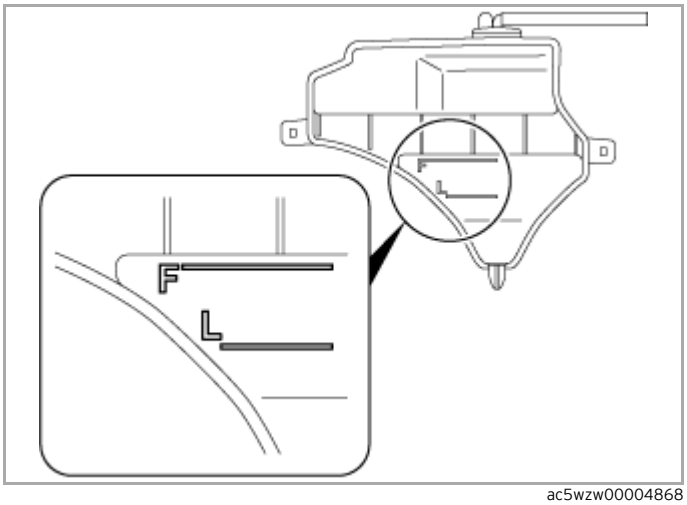
Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2006 MAZDA BT-50 OEM Service and Repair Workshop Manual

Go to manual page



ac5wzw00004868

• If the engine coolant level is below the L mark, add engine coolant.

ENGINE COOLANT LEAKAGE INSPECTION [SKYACTIV-D 2.2]

SM2897327

id0112s680050

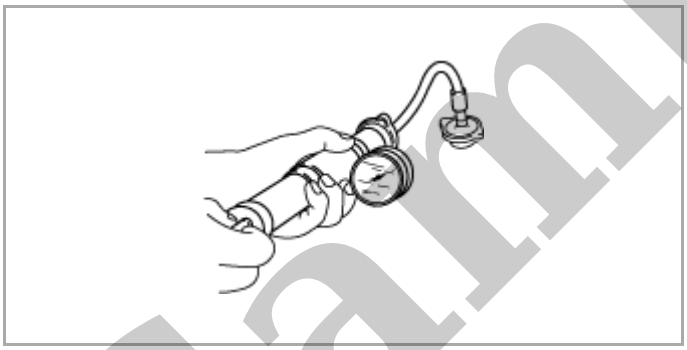
Warning

• Never remove the cooling system cap or loosen the radiator drain plug while the engine is running, or when the engine and radiator are hot. Scalding engine coolant and steam may shoot out and cause serious injury. It may also damage the engine and cooling system.
• Turn off the engine and wait until it is cool. Even then, be very careful when removing the cap. Wrap a thick cloth around it and slowly turn it counterclockwise to the first stop. Step back while the pressure escapes.
• When you are sure all the pressure is gone, press down on the cap using the cloth, turn it, and remove it.

1.Inspect the engine coolant level. (See ENGINE COOLANT LEVEL INSPECTION [SKYACTIV-D 2.2].)

2.Remove the cooling system cap.

3.Install the radiator cap tester to the radiator filler neck.



ampjjw00003132

4.Apply pressure using the radiator cap tester.

Caution

• Applying more than 122.6 kPa {1.250 kgf/cm ^{2}, 17.78 psi} can damage the hoses, fittings, and other components, and cause leakage.

Engine coolant leakage inspection pressure

122.6 kPa {1.250 kgf/cm ^{2}, 17.78 psi} [1 min]

5.When pressurizing the cooling system, verify that the pressure is maintained.

• If the gauge needle drops, it may indicate water leakage. Repair or replace the applicable part.

8.Refill the engine coolant into the coolant reserve tank up to the F mark on the tank.

9.Install the cooling system cap.

Caution

• If the high engine coolant temperature warning light flashes, stop the engine to lower the engine coolant temperature and prevent overheating. Then, verify the malfunctioning part and repair or replace it.

10.Start the engine and warm up the engine by idling.

11.After the engine warms up, perform the following steps. At this time, be careful of the engine coolant temperature to prevent overheating.

Note

• If the accelerator pedal is depressed continuously for a specified time, the engine speed may decrease to the idle speed. This is due to the fuel cut control operation, which prevents overheating, and it does not indicate a malfunction.

(1)Run the engine at 2,500 rpm for 5 min.

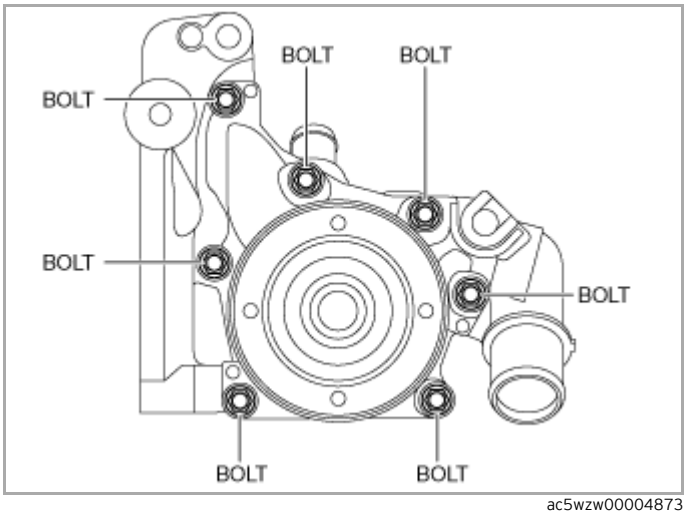
(2)Maintain the engine speed at 3,000 rpm for 5 s, and then idle.

(3)Repeat Steps (1), (2) several times.

12.Stop the engine, and inspect the engine coolant level after the engine coolant temperature decreases. If it is low, repeat Steps 6–10.

13.Inspect for engine coolant leakage. (See ENGINE COOLANT LEAKAGE INSPECTION [SKYACTIV-D 2.2].)

14.Install the service hole cover.



ac5wzw00004873

Caution

• Do not remove the water pump component completely at this time because a small amount of the engine coolant remaining in the engine will drain out.

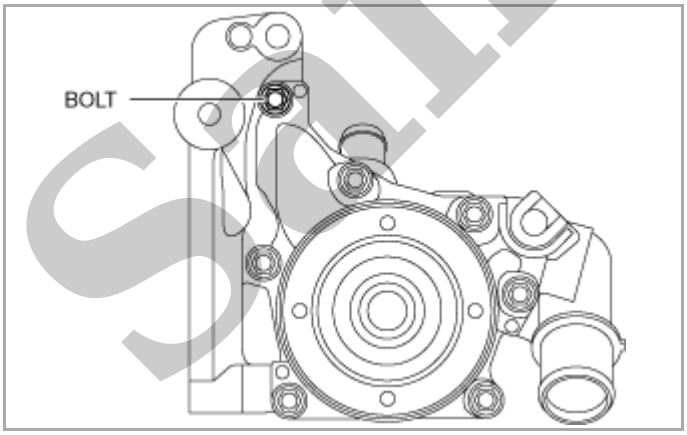
Water Pump Component Installation Note

Caution

• Be careful not to damage the exterior circumference surface of the water pump pulley when using tools, otherwise it will cause wear, breakage, abnormal noise of the drive belt, damage to the pulley, and rust.

1.Install the water pump using the following procedure:

(1)Temporarily tighten the bolts shown in the figure.



ac5wzw00004874

(2)Tighten the bolts in the order shown in the figure.

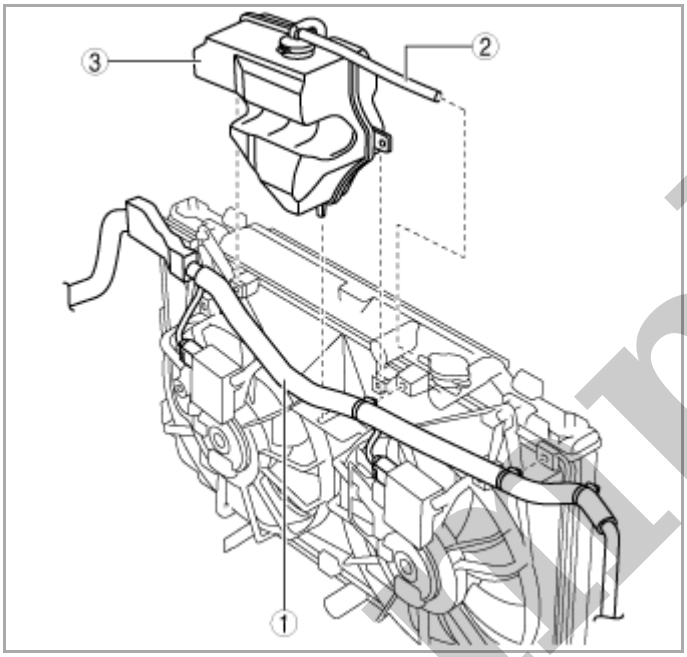
COOLANT RESERVE TANK REMOVAL/INSTALLATION [SKYACTIV-D 2.2]

SM2897330

id0112s680100

1.Remove in the order indicated in the table.

2.Install in the reverse order of removal.

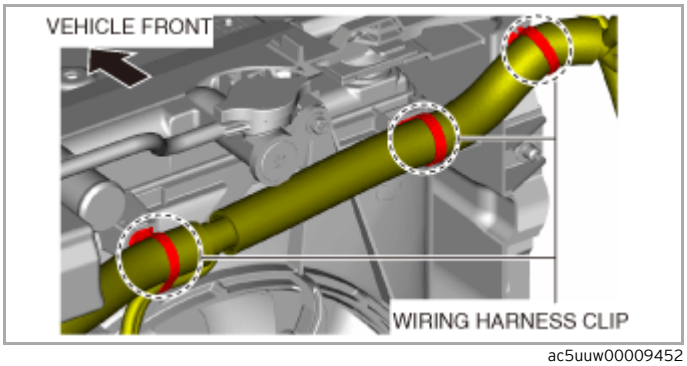


ac5wzw00004875

1	Wiring harness
2	Hose
3	Coolant reserve tank (See Coolant Reserve Tank Removal Note.)

Coolant Reserve Tank Removal Note

1.Remove the wiring harness clips shown in the figure.



ac5uuw00009452

Fan control module No.1, No.2 [During A/C OFF, DPF regeneration control, and DeSOx control]

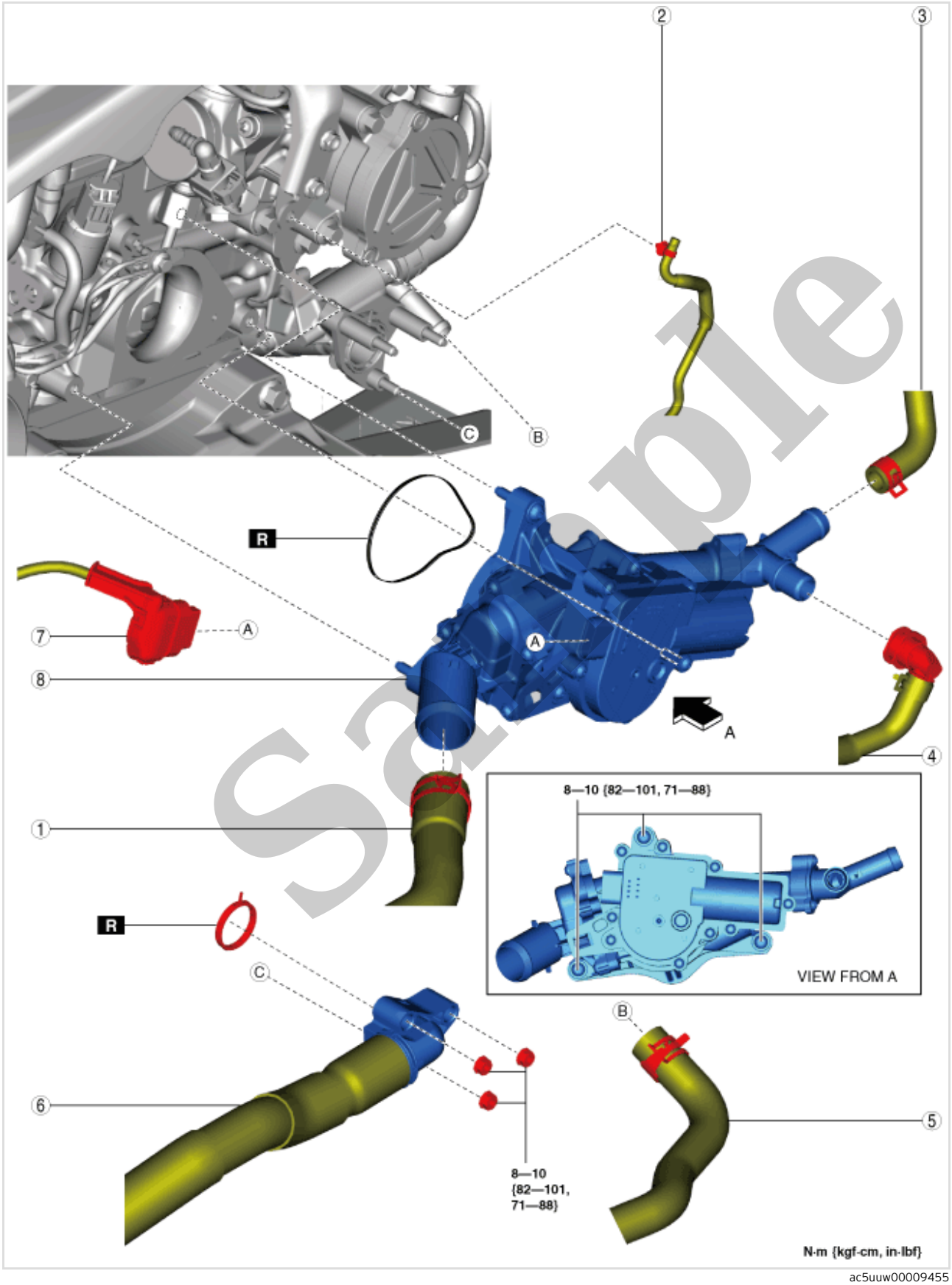
Inspection	Result
Engine coolant temp. (°C {°F})	PID FAN DUTY (%)
less than 81 −83 {181}	0
83−89 {182−192}	30−75
89−91 {193−195}	75
more than 91 {196}	100

Fan control module No.1, No.2 [During A/C ON (Engine coolant temp. less than 90 °C {194 °F} and idling)]

Inspection	Result
Refrigerant pressure (MPa {kgf/cm^2, psi})	PID FAN DUTY (%)
less than 1.0 {10, 145}	30
1.0−1.7 {11−17, 146−246}	30−75
1.7−1.9 {18−19, 247−275}	75
more than 1.9 {19, 276}	100

10.Refill the engine coolant. (See ENGINE COOLANT REPLACEMENT [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)

11.Inspect for engine coolant leakage. (See ENGINE COOLANT LEAKAGE INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)



ac5uuw00009455

1.If the coolant control valve has been replaced, install ECT sensor No.2. (See ENGINE COOLANT TEMPERATURE (ECT) SENSOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)

2.Insert a new gasket into the coolant control valve groove.

3.Install the coolant control valve.

Tightening torque

8–10 N·m {82–101 kgf·cm, 71–88 in·lbf}

Lower Radiator Hose Component Installation Note

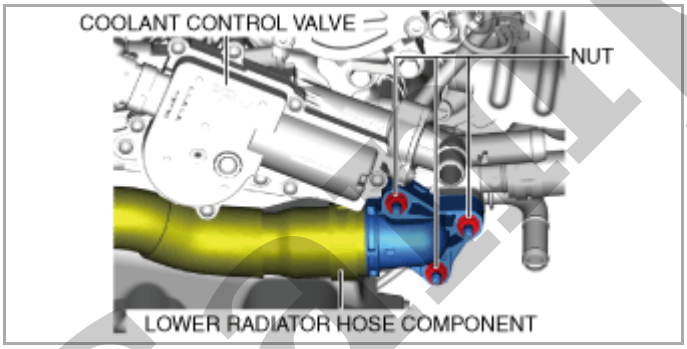
Caution

• Do not apply oil (such as engine oil, ATF) to the gasket. Otherwise, the gasket could swell causing a seal malfunction.

1.Install the lower radiator hose component using the following procedure:

(1)Insert a new gasket into the pipe groove.

(2)Tighten the nuts shown in the figure.

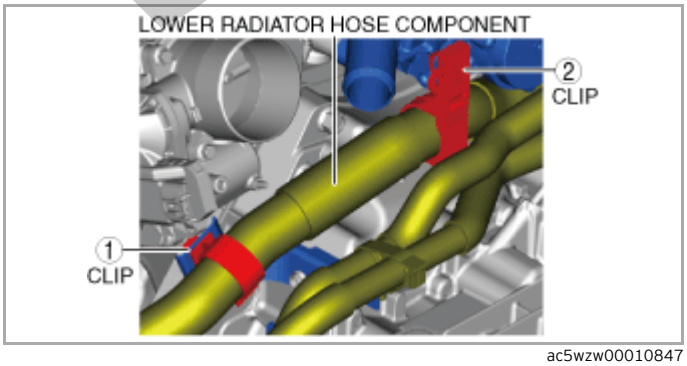


ac5wzw00010844

Tightening torque

8–10 N·m {82–101 kgf·cm, 71–88 in·lbf}

(3)Secure the lower radiator hose using clips in the order shown in the figure.



ac5wzw00010847

Heater Hose Installation Note

1.Connect the heater hose to the coolant control valve so that the projection position is aligned with the mark.

6	Radiator (See ENGINE COOLANT PROTECTION INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See ENGINE COOLANT REPLACEMENT [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See ENGINE COOLANT LEAKAGE INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See RADIATOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)
7	Cooling system cap (See COOLING SYSTEM CAP INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)

With EGR cooler

ac5ww00015547

1	Coolant reserve tank (See ENGINE COOLANT LEVEL INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See COOLANT RESERVE TANK REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)
2	Cooling fan motor No.2 (See COOLING FAN MOTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See COOLING FAN MOTOR INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)
3	Cooling fan motor No.1 (See COOLING FAN MOTOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See COOLING FAN MOTOR INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)
4	Water pump (See WATER PUMP REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)
5	Thermostat (See THERMOSTAT REMOVAL/INSTALLATION [SKYACTIV-G (WITH EGR COOLER)].) (See THERMOSTAT INSPECTION [SKYACTIV-G (WITH EGR COOLER)].)
6	Radiator (See ENGINE COOLANT PROTECTION INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See ENGINE COOLANT REPLACEMENT [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See ENGINE COOLANT LEAKAGE INSPECTION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See RADIATOR REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].)