

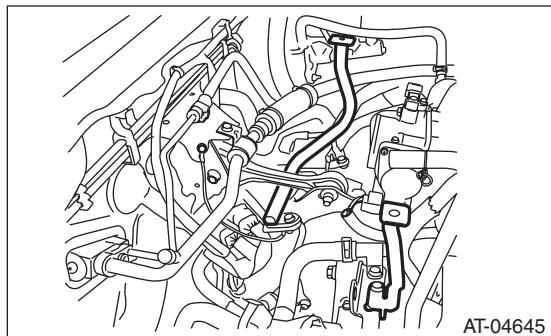
Automatic Transmission Assembly

AUTOMATIC TRANSMISSION

9. Automatic Transmission Assembly

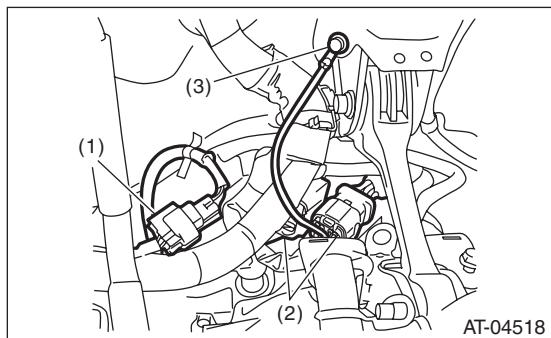
A: REMOVAL

- 1) Set the vehicle on a lift.
- 2) Open the front hood.
- 3) Disconnect the ground cable from battery.
- 4) Remove the air intake chamber and intake boot. (non-turbo model) <Ref. to IN(H4SO)-7, REMOVAL, Air Intake Chamber.>
- 5) Remove the intercooler. (Turbo model) <Ref. to IN(H4DOTC)-13, REMOVAL, Intercooler.>
- 6) Remove the air intake chamber stay. (non-turbo model)



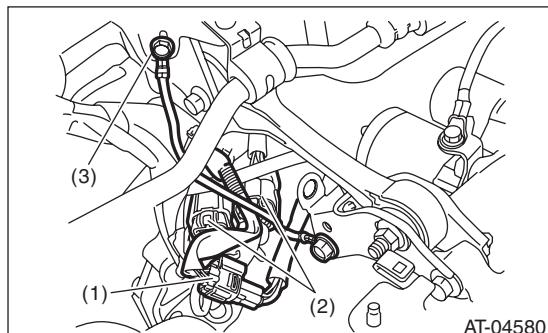
- 7) Disconnect the following connectors and terminals.

- Non-turbo model



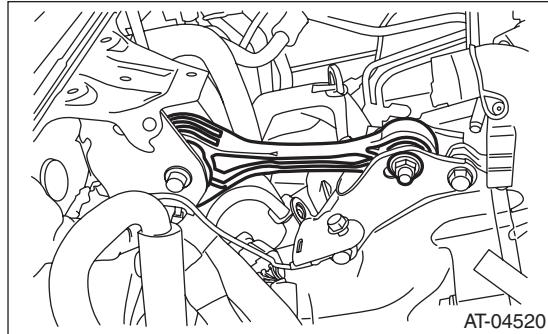
- (1) Rear oxygen sensor connector
- (2) Transmission harness connectors
- (3) Transmission ground terminal

- Turbo model



- (1) Rear oxygen sensor connector
- (2) Transmission harness connectors
- (3) Transmission ground terminal

- 8) Remove the starter. <Ref. to SC(H4SO)-7, REMOVAL, Starter.>
- 9) Remove the pitching stopper.



- 10) Remove the throttle body. (non-turbo model) <Ref. to FU(H4SO)-14, REMOVAL, Throttle Body.>
- 11) Separate the torque converter clutch from the drive plate.

CAUTION:

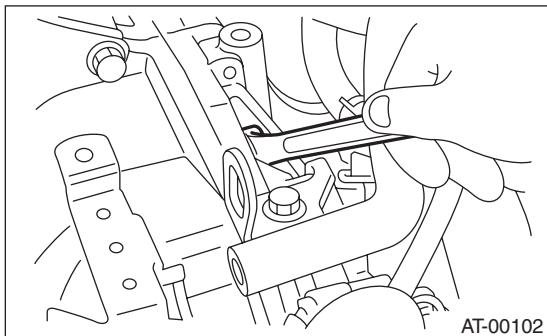
- Be careful not to damage the mounting bolts.
- Be careful not to drop bolts into the converter case.

- (1) Remove the V-belt covers.
- (2) Remove the service hole plug.
- (3) Remove the bolts which hold the torque converter clutch assembly to the drive plate.
- (4) Place the wrench on the crank pulley bolt, and remove all the bolts while rotating the crank pulley a little bit at a time.

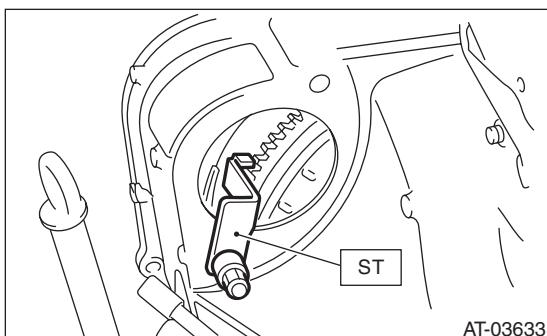
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(5) Make sure the torque converter moves freely by rotating with finger through the starter installation hole.



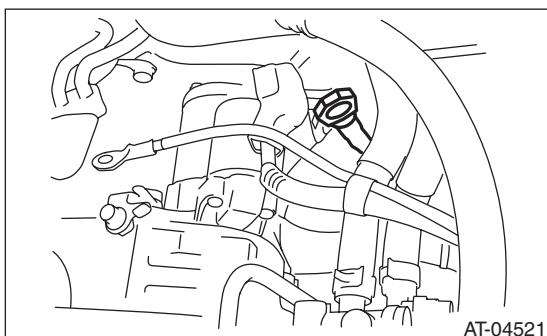
12) Attach the ST to the converter case.
ST 498277200 STOPPER SET



13) Remove the ATF level gauge.

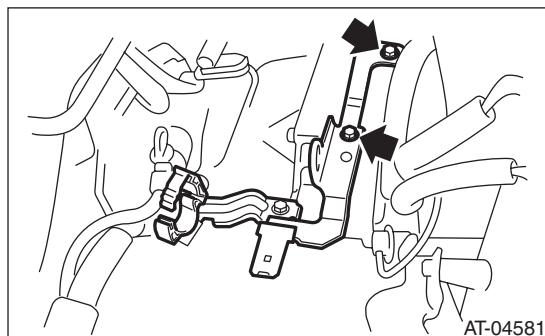
NOTE:

Plug the opening to prevent entry of foreign particles into the transmission fluid.

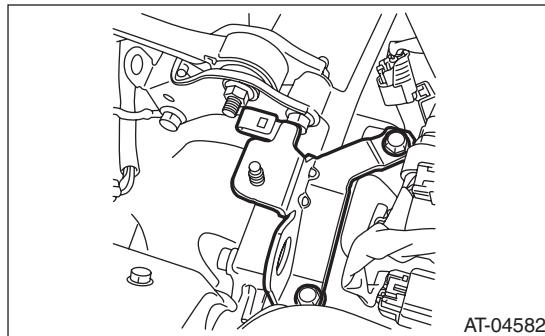


14) Remove the pitching stopper bracket.
15) Disconnect the engine harness, then remove the harness connector from the engine harness bracket. (non-turbo model)

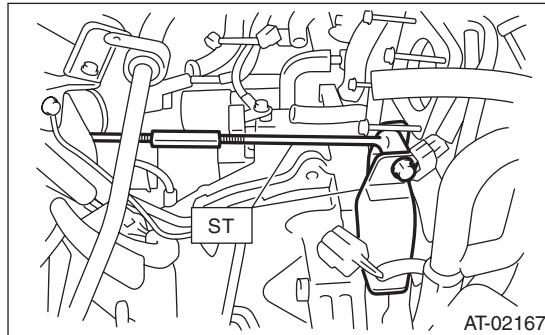
16) Remove the engine harness bracket. (non-turbo model)



17) Remove the engine hanger. (Turbo model)



18) Set the ST.
ST 41099AC000 ENGINE SUPPORT ASSY

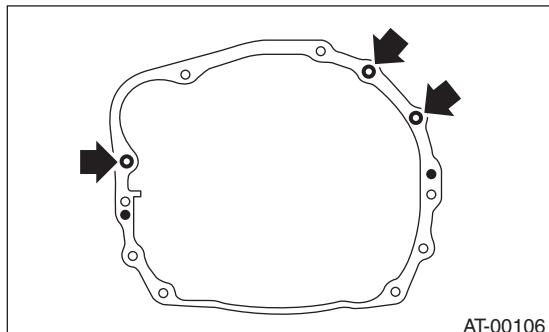


19) Lift up the vehicle.
20) Remove the under cover.
21) Remove the front, center and rear exhaust pipes and the muffler. (non-turbo model)
<Ref. to EX(H4SO)-6, REMOVAL, Front Exhaust Pipe.> <Ref. to EX(H4SO)-9, REMOVAL, Center Exhaust Pipe.> <Ref. to EX(H4SO)-10, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4SO)-12, REMOVAL, Muffler.>
22) Remove the center and rear exhaust pipes and the muffler. (Turbo model)
<Ref. to EX(H4DOTC)-9, REMOVAL, Center Exhaust Pipe.> <Ref. to EX(H4DOTC)-14, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-16, REMOVAL, Muffler.>

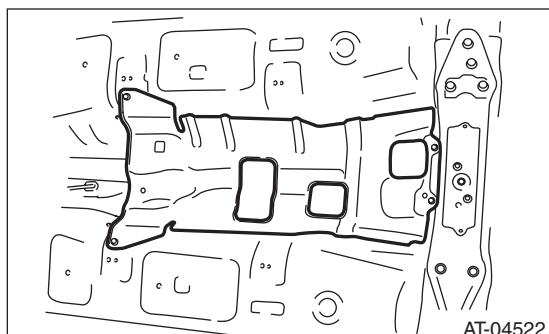
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AUTOMATIC TRANSMISSION

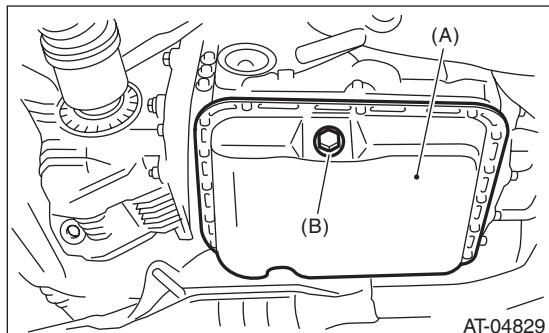
23) Remove the bolts which hold upper side of transmission to engine.



24) Remove the heat shield cover.

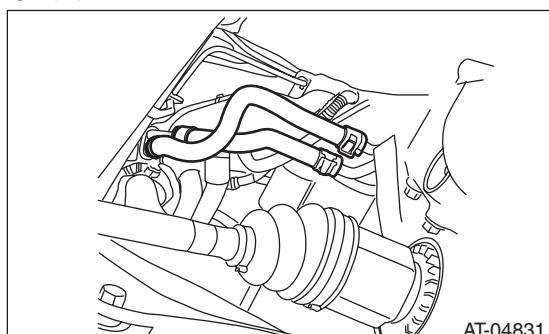


25) Remove the drain plug (ATF) to drain ATF.



(A) Oil pan
(B) Drain plug (ATF)

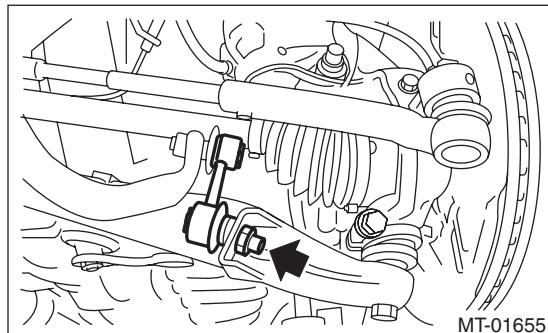
26) Disconnect the ATF cooler hoses from the pipes of the transmission side, and remove the oil charge pipe.



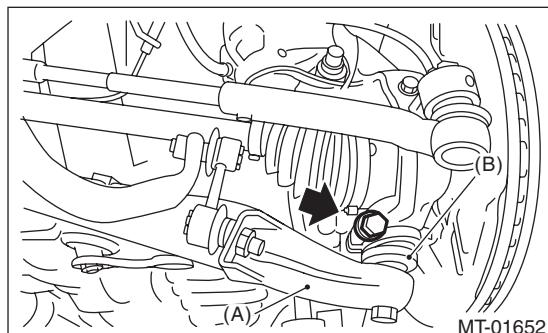
27) Remove the propeller shaft. <Ref. to DS-10, REMOVAL, Propeller Shaft.>

28) Remove the shift select cable from the inhibitor switch and the transmission. <Ref. to CS-24, REMOVAL, Select Cable.>

29) Disconnect the stabilizer link from the front arm.



30) Remove the bolts which secure the front arm ball joint to the front housing, and separate the front arm and housing.



(A) Front arm
(B) Ball joint

31) Pull out the front drive shaft from the transmission.

(1) Using a tire lever or a crow bar, etc., pull out until the front drive shaft transmission side joint slides move smoothly.

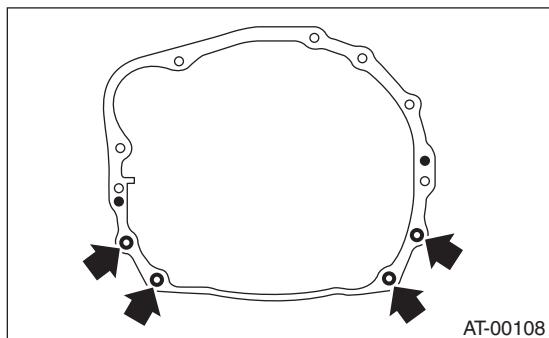
NOTE:

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

(2) Hold the transmission side joint of the front drive shaft by hand and extract the housing from the transmission while pressing the housing outward, so as not to stretch the boot.

32) Remove the bolts which hold the clutch housing cover.

33) Remove the bolts and nuts which hold lower side of transmission to engine.

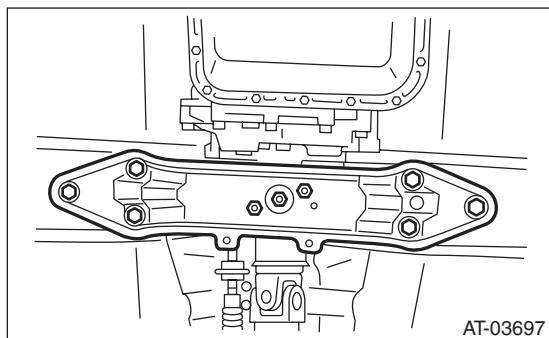


34) Place a transmission jack below the transmission.

NOTE:

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

35) Remove the transmission rear crossmember from the vehicle.

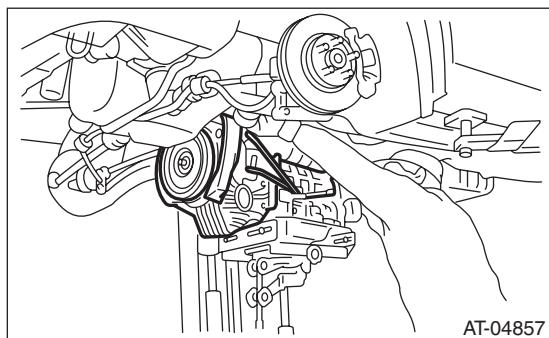


36) While lowering the transmission jack gradually, fully retract the engine support, and then tilt the engine rearward.

37) Remove the transmission.

NOTE:

Remove the transmission and torque converter as a single unit from engine.



38) Remove the rear cushion rubber from the transmission assembly.

B: INSTALLATION

1) Replace the differential side oil seal with a new part. <Ref. to 4AT-45, Differential Side Retainer Oil Seal.>

NOTE:

When a new oil seal has been installed, replacement is not required.

2) Install the rear cushion rubber to the transmission assembly.

Tightening torque:

40 N·m (4.1 kgf·m, 29.5 ft-lb)

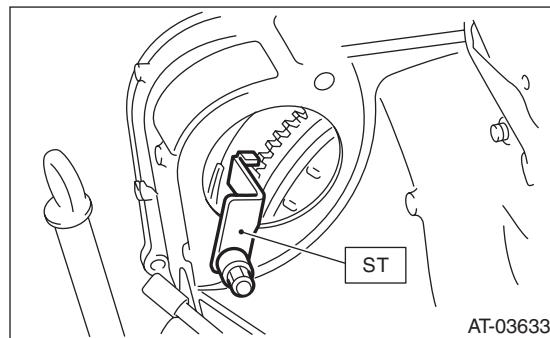
3) Tap the transmission hanger at the rear of the transmission using a rubber hammer to bend it until it becomes in close contact with the transmission case.

CAUTION:

Avoid excessive load and impact to the transmission case.

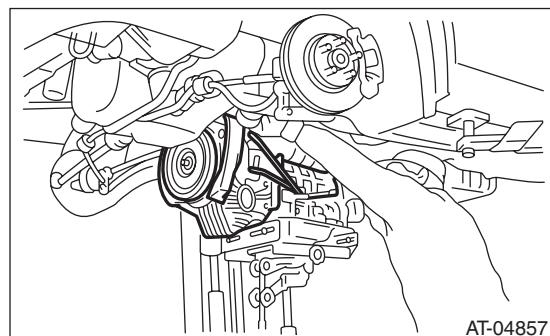
4) Attach the ST to the converter case.

ST 498277200 STOPPER SET



5) Install the transmission onto the engine.

(1) Lift up the transmission gradually using transmission jack.



(2) Insert the engine side stud bolt into the transmission bolt hole.

(3) While raising the transmission jack gradually, turn the screw of engine support, then tilt the engine forward and connect.

6) Install the transmission rear crossmember.

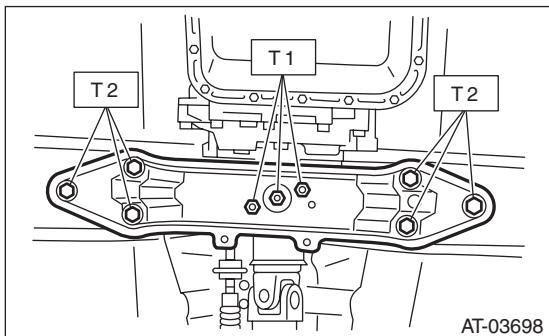
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Tightening torque:

T1: 35 N·m (3.6 kgf-m, 25.8 ft-lb)

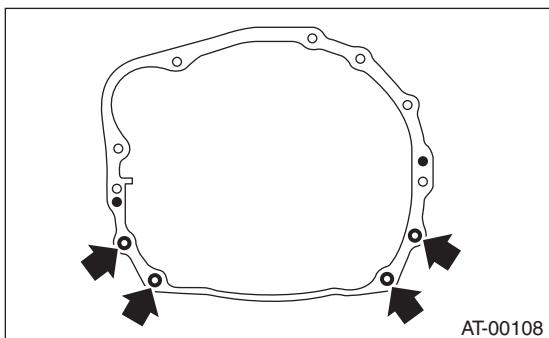
T2: 70 N·m (7.1 kgf-m, 51.6 ft-lb)



- 7) Remove the transmission jack.
- 8) Tighten the bolts and nuts which hold the lower side of transmission to the engine.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



- 9) Install the clutch housing cover bolts.

- 10) Lower the vehicle.

- 11) Connect the engine and transmission.

- (1) Remove the ST from converter case.

NOTE:

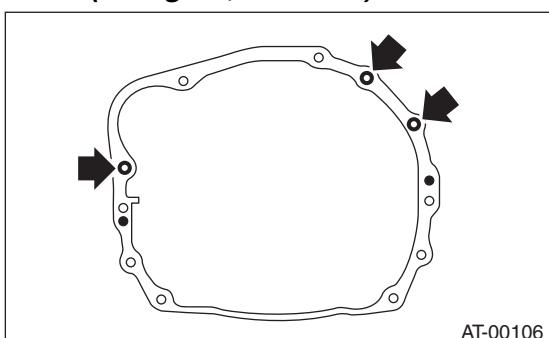
When removing the ST, be careful not to drop it into converter case.

- (2) Install the starter. <Ref. to SC(H4SO)-7, INSTALLATION, Starter.>

- (3) Tighten the bolts which hold the upper side of the transmission to the engine.

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



- 12) Install the torque converter clutch assembly to the drive plate.

CAUTION:

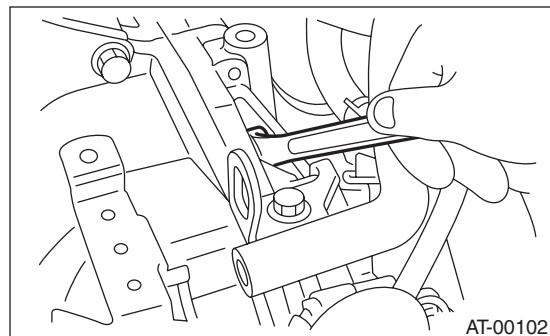
- Be careful not to damage the mounting bolts.
- Be careful not to drop bolts into the converter case.

(1) Tighten the bolts which hold the torque converter clutch to the drive plate.

(2) Place the wrench on the crank pulley bolt, and remove all the bolts while rotating the crank pulley a little bit at a time.

Tightening torque:

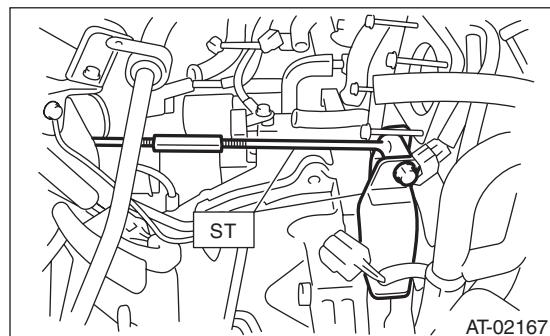
25 N·m (2.5 kgf-m, 18.4 ft-lb)



- (3) Fit the plug to service hole.

- (4) Install the V-belt cover.

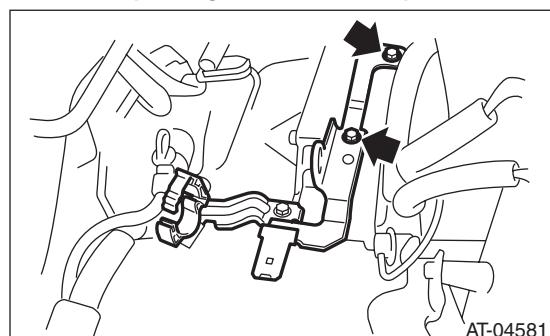
- 13) Remove the ST.



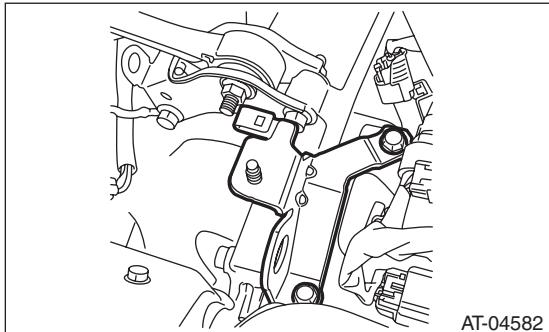
- 14) Install the engine harness bracket. (non-turbo model)

Tightening torque:

T: 16 N·m (1.6 kgf-m, 11.8 ft-lb)



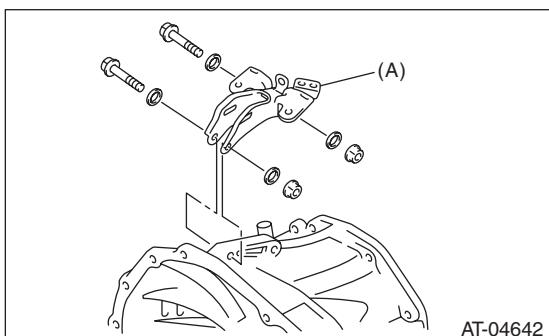
15) Install the harness connector to engine harness bracket, then connect the harness. (non-turbo model)
 16) Install the engine hanger. (Turbo model)



17) Install the pitching stopper bracket (A).

Tightening torque:

41 N·m (4.2 kgf·m, 30.2 ft-lb)



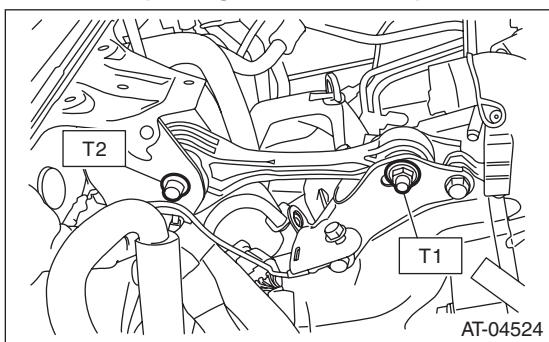
18) Install the throttle body. (non-turbo model)
 <Ref. to FU(H4SO)-14, INSTALLATION, Throttle Body.>

19) 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)

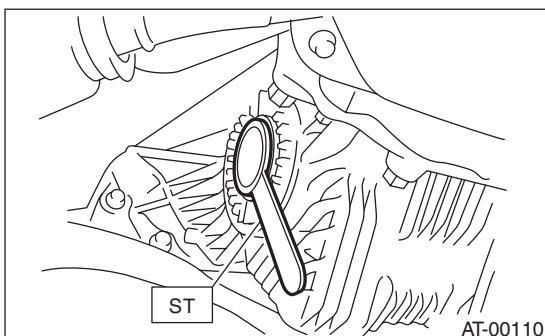


20) Lift up the vehicle.

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

22) Apply grease to the oil seal lip.

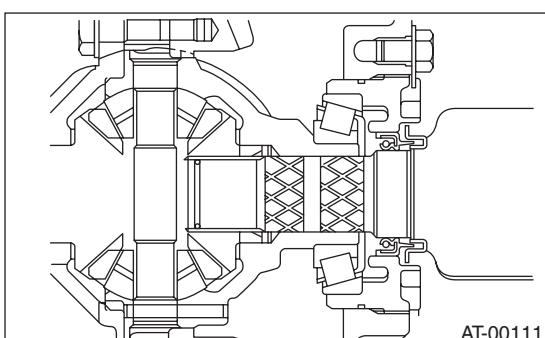
23) Attach the ST to side retainer.
 ST 28399SA010 OIL SEAL PROTECTOR



24) Align and insert the spline of the front drive shaft to the splines of the differential bevel gear, and remove the ST.

ST 28399SA010 OIL SEAL PROTECTOR

25) Insert the front drive shaft into the transmission securely by pressing the front housing from the outside.

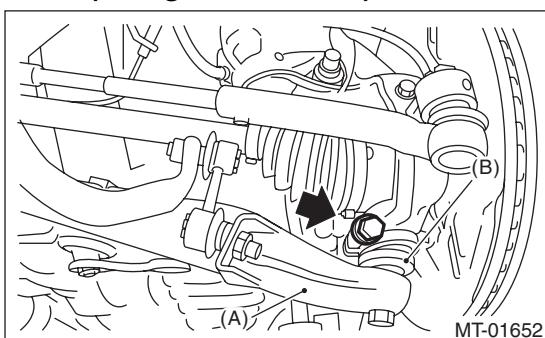


26) Install the ball joint into the front housing.

27) Tighten the attachment bolts.

Tightening torque:

50 N·m (5.1 kgf·m, 36.9 ft-lb)



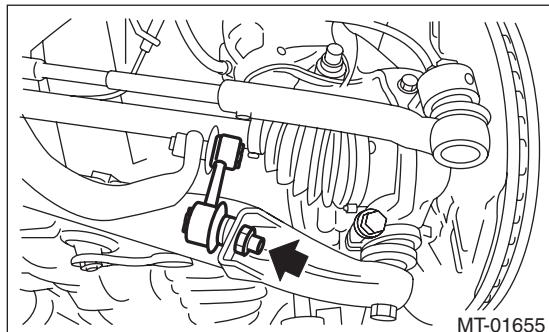
28) Attach the stabilizer link to the front arm.

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Tightening torque:

45 N·m (4.6 kgf·m, 33.2 ft·lb)

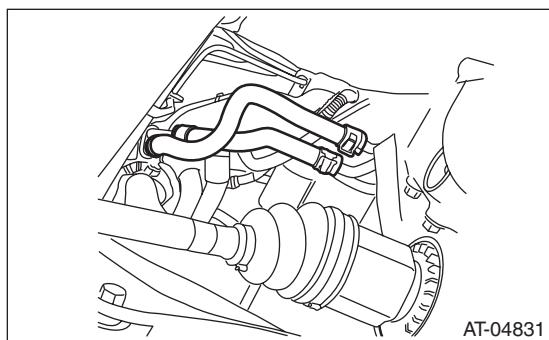


29) Install the shift select cable onto the select lever. <Ref. to CS-25, INSTALLATION, Select Cable.>

30) Install the oil charge pipe, and connect the ATF cooler hoses to the pipe.

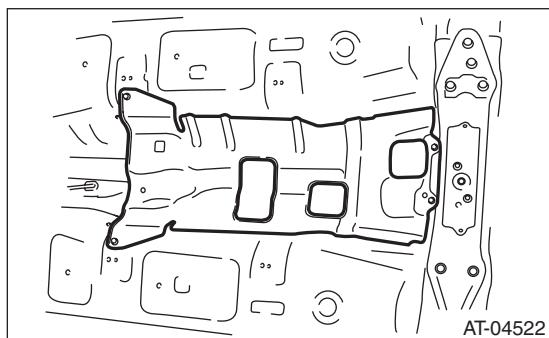
NOTE:

Use a new ATF cooler hose.



31) Install the propeller shaft. <Ref. to DS-11, INSTALLATION, Propeller Shaft.>

32) Install the heat shield cover.



33) Install the rear exhaust pipe and muffler assembly.

- Non-turbo model

<Ref. to EX(H4SO)-10, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4SO)-12, INSTALLATION, Muffler.>

- Turbo model

<Ref. to EX(H4DOTC)-14, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-16, INSTALLATION, Muffler.>

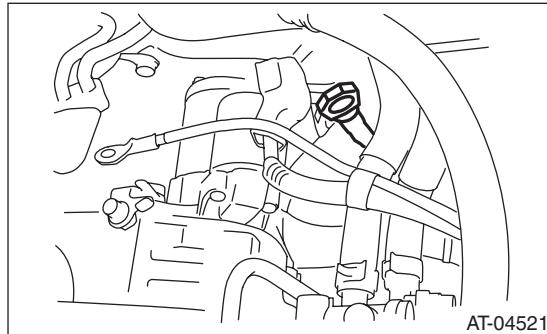
34) Install the front and center exhaust pipe. (non-turbo model) <Ref. to EX(H4SO)-7, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H4SO)-9, INSTALLATION, Center Exhaust Pipe.>

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

36) Install the under cover.

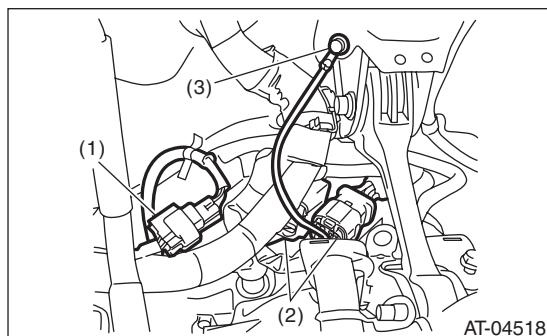
37) Lower the vehicle.

38) Install the ATF level gauge.



39) Connect the following connectors and terminals.

- Non-turbo model

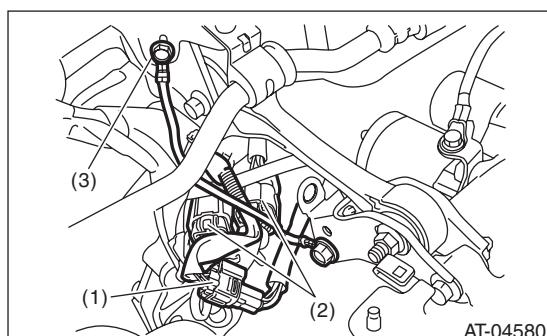


(1) Rear oxygen sensor connector

(2) Transmission harness connectors

(3) Transmission ground terminal

- Turbo model



(1) Rear oxygen sensor connector

(2) Transmission harness connectors

(3) Transmission ground terminal

40) Install the air intake chamber stay. (non-turbo model)

Tightening torque:

16 N·m (1.6 kgf·m, 11.8 ft-lb)

41) Install the air intake chamber and intake boot. (non-turbo model) <Ref. to IN(H4SO)-7, INSTALLATION, Air Intake Chamber.>

42) Install the intercooler. (Turbo model) <Ref. to IN(H4DOTC)-13, INSTALLATION, Intercooler.>

43) Connect the ground cable to battery.

44) Fill transmission with ATF through the oil charge pipe until the fluid level is between the upper and lower level on the "COLD" side of the level gauge. <Ref. to 4AT-26, Automatic Transmission Fluid.>

45) Lower the vehicle from lift.

46) Check the differential gear oil level. <Ref. to 4AT-28, INSPECTION, Differential Gear Oil.>

47) Check the select lever operation. <Ref. to 4AT-46, INSPECTION, Inhibitor Switch.>

48) Bleed the air of control valve. (Turbo model) <Ref. to 4AT-59, PROCEDURE, Air Bleeding of Control Valve.>

49) Check the ATF level. <Ref. to 4AT-26, INSPECTION, Automatic Transmission Fluid.>

50) Perform learning control promotion. <Ref. to 4AT(diag)-18, FACILITATION OF LEARNING CONTROL, OPERATION, Subaru Select Monitor.>

51) Perform the road test. <Ref. to 4AT-29, Road Test.>