

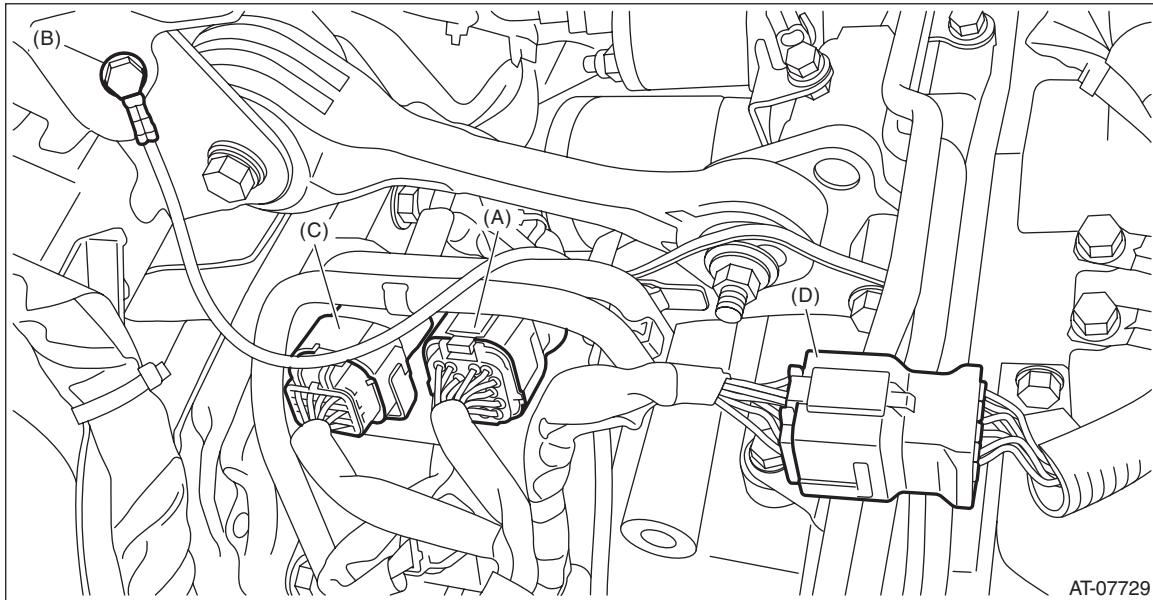
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

11. Automatic Transmission Assembly

A: REMOVAL

- 1) Remove the front wheels.
- 2) Disconnect the ground cable from battery.
- 3) Remove the air intake duct.<Ref. to IN(H4DOTC)-19, REMOVAL, Air Intake Duct.>
- 4) Remove the intercooler.<Ref. to IN(H4DOTC)-35, REMOVAL, Intercooler.>
- 5) Disconnect the following connectors.
 - Transmission harness connectors
 - Transmission radio ground terminal
 - Inhibitor harness connector
 - Engine harness connectors

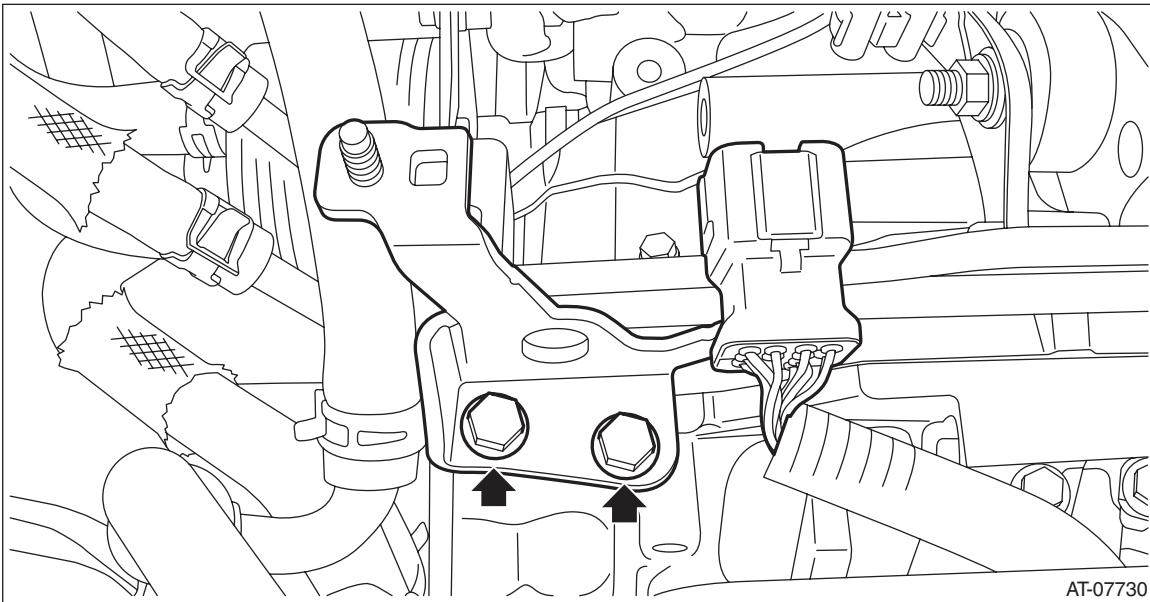


- (A) Transmission harness connectors
- (B) Transmission radio ground terminal
- (C) Inhibitor harness connector
- (D) Engine harness connectors

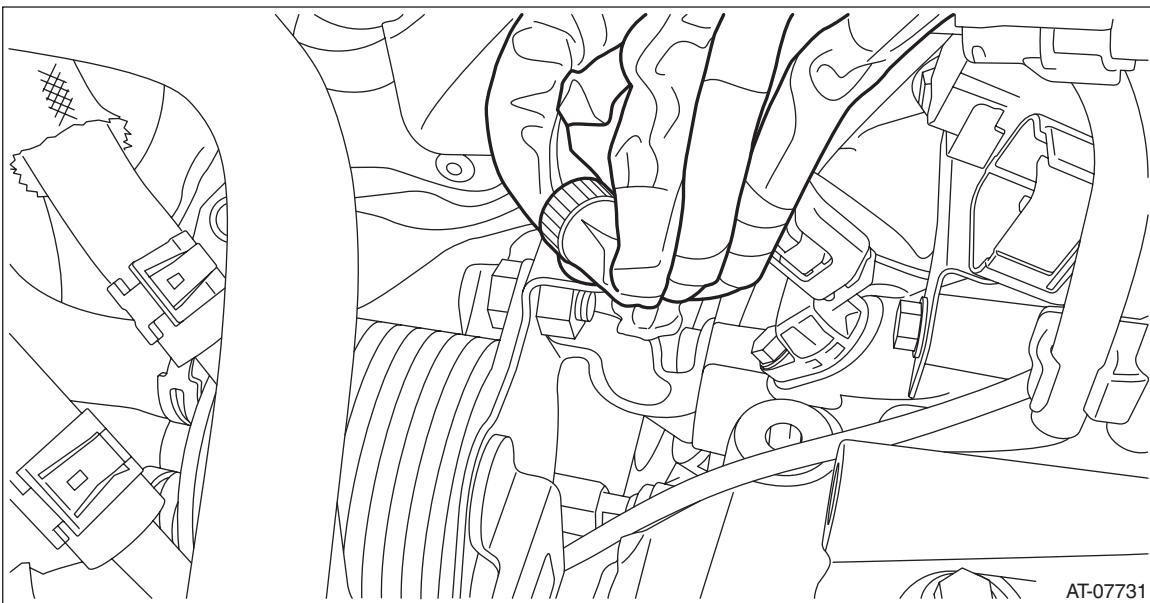
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

6) Remove the engine hanger rear.



7) Remove the harness clip from the CVTF cooler bracket.

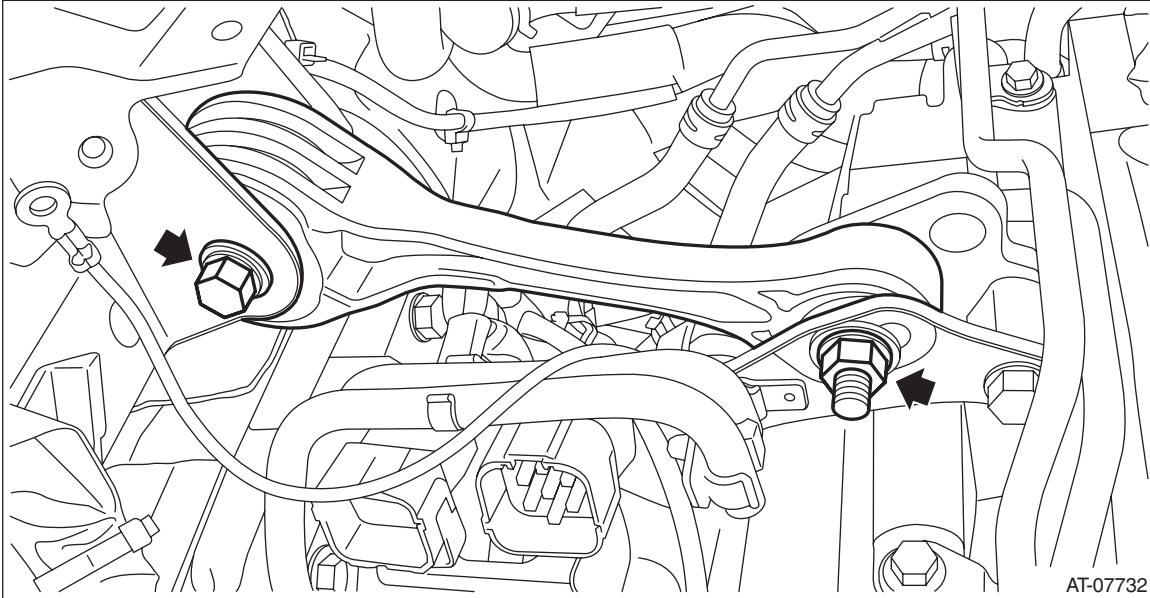


8) Remove the starter.<Ref. to SC(H4DOTC)-2, General Description.>

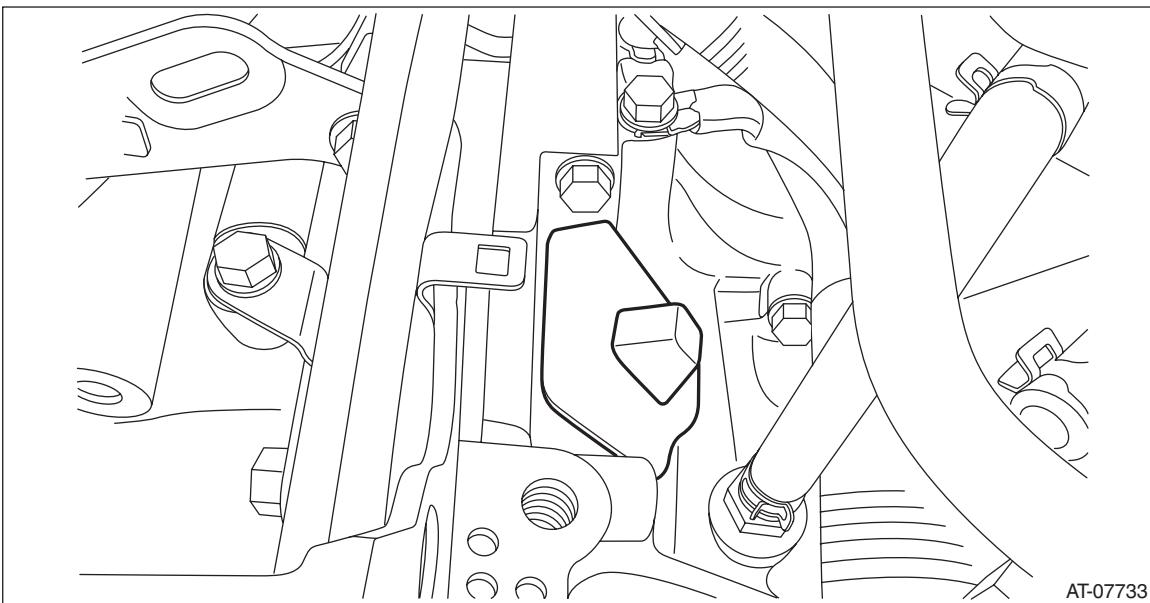
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

9) Remove the pitching stopper.



10) Remove the service hole plug.



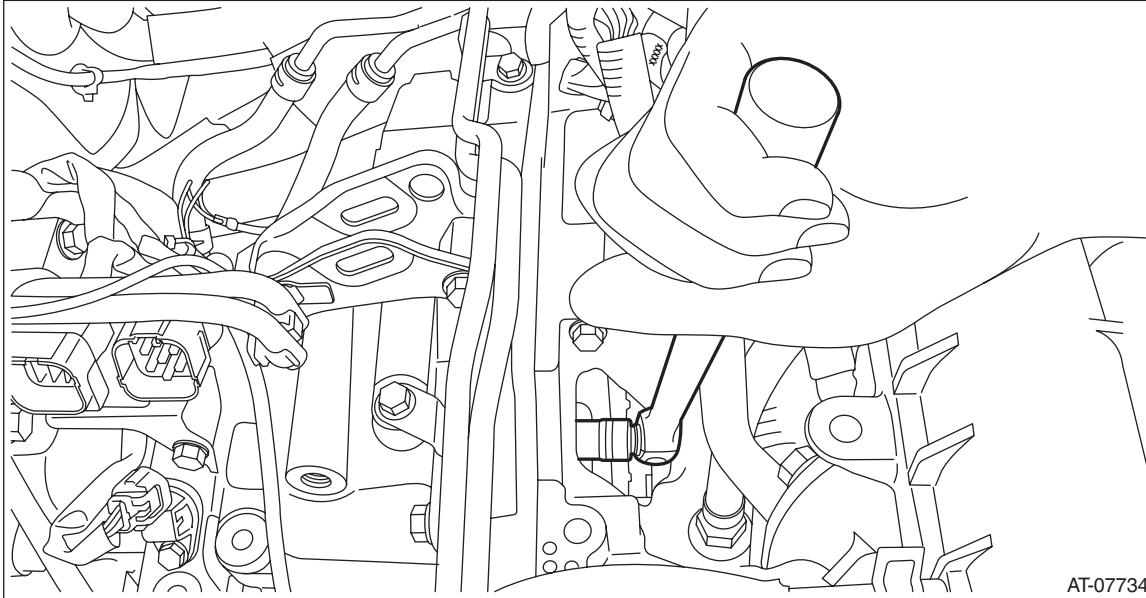
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

11) Remove the four bolts combining the torque converter and drive plate while rotating the crank pulley a little at a time in the same direction as engine revolution.

CAUTION:

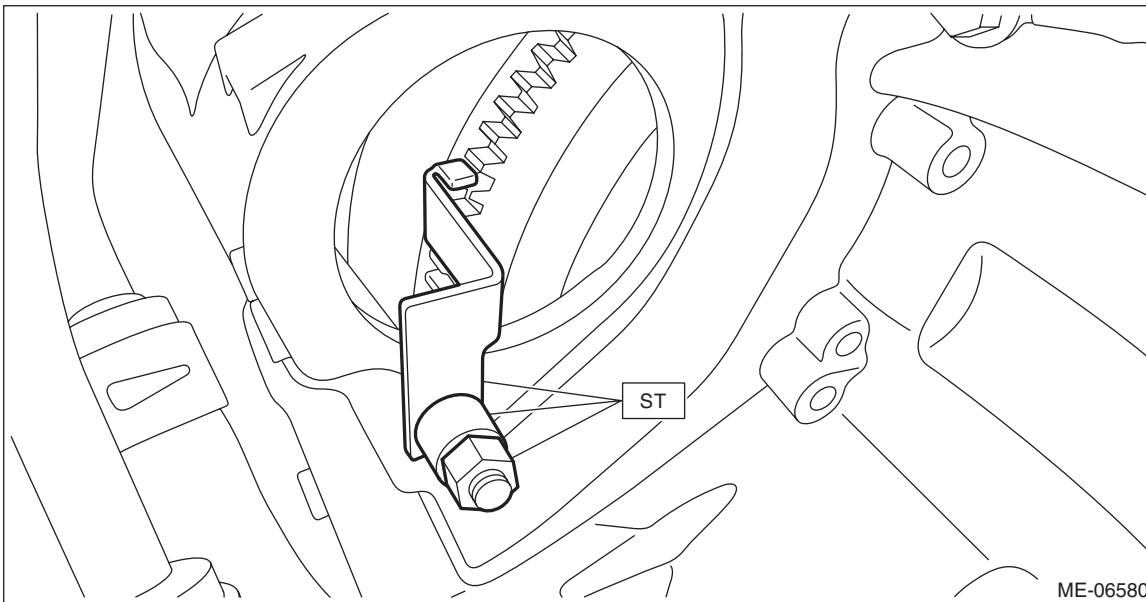
- Be careful not to drop bolts into the converter housing.
- Be careful not to damage the mounting bolts.



12) Make sure the torque converter moves freely by rotating with finger through the starter installation hole.

13) Attach the ST to the converter case.

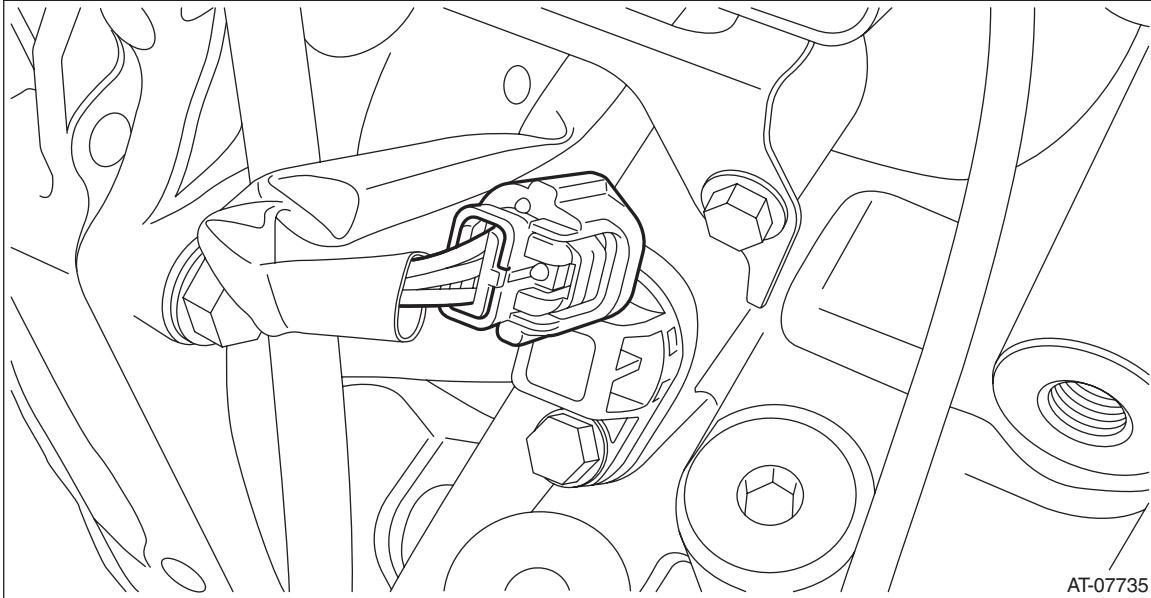
ST 498277200 STOPPER SET



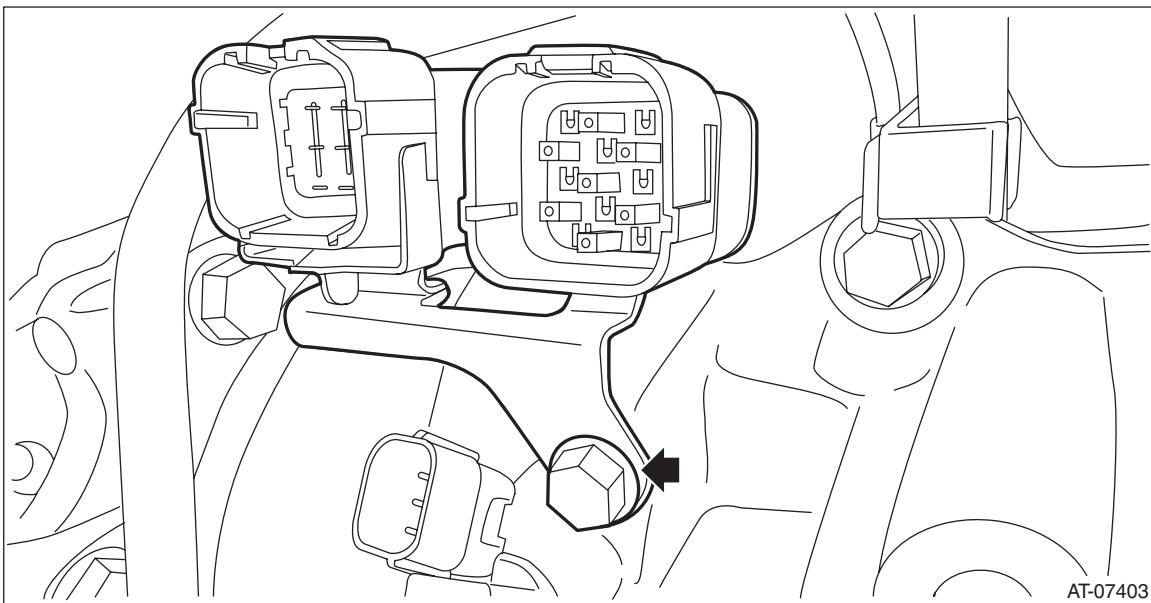
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

- 14) Remove the primary speed sensor harness connector.



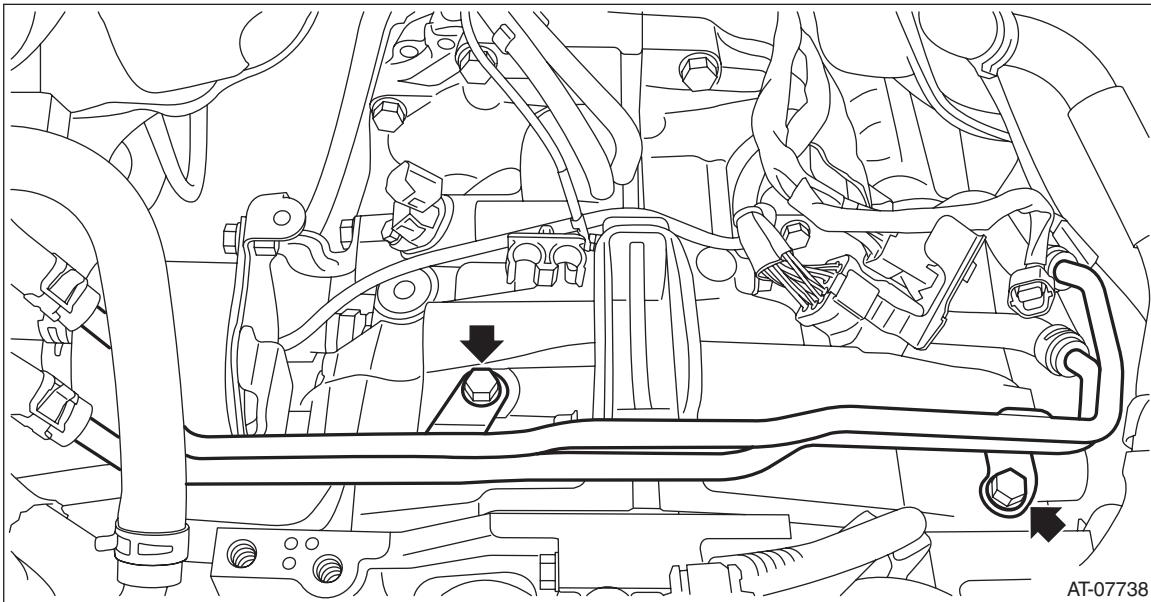
- 15) Remove the transmission harness stay.



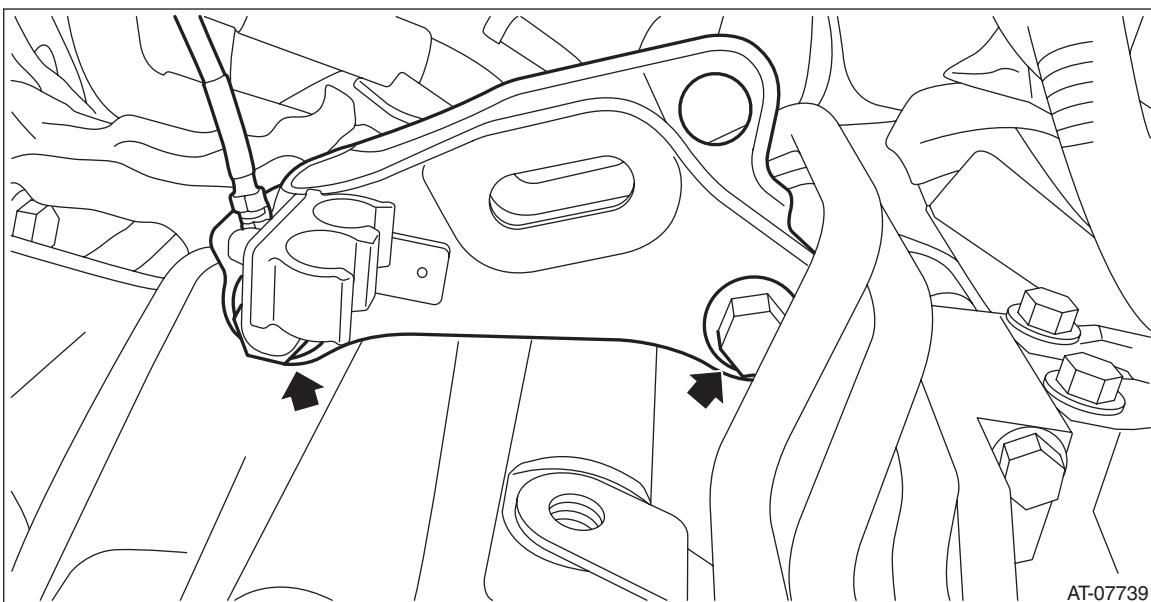
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

16) Remove the CVTF cooler pipe COMPL mounting bolt.



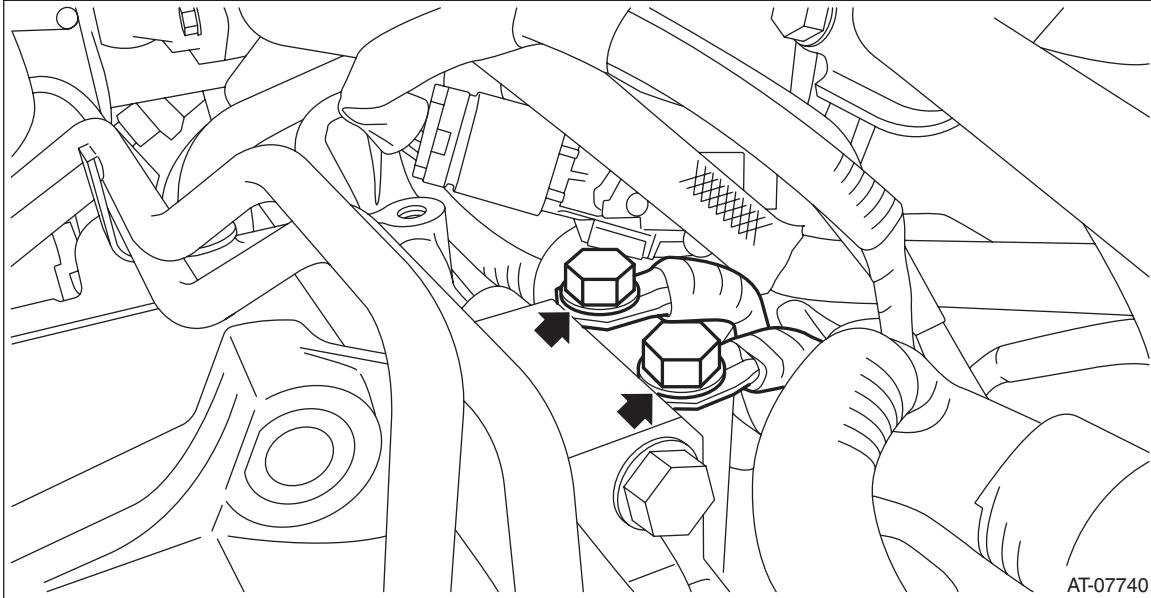
17) Remove the air breather hose from the pitching stopper bracket, and then remove the pitching stopper bracket and transmission radio ground cord.



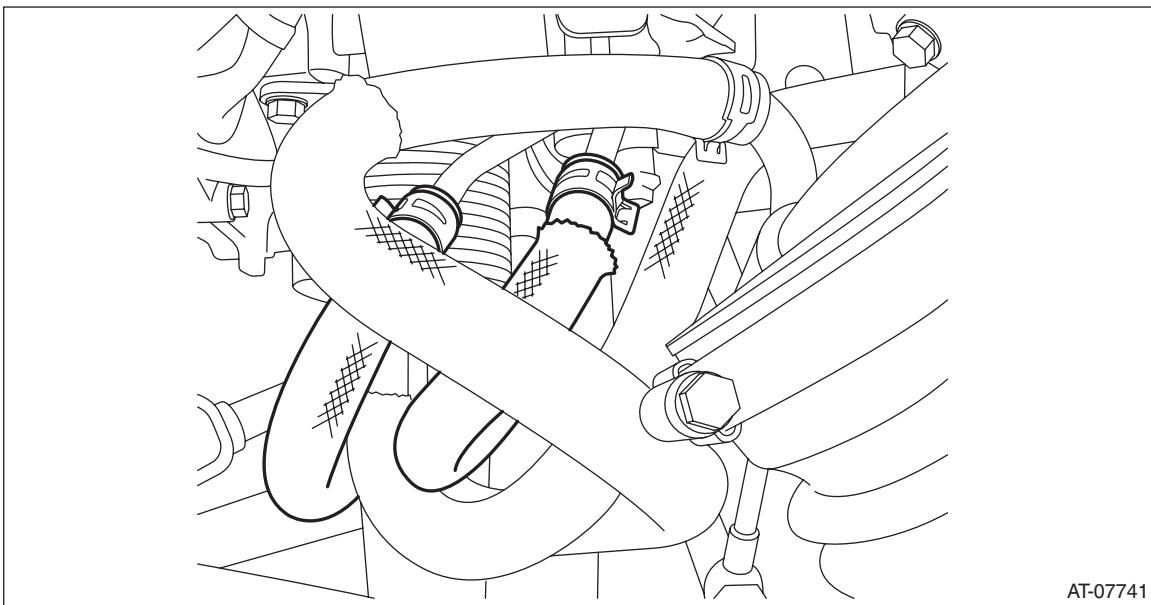
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

- 18) Remove the engine ground terminal.



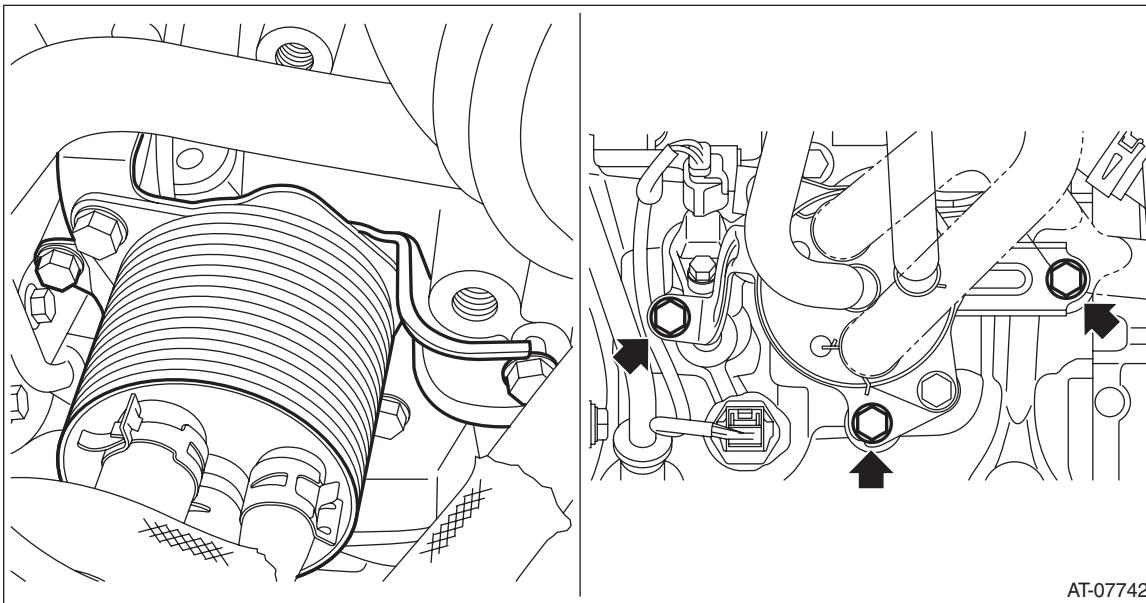
- 19) Remove the CVTF inlet hose and outlet hose from the CVTF cooler pipe COMPL.



Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

20) Remove the CVTF cooler (with warmer feature) from the transmission, and using a piece of wire, affix to a location of the body where it will not interfere with the removal of the transmission.

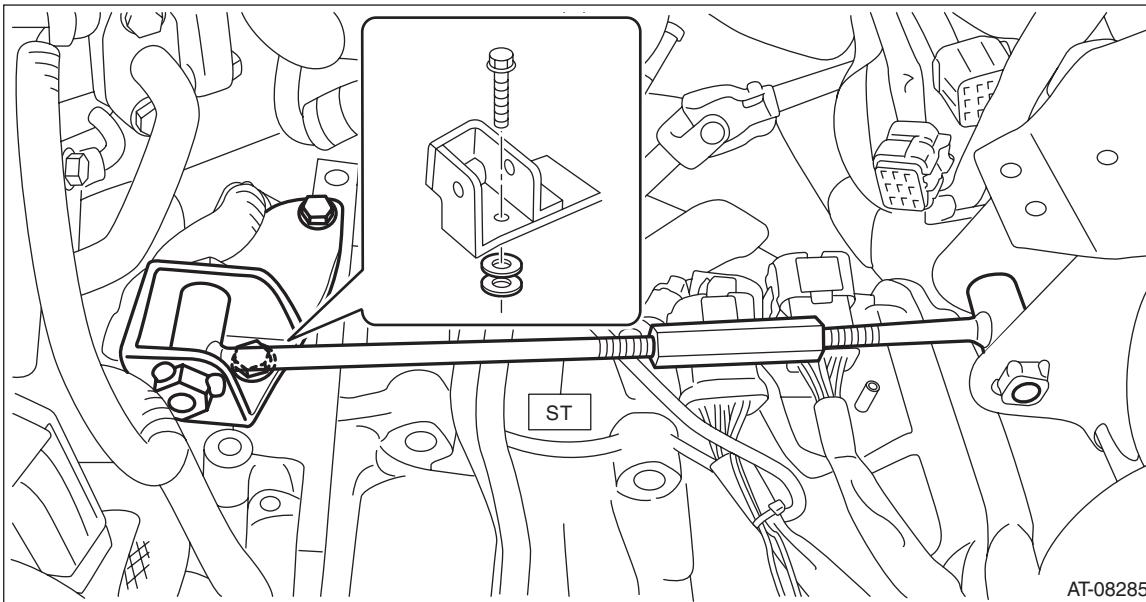


21) Set the ST.

ST 41099AC000 ENGINE SUPPORT ASSY

NOTE:

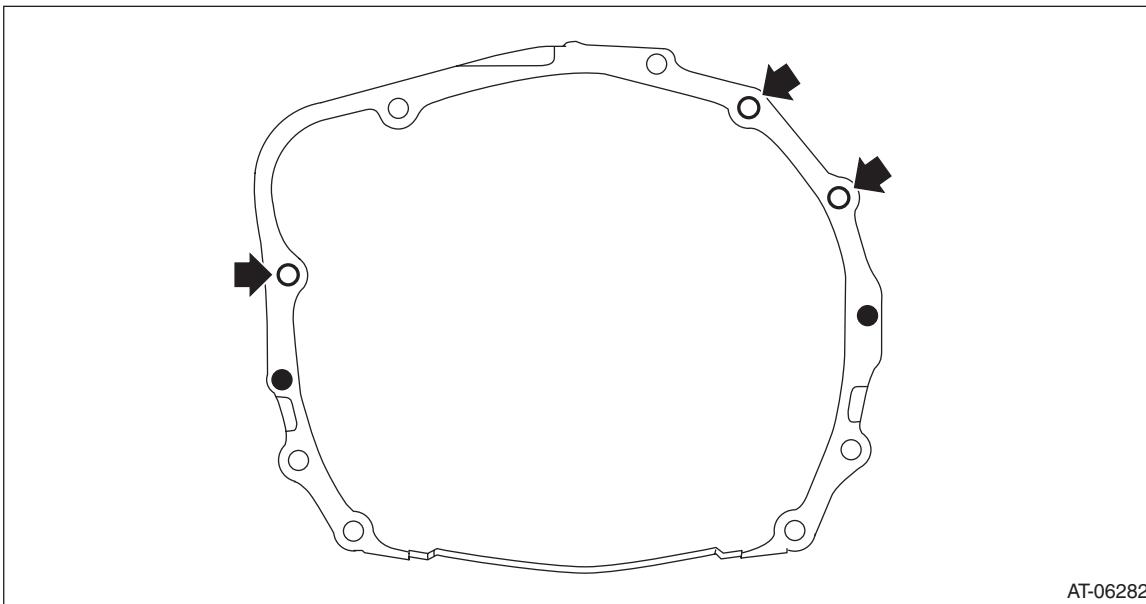
Place a washer with 4 mm (0.16 in) thickness into the gap between the engine block and ST.



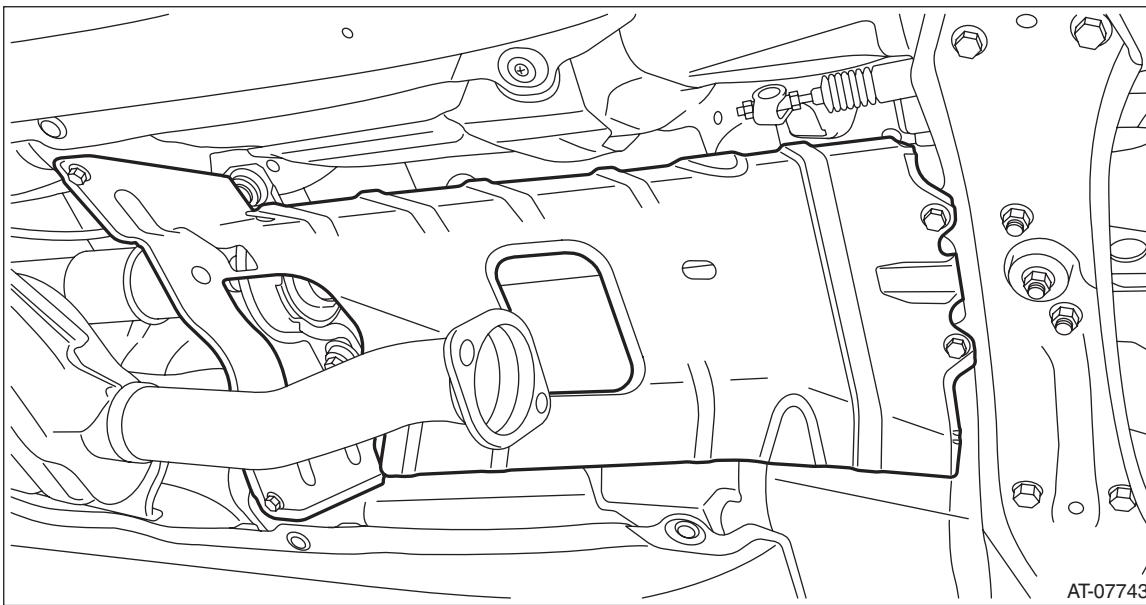
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

22) Remove the three transmission connecting bolts.



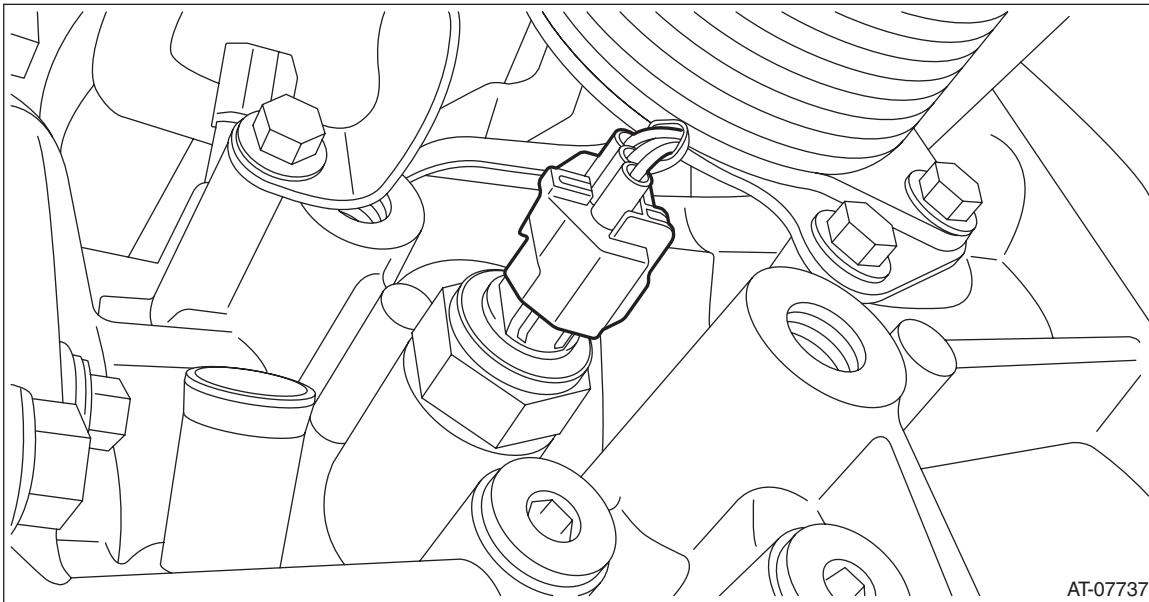
23) Lift up the vehicle.
24) Remove the under cover.
25) Remove the center exhaust pipe.<Ref. to EX(H4DOTC)-30, REMOVAL, Center Exhaust Pipe.>
26) Remove the exhaust hanger bracket.
27) Remove the CVTF drain plug to drain CVTF.<Ref. to CVT(TR690)-38, REPLACEMENT, CVTF.>
28) Remove the center exhaust cover.



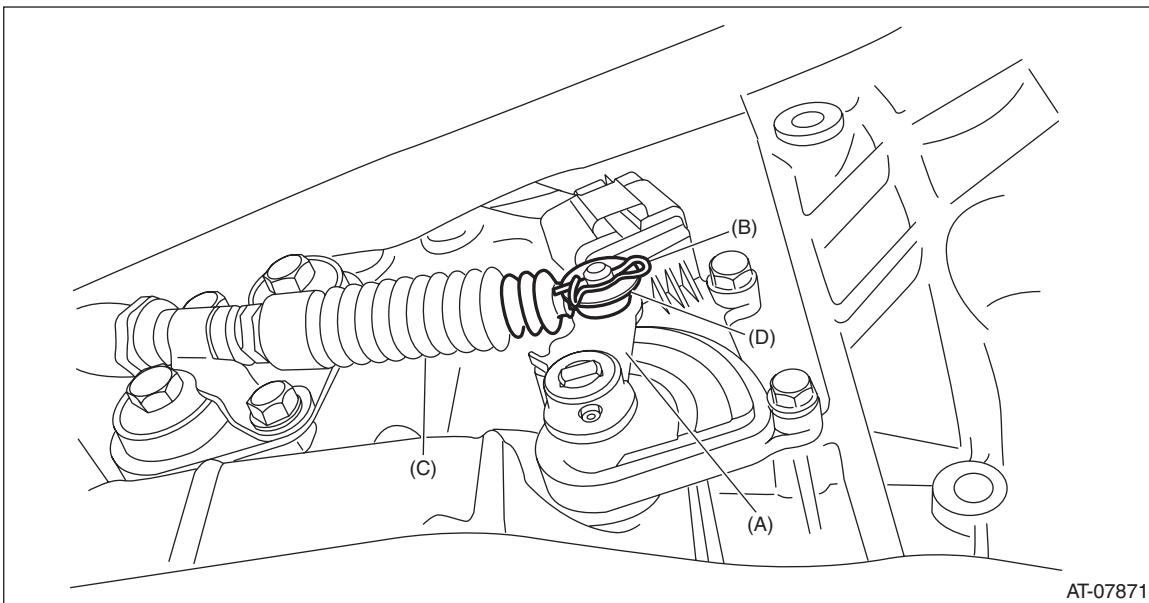
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

29) Remove the secondary pressure sensor harness connector.



30) Remove the snap pin and washer from shifter arm and remove the select cable from shifter arm.

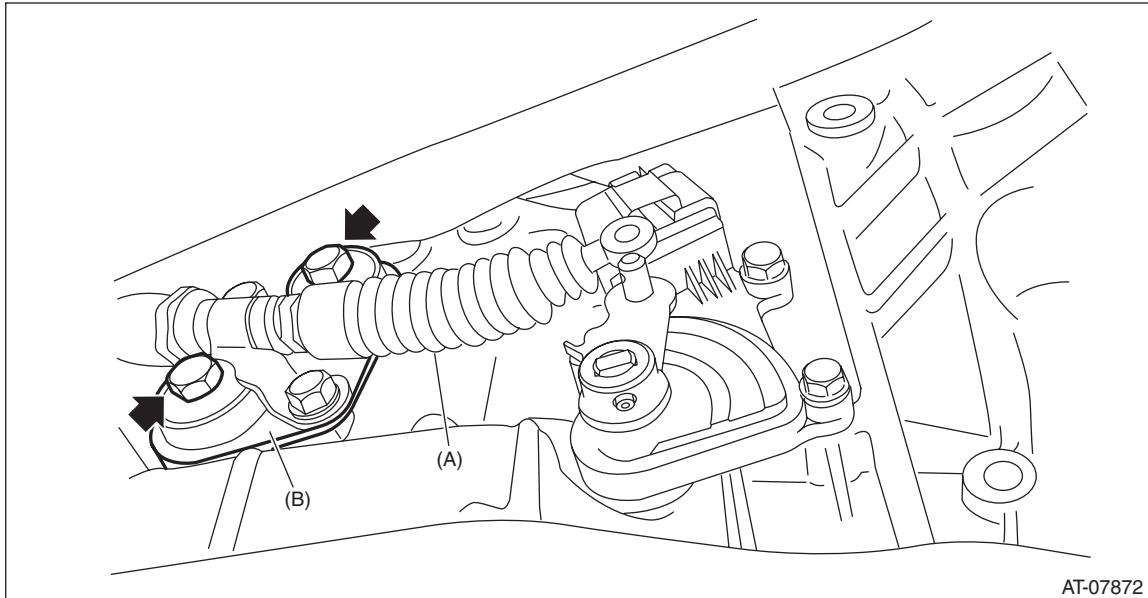


- (A) Shifter arm
- (B) Snap pin
- (C) Select cable
- (D) Washer

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

31) Remove the plate assembly from the transmission case.



(A) Select cable
(B) Plate ASSY

32) Drain differential gear oil.<Ref. to CVT(TR690)-43, REPLACEMENT, Differential Gear Oil.>

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

34) Remove the stabilizer link.<Ref. to FS-29, REMOVAL, Front Stabilizer.>

35) Disconnect the lower arm ball joint and housing.

36) Pull out the front drive shaft from transmission using a crowbar.

NOTE:

Place cloth between the tire lever or bar and the transmission in order to avoid damaging the transmission side retainer.

37) Holding the joint of front drive shaft from transmission side, pull out the drive shaft from transmission with care not to stretch the boot.

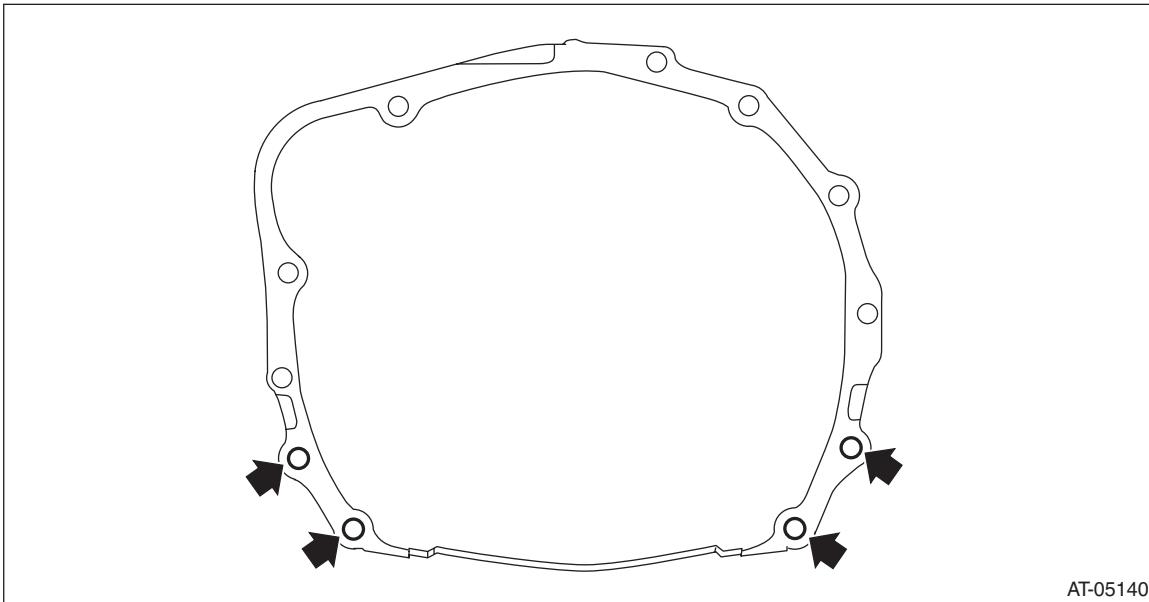
NOTE:

- Before pulling RH front drive shaft from transmission, turn the steering wheel to left hand full lock.
- Before pulling LH front drive shaft from transmission, turn the steering wheel to right hand full lock.

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

38) Remove the two transmission connecting bolts and two nuts (lower side).

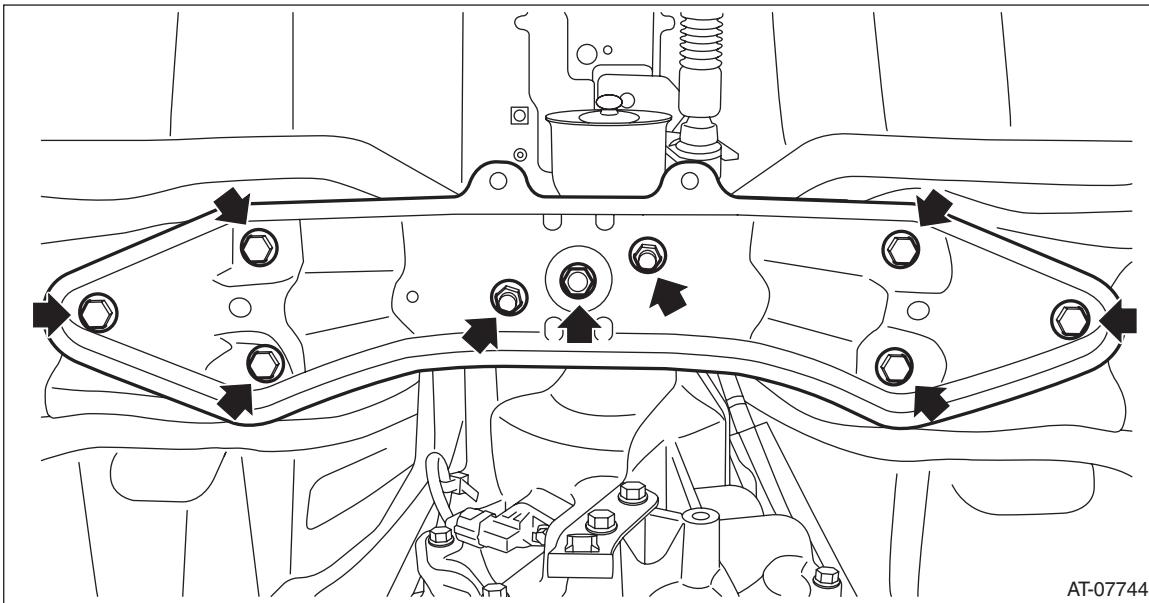


39) Set the transmission jack under the transmission.

NOTE:

Make sure that the support plates of transmission jack do not touch the oil pan.

40) Remove the transmission rear crossmember from the vehicle.



41) While lowering the transmission jack gradually, fully retract the engine support, and then tilt the engine rearward.

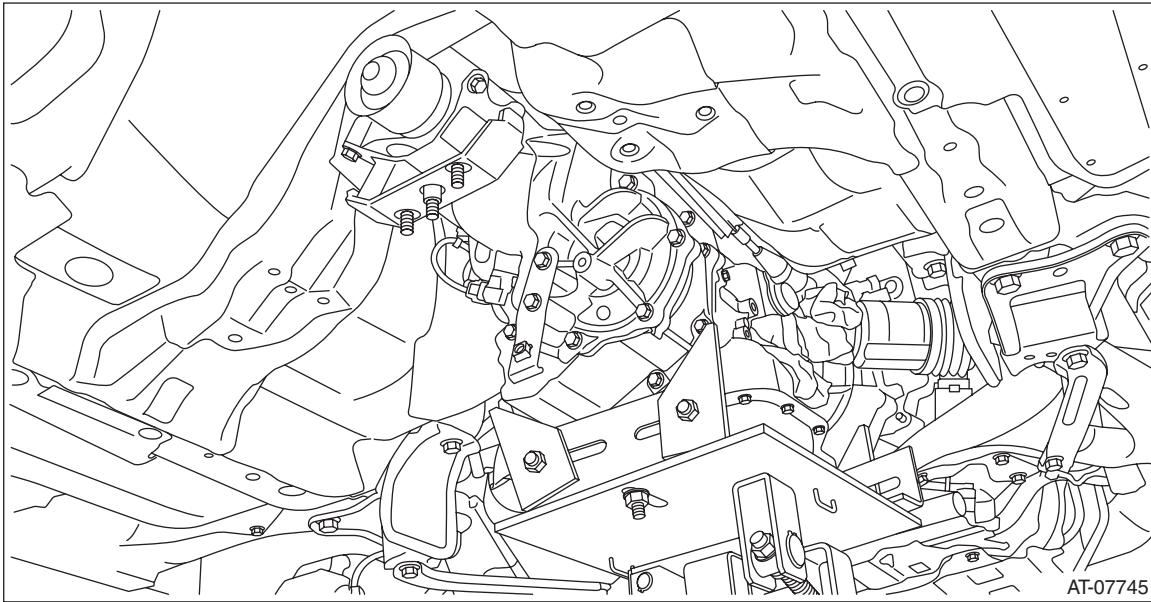
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

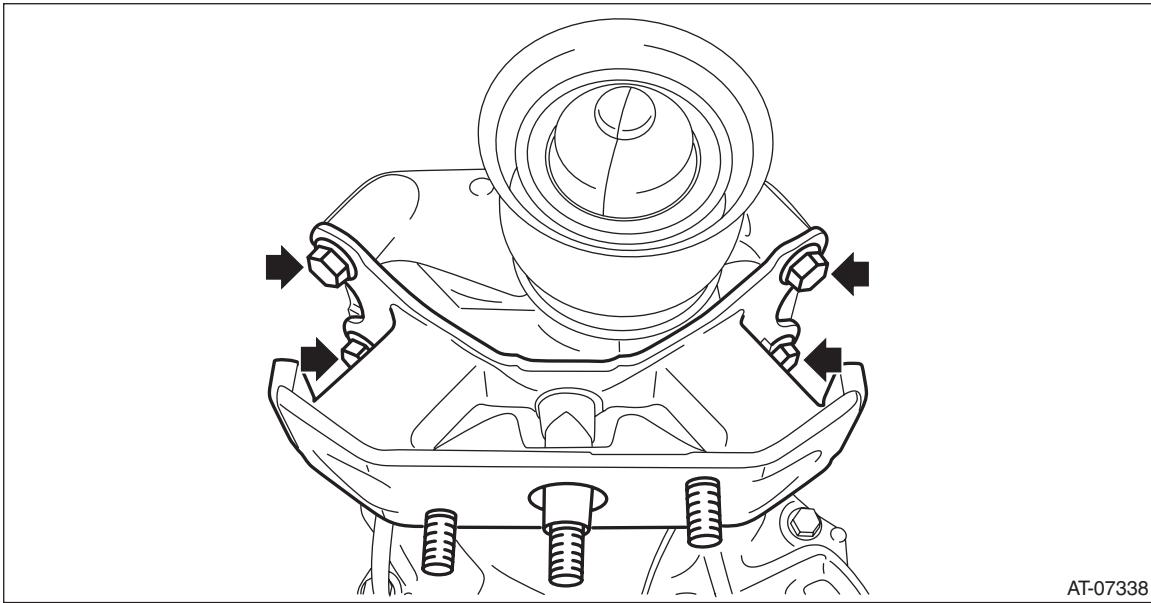
42) Remove the transmission assembly.

NOTE:

Remove it while moving the transmission jack up and down so that the engine and transmission remain directly aligned.

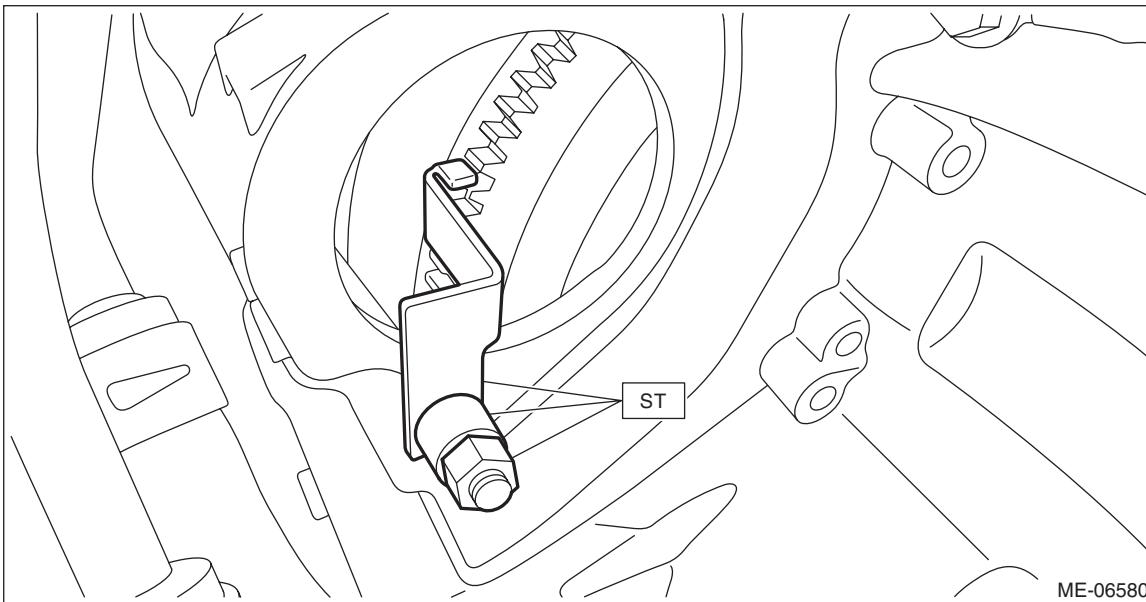


43) Remove the cushion rubber.



B: INSTALLATION

1) Attach the ST to converter case.
ST 498277200 STOPPER SET



2) When completely overhauling the transmission, refill approx. 10 L (2.6 US qt, 8.8 Imp qt) of CVTF through the transmission right side plug, and install the plug.

CAUTION:

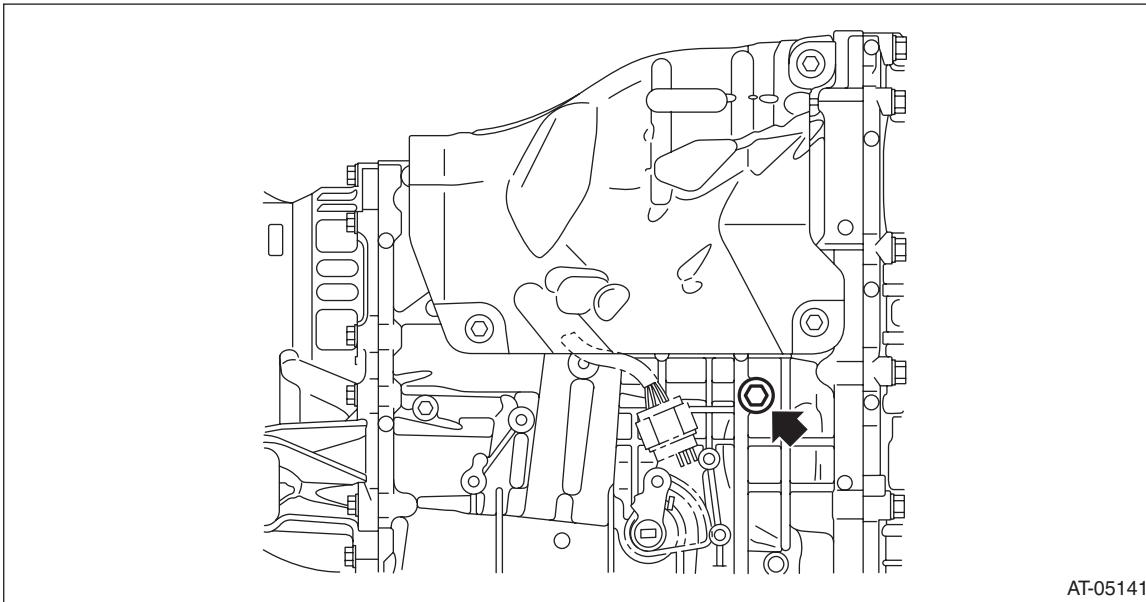
Always use specified CVTF. Using other fluid will cause malfunction. *<Ref. to CVT(TR690)-4, HYDRAULIC CONTROL AND LUBRICATION, SPECIFICATION, General Description. >*

NOTE:

Use a new gasket.

Tightening torque:

35 N·m (3.6 kgf·m, 25.8 ft-lb)



Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

3) Replace the front differential side retainer oil seal.<Ref. to CVT(TR690)-89, REPLACEMENT, Differential Side Retainer Oil Seal.>

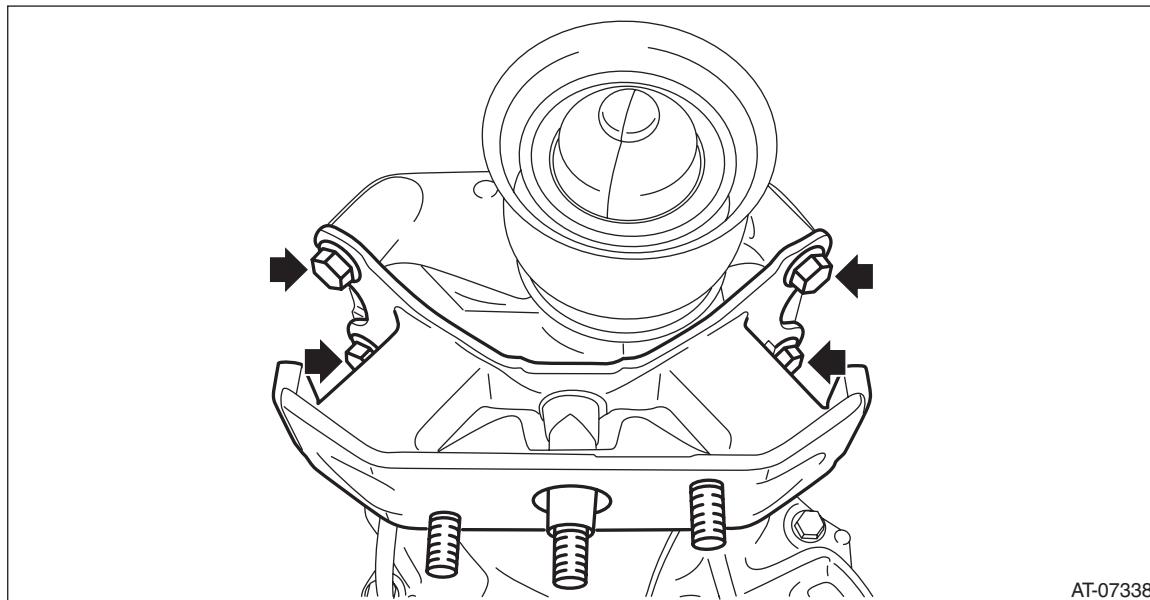
NOTE:

- Be sure to replace the differential side retainer oil seal with a new part whenever the front drive shaft is removed from the transmission.
- When a new differential side retainer oil seal has been installed, replacement is not required.

4) Install the cushion rubber on the transmission.

Tightening torque:

40 N·m (4.1 kgf·m, 29.5 ft-lb)

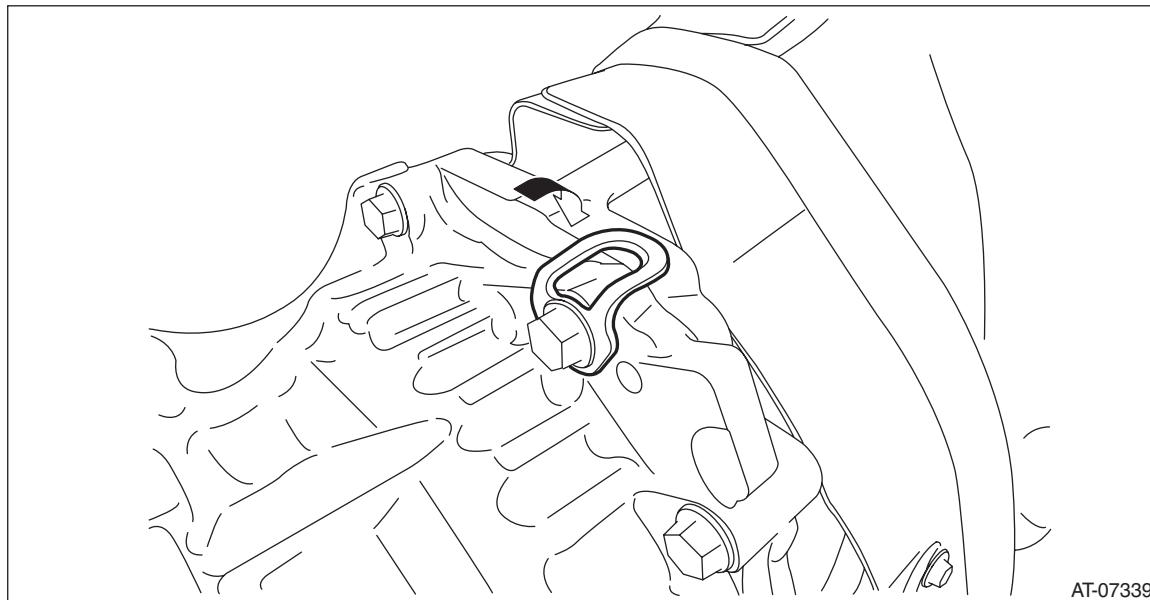


5) Mount the transmission onto the transmission jack.

6) Strike and bend the transmission hanger of transmission rear with a rubber hammer etc. so that it gets in contact with the transmission case.

CAUTION:

Do not apply extra overload or impact to the transmission case.



7) Remove the pitching stopper bracket, if mounted.

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

8) Install the transmission onto the engine.

NOTE:

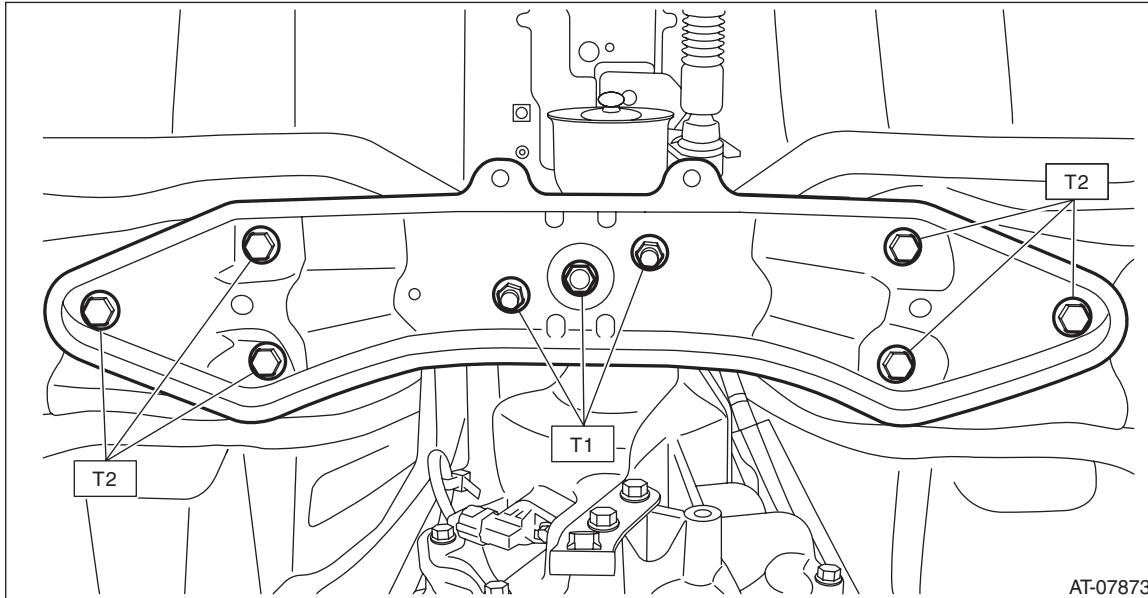
- While raising the transmission jack gradually, turn the screw of engine support, then tilt the engine forward.
- Temporarily attach the two engine connecting bolts and two nuts (lower side).

9) Install the transmission rear crossmember.

Tightening torque:

T1: 35 N·m (3.6 kgf-m, 25.8 ft-lb)

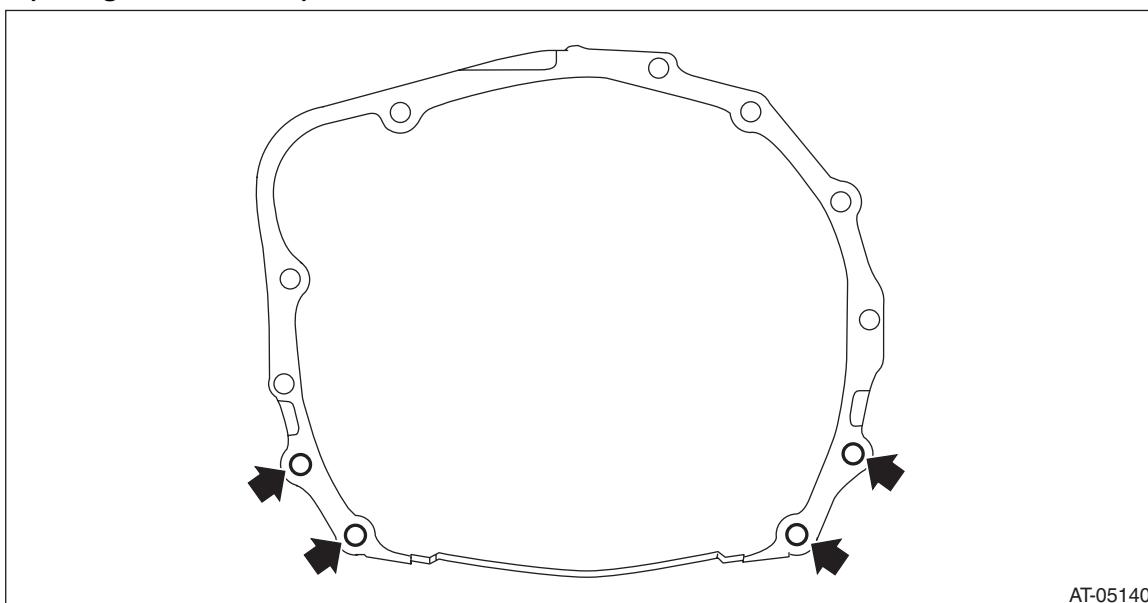
T2: 70 N·m (7.1 kgf-m, 51.6 ft-lb)



10) Tighten the two engine connecting bolts and two nuts (lower side).

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



11) Remove the transmission jack.

12) Lower the vehicle.

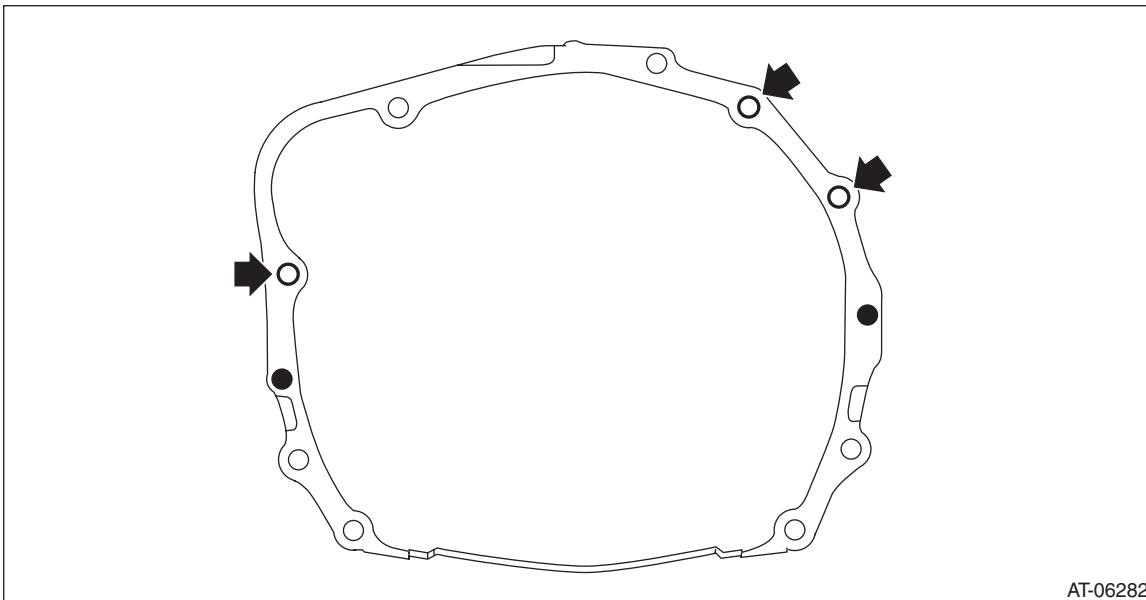
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

13) Install the three engine mounting bolts (upper side).

Tightening torque:

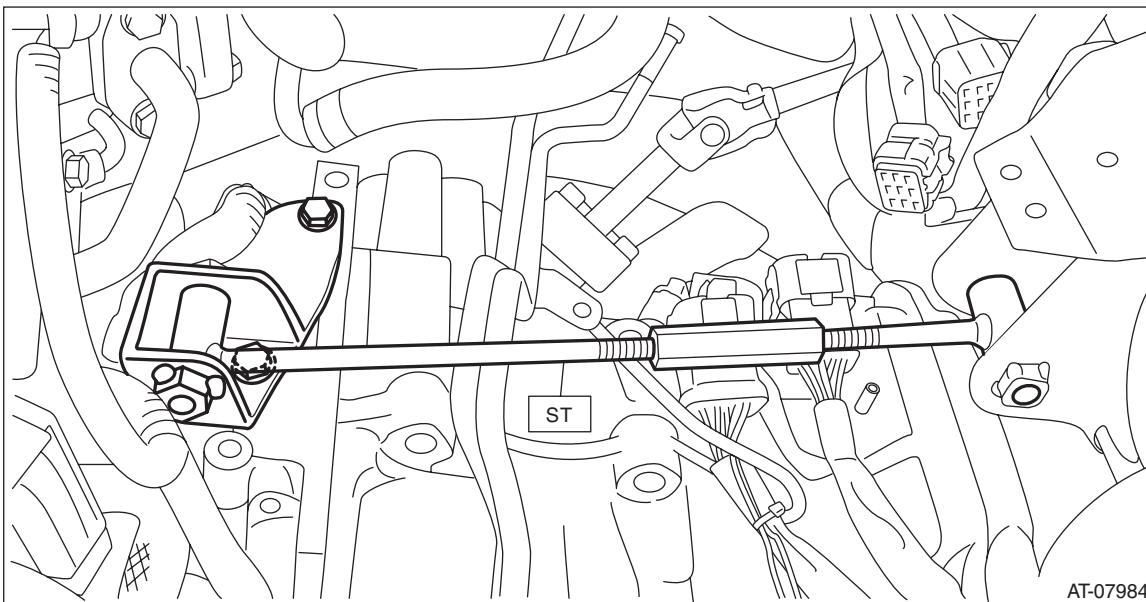
50 N·m (5.1 kgf·m, 36.9 ft-lb)



14) Remove the ST (STOPPER SET) from converter case.

15) Remove the ST (ENGINE SUPPORT ASSY).

ST 41099AC000 ENGINE SUPPORT ASSY



16) Match the torque converter screw hole with drive plate hole to install the bolt.

CAUTION:

- Do not drop the mounting bolt in the converter housing.
- Do not damage the mounting bolt.

Tightening torque:

25 N·m (2.5 kgf·m, 18.4 ft-lb)

17) Install the remaining three bolts by rotating the crank pulley a little at a time in the same direction as engine revolution.

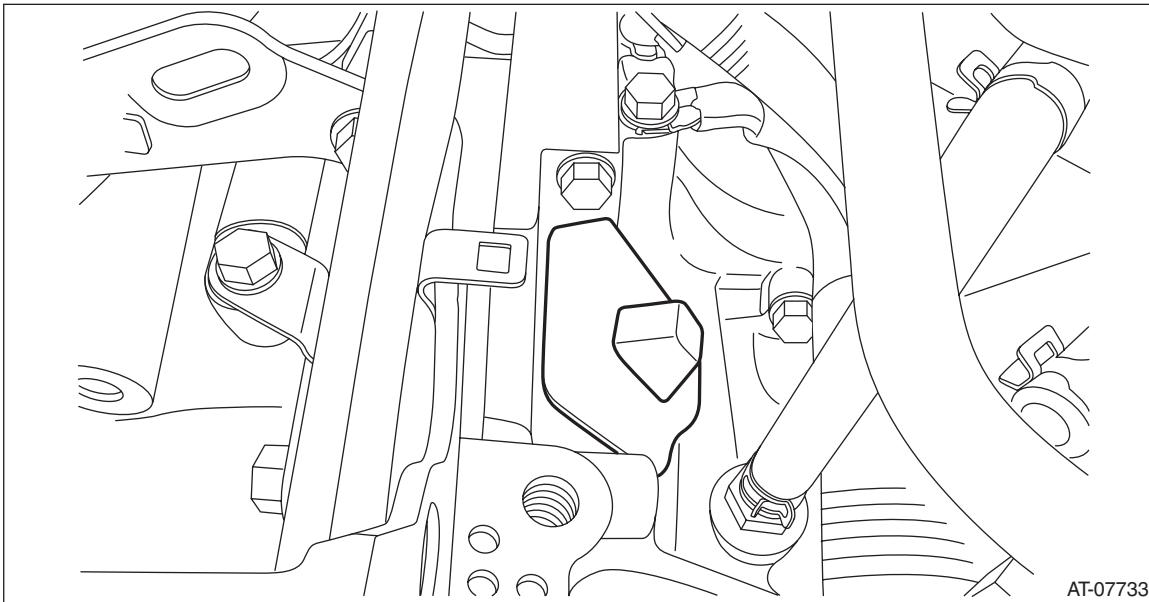
Tightening torque:

25 N·m (2.5 kgf·m, 18.4 ft-lb)

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

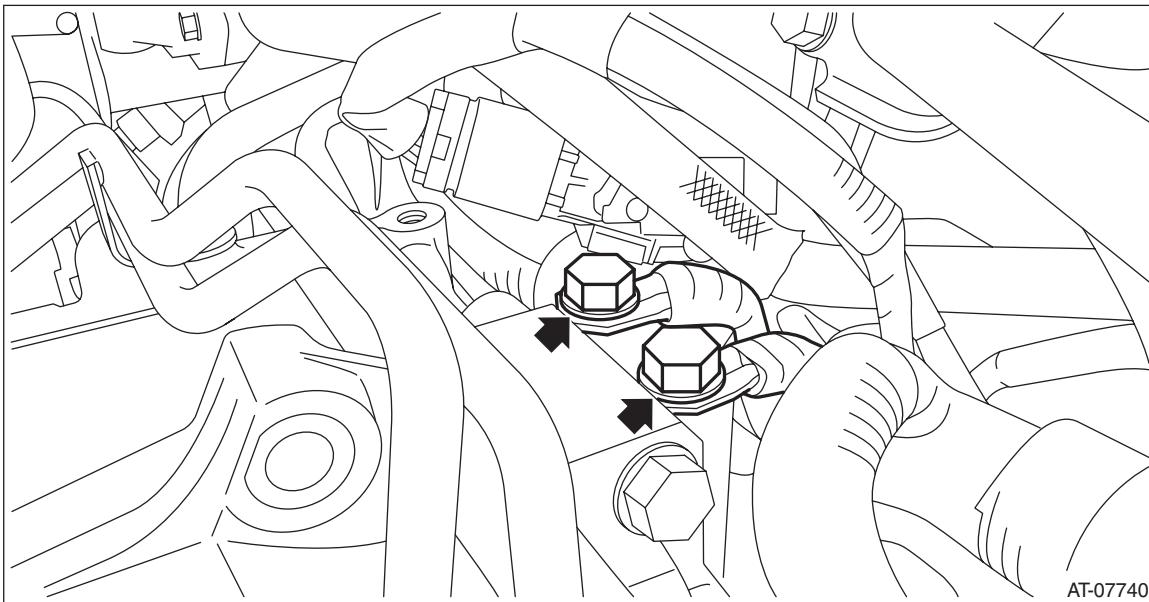
18) Install the service hole plug.



19) Install the engine ground terminals.

Tightening torque:

19 N·m (1.9 kgf·m, 14.0 ft·lb)



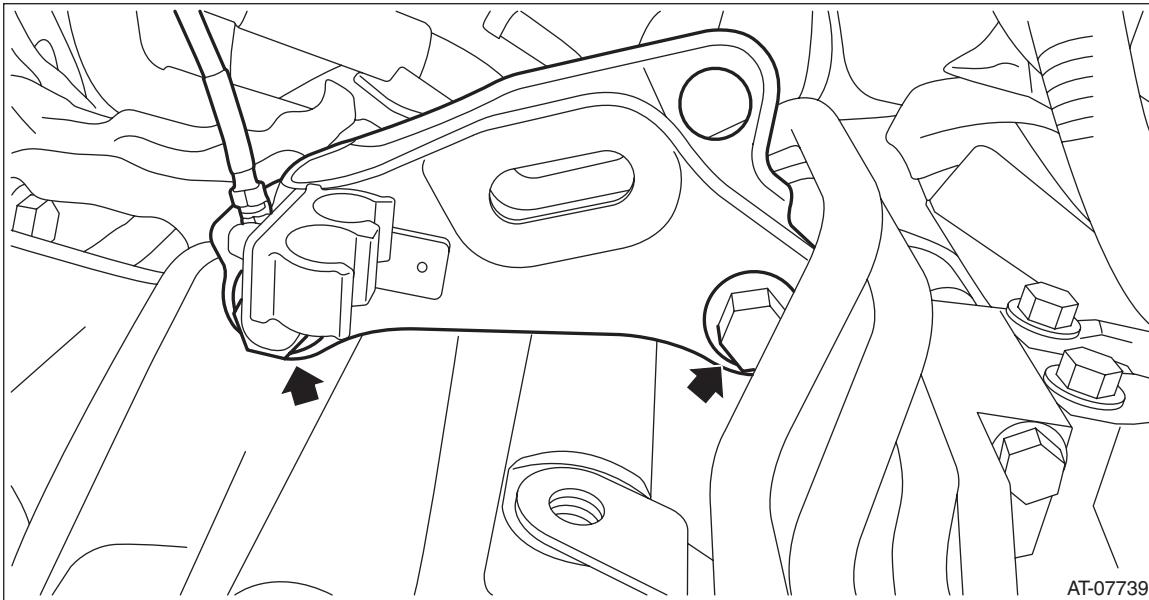
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

20) Install the pitching stopper bracket and transmission radio ground cord.

Tightening torque:

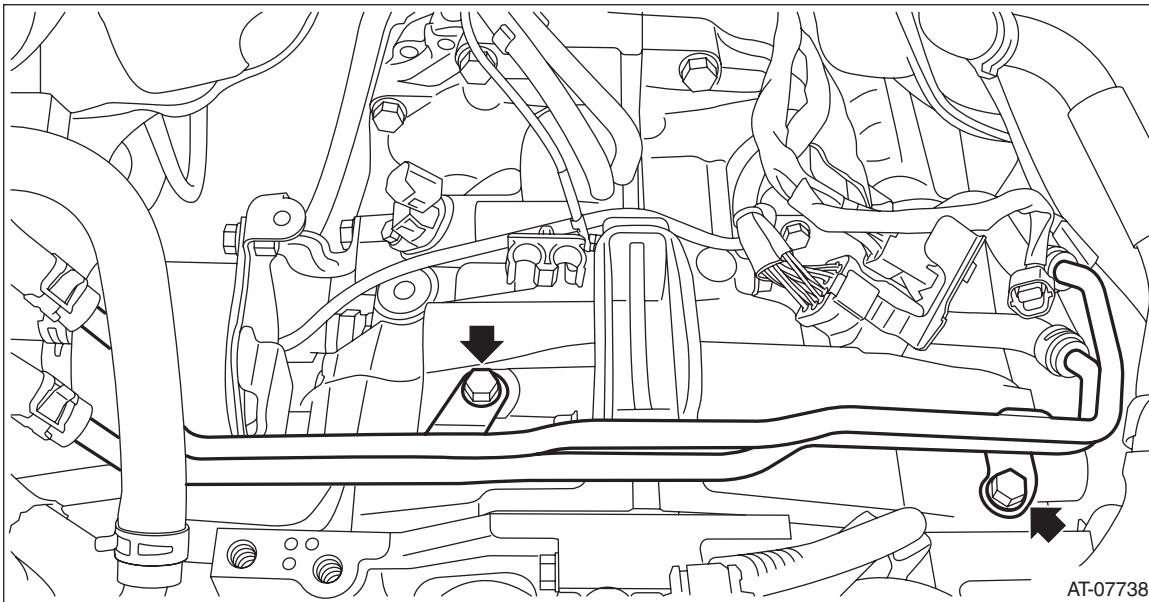
41 N·m (4.2 kgf·m, 30.2 ft-lb)



21) Install the CVTF cooler pipe COMPL.

Tightening torque:

16 N·m (1.6 kgf·m, 11.8 ft-lb)



22) Install the starter.<Ref. to SC(H4DOTC)-2, General Description.>

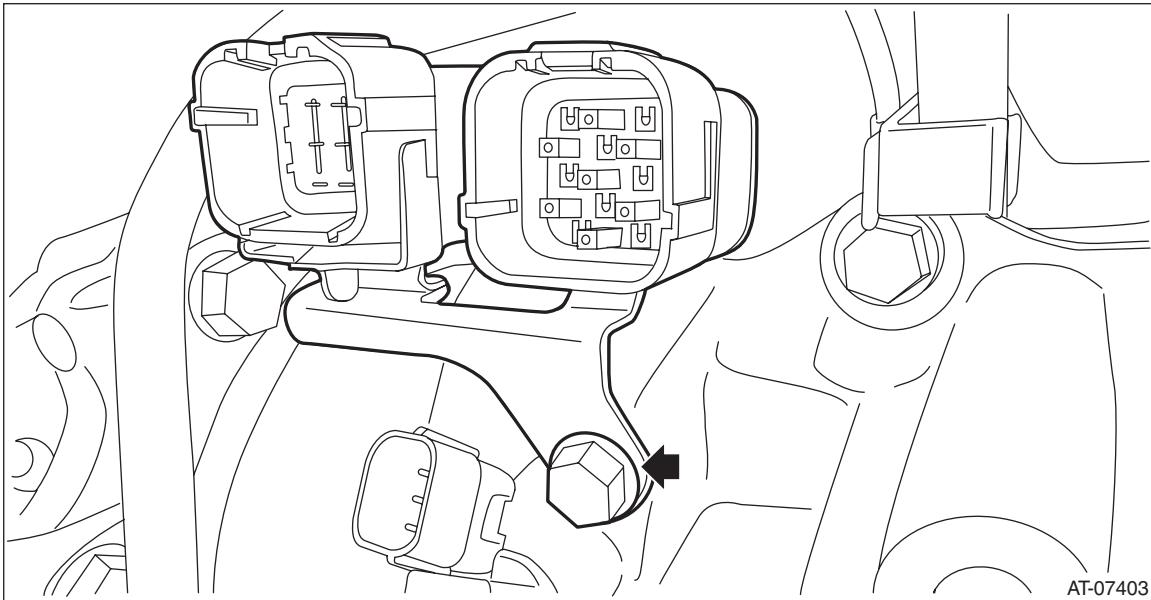
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

23) Install the transmission harness stay.

Tightening torque:

16 N·m (1.6 kgf-m, 11.8 ft-lb)

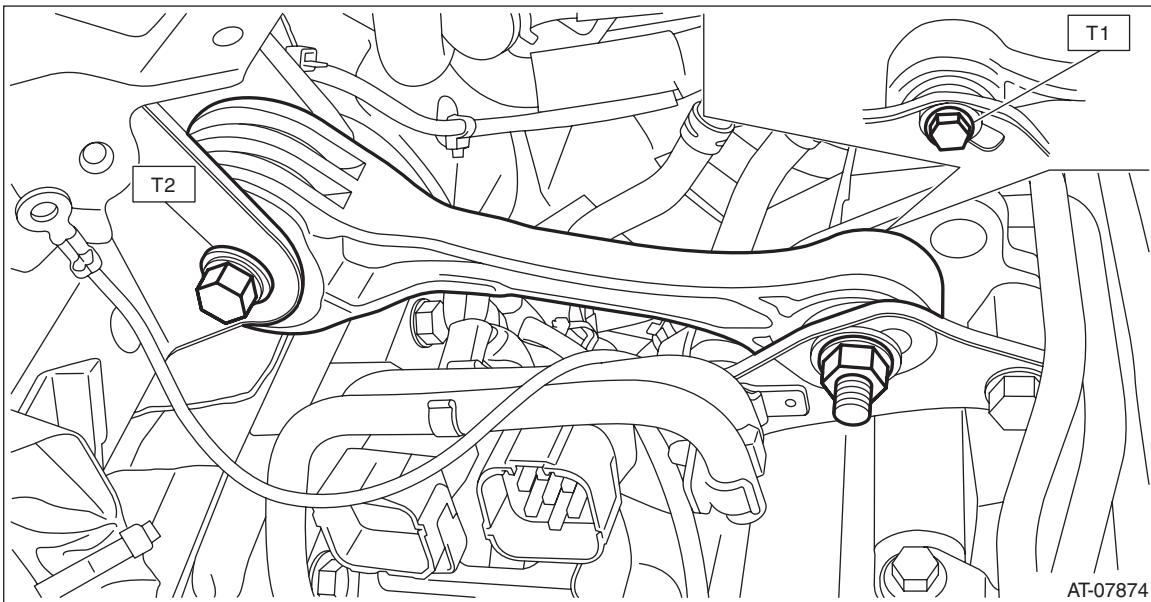


24) Install the pitching stopper.

Tightening torque:

T1: 50 N·m (5.1 kgf-m, 36.9 ft-lb)

T2: 58 N·m (5.9 kgf-m, 42.8 ft-lb)



25) Lift up the vehicle.

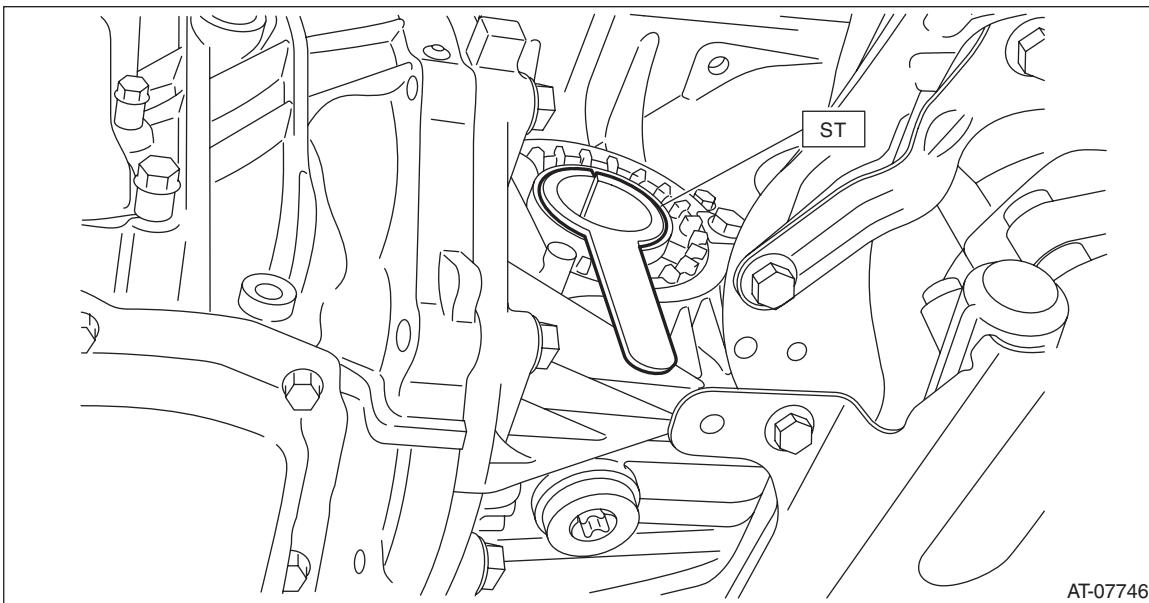
26) Apply grease to the side retainer oil seal lip.

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

27) Set the ST to side retainer.

ST 28399SA010 OIL SEAL PROTECTOR



28) Replace the circlip of the drive shaft with a new part.

29) Insert the front drive shaft spline section into transmission and remove the ST (OIL SEAL PROTECTOR).

NOTE:

- Before inserting RH front drive shaft into transmission, turn the steering wheel to left hand full lock.
- Before inserting LH front drive shaft into transmission, turn the steering wheel to right hand full lock.

30) Insert the drive shaft into the transmission securely by pressing the housing from outside of the vehicle.

31) Insert the ball joint into housing and secure with bolt.

Tightening torque:

50 N·m (5.1 kgf·m, 36.9 ft-lb)

CAUTION:

- Do not apply grease to the tapered portion of ball stud.
- Before tightening, make sure the lower side of housing and stepped section of ball joint are in contact.

32) Install the stabilizer link.

Tightening torque:

60 N·m (6.1 kgf·m, 44.3 ft-lb)

33) Install the propeller shaft.<Ref. to DS-14, INSTALLATION, Propeller Shaft.>

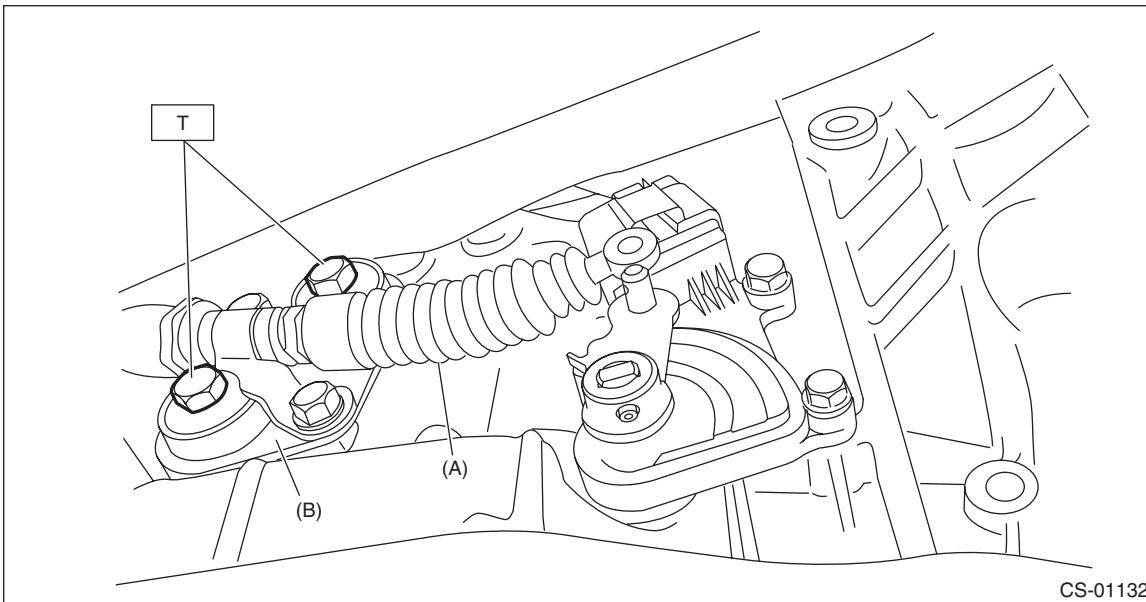
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

34) Install the plate assembly to transmission.

Tightening torque:

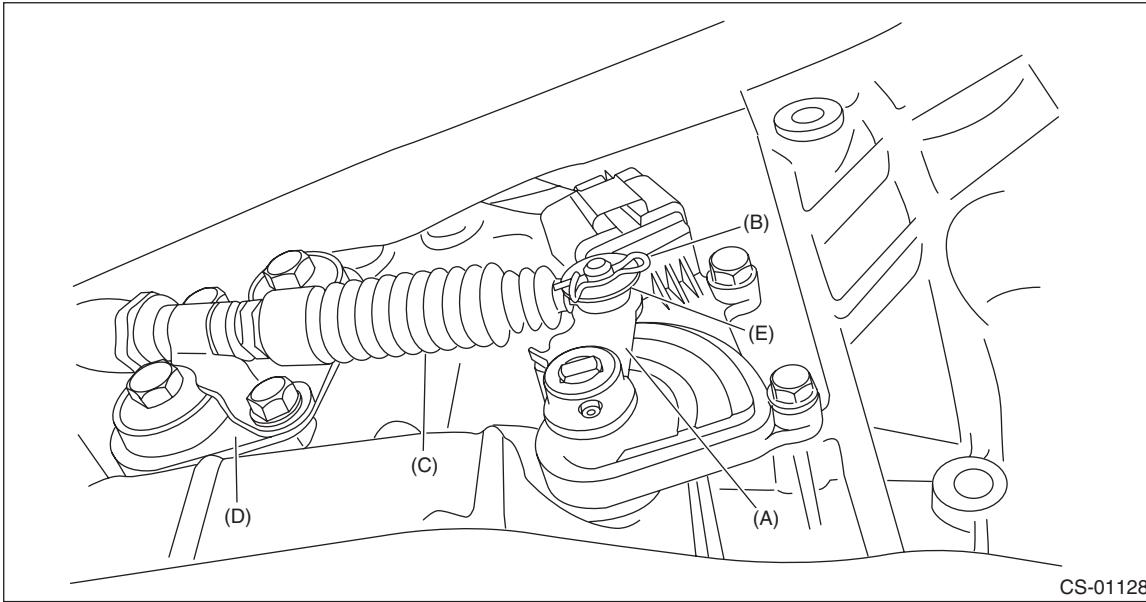
T: 25 N·m (2.5 kgf-m, 18.4 ft-lb)



(A) Select cable

(B) Plate ASSY

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



(A) Shifter arm

(B) Snap pin

(C) Select cable

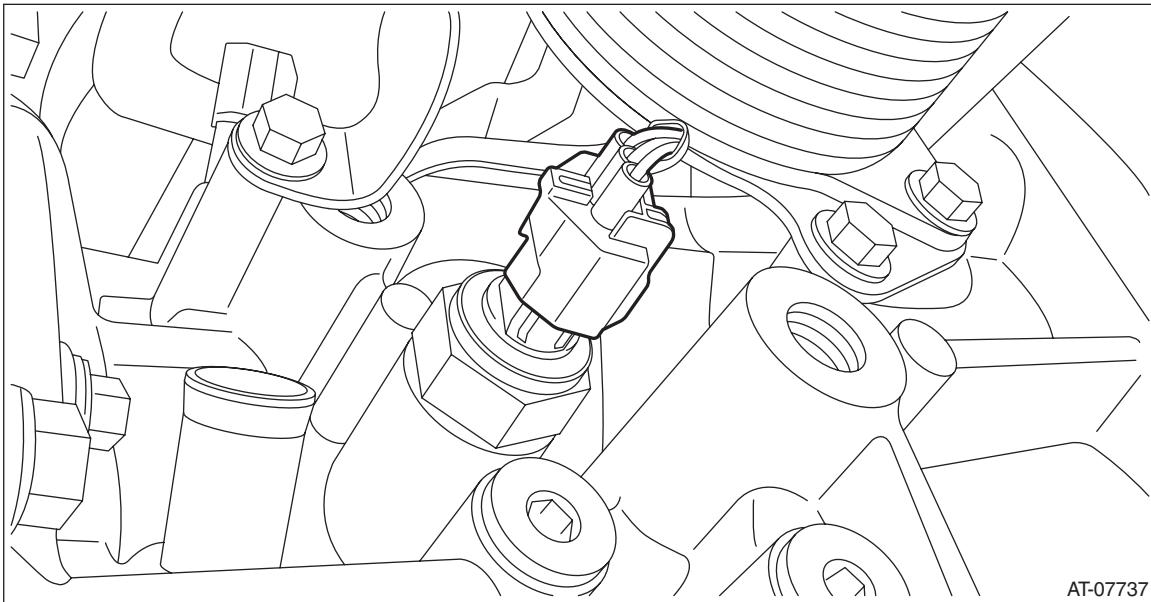
(D) Plate ASSY

(E) Washer

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

- 36) Connect the secondary pressure sensor harness connector.



- 37) Install the exhaust hanger bracket.

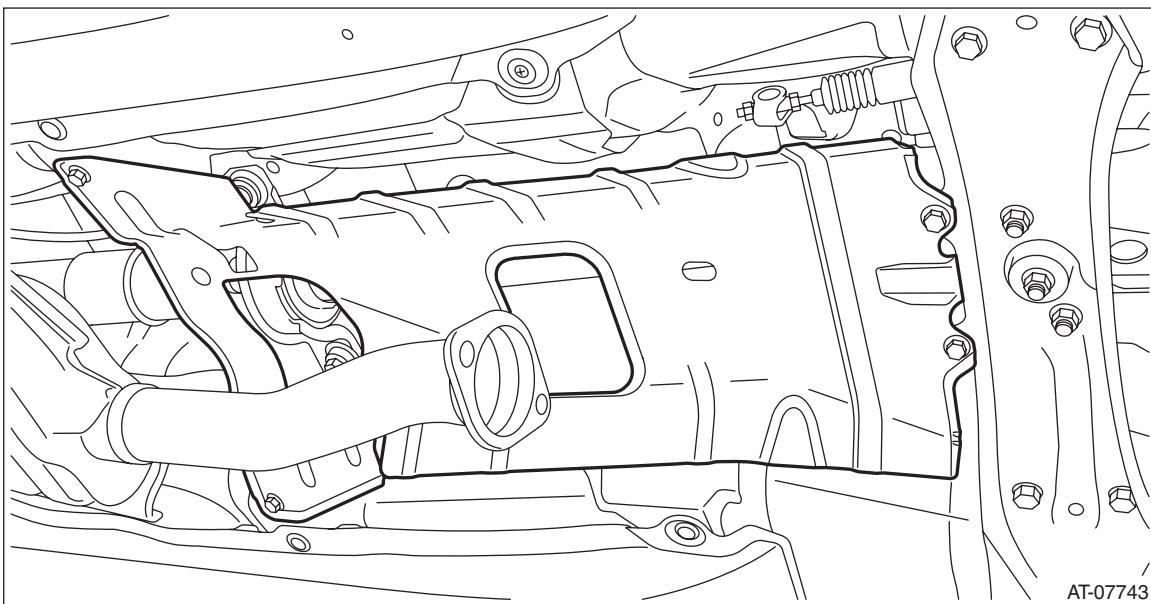
Tightening torque:

23 N·m (2.3 kgf·m, 17.0 ft·lb)

- 38) Install the center exhaust cover.

Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)



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

- 40) Install the under cover.

- 41) Lower the vehicle.

- 42) Replace the CVTF inlet hose and CVTF outlet hose.<Ref. to CVT(TR690)-132, ASSEMBLY, CVTF Cooler (With Warmer Function).>

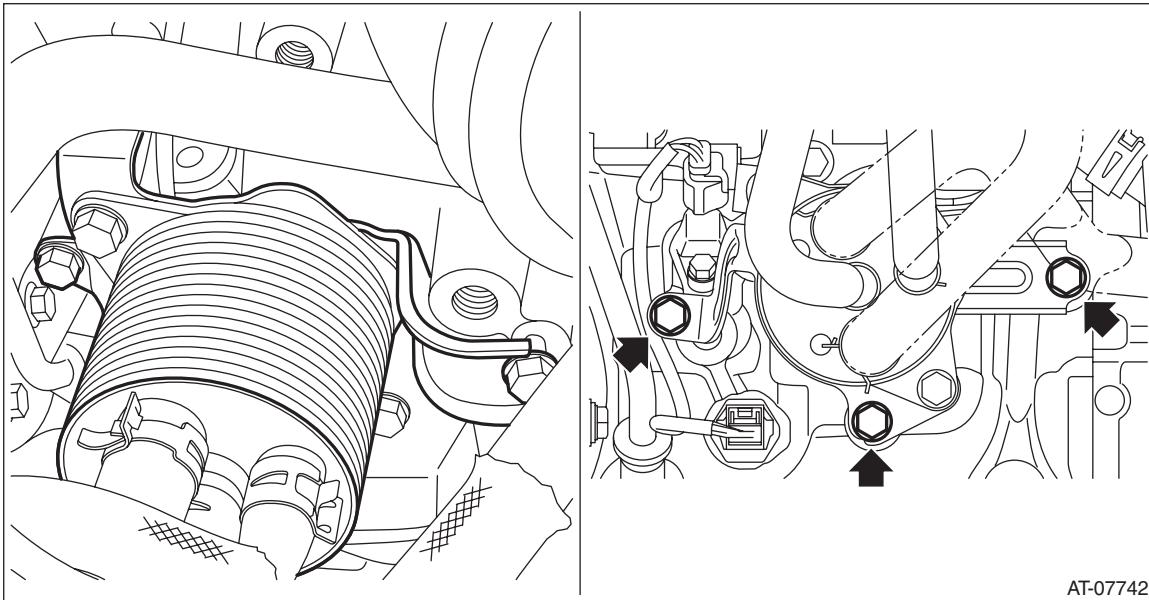
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

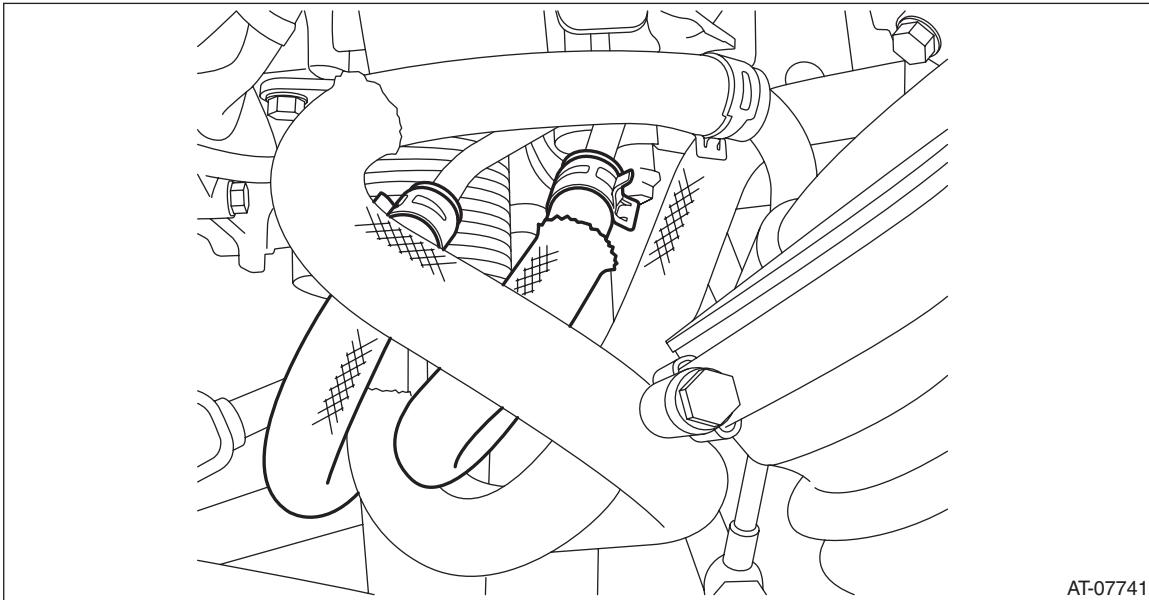
43) Install the CVTF cooler (with warmer feature) to the transmission.

Tightening torque:

23 N·m (2.3 kgf·m, 17.0 ft-lb)



44) Connect the CVTF inlet hose and the outlet hose.

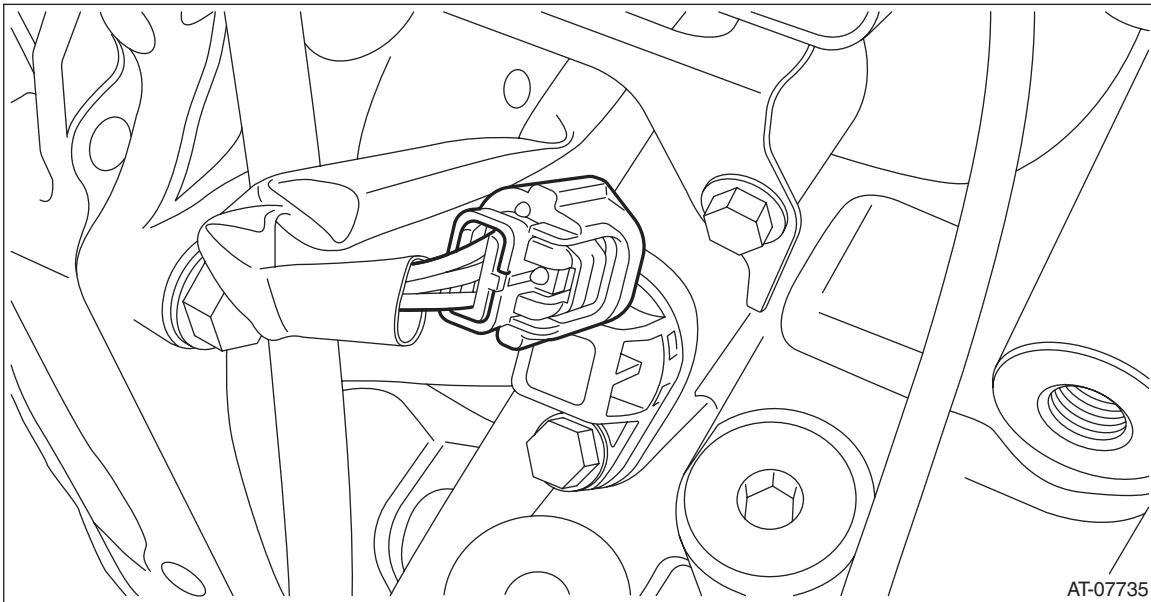


45) Install the air breather hose to the pitching stopper bracket.

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

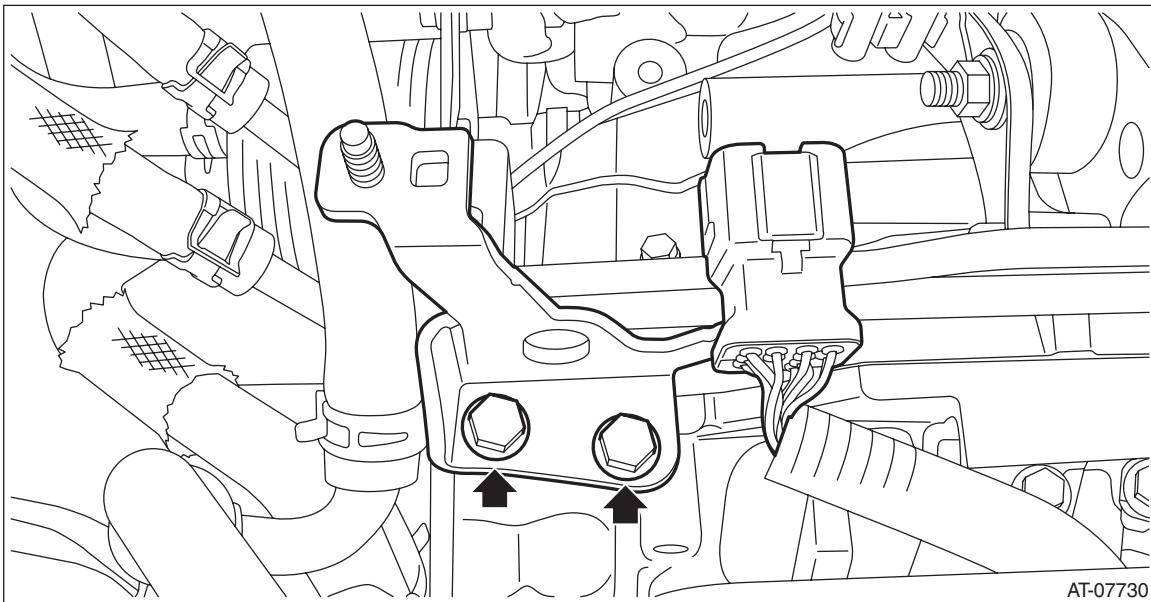
46) Connect the primary pressure sensor harness connector.



47) Install the engine hanger rear.

Tightening torque:

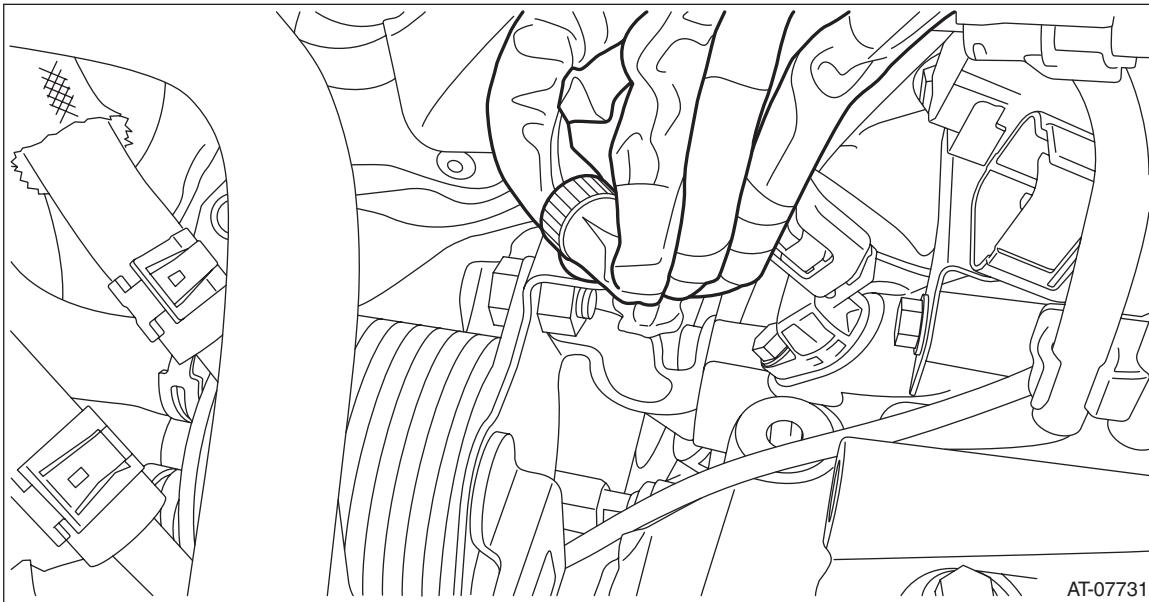
21 N·m (2.1 kgf·m, 15.5 ft-lb)



Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

48) Install the harness clip to the CVTF cooler bracket.

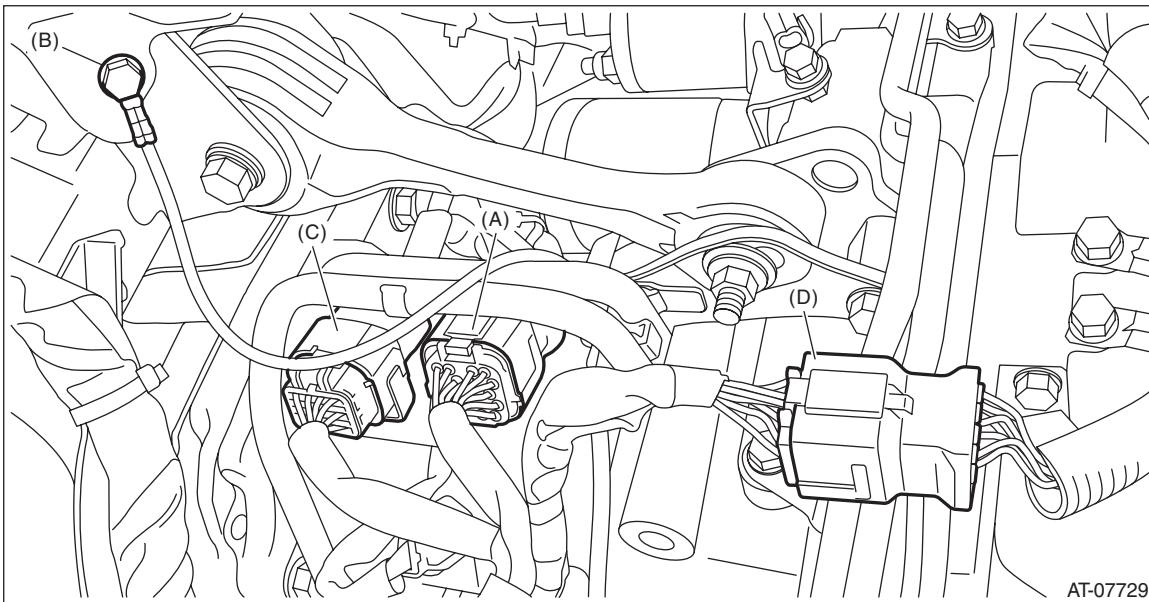


49) Connect the following harness connectors.

- Transmission harness connectors
- Transmission radio ground terminal
- Inhibitor harness connector
- Engine harness connectors

Tightening torque:

13 N·m (1.3 kgf·m, 9.6 ft-lb)



- (A) Transmission harness connectors
- (B) Transmission radio ground terminal
- (C) Inhibitor harness connector
- (D) Engine harness connectors

50) Install the intercooler.<Ref. to IN(H4DOTC)-37, INSTALLATION, Intercooler.>

51) Install the air intake duct.<Ref. to IN(H4DOTC)-19, INSTALLATION, Air Intake Duct.>

52) Install the front tires.

53) Connect the battery ground terminal.

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

- 54) Refill differential gear oil to adjust the differential gear oil amount.<Ref. to CVT(TR690)-41, Differential Gear Oil.>
- 55) Refill CVTF to adjust the CVTF amount.<Ref. to CVT(TR690)-36, CVTF.>
- 56) Perform the variator chain break-in.

CAUTION:

Always execute the variator chain break-in after the replacement of the following.

- **Variator chain replacement**
- **Primary pulley and secondary pulley replacement**

57) Perform the operation for clearing AT learning value.<Ref. to CVT(diag)-24, OPERATION, Clear Memory Mode.>

58) Perform the operation of AT learning mode.<Ref. to CVT(diag)-30, Learning Control.>

59) Execute the rear differential inspection mode.<Ref. to DI-64, Rear Differential Inspection Mode.>

CAUTION:

Always execute the rear differential inspection mode at the replacement of the following.

- **Replacement of transmission assembly**
- **Replacement of front differential hypoid gear set**

60) Perform the road test to make sure there is no fault.<Ref. to CVT(TR690)-47, INSPECTION, Road Test.>