

Warning

- A hot engine and exhaust system can cause severe burns. Turn off the engine and wait until they are cool before removing the exhaust system.

Caution

- Perform exhaust gas temperature sensor removal/installation only when inspection or replacement is required, such as when DTCs for the sensor are displayed, because it may cause exhaust gas leakage. If the exhaust gas temperature sensor is removed once, always verify that there is no exhaust gas leakage after reinstallation.

Note

- If the turbocharger is replaced or removed/installed, perform the turbocharger initialization procedure.

Operation After Replacing or Removal/Installation Turbocharger

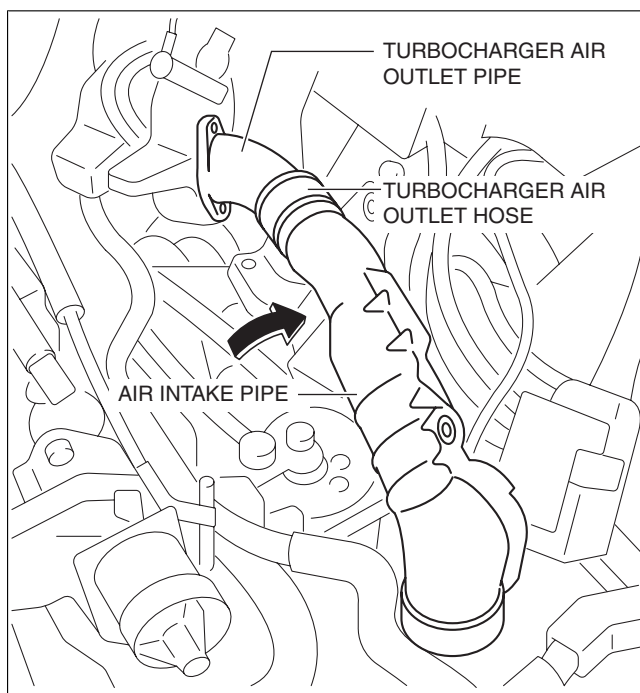
1. If the turbocharger is replaced or removed/installed, perform the following procedure.

STEP	ACTION	PAGE/CONDITION
1	Perform turbocharger initialization procedure.	(See TURBOCHARGER INITIALIZATION [SKYACTIV-D 2.2].)
2	Switch the ignition off.	—
3	Wait for 20 s.	—
4	Switch the ignition ON (engine off).	—
5	Perform KOEO self-test procedure.	(See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].)
6	Start the engine.	—
7	Verify that the check engine light does not illuminate.	—
8	Perform KOER self-test procedure.	(See KOEO/KOER SELF TEST [SKYACTIV-D 2.2].)
9	Switch the ignition off.	—

Turbocharger Removal/Installation

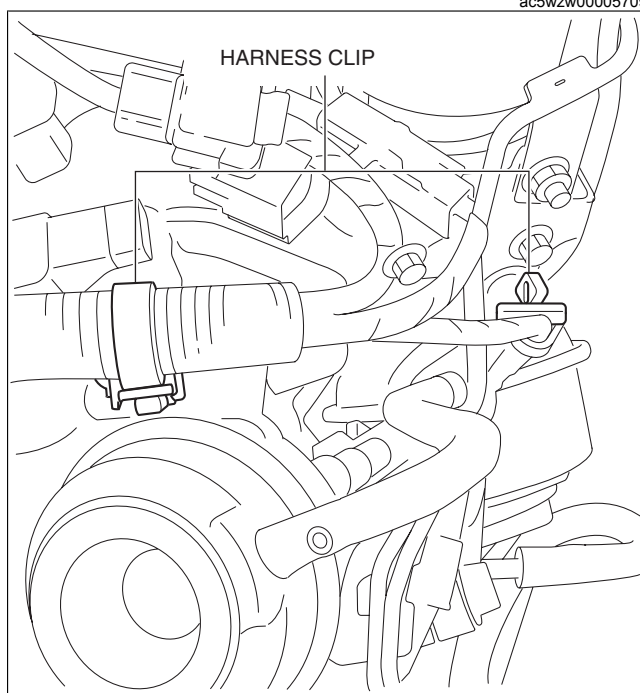
1. Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)
2. Remove the engine cover. (See ENGINE COVER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
3. Drain the engine coolant. (See ENGINE COOLANT REPLACEMENT [SKYACTIV-D 2.2].)
4. Remove the air cleaner. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
5. Remove the battery and the battery tray. (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
6. Remove the following parts as a single unit: (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
 - Air hose
 - Air inlet pipe
 - Breather hose
 - Turbocharger air inlet hose
 - Blow-by heater

7. Set the turbocharger air outlet pipe, turbocharger air outlet hose, and air intake pipe aside as a single unit as shown in the figure. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)



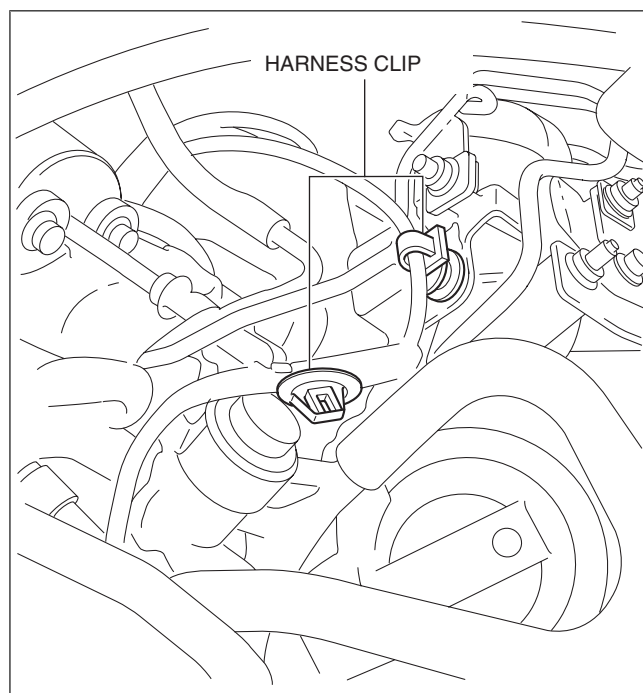
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8. Remove the wiring harness clip shown in the figure.
9. Disconnect the regulating valve position sensor connector.

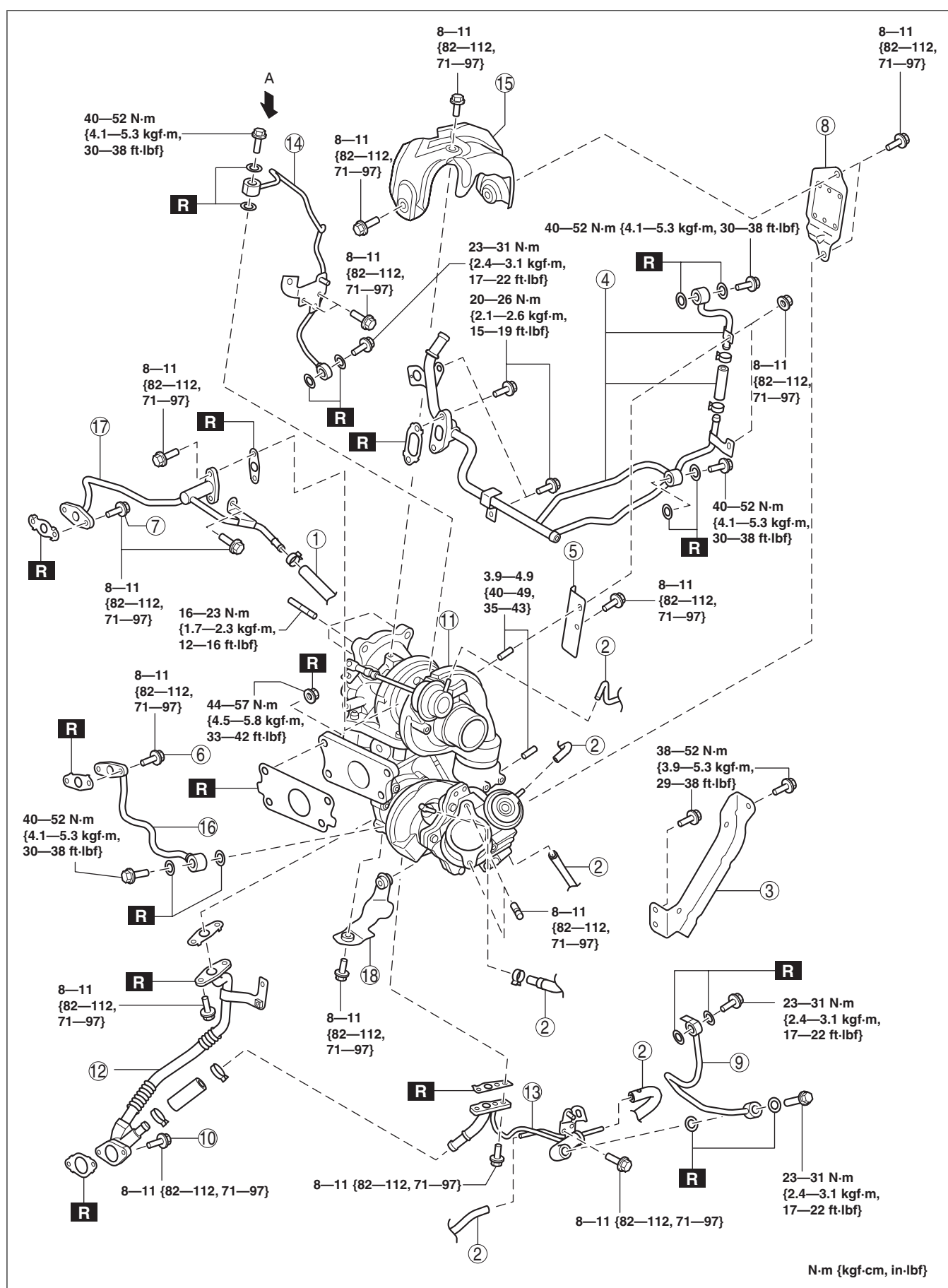


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10. Detach the wiring harness clips shown in the figure.
11. Remove the front crossmember. (See FRONT CROSSMEMBER REMOVAL/INSTALLATION.)
12. Remove the catalytic converter. (See EXHAUST SYSTEM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
13. Remove the transfer. (See TRANSFER REMOVAL/INSTALLATION [GW6AX-EL].)
14. Remove in the order shown in the figure.
15. Install in the reverse order of removal.



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1	Water hose
2	Vacuum hose

3	Turbocharger bracket (2WD)
4	Water pipe No. 1

5	Turbocharger insulator No.1
6	Water pipe No.2 installation bolt
7	Water pipe No.3 installation bolt
8	Turbocharger insulator No.2
9	Oil pipe No.1
10	Oil pipe No.2 installation bolt
11	Turbocharger (See Turbocharger installation note.) (See Operation After Replacing or Removal/ Installation Turbocharger.)
12	Oil pipe No.2 (See Oil pipe No.2 removal note.)

13	Oil pipe No.3
14	Oil pipe No.4 (See Oil pipe No.4 installation note.)
15	Turbocharger insulator No.3
16	Water pipe No.2 (See Water pipe No.2 installation note.)
17	Water pipe No.3
18	Turbocharger insulator No.4

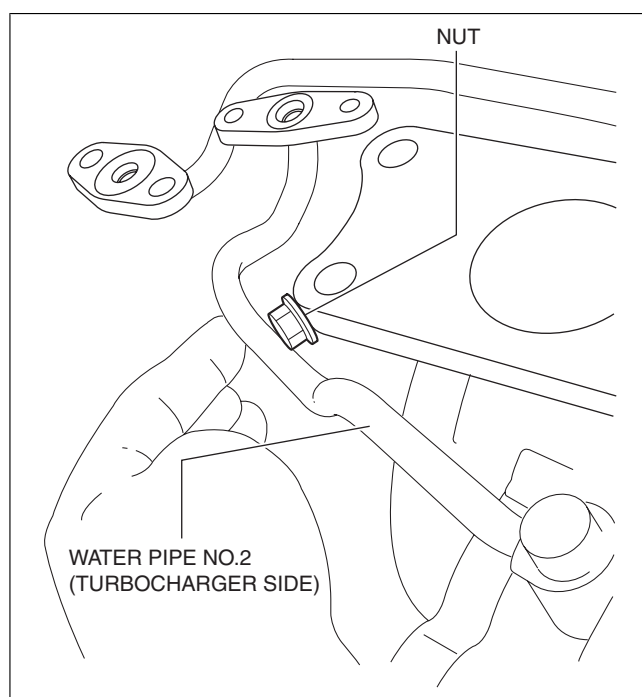
Oil pipe No.2 removal note

1. Remove oil pipes No.2 and 3 as a single unit.
2. Remove oil pump No.2.

Water pipe No.2 installation note

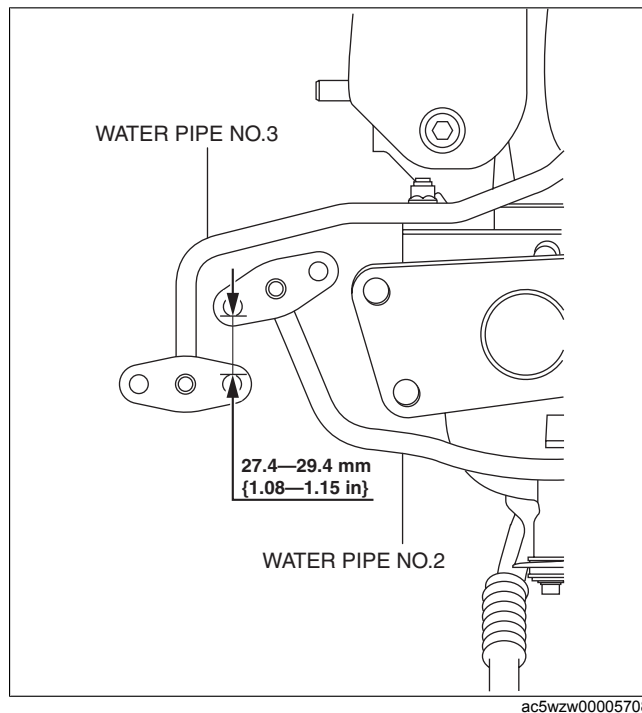
1. Insert a nut (9 mm {0.4 in}) between the position shown in the figure and tighten water pipe No.2 (turbocharger side).

Water pipe No.2 (turbocharger side) tightening torque 40—52 N·m {4.1—5.3 kgf·m, 30—38 ft·lbf}



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2. Measure the distance shown in the figure and verify that water pipe No.2 is installed correctly.



Oil pipe No.4 installation note

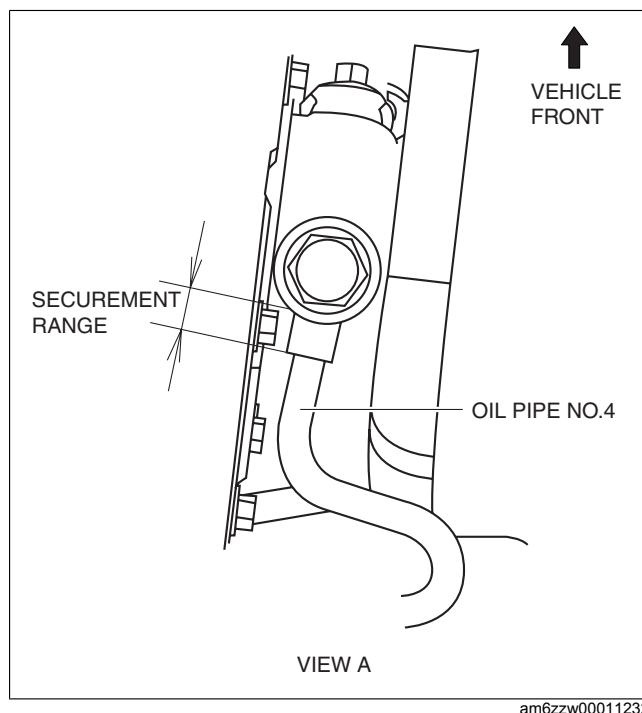
Caution

- Oil pipe No.4 may be damaged if it is secured out of the securement range. Secure oil pipe No.4 within the securement range.

1. Secure oil pipe No.4 using a wrench so that it does not rotate.
2. Tighten the oil pipe No.4.

Oil pipe No.4 tightening torque

40—52 N·m {4.1—5.3 kgf·m, 30—38 ft·lbf}



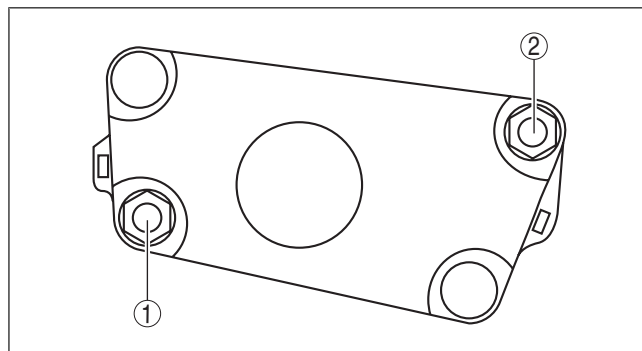
Turbocharger installation note

1. Install the turbocharger using the following procedure.

- (1) Temporarily tighten nuts in the order shown in the figure.

Tightening torque

23—27 N·m {2.4—2.7 kgf·m, 17—19 ft·lbf}



- (2) Tighten the nuts in the order shown in the figure.

Tightening torque

44—57 N·m {4.5—5.8 kgf·m, 33—42 ft·lbf}

