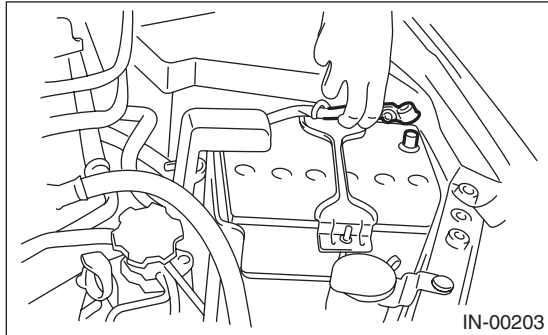


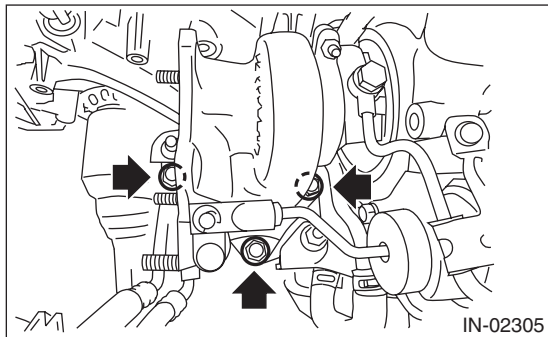
7. Turbocharger

A: REMOVAL

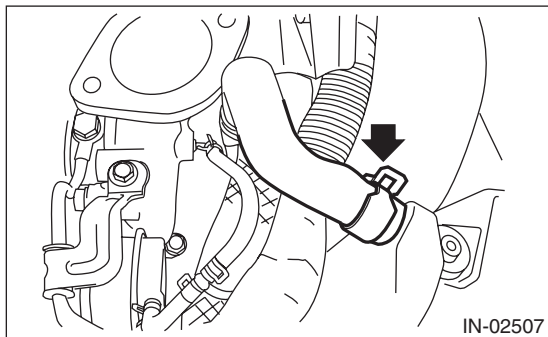
- 1) Set the vehicle on a lift.
- 2) Disconnect the ground cable from battery.



- 3) Lift up the vehicle.
- 4) Drain approximately 3.0 ℓ (3.2 US qt, 2.6 Imp qt) of coolant. <Ref. to CO(H4DOTC)-14, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
- 5) Lower the vehicle.
- 6) Remove the intercooler. <Ref. to IN(H4DOTC)-13, REMOVAL, Intercooler.>
- 7) Remove the center exhaust pipe. <Ref. to EX(H4DOTC)-9, REMOVAL, Center Exhaust Pipe.>
- 8) Lower the vehicle.
- 9) Remove the joint pipe from the turbocharger.

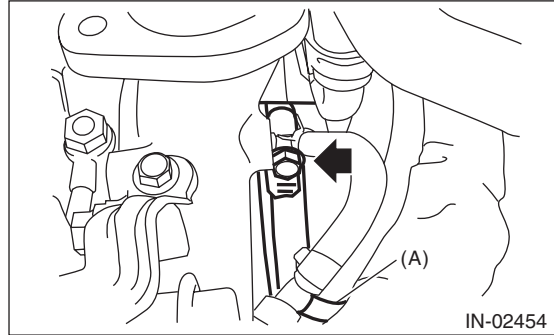


- 10) Disconnect the engine coolant hoses from coolant filler tank.

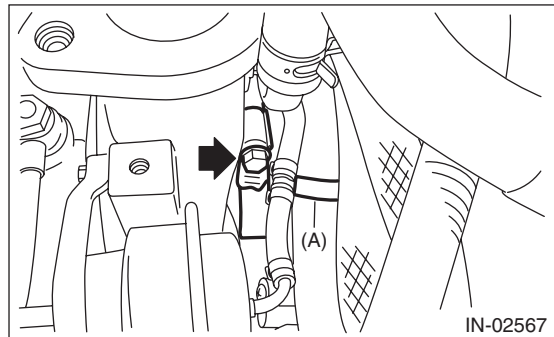


- 11) Disconnect the air control hose (A), and loosen the clamp holding the turbocharger to the intake duct.

- Except for WRX-SS model



- WRX-SS model

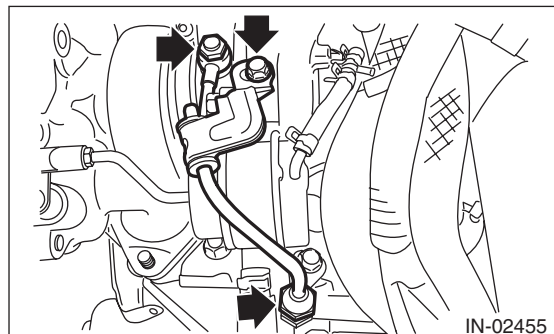
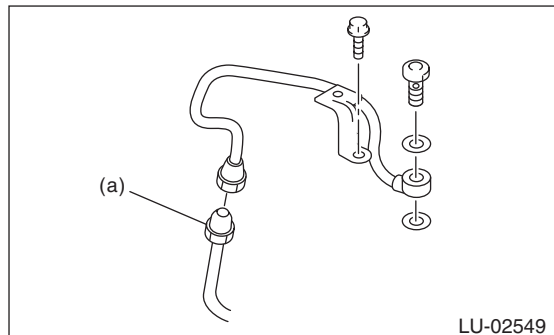


- 12) Remove the oil inlet pipe from the turbocharger.

CAUTION:

In order to prevent damaging the oil pipe on the cylinder head side, fix the section (a) shown in the figure when loosening the oil inlet pipe flare nut, and avoid the part from rotating together while loosening the nut.

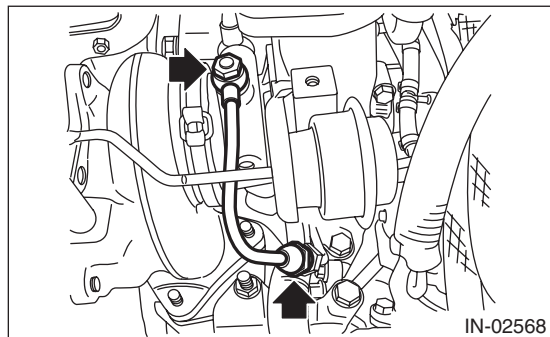
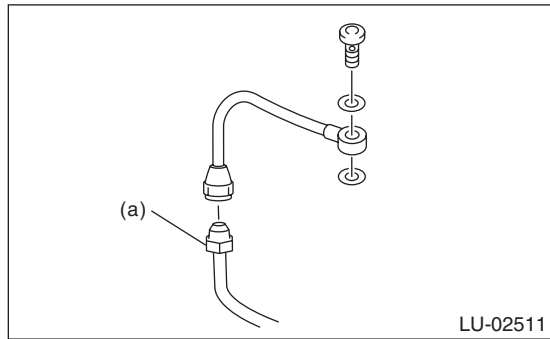
- Except for WRX-SS model



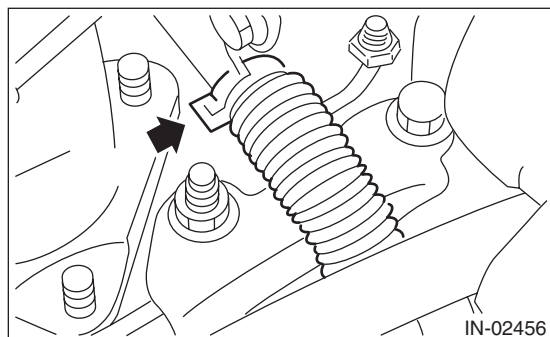
Turbocharger

INTAKE (INDUCTION)

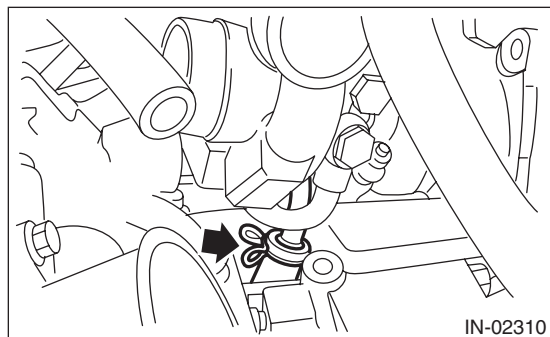
- WRX-SS model



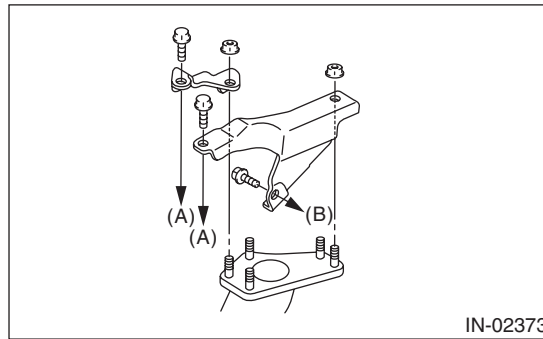
- 13) Disconnect the engine coolant hose from the water pipe.



- 14) Disconnect the oil outlet hose from the oil outlet pipe, and remove the turbocharger.



- 15) Remove the turbocharger stay.



- (A) To cylinder head RH
(B) To cylinder block RH

B: INSTALLATION

CAUTION:

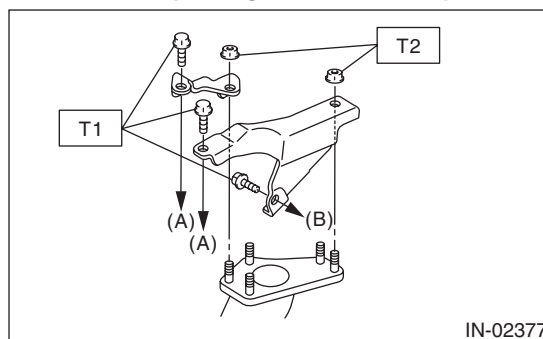
When replacing the turbocharger, check the filter part of union screw for clogging. <Ref. to LU(H4SO)-28, INSPECTING UNION SCREW WITH FILTER, INSPECTION, Oil Pipe.>

- 1) Install the turbocharger stay.

Tightening torque:

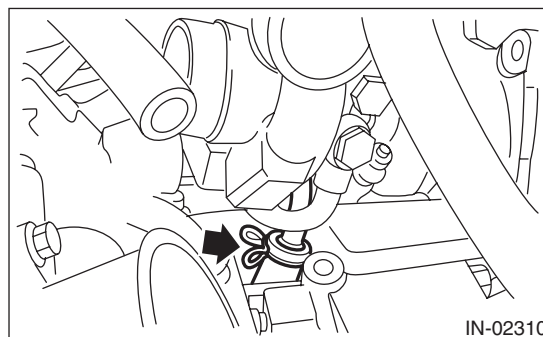
T1: 33 N·m (3.4 kgf-m, 24.3 ft-lb)

T2: 42.5 N·m (4.3 kgf-m, 31.3 ft-lb)

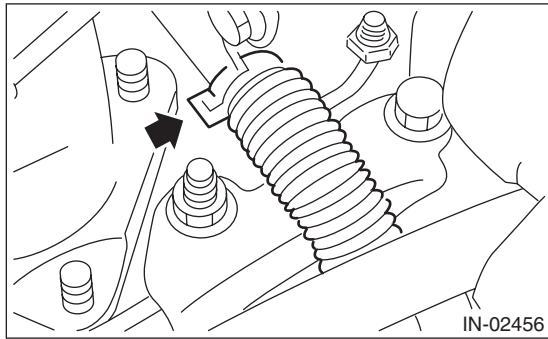


- (A) To cylinder head RH
(B) To cylinder block RH

- 2) Connect the oil outlet hose to the oil outlet pipe.



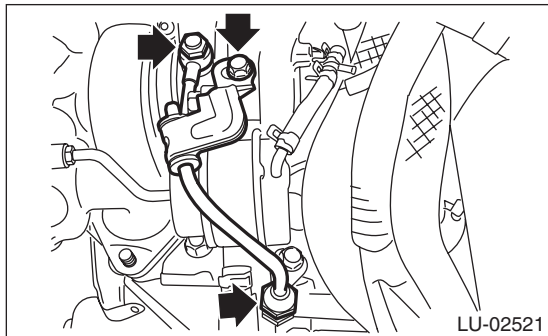
3) Connect the engine coolant hoses to the water pipe.



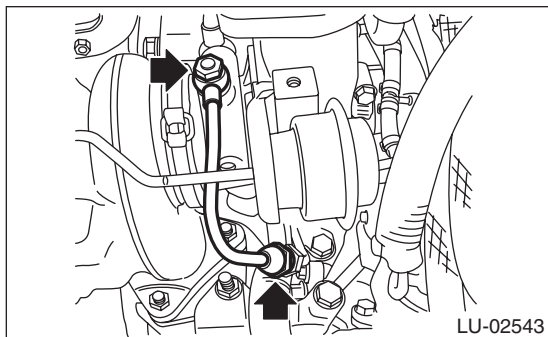
4) Temporarily tighten the bolts which secure the oil inlet pipe to the turbocharger. (except for WRX-SS model)

5) Temporarily tighten the flare nut of oil inlet pipe.

- Except for WRX-SS model



- WRX-SS model



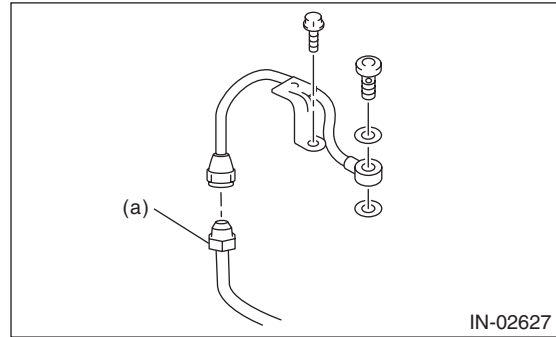
6) Tighten the bolts which secure the oil inlet pipe to the turbocharger. (except for WRX-SS model)

7) Tighten the oil inlet pipe of turbocharger.

CAUTION:

In order to prevent damaging the oil pipe on the cylinder head side, fix the section (a) shown in the figure when tightening the oil inlet pipe flare nut, and avoid the part from rotating together while tightening the nut.

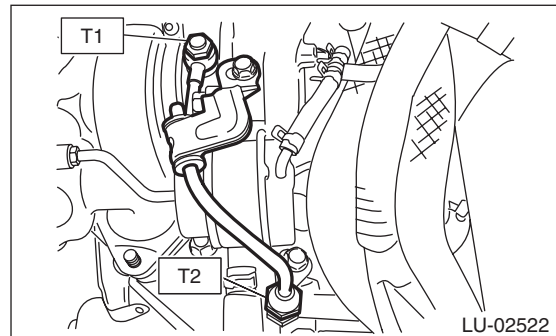
- Except for WRX-SS model



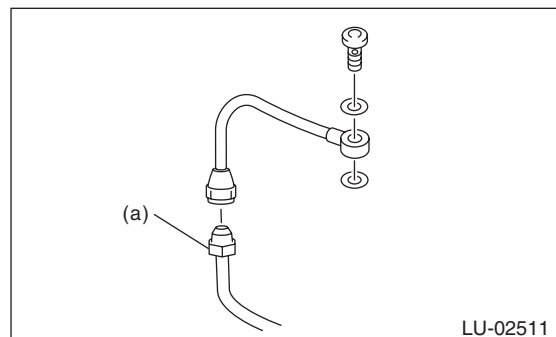
Tightening torque:

T1: 16 N·m (1.6 kgf-m, 11.8 ft-lb)

T2: 20 N·m (2.0 kgf-m, 14.8 ft-lb)



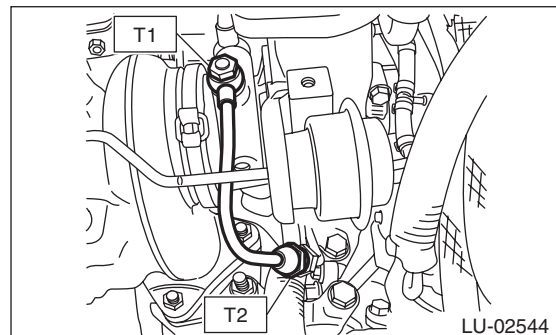
- WRX-SS model



Tightening torque:

T1: 16 N·m (1.6 kgf-m, 11.8 ft-lb)

T2: 20 N·m (2.0 kgf-m, 14.8 ft-lb)



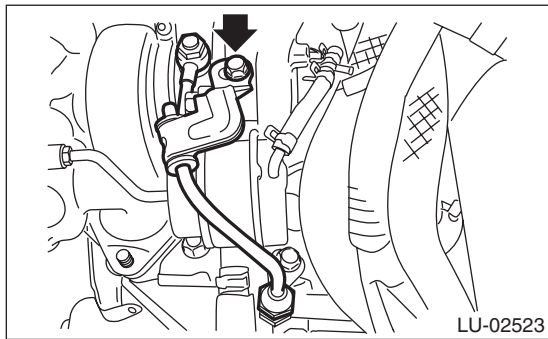
8) Tighten the bolts which hold the oil inlet pipe stay to the turbocharger. (except for WRX-SS model)

Turbocharger

INTAKE (INDUCTION)

Tightening torque:

5 N·m (0.5 kgf-m, 3.7 ft-lb)

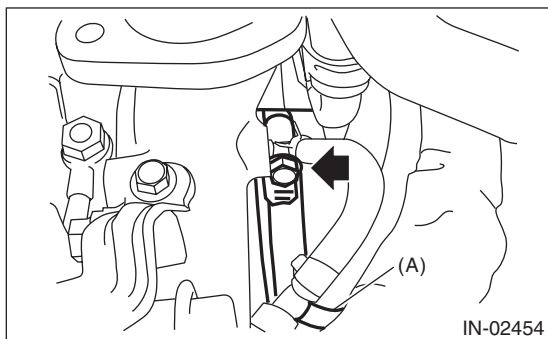


9) Connect the air control hose (A), and install the turbocharger to the intake duct.

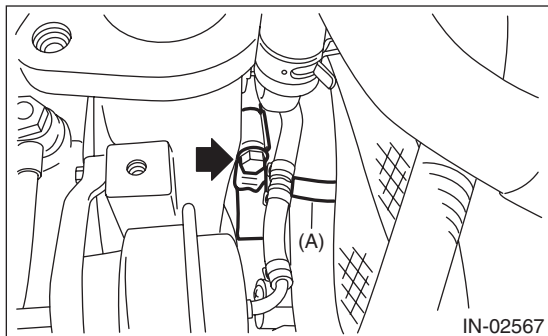
Tightening torque:

3 N·m (0.3 kgf-m, 2.2 ft-lb)

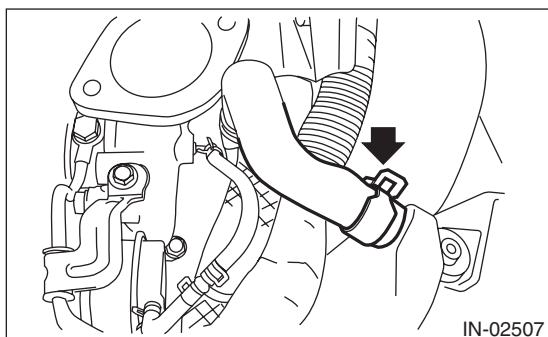
- Except for WRX-SS model



- WRX-SS model



10) Connect the engine coolant hoses to the coolant filler tank.



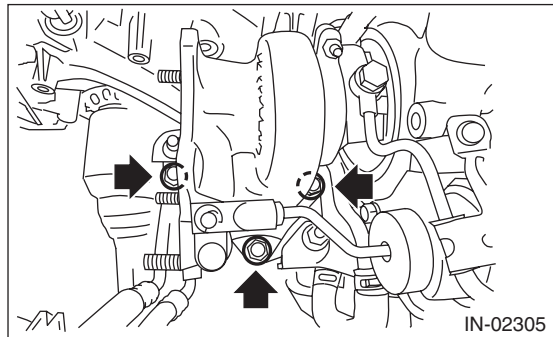
11) Install the joint pipe to turbocharger.

NOTE:

Replace the gasket with a new part.

Tightening torque:

42.5 N·m (4.3 kgf-m, 31.3 ft-lb)



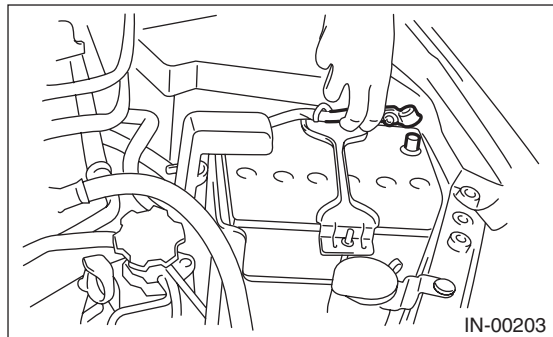
12) Lift up the vehicle.

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

14) Lower the vehicle.

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

16) Connect the ground cable to battery.



17) Fill engine coolant. <Ref. to CO(H4DOTC)-14, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

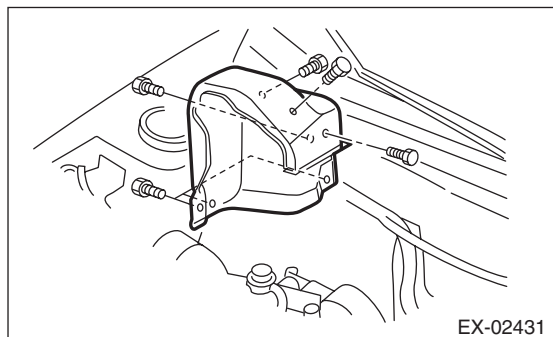
C: INSPECTION

1. WASTE GATE ACTUATOR

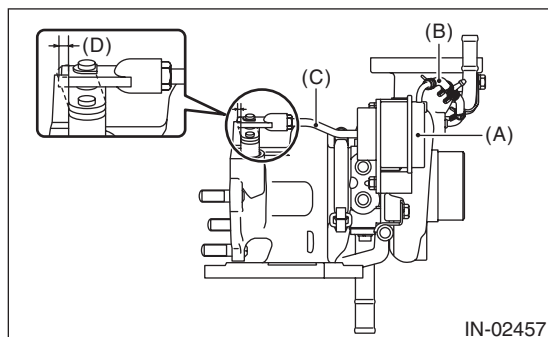
- Except for WRX-SS model

1) Remove the intercooler. <Ref. to IN(H4DOTC)-13, REMOVAL, Intercooler.>

2) Remove the turbocharger upper cover.



3) Remove the boost hose (B) from the waste gate actuator (A) of the turbocharger, and connect the Mighty Vac to the waste gate actuator (A).



- (A) Waste gate actuator
- (B) Boost hose
- (C) Control rod
- (D) Control rod stroke

4) Pressurize slowly with the Mighty Vac, and measure the pressure when the control rod stroke (D) becomes 1 mm (0.04 in). If it is not within the standard, replace the turbocharger assembly.

CAUTION:

Do not pressurize over 56.0 kPa (0.57 kgf/cm², 8.12 psi) to prevent damaging the waste gate actuator.

Operating pressure (Control rod stroke 1 mm (0.04 in)):

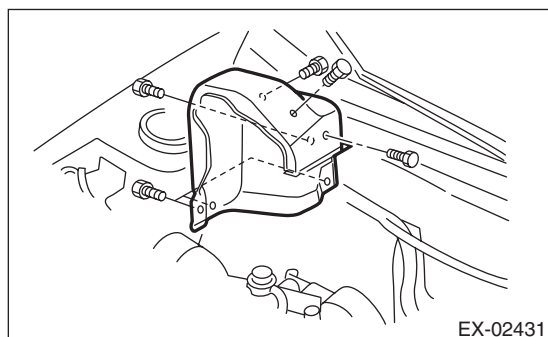
Standard

44.0 — 46.6 kPa (0.45 — 0.48 kgf/cm², 6.38 — 6.76 psi)

5) After inspection, install the related parts in the reverse order of removal.

Tightening torque:

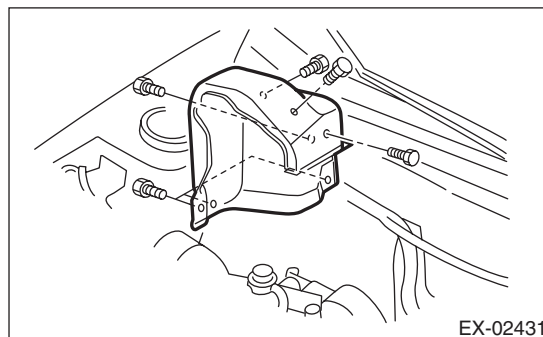
7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



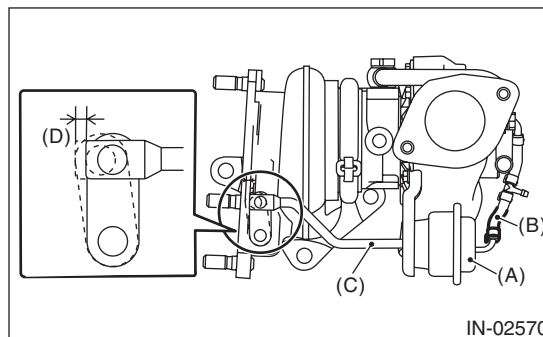
• WRX-SS model

1) Remove the intercooler. <Ref. to IN(H4DOTC)-13, REMOVAL, Intercooler.>

2) Remove the turbocharger upper cover.



3) Remove the boost hose (B) from the waste gate actuator (A) of the turbocharger, and connect the Mighty Vac to the waste gate actuator (A).



- (A) Waste gate actuator
- (B) Boost hose
- (C) Control rod
- (D) Control rod stroke

4) Pressurize slowly with the Mighty Vac, and measure the pressure when the control rod stroke (D) becomes 2 mm (0.08 in). If it is not within the standard, replace the turbocharger assembly.

CAUTION:

Do not pressurize over 89.9 kPa (0.92 kgf/cm², 13.0 psi) to prevent damaging the waste gate actuator.

Operating pressure (Control rod stroke 2 mm (0.08 in)):

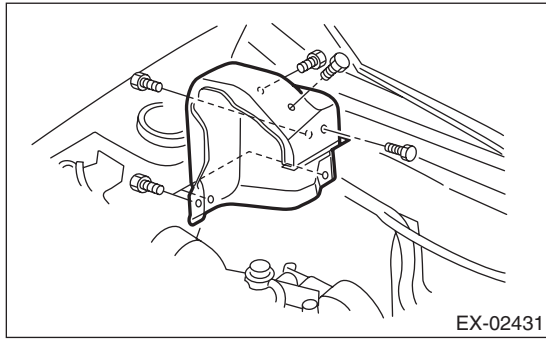
Standard

74.7 — 80.8 kPa (0.76 — 0.82 kgf/cm², 10.8 — 11.7 psi)

5) After inspection, install the related parts in the reverse order of removal.

Tightening torque:

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)



2. OIL PIPE AND WATER PIPE

- Check that there are no oil leakage or water leakage from the pipe attachment section.
- Check for cracks or loose connections.