

# Automatic Transmission Assembly

## AUTOMATIC TRANSMISSION

### 9. Automatic Transmission Assembly

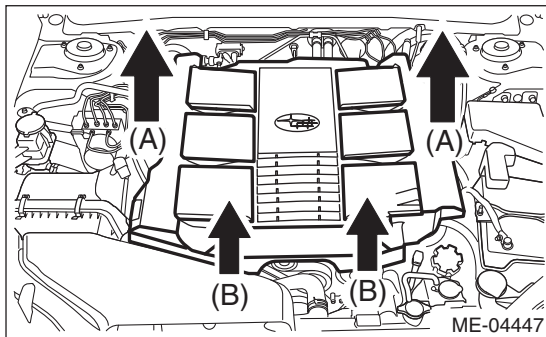
#### A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Remove the front wheels.
- 3) Fully open the front hood.
- 4) Disconnect the ground cable from battery.
- 5) Remove the collector cover.

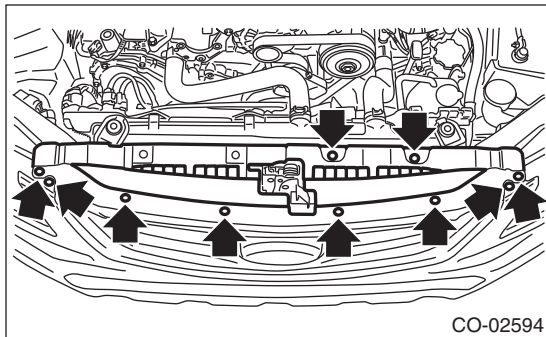
#### NOTE:

Follow the steps below when removing the collector cover.

- (1) Pull up the two points at the rear (A).
- (2) Pull up the two points at the front (B) while moving them forward.

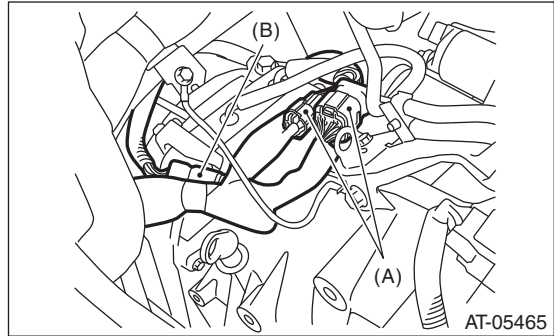


- 6) Remove the air intake duct. <Ref. to IN(H6DO)-8, REMOVAL, Air Intake Duct.>
- 7) Remove the 10 clips and detach the grille bracket.



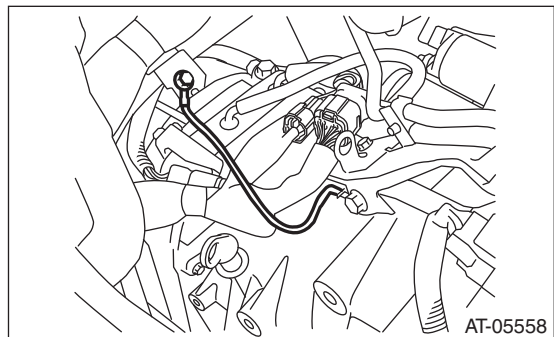
- 8) Remove the air intake boot. <Ref. to IN(H6DO)-7, REMOVAL, Air Intake Boot.>

- 9) Disconnect the following connectors.

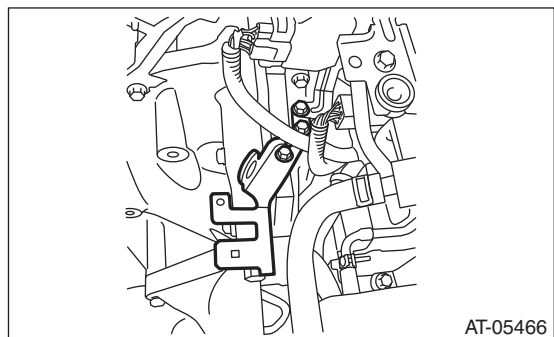


- (A) Transmission harness connectors
- (B) Front oxygen (A/F) sensor

- 10) Disconnect the ground cable.



- 11) Remove the air breather hose. <Ref. to 5AT-62, REMOVAL, Air Breather Hose.>
- 12) Remove the starter. <Ref. to SC(H4SO)-9, REMOVAL, Starter.>
- 13) Remove the engine hanger rear.

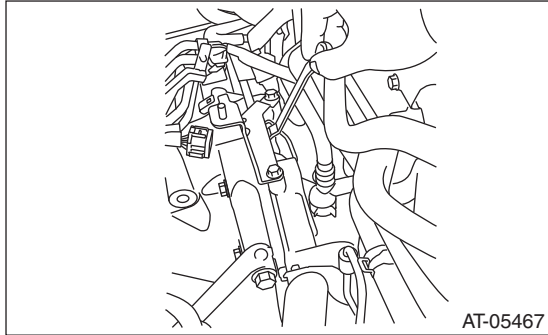


- 14) Separate the torque converter from drive plate.

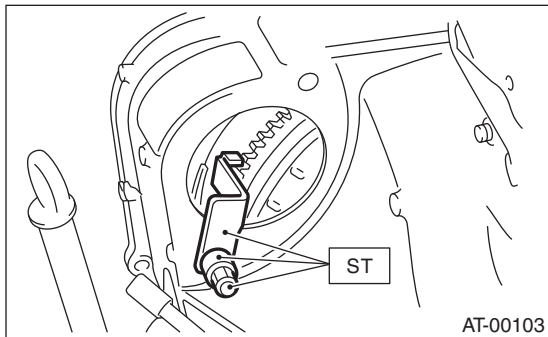
#### CAUTION:

- Be careful not to drop bolts into converter housing.
- Be careful not to damage the mounting bolts.
  - (1) Remove the service hole plug.
  - (2) Remove the bolts which hold torque converter to drive plate.
  - (3) Remove the four bolts by rotating the crank pulley a little at a time.

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



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

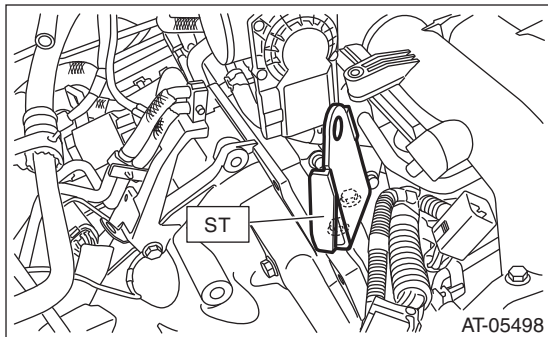


16) Attach the ST to the engine.

**Tightening torque:**

**19 N·m (1.9 kgf·m, 14.0 ft·lb)**

ST 18360AA020 HANGER

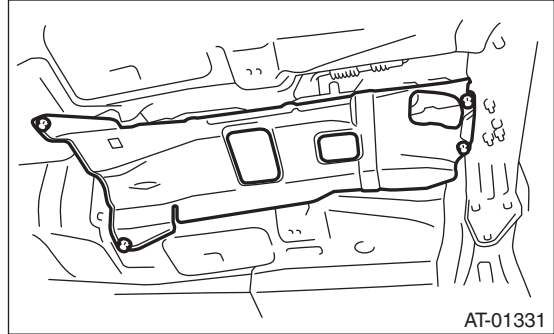


17) Lift up the vehicle.

18) Remove the under cover. <Ref. to EI-35, REMOVAL, Front Under Cover.>

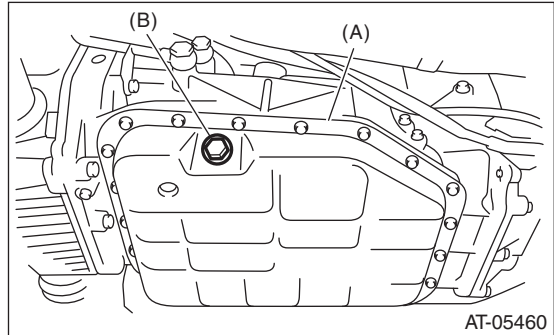
19) Remove the front and rear exhaust pipes. <Ref. to EX(H6DO)-5, REMOVAL, Front Exhaust Pipe.> <Ref. to EX(H6DO)-8, REMOVAL, Rear Exhaust Pipe.>

20) Remove the heat shield cover.



21) Remove the steering shaft universal joint. <Ref. to PS-18, REMOVAL, Universal Joint.>

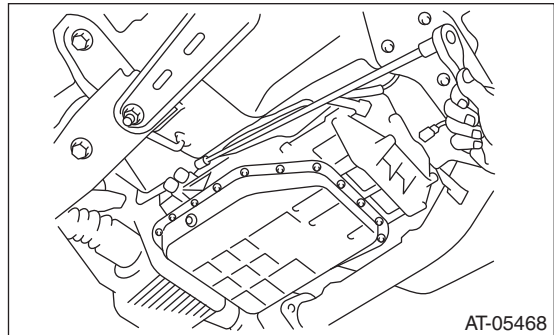
22) Remove the ATF drain plug to drain ATF.



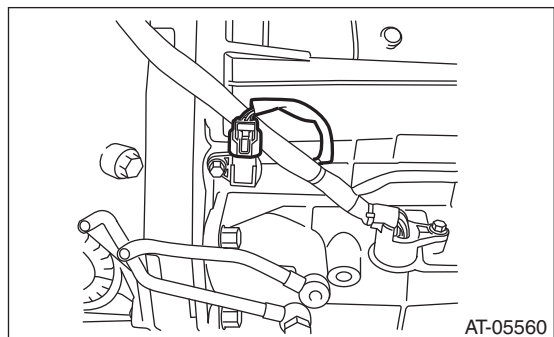
(A) Oil pan

(B) ATF drain plug

23) Remove the oil charge pipe.



24) Disconnect the connector from turbine speed sensor 1.



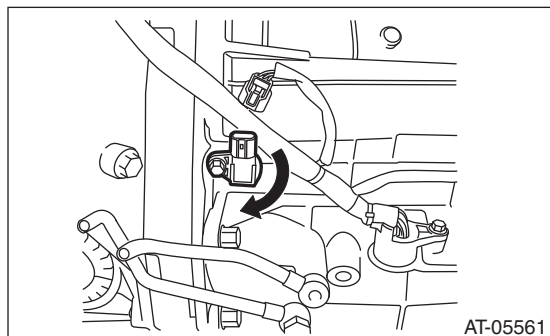
25) Remove the turbine speed sensor 1 connector mounting bolt and rotate the sensor by 180°.

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### CAUTION:

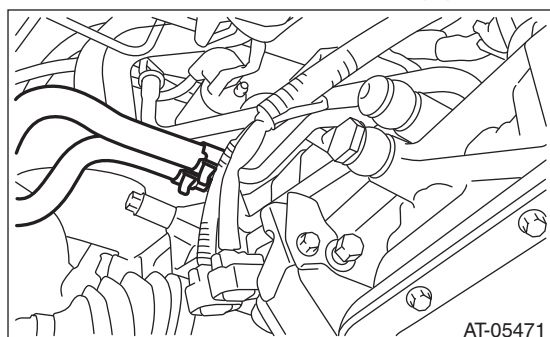
Failure to follow this procedure may cause the interference between vehicle body and sensor while removing/installing transmission, and resulting in damage.



26) Remove the propeller shaft. <Ref. to DS-10, REMOVAL, Propeller Shaft.>

27) Remove the select cable. <Ref. to CS-41, REMOVAL, Select Cable.>

28) Disconnect the ATF cooler inlet and outlet hose from the ATF cooler inlet and outlet pipe.



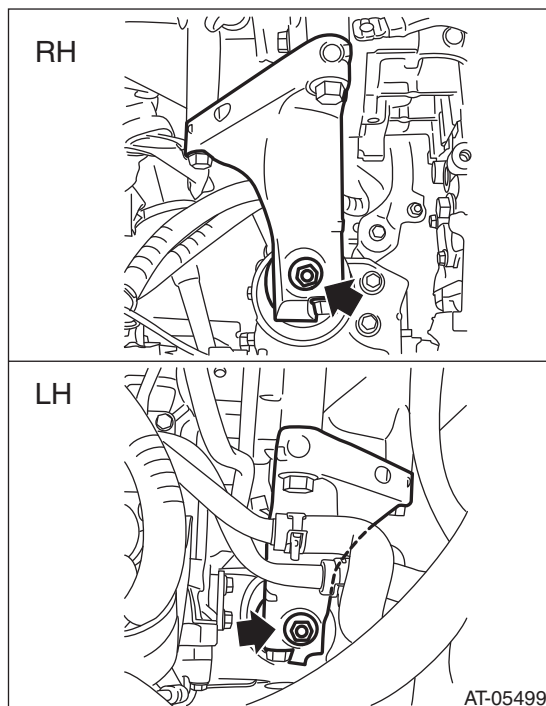
29) Remove the front stabilizer bracket. <Ref. to FS-19, REMOVAL, Front Stabilizer.>

30) Remove the bolts which secure front ball joint to the housing. <Ref. to FS-20, REMOVAL, Front Ball Joint.>

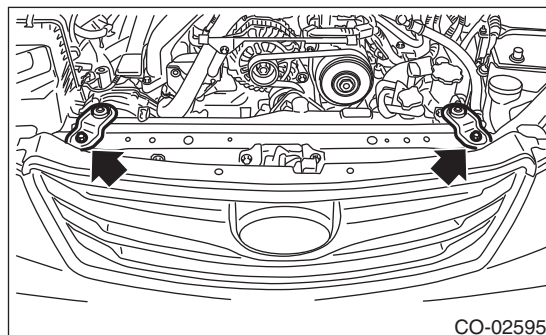
31) Pull out the drive shaft from transmission.

32) Lower the vehicle.

33) Remove the nuts connecting the engine mounting and the transmission main mounting bracket.



34) Remove the radiator upper brackets.



35) Set the ST on the vehicle and hang the engine.

### CAUTION:

• Set the ST so that the chain does not contact the sensor and other parts while hanging the engine.

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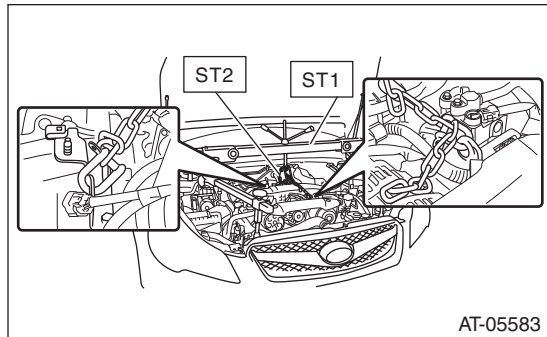
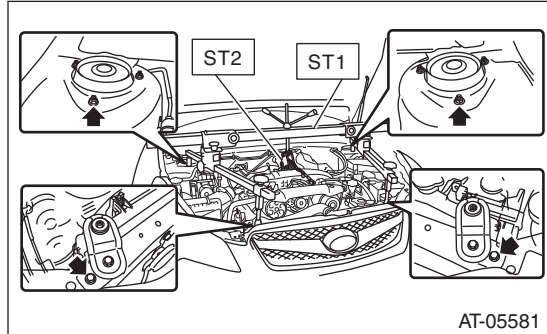
- Set the arms of ST (ENGINE HANGER) at the locations shown in the figure.

ST1 99099AJ000 SPECIAL TOOL ENGINE HANGER

ST2 99099AJ010 SPECIAL TOOL CHAIN BALANCER

GENERAL TOOL Sling chain

GENERAL TOOL Screw shackle

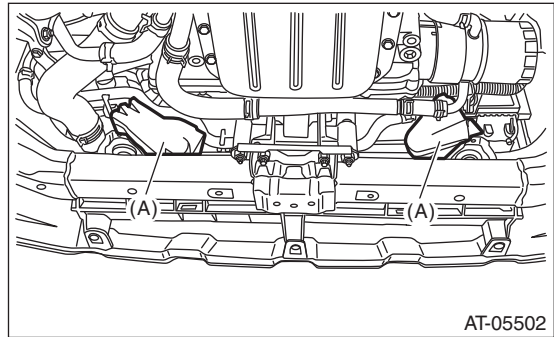
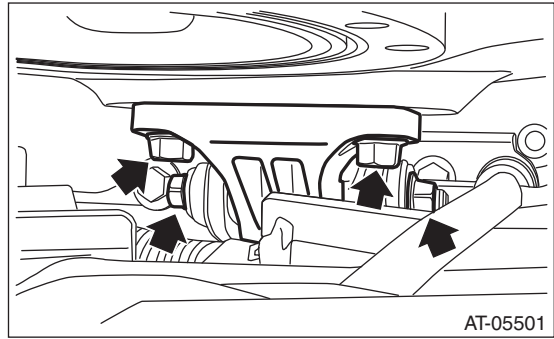


36) Lift the radiator by approximately 30 mm and remove the front cushion rubber.

**NOTE:**

- The front cushion rubber cannot be removed from the vehicle unless the radiator is lifted due to a small clearance between the radiator and engine.

- Lift the radiator up and keep the position with cloth or other material placed under the radiator.



(A) Cloth

37) Attach the ST with the front cushion rubber mounting bolts and nuts.

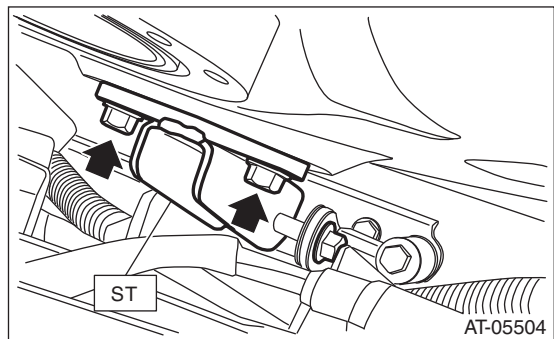
**CAUTION:**

Do not tighten the nuts on the engine mount excessively, or the engine mounting bracket may be deformed.

**Tightening torque:**

**25 N·m (2.5 kgf-m, 18.4 ft-lb)**

ST 41099AJ010 SPECIAL TOOL H6



38) Remove the ST (ENGINE HANGER).

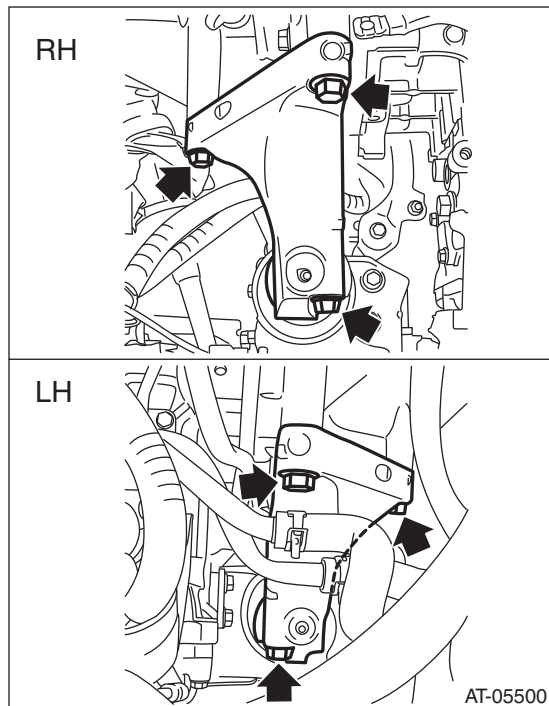
**NOTE:**

Operation is less efficient with the ST (ENGINE HANGER) attached. Remove it temporarily.

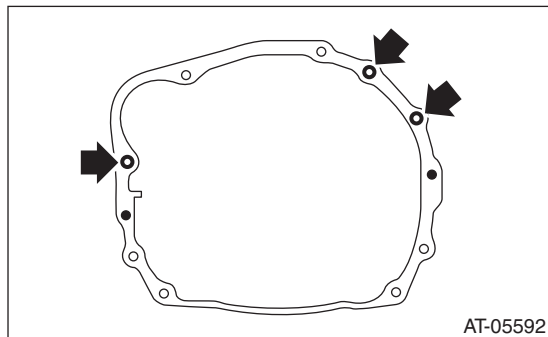
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39) Remove the transmission main mounting bracket.



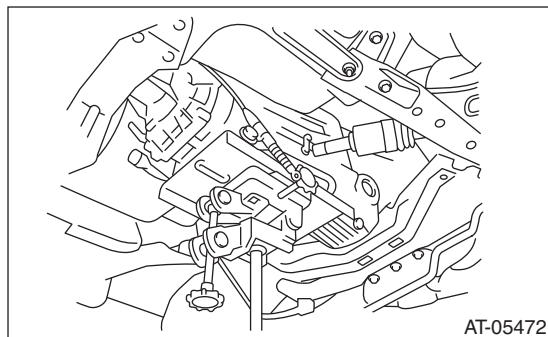
40) Remove the transmission mounting bolt (upper side).



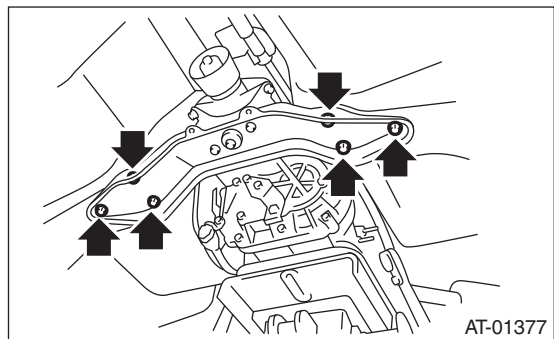
41) Attach the ST (ENGINE HANGER) again.

42) Lift up the vehicle.

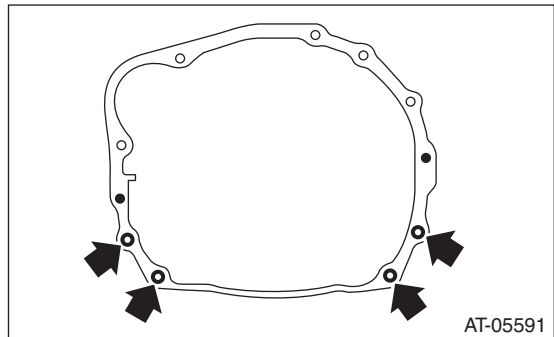
43) Set the transmission jack under the transmission.



44) Remove the rear crossmember from the vehicle.



45) Remove the transmission mounting bolt and nut (lower side).



46) Remove the transmission.

47) Remove the rear crossmember and cushion rubber from the transmission.

## B: INSTALLATION

1) Replace the front differential side retainer oil seal.

(1) Remove the oil seal by using flat tip screwdriver etc.

(2) Using the ST, install the oil seal by lightly tapping with a plastic hammer.

### NOTE:

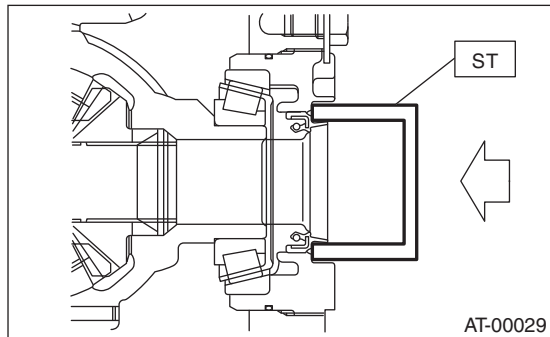
- Use a new oil seal.
- Check the identification marks (L, R) during installation not to mix up the oil seal RH and LH.
- Apply gear oil to the oil seal lips.

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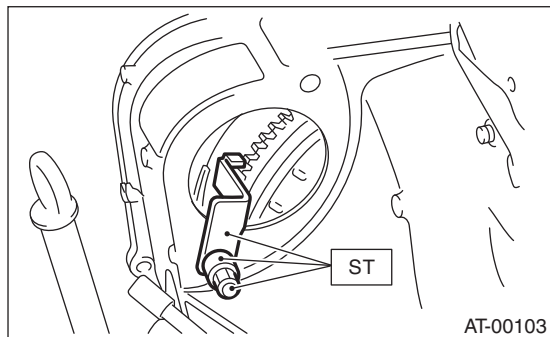
- Be sure to replace the differential side retainer oil seal whenever the front drive shaft is removed from the transmission.

ST 18675AA000 DIFFERENTIAL SIDE OIL SEAL INSTALLER



2) Attach the ST to converter case.

ST 498277200 STOPPER SET

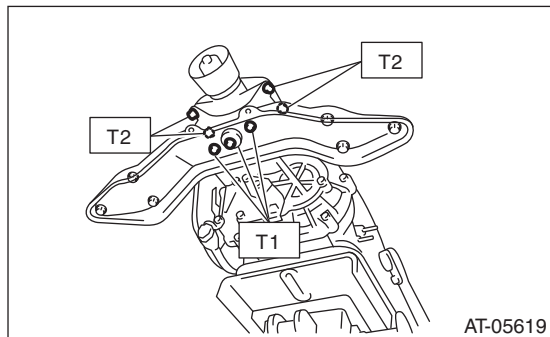


3) Install the rear crossmember and cushion rubber to the transmission.

**Tightening torque:**

**T1: 35 N·m (3.6 kgf-m, 25.8 ft-lb)**

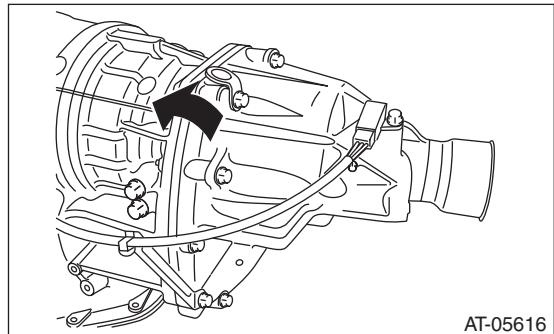
**T2: 40 N·m (4.1 kgf-m, 29.5 ft-lb)**



4) Tap the transmission hanger in the rear side of transmission with a rubber hammer to bend it until it is in close contact with the transmission case.

**CAUTION:**

**Do not apply excessive load or impact to the transmission case.**

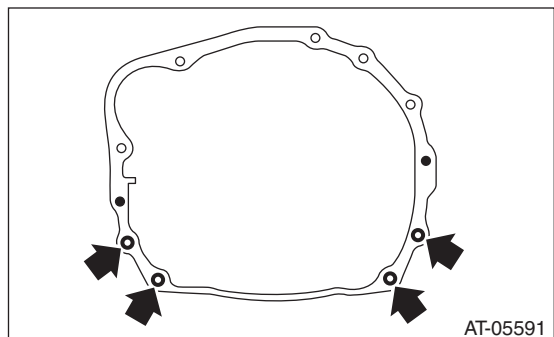


5) While lifting up the transmission gradually using transmission jack, install the transmission to the engine.

6) Install the engine mounting bolt and nut (lower side).

**Tightening torque:**

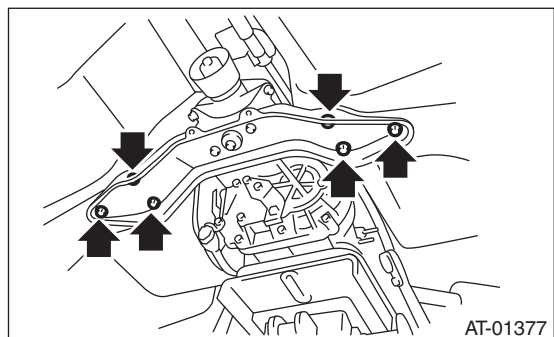
**50 N·m (5.1 kgf-m, 36.9 ft-lb)**



7) Install the transmission rear crossmember.

**Tightening torque:**

**75 N·m (7.6 kgf-m, 55.3 ft-lb)**



8) Remove the transmission jack.

9) Lower the vehicle.

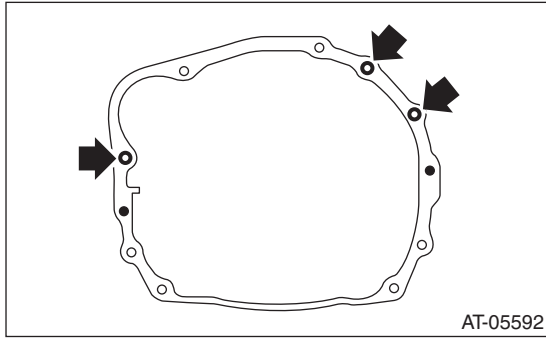
10) Install the engine mounting bolt (upper side).

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### Tightening torque:

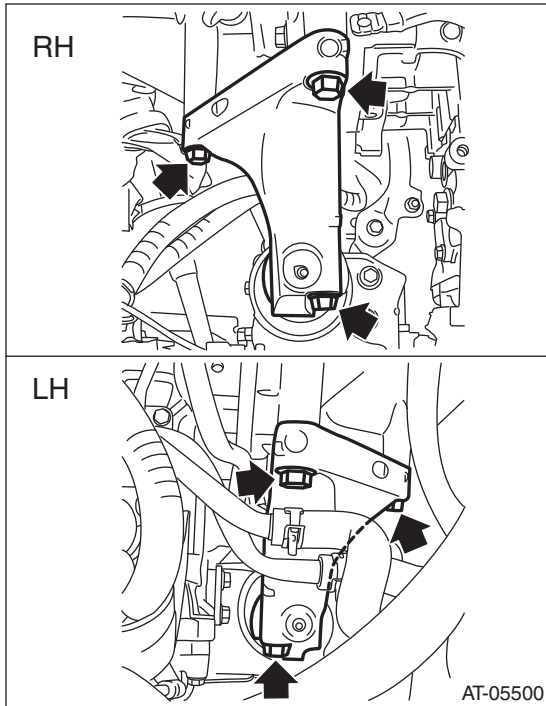
**50 N·m (5.1 kgf·m, 36.9 ft·lb)**



- 11) Remove the ST (ENGINE HANGER).
- 12) Install the transmission main mounting bracket.

### Tightening torque:

**75 N·m (7.6 kgf·m, 55.3 ft·lb)**



- 13) Attach the ST (ENGINE HANGER) again.
- 14) Remove the ST and install the front cushion rubber.

(1) Lift the radiator by approximately 30 mm and install the front cushion rubber.

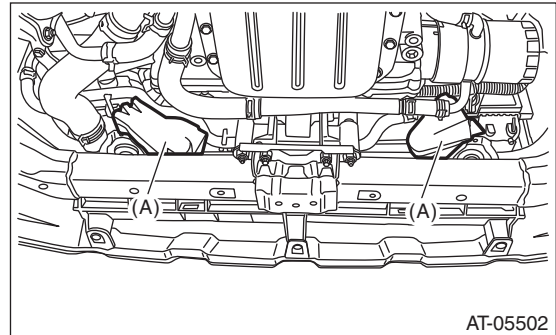
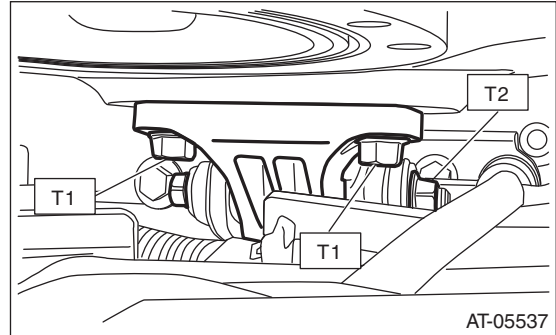
### NOTE:

- The front cushion rubber cannot be installed to the vehicle unless the radiator is lifted due to a small clearance between the radiator and engine.
- Lift the radiator up and keep the position with cloth or other material placed under the radiator.

### 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)**

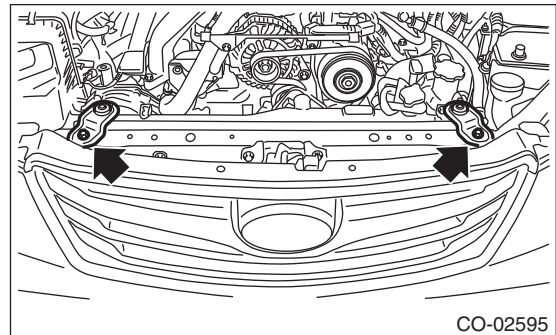


(A) Cloth

- (2) Install the radiator upper brackets.

### Tightening torque:

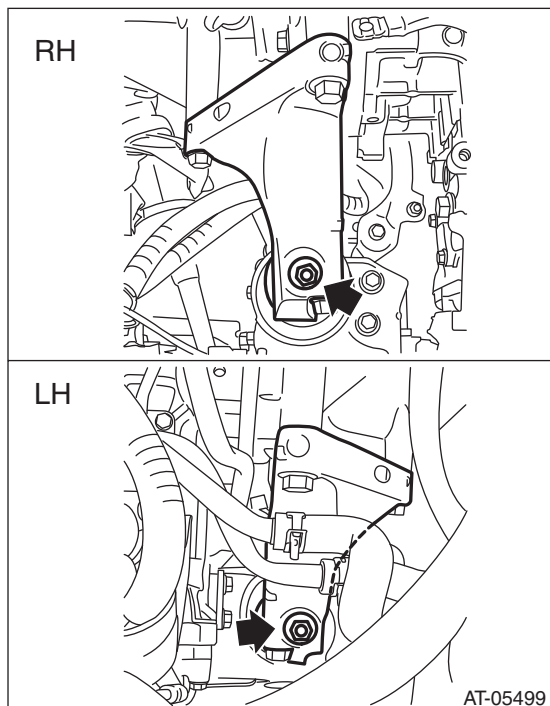
**12 N·m (1.2 kgf·m, 8.9 ft·lb)**



- 15) Remove the ST from the vehicle.
- 16) Tighten the nuts connecting the engine mounting and the transmission main mounting bracket.

**Tightening torque:**

**45 N·m (4.6 kgf·m, 33.2 ft·lb)**



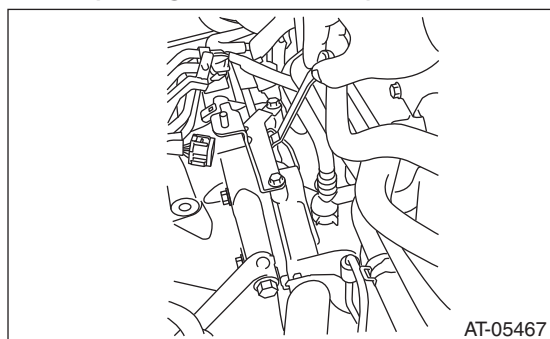
- 17) Remove the ST from converter case.
- 18) Install the torque converter to drive plate.

**CAUTION:**

- **Be careful not to drop bolts into converter housing.**
- **Be careful not to damage the mounting bolts.**
  - (1) Install the bolts which connect the torque converter and drive plate.
  - (2) Install all four bolts by rotating the crank pulley a little at a time.
  - (3) Install the service hole plug.

**Tightening torque:**

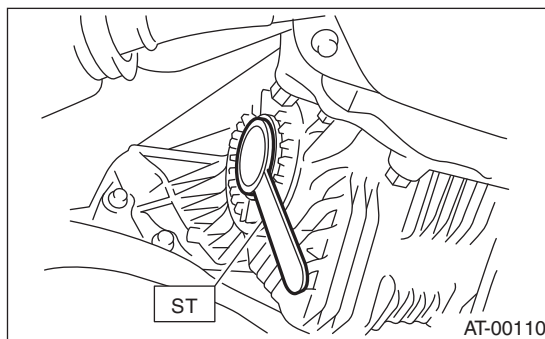
**25 N·m (2.5 kgf·m, 18.4 ft·lb)**



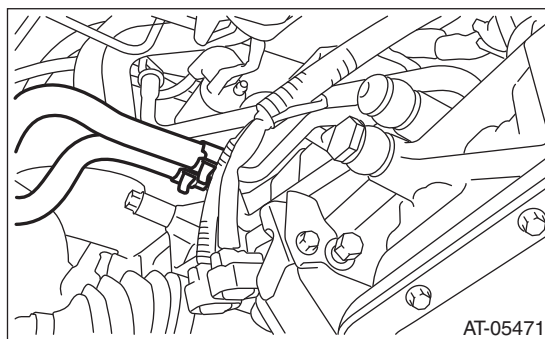
- 19) Install the starter. <Ref. to SC(H4SO)-9, INSTALLATION, Starter.>
- 20) Lift up the vehicle.

- 21) Set the ST to side retainer.

ST 28399SA010 OIL SEAL PROTECTOR



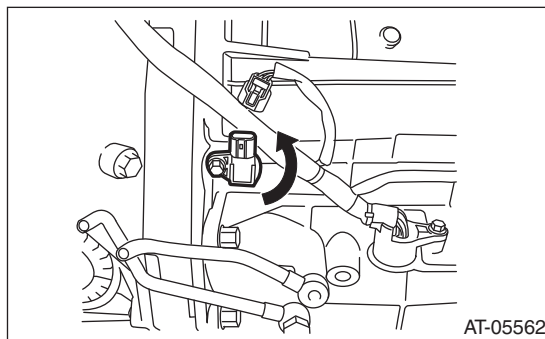
- 22) Install the front drive shaft into the transmission. <Ref. to DS-25, INSTALLATION, Front Drive Shaft.>
- 23) Connect the ATF cooler inlet and outlet hose to the ATF cooler inlet and outlet pipe.



- 24) Insert the ball joint into housing. <Ref. to FS-20, INSTALLATION, Front Ball Joint.>
- 25) Install the front stabilizer bracket. <Ref. to FS-19, INSTALLATION, Front Stabilizer.>
- 26) Install the propeller shaft. <Ref. to DS-10, INSTALLATION, Propeller Shaft.>
- 27) Install the select cable. <Ref. to CS-45, INSTALLATION, Select Cable.>
- 28) Rotate the turbine speed sensor 1 by 180° and then restore it to the original position to install. Then, connect the connector.

**Tightening torque:**

**7 N·m (0.7 kgf·m, 5.2 ft·lb)**



- 29) Install the oil charge pipe.

**NOTE:**

Use new gaskets and O-rings.

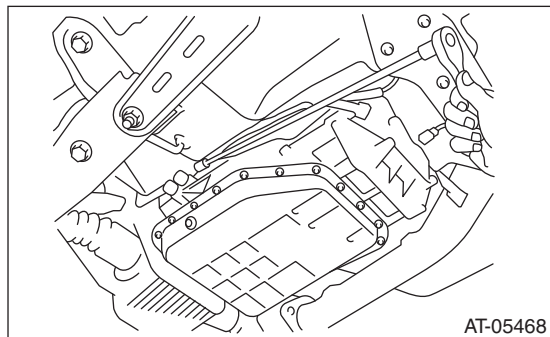


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### Tightening torque:

**38 N·m (3.9 kgf·m, 28.0 ft-lb)**



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

31) Install the heat shield cover. <Ref. to EI-165, INSTALLATION, Heat Shield Cover.>

32) Install the front and rear exhaust pipe. <Ref. to EX(H6DO)-6, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H6DO)-8, INSTALLATION, Rear Exhaust Pipe.>

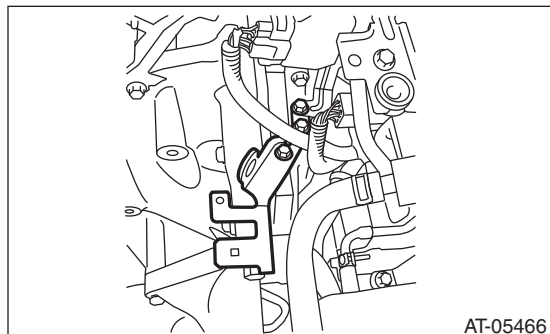
33) Install the under cover. <Ref. to EI-35, INSTALLATION, Front Under Cover.>

34) Lower the vehicle.

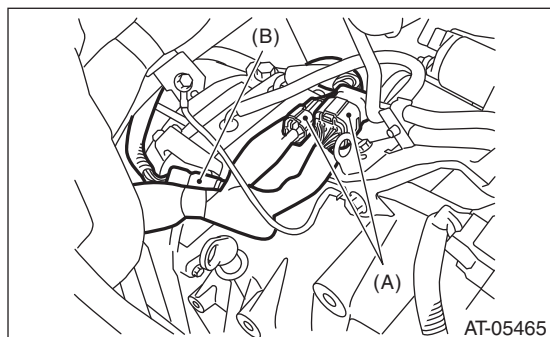
35) Remove the ST and install the engine hanger rear.

### Tightening torque:

**19 N·m (1.9 kgf·m, 14.0 ft-lb)**



36) Connect the following connectors.



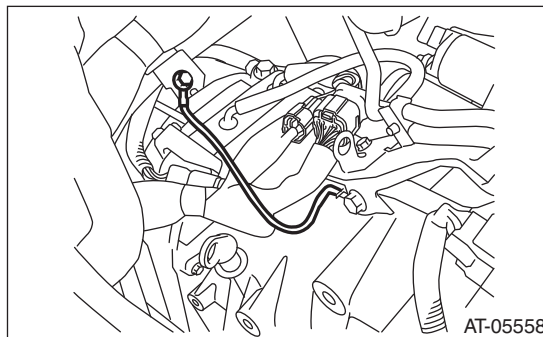
(A) Transmission harness connectors

(B) Front oxygen (A/F) sensor

37) Install the ground cable.

### Tightening torque:

**13 N·m (1.3 kgf·m, 9.6 ft-lb)**

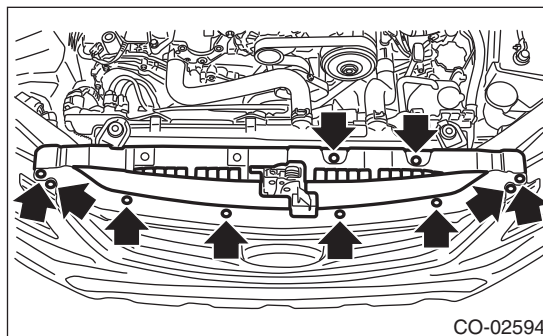


38) Pour ATF from the oil charge pipe. <Ref. to 5AT-28, Automatic Transmission Fluid.>

39) Install the air breather hose. <Ref. to 5AT-62, INSTALLATION, Air Breather Hose.>

40) Install the air intake boot. <Ref. to IN(H6DO)-7, INSTALLATION, Air Intake Boot.>

41) Attach the grille bracket.



42) Install the air intake duct. <Ref. to IN(H6DO)-8, INSTALLATION, Air Intake Duct.>

43) Install the collector cover.

44) Connect the ground cable to battery.

45) Perform Clear Memory 2 operation. <Ref. to 5AT(diag)-21, Clear Memory Mode.>

46) Perform learning operation. <Ref. to 5AT(diag)-23, Learning Control.>

47) Perform the inspection at the end of repair work, and make sure there is no faulty as below;

- Excessive shift shock
- Oil leakage from the transmission body, etc.
- Occurrence of noise caused by interference etc.