

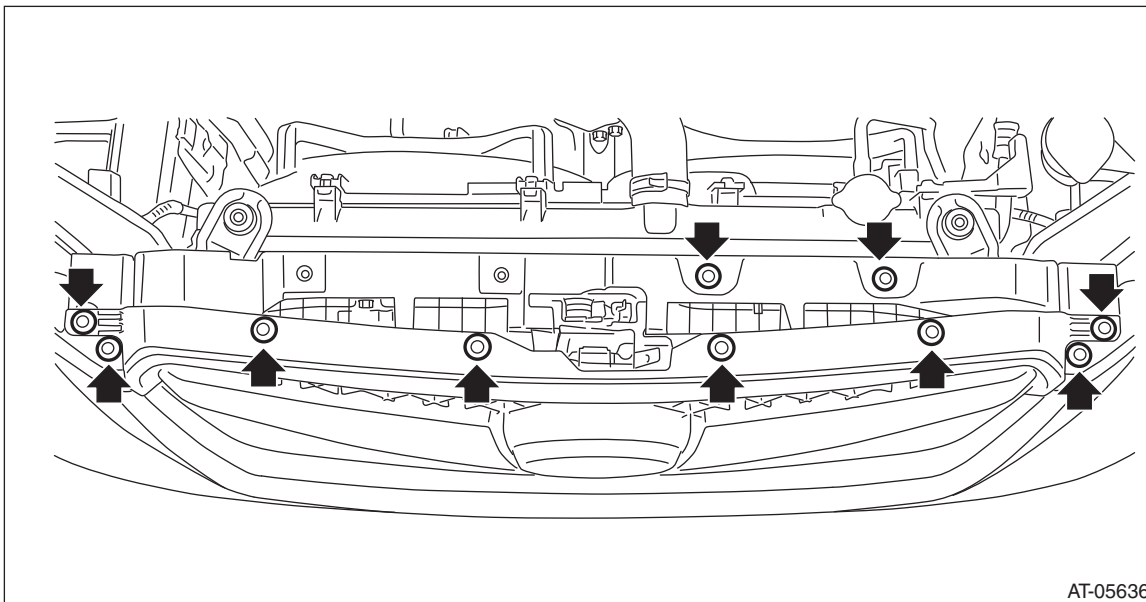
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

11. Automatic Transmission Assembly

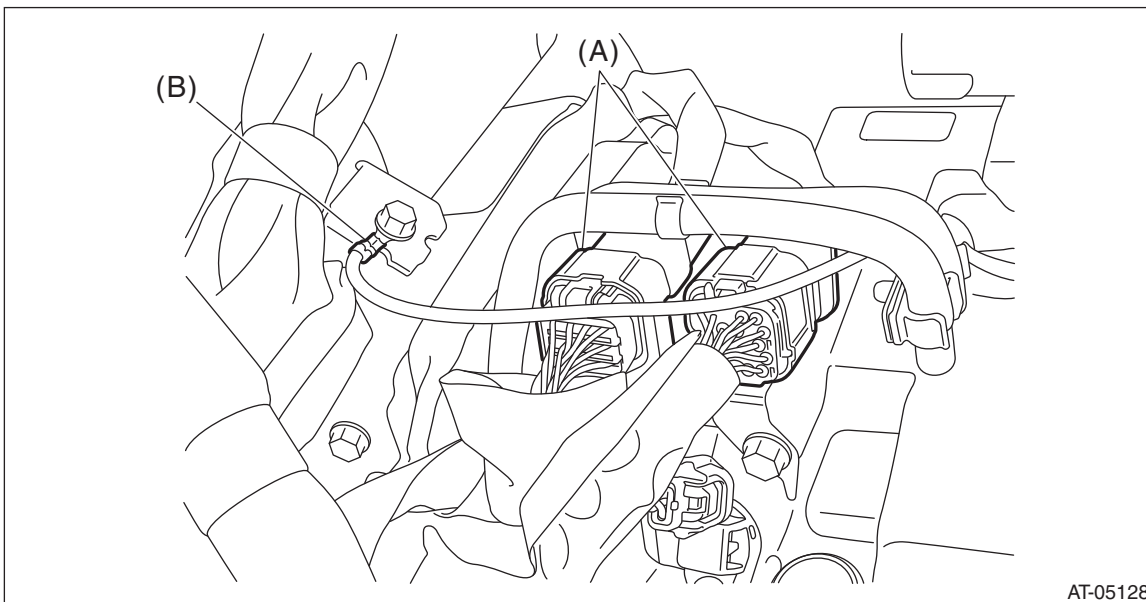
A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Remove the front wheels.
- 3) Disconnect the ground cable from battery.
- 4) Remove the air intake duct. <Ref. to IN(H4SO)-9, REMOVAL, Air Intake Duct.>
- 5) Remove the air intake boot assembly. <Ref. to IN(H4SO)-8, REMOVAL, Air Intake Boot.>
- 6) Remove the ten clips and remove the grille bracket.



AT-05636

- 7) Disconnect the following connectors.
 - Transmission harness connectors
 - Transmission radio ground terminal



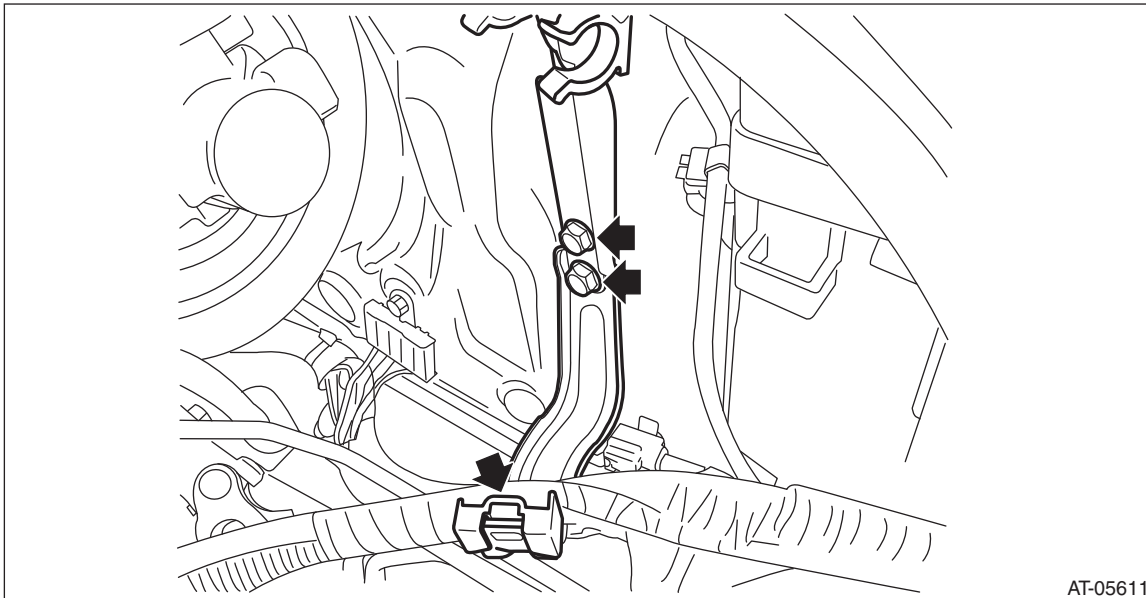
AT-05128

- (A) Transmission harness connectors
(B) Transmission radio ground terminal

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

8) Separate the battery cable clip to remove the bracket.

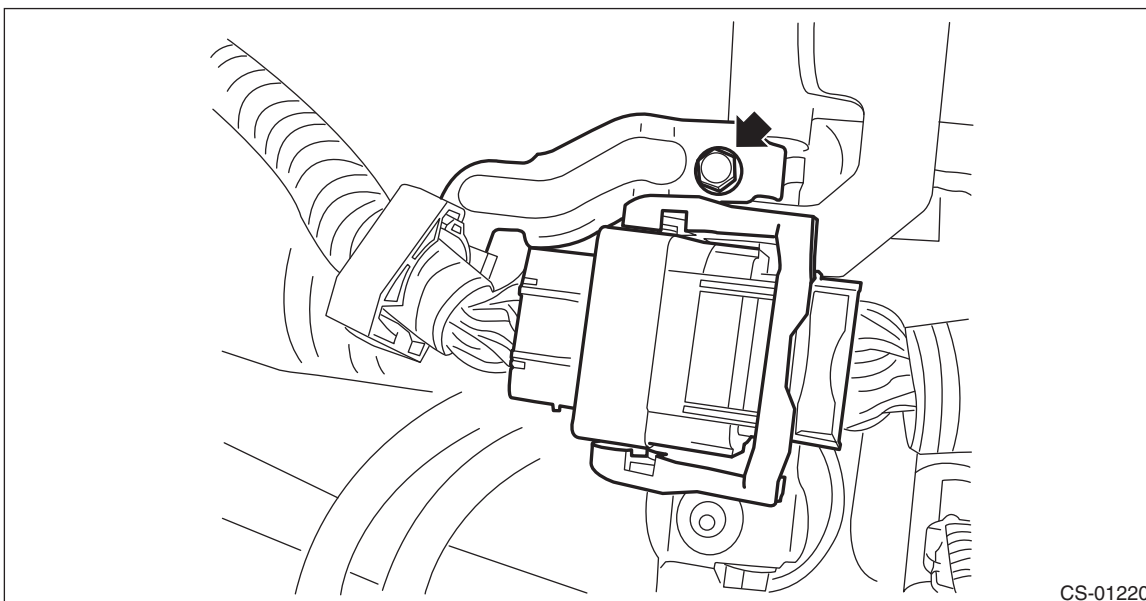


9) Remove the starter. <Ref. to SC(H4SO)-9, REMOVAL, Starter.>

10) Remove the throttle body. <Ref. to FU(H4SO)-14, REMOVAL, Throttle Body.>

11) Remove the manifold absolute pressure sensor. <Ref. to FU(H4SO)-30, REMOVAL, Manifold Absolute Pressure Sensor.>

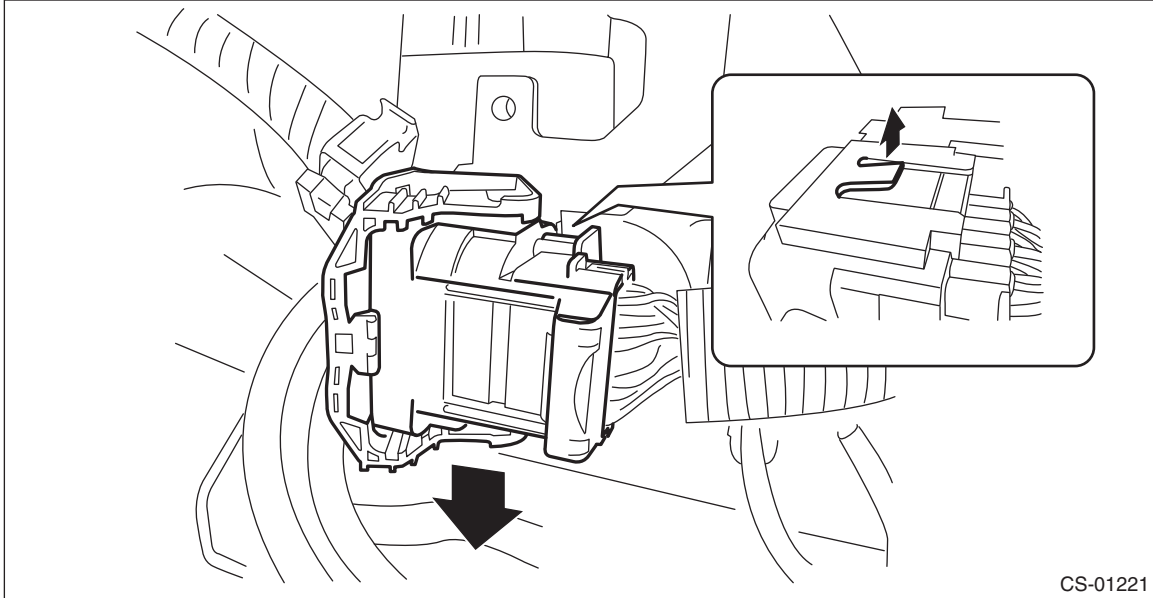
12) Remove the bolt and disconnect the engine harness connector.



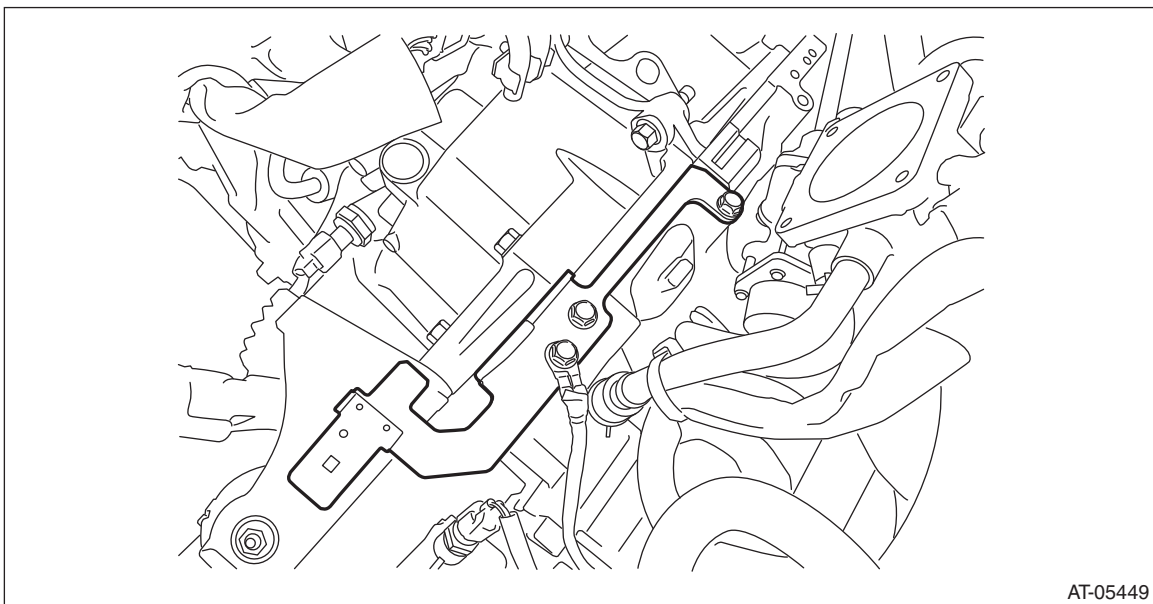
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

13) Remove the engine harness connector from the engine hanger rear.



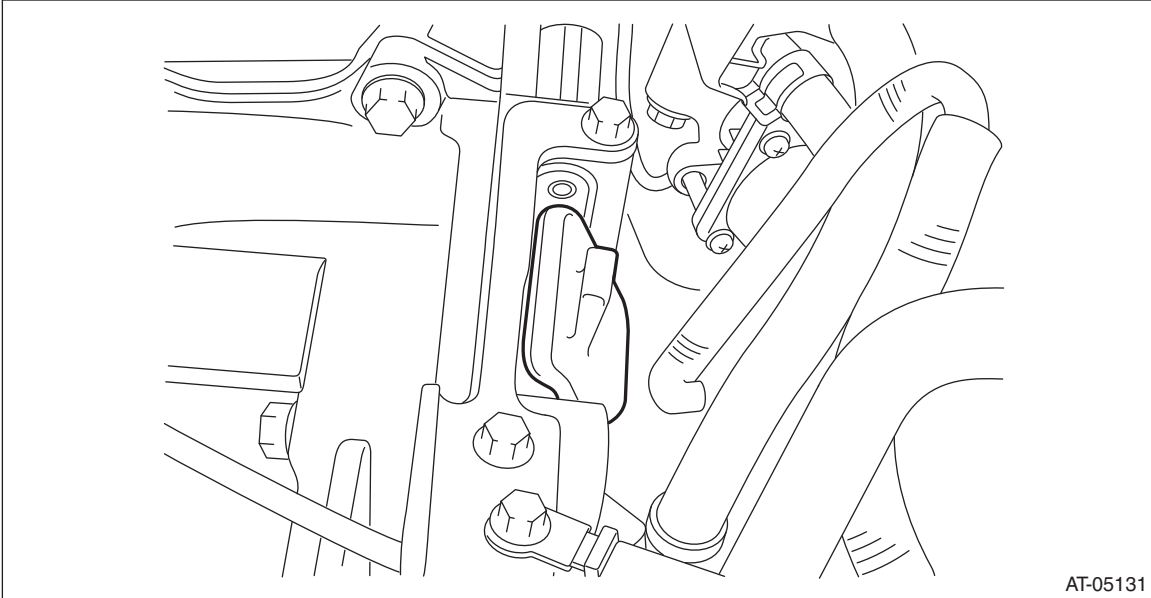
14) Remove the engine hanger rear.



Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

15) Remove the service hole plug.

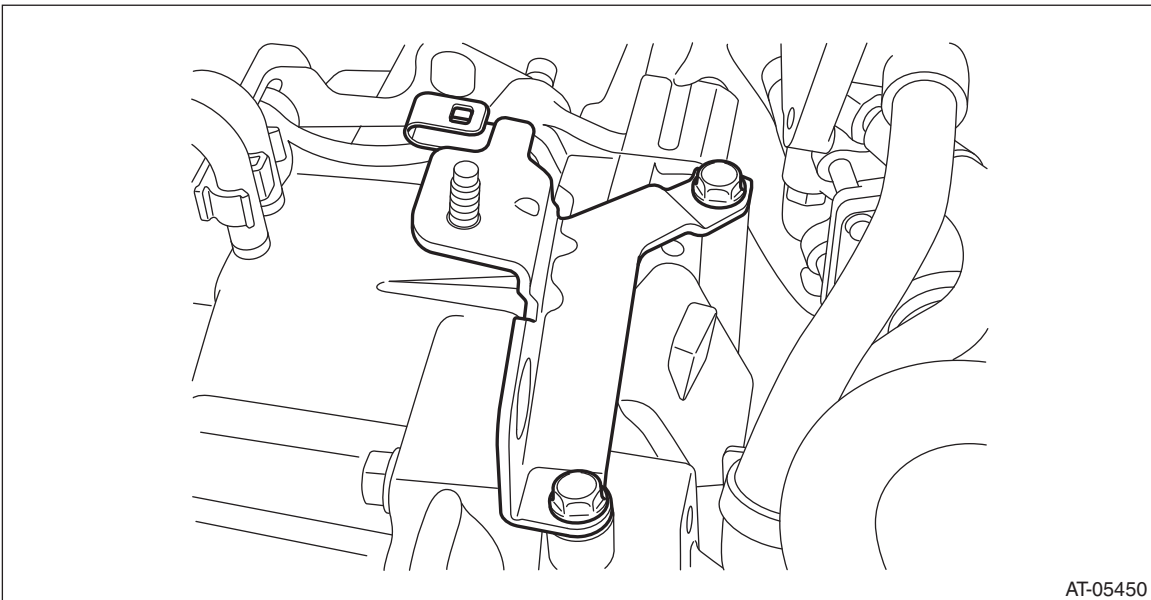


16) Install the engine hanger rear for turbo model.

Part No. 10004AA180 Engine hanger rear

Tightening torque:

16 N·m (1.6 kgf·m, 11.8 ft·lb)



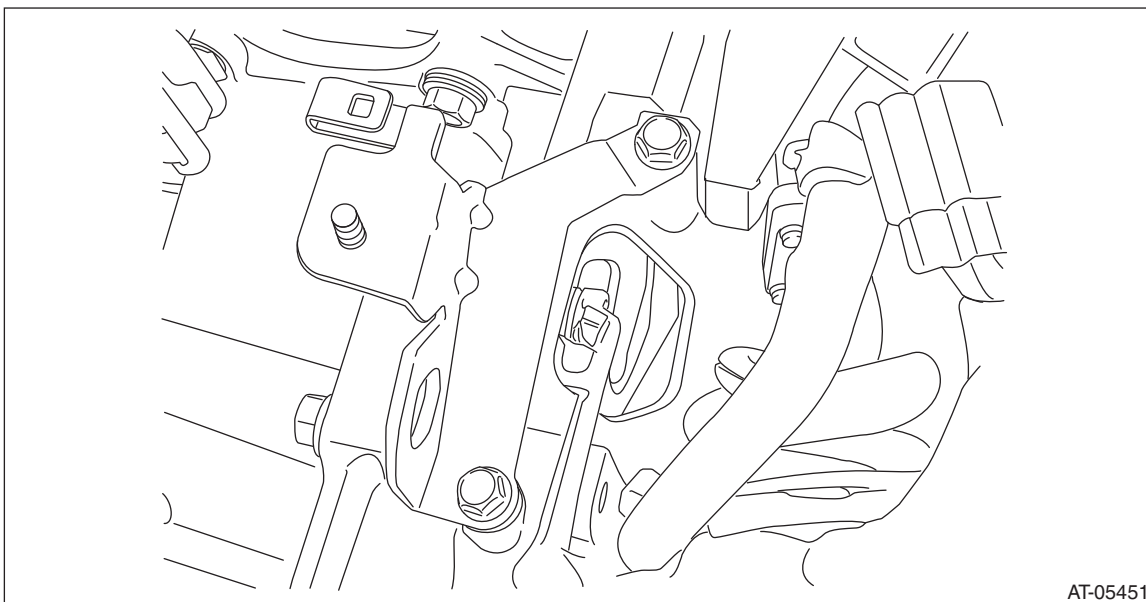
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

17) 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 converter housing.
- Be careful not to damage the mounting bolts.

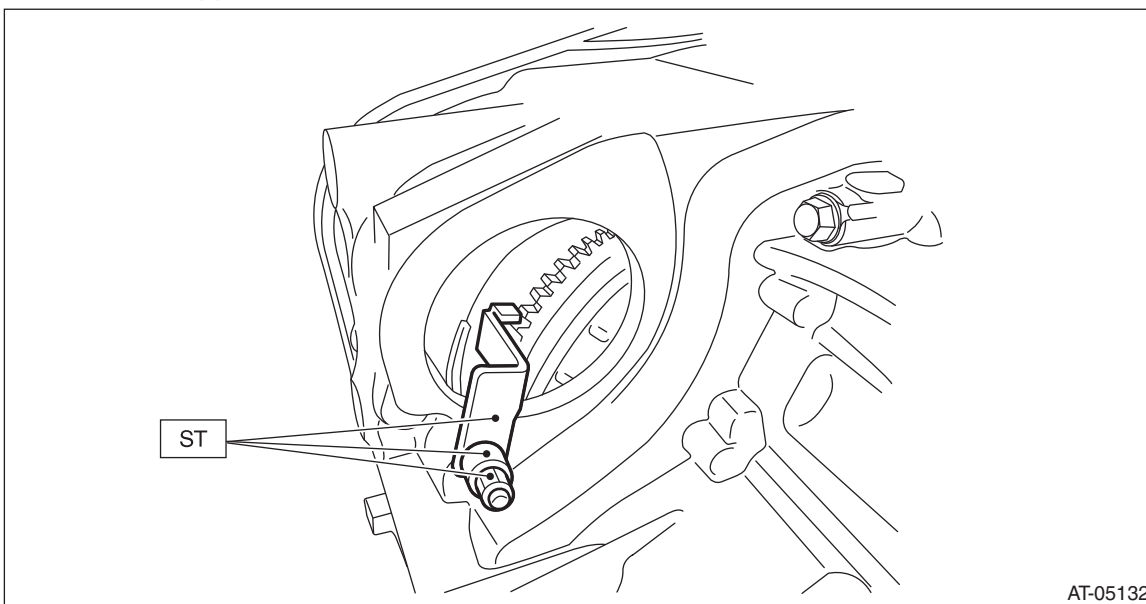


AT-05451

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

19) Attach the ST to the converter case.

ST 498277200 Stopper set

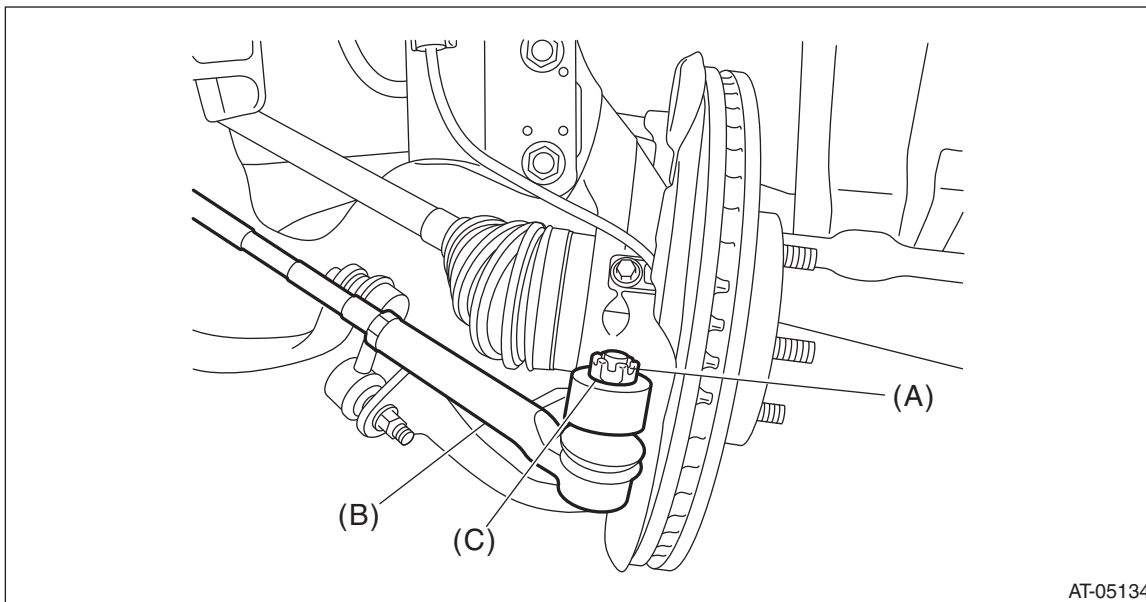


AT-05132

Automatic Transmission Assembly

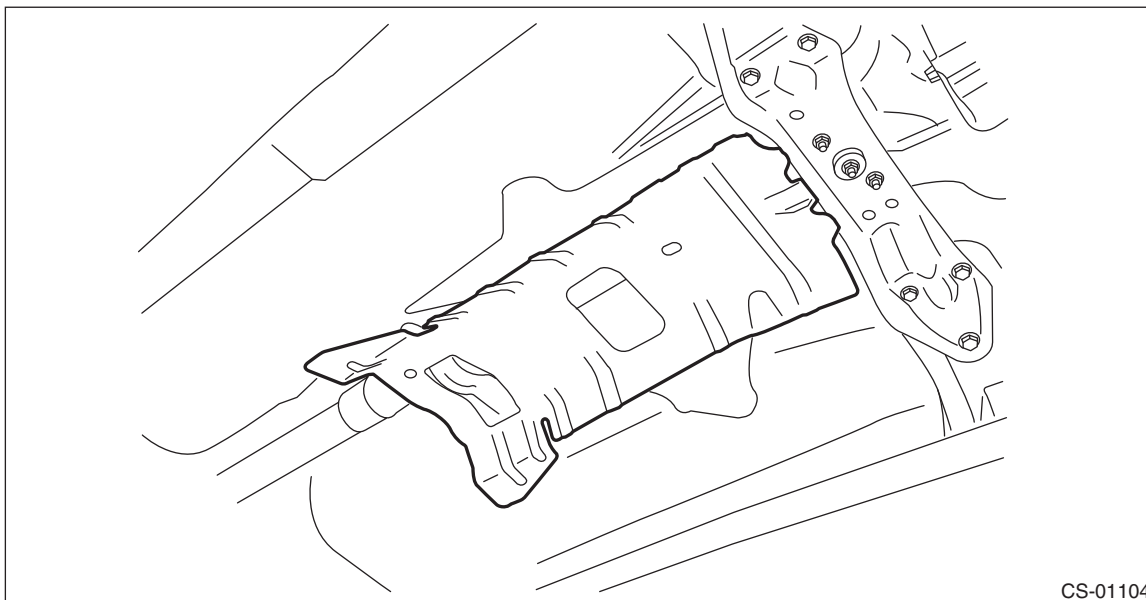
CONTINUOUSLY VARIABLE TRANSMISSION

20) After pulling off the cotter pin and removing the castle nut, use a puller to remove the tie-rod end from the knuckle arm.



- (A) Cotter pin
- (B) Tie-rod end
- (C) Castle nut

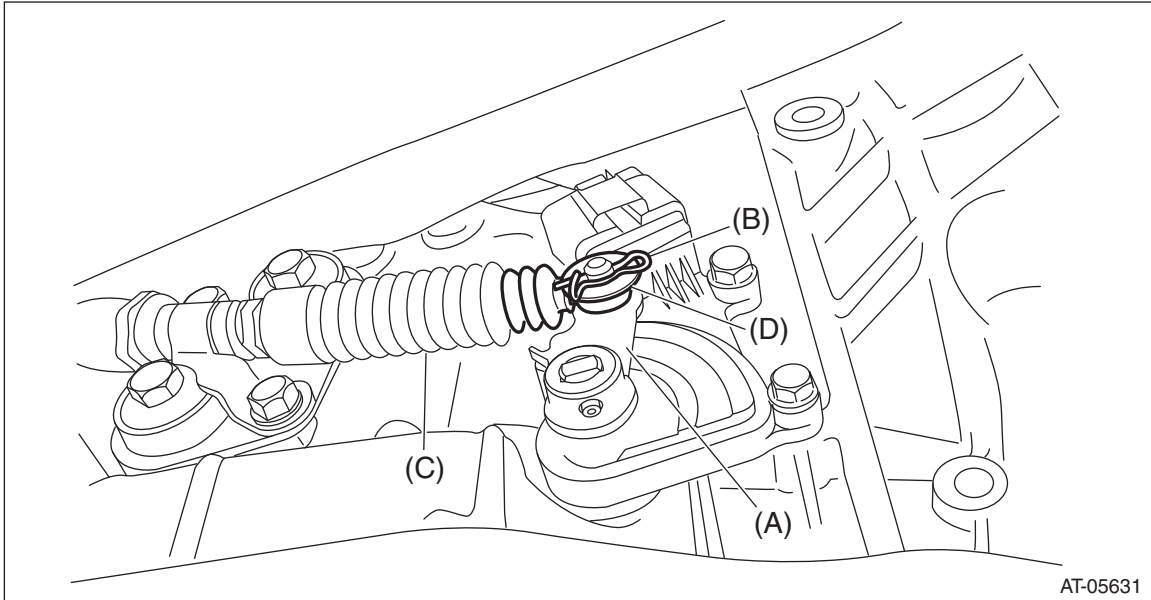
- 21) Lift up the vehicle.
- 22) Remove the under cover.
- 23) Remove the center exhaust pipe. <Ref. to EX(H4SO)-7, REMOVAL, Center Exhaust Pipe.>
- 24) Remove the CVTF drain plug to drain CVTF. <Ref. to CVT-37, REPLACEMENT, CVTF.>
- 25) Remove the heat shield cover.



Automatic Transmission Assembly

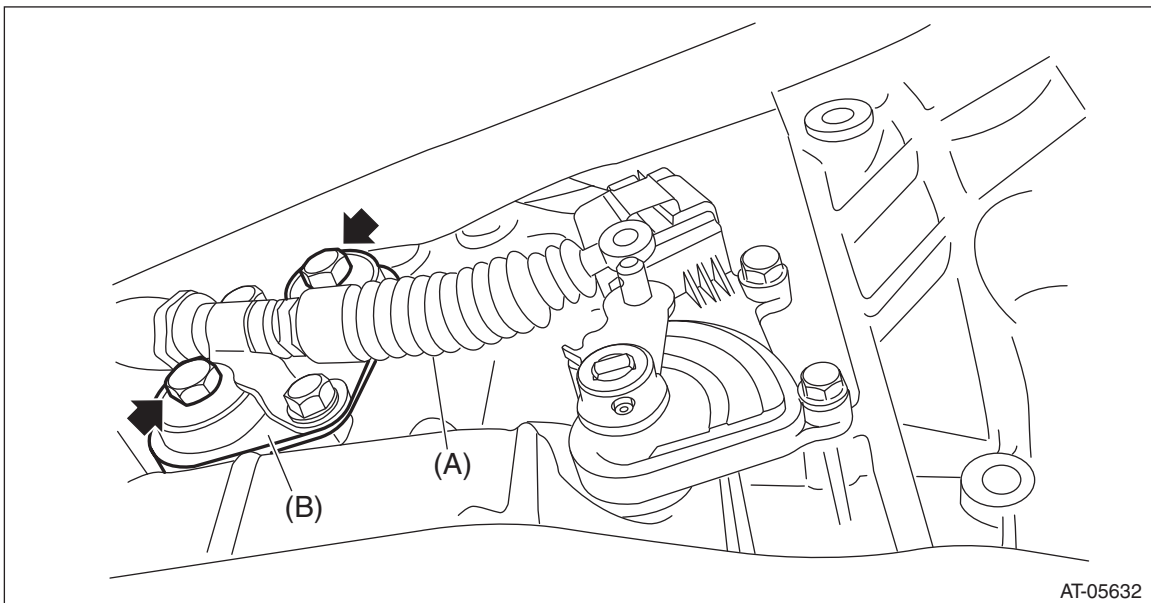
CONTINUOUSLY VARIABLE TRANSMISSION

26) 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

27) Remove the plate assembly from the transmission case.



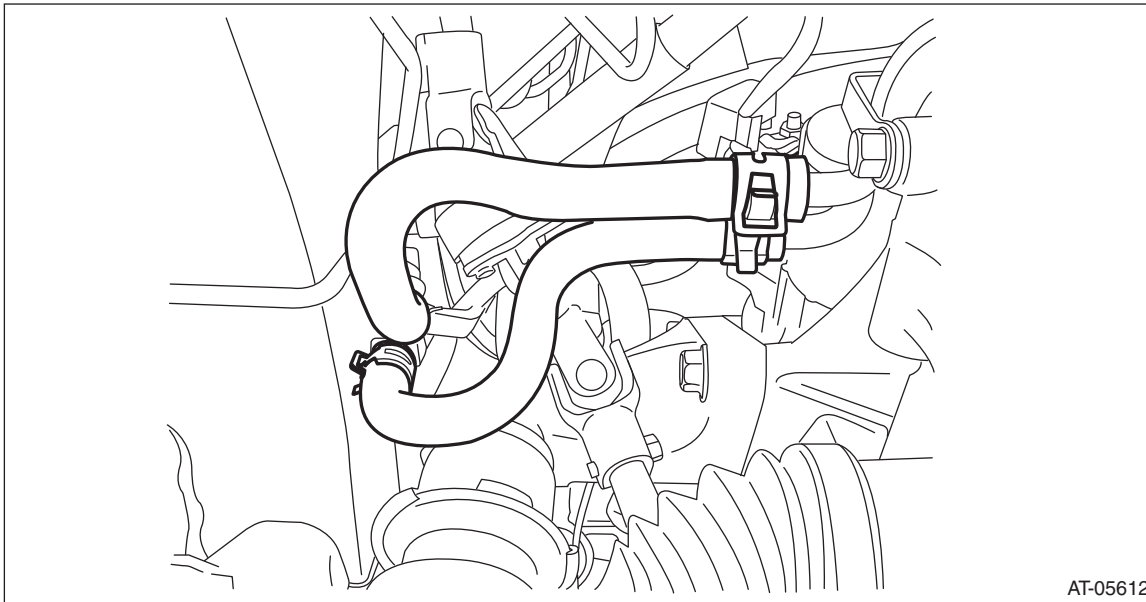
- (A) Select cable
- (B) Plate ASSY

28) Drain differential gear oil. <Ref. to CVT-42, REPLACEMENT, Differential Gear Oil.>

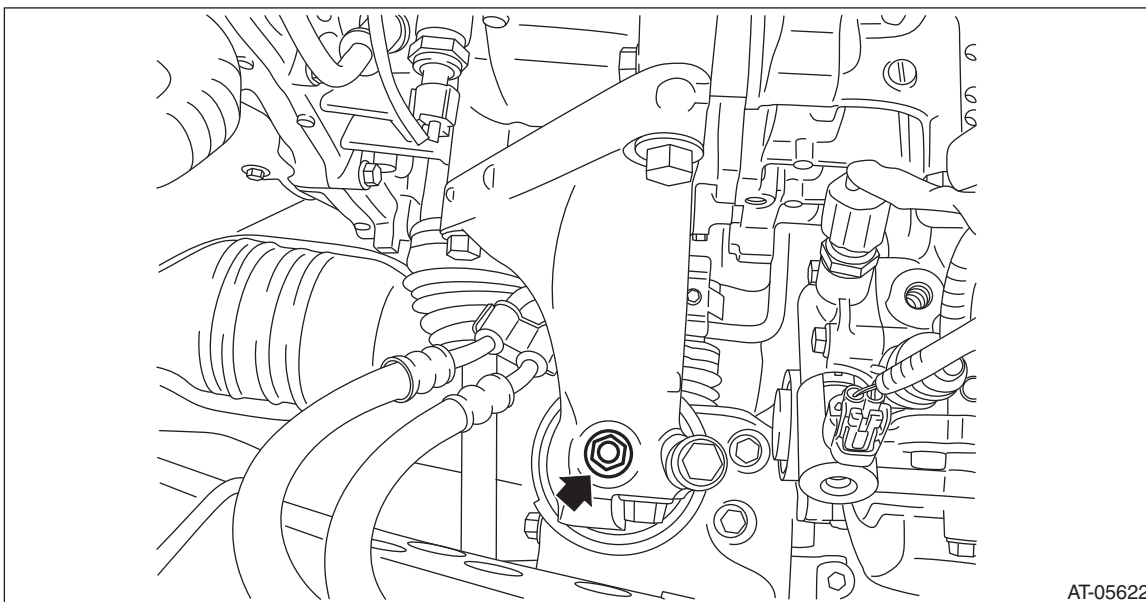
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

- 29) Remove the CVTF inlet hose and CVTF outlet hose.



- 30) Remove the universal joint. <Ref. to PS-18, REMOVAL, Universal Joint.>
31) Remove the propeller shaft. <Ref. to DS-10, REMOVAL, Propeller Shaft.>
32) Remove the stabilizer link.
33) Disconnect the lower arm ball joint and housing.
34) Pull out the front drive shaft from transmission using a crowbar.
35) Holding the joint of front drive shaft from transmission side, pull out the drive shaft from transmission with care not to stretch the boot.
36) Lower the vehicle.
37) Remove the nuts from left and right transmission mounting brackets.



Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

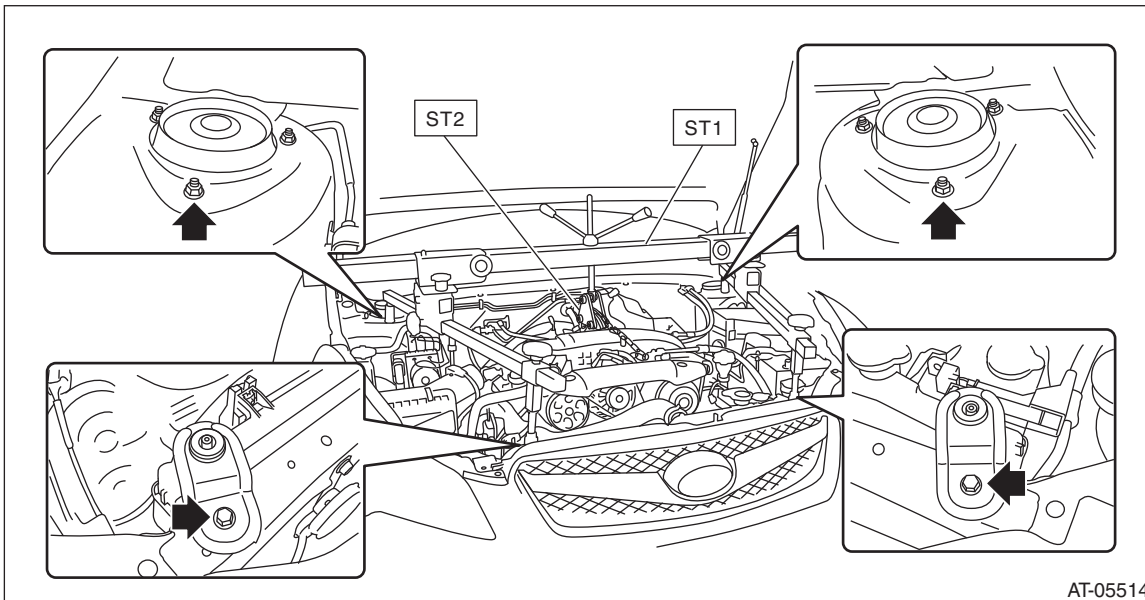
38) Set the ST1 and ST2 to vehicle.

ST1 99099AJ000 ENGINE HANGER

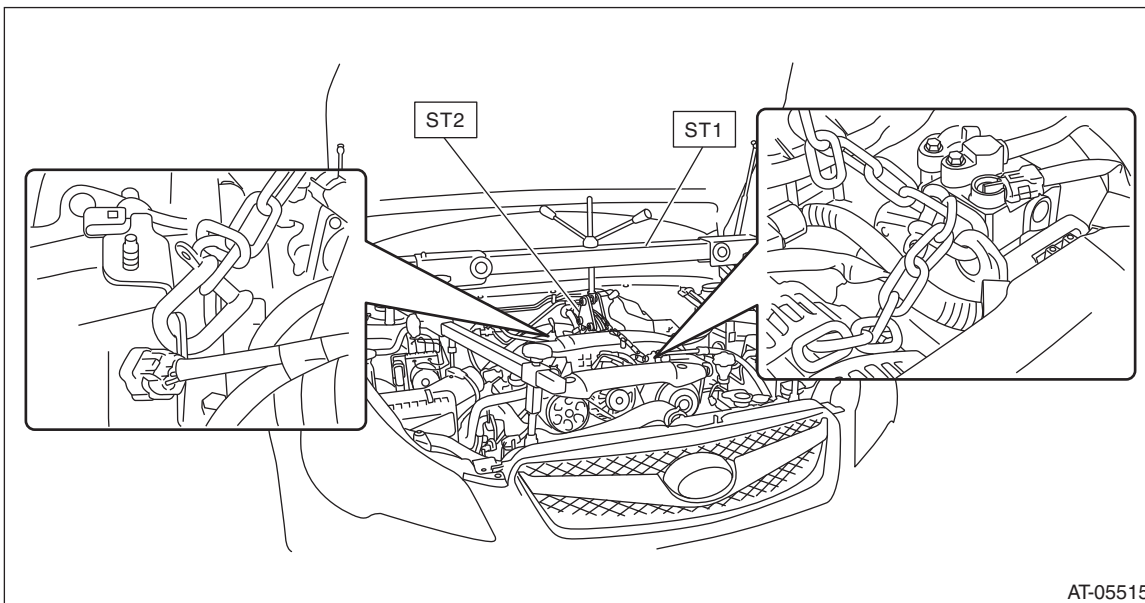
ST2 99099AJ010 CHAIN BALANCER

CAUTION:

- Set so that the chain sling does not hit the engine parts.
- Set the arms of ST (ENGINE HANGER) at the locations shown in the figure.



AT-05514

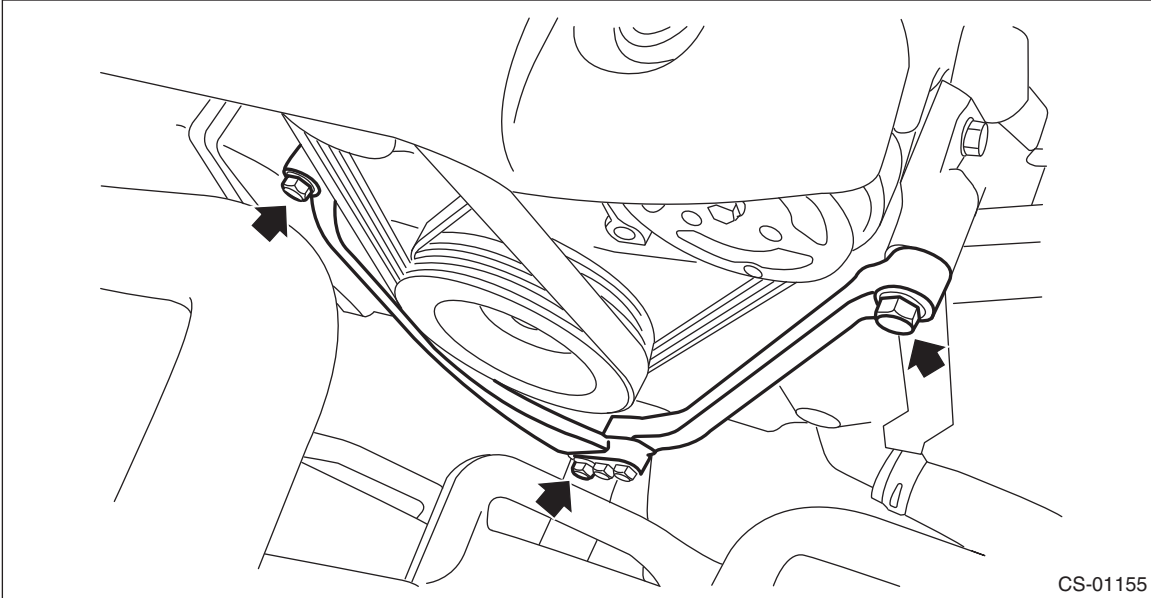


AT-05515

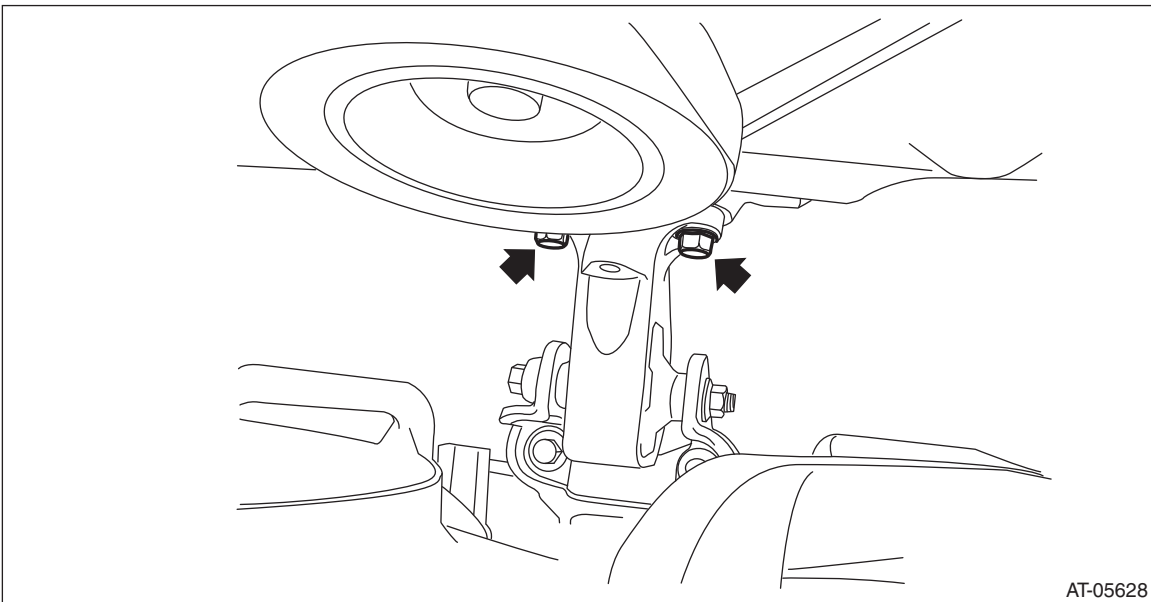
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

39) Remove the stopper rod.



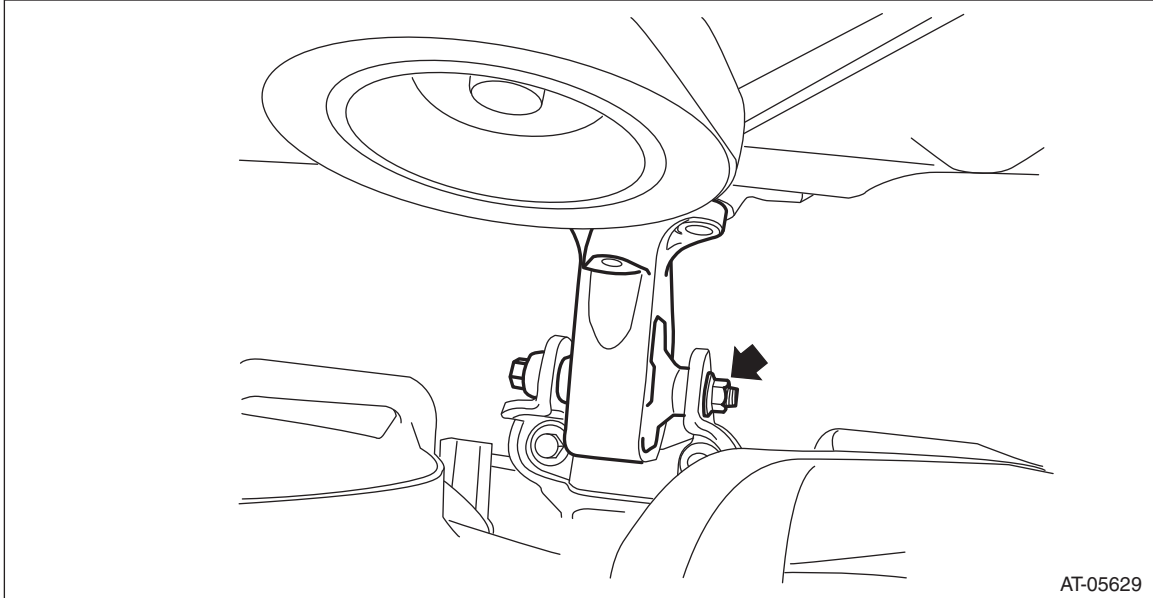
40) Lift the engine slightly and remove the engine mounting bolts.



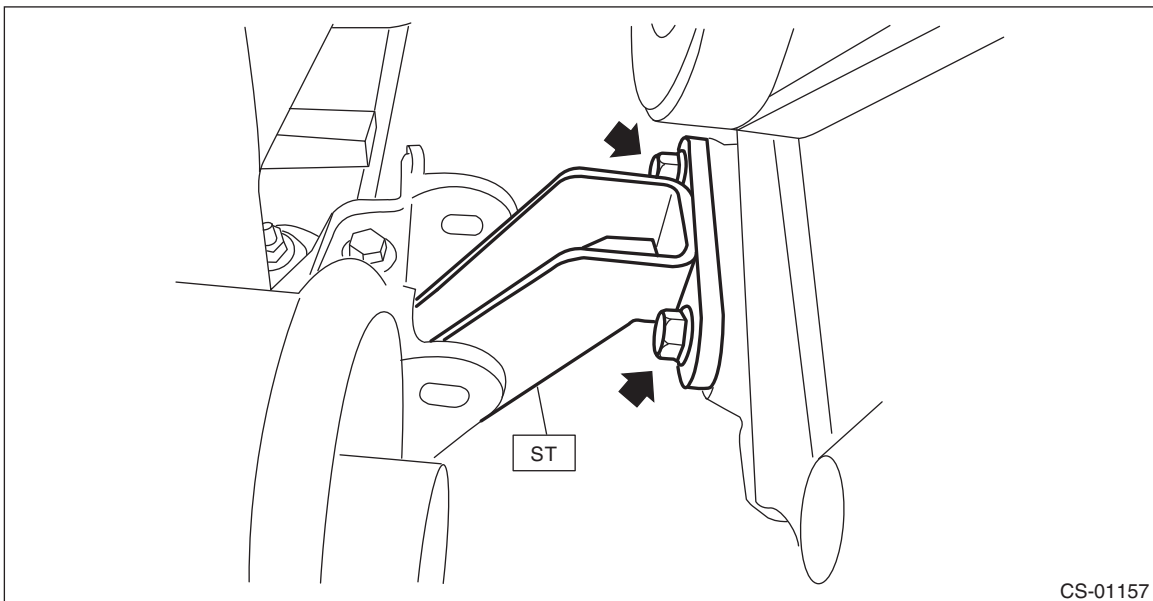
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

41) Remove the engine mounting nut and bolt to remove the engine mounting.



42) Temporarily install the ST by using two bolts.
ST 41099AJ000 FRONT MOUNTING H4



Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

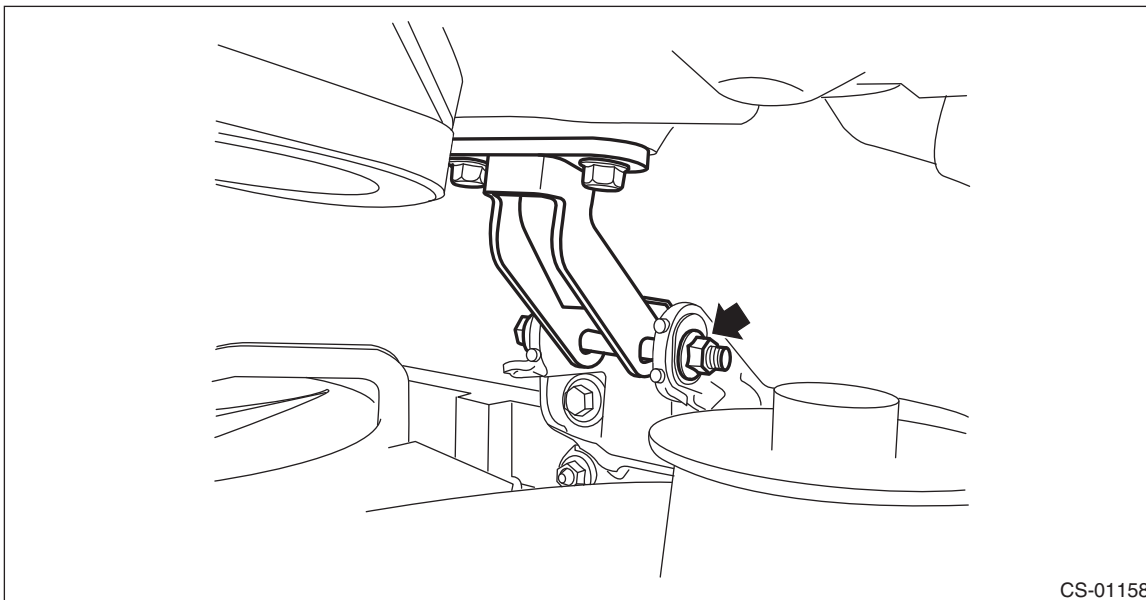
43) Lift up the engine unit high enough to install the bolt and nut to vehicle.

CAUTION:

Do not lift up higher than enough level to install the ST to avoid damage to the hoses and pipes inside the engine room.

NOTE:

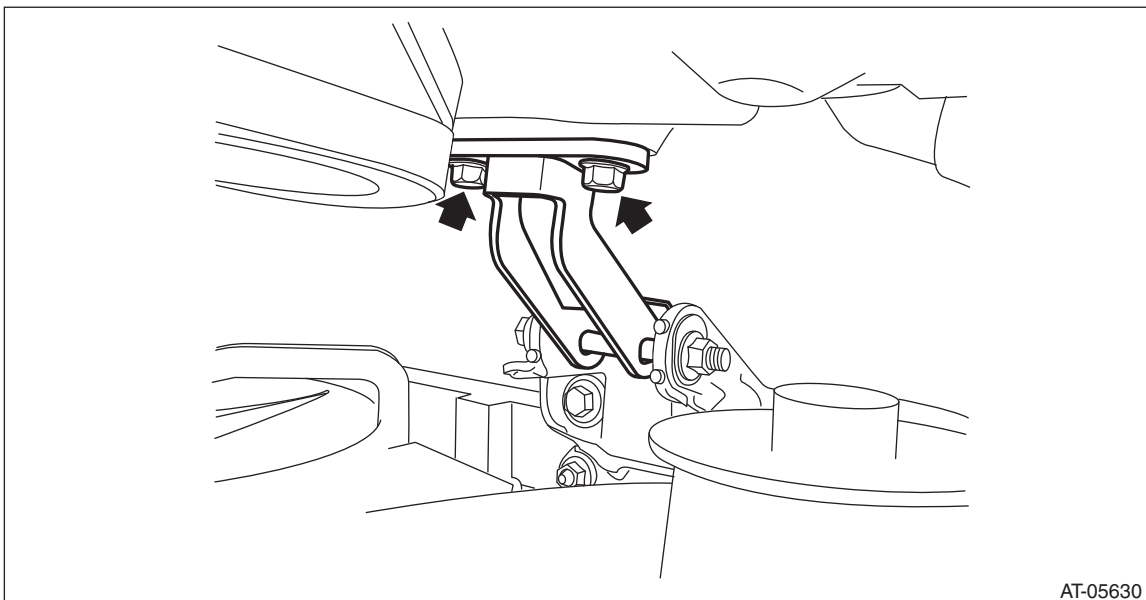
- If it is difficult to pull out the stud bolt from transmission mounting bracket, shake the engine unit slightly while lifting up.



44) Tighten the attachment bolts at the engine side.

Tightening torque:

25 N·m (2.5 kgf·m, 18.4 ft·lb)



45) Remove the ST (ENGINE HANGER).

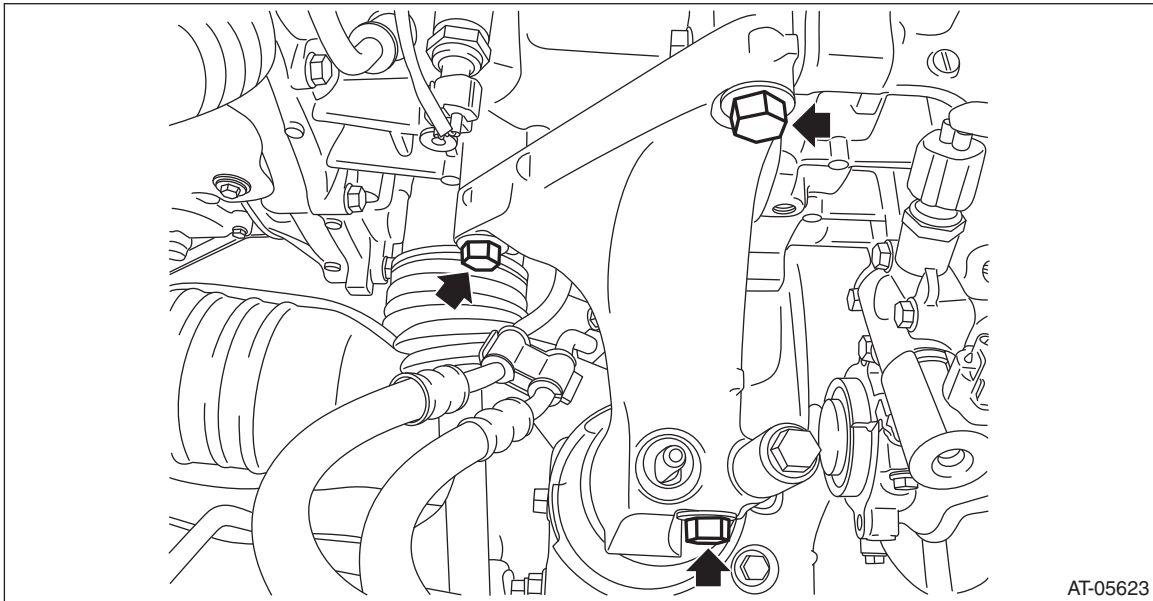
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

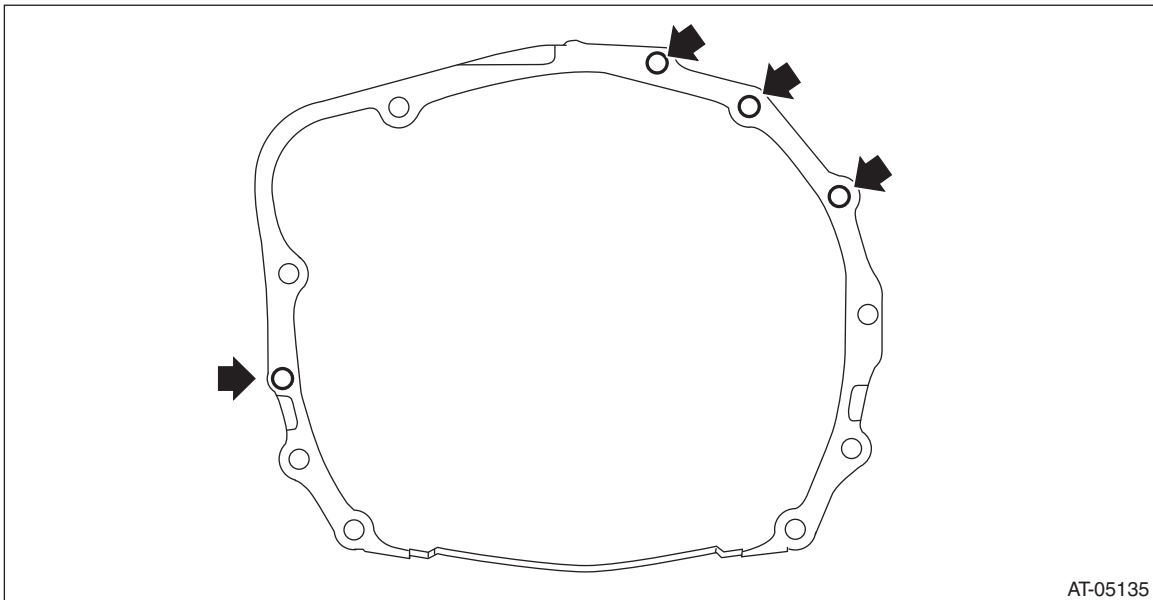
46) Remove the left and right transmission mounting brackets.

NOTE:

First, remove the transmission mounting bracket on the right side of vehicle, and then tilt the engine unit to remove the left transmission mounting bracket.



47) Remove the four transmission connecting bolts.



48) Set the ST (ENGINE HANGER) again to loosen the chain sling.

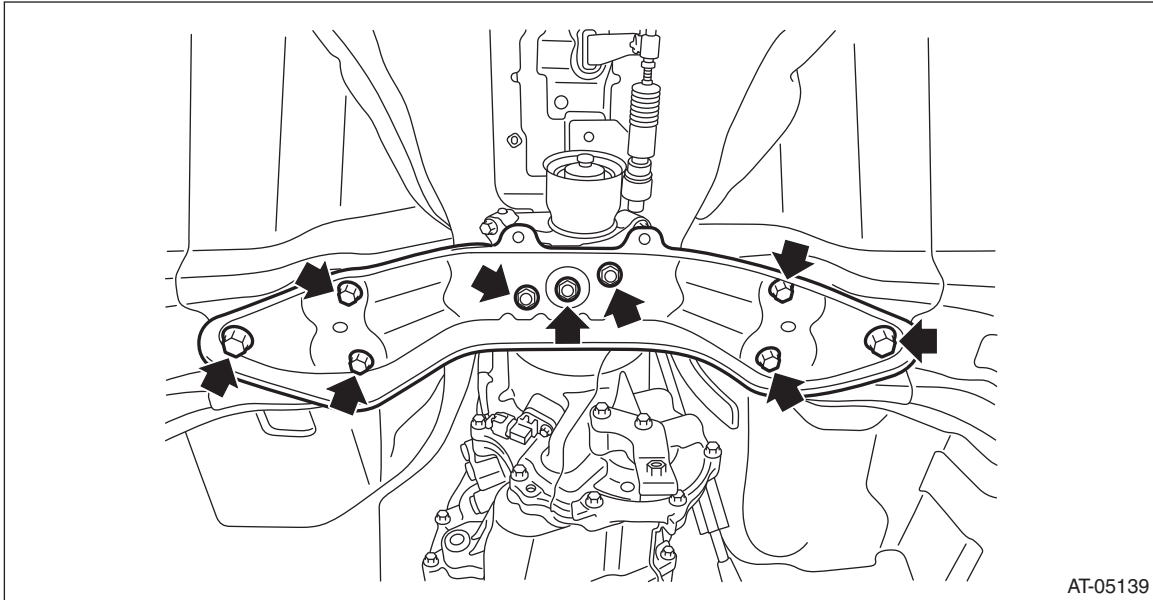
49) Lift up the vehicle.

50) Set the transmission jack under the transmission.

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

51) Remove the rear crossmember.



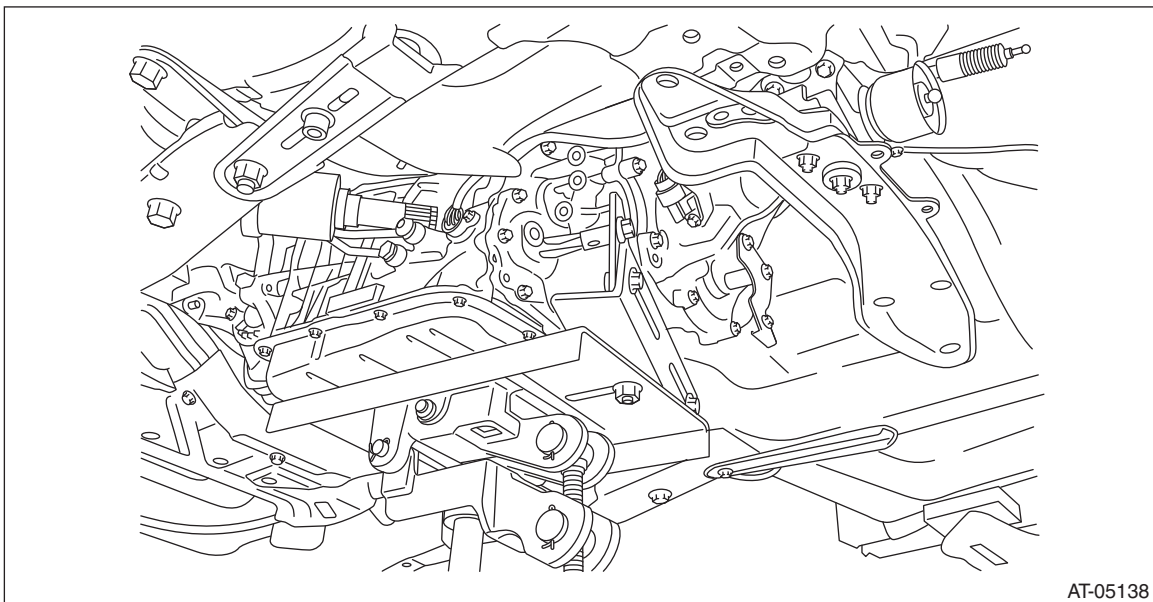
52) Lower the transmission rear end (dust cover rear end).

CAUTION:

When lowering the transmission rear end, be careful not to let the converter case and steering mechanical parts contact each other.

NOTE:

Lower the transmission rear end by approx. 80 mm (3.1 in) (reference).

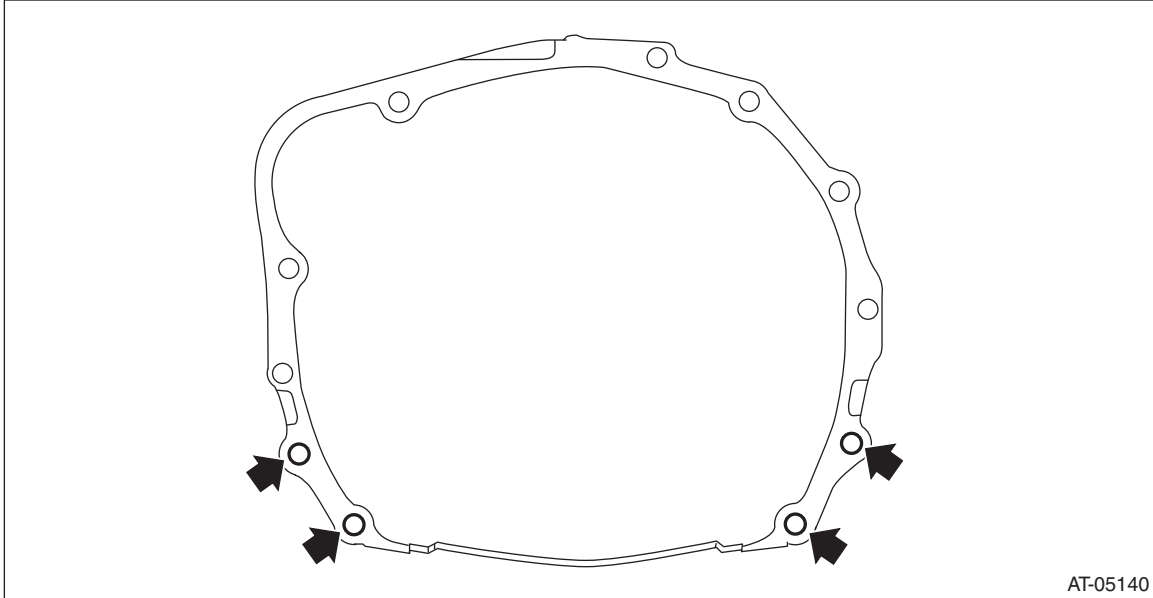


53) Rotate the handle of ST (ENGINE HANGER) to apply tension to the chain sling.

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

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



55) Remove the transmission assembly.

NOTE:

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

56) Remove the cushion rubber.

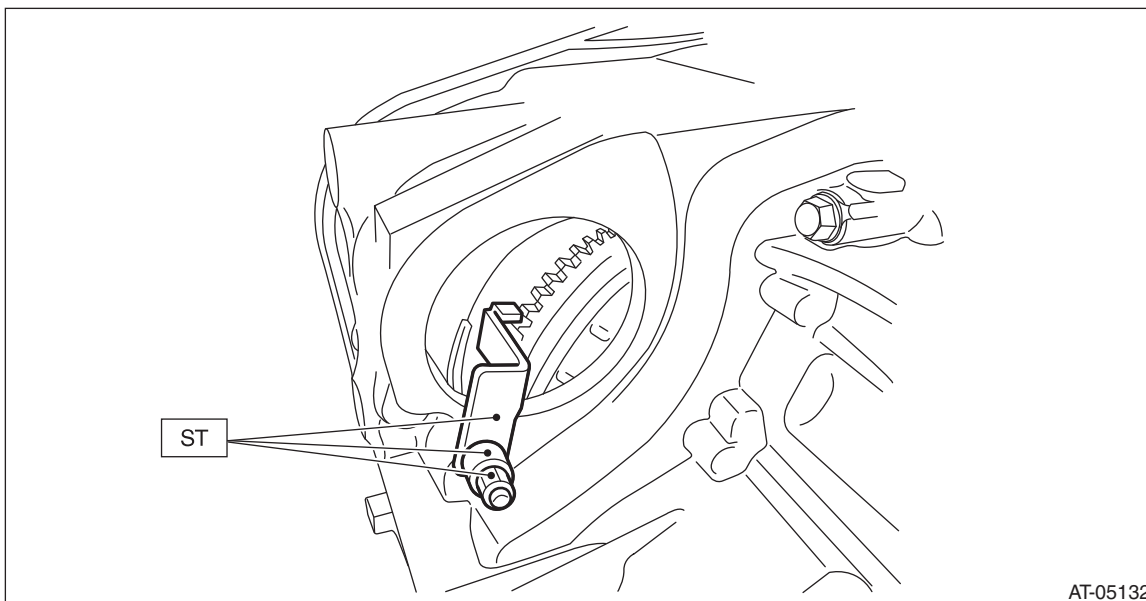
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

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:

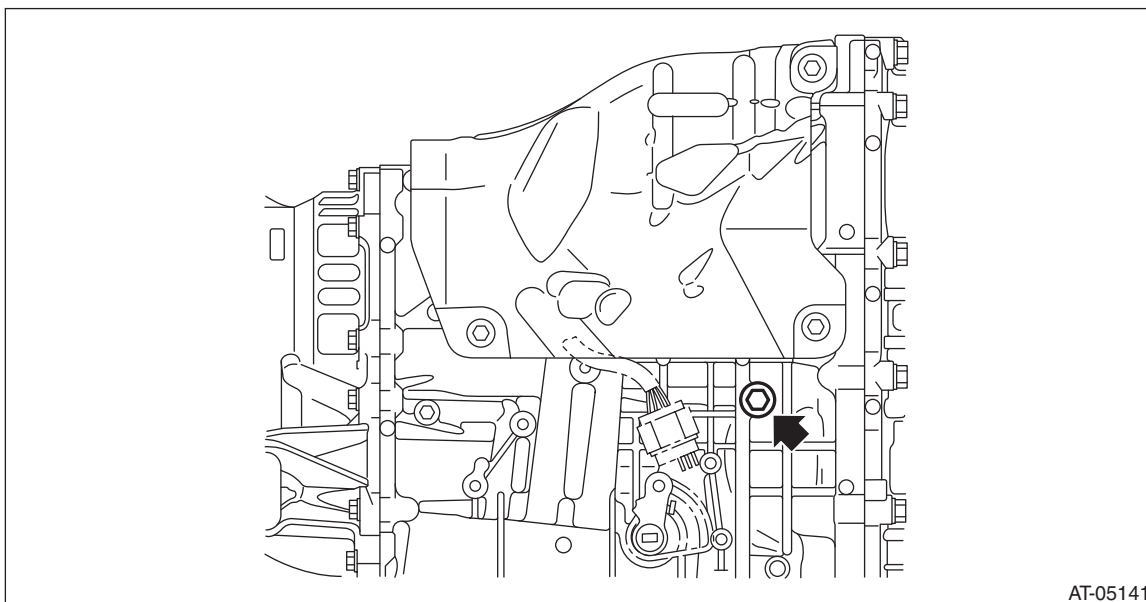
Always use specified CVTF or equivalent. Using other fluid except for specified or equivalent will cause malfunction. <Ref. to CVT-4, HYDRAULIC CONTROL AND LUBRICATION, SPECIFICATION, General Description.>

NOTE:

Use a new gasket.

Tightening torque:

25 N·m (2.5 kgf-m, 18.4 ft-lb)



Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

3) Replace the front differential side retainer oil seal. <Ref. to CVT-90, 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.

4) Install the cushion rubber on the transmission.

Tightening torque:

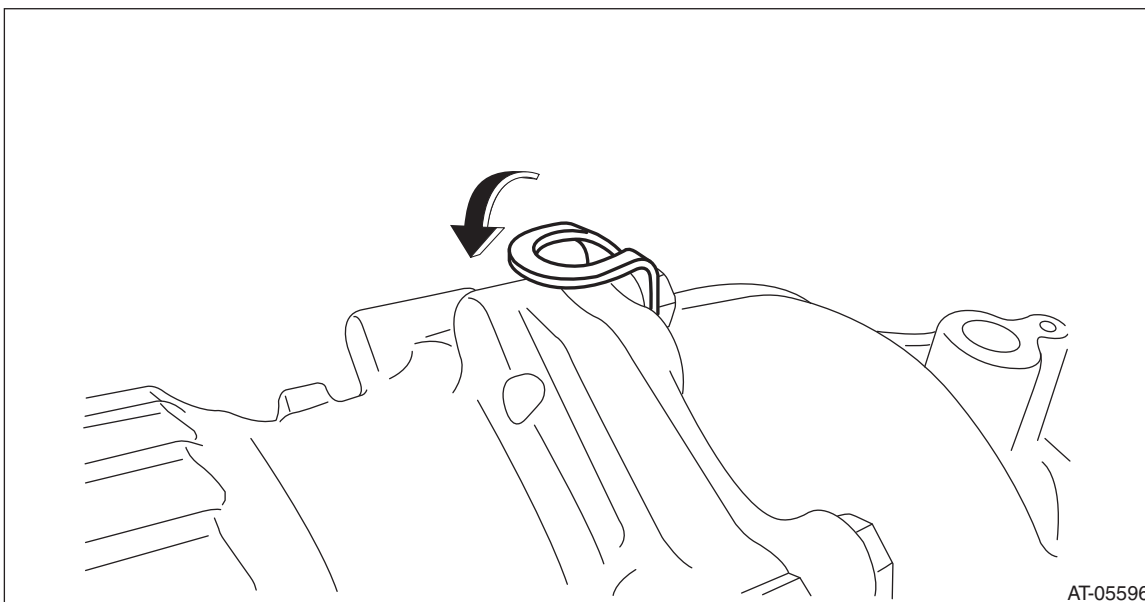
40 N·m (4.1 kgf·m, 29.5 ft·lb)

5) Mount the transmission onto the transmission jack.

6) Strike and bend the transmission hanger of transmission rear with a soft 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) While lifting up the transmission gradually, install the transmission to the engine.

CAUTION:

This operation requires at least two persons.

NOTE:

Keep the engine level.

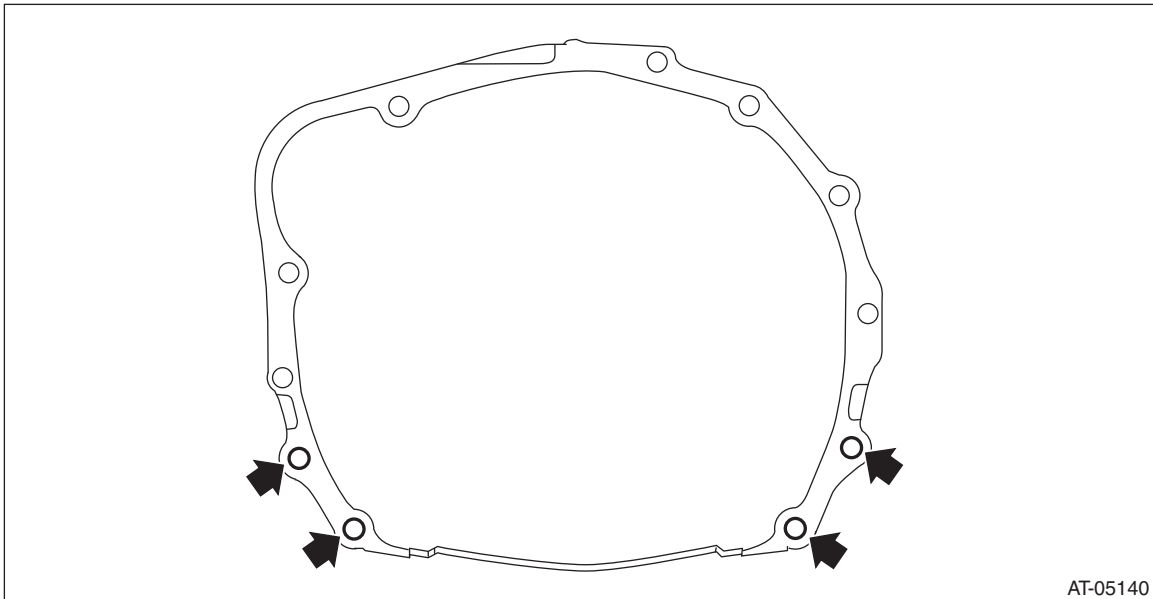
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

8) Install the two engine connecting bolts and two nuts (lower side).

Tightening torque:

50 N·m (5.1 kgf·m, 36.9 ft·lb)



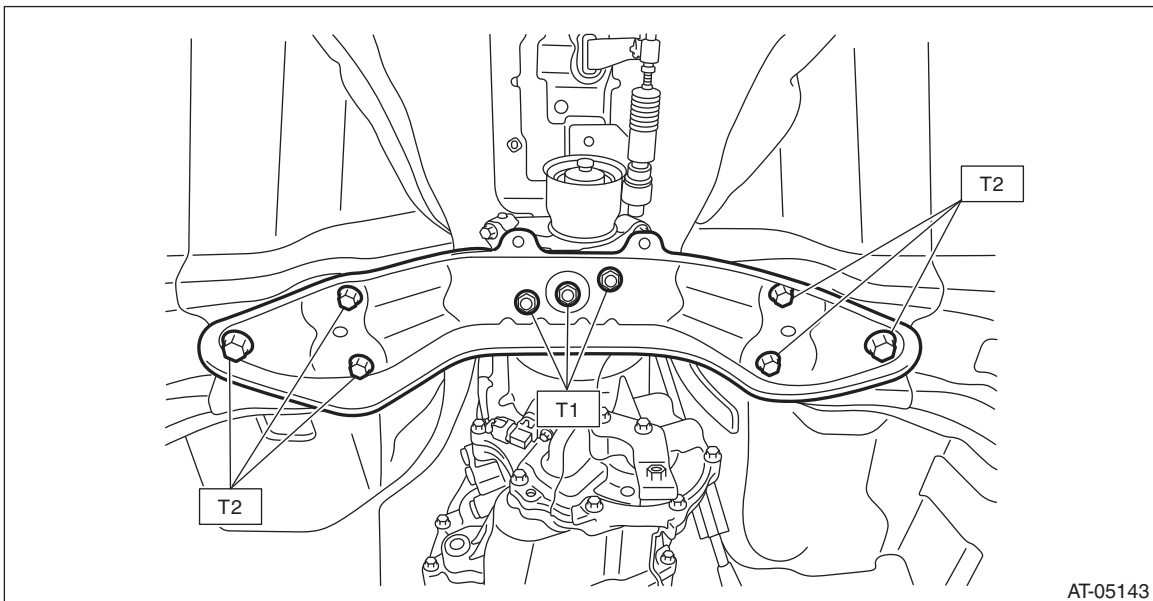
AT-05140

9) Secure the transmission rear crossmember to the vehicle body.

Tightening torque:

T1: 35 N·m (3.6 kgf·m, 25.8 ft·lb)

T2: 75 N·m (7.6 kgf·m, 55.3 ft·lb)



AT-05143

10) Remove the transmission jack.

11) Lower the vehicle.

12) Remove the ST (ENGINE HANGER).

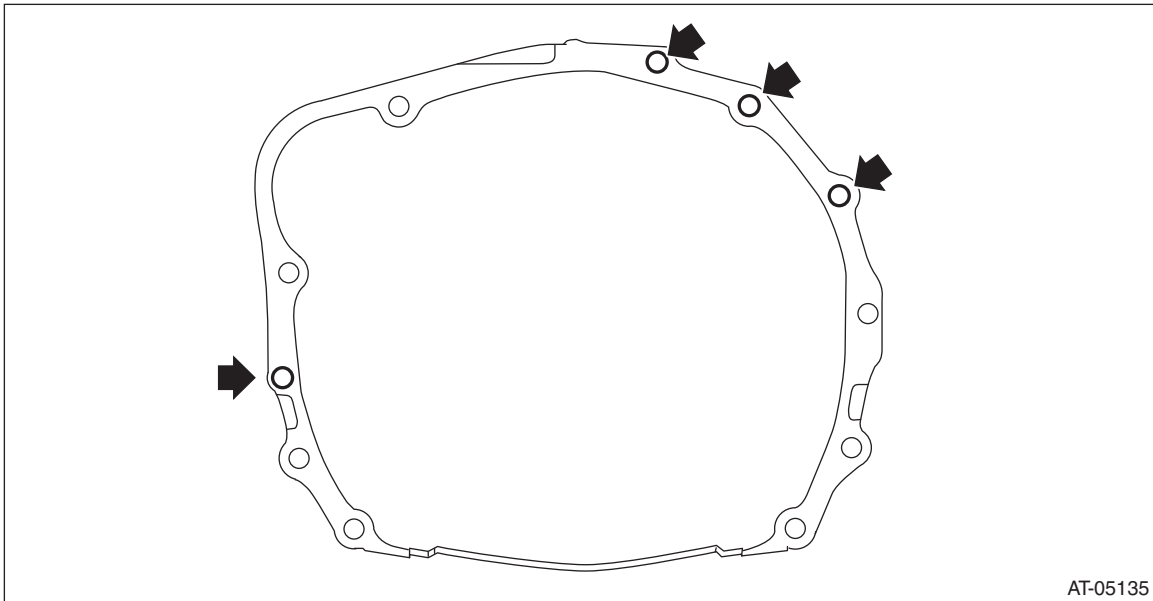
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

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

Tightening torque:

50 N·m (5.1 kgf·m, 36.9 ft·lb)



AT-05135

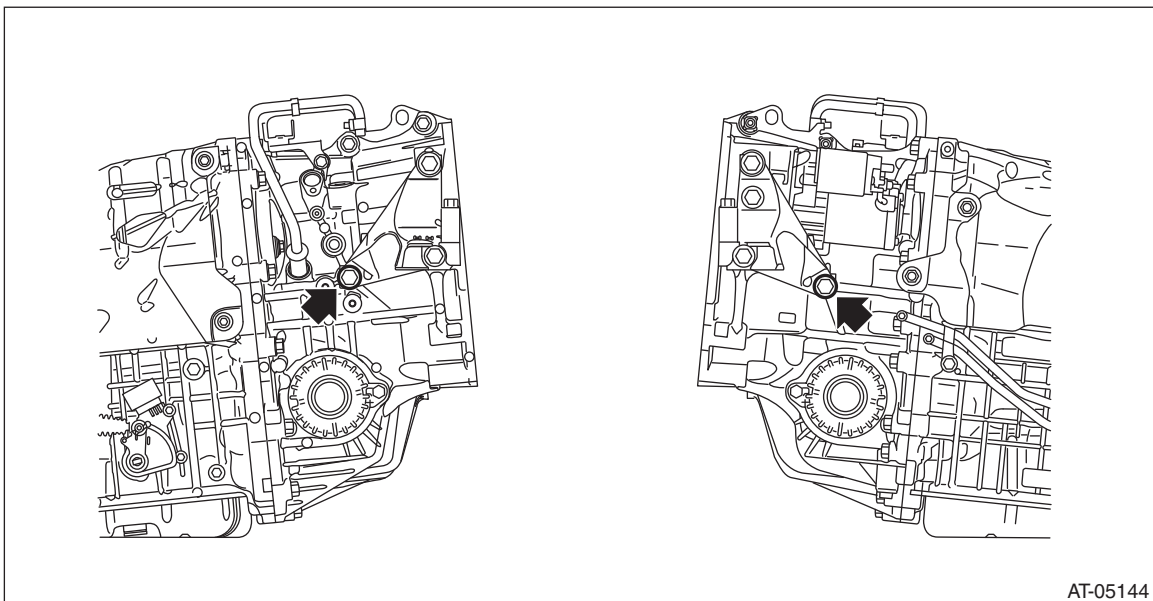
14) Install the left and right transmission mounting brackets.

NOTE:

- Install to the left side of vehicle first because the engine inclines to the left.
- Temporarily tighten one bolt arrowed in the figure.

Tightening torque:

75 N·m (7.6 kgf·m, 55.3 ft·lb)



AT-05144

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

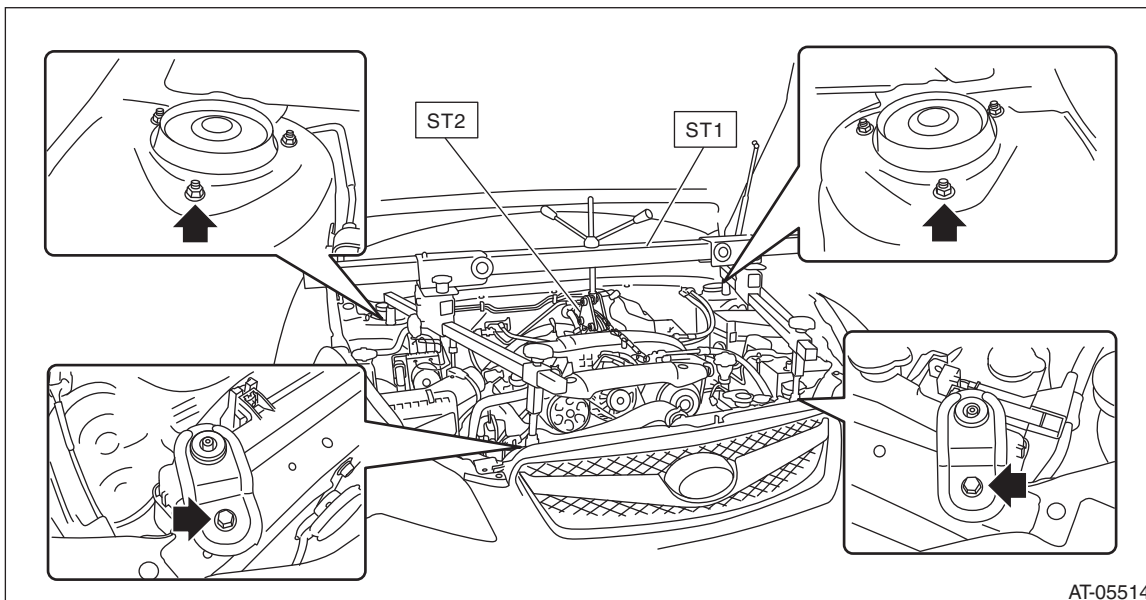
15) Set the ST1 to vehicle body and lift up the engine unit slightly.

ST1 99099AJ000 ENGINE HANGER

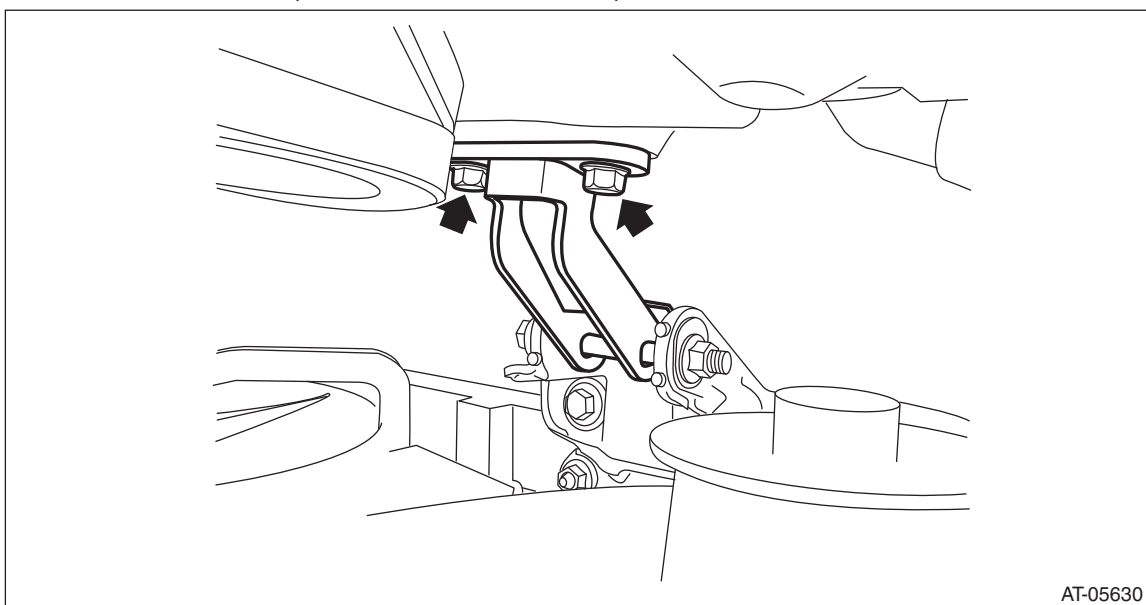
ST2 99099AJ010 CHAIN BALANCER

CAUTION:

- Set so that the chain sling does not hit the engine parts.
- Set the arms of ST (ENGINE HANGER) at the locations shown in the figure.



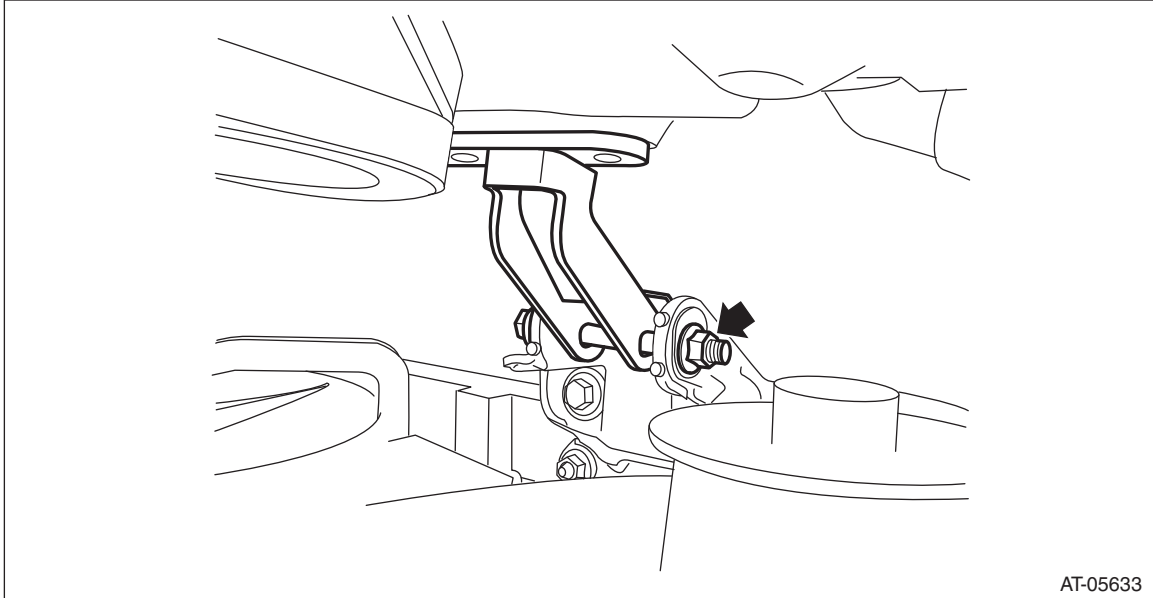
16) Remove the bolts from ST (FRONT MOUNTING H4).



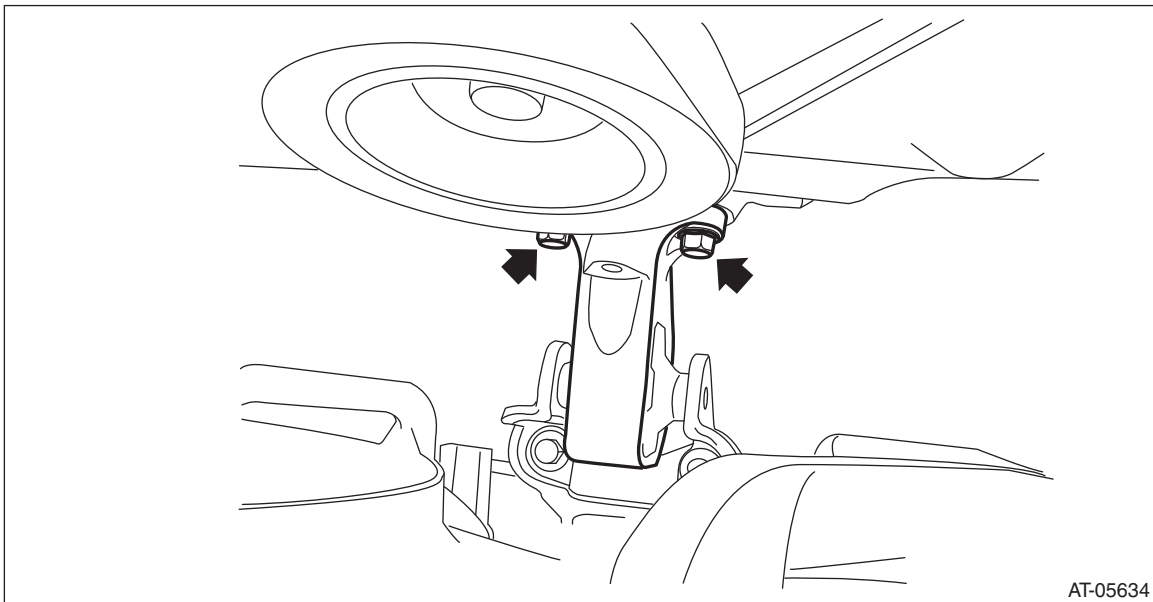
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

17) Remove the bolt and nut to remove ST (FRONT MOUNTING H4).



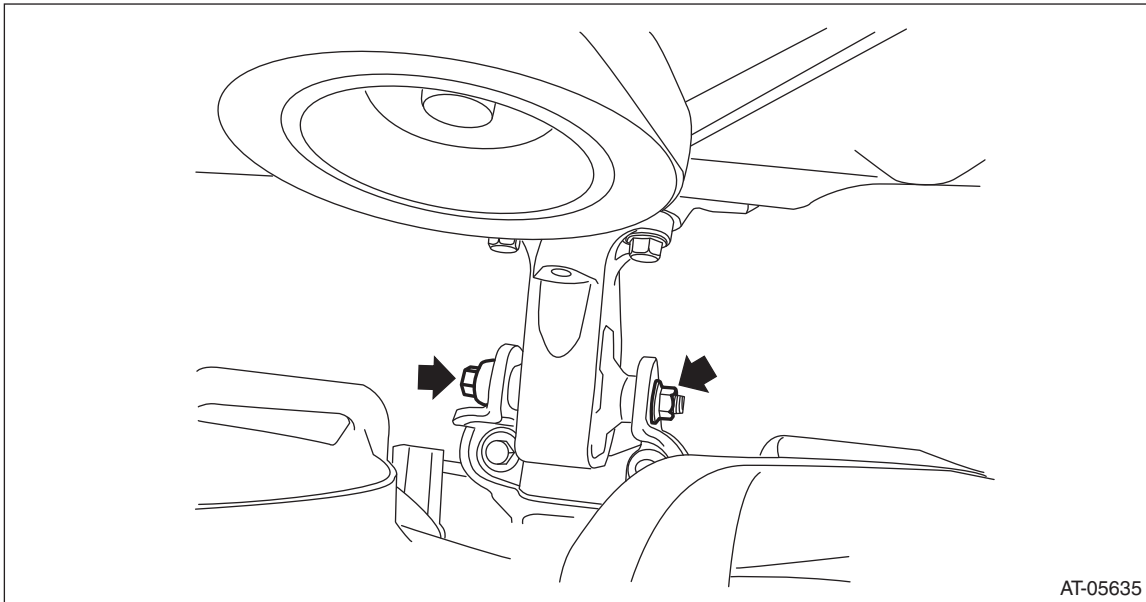
18) Temporarily attach the front engine mounting with bolts.



Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

19) Install the bolt and nut to the front engine mounting.



20) Tighten the bolt and nut of the front engine mounting.

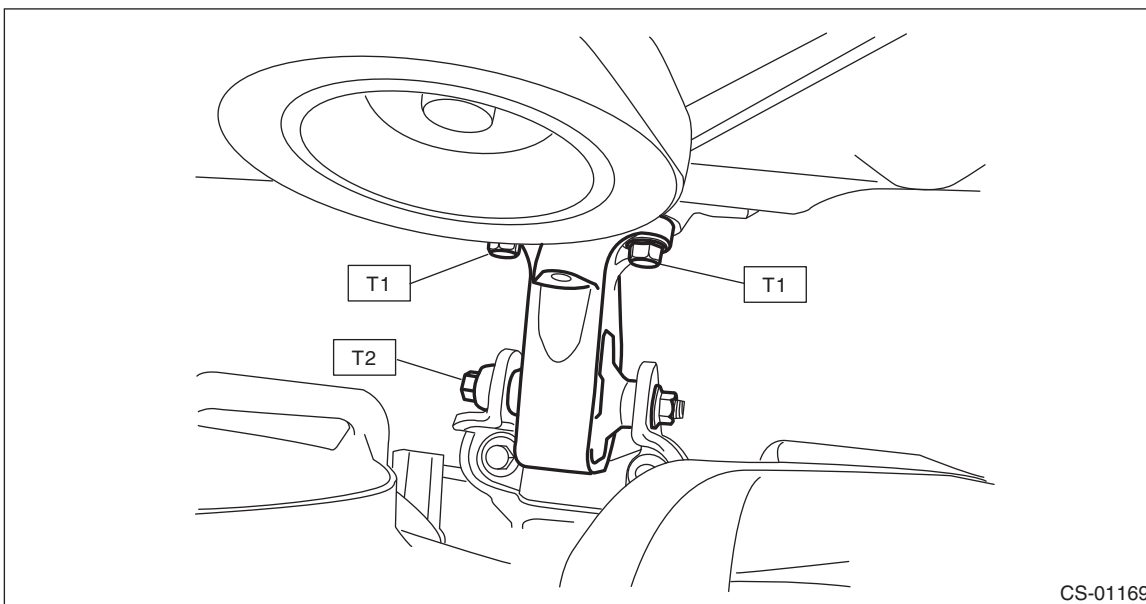
NOTE:

Start tightening from the engine side bolt.

Tightening torque:

T1: 25 N·m (2.5 kgf-m, 18.4 ft-lb)

T2: 45 N·m (4.6 kgf-m, 33.2 ft-lb)



21) Remove the ST (ENGINE HANGER and CHAIN SLING).

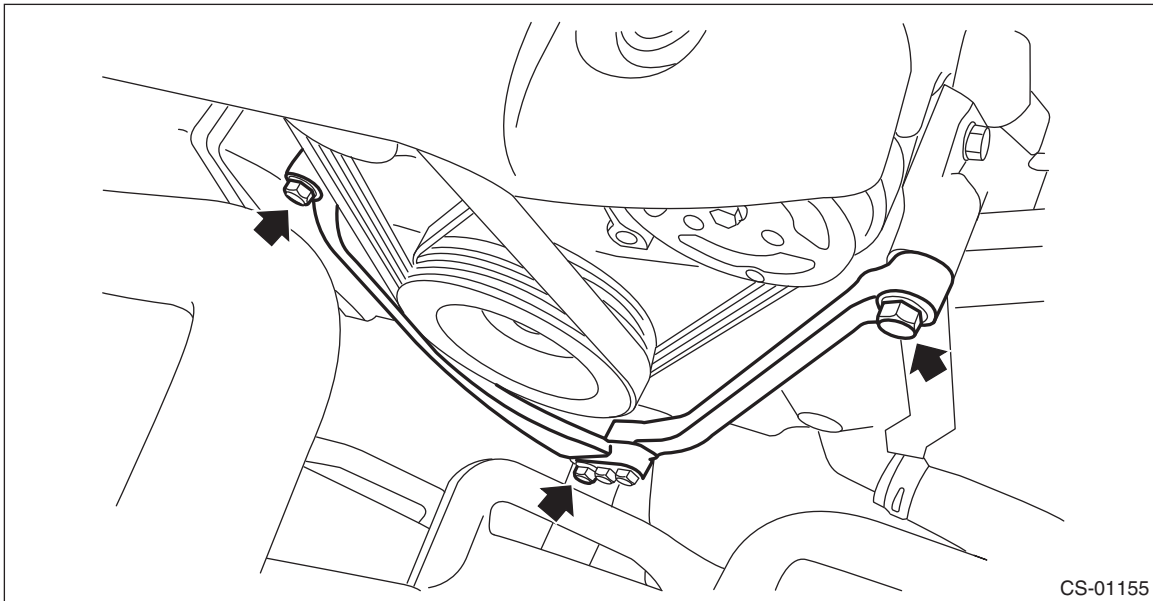
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

22) Install the stopper rod.

Tightening torque:

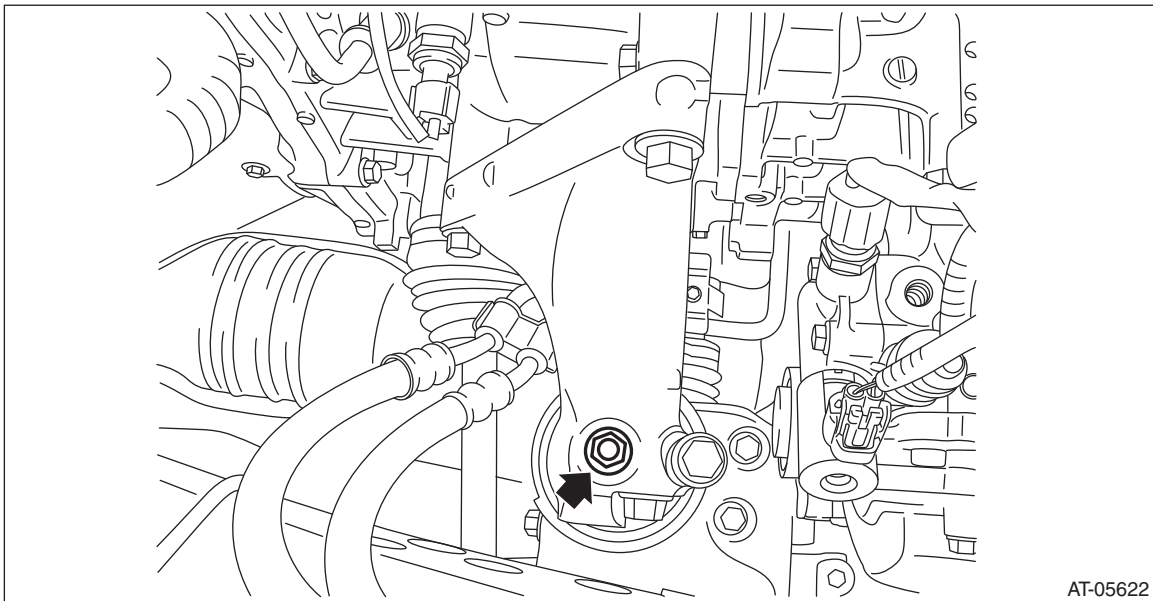
36 N·m (3.7 kgf·m, 26.6 ft·lb)



23) Install the nut to the transmission mounting bracket.

Tightening torque:

45 N·m (4.6 kgf·m, 51.6 ft·lb)



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

25) 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)

Automatic Transmission Assembly

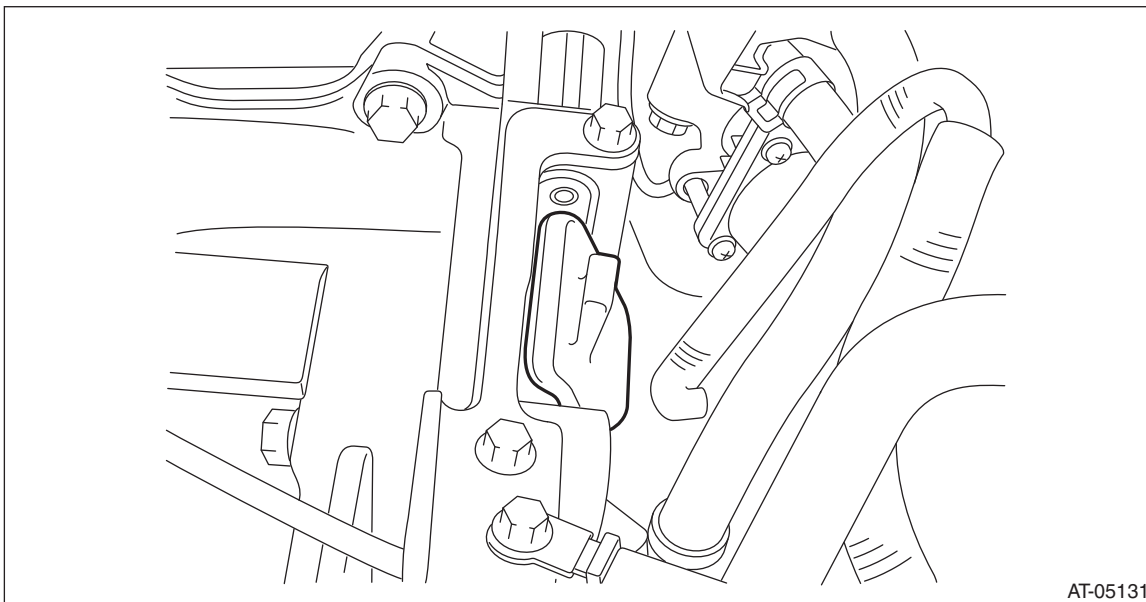
CONTINUOUSLY VARIABLE TRANSMISSION

26) 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)

27) Install the service hole.



AT-05131

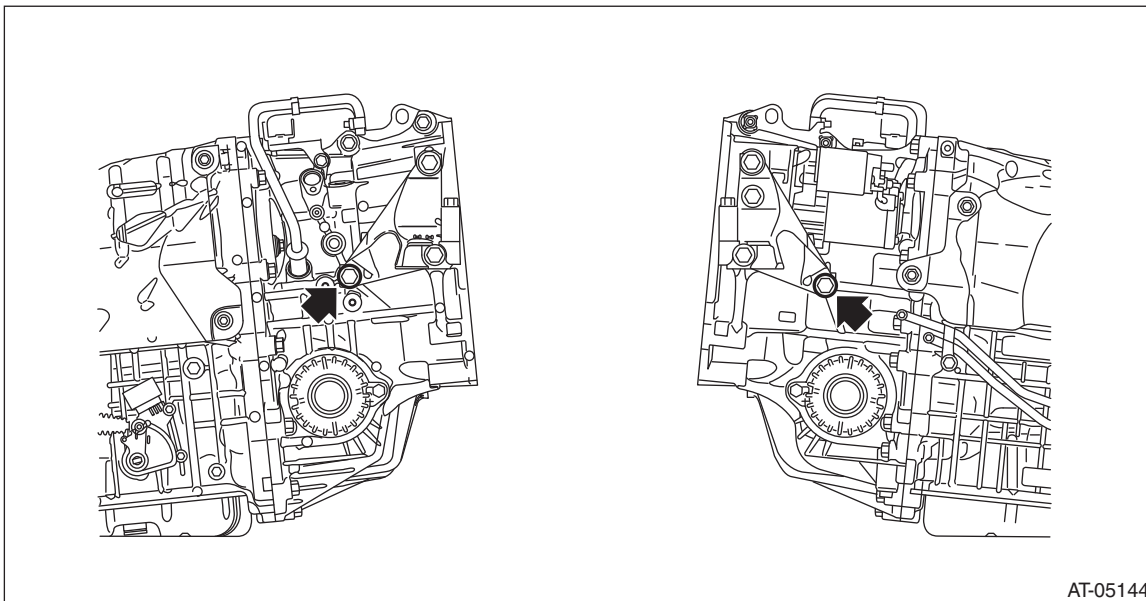
28) Install the starter. <Ref. to SC(H4SO)-9, INSTALLATION, Starter.>

29) Lift up the vehicle.

30) Tighten the single mounting bolt of transmission mounting bracket.

Tightening torque:

75 N·m (7.6 kgf·m, 55.3 ft·lb)



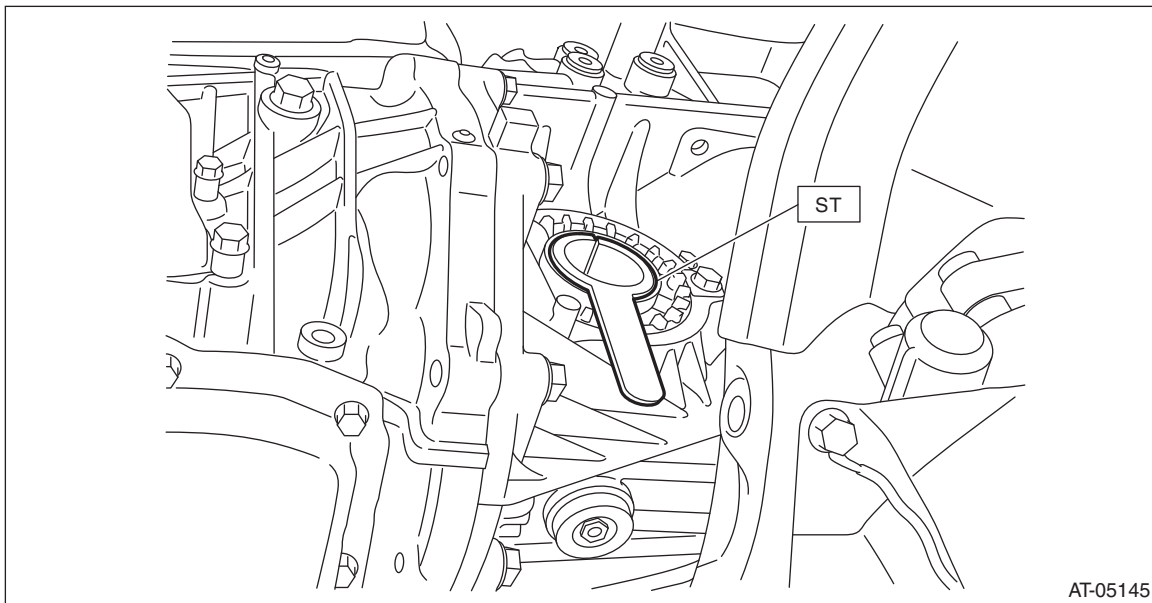
AT-05144

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

31) Set the ST to side retainer.

ST 28399SA010 OIL SEAL PROTECTOR



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

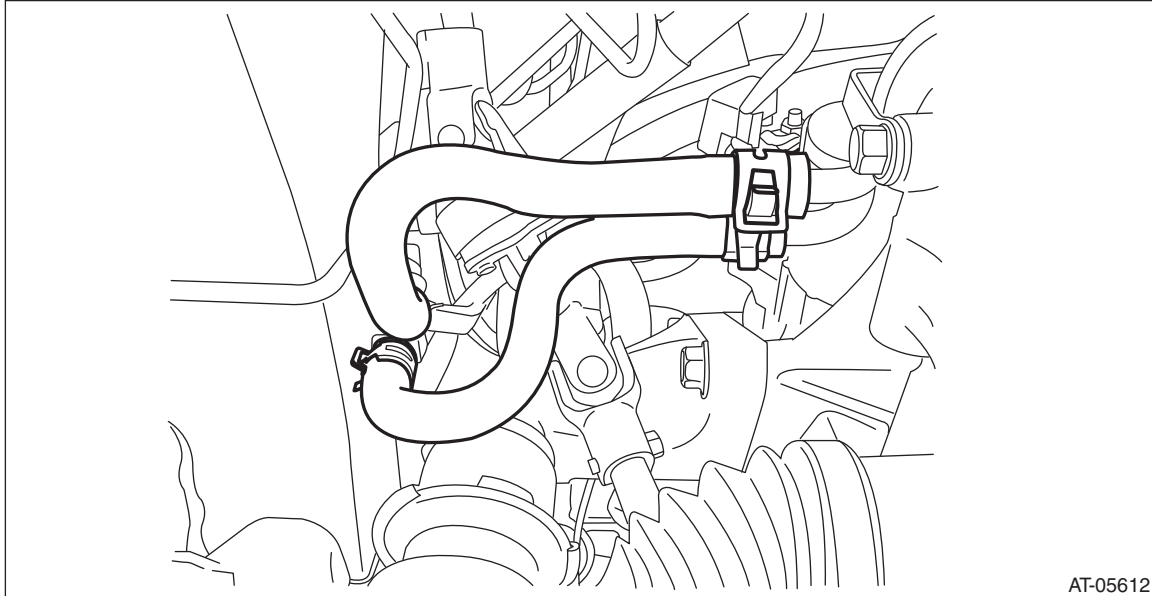
33) Insert the front drive shaft spline section into transmission and remove the ST (OIL SEAL PROTECTOR).

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

35) Install the CVTF inlet hose and CVTF outlet hose.

NOTE:

Use the new CVTF inlet hose and CVTF outlet hose.



36) 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.

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

37) Install the stabilizer link.

Tightening torque:

60 N·m (6.1 kgf·m, 44.3 ft·lb)

38) Connect the tie-rod end and knuckle arm, and attach the castle nut.

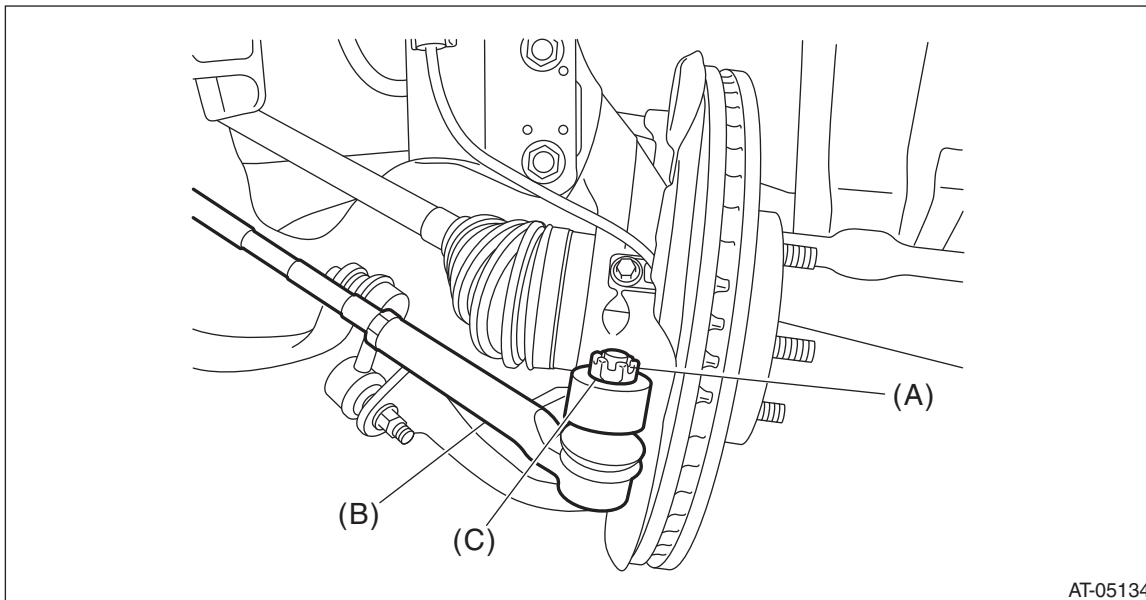
Tightening torque:

27 N·m (2.75 kgf·m, 19.9 ft·lb)

CAUTION:

When connecting, do not hit the cap at the bottom of tie-rod end with hammer.

39) After tightening the castle nut to the specified tightening torque, tighten it further within 60° until the cotter pin hole is aligned with slot in the nut. Fit the cotter pin into the nut, and then bend the pin to lock.



- (A) Cotter pin
- (B) Tie-rod end
- (C) Castle nut

40) Install the propeller shaft. <Ref. to DS-10, INSTALLATION, Propeller Shaft.>

41) Install the universal joint. <Ref. to PS-18, INSTALLATION, Universal Joint.>

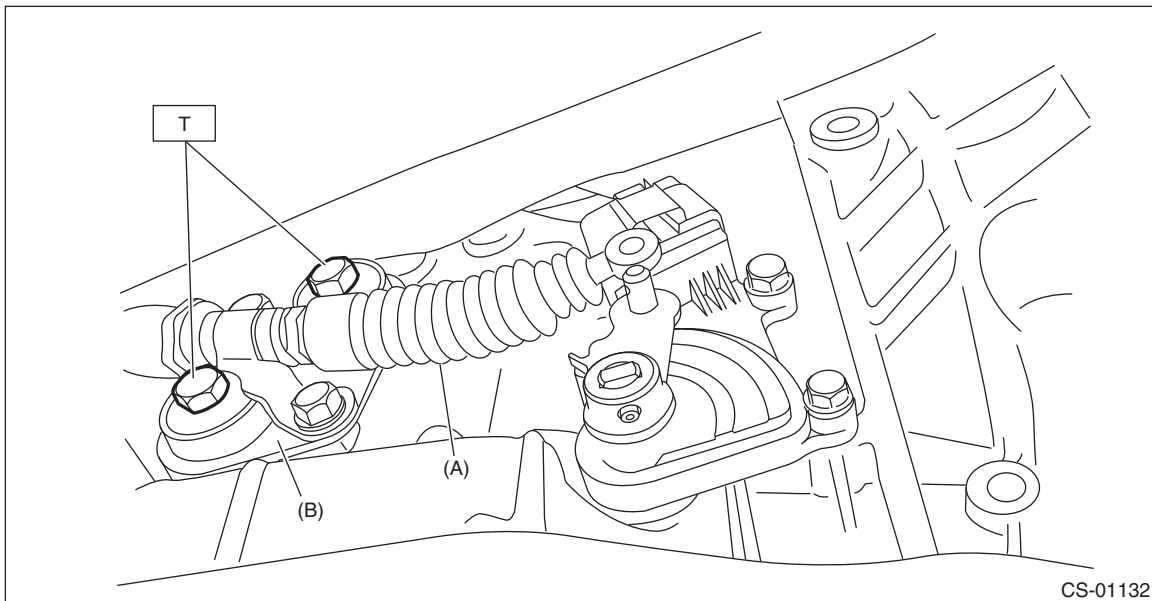
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

42) Install the plate assembly to transmission.

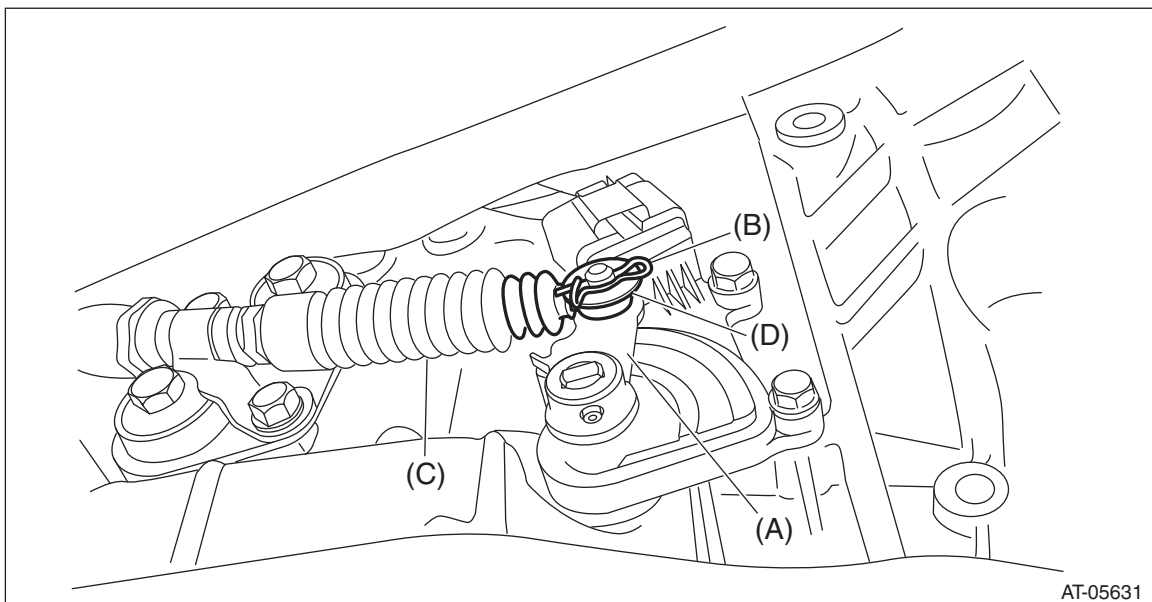
Tightening torque:

T: 25 N·m (2.5 kgf-m, 18.4 ft-lb)



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

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



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

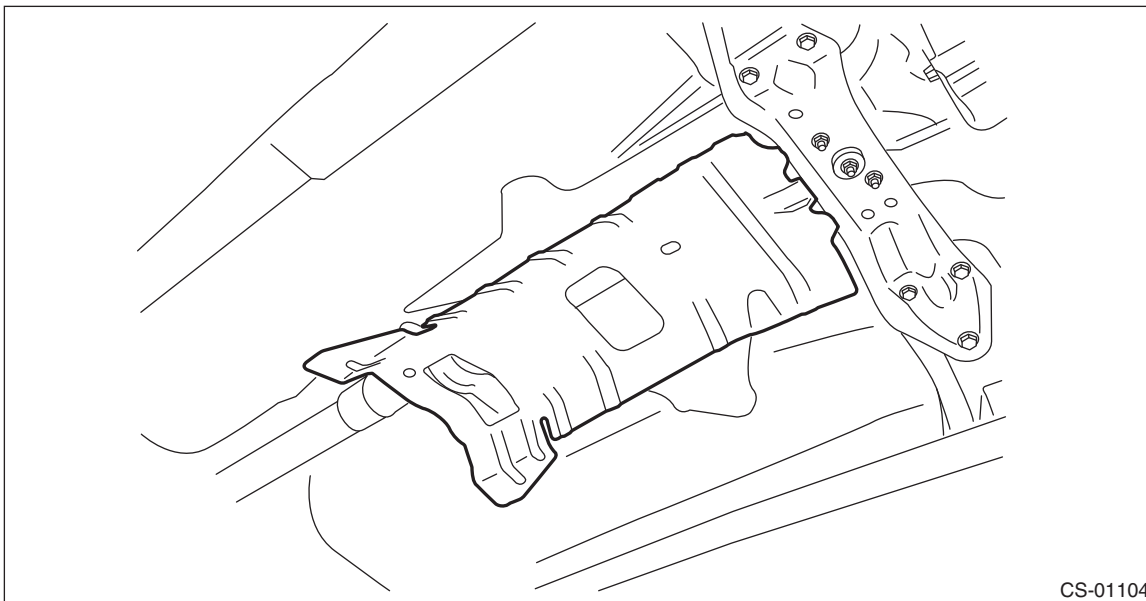
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

44) Install the heat shield cover.

Tightening torque:

18 N·m (1.8 kgf·m, 13.3 ft·lb)



CS-01104

45) Install the center exhaust pipe. <Ref. to EX(H4SO)-7, INSTALLATION, Center Exhaust Pipe.>

46) Install the under cover.

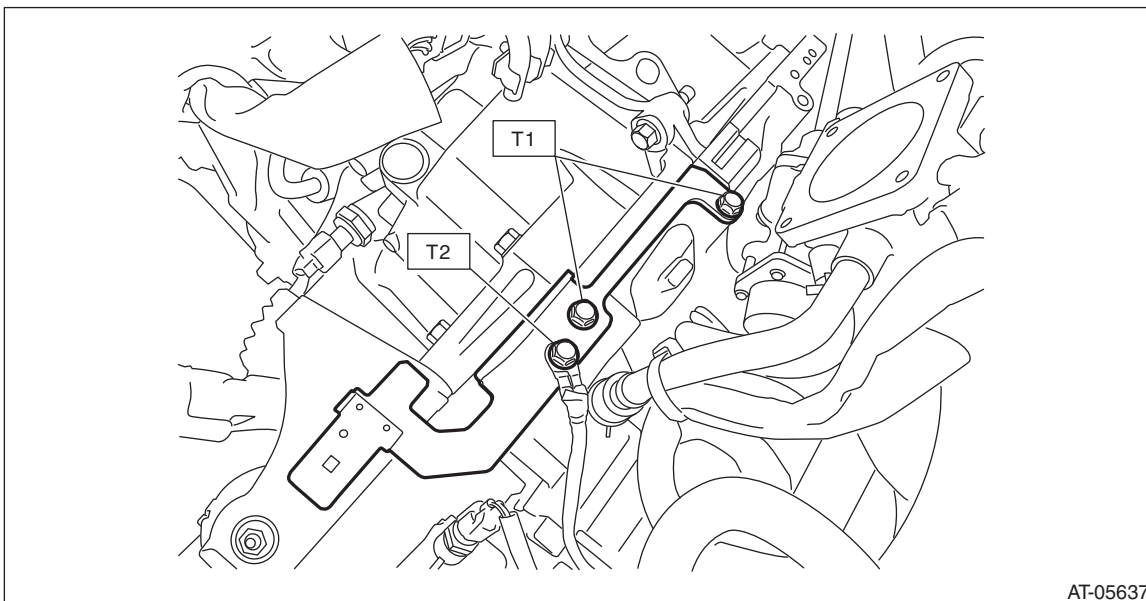
47) Lower the vehicle.

48) Remove the engine hanger rear for turbo model and install the engine hanger rear for non-turbo model.

Tightening torque:

T1: 16 N·m (1.6 kgf·m, 11.8 ft·lb)

T2: 19 N·m (1.9 kgf·m, 14.0 ft·lb)



AT-05637

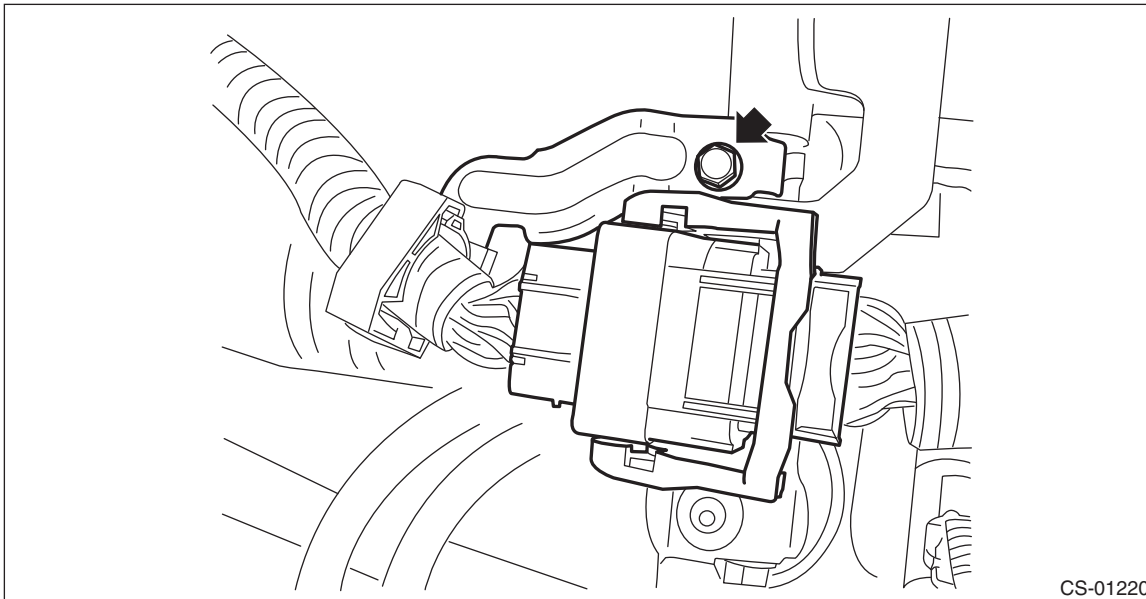
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

49) Install the engine harness connector to the engine hanger rear, and connect the harness connector, and install the harness connector bracket.

Tightening torque:

7.5 N·m (0.76 kgf-m, 5.5 ft-lb)



CS-01220

50) Install the throttle body. <Ref. to FU(H4SO)-14, INSTALLATION, Throttle Body.>

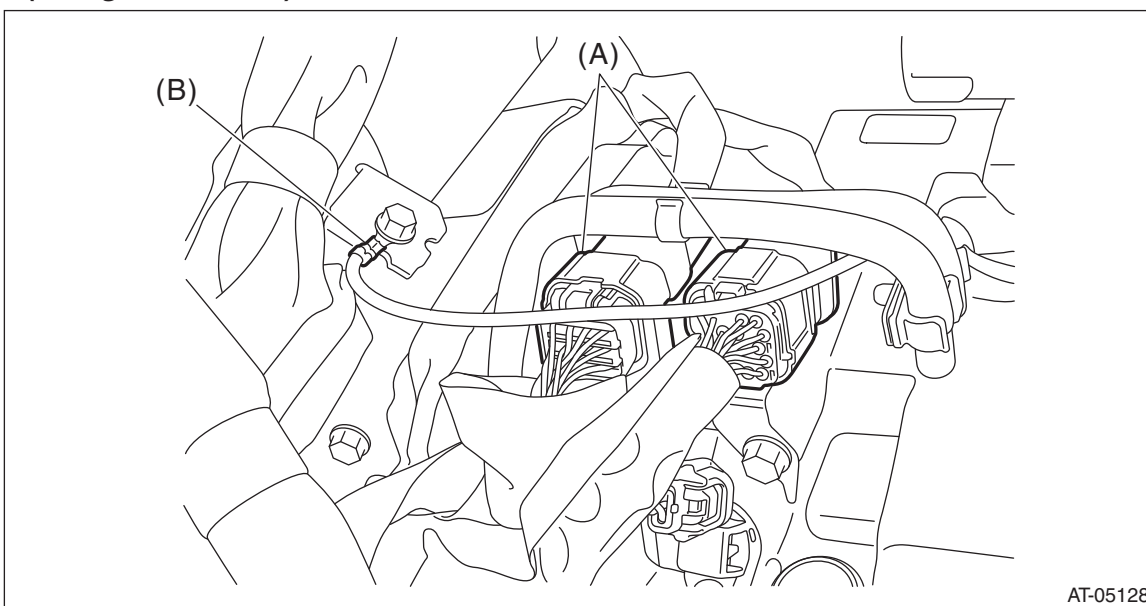
51) Install the manifold absolute pressure sensor. <Ref. to FU(H4SO)-30, INSTALLATION, Manifold Absolute Pressure Sensor.>

52) Connect the following harness connectors.

- Transmission harness
- Transmission radio ground terminal

Tightening torque:

13 N·m (1.3 kgf-m, 9.6 ft-lb)



AT-05128

- (A) Transmission harness connectors
- (B) Transmission radio ground terminal

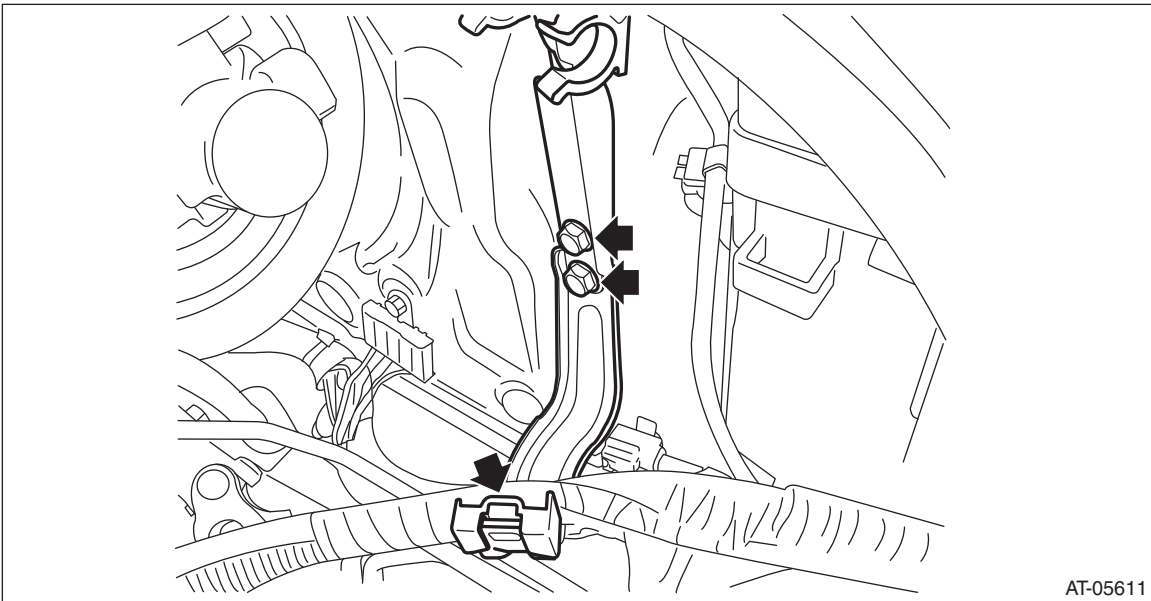
Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

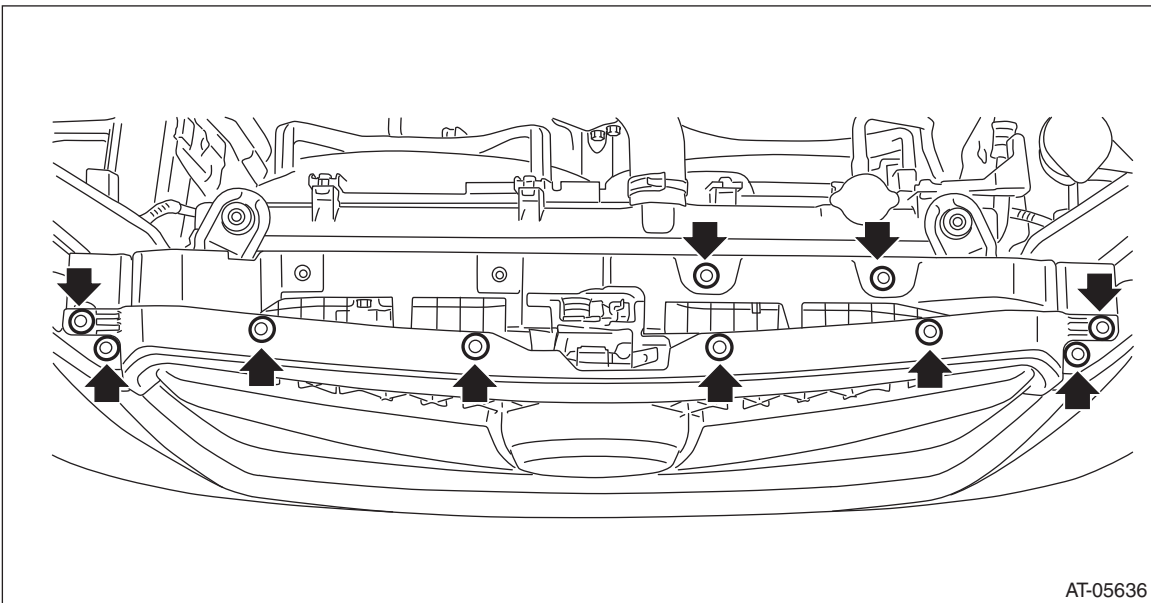
53) Install the battery cable bracket, and install the battery cable clip to the bracket.

Tightening torque:

7.5 N·m (0.76 kgf·m, 5.5 ft·lb)



54) Attach the grille bracket.



55) Install the air intake boot assembly. <Ref. to IN(H4SO)-8, INSTALLATION, Air Intake Boot.>

56) Install the air intake duct. <Ref. to IN(H4SO)-9, INSTALLATION, Air Intake Duct.>

57) Install the front wheels.

58) Connect the ground cable to battery.

59) Refill differential gear oil to adjust the differential gear oil amount. <Ref. to CVT-40, Differential Gear Oil.>

60) Refill CVTF to adjust the CVTF amount. <Ref. to CVT-35, CVTF.>

61) Perform the variator chain break-in. <Ref. to CVT-44, Variator Chain Break-in.>

CAUTION:

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

- Variator chain replacement
- Primary pulley and secondary pulley replacement

62) Perform Clear Memory 2 operation. <Ref. to CVT(diag)-18, Clear Memory Mode.>

63) Execute the learning control promotion. <Ref. to CVT(diag)-20, Learning Control.>

Automatic Transmission Assembly

CONTINUOUSLY VARIABLE TRANSMISSION

64) Execute the rear differential inspection mode. <Ref. to DI-78, 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**

65) Perform the road test to make sure there is no fault. <Ref. to CVT-46, INSPECTION, Road Test.>