

Automatic Transmission Assembly

AUTOMATIC TRANSMISSION

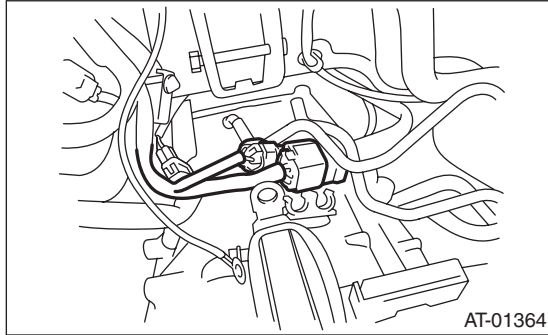
9. Automatic Transmission Assembly

A: REMOVAL

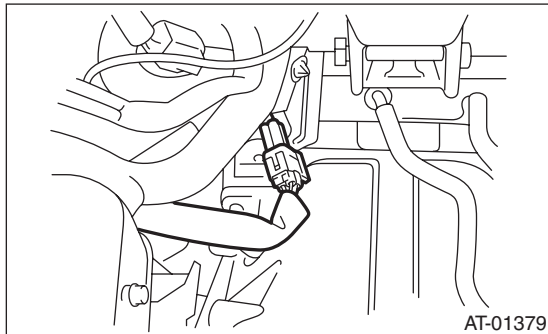
- 1) Set the vehicle on a lift.
- 2) Open the front hood and support with the hood stay.
- 3) Disconnect the ground cable from the battery.
- 4) Remove the collector cover.
- 5) Remove the intercooler. (Turbo model)
<Ref. to IN(H4DOTC)-12, REMOVAL, Intercooler.>
- 6) Remove the air intake chamber. (Non-turbo model) <Ref. to IN(H6DO)-7, REMOVAL, Air Intake Chamber.>
- 7) Remove the air cleaner case. (Non-turbo model) <Ref. to IN(H6DO)-5, REMOVAL, Air Cleaner Case.>
- 8) Remove the air breather hose. <Ref. to 5AT-61, REMOVAL, Air Breather Hose.>
- 9) Remove the starter. <Ref. to SC(H4SO)-6, REMOVAL, Starter.>
- 10) Disconnect the following connectors.

- Turbo model

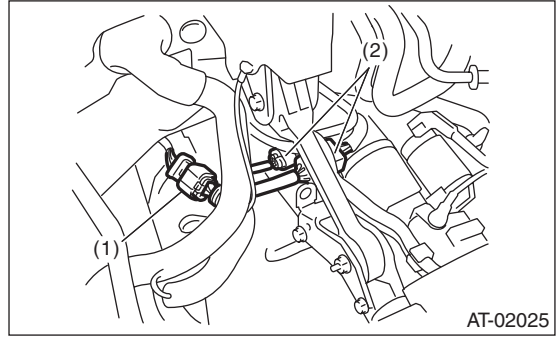
1. Transmission harness connectors



2. Front oxygen (A/F) sensor

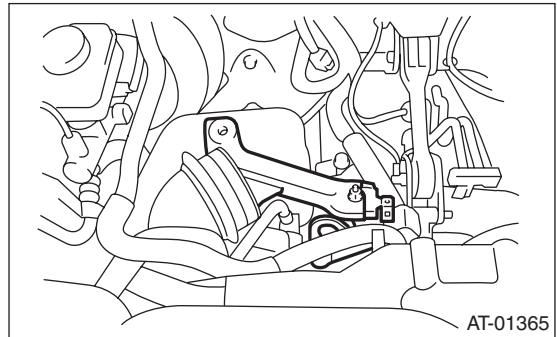


- Non-turbo model

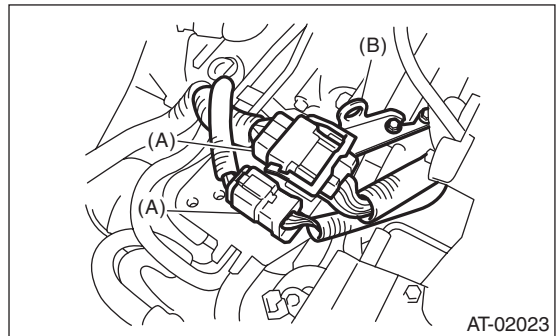


- (1) Front oxygen (A/F) sensor
- (2) Transmission harness connectors

- 11) Remove the intercooler stay and engine hanger rear. (Turbo model)



- 12) Disconnect the engine harness connectors, and then remove the engine hanger rear. (Non-turbo model)

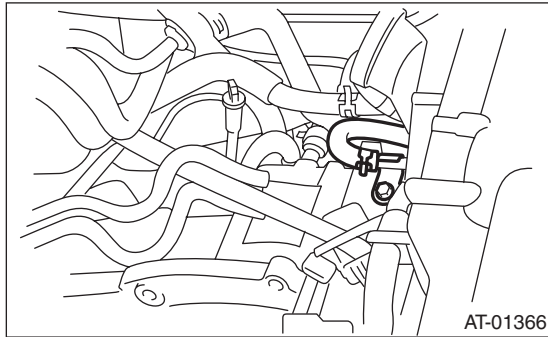


- (A) Engine harness connectors
- (B) Engine hanger rear

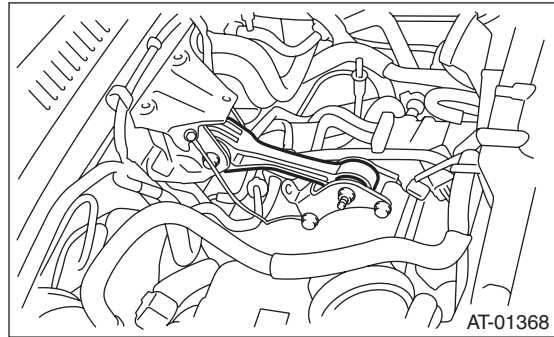
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13) Remove the water by-pass pipe. (Turbo model)



16) Remove the pitching stopper.

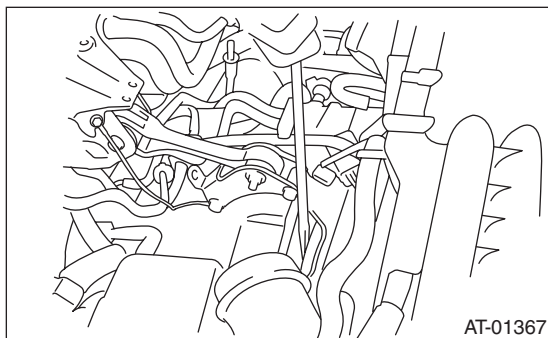


14) Separate the torque converter from drive plate.

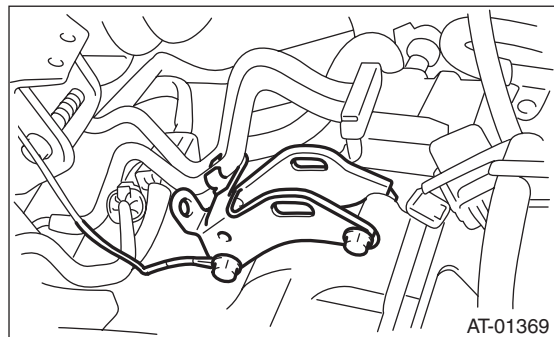
- (1) Remove the service hole plug.
- (2) Remove the bolts which hold torque converter to drive plate.
- (3) Remove the four bolts by rotating the clamp pulley a little at a time.
- (4) Make sure the torque converter moves freely by rotating with finger through the starter installation hole.

CAUTION:

Be careful not to drop bolts into converter housing.

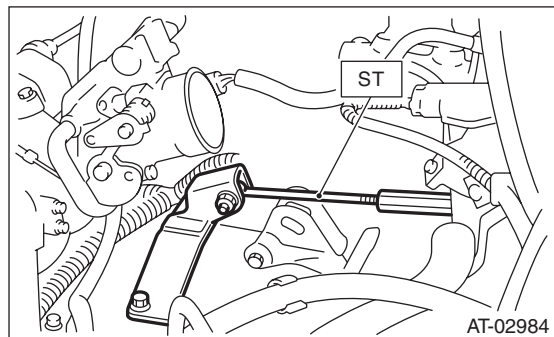


17) Remove the pitching stopper bracket.



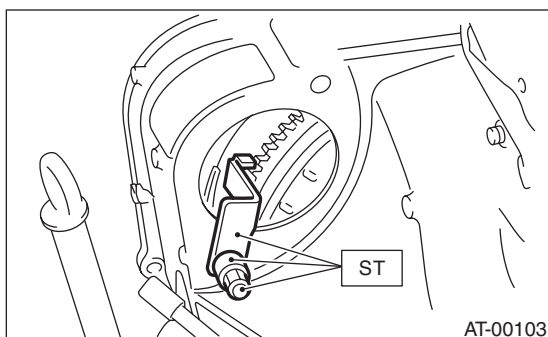
18) Set the ST.

ST 41099AC000 ENGINE SUPPORT ASSY



15) Attach the ST to the converter case.

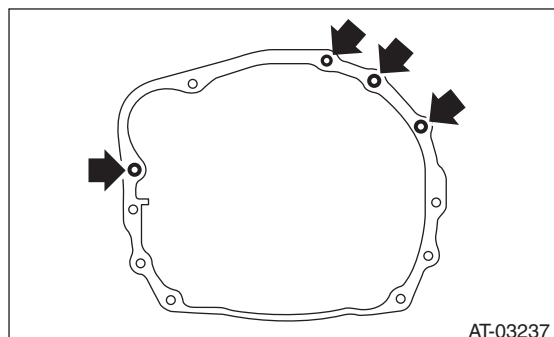
ST 498277200 STOPPER SET



19) Remove the air intake duct. (Turbo model)
<Ref. to IN(H4DOTC)-9, REMOVAL, Air Intake Duct.>

20) Remove the air cleaner case. (Turbo model)
<Ref. to IN(H4DOTC)-8, REMOVAL, Air Cleaner Case.>

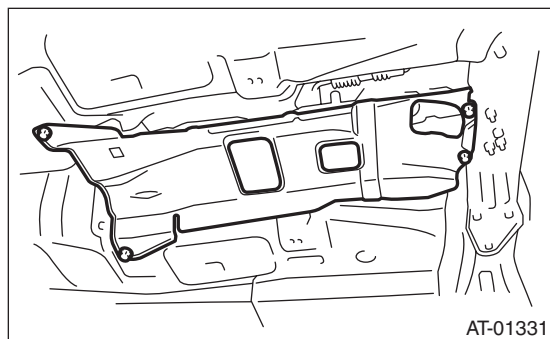
21) Remove the transmission mounting bolt (upper side).



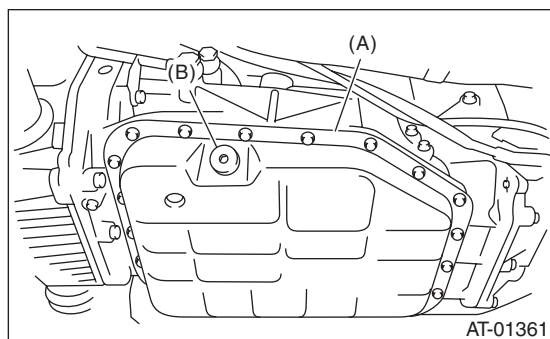
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- 22) Lift-up the vehicle. (Turbo model)
- 23) Remove the under cover. (Turbo model)
- 24) Remove the center and rear exhaust pipes and the muffler. (Turbo model) <Ref. to EX(H4DOTC)-8, REMOVAL, Center Exhaust Pipe.> <Ref. to EX(H4DOTC)-12, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-13, REMOVAL, Muffler.>
- 25) Remove the front exhaust pipe, rear exhaust pipe and muffler. (Non-turbo model) <Ref. to EX(H6DO)-4, REMOVAL, Front Exhaust Pipe.> <Ref. to EX(H6DO)-7, REMOVAL, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-9, REMOVAL, Muffler.>
- 26) Remove the heat shield cover.

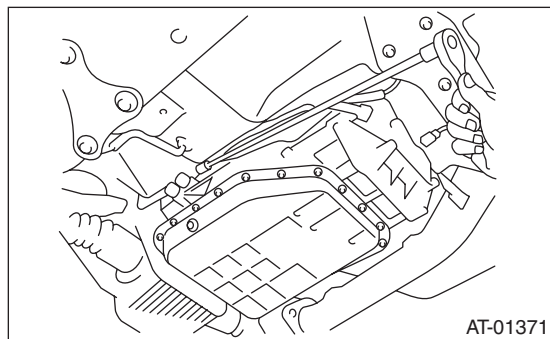


- 27) Remove the ATF drain plug to drain ATF.

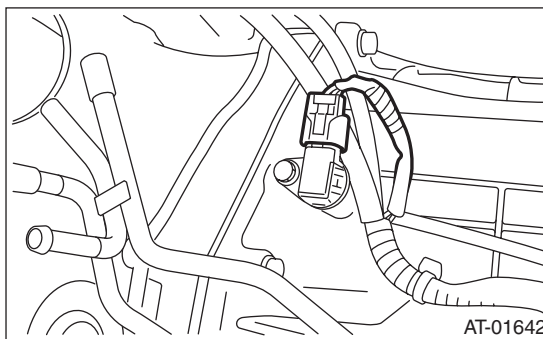


- (A) Oil pan
- (B) Drain plug

- 28) Remove the oil charge pipe.



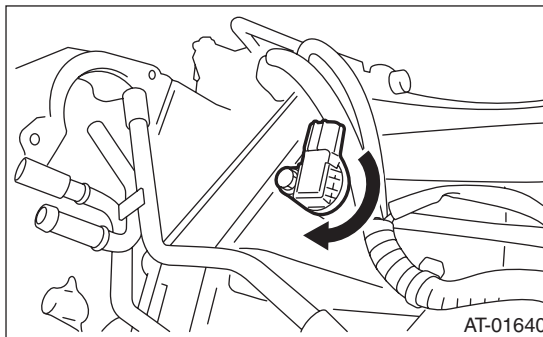
- 29) Disconnect the connector from turbine speed sensor 1.



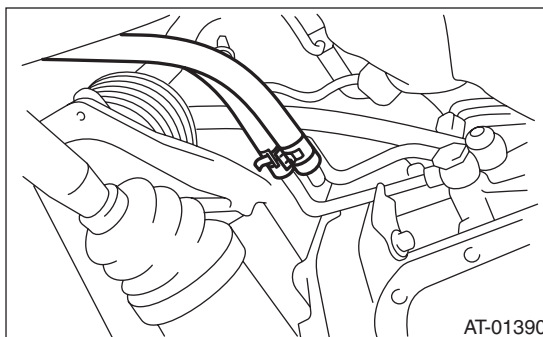
- 30) Remove the turbine speed sensor 1 connector mounting bolt and rotate the sensor by 180°.

CAUTION:

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



- 31) Remove the propeller shaft. <Ref. to DS-10, REMOVAL, Propeller Shaft.>
- 32) Remove the shift select cable. <Ref. to CS-23, REMOVAL, Select Cable.>
- 33) Disconnect the hose from the ATF inlet and outlet pipes.

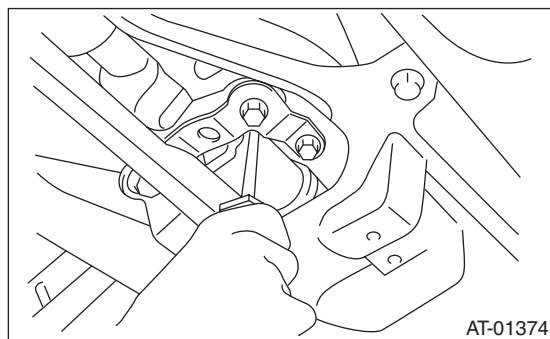
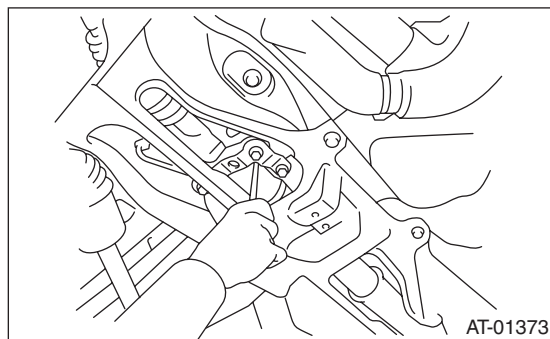


- 34) Remove the front crossmember support plate. <Ref. to FS-13, REMOVAL, Front Crossmember Support Plate.>

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35) Remove the two clutch housing cover securing bolts.

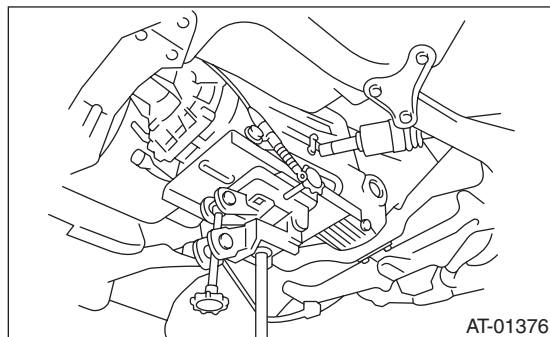


36) Remove the front stabilizer bracket. <Ref. to FS-14, REMOVAL, Front Stabilizer.>

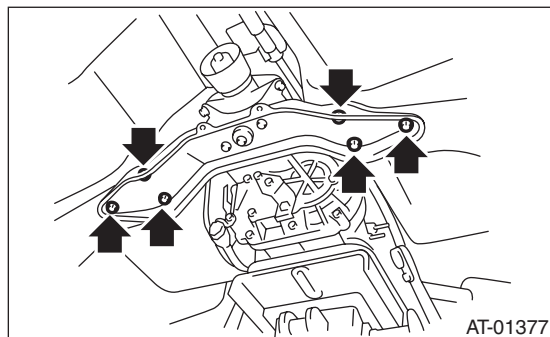
37) Remove the bolts which secure front ball joint to the housing. <Ref. to FS-15, REMOVAL, Front Ball Joint.>

38) Pull out the drive shaft from transmission.

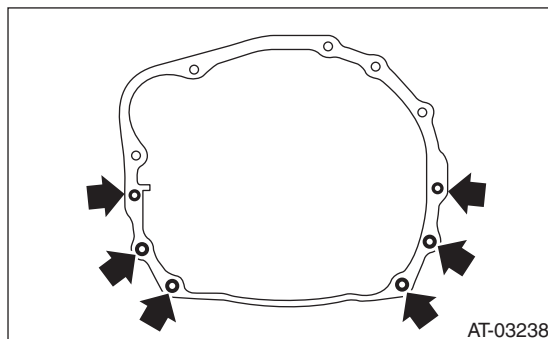
39) Set the transmission jack under the transmission.



40) Remove the rear crossmember.



41) Remove the transmission mounting bolt (lower side).



42) Remove the transmission.

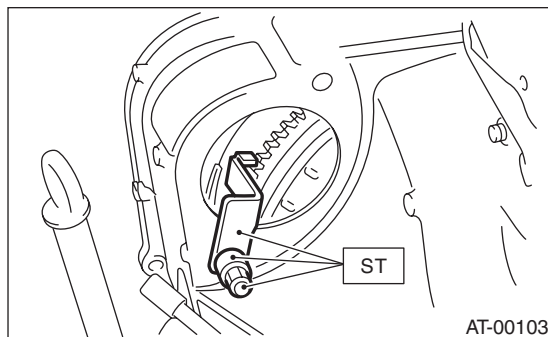
NOTE:

- Turn the engine support assembly from the vehicle under body to the left (to shorten the engine support length), and lower the rear of the engine for easy disassembly.
- Be careful not to allow breather pipe and etc. to touch the vehicle body when detaching the automatic transmission assembly by pulling it backward.

B: INSTALLATION

1) Attach the ST to converter case.

ST 498277200 STOPPER SET



2) Install the transmission onto the engine.

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

(2) Engage at the spline.

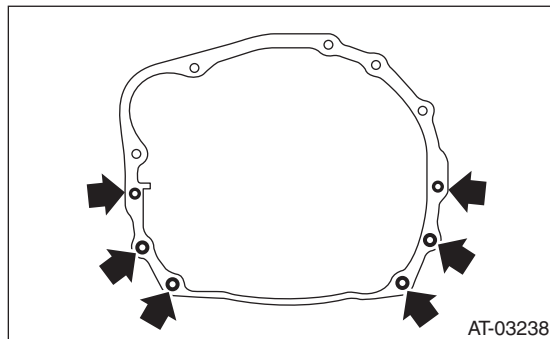
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3) Install the engine mounting bolt (lower side).

Tightening torque:

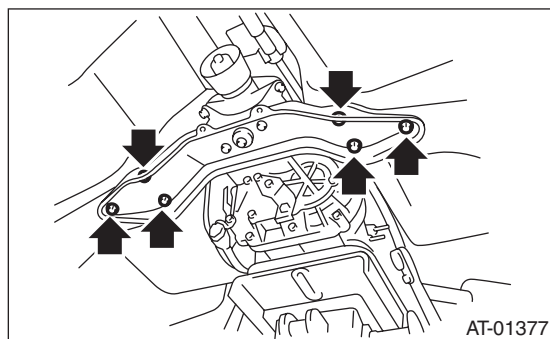
50 N·m (5.1 kgf-m, 36.9 ft-lb)



4) Install the transmission rear crossmember.

Tightening torque:

75 N·m (7.6 kgf-m, 55.3 ft-lb)



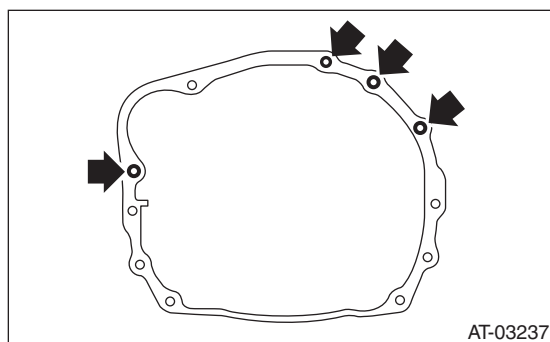
5) Remove the transmission jack.

6) Lower the vehicle.

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

Tightening torque:

50 N·m (5.1 kgf-m, 36.9 ft-lb)



8) Remove the ST from converter case.

ST 498277200 STOPPER SET

9) Install the starter. <Ref. to SC(H4SO)-6, INSTALLATION, Starter.>

10) Install the torque converter to drive plate.

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

(2) Install all four bolts by rotating the crank pulley a little at a time.

(3) Install the service hole.

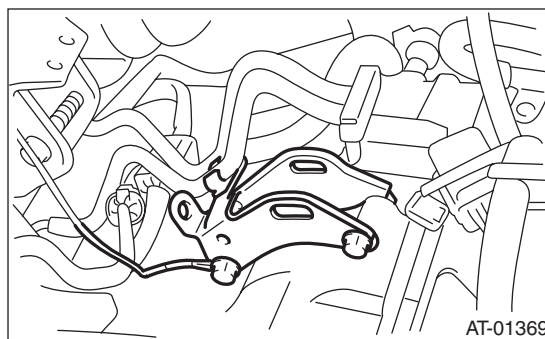
Tightening torque:

25 N·m (2.5 kgf-m, 18 ft-lb)

11) Remove the ST and install the pitching stopper bracket.

Tightening torque:

40 N·m (4.1 kgf-m, 29.5 ft-lb)

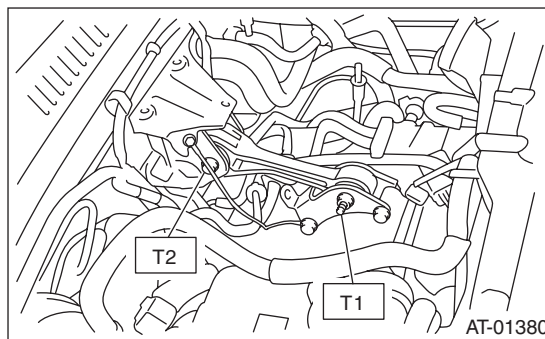


12) Install the pitching stopper.

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)



13) Lift-up the vehicle.

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14) Replace the front differential side retainer oil seal.

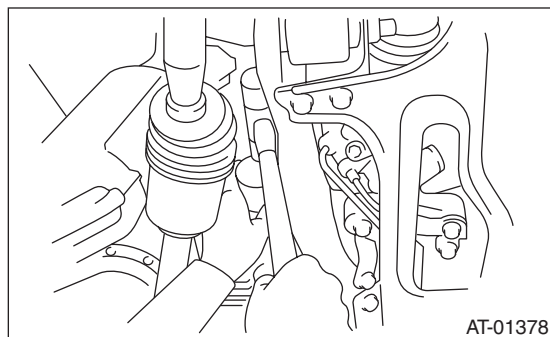
(1) Remove the oil seal by using flat tip screwdriver etc.

(2) Install a new oil seal using ST.

ST 18675AA000 DIFFERENTIAL SIDE OIL SEAL INSTALLER

NOTE:

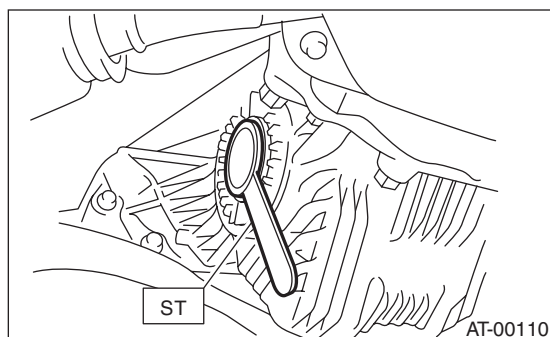
- Apply oil to the oil seal lips.
- Be sure to replace the differential side oil seal after the procedure of removing front drive shaft from transmission.



15) Apply grease to the oil seal lips.

16) Set the ST to side retainer.

ST 28399SA000 OIL SEAL PROTECTOR



17) Install the front drive shaft into the transmission.

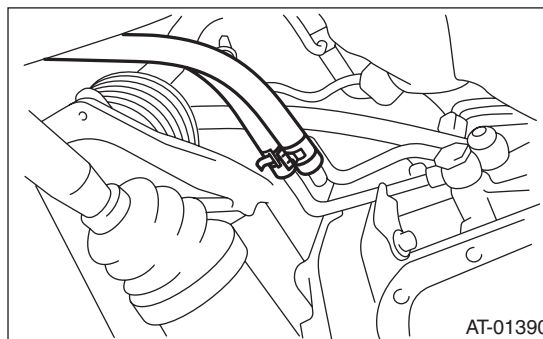
NOTE:

Replace the circlip of drive shaft with a new part.

18) Install the front drive shaft into transmission, remove the ST and insert the drive shaft securely.

ST 28399SA000 OIL SEAL PROTECTOR

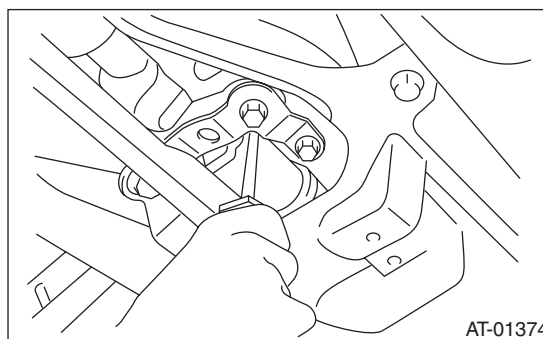
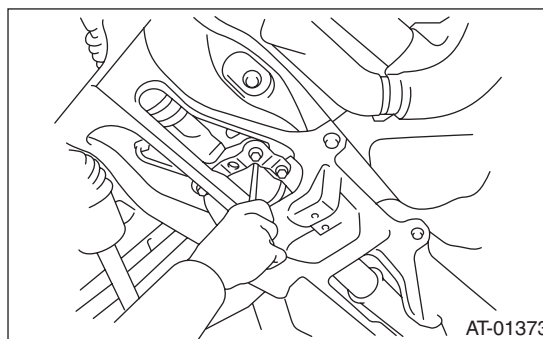
19) Install the inlet and outlet hoses to the ATF inlet and outlet pipes.



20) Insert the ball joint into housing. <Ref. to FS-15, INSTALLATION, Front Ball Joint.>

21) Install the front stabilizer bracket. <Ref. to FS-14, INSTALLATION, Front Stabilizer.>

22) Install the clutch housing cover securing bolts.



23) Install the front cross support plate. <Ref. to FS-13, INSTALLATION, Front Crossmember Support Plate.>

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

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

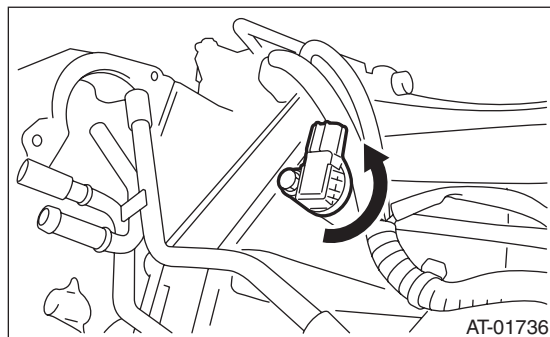
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26) Install the turbine speed sensor 1 and harness, and then connect the connector.

Tightening torque:

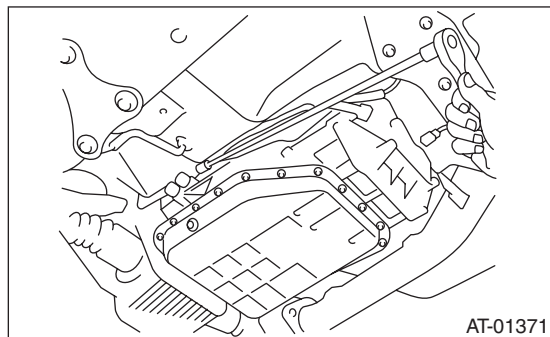
7 N·m (0.7 kgf·m, 5.2 ft·lb)



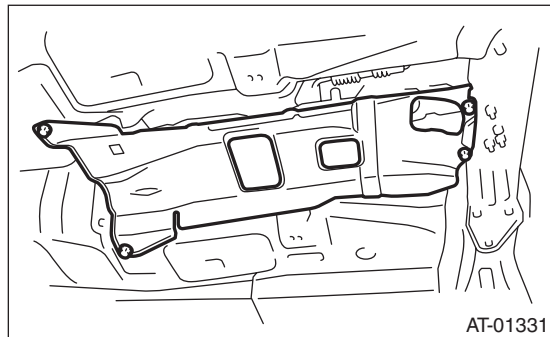
27) Install the oil charge pipe.

Tightening torque:

41 N·m (4.2 kgf·m, 30.2 ft·lb)



28) Install the heat shield cover.



29) Install the center, rear exhaust pipes and the muffler. (Turbo model) <Ref. to EX(H4DOTC)-9, INSTALLATION, Center Exhaust Pipe.> <Ref. to EX(H4DOTC)-12, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-13, INSTALLATION, Muffler.>

30) Install the front exhaust pipe, rear exhaust pipe and muffler. (Non-turbo model) <Ref. to EX(H6DO)-5, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H6DO)-7, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H6DO)-9, INSTALLATION, Muffler.>

31) Install the under cover.

32) Lower the vehicle.

33) Install the air cleaner case.

<Ref. to IN(H4DOTC)-8, INSTALLATION, Air Cleaner Case.>

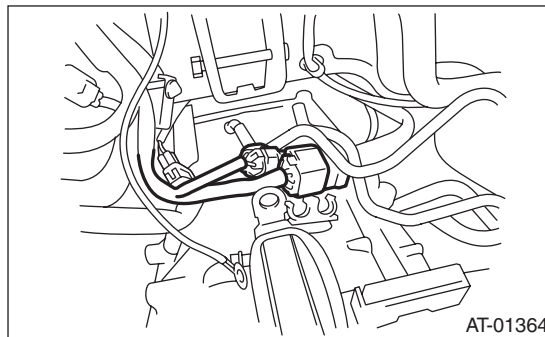
34) Install the air intake duct.

<Ref. to IN(H4DOTC)-9, INSTALLATION, Air Intake Duct.>

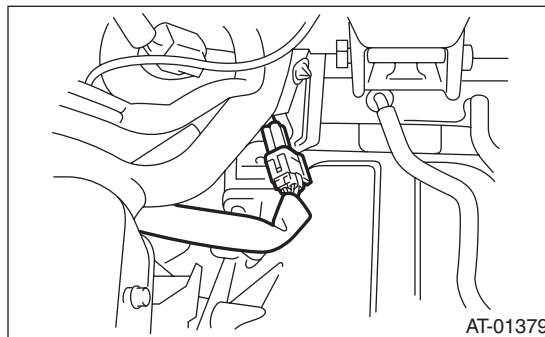
35) Connect the following connectors.

• Turbo model

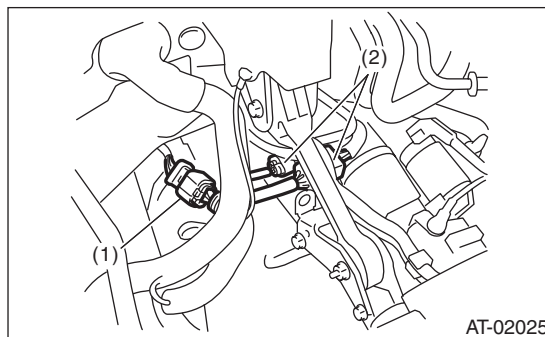
1. Transmission harness connectors



2. Front oxygen (A/F) sensor

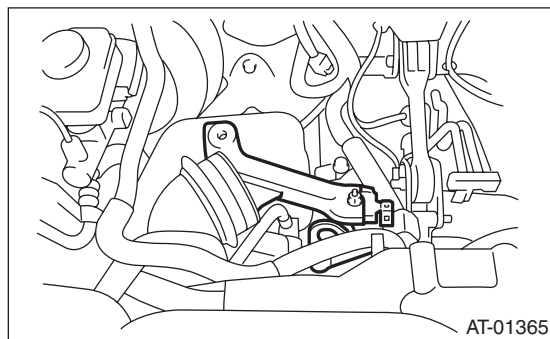


• Non-turbo model

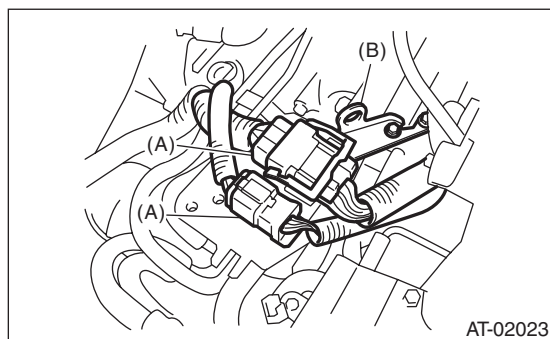


- (1) Front oxygen (A/F) sensor
- (2) Transmission harness connectors

36) Install the intercooler stay RH and engine hanger rear. (Turbo model)

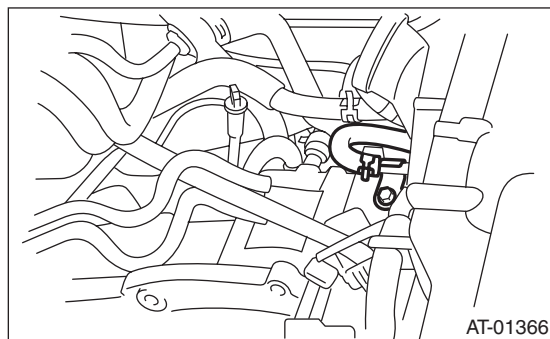


37) Install the engine hanger rear, and then connect the engine harness connector. (Non-turbo model)



- (A) Engine harness connectors
- (B) Engine hanger rear

38) Install the water by-pass pipe. (Turbo model)



39) Pour ATF from the oil charge pipe. <Ref. to 5AT-26, REPLACEMENT, Automatic Transmission Fluid.>

40) Install the air breather hose. <Ref. to 5AT-61, INSTALLATION, Air Breather Hose.>

41) Install the intercooler. (Turbo model) <Ref. to IN(H4DOTC)-12, INSTALLATION, Intercooler.>

42) Install the air intake chamber. (Non-turbo model) <Ref. to IN(H6DO)-7, INSTALLATION, Air Intake Chamber.>

43) Install the air cleaner case. (Non-turbo model) <Ref. to IN(H6DO)-6, INSTALLATION, Air Cleaner Case.>

44) Install the collector cover.

45) Connect the ground cable to battery.

46) Perform Clear Memory 2 operation. <Ref. to 5AT(diag)-18, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.>

(1) Connect the Subaru Select Monitor to the data link connector.

(2) Turn the ignition switch to ON (engine OFF) and turn Subaru Select Monitor switch to ON.

(3) Ensure that the select lever is in the "P" range.

(4) On the «Main Menu» display screen, select the {Each System Check} and press the [YES] key.

(5) On the «System Selection Menu» display screen, select the {Transmission} and press the [YES] key.

(6) Press the [YES] key after the information of transmission type is displayed.

(7) On the «Transmission Diagnosis» display screen, select the {Clear Memory 2} and press the [YES] key.

47) Perform the inspection with driving the vehicle 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.

NOTE:

If excessive shift shock is felt, execute advance operation of learning control. <Ref. to 5AT(diag)-22, PROCEDURE, Learning Control.>