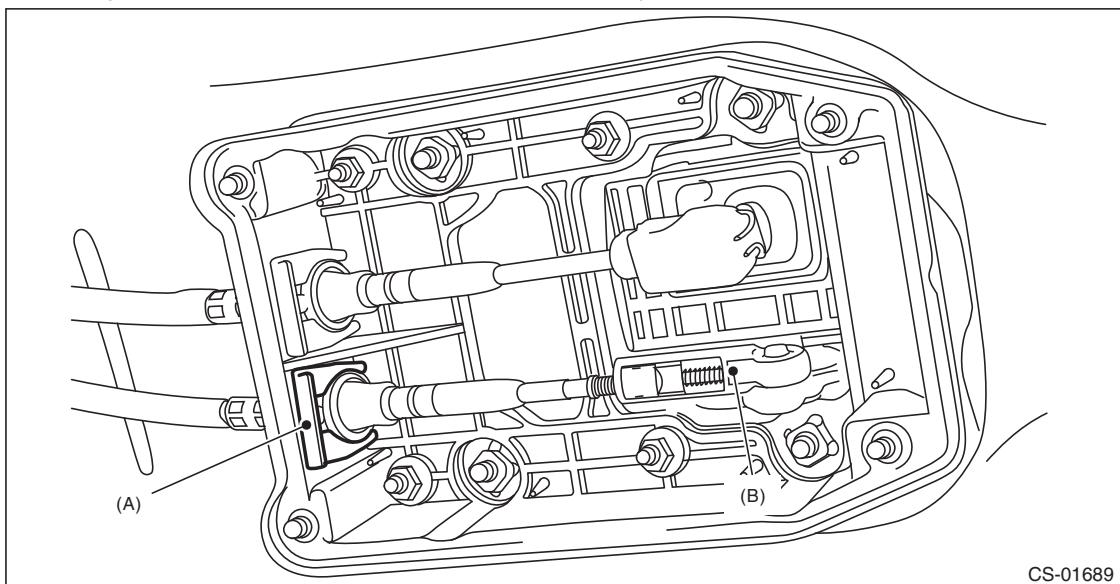
4) Install the MT gear select cable to the select lever COMPL.



(A) MT gear select cable

(B) Select bracket

5) Insert the MT gear select cable into cable cover assembly, and secure it with the clamp.



(A) Clamp

(B) MT gear select cable

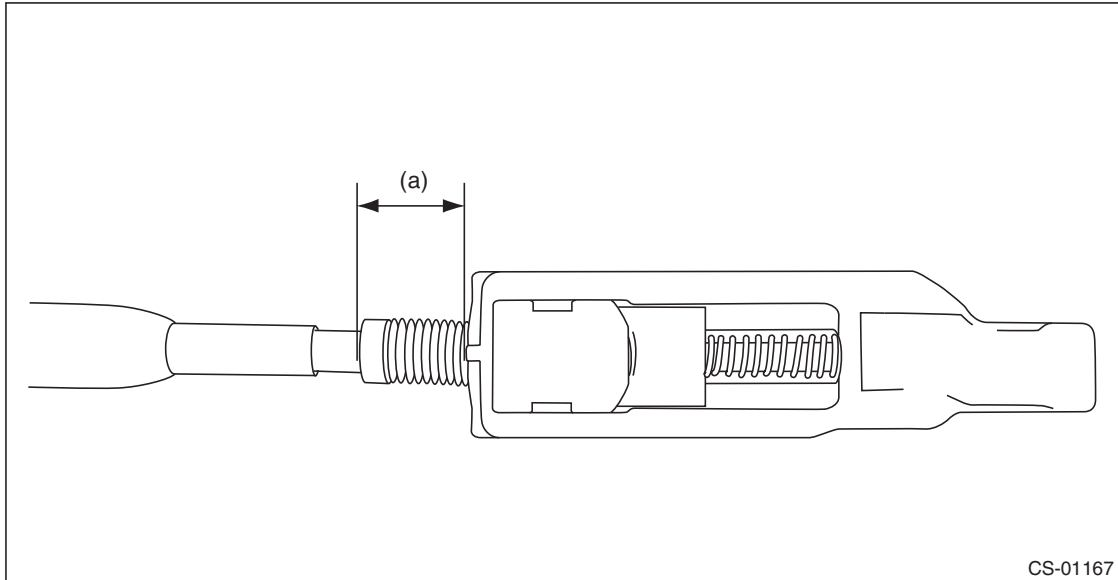
MT Gear Select Cable

CONTROL SYSTEMS

6) Measure the exposed length (a) of MT gear select cable. If out of specification, adjust the MT gear select cable. <Ref. to CS-89, ADJUSTMENT, MT Gear Select Cable.>

Exposed length (a) of MT gear select cable:

Specification: 11 mm (0.4 in)

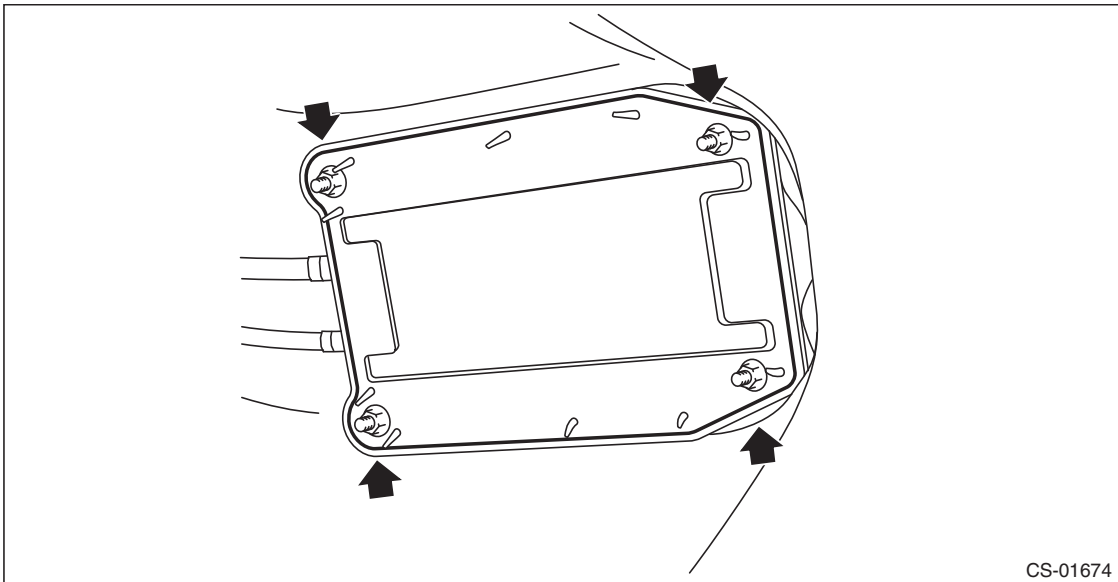


7) Connect the MT gear select cable.

8) Attach the cable cover plate.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



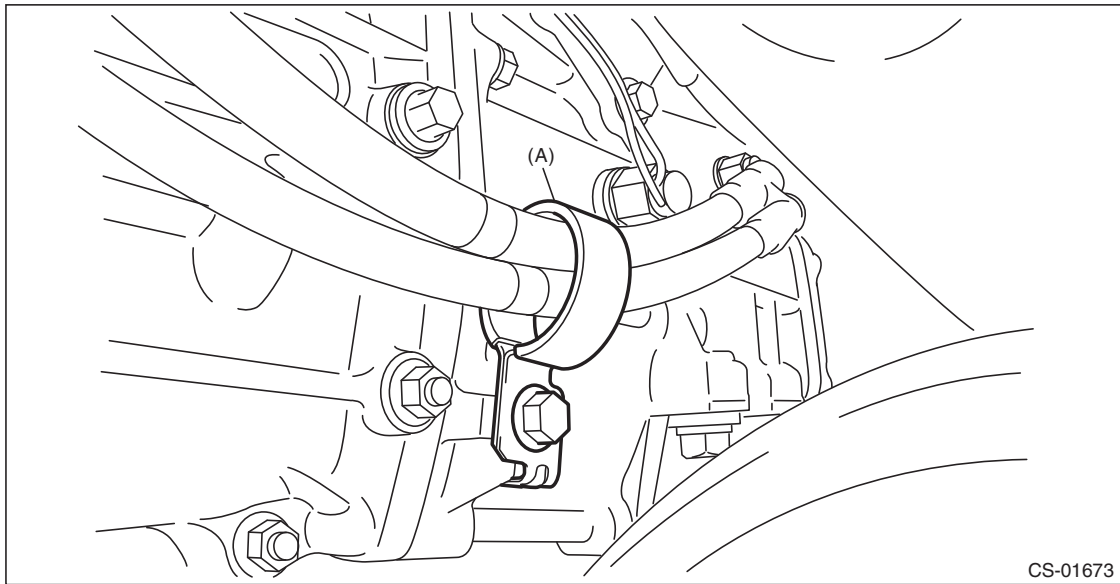
MT Gear Select Cable

CONTROL SYSTEMS

9) Insert the MT gear select cable into cable clamp, and install to the transmission.

Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



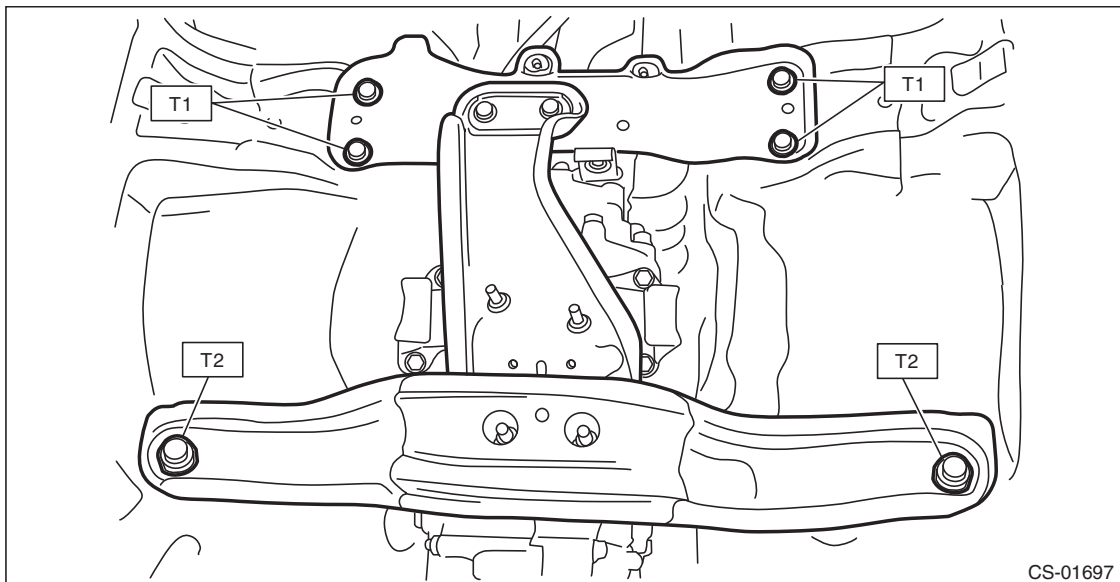
(A) Cable clamp

10) Raise the transmission jack, install the front crossmember and rear crossmember.

Tightening torque:

T1: 70 N·m (7.1 kgf-m, 51.6 ft-lb)

T2: 140 N·m (14.3 kgf-m, 103.3 ft-lb)



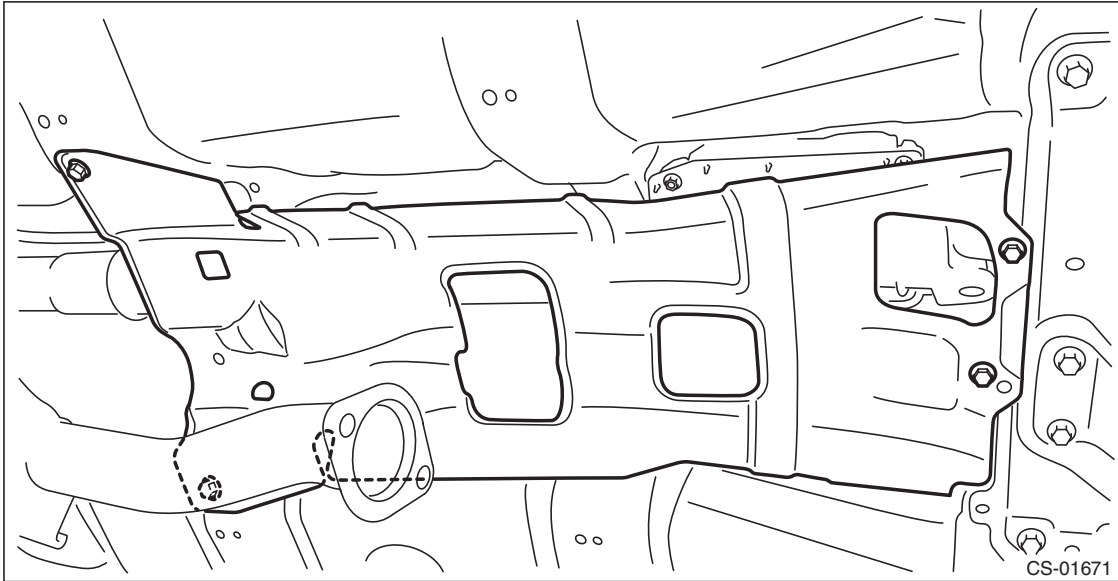
11) Take out the transmission jack.

12) Install the propeller shaft. <Ref. to DS-13, INSTALLATION, Propeller Shaft.>

13) Install the center exhaust cover.

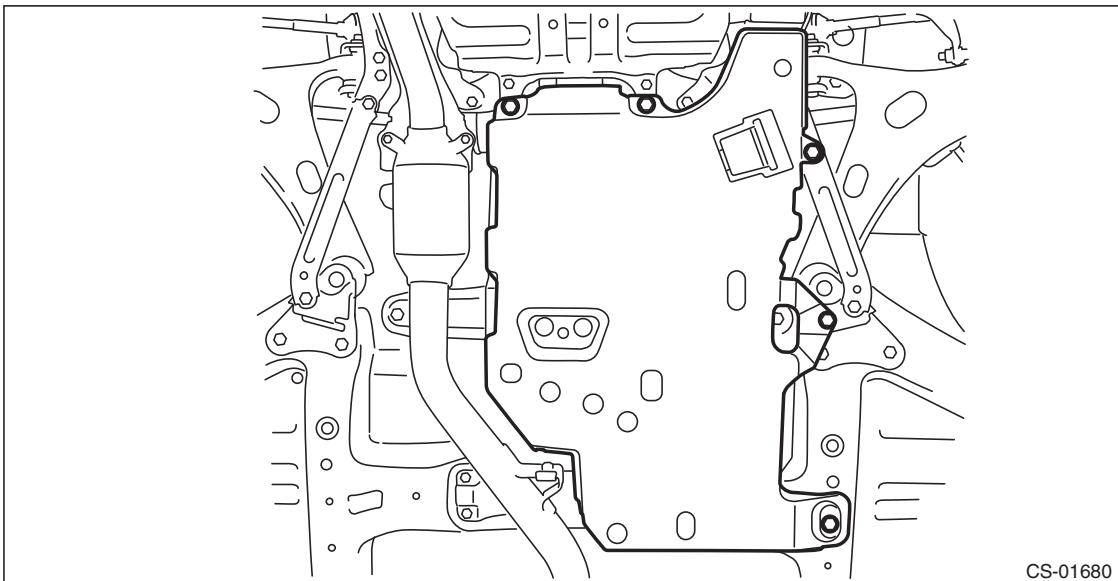
Tightening torque:

18 N·m (1.8 kgf-m, 13.3 ft-lb)



14) Install the center exhaust pipe. <Ref. to EX(H4DO)-15, INSTALLATION, Center Exhaust Pipe.>

15) Install the transmission under cover.



16) Lower the vehicle.

17) Install the pitching stopper. <Ref. to 6MT-34, PITCHING STOPPER, INSTALLATION, Transmission Mounting System.>

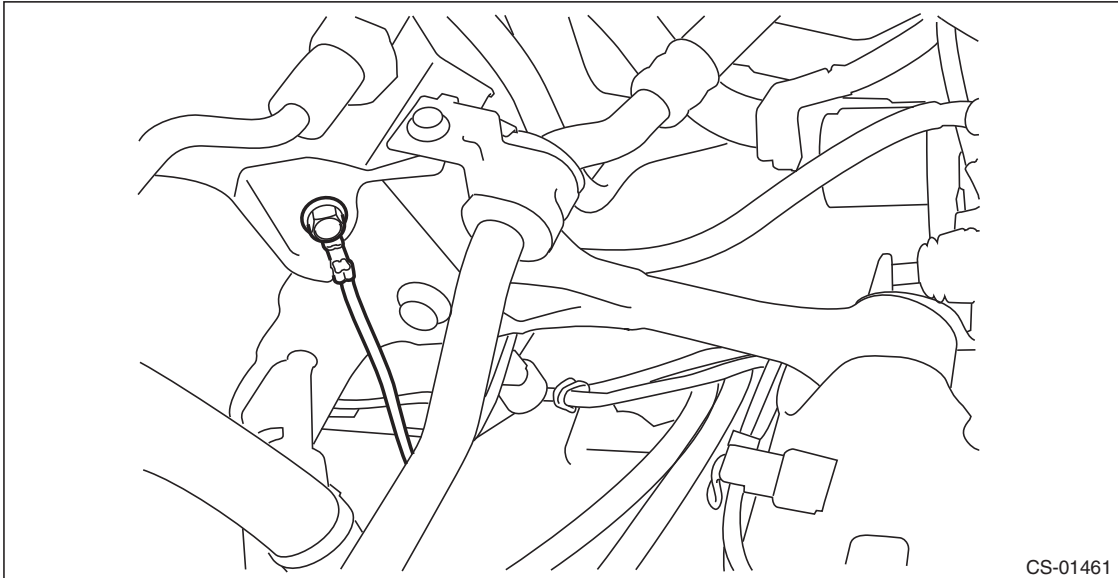
MT Gear Select Cable

CONTROL SYSTEMS

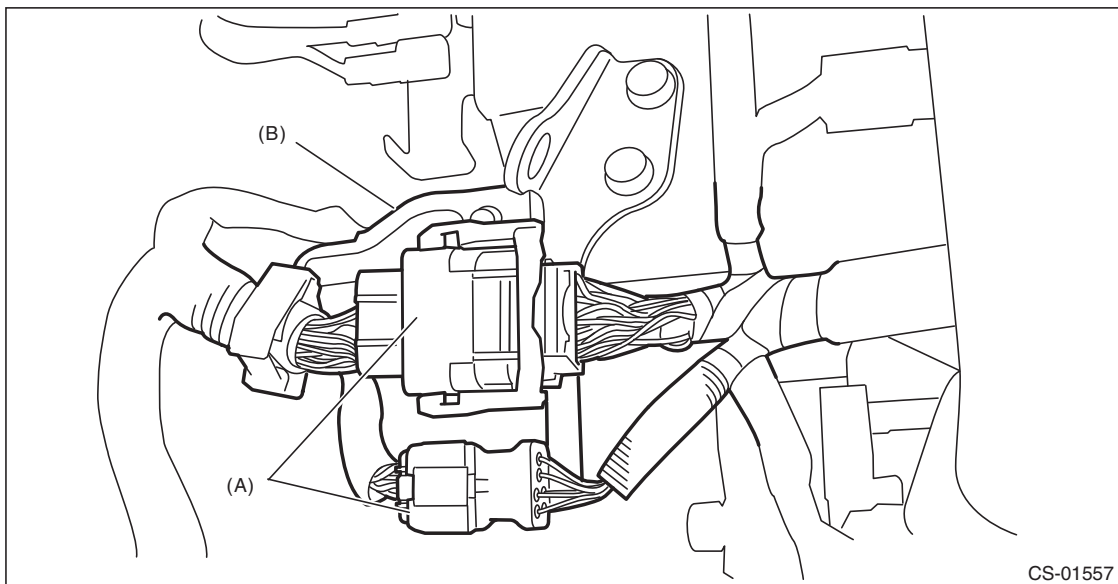
18) Install the transmission radio ground cord terminal.

Tightening torque:

13 N·m (1.3 kgf-m, 9.6 ft-lb)



19) Connect the engine harness connector, then attach the harness bracket.



(A) Engine harness connectors

(B) Harness bracket

20) Install the air intake boot. <Ref. to IN(H4DO)-11, INSTALLATION, Air Intake Boot.>

21) Connect the battery ground terminal.

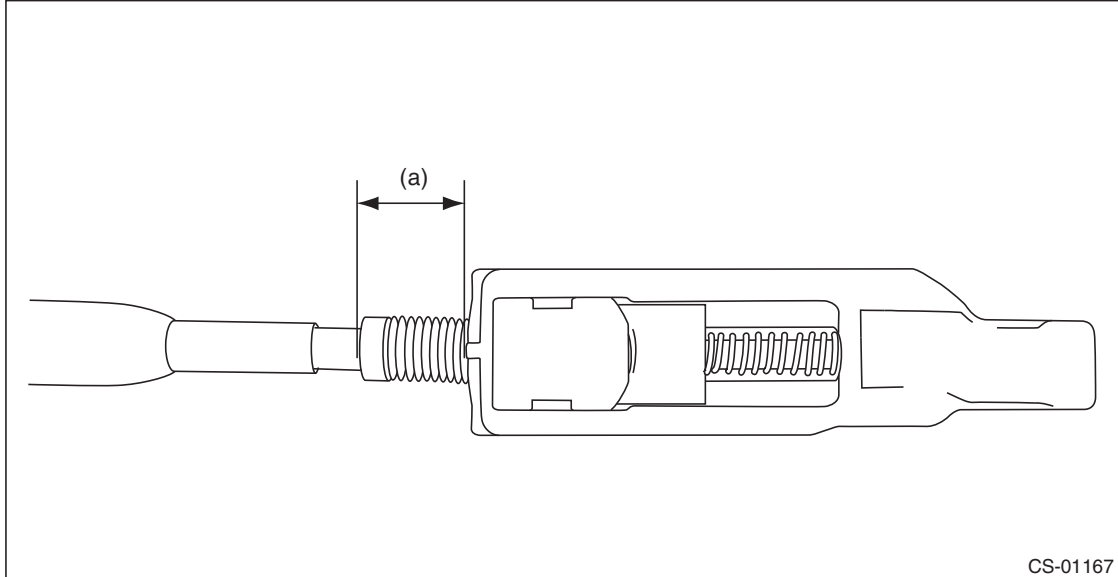
22) Make sure the gears can be shifted accurately into each gear.

C: INSPECTION

1) Check that exposed length (a) of MT gear select cable is within specification.

Exposed length (a) of MT gear select cable:

Specification: 11 mm (0.4 in)



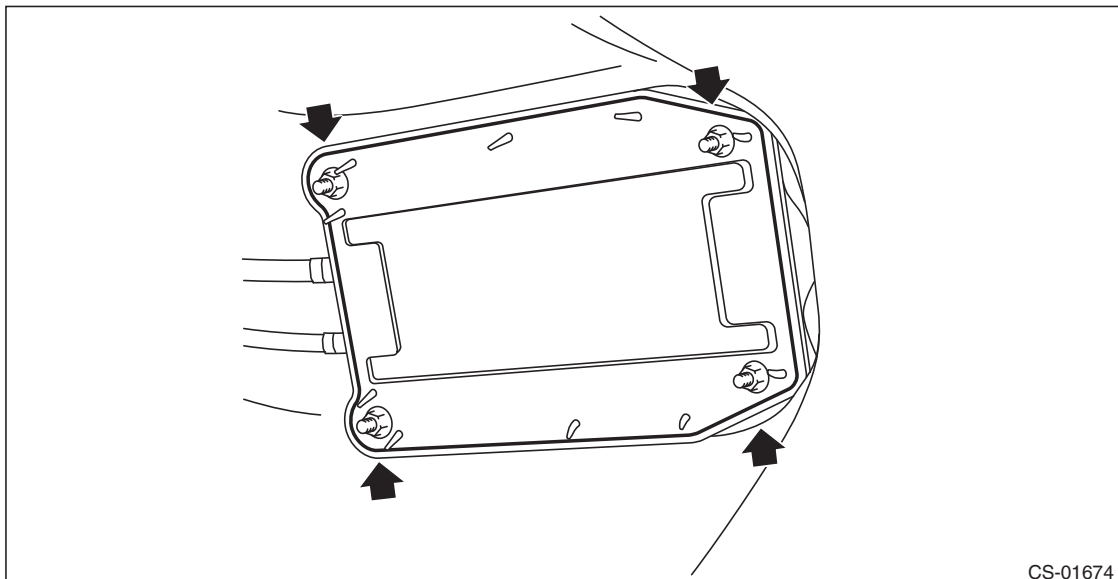
2) If it is not within the specification, perform the adjustment. <Ref. to CS-89, ADJUSTMENT, MT Gear Select Cable.>

D: ADJUSTMENT

NOTE:

Two person are required to perform the MT gear select cable adjustment. (Only the step 7) requires two workers.)

- 1) Shift the select lever to the 6th.
- 2) Remove the cable cover plate.



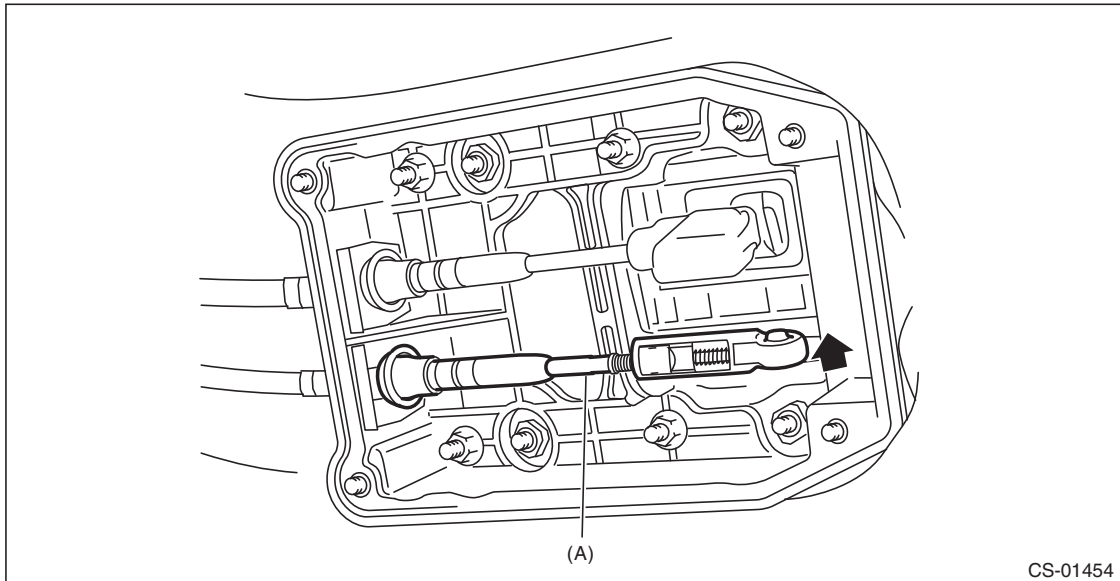
MT Gear Select Cable

CONTROL SYSTEMS

3) Disconnect the MT gear select cable.

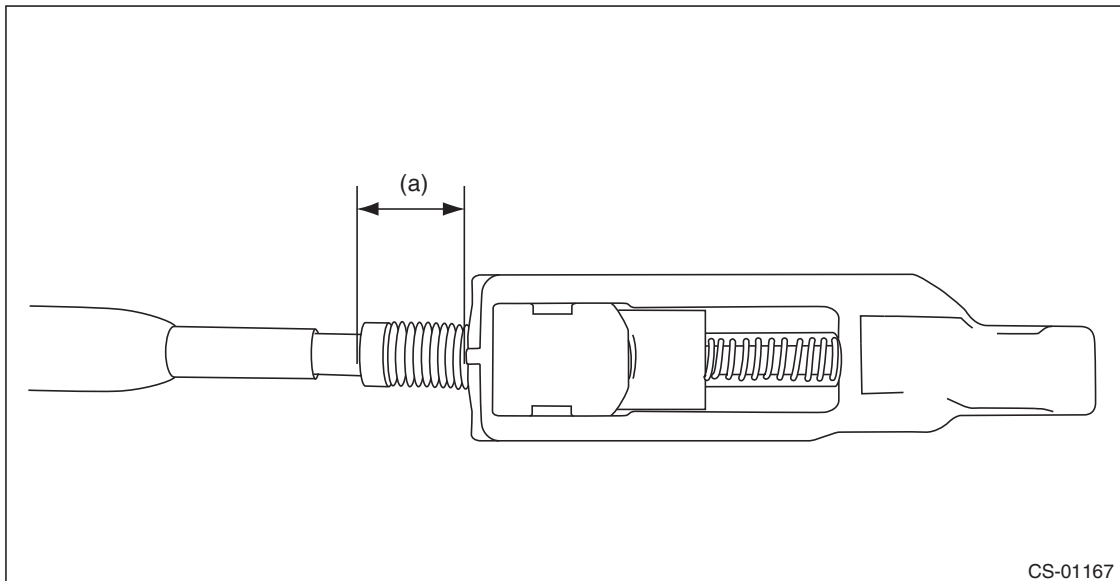
NOTE:

Push the MT gear select cable in the direction of arrow, and remove it.



(A) MT gear select cable

4) Measure the exposed length (a) of MT gear select cable.



(a) Measurement value

MT Gear Select Cable

CONTROL SYSTEMS

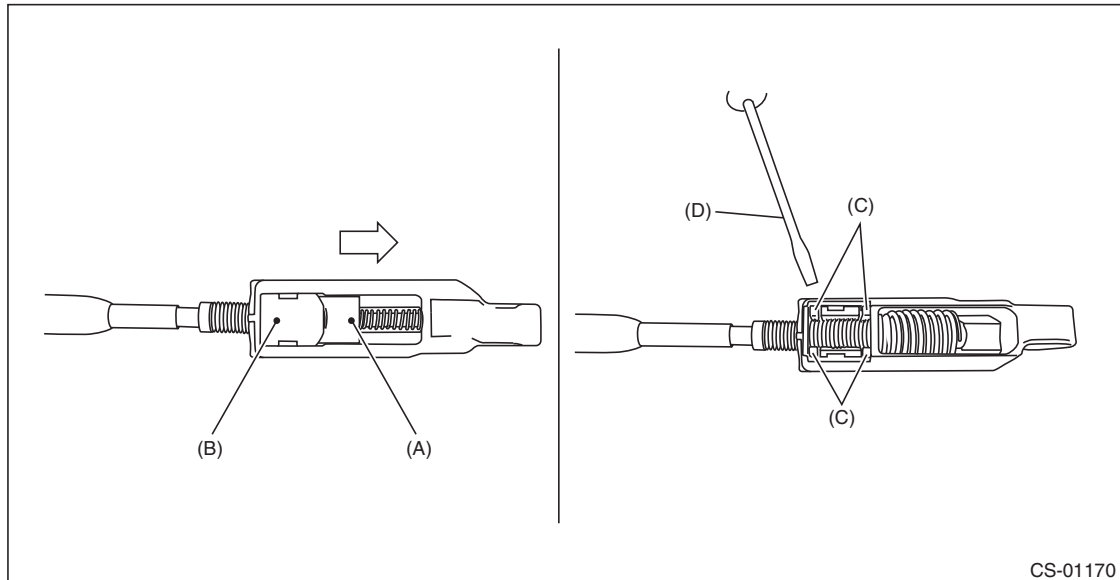
5) Slide the slider (green) in the direction of the arrow and release the lock piece (pink) by using flat tip screwdriver etc.

CAUTION:

Lock piece is easily damaged for the resin. When the lock piece is broken, replace the new MT gear select cable.

NOTE:

Rotate the MT gear select cable to 180 degrees, slide the slider in the direction of the arrow and push the claw of lock piece.



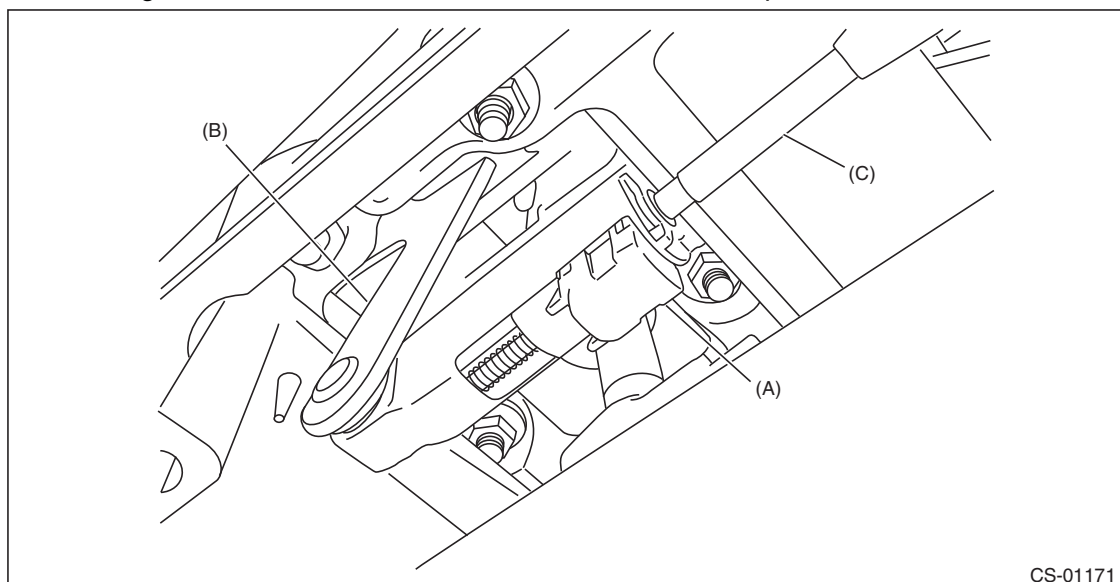
(A) Slider

(C) Claw

(D) Flat tip screwdriver

(B) Lock piece

6) Connect the MT gear select cable to the select lever, with the lock piece released.



(A) Lock piece

(B) Select lever

(C) MT gear select cable

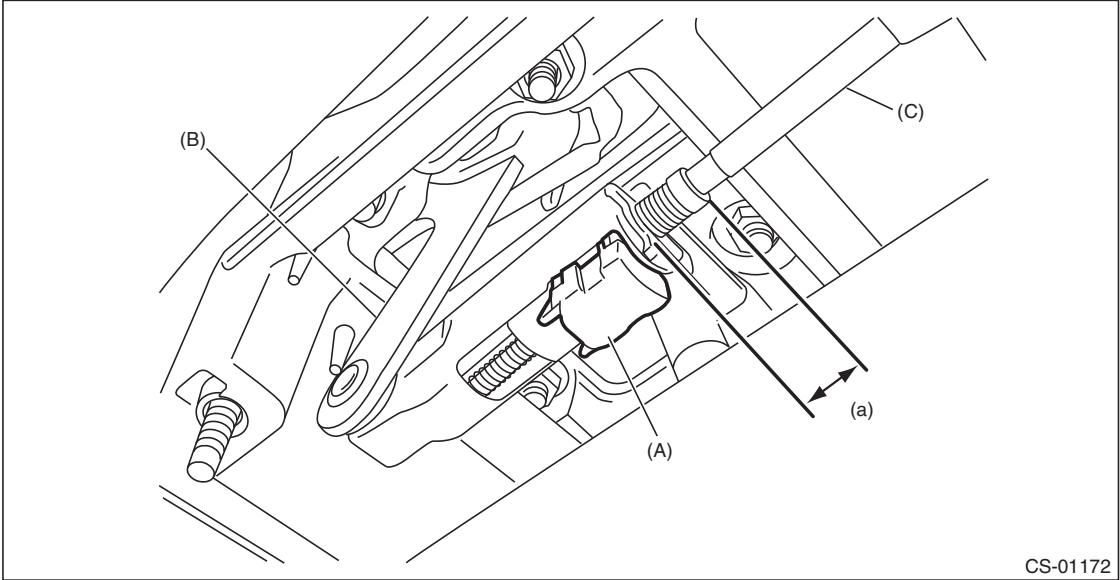
MT Gear Select Cable

CONTROL SYSTEMS

7) Move the select lever to the Rev side, keep the exposed length (a) of MT gear select cable to 11 mm (0.4 in), and push the lock piece.

NOTE:

Pull up the slider of the gear shift lever assembly, move to the Rev side.



CS-01172

(a) Exposed length 11 mm (0.4 in)

(A) Lock piece

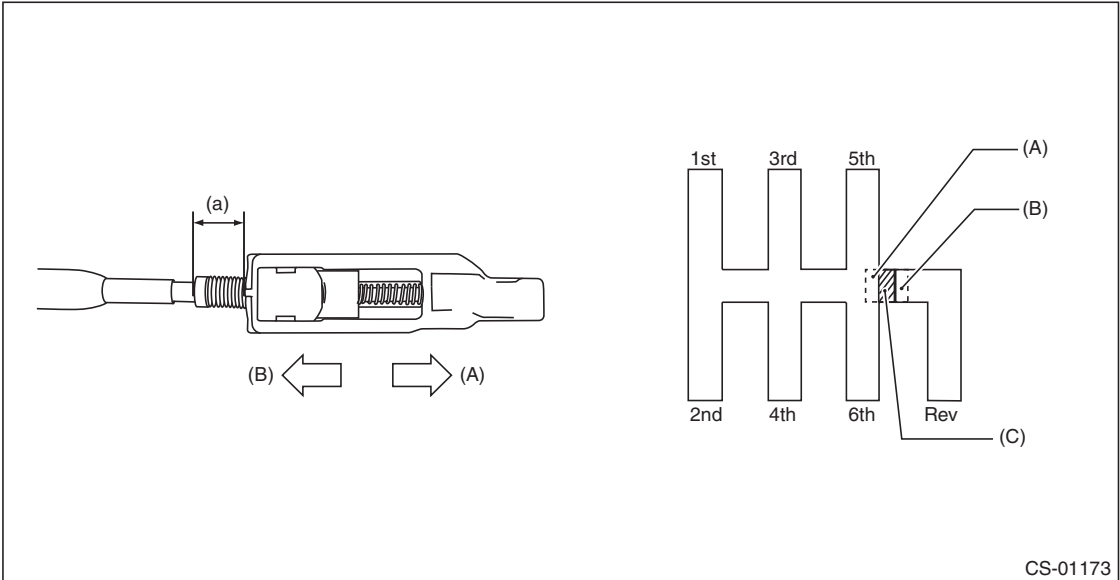
(B) Select lever

(C) MT gear select cable

8) Shift to 5th $\longleftrightarrow$ 6th and Rev, and check for stuck.

9) If no fault is found in the shift and select operation, restore the vehicle.

10) If the shifting operation is not smooth, readjust the exposed length (a) of MT gear select cable by referring to the following figure.



CS-01173

(a) Exposed length of MT gear select cable

(A) Extend direction of exposed length of MT gear select cable

(B) Shorten direction of exposed length of MT gear select cable

(C) Specification of exposed length (a)

MT Gear Select Cable

CONTROL SYSTEMS

- If the shift cannot be inserted to push the reverse lock bracket 5th and 6th.
⇒ Extend the exposed length (a) of MT gear select cable.
- When operate the select lever to 4th → 5th, it cannot be operated at select lever crank line.
⇒ Shorten the exposed length (a) of MT gear select cable.

NOTE:

If it cannot adjust, replace the MT gear select cable.



General Diagnostic Table

CONTROL SYSTEMS

10. General Diagnostic Table

A: INSPECTION

Symptoms	Possible cause	Corrective action
AT select lever	Starter does not run.	Adjust the select cable and inhibitor switch, or inspect the circuit.
	Back-up light does not illuminate.	Adjust the select cable and inhibitor switch, or inspect the circuit.
	AT shift lock system does not operate normally.	Adjust the select cable and inhibitor switch, or inspect the circuit.
	Will not change to manual mode or L mode.	Inspect the mode switch and select lever, or inspect the 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.
MT gear shift lever	Cannot shift into reverse.	Adjust the MT gear select cable.
	Shifted to 6th though it shifted to reverse.	Adjust or replace the MT gear select cable.
	Can shift into reverse when the slider is not pulled up.	Adjust or replace the MT gear select cable.
	Slider cannot be pulled up or sticks in the pulled-up position.	• Check the shift link system of the transmission. • Adjust or replace the MT gear select cable.