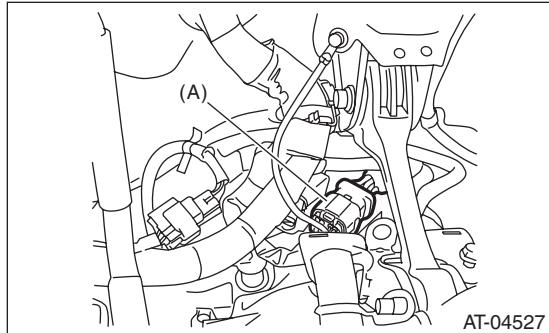


## 14. Front Vehicle Speed Sensor

### A: REMOVAL

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



(A) Transmission harness connectors

- 6) Remove the pitching stopper. <Ref. to 4AT-42, REMOVAL, Transmission Mounting System.>
- 7) Remove the transmission harness connector from stay.
- 8) Lift up the vehicle.
- 9) Clean the transmission exterior.
- 10) Remove the drain plug (ATF) to drain ATF.

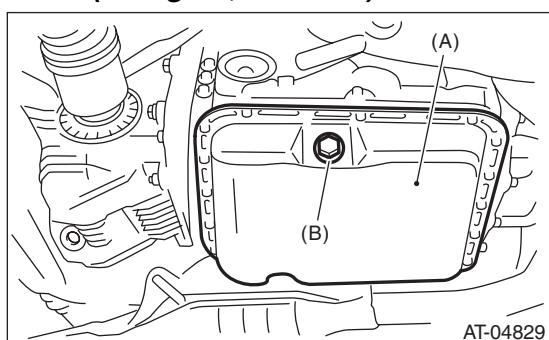
#### CAUTION:

**Directly after the vehicle has been running or the engine has been long idle running, the ATF is hot. Be careful not to burn yourself.**

- 11) Perform replacement with a new gasket, and tighten the drain plug (ATF).

#### Tightening torque:

**25 N·m (2.5 kgf·m, 18.4 ft-lb)**



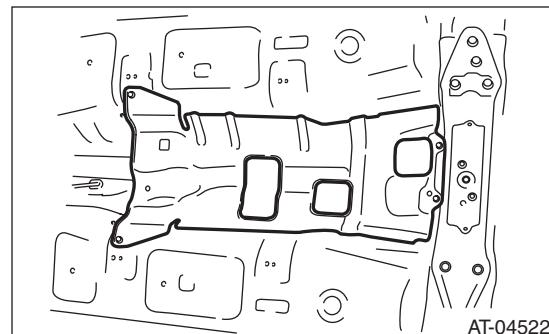
(A) Oil pan

(B) Drain plug (ATF)

- 12) 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.>

- 13) 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.>

- 14) Remove the heat shield cover.



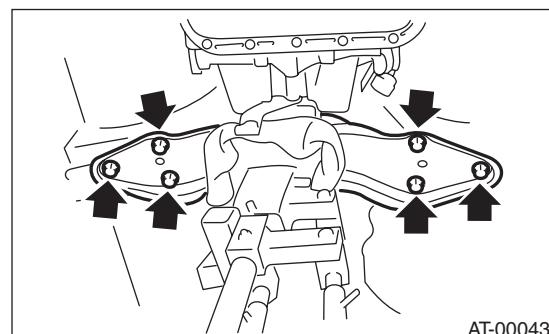
- 15) Remove the propeller shaft. <Ref. to DS-10, REMOVAL, Propeller Shaft.>

- 16) Place the transmission jack under the transmission.

#### NOTE:

Make sure that the support plate of transmission jack does not touch the cross.

- 17) Remove the transmission rear crossmember bolt.



- 18) Lower the transmission jack.

#### NOTE:

Do not separate the transmission jack and transmission.

- 19) Remove the ATF inlet and outlet pipes.

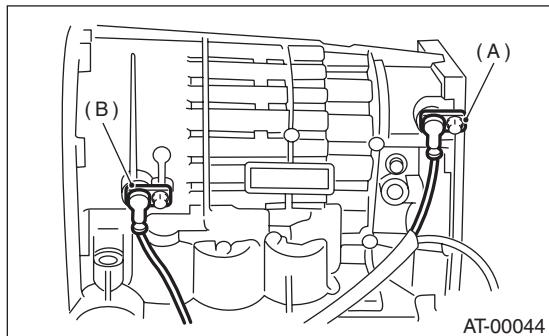
#### CAUTION:

**When removing the outlet pipe, be careful not to lose the ball and spring used together with the retaining screw.**

# Front Vehicle Speed Sensor

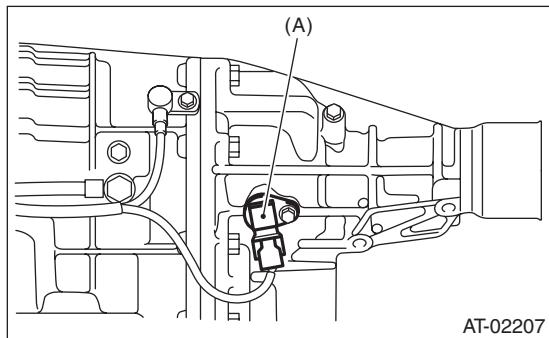
## AUTOMATIC TRANSMISSION

20) Remove the front vehicle speed sensor and torque converter turbine speed sensor.



(A) Front vehicle speed sensor  
(B) Torque converter turbine speed sensor

21) Disconnect the connector from the rear vehicle speed sensor.



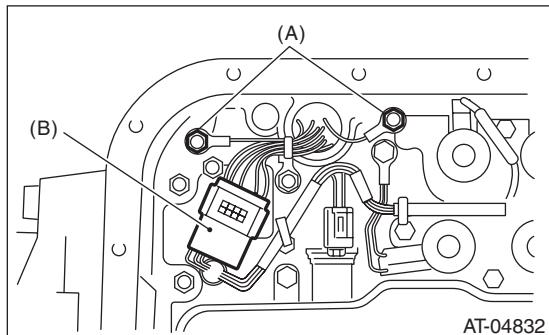
(A) Rear vehicle speed sensor

22) Remove the oil pan.

### CAUTION:

**Be careful not to allow foreign matter such as dust or dirt to enter the oil pan.**

23) Disconnect the control valve connector and transmission ground terminal.

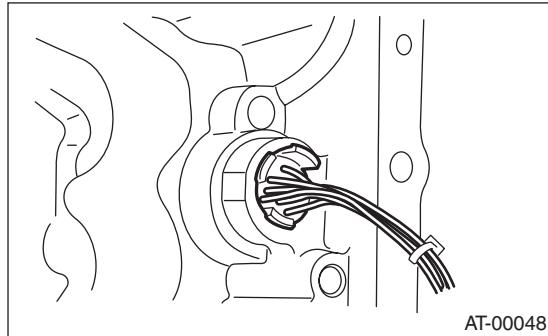


(A) Transmission ground terminal  
(B) Control valve connector

24) Remove the transmission harness assembly.

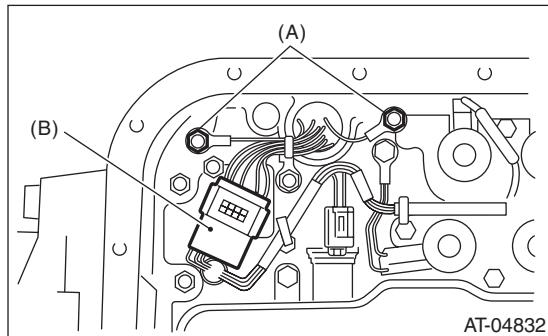
## B: INSTALLATION

1) Pass the transmission harness assembly through the hole of the transmission case.



2) Connect the control valve connector and transmission ground.

**Tightening torque:**  
**8 N·m (0.8 kgf·m, 5.9 ft-lb)**

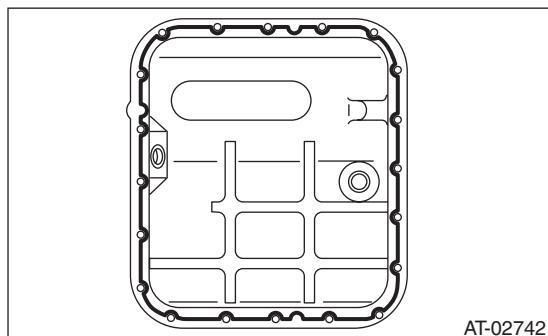


(A) Transmission ground terminal  
(B) Control valve connector

3) Apply proper amount of liquid gasket to the entire oil pan mating surface.

### Liquid gasket:

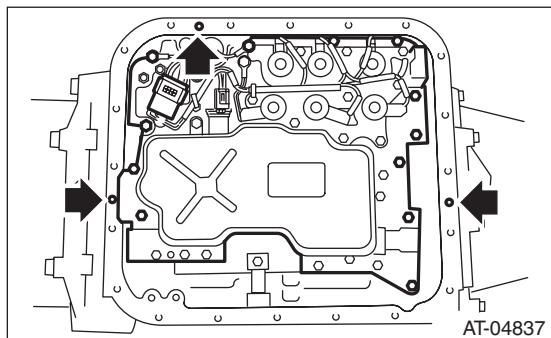
**THREE BOND 1217B (Part No. K0877YA020) or equivalent**



4) Fill the 3 locations of the transmission case excluding the bolt holes with an ample amount of liquid gasket.

**Liquid gasket:**

**THREE BOND 1217B (Part No. K0877YA020)  
or equivalent**



5) Install the oil pan by equally tightening the bolts.

**Tightening torque:**

**5 N·m (0.5 kgf·m, 3.7 ft-lb)**

6) Install the front vehicle speed sensor and torque converter turbine speed sensor.

**Tightening torque:**

**7 N·m (0.7 kgf·m, 5.2 ft-lb)**

7) Connect the connector to the rear vehicle speed sensor.

8) Install the ATF inlet and outlet pipes.

**NOTE:**

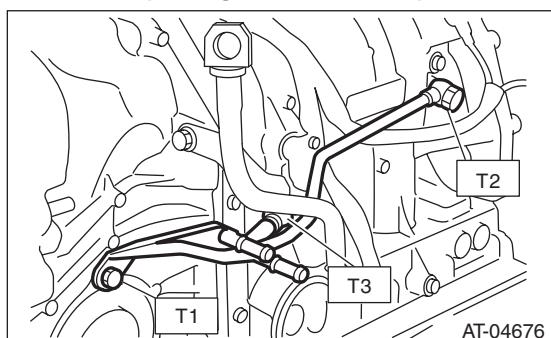
Use a new copper washer.

**Tightening torque:**

**T1: 25 N·m (2.5 kgf·m, 18.4 ft-lb)**

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

**T3: 45 N·m (4.6 kgf·m, 33.2 ft-lb)**



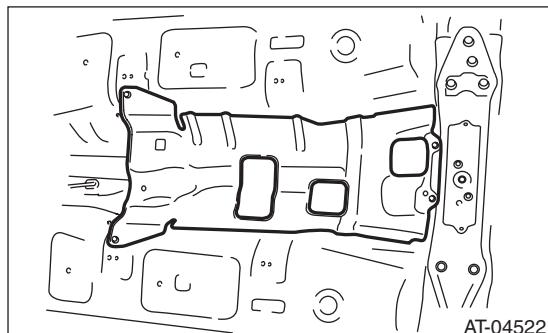
9) Install the transmission rear crossmember bolt.

**Tightening torque:**

**70 N·m (7.1 kgf·m, 51.6 ft-lb)**

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

11) Install the heat shield cover.



12) Install the front, center and rear exhaust pipes, and the muffler. (non-turbo model)

<Ref. to EX(H4SO)-7, INSTALLATION, Front Exhaust Pipe.> <Ref. to EX(H4SO)-9, INSTALLATION, Center Exhaust Pipe.> <Ref. to EX(H4SO)-10, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4SO)-12, INSTALLATION, Muffler.>

13) Install the center, rear exhaust pipes and the muffler. (Turbo model) <Ref. to EX(H4DOTC)-10, INSTALLATION, Center Exhaust Pipe.> <Ref. to EX(H4DOTC)-14, INSTALLATION, Rear Exhaust Pipe.> <Ref. to EX(H4DOTC)-16, INSTALLATION, Muffler.>

14) Lower the vehicle.

15) Install the transmission harness connector to the stay.

16) Install the pitching stopper. <Ref. to 4AT-42, INSTALLATION, Transmission Mounting System.>

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

18) Install the intercooler. (Turbo model)

<Ref. to IN(H4DOTC)-13, INSTALLATION, Intercooler.>

19) Fill with the same amount of ATF as drained. <Ref. to 4AT-26, Automatic Transmission Fluid.>

20) Bleed the air of control valve.

<Ref. to 4AT-59, PROCEDURE, Air Bleeding of Control Valve.>

21) Inspect the level of ATF. <Ref. to 4AT-26, INSPECTION, Automatic Transmission Fluid.>

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