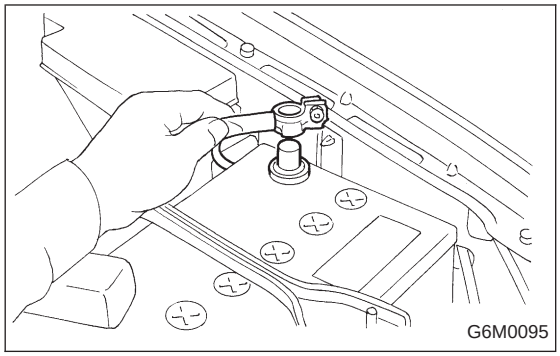
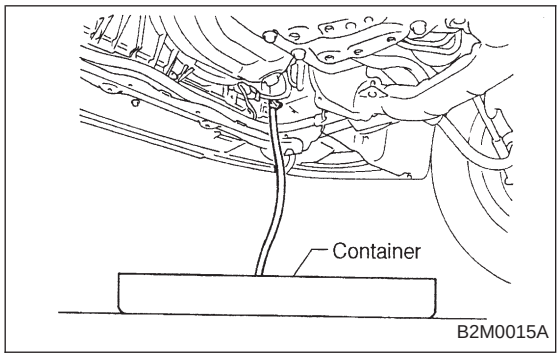

G6M0095

2. Engine Coolant Pump

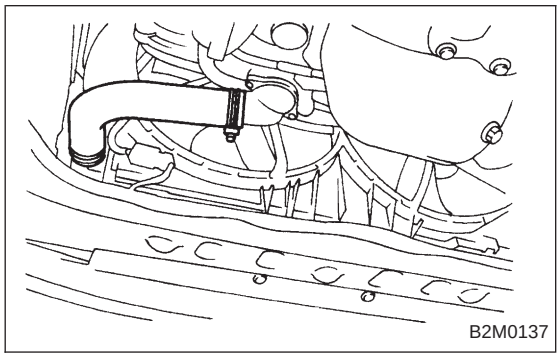
A: REMOVAL

1) Open engine hood.
2) Disconnect ground cable from the battery.

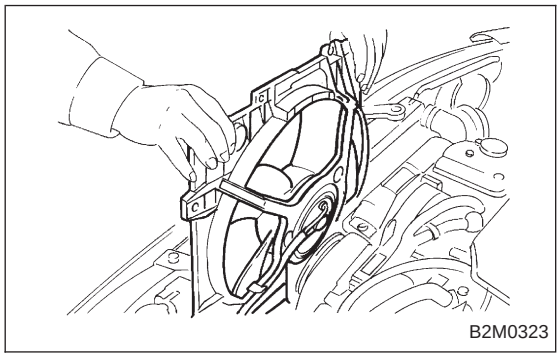


B2M0015A

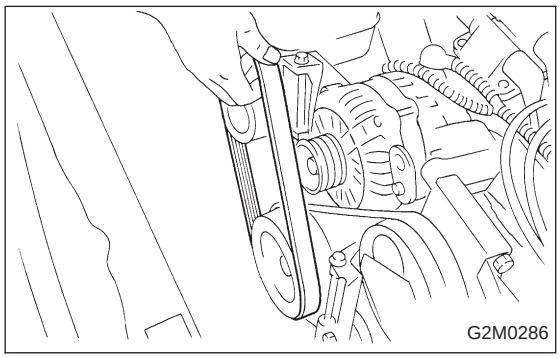
3) Drain engine coolant completely.
<Ref. to 2-5 [W1A0].>


B2M0137

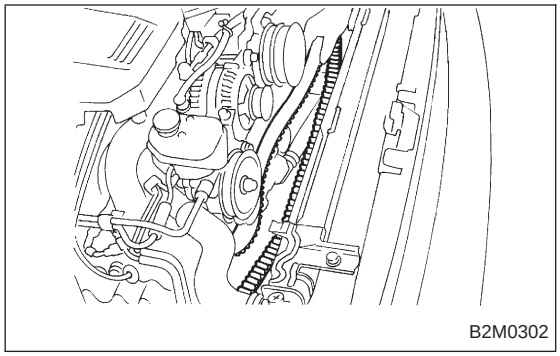
4) Disconnect radiator outlet hose from engine coolant pump.


B2M0323

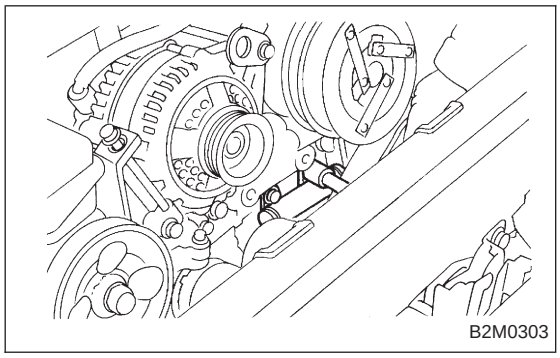
5) Remove radiator fan motor assembly.
<Ref. to 2-5 [W6A0].>


G2M0286

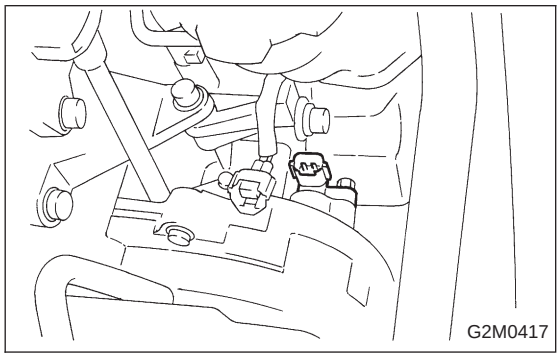
6) Remove V-belt(s).
<Ref. to 1-5 [01B0].>


B2M0302

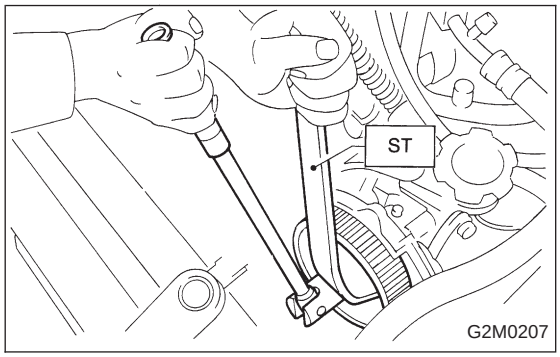
7) Remove timing belt.
<Ref. to 1-5 [02A0].>


B2M0303

8) Remove belt tension adjuster.

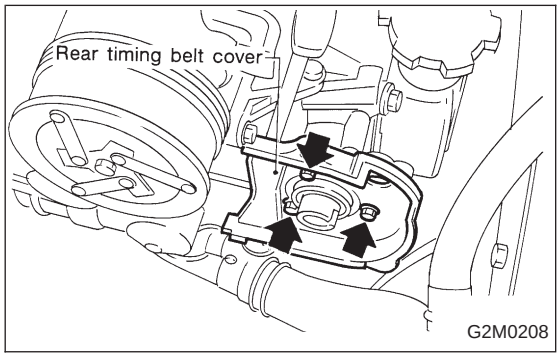

G2M0417

9) Remove camshaft position sensor.
<Ref. to 2-7 [W10A0].>



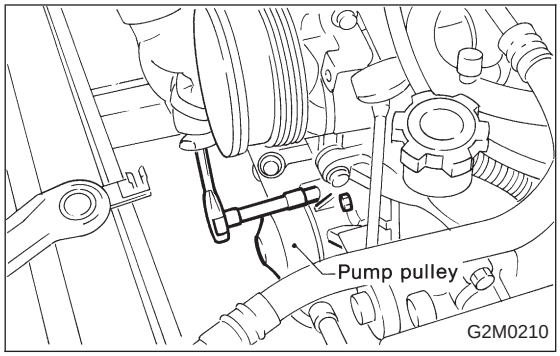
G2M0207

10) Remove left side camshaft pulley by using ST.
ST 499207100 CAMSHAFT SPROCKET WRENCH



G2M0208

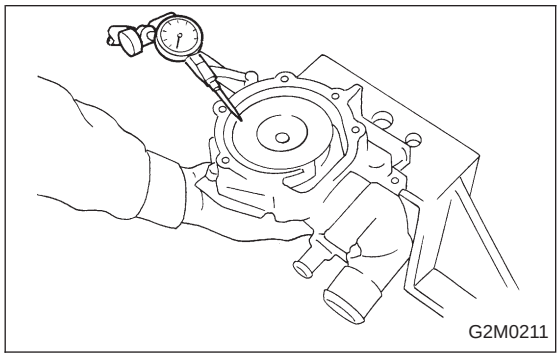
11) Remove left side rear timing belt cover.



12) Remove tensioner bracket.
13) Disconnect heater hose from engine coolant pump.
14) Remove engine coolant pump.

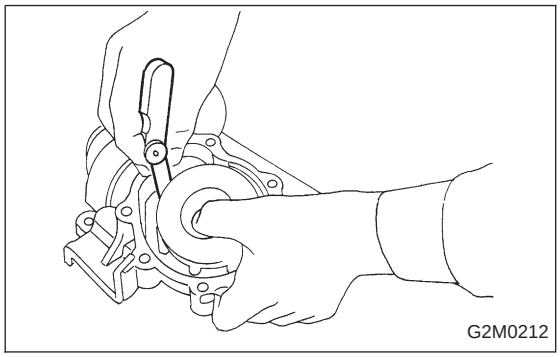
B: INSPECTION

1) Check engine coolant pump bearing for smooth rotation.
2) Check engine coolant pump pulley for abnormalities.



3) Using a dial gauge, measure impeller runout in thrust direction while rotating the pulley.

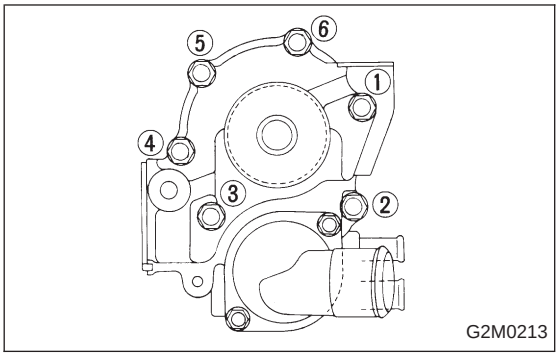
"Thrust" runout limit:
0.5 mm (0.020 in)



4) Check clearance between impeller and pump case.

Clearance between impeller and pump case:
Standard
0.5 — 0.7 mm (0.020 — 0.028 in)
Limit
1.0 mm (0.039 in)

5) After engine coolant pump installation, check pulley shaft for engine coolant leaks. If leaks are noted, replace engine coolant pump assembly.

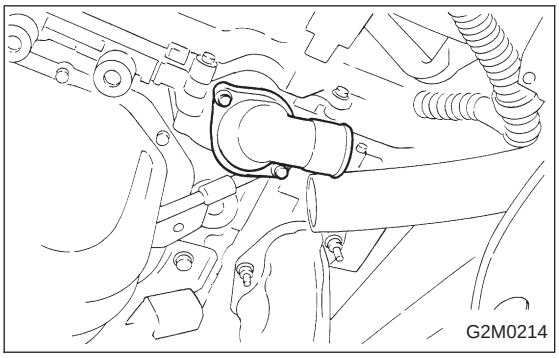


C: INSTALLATION

Installation is in the reverse order of removal.

CAUTION:
- **Replace gasket with a new one.**
- **When installing engine coolant pump, tighten bolts in two stages in numerical sequence as shown in figure.**

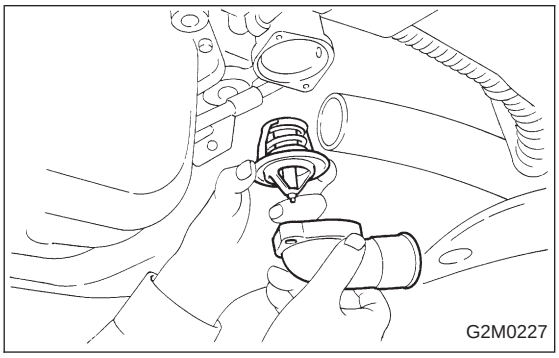
Tightening torque:
10^{+4}_{-0} N·m ($1.0^{+0.4}_{-0}$ kg-m, $7.2^{+2.9}_{-0}$ ft-lb)



3. Thermostat

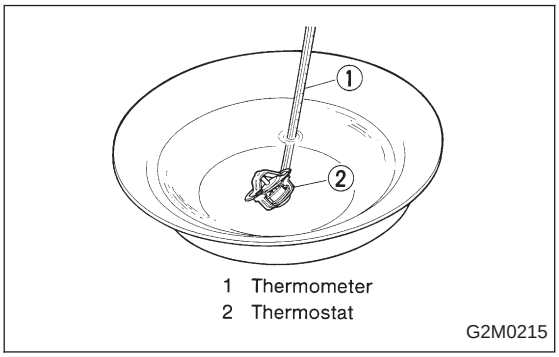
A: REMOVAL AND INSTALLATION

1) Drain engine coolant.
Set container under the vehicle, and remove drain cock from radiator.
2) Disconnect radiator outlet hose from thermostat cover.
3) Remove thermostat cover and gasket, and pull out the thermostat.



4) Install the thermostat in the intake manifold, and install the thermostat cover together with a gasket.

CAUTION:
- **When reinstalling the thermostat, use a new gasket.**
- **The thermostat must be installed with the jiggle pin upward.**
- **In this time, set the jiggle pin of thermostat for front side.**

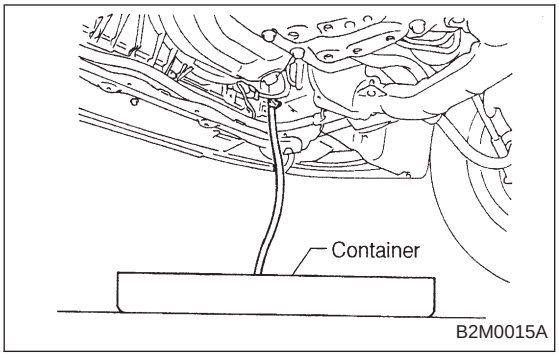


B: INSPECTION

Replace the thermostat if the valve does not close completely at an ambient temperature or if the following test shows unsatisfactory results.
Immerse the thermostat and a thermometer in water. Raise water temperature gradually, and measure the temperature and valve lift when the valve begins to open and when the valve is fully opened. During the test, agitate the water for even temperature distribution. The measurement should be to the specification.

Starts to open:
76.0 — 80.0°C (169 — 176°F)

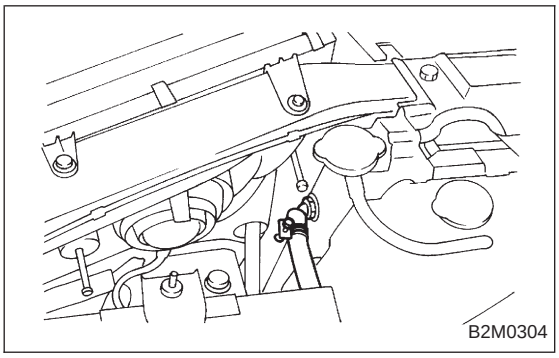
Fully opens:
91°C (196°F)



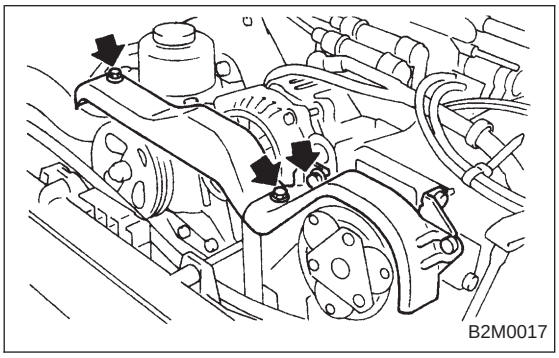
4. Radiator

A: REMOVAL

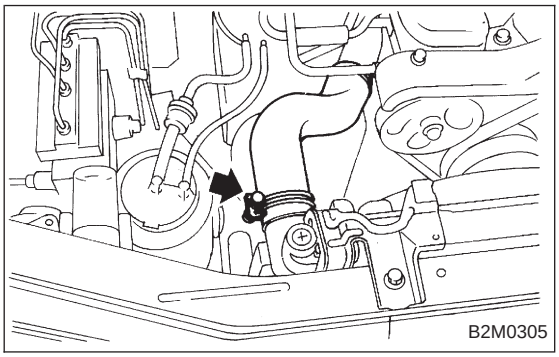
1) Disconnect battery cables and remove battery from body.
2) Drain engine coolant.
Set container under the vehicle, and remove drain cock from radiator.



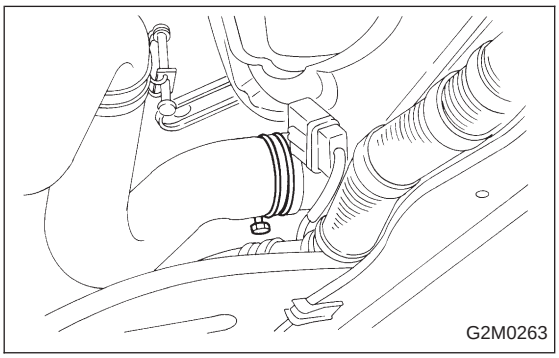
3) Disconnect radiator outlet hose from thermostat cover.
4) Disconnect ATF cooler hoses from radiator. (AT model)



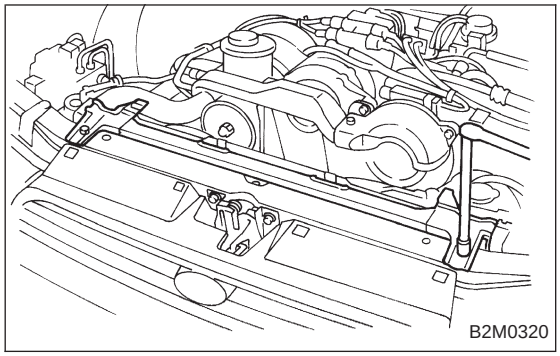
5) Remove V-belt cover.



6) Disconnect inlet hose from radiator.



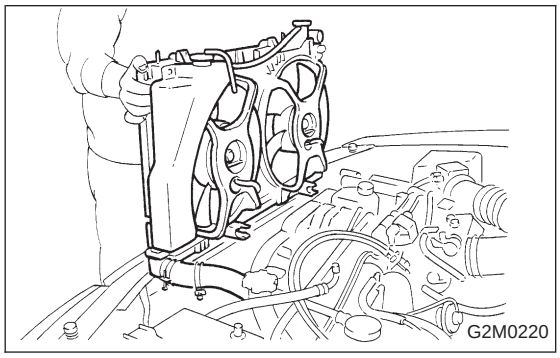
7) Disconnect connectors of radiator main fan and sub fan motor.


B2M0320

8) Remove radiator upper brackets.

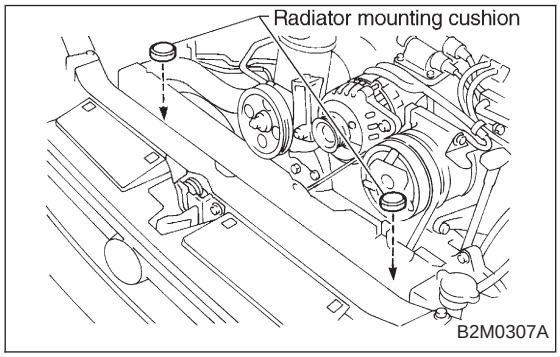
NOTE:
Place left upper radiator bracket between grille and body.

9) While slightly lifting radiator, slide it to left.


G2M0220

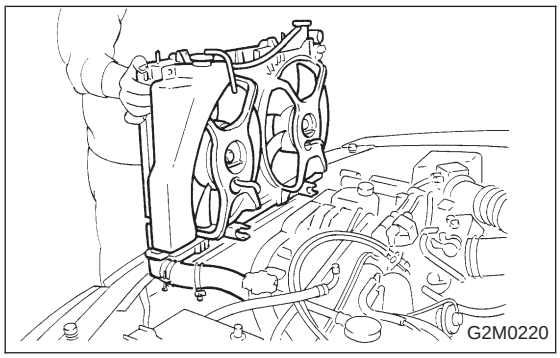
10) Lift radiator up and away from vehicle.

B: INSTALLATION

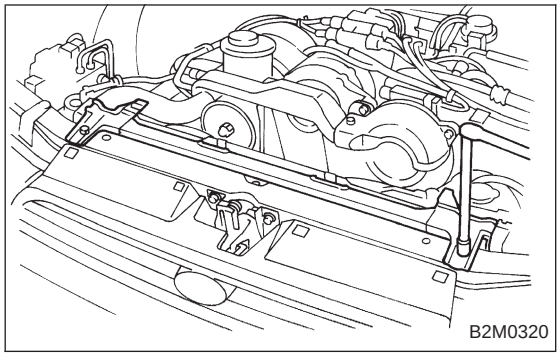


B2M0307A

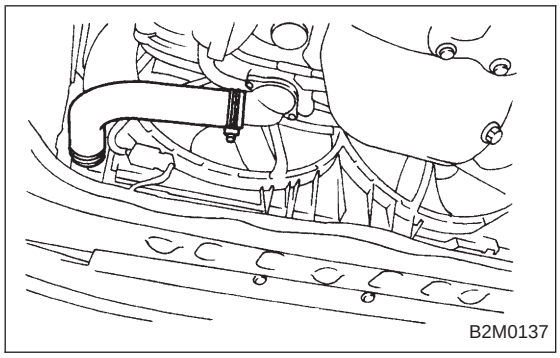
1) Attach radiator mounting cushions to body.


G2M0220

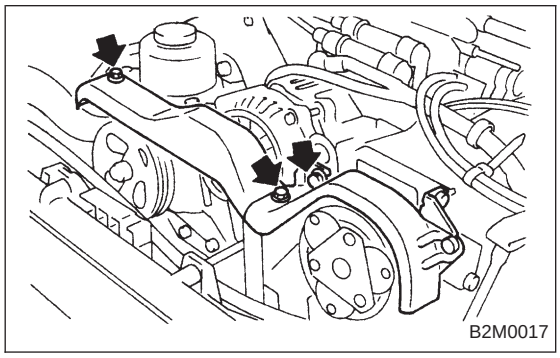
2) Install radiator while fitting radiator pins to cushions.


B2M0320

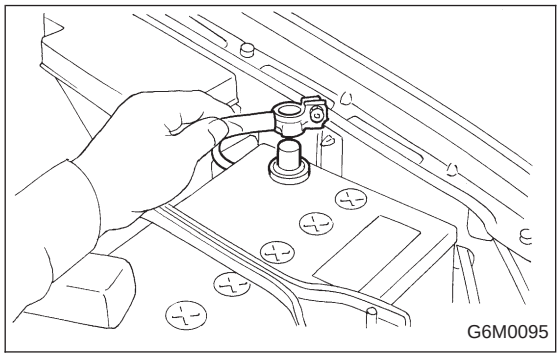
3) Install radiator brackets and tighten bolts.
4) Connect radiator main fan motor and sub fan motor connectors.


B2M0137

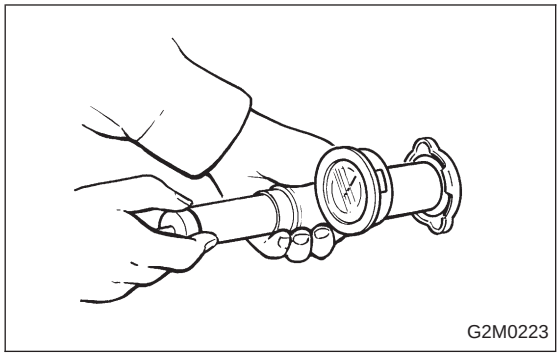
5) Connect radiator inlet and outlet hoses.
6) Connect ATF cooler hoses. (AT model)


B2M0017

7) Install V-belt cover.


G6M0095

8) Connect ground cable to battery terminal.


G2M0223

5. Radiator Cap

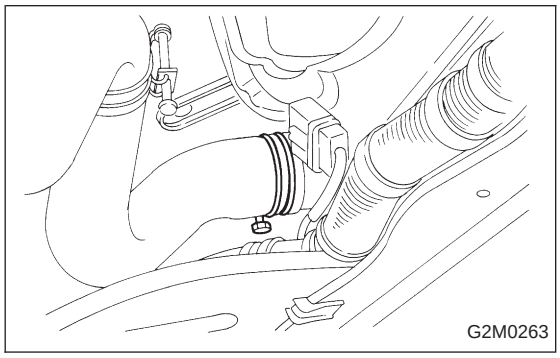
A: INSPECTION

1) Attach radiator cap to tester.
2) Increase pressure until tester gauge pointer stops. Radiator cap is functioning properly if it holds the service limit pressure for five to six seconds.

Standard pressure:
78 — 98 kPa (0.8 — 1.0 kg/cm^2, 11 — 14 psi)

Service limit pressure:
69 kPa (0.7 kg/cm^2, 10 psi)

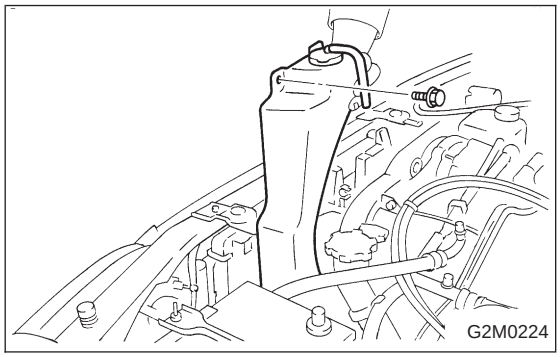
CAUTION:
Be sure to remove foreign matter and rust from the cap in advance; otherwise, results of pressure test will be incorrect.


G2M0263

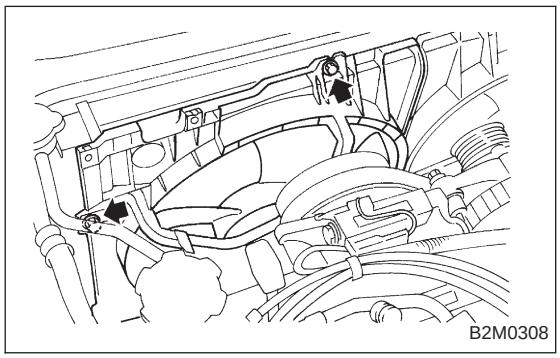
6. Radiator Fan and Fan Motor

A: REMOVAL

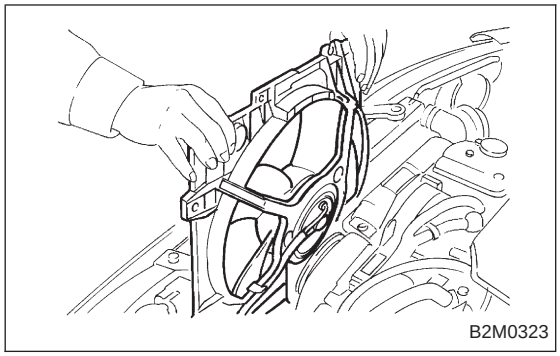
1) Disconnect ground cable from battery terminal.
2) Disconnect connector of fan motor.


G2M0224

3) Remove reservoir tank.


B2M0308

4) Remove four bolts holding shroud to radiator.


B2M0323

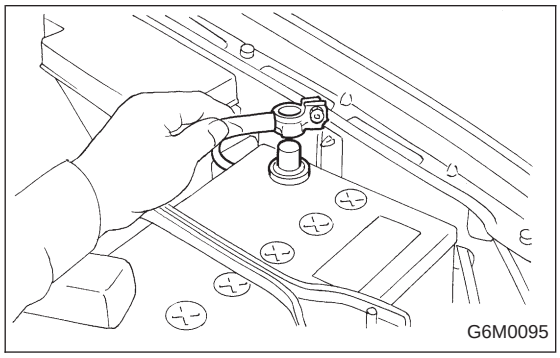
5) Remove radiator fan motor assembly.
6) Remove fan motor from shroud.

B: INSTALLATION

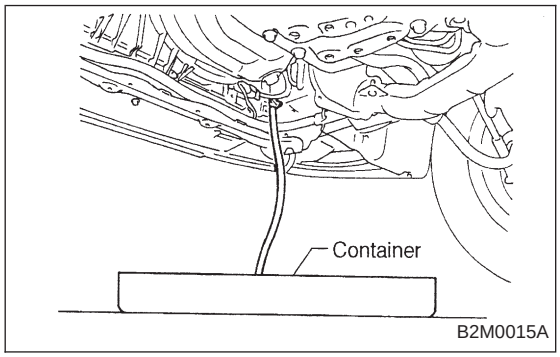
Installation is in the reverse order of removal procedures.
Do the following:
1) Before installing radiator fan motor, apply a coat of sealant to threads and tighten nuts.
2) Make sure radiator fan does not come into contact with shroud when installed.
3) After installation, make sure there is no unusual noise or vibration when fan is rotated.

7. Engine Coolant Pipe

A: REMOVAL

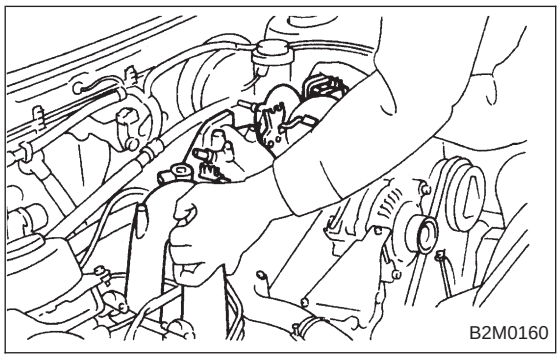

G6M0095

1) Release fuel pressure.
<Ref. to 2-8 [W1A0].>
2) Disconnect ground cable from the battery.

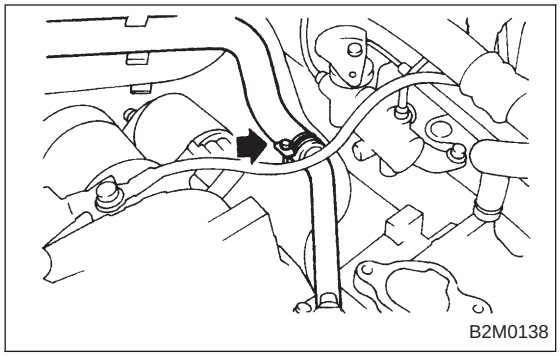


B2M0015A

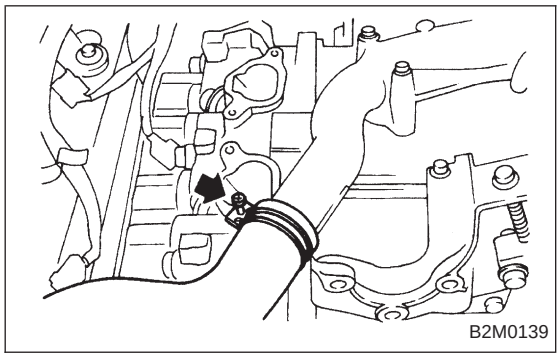
3) Drain engine coolant completely.
<Ref. to 2-5 [W1A0].>


B2M0160

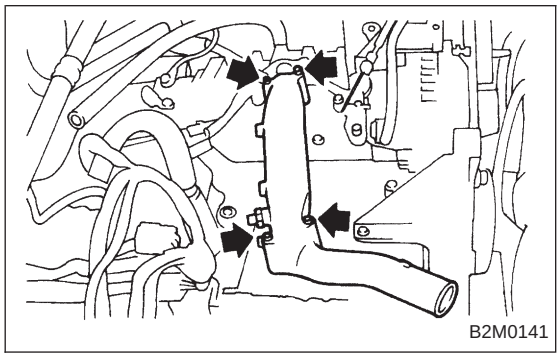
4) Remove intake manifold.
<Ref. to 2-7 [W4A0].>


B2M0138

5) Disconnect heater inlet hose.

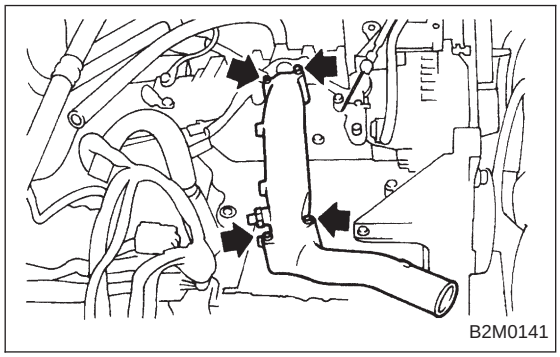

B2M0139

6) Disconnect radiator inlet hose from engine coolant pipe.


B2M0141

7) Remove bolts which install engine coolant pipe on cylinder block.

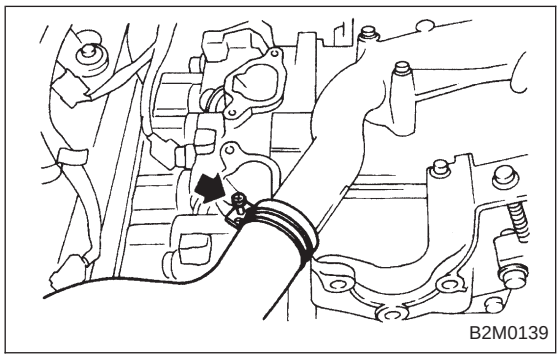
B: INSTALLATION


B2M0141

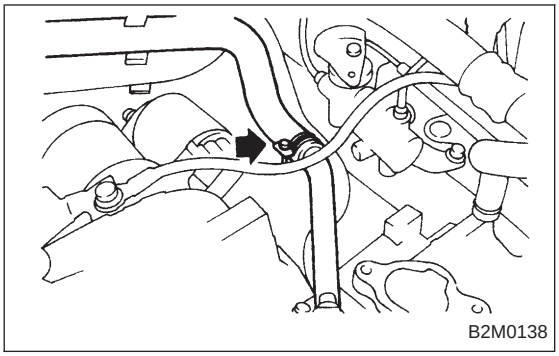
1) Install engine coolant pipe on cylinder block.

Tightening torque:
6.4±0.5 N·m (0.65±0.05 kg-m, 4.7±0.4 ft-lb)

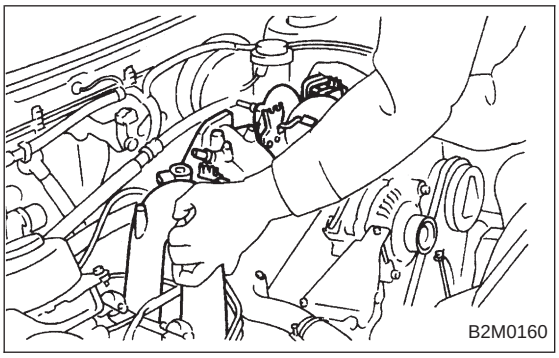
CAUTION:
Use a new O-ring.


B2M0139

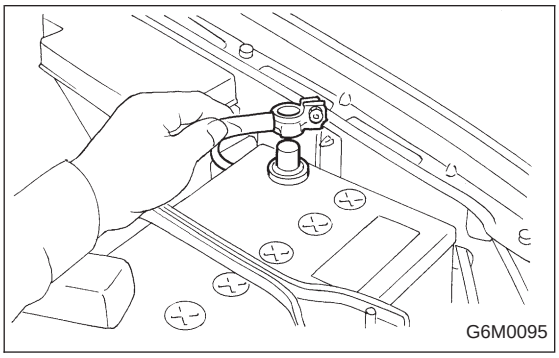
2) Connect radiator inlet hose.



3) Connect heater inlet hose.



4) Install intake manifold.
<Ref. to 2-7 [W4D0].>

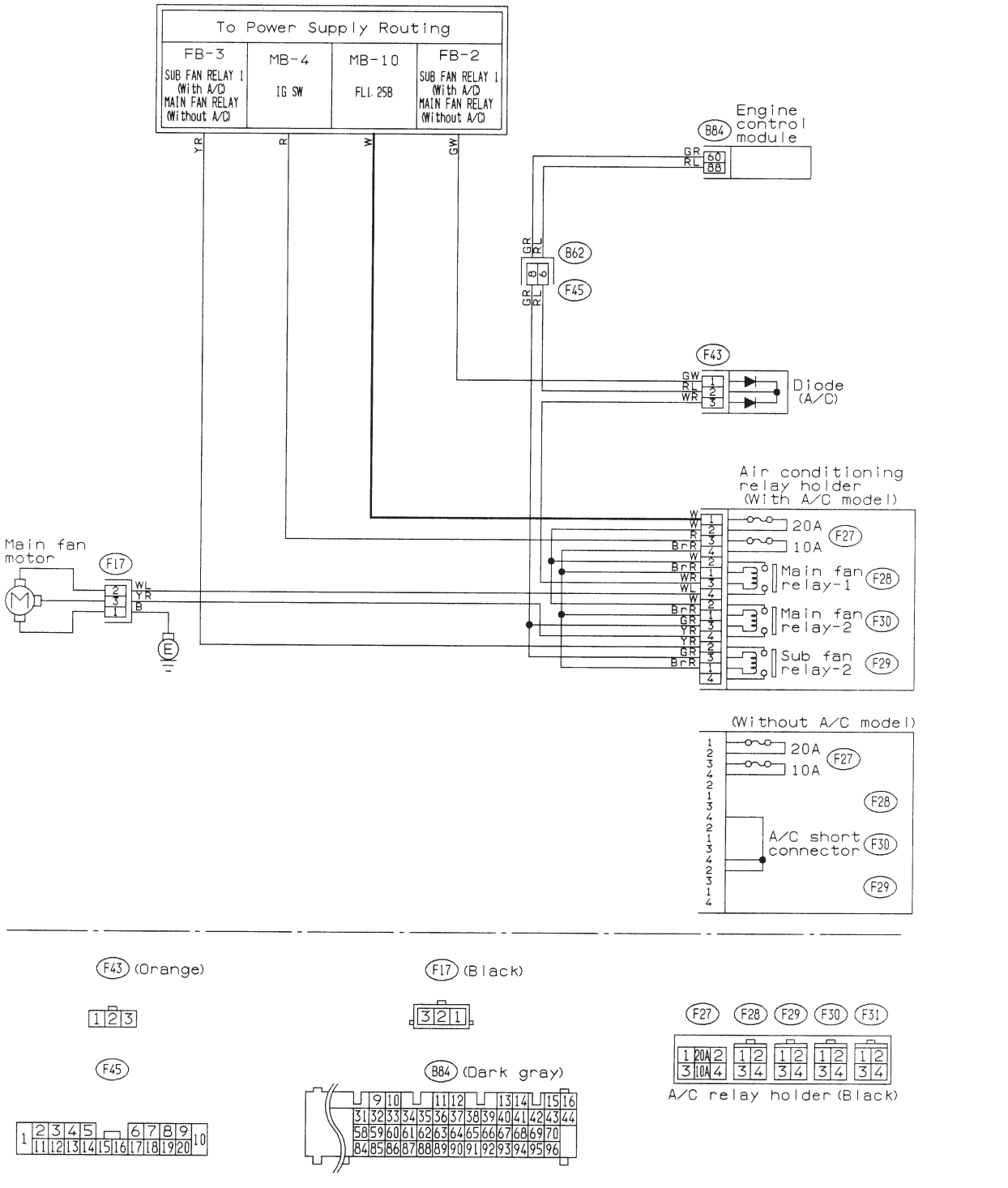


5) Connect ground cable to battery terminal.

1. Engine Cooling System

Trouble	Possible cause	Corrective action
Over-heating	a. Insufficient engine coolant	Replenish engine coolant, inspect for leakage, and repair.
	b. Loose timing belt	Repair or replace timing belt tensioner.
	c. Oil on drive belt	Replace.
	d. Malfunction of thermostat	Replace.
	e. Malfunction of engine coolant pump	Replace.
	f. Clogged engine coolant passage	Clean.
	g. Improper ignition timing	Inspect and repair ignition control system. <Ref. to 2-7 On-Board Diagnostics II System.>
	h. Clogged or leaking radiator	Clean or repair, or replace.
	i. Improper engine oil in engine coolant	Replace engine coolant.
	j. Air/fuel mixture ratio too lean	Inspect and repair fuel injection system. <Ref. to 2-7 On-Board Diagnostics II System.>
	k. Excessive back pressure in exhaust system	Clean or replace.
	l. Insufficient clearance between piston and cylinder	Adjust or replace.
	m. Slipping clutch	Repair or replace.
	n. Dragging brake	Adjust.
	o. Improper transmission oil	Replace.
	p. Defective thermostat	Replace.
	q. Malfunction of electric fan	Inspect radiator fan relay, engine coolant temperature sensor or radiator motor and replace there.
Over-cooling	a. Atmospheric temperature extremely low	Partly cover radiator front area.
	b. Defective thermostat	Replace.
Engine coolant leaks.	a. Loosened or damaged connecting units on hoses	Repair or replace.
	b. Leakage from engine coolant pump	Replace.
	c. Leakage from engine coolant pipe	Repair or replace.
	d. Leakage around cylinder head gasket	Retighten cylinder head bolts or replace gasket.
	e. Damaged or cracked cylinder head and crankcase	Repair or replace.
	f. Damaged or cracked thermostat case	Repair or replace.
	g. Leakage from radiator	Repair or replace.
Noise	a. Defective drive belt	Replace.
	b. Defective radiator fan	Replace.
	c. Defective engine coolant pump bearing	Replace engine coolant pump.
	d. Defective engine coolant pump mechanical seal	Replace engine coolant pump.

2. Radiator Main Fan



B2M0309

A: OPERATION (WITHOUT A/C MODEL)

CONDITION:

- Engine coolant temperature is above 95°C (203°F).

TROUBLE SYMPTOM:

- Radiator main fan does not operate under the above condition.

1. Check fuse and power supply.
- Not OK → Melted fuse → repair the shorted part of the circuit → replace fuse.
- OK ↓

2. Check harness connector between fuse and relay box, and A/C relay holder.
- Not OK → Repair or replace wiring harness.
- OK ↓

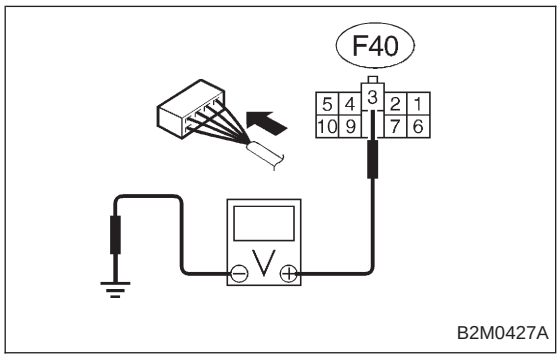
3. Check A/C relay holder.
- Not OK → Repair or replace A/C relay holder.
- OK ↓

4. Check harness connector between A/C relay holder and main fan motor.
- Not OK → Repair or replace wiring harness.
- OK ↓

5. Check ground circuit of main fan motor.
- Not OK → Repair or replace wiring harness.
- OK ↓

6. Check main fan motor.
- Not OK → Replace main fan motor.
- OK ↓

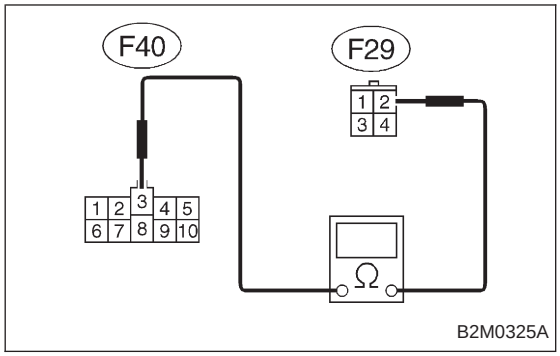
Refer to 2-7 On-Board Diagnostics II System.



1. CHECK FUSE AND POWER SUPPLY.

1) Check fuse No. 13.
2) Turn ignition switch to ACC.
3) Measure voltage between fuse and relay box, and body.

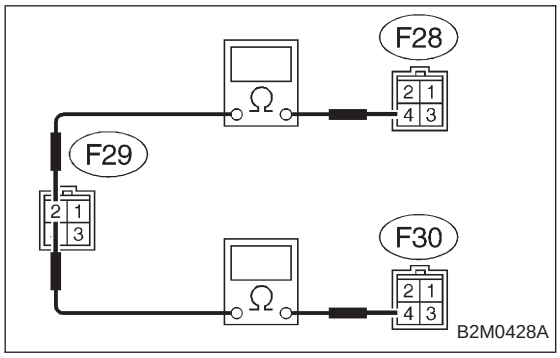
Connector & terminal / Specified voltage:
(F40) No. 3 — Body / 10 V, or more



2. CHECK HARNESS CONNECTOR BETWEEN FUSE AND RELAY BOX, AND A/C RELAY HOLDER.

1) Turn ignition switch to OFF.
2) Disconnect connectors from fuse and relay box, and A/C relay holder.
3) Measure resistance of harness connector between fuse and relay box, and A/C relay holder.

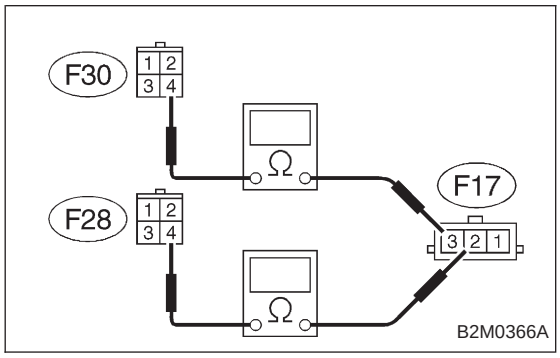
Connector & terminal / Specified resistance:
(F40) No. 3 — (F29) No. 2 / 10 Ω, max.



3. CHECK A/C RELAY HOLDER.

1) Disconnect connector from A/C relay holder.
2) Measure resistance between terminals of A/C relay holder.

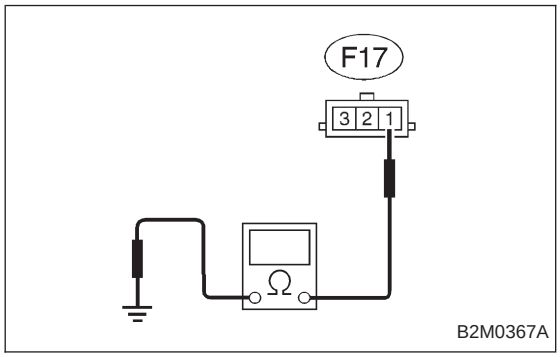
Connector & terminal / Specified resistance:
(F29) No. 2 — (F28) No. 4 / 10 Ω, max.
(F29) No. 2 — (F30) No. 4 / 10 Ω, max.



4. CHECK HARNESS CONNECTOR BETWEEN A/C RELAY HOLDER AND MAIN FAN MOTOR.

1) Disconnect connectors from A/C relay holder and main fan motor.
2) Measure resistance of harness connector between A/C relay holder and main fan motor.

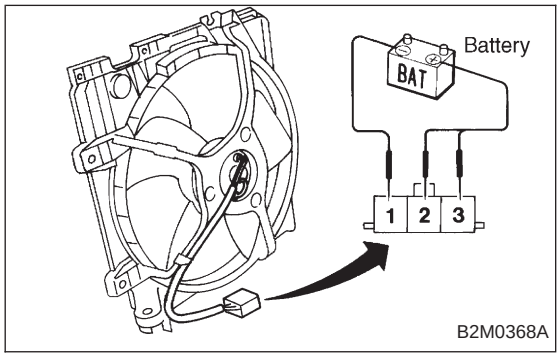
Connector & terminal / Specified resistance:
(F28) No. 4 — (F17) No. 2 / 10 Ω, max.
(F30) No. 4 — (F17) No. 3 / 10 Ω, max.



5. CHECK GROUND CIRCUIT OF MAIN FAN MOTOR.

Measure resistance between main fan motor connector and body.

Connector & terminal / Specified resistance:
(F17) No. 1 — Body / 10 Ω, max.



6. CHECK MAIN FAN MOTOR.

1) Disconnect connector from main fan motor.
2) Connect battery positive (+) terminal to terminals No. 2 and No. 3, and connect terminal No. 1 to ground. Ensure that fan rotates.

B: LO MODE OPERATION (WITH A/C MODEL)

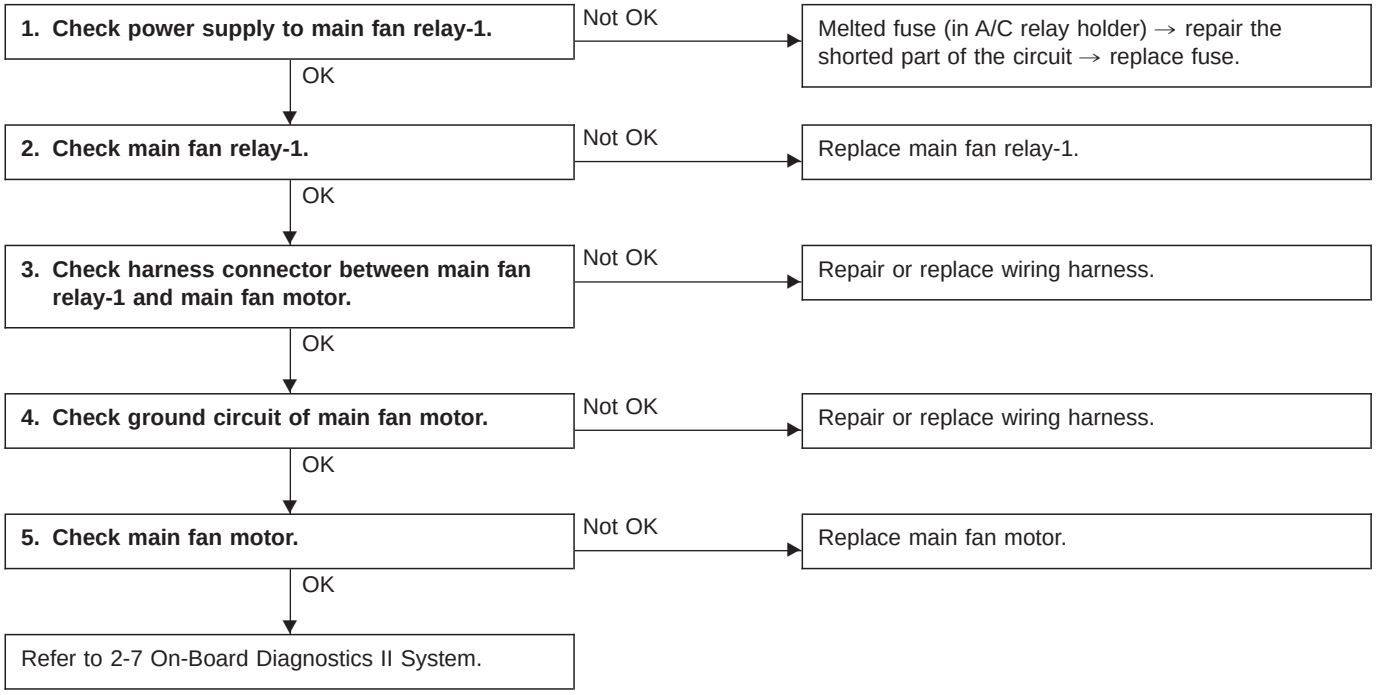
CONDITION:

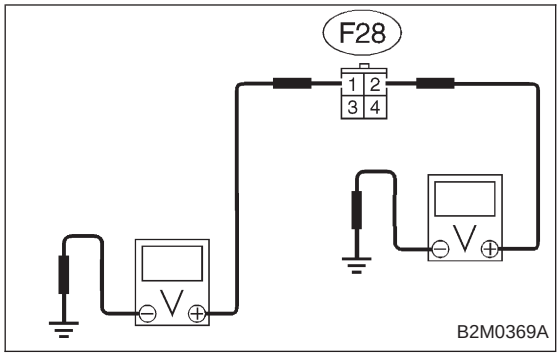
Condition (1) :
- Engine coolant temperature is below 89°C (192°F).
- A/C switch is turned ON.
- Vehicle speed is below 10 km/h (6 MPH).

Condition (2) :
- Engine coolant temperature is above 95°C (203°F).
- A/C switch is turned OFF.
- Vehicle speed is below 10 km/h (6 MPH).

TROUBLE SYMPTOM:

- Radiator main fan does not rotate at LO speed under conditions (1) and (2) above.





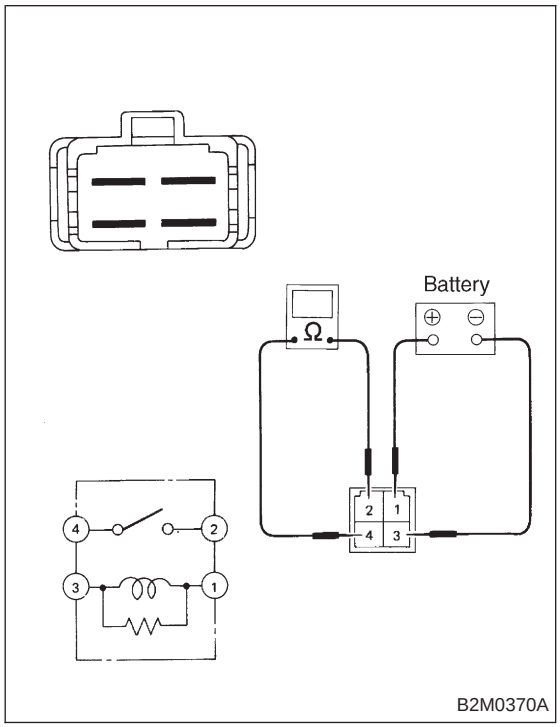
1. CHECK POWER SUPPLY TO MAIN FAN RELAY-1.

1) Turn ignition switch to OFF.
2) Disconnect connector from A/C relay holder.
3) Measure voltage between A/C relay holder connector and body.

Connector & terminal / Specified voltage:
(F28) No. 2 — Body / 10 V, or more
(F28) No. 1 — Body / 1 V, max.

4) Turn ignition switch to ON.
5) Measure voltage between A/C relay holder connector and body.

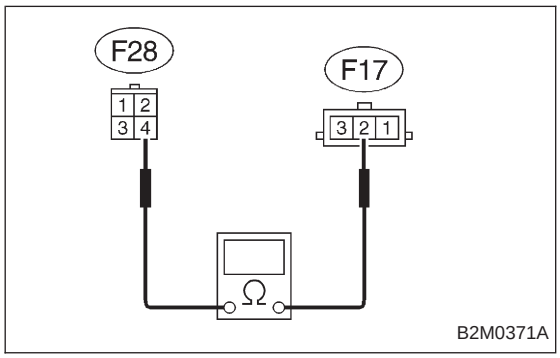
Connector & terminal / Specified voltage:
(F28) No. 1 — Body / 10 V, or more



2. CHECK MAIN FAN RELAY-1.

1) Turn ignition switch to OFF.
2) Remove main fan relay-1 from A/C relay holder.
3) Check continuity between terminals (indicated in table below) when terminal (1) is connected to battery and terminal (3) is grounded.

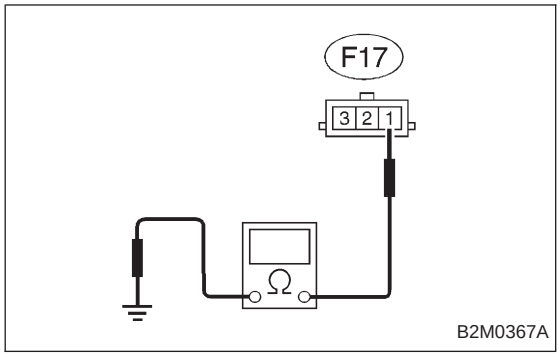
When current flows.	Between terminals (2) and (4)	Continuity exists.
When current does not flow.	Between terminals (2) and (4)	Continuity does not exist.
	Between terminals (1) and (3)	Continuity exists.



3. CHECK HARNESS CONNECTOR BETWEEN MAIN FAN RELAY-1 AND MAIN FAN MOTOR.

1) Disconnect connectors from main fan relay-1 and main fan motor.
2) Measure resistance of harness connector between main fan relay-1 and main fan motor.

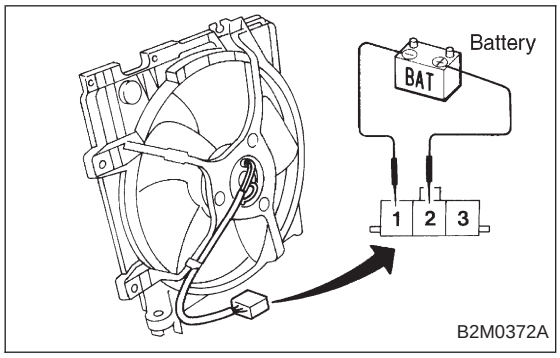
Connector & terminal / Specified resistance:
(F28) No. 4 — (F17) No.2 / 10 Ω, max.



4. CHECK GROUND CIRCUIT OF MAIN FAN MOTOR.

Measure resistance between main fan motor connector and body.

Connector & terminal / Specified resistance:
(F17) No. 1 — Body / 10 Ω, max.



5. CHECK MAIN FAN MOTOR.

1) Disconnect connector from main fan motor.
2) Connect battery positive (+) terminal to terminal No. 2 and connect terminal No. 1 to ground. Ensure that fan rotates at LO speed.

C: HI MODE OPERATION (WITH A/C MODEL)

CONDITION:

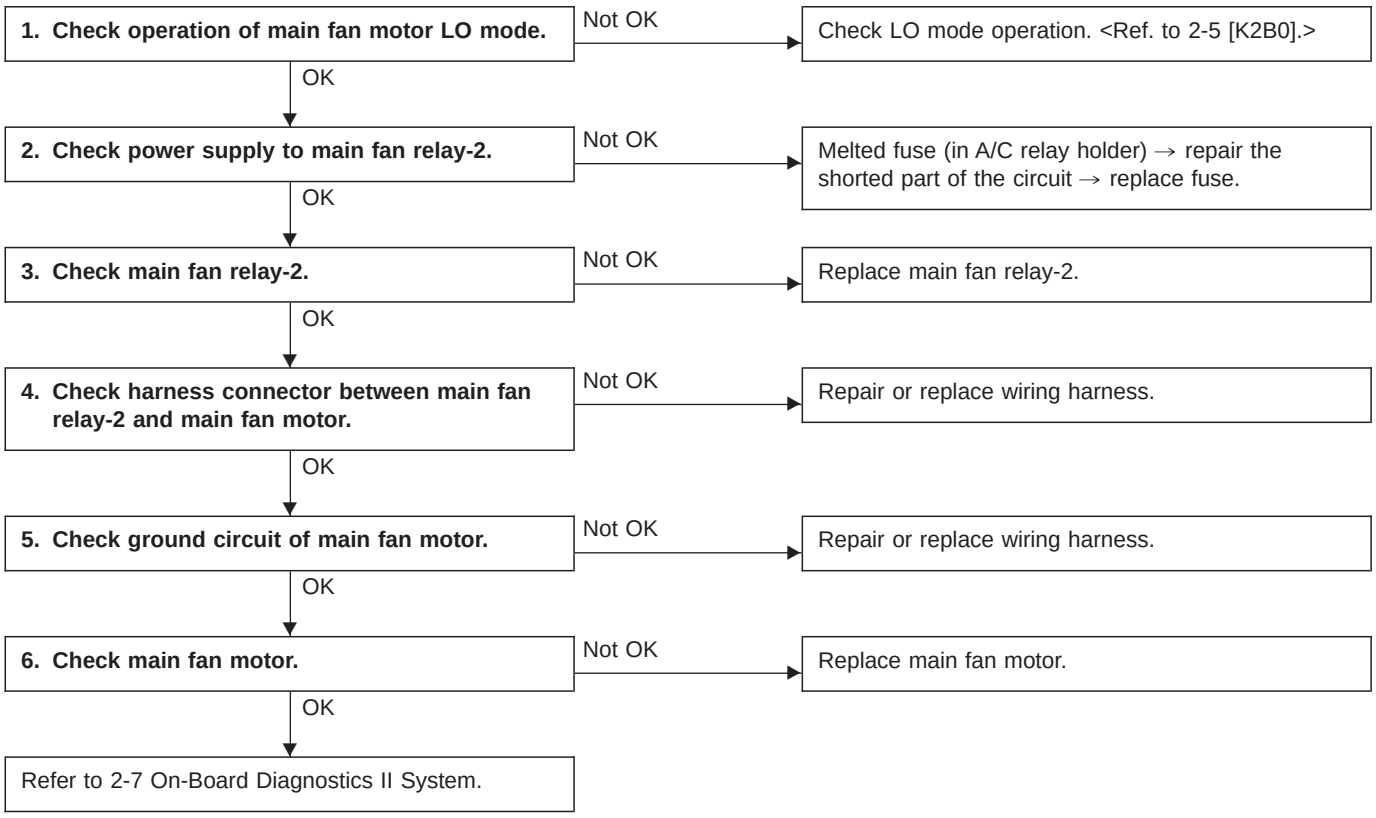
Condition (1) :
- Engine coolant temperature is below 89°C (192°F).
- A/C switch is turned ON.
- Vehicle speed is over 20 km/h (12 MPH).

Condition (2) :
- Engine coolant temperature is above 95°C (203°F).
- A/C switch is turned OFF.
- Vehicle speed is over 20 km/h (12 MPH).

Condition (3) :
- Engine coolant temperature is above 95°C (203°F).
- A/C switch is turned ON.

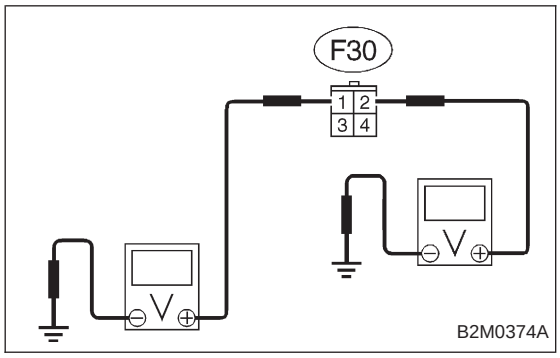
TROUBLE SYMPTOM:

- Radiator main fan does not rotate at HI speed under conditions (1), (2) and (3) above.



1. CHECK OPERATION OF MAIN FAN MOTOR LO MODE.

Check that radiator main fan rotates at LO speed under each condition described under LO mode operation. <Ref. to 2-5 [K2B0].>



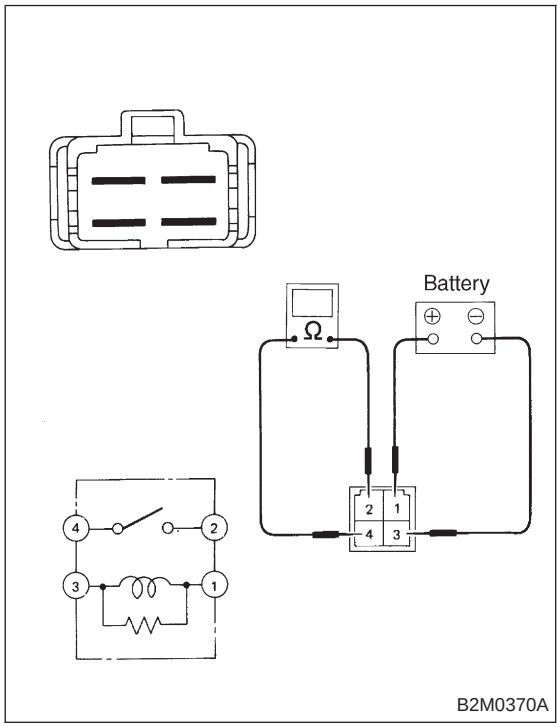
2. CHECK POWER SUPPLY TO MAIN FAN RELAY-2.

1) Turn ignition switch to OFF.
2) Disconnect connector from A/C relay holder.
3) Measure voltage between A/C relay holder connector and body.

Connector & terminal / Specified voltage:
(F30) No. 2 — Body / 10 V, or more
(F30) No. 1 — Body / 1 V, max.

4) Turn ignition switch to ON.
5) Measure voltage between A/C relay holder connector and body.

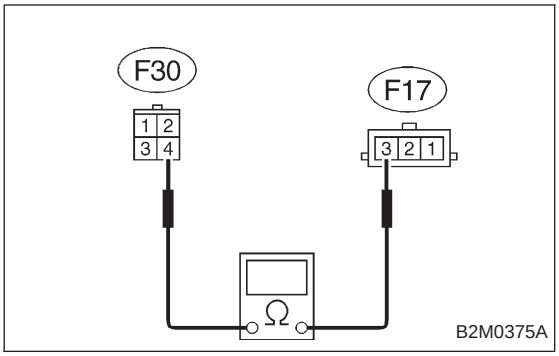
Connector & terminal / Specified voltage:
(F30) No. 1 — Body / 10 V, or more



3. CHECK MAIN FAN RELAY-2.

1) Turn ignition switch to OFF.
2) Remove main fan relay-2 from A/C relay holder.
3) Check continuity between terminals (indicated in table below) when terminal (1) is connected to battery and terminal (3) is grounded.

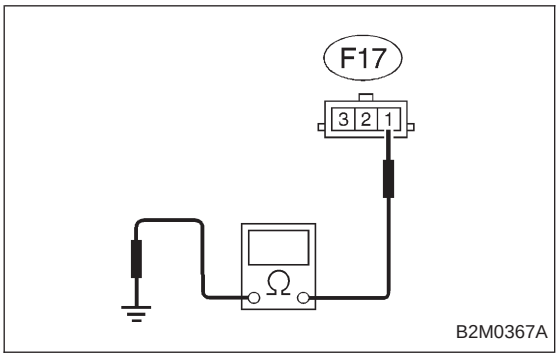
When current flows.	Between terminals (2) and (4)	Continuity exists.
When current does not flow.	Between terminals (2) and (4)	Continuity does not exist.
	Between terminals (1) and (3)	Continuity exists.



4. CHECK HARNESS CONNECTOR BETWEEN MAIN FAN RELAY-2 AND MAIN FAN MOTOR.

1) Disconnect connectors from main fan relay-2 and main fan motor.
2) Measure resistance of harness connector between main fan relay-2 and main fan motor.

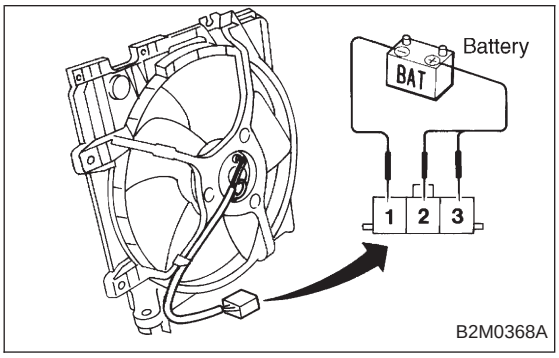
Connector & terminal / Specified resistance:
(F30) No. 4 — (F17) No. 3 / 10 Ω, max.



5. CHECK GROUND CIRCUIT OF MAIN FAN MOTOR.

Measure resistance between main fan motor connector and body.

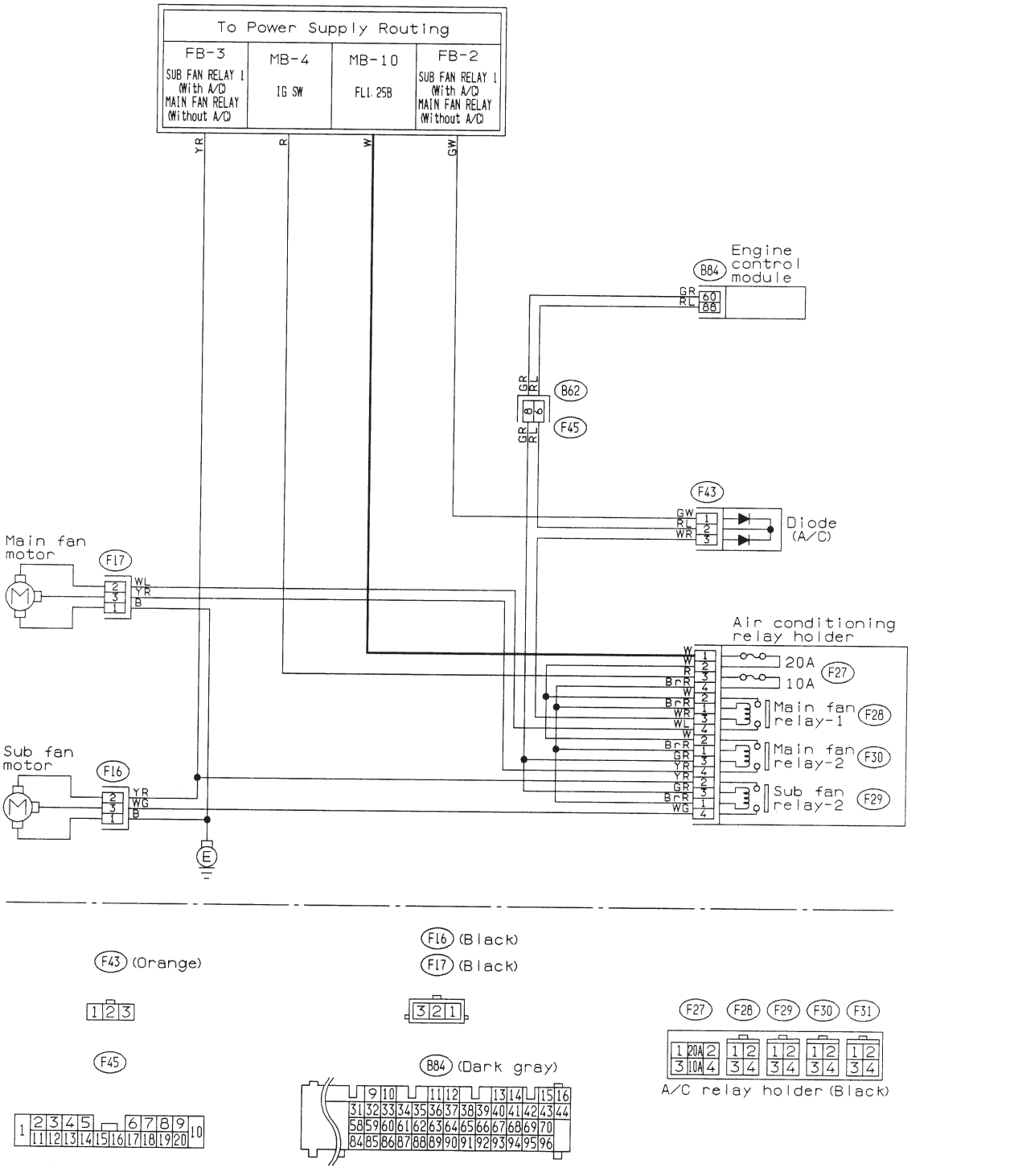
Connector & terminal / Specified resistance:
(F17) No. 1 — Body / 10 Ω, max.



6. CHECK MAIN FAN MOTOR.

1) Disconnect connector from main fan motor.
2) Connect battery positive (+) terminal to terminals No. 2 and No. 3, and connect terminal No. 1 to ground. Ensure that fan rotates at HI speed.

3. Radiator Sub Fan (With A/C model only)



B2M0376

A: LO MODE OPERATION

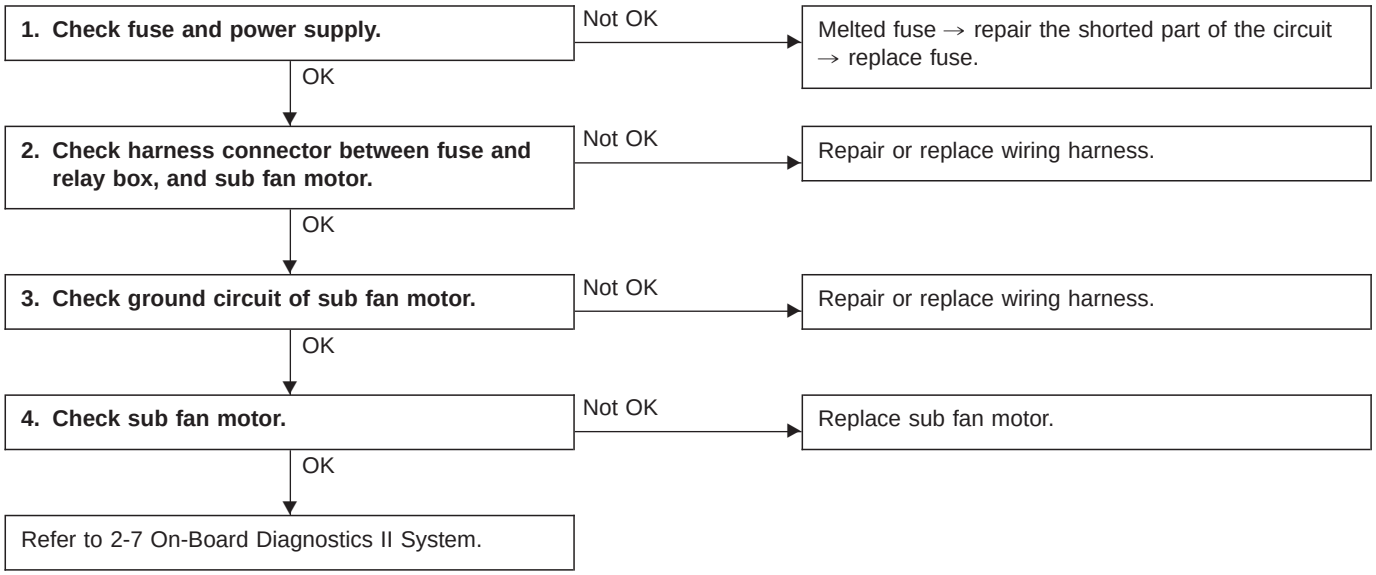
CONDITION:

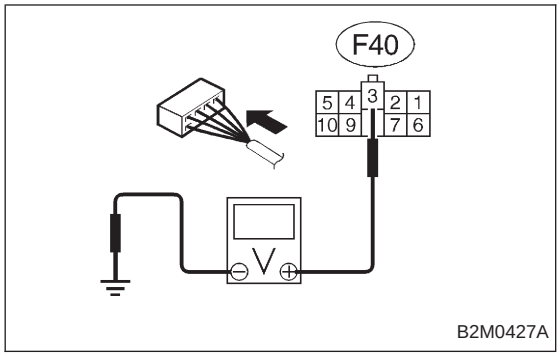
Condition (1) :
- Engine coolant temperature is below 89°C (192°F).
- A/C switch is turned ON.
- Vehicle speed is below 10 km/h (6 MPH).

Condition (2) :
- Engine coolant temperature is above 95°C (203°F).
- A/C switch is turned OFF.
- Vehicle speed is below 10 km/h (6 MPH).

TROUBLE SYMPTOM:

- Radiator sub fan does not rotate at LO speed under conditions (1) and (2) above.

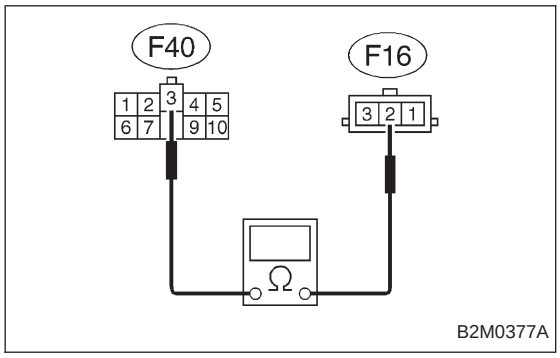




1. CHECK FUSE AND POWER SUPPLY.

1) Check fuse No. 13.
2) Turn ignition switch to ACC.
3) Measure voltage between fuse and relay box, and body.

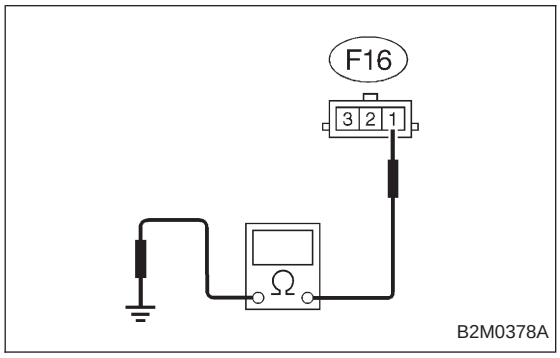
Connector & terminal / Specified voltage:
(F40) No. 3 — Body / 10 V, or more



2. CHECK HARNESS CONNECTOR BETWEEN FUSE AND RELAY BOX, AND SUB FAN MOTOR.

1) Turn ignition switch to OFF.
2) Disconnect connectors from fuse and relay box, and sub fan motor.
3) Measure resistance of harness connector between fuse and relay box, and sub fan motor.

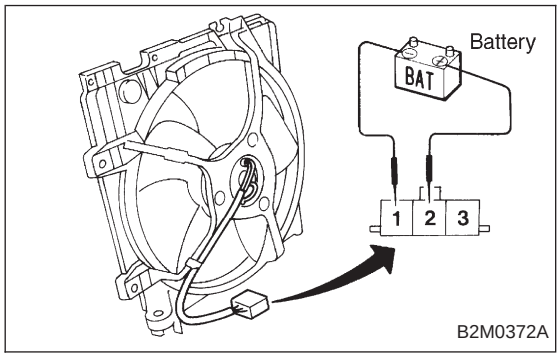
Connector & terminal / Specified resistance:
(F40) No. 3 — (F16) No. 2 / 10 Ω, max.



3. CHECK GROUND CIRCUIT OF SUB FAN MOTOR.

Measure resistance between sub fan motor connector and body.

Connector & terminal / Specified resistance:
(F16) No. 1 — Body / 10 Ω, max.



4. CHECK SUB FAN MOTOR.

1) Disconnect connector from sub fan motor.
2) Connect battery positive (+) terminal to terminal No. 2 and connect terminal No. 1 to ground. Ensure that fan rotates at LO speed.

B: HI MODE OPERATION

CONDITION:

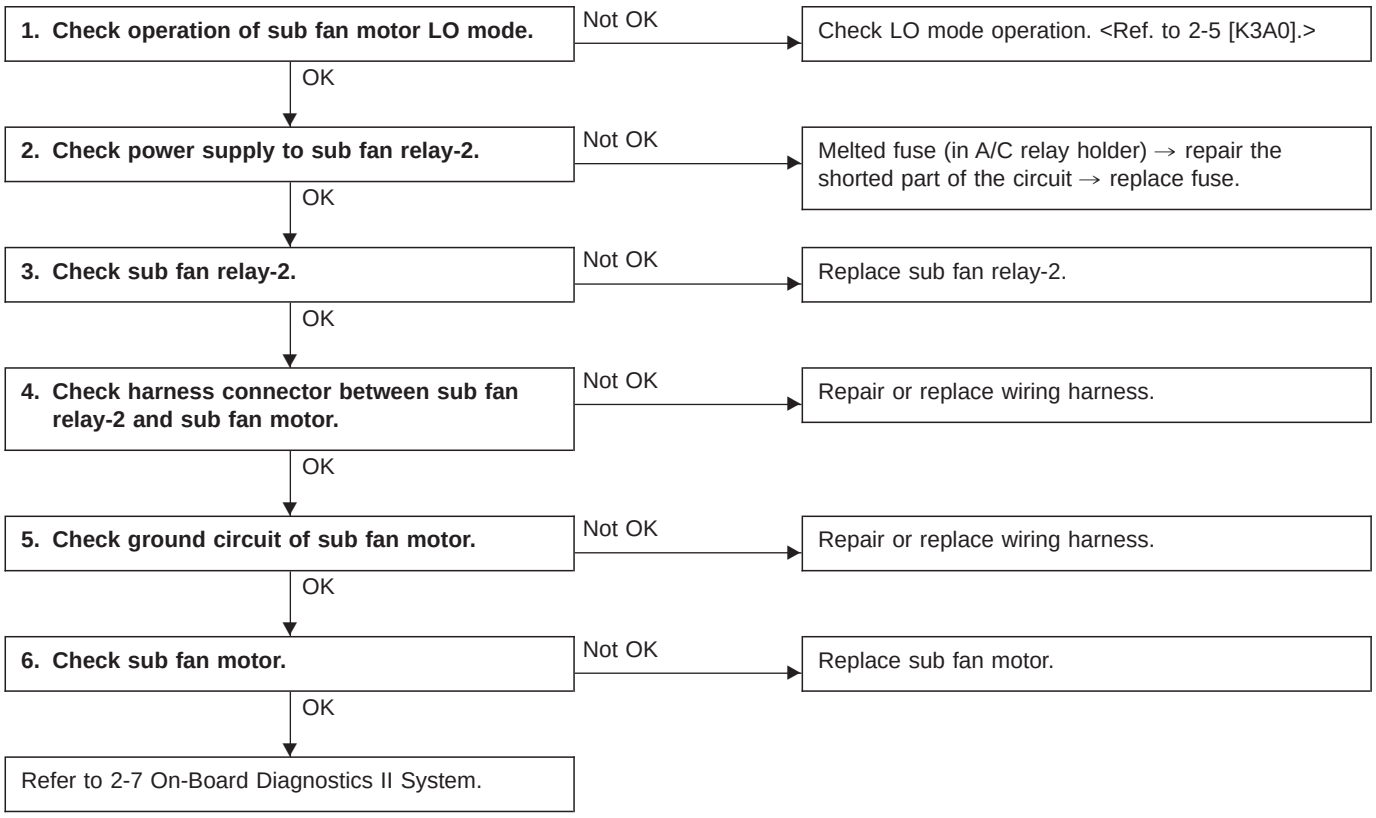
Condition (1) :
- Engine coolant temperature is below 89°C (192°F).
- A/C switch is turned ON.
- Vehicle speed is over 20 km/h (12 MPH).

Condition (2) :
- Engine coolant temperature is above 95°C (203°F).
- A/C switch is turned OFF.
- Vehicle speed is over 20 km/h (12 MPH).

Condition (3) :
- Engine coolant temperature is above 95°C (203°F).
- A/C switch is turned ON.

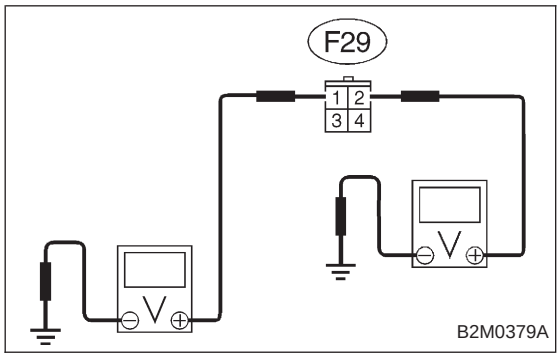
TROUBLE SYMPTOM:

- Radiator sub fan does not rotate at HI speed under conditions (1), (2) and (3) above.



1. CHECK OPERATION OF SUB FAN MOTOR LO MODE.

Check that radiator sub fan rotates at LO speed under each condition described under LO mode operation. <Ref. to 2-5 [K3A0].>



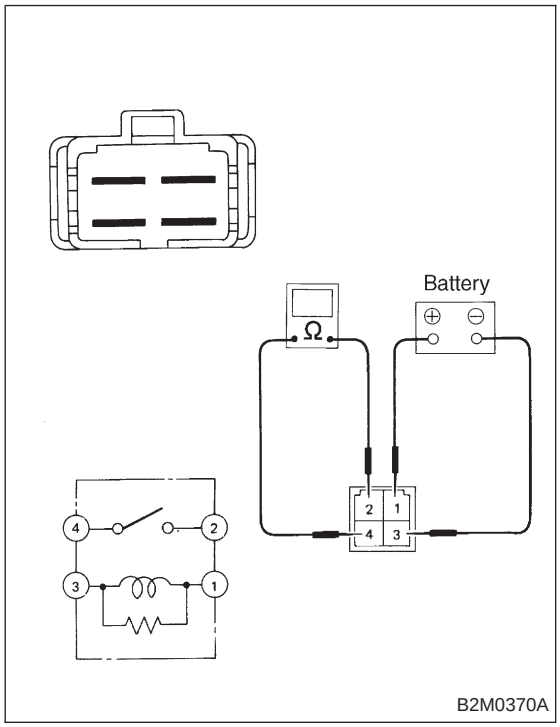
2. CHECK POWER SUPPLY TO SUB FAN RELAY-2.

1) Turn ignition switch to OFF.
2) Disconnect connector from A/C relay holder.
3) Measure voltage between A/C relay holder connector and body.

Connector & terminal / Specified voltage:
(F29) No. 1 — Body / 1 V, max.
(F29) No. 2 — Body / 1 V, max.

4) Turn ignition switch to ON.
5) Measure voltage between A/C relay holder connector and body.

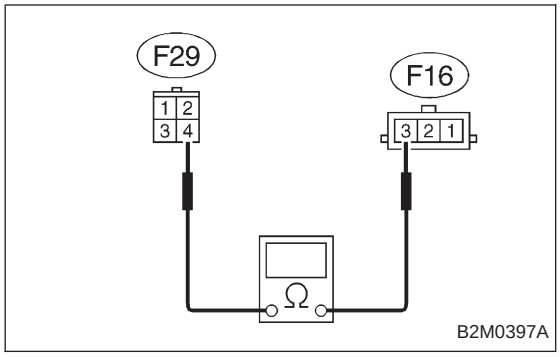
Connector & terminal / Specified voltage:
(F29) No. 1 — Body / 10 V, or more
(F29) No. 2 — Body / 10 V, or more



3. CHECK SUB FAN RELAY-2.

1) Turn ignition switch to OFF.
2) Remove sub fan relay-2 from A/C relay holder.
3) Check continuity between terminals (indicated in table below) when terminal (1) is connected to battery and terminal (3) is grounded.

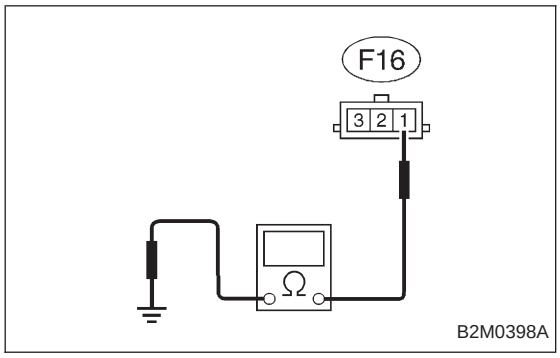
When current flows.	Between terminals (2) and (4)	Continuity exists.
When current does not flow.	Between terminals (2) and (4)	Continuity does not exist.
	Between terminals (1) and (3)	Continuity exists.



4. CHECK HARNESS CONNECTOR BETWEEN SUB FAN RELAY-2 AND SUB FAN MOTOR.

1) Disconnect connectors from sub fan relay-2 and sub fan motor.
2) Measure resistance of harness connector between sub fan relay-2 and sub fan motor.

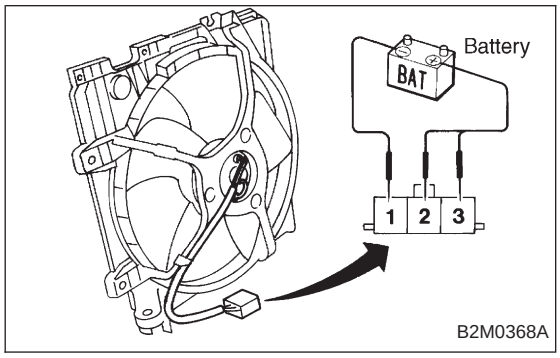
Connector & terminal / Specified resistance:
(F29) No. 4 — (F16) No. 3 / 10 Ω, max.



5. CHECK GROUND CIRCUIT OF SUB FAN MOTOR.

Measure resistance between sub fan motor connector and body.

Connector & terminal / Specified resistance:
(F16) No. 1 — Body / 10 Ω, max.

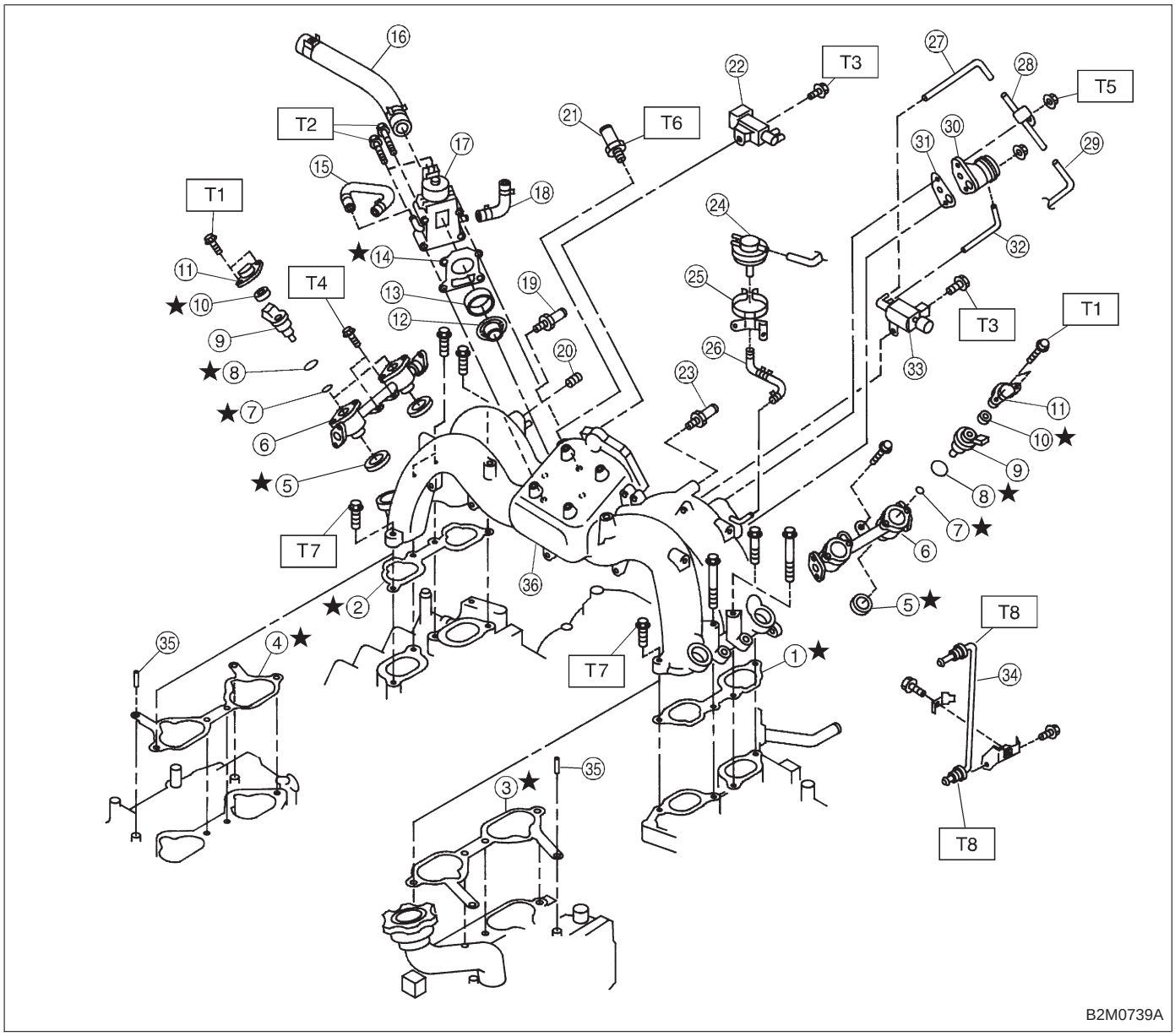


6. CHECK SUB FAN MOTOR.

1) Disconnect connector from sub fan motor.
2) Connect battery positive (+) terminal to terminals No. 2 and No.3, and connect terminal No. 1 to ground. Ensure that fan rotates at HI speed.

FUEL INJECTION SYSTEM 2-7

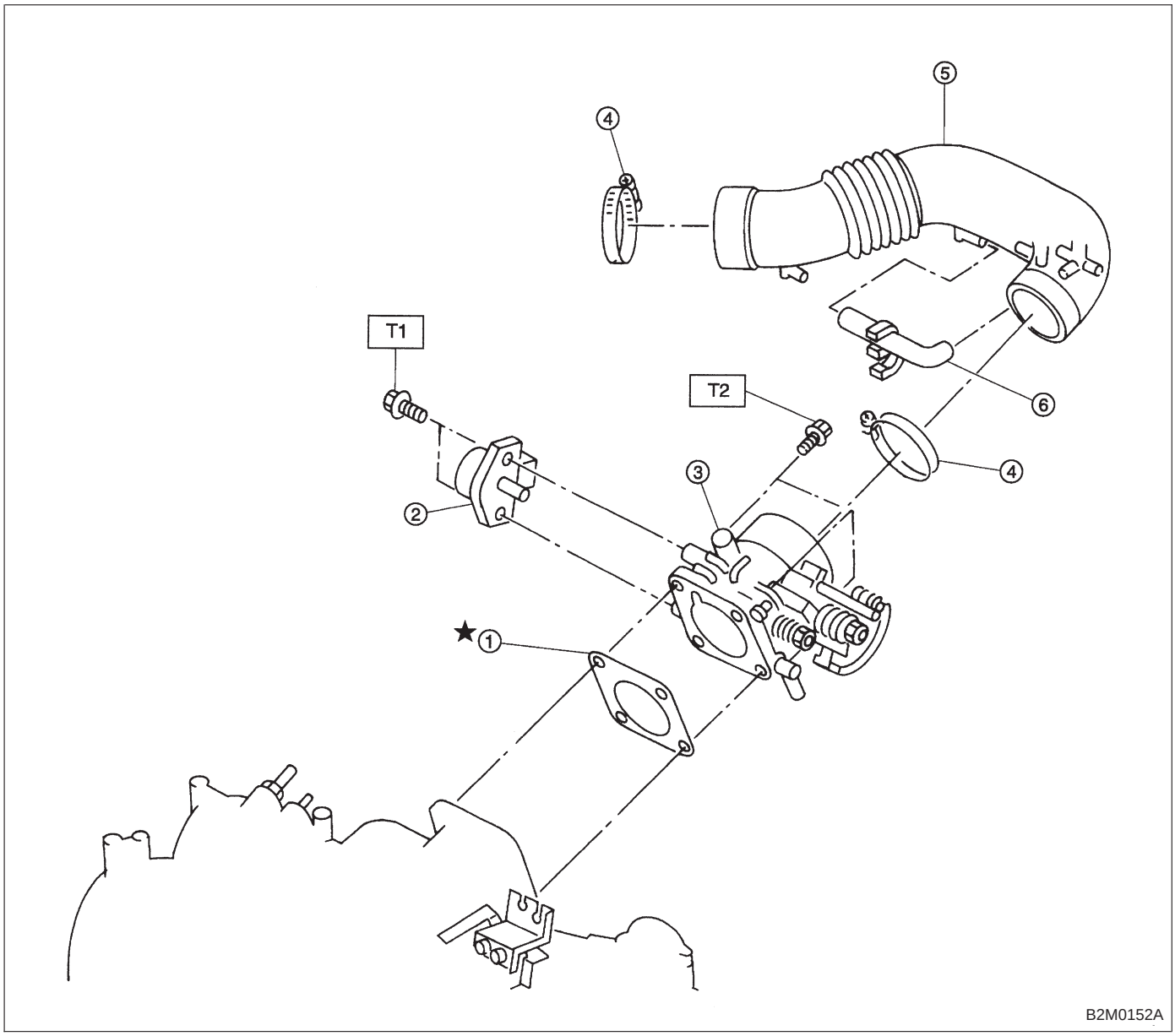
1. Intake Manifold



① Intake manifold gasket LH (2200 cc model)
② Intake manifold gasket RH (2200 cc model)
③ Intake manifold gasket LH (2500 cc model)
④ Intake manifold gasket RH (2500 cc model)
⑤ Fuel injector pipe insulator
⑥ Fuel injector pipe
⑦ O-ring A
⑧ O-ring B
⑨ Fuel injector
⑩ Insulator
⑪ Fuel injector cap
⑫ Plate
⑬ Sealing
⑭ Gasket
⑮ Engine coolant hose B
⑯ Air by-pass hose
⑰ Idle air control solenoid valve
⑱ Engine coolant hose A
⑲ Nipple (AT model)
⑳ Plug
㉑ PCV valve
㉒ Purge control solenoid valve
㉓ Nipple
㉔ BPT
㉕ BPT holder bracket
㉖ Back pressure hose
㉗ EGR vacuum hose A
㉘ EGR vacuum pipe
㉙ EGR vacuum hose C
㉚ EGR valve
㉛ Gasket
㉜ EGR vacuum hose B
㉝ EGR solenoid valve
㉞ EGR pipe
㉟ Collar
㊱ Intake manifold

Tightening torque: N·m (kg-m, ft-lb)
T1: 3.4±0.5 (0.35±0.05, 2.5±0.4)
T2: 6.4±0.5 (0.65±0.05, 4.7±0.4)
T3: 16±1.5 (1.6±0.15, 11.6±1.1)
T4: 19±1 (1.9±0.1, 13.7±0.7)
T5: 19±1.5 (1.9±0.15, 13.7±1.1)
T6: 23±3 (2.3±0.3, 16.6±2.2)
T7: 25±2 (2.5±0.2, 18.1±1.4)
T8: 34±2 (3.5±0.2, 25.3±1.4)

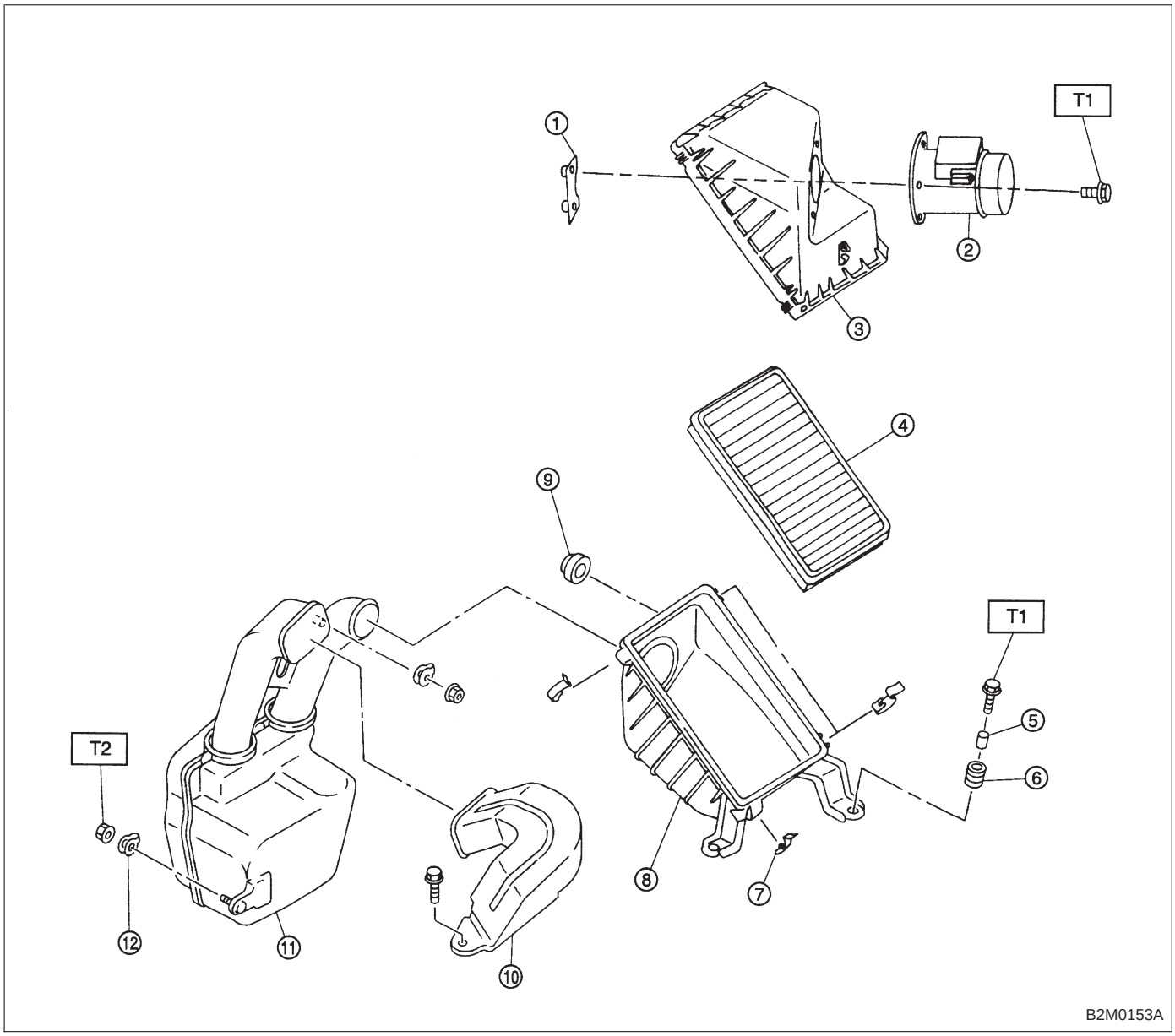
2. Air Intake System



① Gasket
② Throttle position sensor
③ Throttle body
④ Clamp
⑤ Air intake duct
⑥ By-pass hose

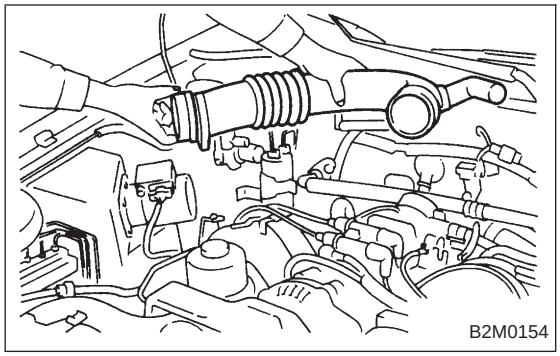
Tightening torque: N·m (kg-m, ft-lb)
T1: 2.2±0.2 (0.22±0.02, 1.6±0.1)
T2: 22±2 (2.2±0.2, 15.9±1.4)

3. Air Cleaner



① Mass air flow sensor bracket
② Mass air flow sensor ASSY
③ Air cleaner upper cover
④ Air cleaner element
⑤ Spacer
⑥ Bush
⑦ Clip
⑧ Air cleaner case
⑨ Cushion rubber
⑩ Air intake duct
⑪ Resonator chamber ASSY
⑫ Clip

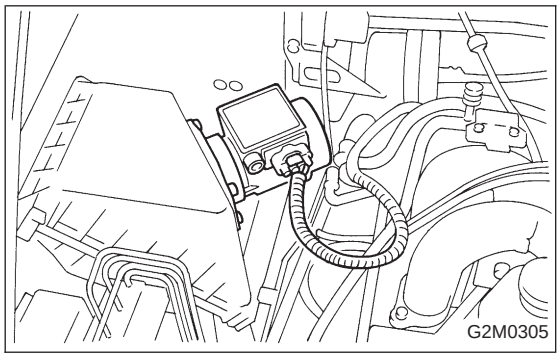
Tightening torque: N·m (kg-m, ft-lb)
T1: 7.4±2.0 (0.75±0.2, 5.4±1.4)
T2: 33±10 (3.4±1.0, 25±7)


B2M0154

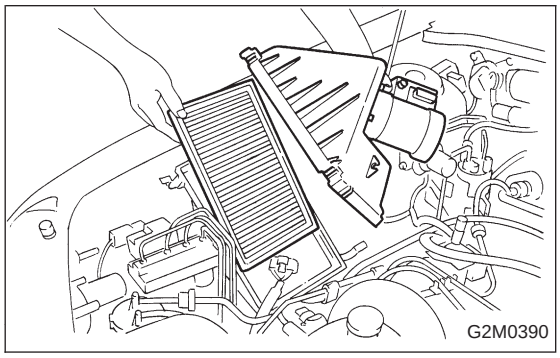
1. Air Cleaner and Air Intake Duct

A: REMOVAL AND INSTALLATION

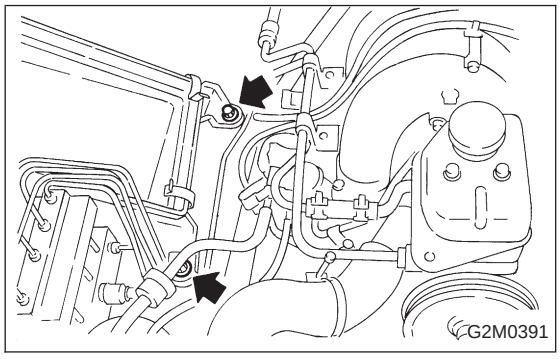
1) Loosen clamp which connect air intake duct to throttle body and mass air flow sensor.
2) Disconnect blow-by hoses from air intake duct.
3) Remove air intake duct.


G2M0305

4) Disconnect connector from mass air flow sensor.

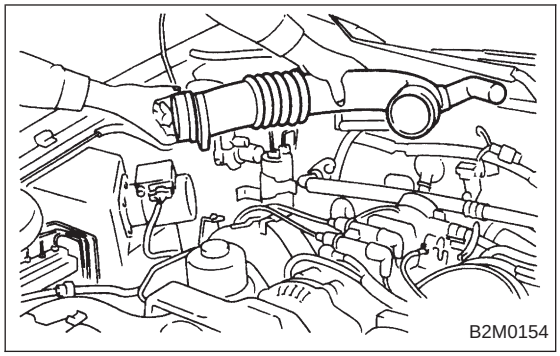

G2M0390

5) Remove clips of air cleaner upper cover.
6) Remove air cleaner element.


G2M0391

7) Remove air cleaner lower case.

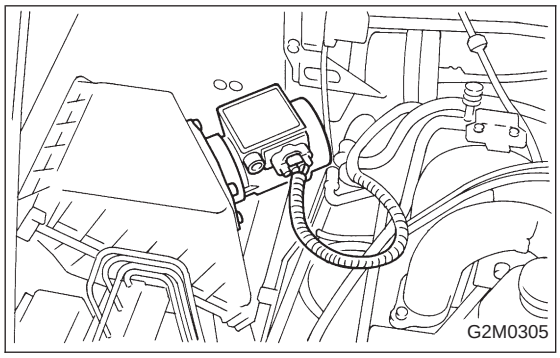
8) Installation is in the reverse order of removal.


B2M0154

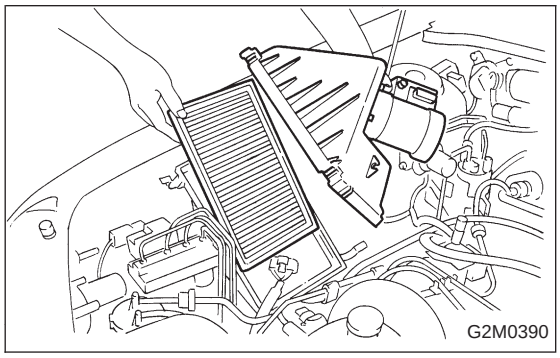
2. Mass Air Flow Sensor

A: REMOVAL AND INSTALLATION

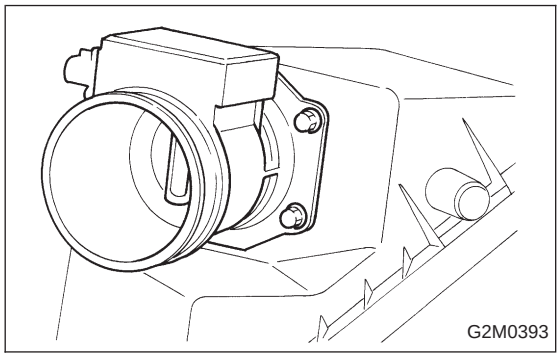
1) Remove air intake duct.


G2M0305

2) Disconnect connector from mass air flow sensor.


G2M0390

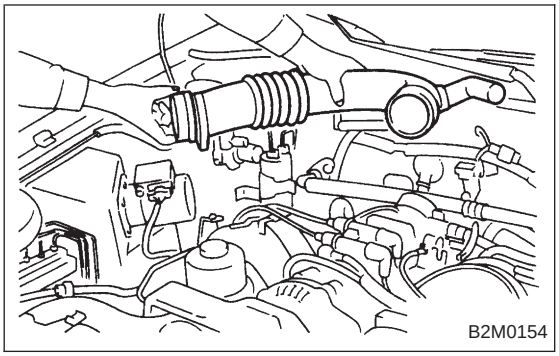
3) Remove air cleaner upper cover.


G2M0393

4) Remove mass air flow sensor from air cleaner upper cover.

5) Installation is in the reverse order of removal.

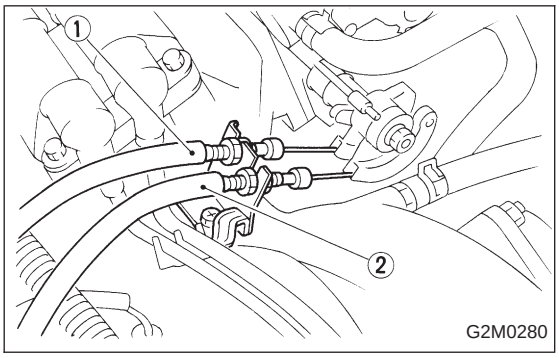
Tightening torque:
7.4±2.0 N·m (0.75±0.2 kg-m, 5.4±1.4 ft-lb)


B2M0154

3. Throttle Body

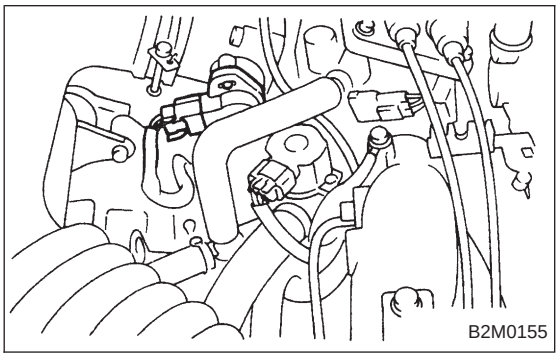
A: REMOVAL AND INSTALLATION

1) Remove air intake duct.

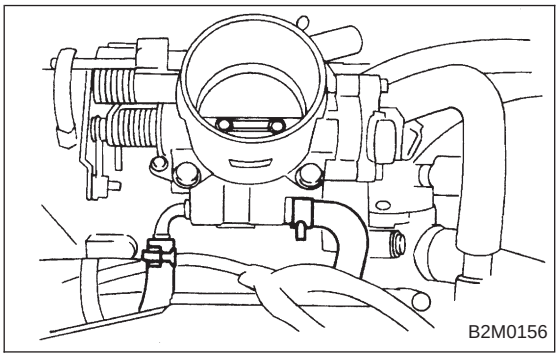


G2M0280

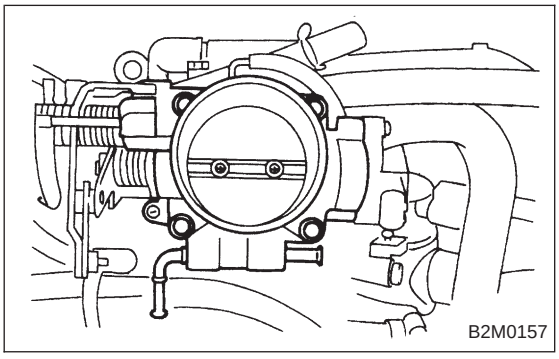
2) Disconnect accelerator cable ①.
3) Disconnect cruise control cable ②. (With cruise control model)


B2M0155

4) Disconnect connector from throttle position sensor.


B2M0156

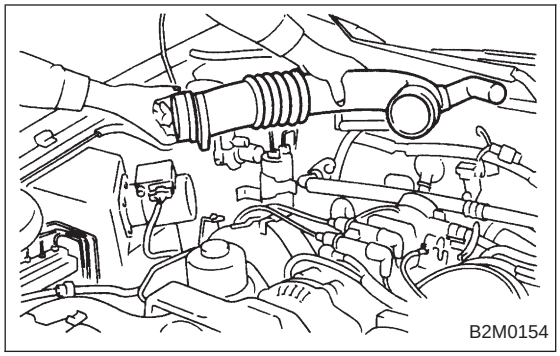
5) Disconnect engine coolant hoses from throttle body.


B2M0157

6) Remove bolts which install throttle body to intake manifold.
7) Installation is in the reverse order of removal.

CAUTION:
Always use a new gasket.

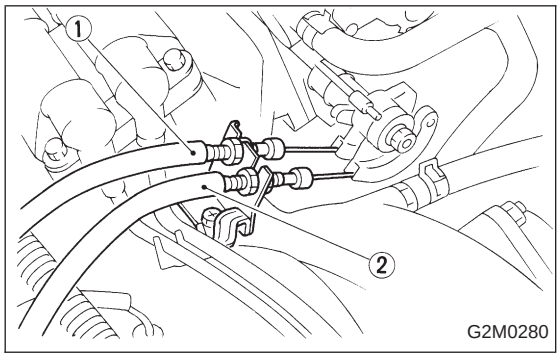
Tightening torque:
22±2 N·m (2.2±0.2 kg-m, 15.9±1.4 ft-lb)


B2M0154

4. Intake Manifold

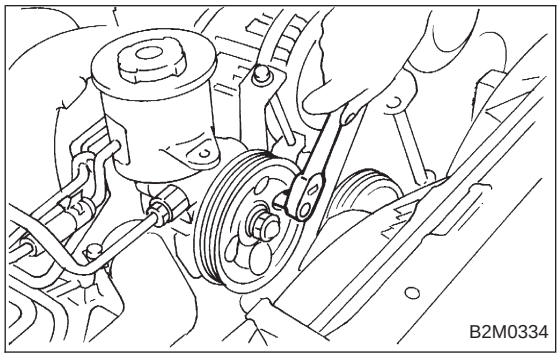
A: REMOVAL

1) Release fuel pressure. <Ref. to 2-8 [W1A0].>
2) Disconnect connector from mass air flow sensor.
3) Remove air intake duct, air cleaner upper cover and air cleaner element.

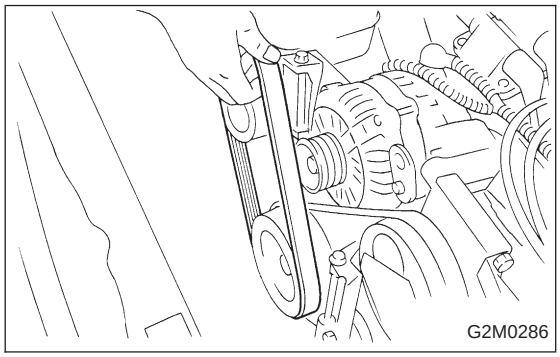


G2M0280

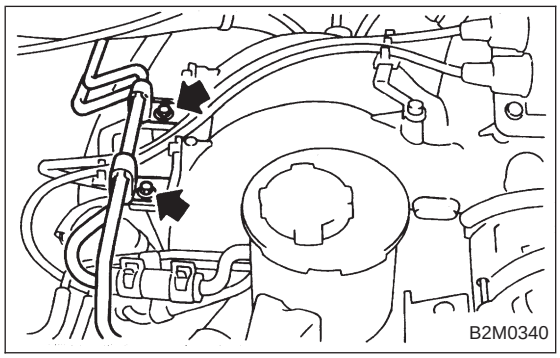
4) Disconnect accelerator cable ①.
5) Disconnect cruise control cable ②. (With cruise control model)


B2M0334

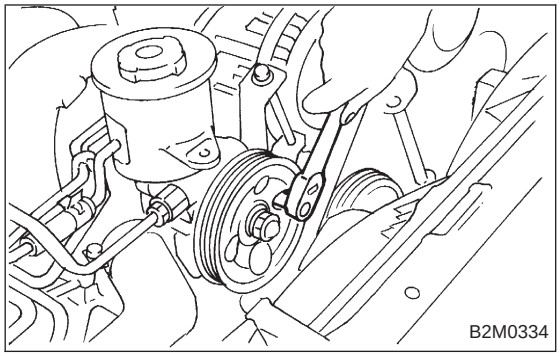
6) Disconnect hoses from pressure sources switching solenoid valve.


G2M0286

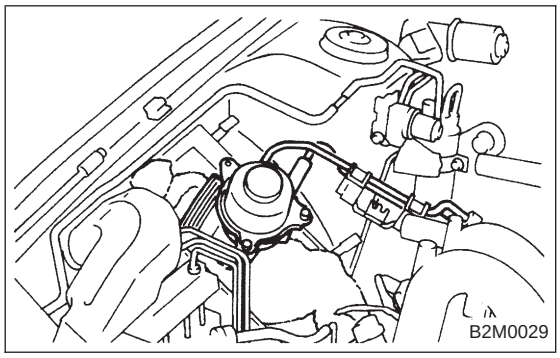
7) Remove power steering pump from bracket.
(1) Loosen lock bolt and slider bolt, and remove front side V-belt.


B2M0340

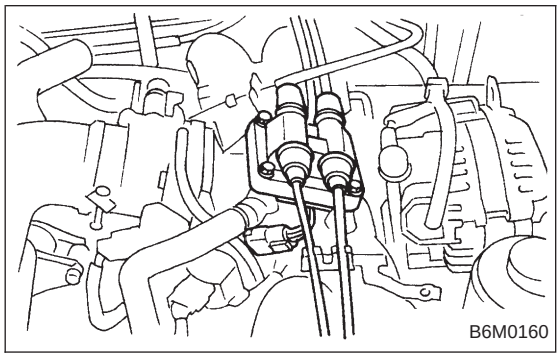
(2) Remove pipe with bracket from intake manifold.


B2M0334

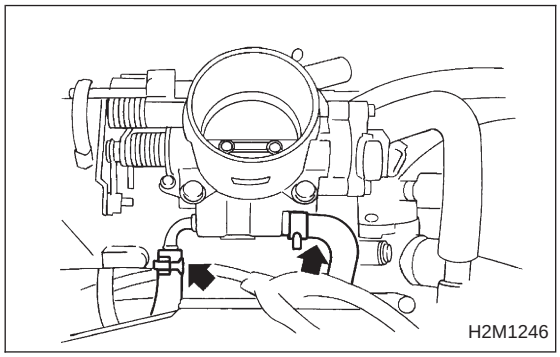
(3) Remove bolts which install power steering pump from bracket.


B2M0029

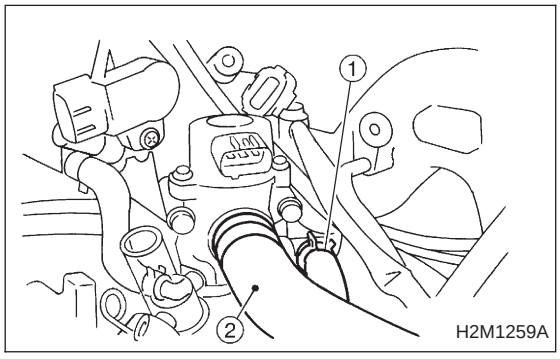
(4) Place power steering pump on the right side wheel apron.


B6M0160

8) Disconnect spark plug cords from ignition coil.

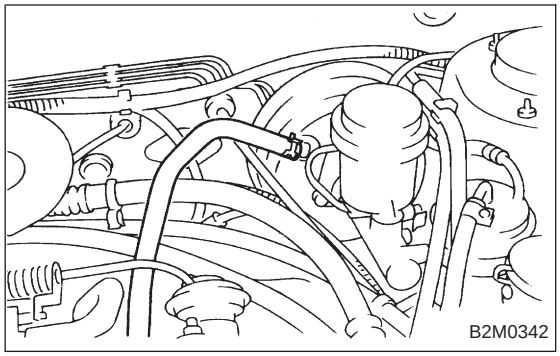

H2M1246

9) Disconnect engine coolant hoses from throttle body.

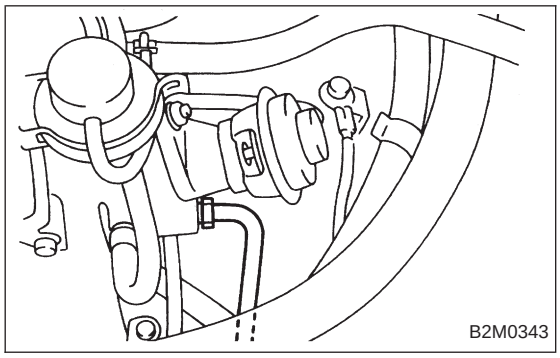


H2M1259A

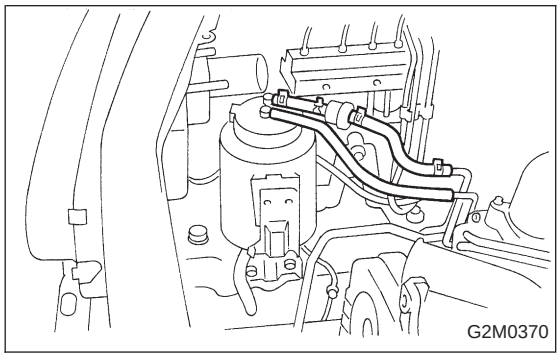
10) Disconnect engine coolant hose ① from idle air control solenoid valve.
11) Disconnect air by-pass hose ② from idle air control solenoid valve.



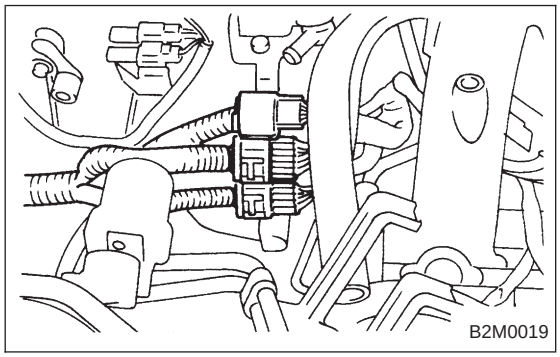
12) Disconnect brake booster hose.



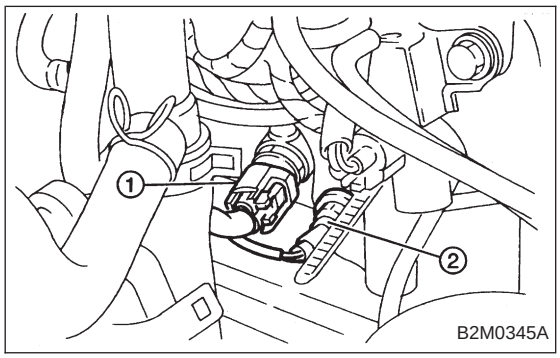
13) Remove EGR pipe.



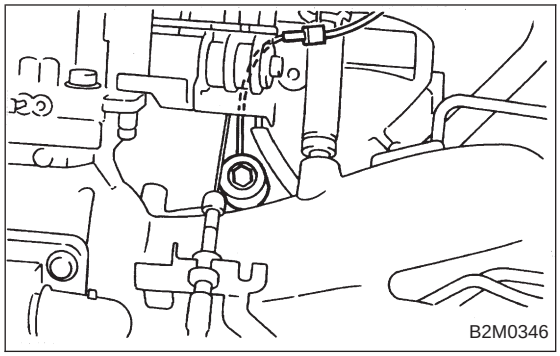
14) Disconnect canister hose from pipe.



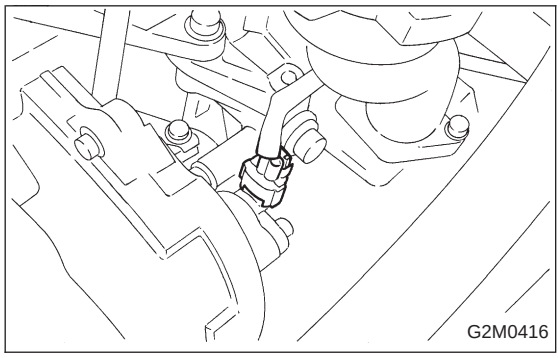
15) Disconnect engine harness connectors from bulkhead harness connectors.



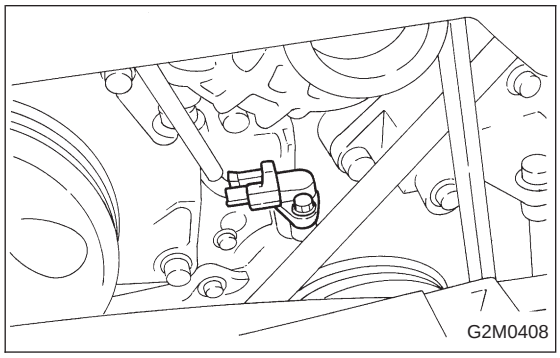
16) Disconnect connectors from engine coolant temperature sensor ① and thermometer ②.



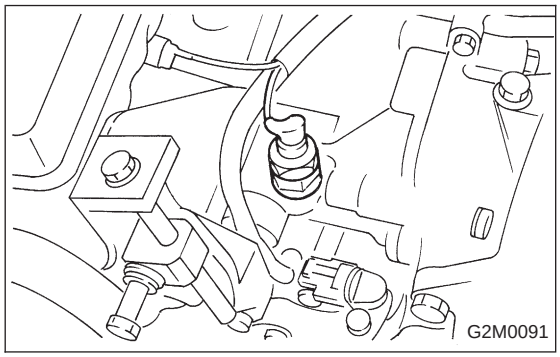
17) Disconnect connector from knock sensor.



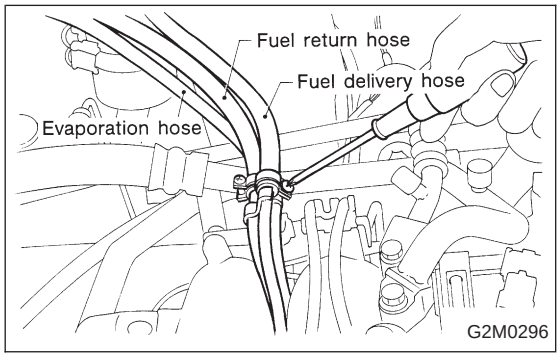
18) Disconnect connector from camshaft position sensor.



19) Disconnect connector from crankshaft position sensor.

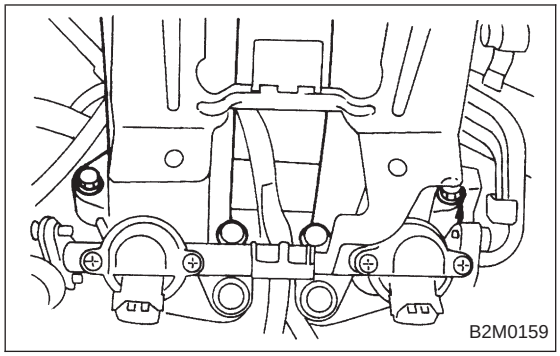


20) Disconnect connector from oil pressure switch.

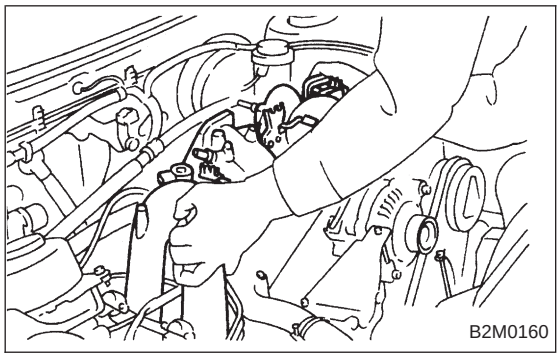


21) Disconnect fuel hoses from pipes.

WARNING:
Catch fuel from hoses in a container.

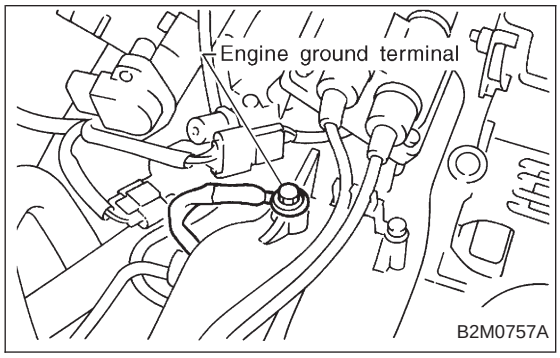

B2M0159

22) Remove bolts which hold intake manifold onto cylinder heads.


B2M0160

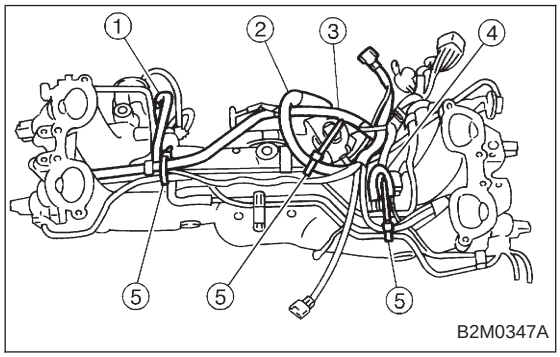
23) Remove intake manifold.

B: DISASSEMBLY



B2M0757A

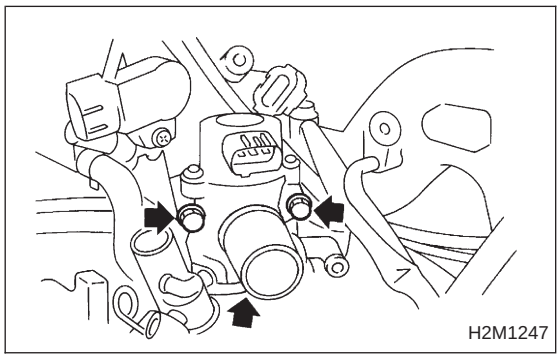
1) Disconnect engine ground terminal from intake manifold.



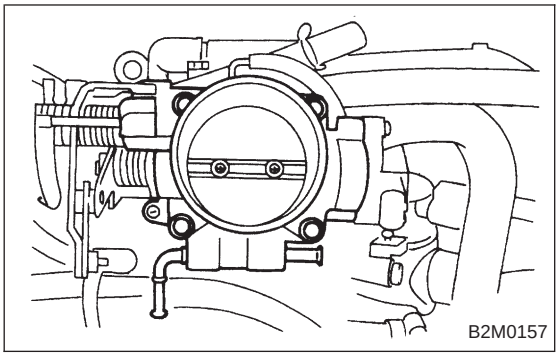
B2M0347A

2) Disconnect connectors from throttle position sensor, ignition coil, fuel injectors, idle air control solenoid valve, purge control solenoid valve and EGR solenoid valve.
3) Remove engine harness from intake manifold.

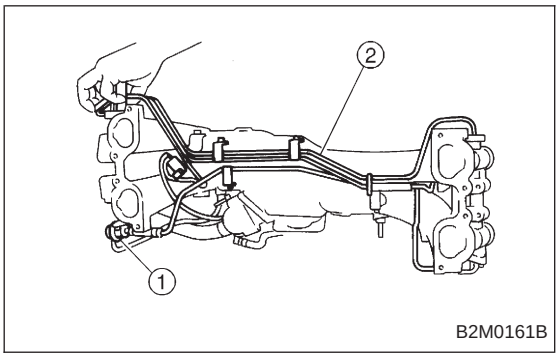
① EGR solenoid valve
② Throttle position sensor
③ Idle air control solenoid valve
④ Purge control solenoid valve
⑤ Harness band


H2M1247

4) Remove idle air control solenoid valve from intake manifold.


B2M0157

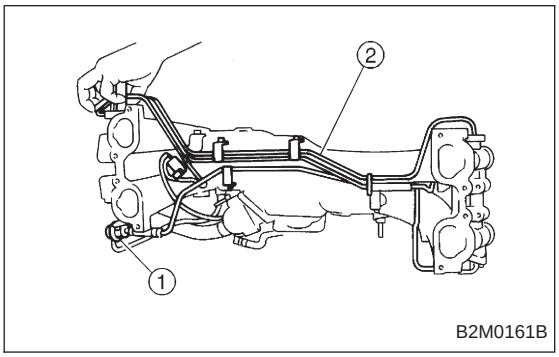
5) Remove throttle body from intake manifold.



B2M0161B

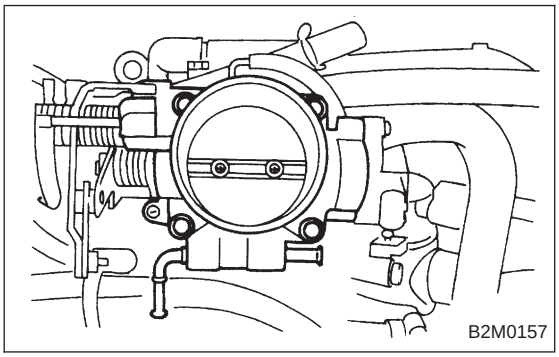
6) Remove fuel pipes, etc. from intake manifold.
① Pressure regulator
② Fuel pipe ASSY
7) Remove EGR solenoid valve and purge control solenoid valve.

C: ASSEMBLY

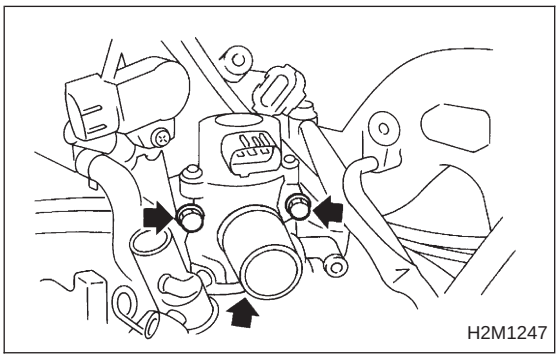


B2M0161B

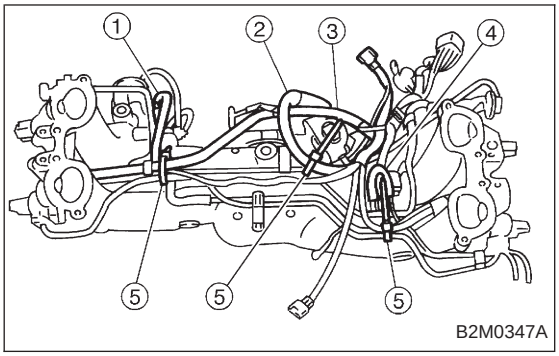
1) Install EGR solenoid valve and purge control solenoid valve.
2) Assemble fuel pipes, etc. to intake manifold.
① Pressure regulator
② Fuel pipe ASSY


B2M0157

3) Assemble throttle body to intake manifold.
CAUTION:
Replace gasket with a new one.
Tightening torque:
22±2 N·m (2.2±0.2 kg-m, 15.9±1.4 ft-lb)

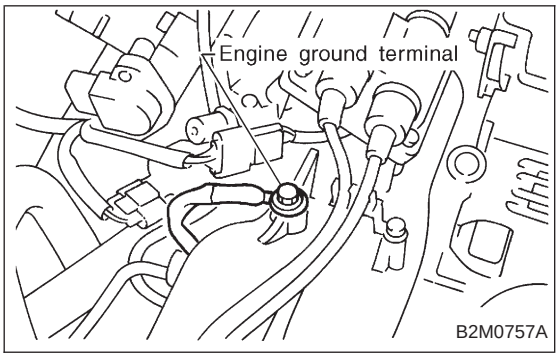

H2M1247

4) Install idle air control solenoid valve to intake manifold.
CAUTION:
Replace gasket with a new one.
Tightening torque:
6.4±0.5 N·m (0.65±0.05 kg-m, 4.7±0.4 ft-lb)



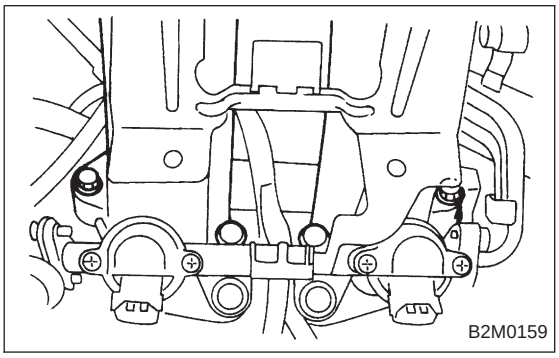
5) Install engine harness onto intake manifold.
6) Connect connectors to throttle position sensor, ignition coil, fuel injectors, idle air control solenoid valve, purge control solenoid valve and EGR solenoid valve.

① EGR solenoid valve
② Throttle position sensor
③ Idle air control solenoid valve
④ Purge control solenoid valve
⑤ Harness band



7) Connect engine ground terminal to intake manifold.

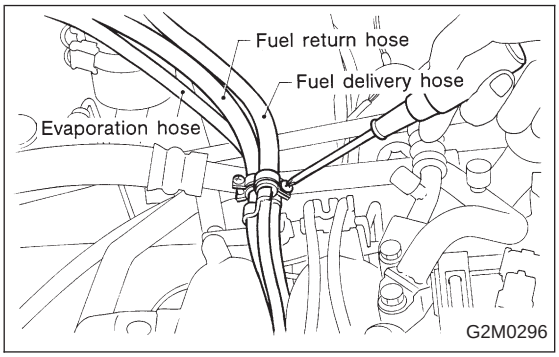
D: INSTALLATION



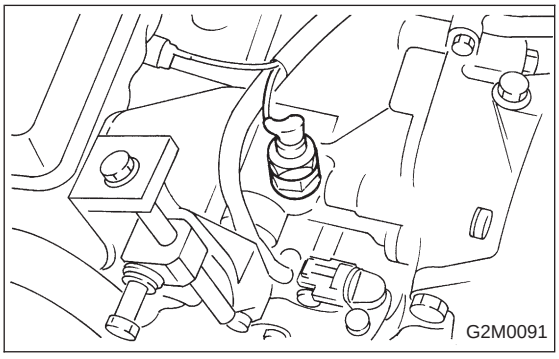
1) Install intake manifold onto cylinder heads.

CAUTION:
Always use new gaskets.

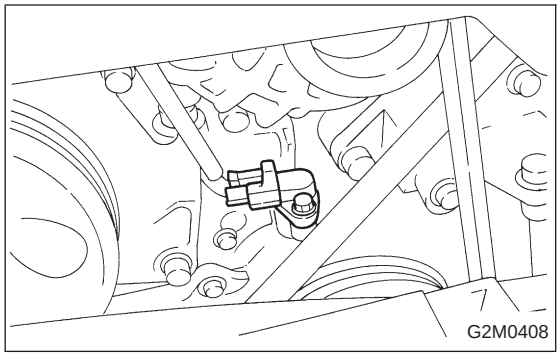
Tightening torque:
25±2 N·m (2.5±0.2 kg-m, 18.1±1.4 ft-lb)



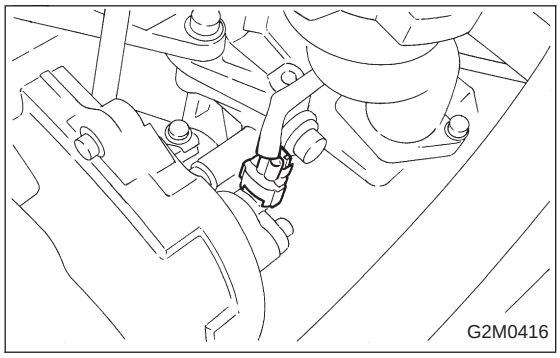
2) Connect fuel hoses.



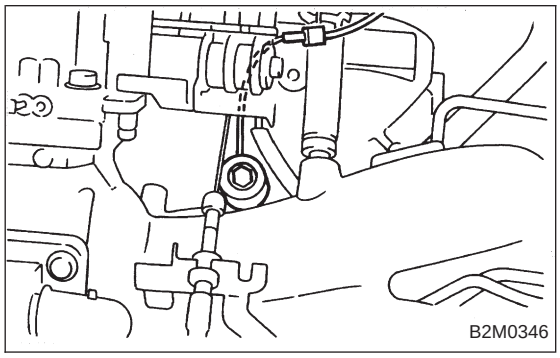
3) Connect connector to oil pressure switch.


G2M0408

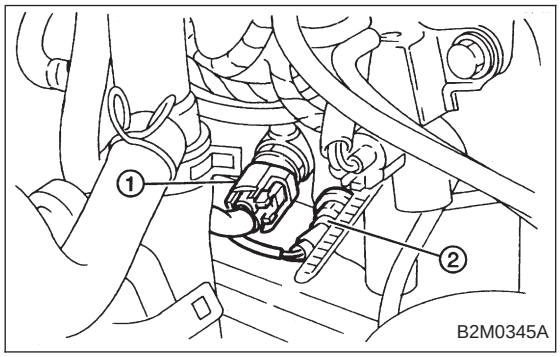
4) Connect connector to crankshaft position sensor.


G2M0416

5) Connect connector to camshaft position sensor.

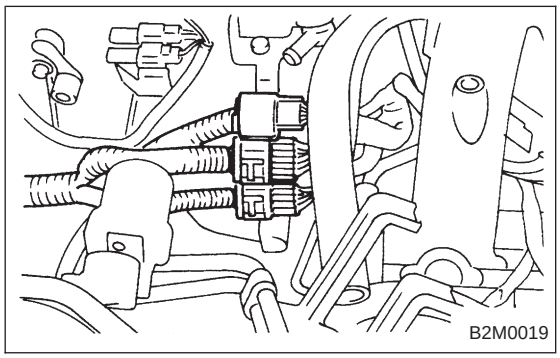

B2M0346

6) Connect connector to knock sensor.

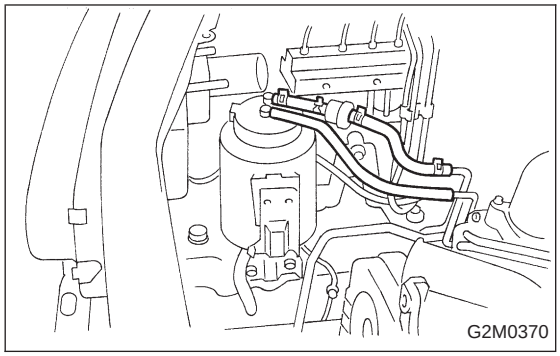


B2M0345A

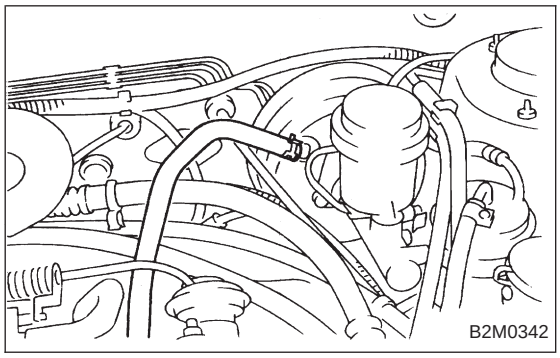
7) Connect connectors to engine coolant temperature sensor ① and thermometer ②.


B2M0019

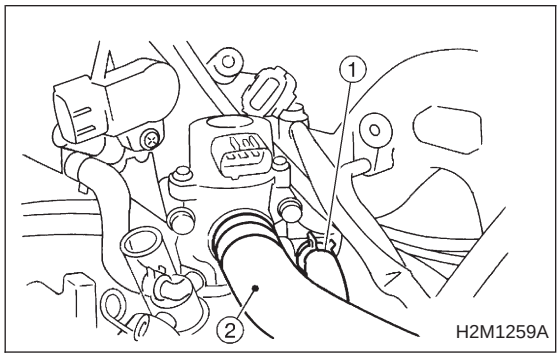
8) Connect engine harness connector to bulkhead harness connectors.



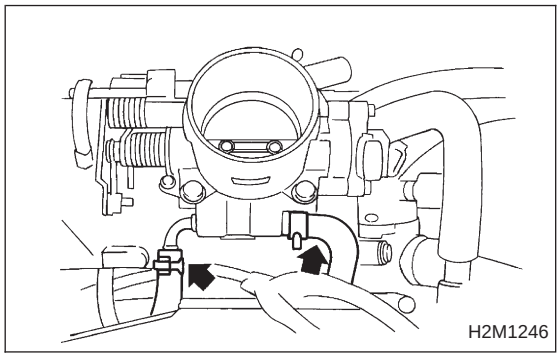
9) Connect canister hoses.



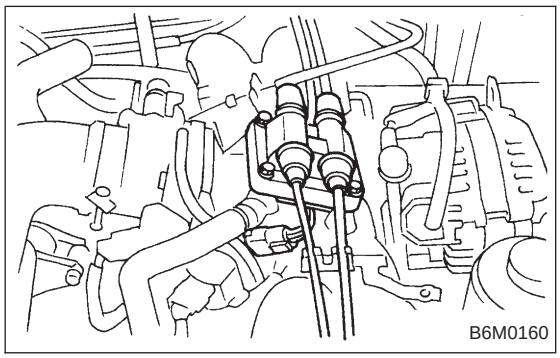
10) Connect brake booster vacuum hose.



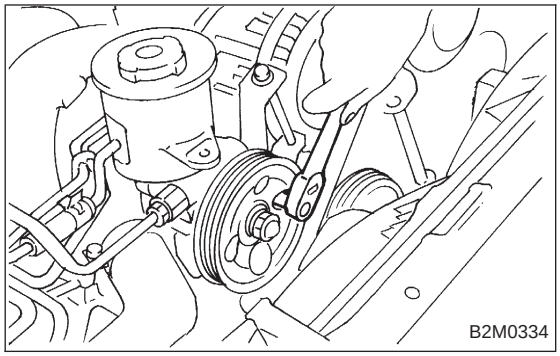
11) Connect engine coolant hose ① to idle air control solenoid valve.
12) Connect air by-pass hose ② to idle air control solenoid valve.



13) Connect engine coolant hoses to throttle body.



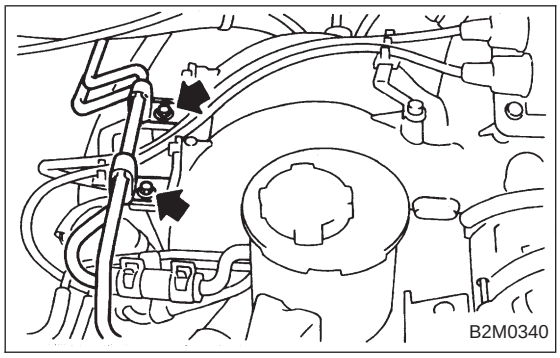
14) Connect spark plug cords to ignition coil.



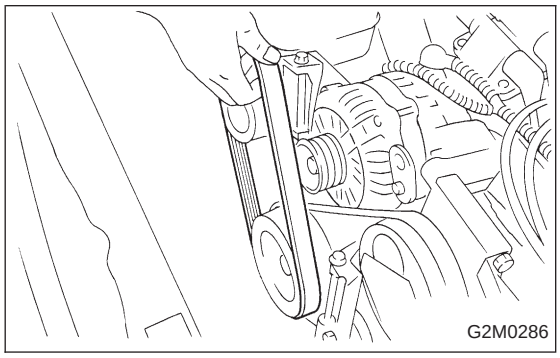
15) Install power steering pump on bracket.

(1) Install power steering pump on bracket, and tighten bolts.

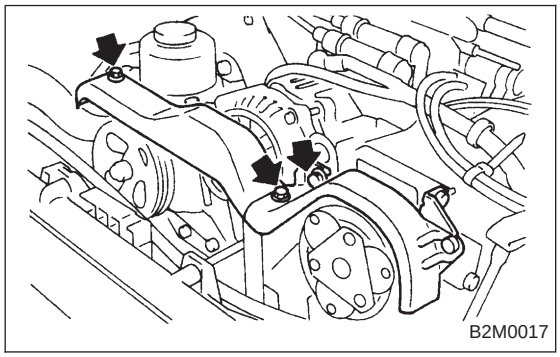
Tightening torque:
20.1±2.5 N·m (2.05±0.25 kg-m, 14.8±1.8 ft-lb)



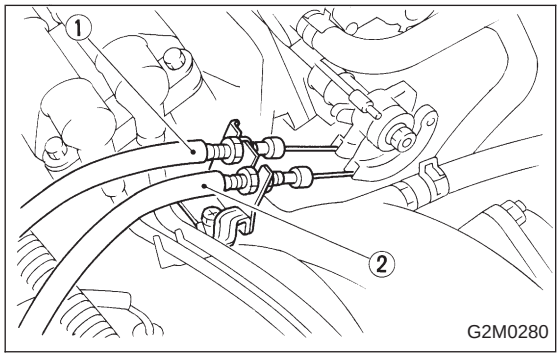
(2) Install power steering pipe bracket on right side intake manifold.



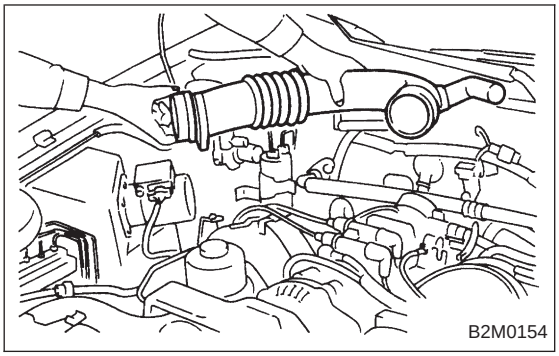
(3) Install front side V-belt, and adjust it.
<Ref. to 1-5 [01A0].>



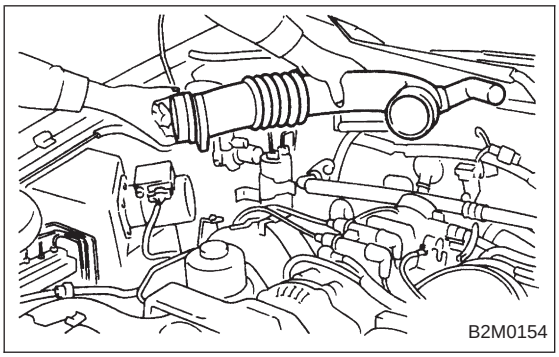
(4) Install V-belt cover.



16) Connect accelerator cable ①.
17) Connect cruise control cable ②. (With cruise control model)



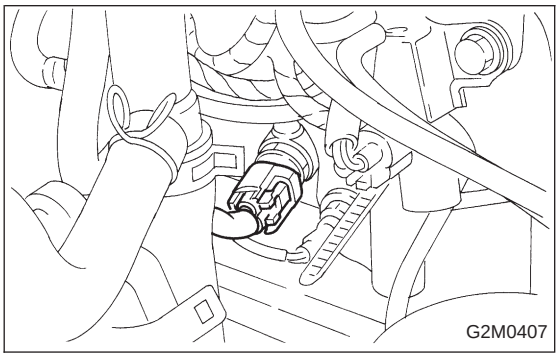
18) Install air cleaner element, air cleaner upper cover and air intake duct.
19) Connect connector to mass air flow sensor.



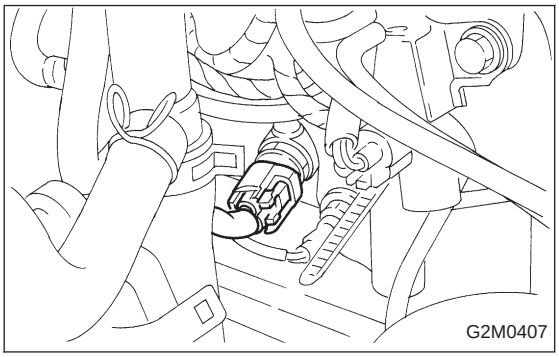
5. Engine Coolant Temperature Sensor

A: REMOVAL AND INSTALLATION

1) Remove air intake duct.

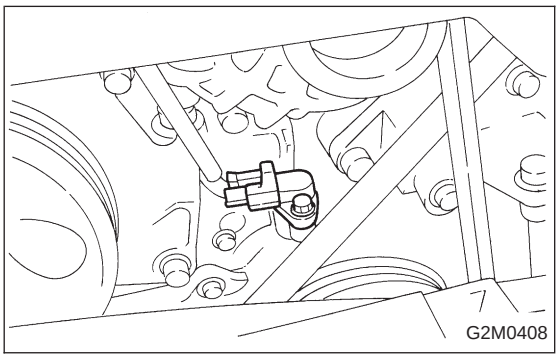


2) Disconnect connector from engine coolant temperature sensor.
3) Remove engine coolant temperature sensor.



4) Installation is in the reverse order of removal.

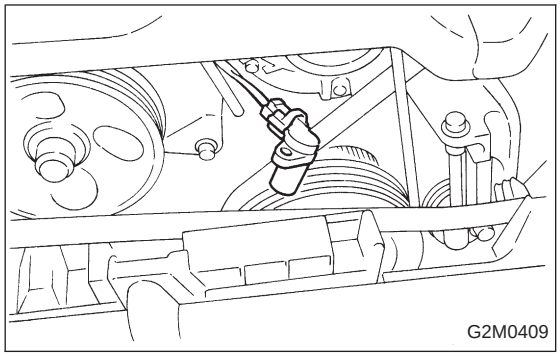
Tightening torque:
25±3 N·m (2.5±0.3 kg-m, 18.1±2.2 ft-lb)



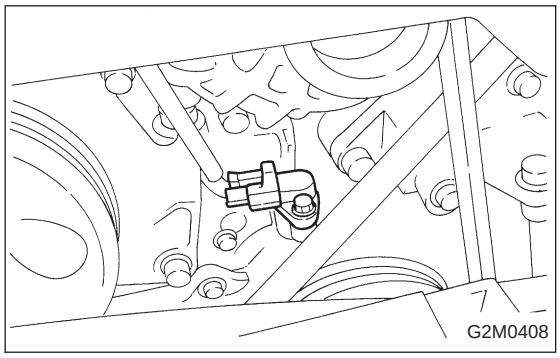
6. Crankshaft Position Sensor

A: REMOVAL AND INSTALLATION

1) Remove bolt which install crankshaft position sensor to cylinder block.



2) Remove crankshaft position sensor, and disconnect connector from it.



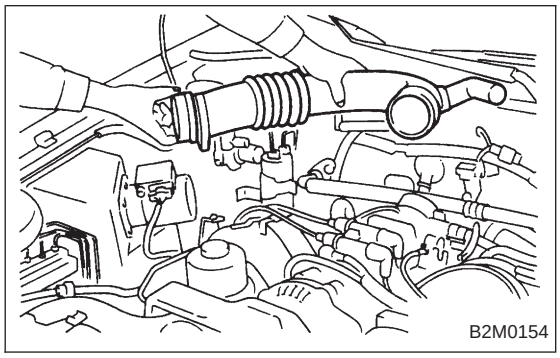
3) Installation is in the reverse order of removal.

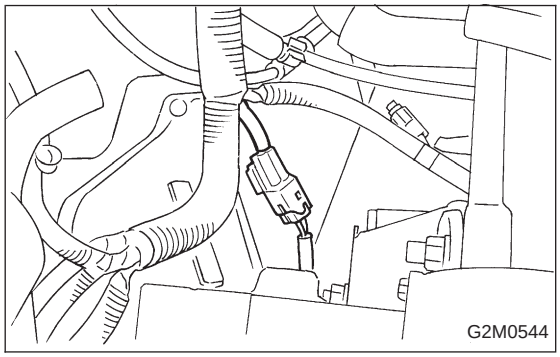
Tightening torque:
6.4±0.5 N·m (0.65±0.05 kg-m, 4.7±0.4 ft-lb)

7. Front Oxygen Sensor

A: REMOVAL

1) Remove air intake duct.

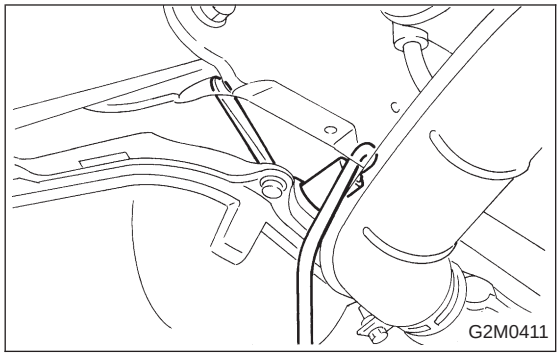




2) Disconnect connector from front oxygen sensor.

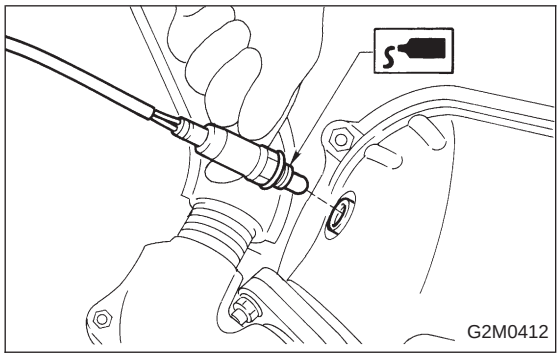
3) Lift-up the vehicle.
4) Apply SUBARU CRC or its equivalent to threaded portion of front oxygen sensor, and leave it for one minute or more.

SUBARU CRC (Part No. 004301003)



5) Remove front oxygen sensor.

CAUTION:
When removing oxygen sensor, do not force oxygen sensor especially when exhaust pipe is cold, otherwise it will damage exhaust pipe.

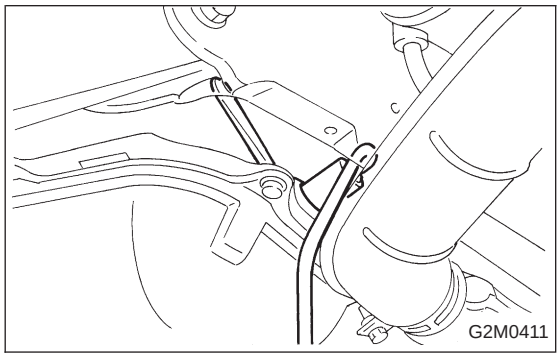


B: INSTALLATION

1) Before installing front oxygen sensor, apply anti-seize compound only to threaded portion of front oxygen sensor to make the next removal easier.

Anti-seize compound:
SS-30 by JET LUBE

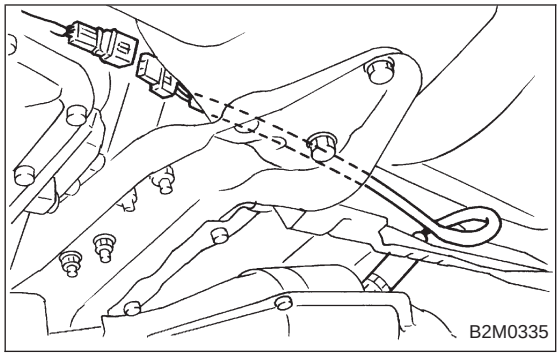
CAUTION:
Never apply anti-seize compound to protector of front oxygen sensor.



2) Install front oxygen sensor.

Tightening torque:
21±3 N·m (2.1±0.3 kg-m, 15.2±2.2 ft-lb)

3) Lower the vehicle.
4) Connect connector of front oxygen sensor.
5) Install air intake duct.


B2M0335

8. Rear Oxygen Sensor

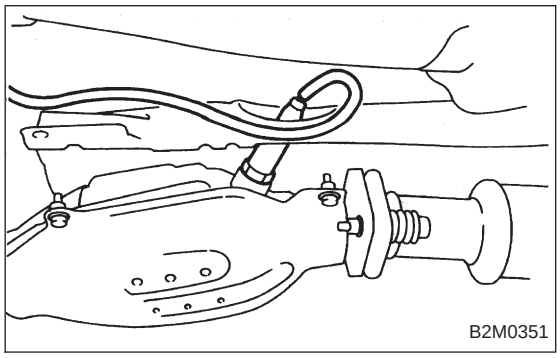
A: REMOVAL

1. EXCEPT CALIFORNIA 2200 cc MODEL

1) Lift-up the vehicle.
2) Disconnect connector from rear oxygen sensor.

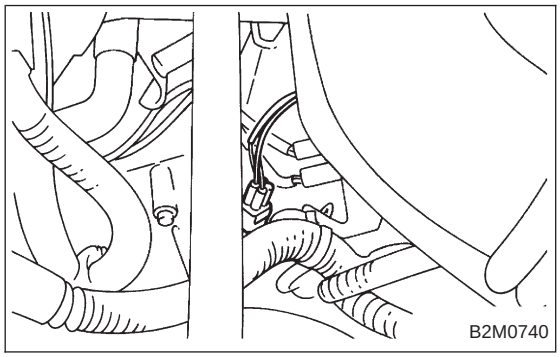
3) Apply SUBARU CRC or its equivalent to threaded portion of rear oxygen sensor, and leave it for one minute or more.

SUBARU CRC (Part No. 004301003)


B2M0351

4) Remove rear oxygen sensor.

CAUTION:
When removing rear oxygen sensor, do not force rear oxygen sensor especially when exhaust pipe is cold, otherwise it will damage exhaust pipe.

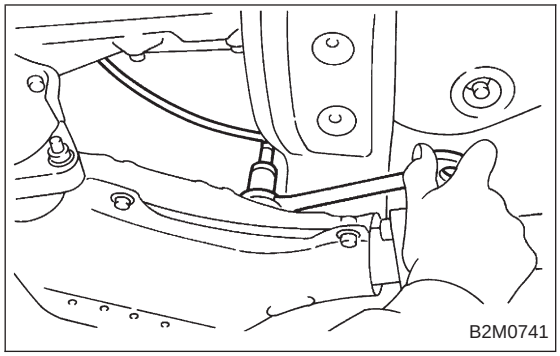

B2M0740

2. CALIFORNIA 2200 cc MODEL

1) Disconnect connector from rear oxygen sensor.
2) Lift-up the vehicle.

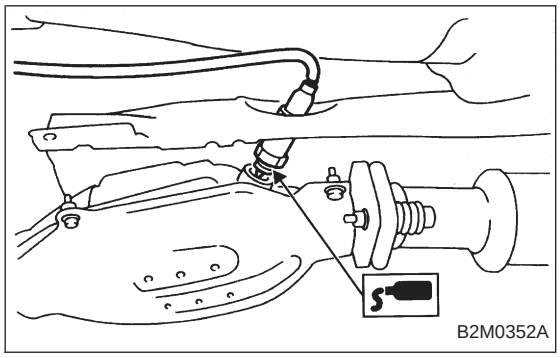
3) Apply SUBARU CRC or its equivalent to threaded portion of rear oxygen sensor, and leave it for one minute or more.

SUBARU CRC (Part No. 004301003)


B2M0741

4) Remove rear oxygen sensor.

CAUTION:
When removing rear oxygen sensor, do not force rear oxygen sensor especially when exhaust pipe is cold, otherwise it will damage exhaust pipe.


B2M0352A

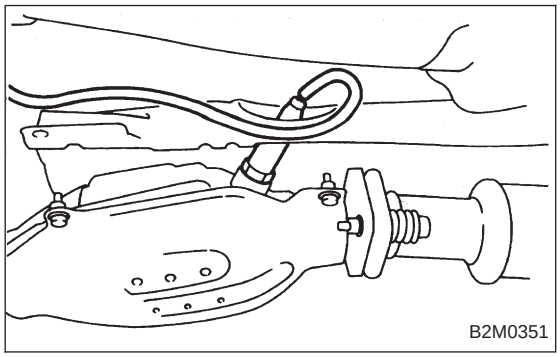
B: INSTALLATION

1. EXCEPT CALIFORNIA 2200 cc MODEL

1) Before installing rear oxygen sensor, apply anti-seize compound only to threaded portion of rear oxygen sensor to make the next removal easier.

Anti-seize compound:
SS-30 by JET LUBE

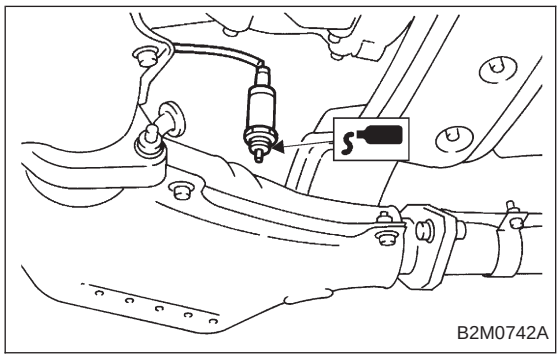
CAUTION:
Never apply anti-seize compound to protector of rear oxygen sensor.


B2M0351

2) Install rear oxygen sensor.

Tightening torque:
21±3 N·m (2.1±0.3 kg-m, 15.2±2.2 ft-lb)

3) Connect connector of rear oxygen sensor.
4) Lower the vehicle.

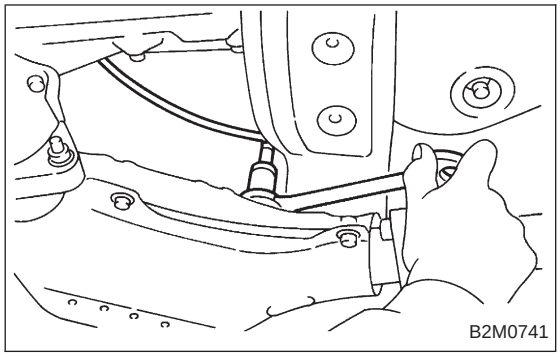

B2M0742A

2. CALIFORNIA 2200 cc MODEL

1) Before installing rear oxygen sensor, apply anti-seize compound only to threaded portion of rear oxygen sensor to make the next removal easier.

Anti-seize compound:
SS-30 by JET LUBE

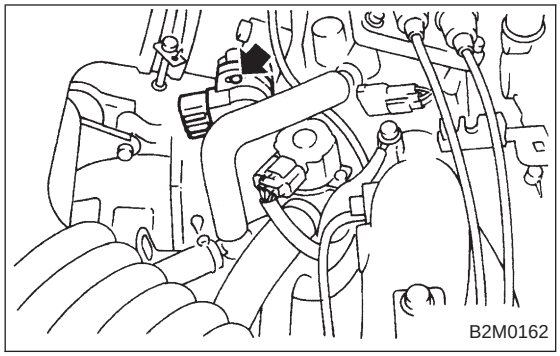
CAUTION:
Never apply anti-seize compound to protector of rear oxygen sensor.



2) Install rear oxygen sensor.

Tightening torque:
21±3 N·m (2.1±0.3 kg-m, 15.2±2.2 ft-lb)

3) Lower the vehicle.
4) Connect connector to rear oxygen sensor.


B2M0162

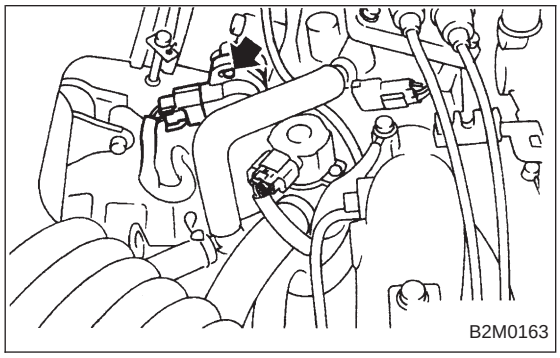
9. Throttle Position Sensor

A: REMOVAL AND INSTALLATION

1) Disconnect connector from throttle position sensor.
2) Remove throttle position sensor holding screws, and remove it.
3) Installation is in the reverse order of removal.

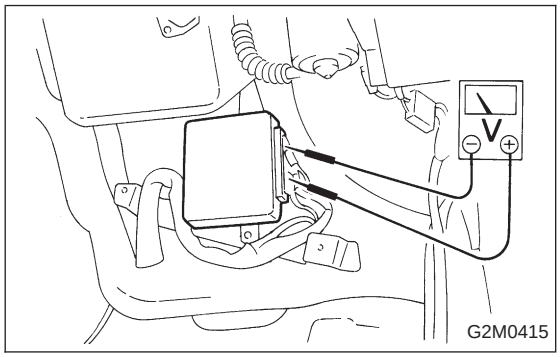
Tightening torque:
2.2±0.2 N·m (0.22±0.02 kg-m, 1.6±0.1 ft-lb)

CAUTION:
When installing throttle position sensor, adjust to the specified data.


B2M0163

B: ADJUSTMENT

1) Turn ignition switch to OFF.
2) Loosen throttle position sensor holding screws.

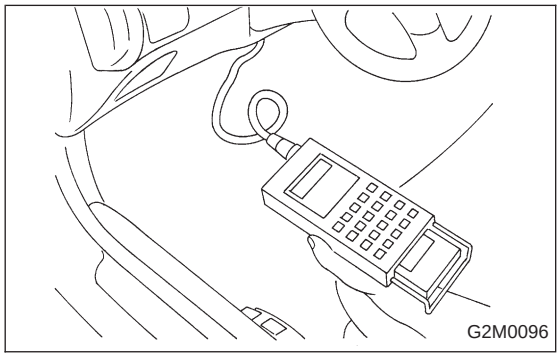


G2M0415

3) When using voltage meter;
   (1) Take out ECM.
   (2) Turn ignition switch to ON.
   (3) Adjust throttle position sensor so that signal voltage to ECM may be in specification.

Connector & Terminal / Specified voltage
(B84) No. 24 — (B84) No. 25 / 0.45 — 0.55 V
[Fully closed.]

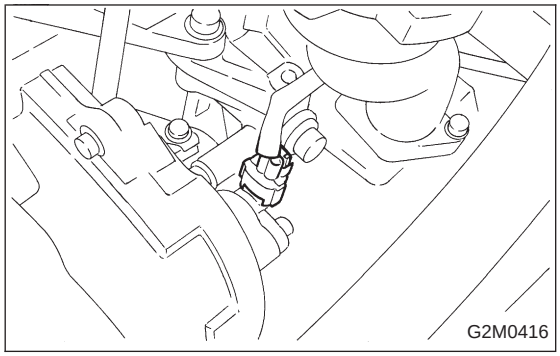
   (4) Tighten throttle position sensor holding screws.


G2M0096

4) When using Subaru Select Monitor;
   (1) Connect Subaru Select Monitor to the data link connector.
   (2) Turn ignition switch to ON and SSM switch to ON.
   (3) Select mode “F10”.
   (4) Adjust throttle position sensor to specified data.

Condition / Specified data.
Throttle fully closed / 0.50 V

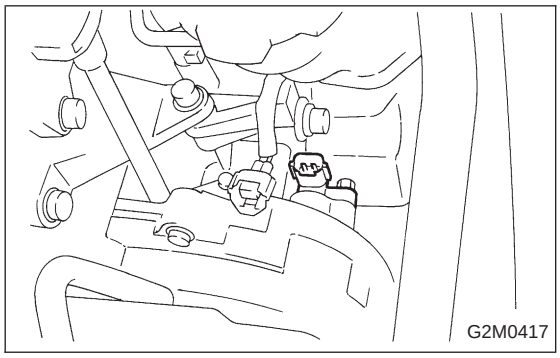
   (5) Tighten throttle position sensor holding screws.



10. Camshaft Position Sensor

A: REMOVAL AND INSTALLATION

1) Disconnect connector from camshaft position sensor.



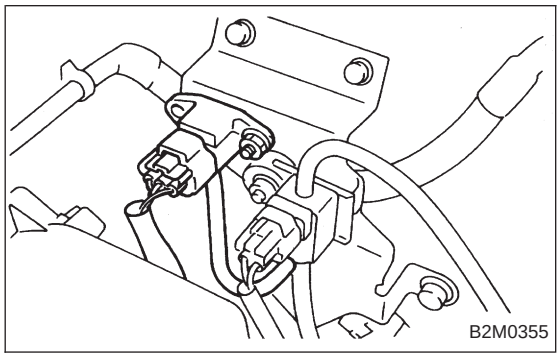
2) Remove camshaft position sensor from camshaft support LH.
3) Installation is in the reverse order of removal.

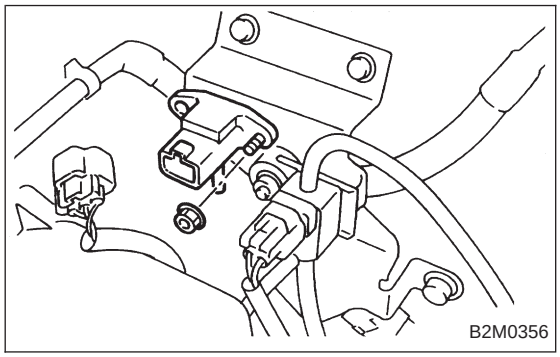
Tightening torque:
6.4±0.5 N·m (0.65±0.05 kg-m, 4.7±0.4 ft-lb)

11. Pressure Sensor (AT model)

A: REMOVAL AND INSTALLATION

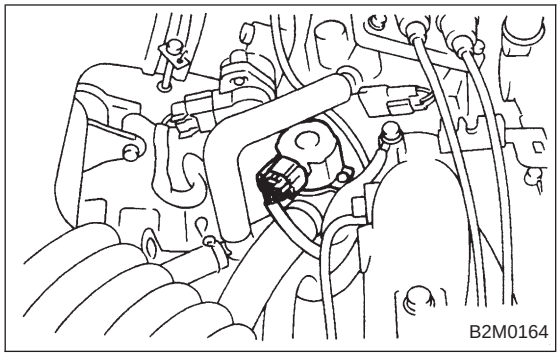
1) Disconnect connector from pressure sensor.
2) Disconnect hose from pressure sensor.





3) Remove pressure sensor from bracket.
4) Installation is in the reverse order of removal.

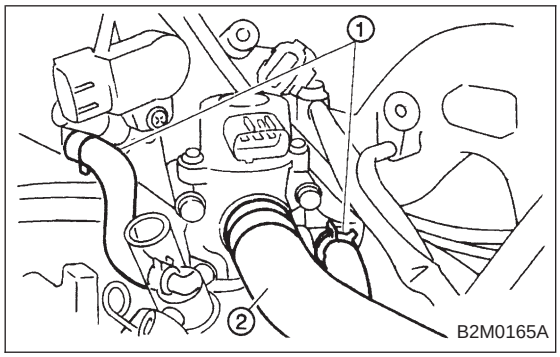
Tightening torque:
6.4±0.5 N·m (0.65±0.05 kg-m, 4.7±0.4 ft-lb)


B2M0164

12. Idle Air Control Solenoid Valve

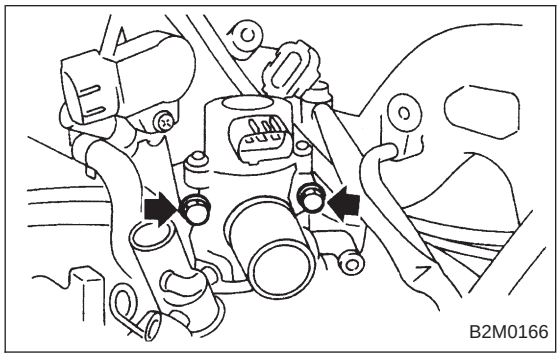
A: REMOVAL AND INSTALLATION

1) Disconnect connector from idle air control solenoid valve.



B2M0165A

2) Disconnect engine coolant hoses ① from idle air control solenoid valve.
3) Disconnect air by-pass hose ② from idle air control solenoid valve.

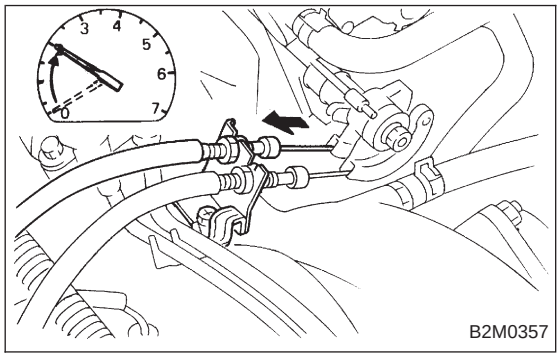

B2M0166

4) Remove idle air control solenoid valve from throttle body.
5) Installation is in the reverse order of removal.

CAUTION:
Replace gasket with a new one.

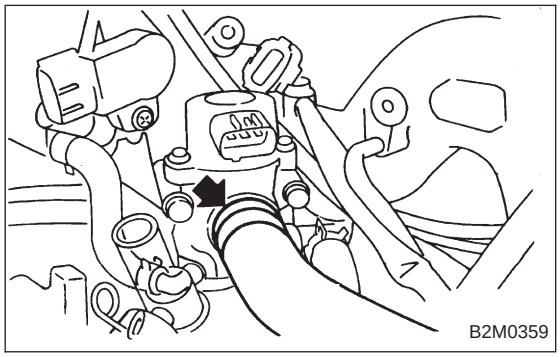
Tightening torque:
6.4±0.5 N·m (0.65±0.05 kg-m, 4.7±0.4 ft-lb)

B: CLEANING

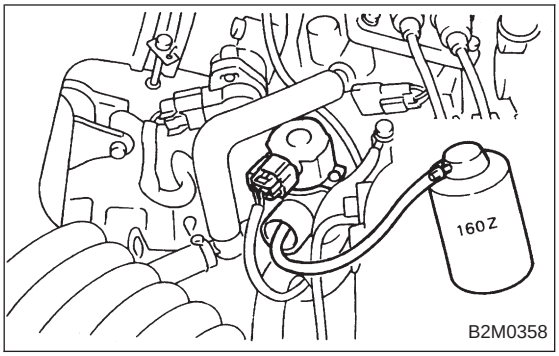


B2M0357

1) Start and warm-up the engine until radiator fan operates.
2) Hold throttle valve so that engine speed is at 2,000 rpm.


B2M0359

3) Disconnect by-pass hose from idle air control solenoid valve.



4) Slowly pour one can (16 oz) of cleaner into by-pass air hole.

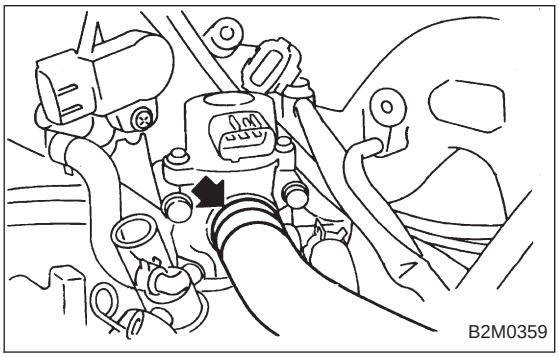
Cleaner:

- ***Part No. 1050002 GM Top Engine Cleaner***
- ***Part No. X66-A AC Delco Carburetor Tune-up Conditioner***

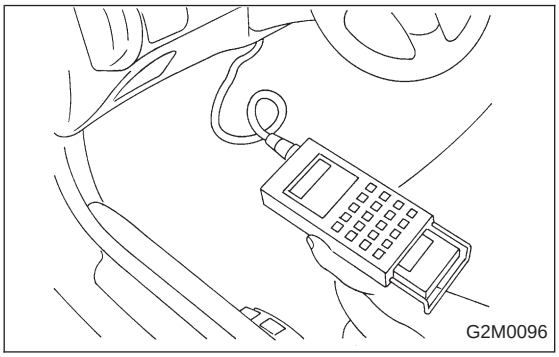
5) Leave the engine running for five minutes.

NOTE:
White smoke comes out of the muffler until the cleaner is used up.

6) Stop the engine.



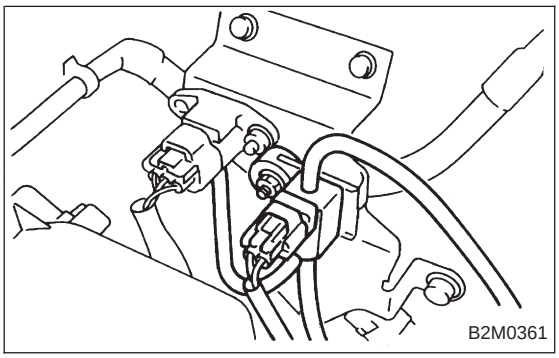
7) Release the throttle valve.
8) Connect by-pass hose to idle air control solenoid valve.



9) Check duty ratio of idle air control solenoid valve with Subaru Select Monitor.

(1) Connect Subaru Select Monitor to the data link connector.
(2) Start the engine and turn Subaru Select Monitor switch to ON.
(3) Select mode “F12”.
(4) Make sure duty ratio on radiator fan and electric load is OFF.

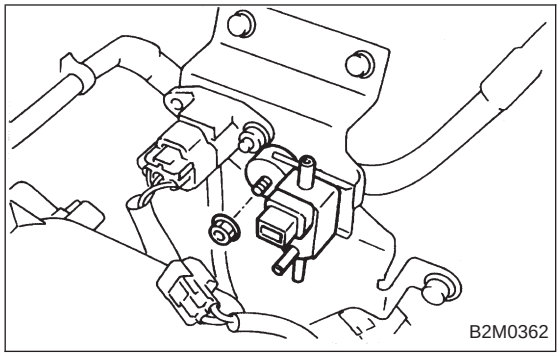
Specified data: 25 — 40%



13. Pressure Sources Switching Solenoid Valve (AT model)

A: REMOVAL AND INSTALLATION

1) Disconnect connector from pressure sources switching solenoid valve.
2) Disconnect hoses from pressure sources switching solenoid valve.


B2M0362

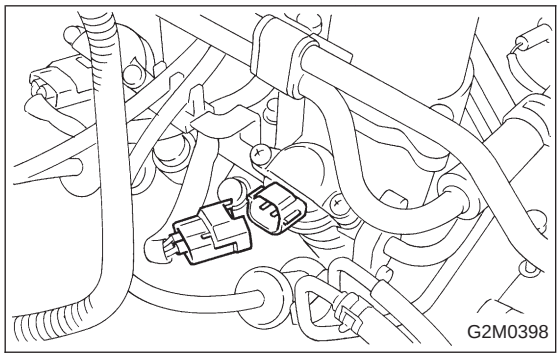
3) Remove pressure sources switching solenoid valve from bracket.
4) Installation is in the reverse order of removal.

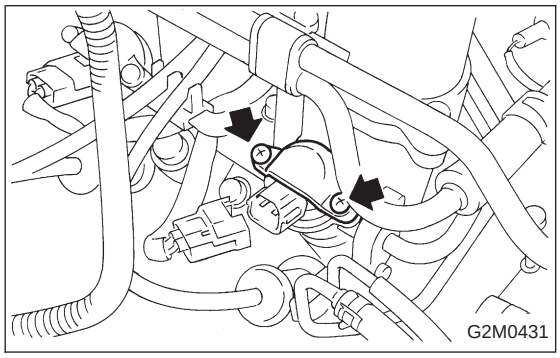
Tightening torque:
6.4±0.5 N·m (0.65±0.05 kg-m, 4.7±0.4 ft-lb)

14. Fuel Injector

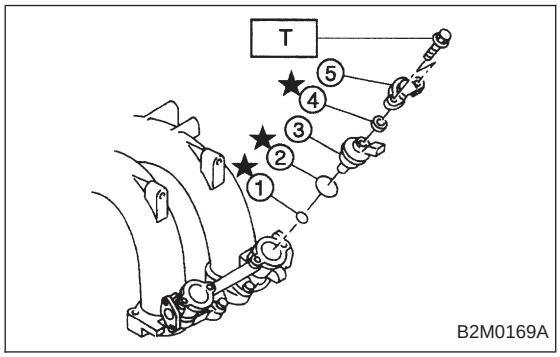
A: REMOVAL AND INSTALLATION

1) Release fuel pressure.
<Ref. to 2-8 [W1A0].>
2) Disconnect connector from fuel injector.


G2M0398


G2M0431

3) Remove fuel injector from fuel pipe assembly.



B2M0169A

4) Installation is in the reverse order of removal.

CAUTION:
Replace O-rings and insulator.

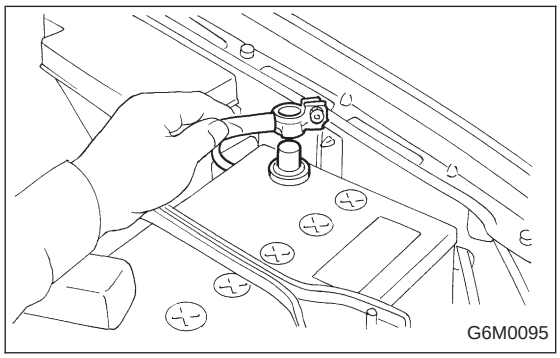
Tightening torque:
T: 3.4±0.5 N·m (0.35±0.05 kg-m, 2.5±0.4 ft-lb)

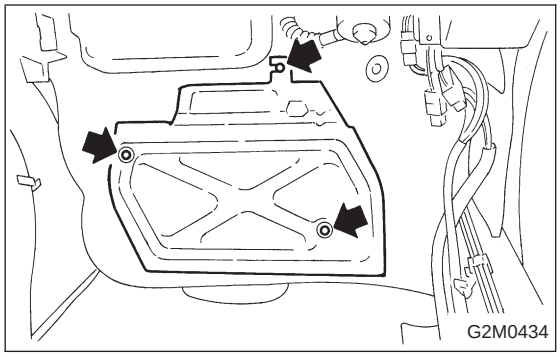
① O-ring B
② O-ring A
③ Fuel injector
④ Insulator
⑤ Fuel injector cup

15. Engine Control Module

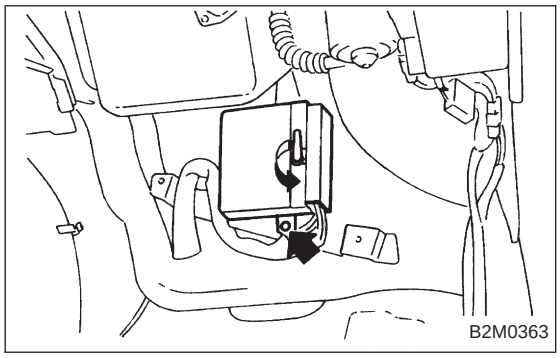
A: REMOVAL AND INSTALLATION

1) Disconnect battery ground cable.

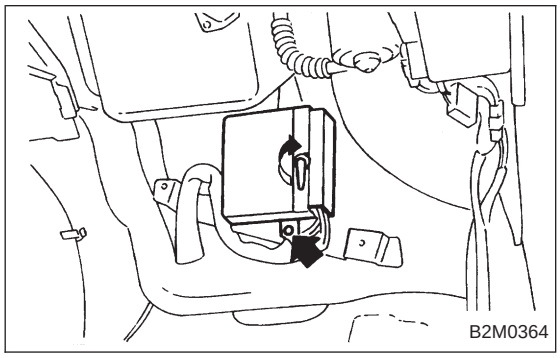

G6M0095



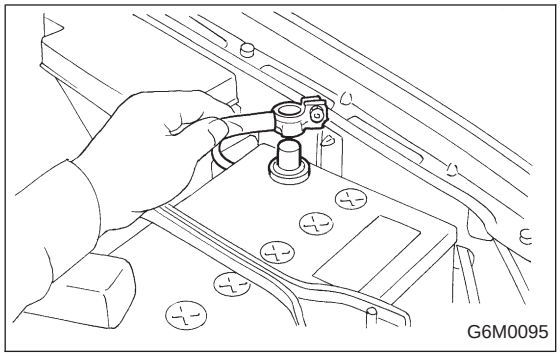
2) Detach floor mat of front passenger seat.
3) Remove protect cover.



4) Release the lock of ECM connector and disconnect it.
5) Remove nuts which install ECM onto body.
6) Take out ECM.



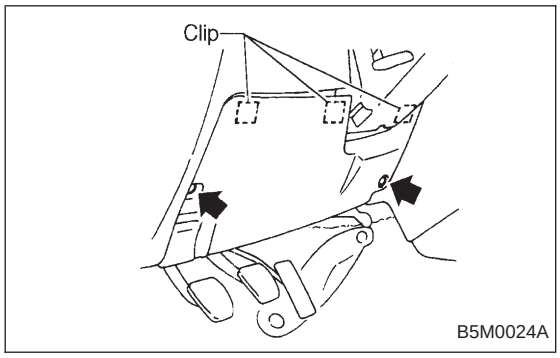
7) Connect ECM connector and lock it.
8) Installation is in the reverse order of removal.


G6M0095

16. Main Relay

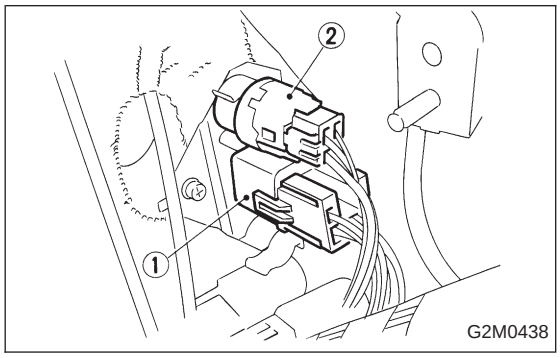
A: REMOVAL AND INSTALLATION

1) Disconnect battery ground cable.



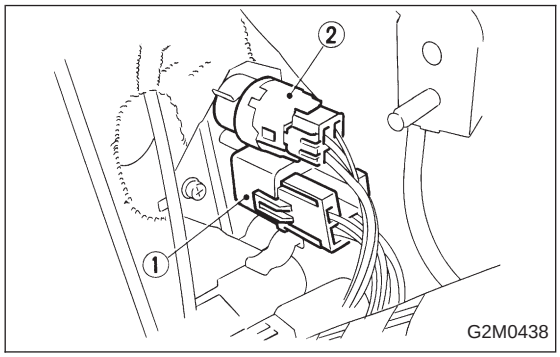
B5M0024A

2) Remove lower cover and then disconnect connectors.
3) Lower transmission control module.
4) Remove the front pillar lower trim.
<Ref. to 5-3 [W5A1].>
5) Remove fuse box mounting nuts.
6) Lower fuse box.
7) Remove fuse box mounting bracket.



G2M0438

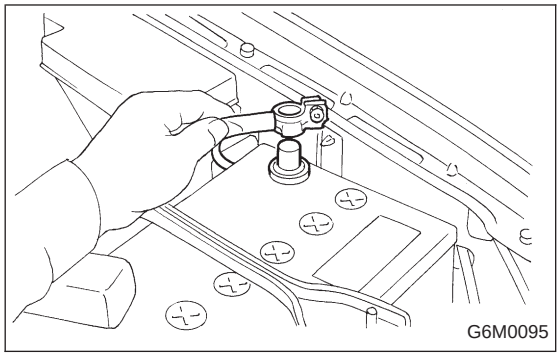
8) Remove screw which retains bracket of main relay ① and fuel pump relay ②.
9) Disconnect connector from main relay.



G2M0438

10) Installation is in the reverse order of removal.

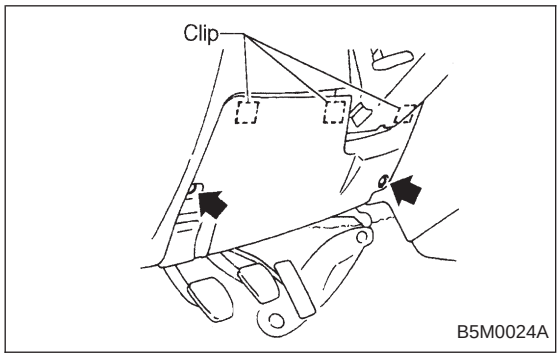
① Main relay
② Fuel pump relay


G6M0095

17. Fuel Pump Relay

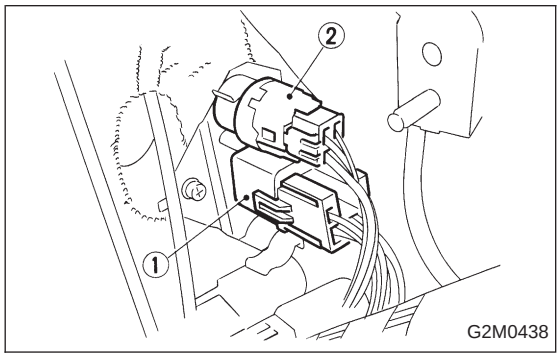
A: REMOVAL AND INSTALLATION

1) Disconnect battery ground cable.



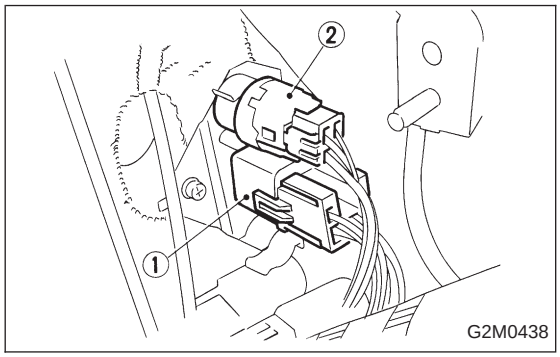
B5M0024A

2) Remove lower cover and then disconnect connectors.
3) Lower transmission control module.
4) Remove the front pillar lower trim.
<Ref. to 5-3 [W5A1].>
5) Remove fuse box mounting nuts.
6) Lower fuse box.
7) Remove fuse box mounting bracket.



G2M0438

8) Remove fuel pump relay from main relay and fuel pump relay mounting bracket.
9) Disconnect connector from fuel pump relay.



G2M0438

10) Installation is in the reverse order of removal.

① Main relay
② Fuel pump relay

FUEL SYSTEM 2-8

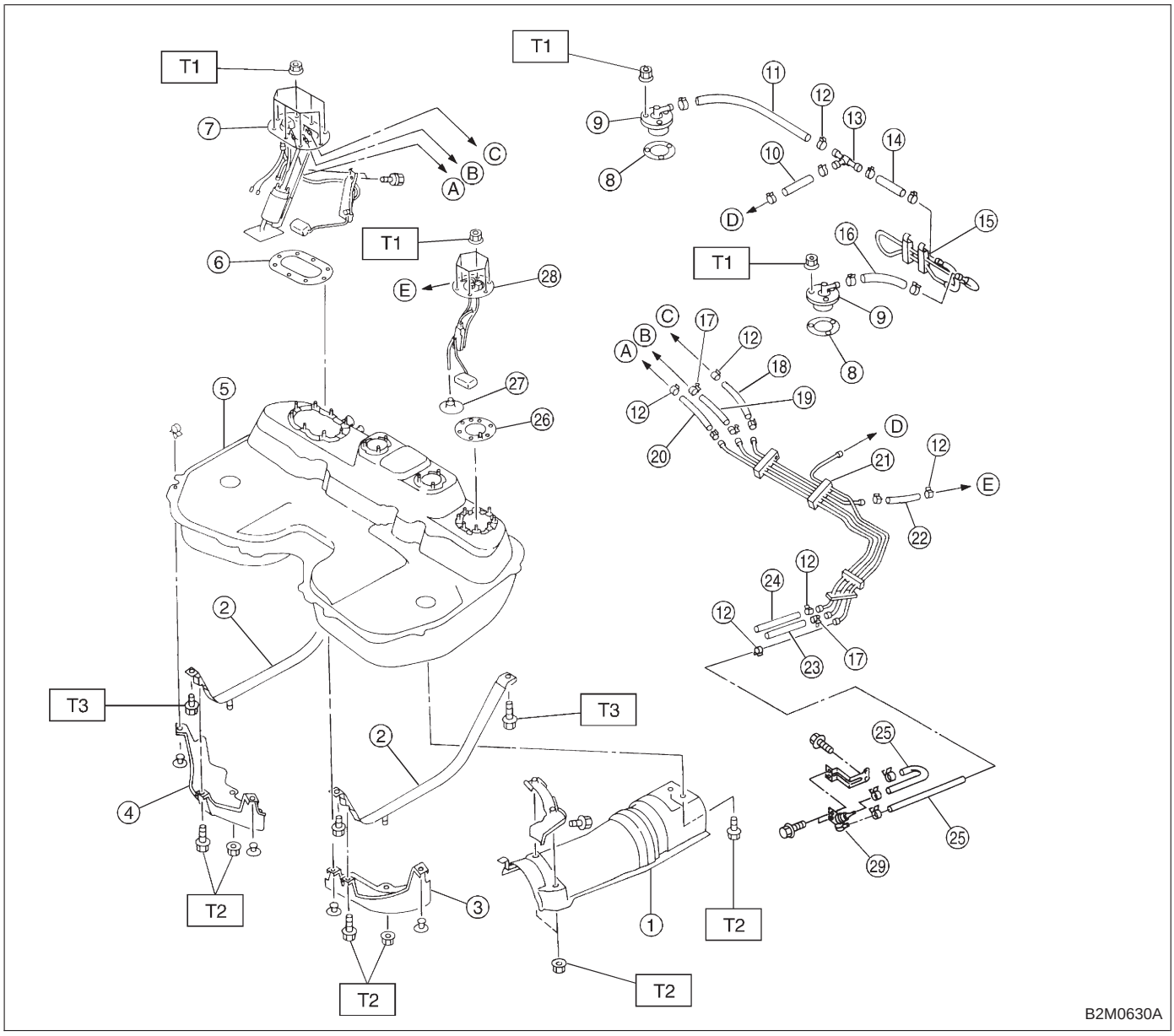
1. Fuel System

A: SPECIFICATIONS

Fuel tank	Capacity	60 ℓ (15.9 US gal, 13.2 Imp gal)
	Location	Under rear seat
Fuel pump	Type	Impeller
	Discharge pressure	250.1 kPa (2.55 kg/cm^2, 36.3 psi)
	Discharge flow	AWD: More than 80 ℓ (21.1 US gal, 17.6 Imp gal)/h FWD: More than 65 ℓ (17.2 US gal, 14.3 Imp gal)/h [12 V at 300 kPa (3.06 kg/cm^2, 43.5 psi)]
Fuel filter		Cartridge type

1. Fuel Tank

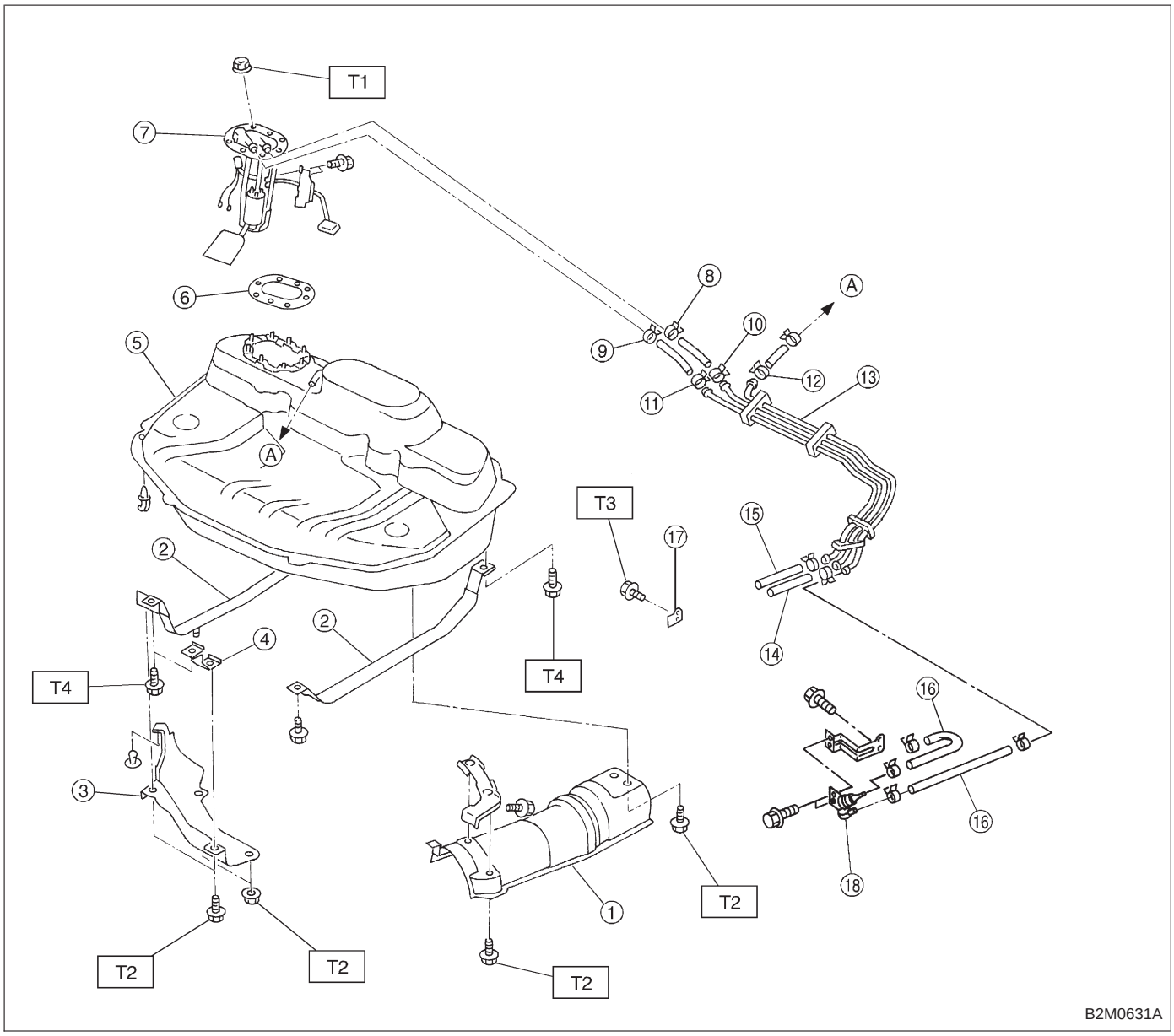
1. 2500 cc AWD MODEL



① Heat sealed cover
② Fuel tank band
③ Protector LH
④ Protector RH
⑤ Fuel tank
⑥ Fuel pump gasket
⑦ Fuel pump ASSY
⑧ Fuel cut valve gasket
⑨ Fuel cut valve
⑩ Evaporation hose C
⑪ Evaporation hose A
⑫ Clip
⑬ Joint pipe
⑭ Evaporation hose B
⑮ Evaporation pipe ASSY
⑯ Evaporation hose D
⑰ Clamp
⑱ Jet pump hose A
⑲ Fuel delivery hose A
⑳ Fuel return hose A
㉑ Fuel pipe ASSY
㉒ Jet pump hose B
㉓ Fuel delivery hose B
㉔ Fuel return hose B
㉕ Evaporation hose E
㉖ Fuel sub meter gasket
㉗ Jet pump filter
㉘ Fuel sub meter unit
㉙ Roll over valve

Tightening torque: N·m (kg-m, ft-lb)
T1: 4.4±1.5 (0.45±0.15, 3.3±1.1)
T2: 7.4±2.0 (0.75±0.2, 5.4±1.4)
T3: 33±10 (3.4±1.0, 25±7)

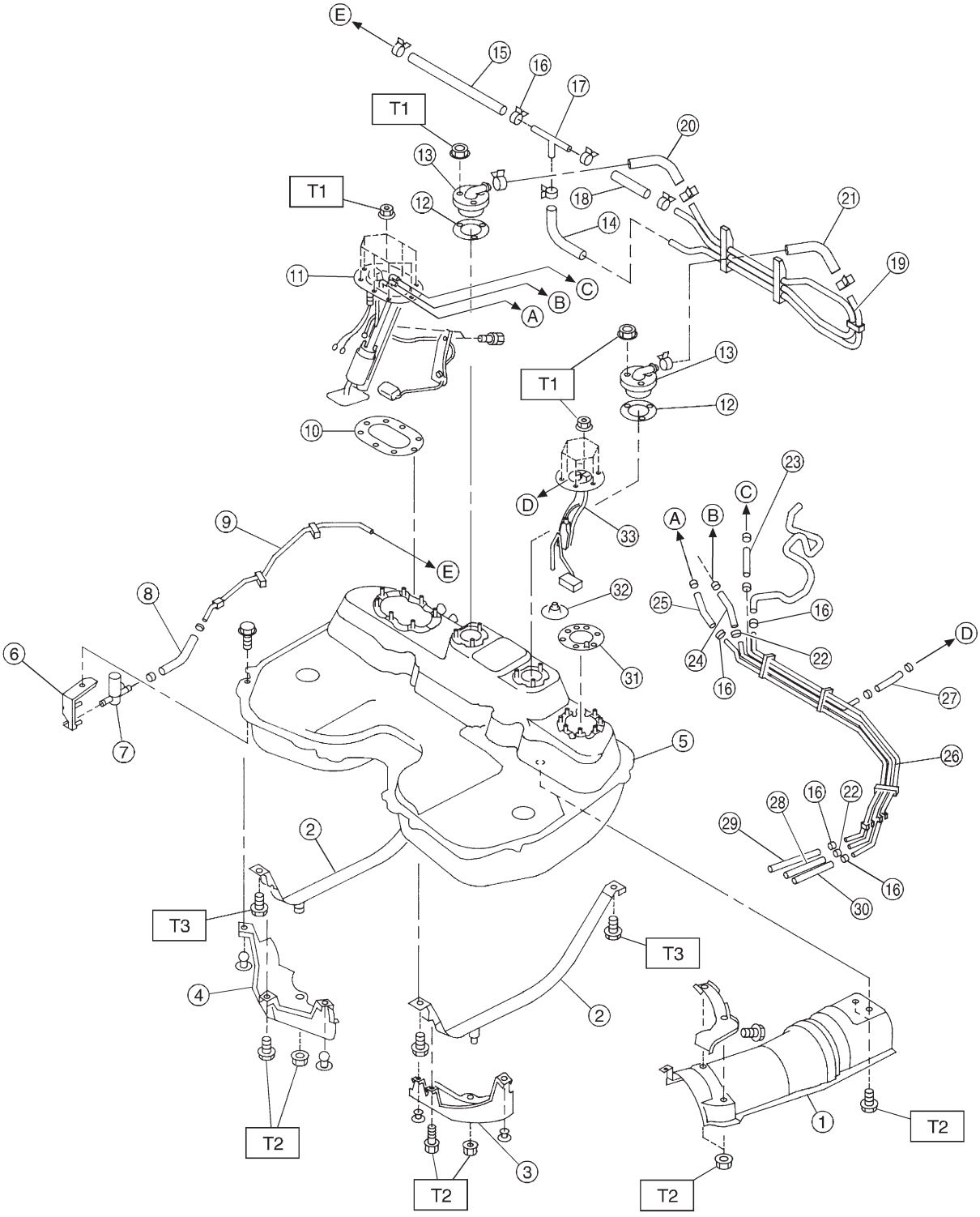
2. FWD MODEL



① Heat seated cover
② Fuel tank band
③ Protector
④ Protector bracket
⑤ Fuel tank
⑥ Fuel pump gasket
⑦ Fuel pump ASSY
⑧ Clamp
⑨ Clip
⑩ Fuel delivery hose A
⑪ Fuel return hose A
⑫ Evaporation hose A
⑬ Fuel pipe ASSY
⑭ Fuel delivery hose B
⑮ Fuel return hose B
⑯ Evaporation hose B
⑰ Plate
⑱ Roll over valve

Tightening torque: N·m (kg-m, ft-lb)
T1: 4.4±1.5 (0.45±0.15, 3.3±1.1)
T2: 7.4±0.2 (0.75±0.2, 5.4±1.4)
T3: 18±5 (1.8±0.5, 13.0±3.6)
T4: 33±10 (3.4±1.0, 25±7)

3. 2200 cc AWD MODEL



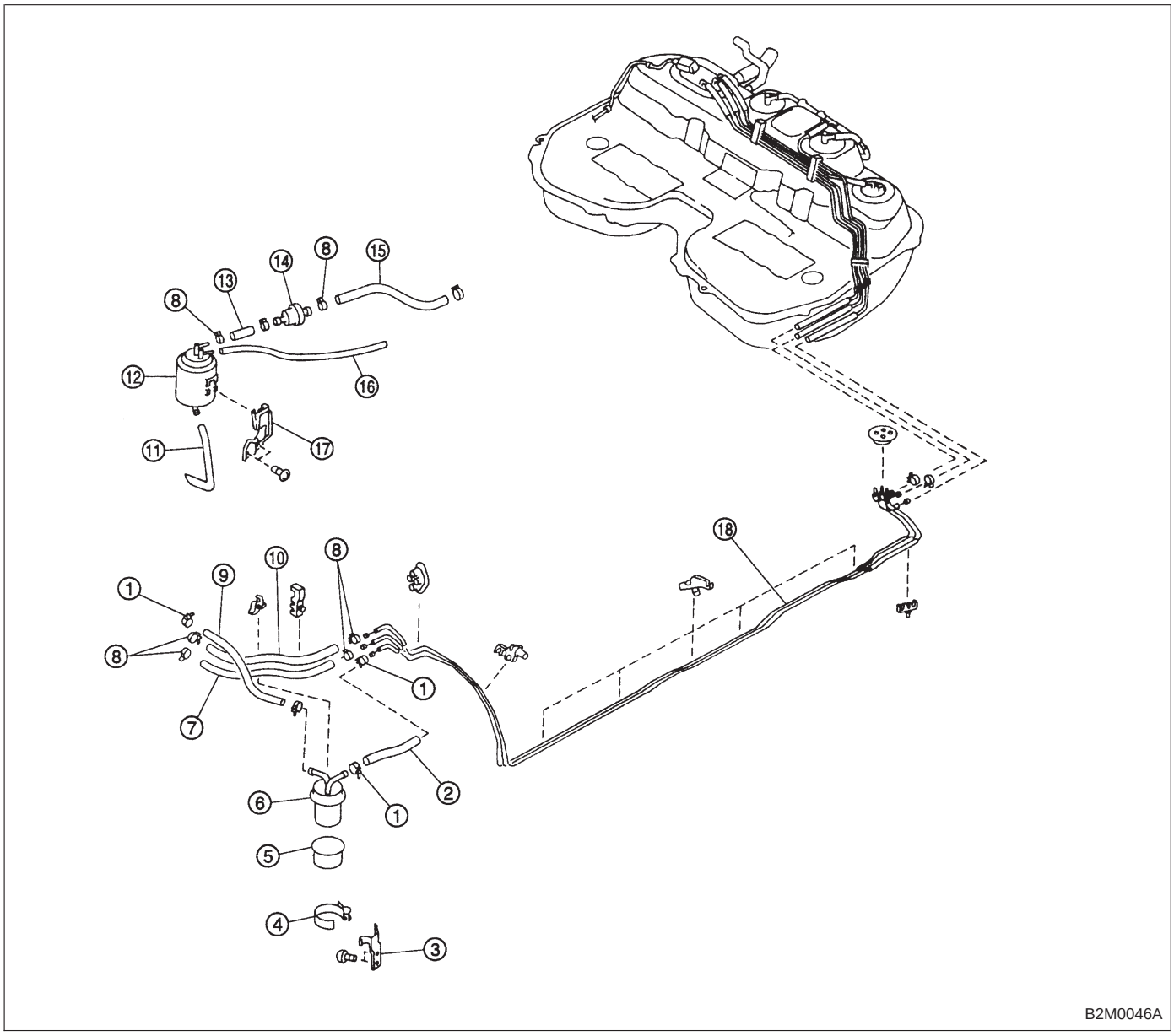
B2M0975A

① Heat sealed cover
② Fuel tank band
③ Protector LH
④ Protector RH
⑤ Fuel tank
⑥ Pressure control solenoid valve bracket
⑦ Pressure control solenoid valve
⑧ Evaporation hose G
⑨ Evaporation pipe A
⑩ Fuel pump gasket
⑪ Fuel pump ASSY
⑫ Fuel cut valve gasket
⑬ Fuel cut valve
⑭ Evaporation hose C
⑮ Evaporation hose A
⑯ Clip
⑰ Joint pipe
⑱ Evaporation hose B
⑲ Evaporation pipe ASSY
⑳ Evaporation hose D
㉑ Evaporation hose E
㉒ Clamp
㉓ Jet pump hose A
㉔ Fuel delivery hose A
㉕ Fuel return hose A
㉖ Fuel pipe ASSY
㉗ Jet pump hose B
㉘ Fuel delivery hose B
㉙ Fuel return hose B
㉚ Evaporation hose F
㉛ Fuel sub meter gasket
㉜ Jet pump filter
㉝ Fuel sub meter unit

Tightening torque: N·m (kg-m, ft-lb)
T1: 4.4±1.5 (0.45±0.15, 3.3±1.1)
T2: 7.4±2.0 (0.75±0.2, 5.4±1.4)
T3: 33±10 (3.4±1.0, 25±7)

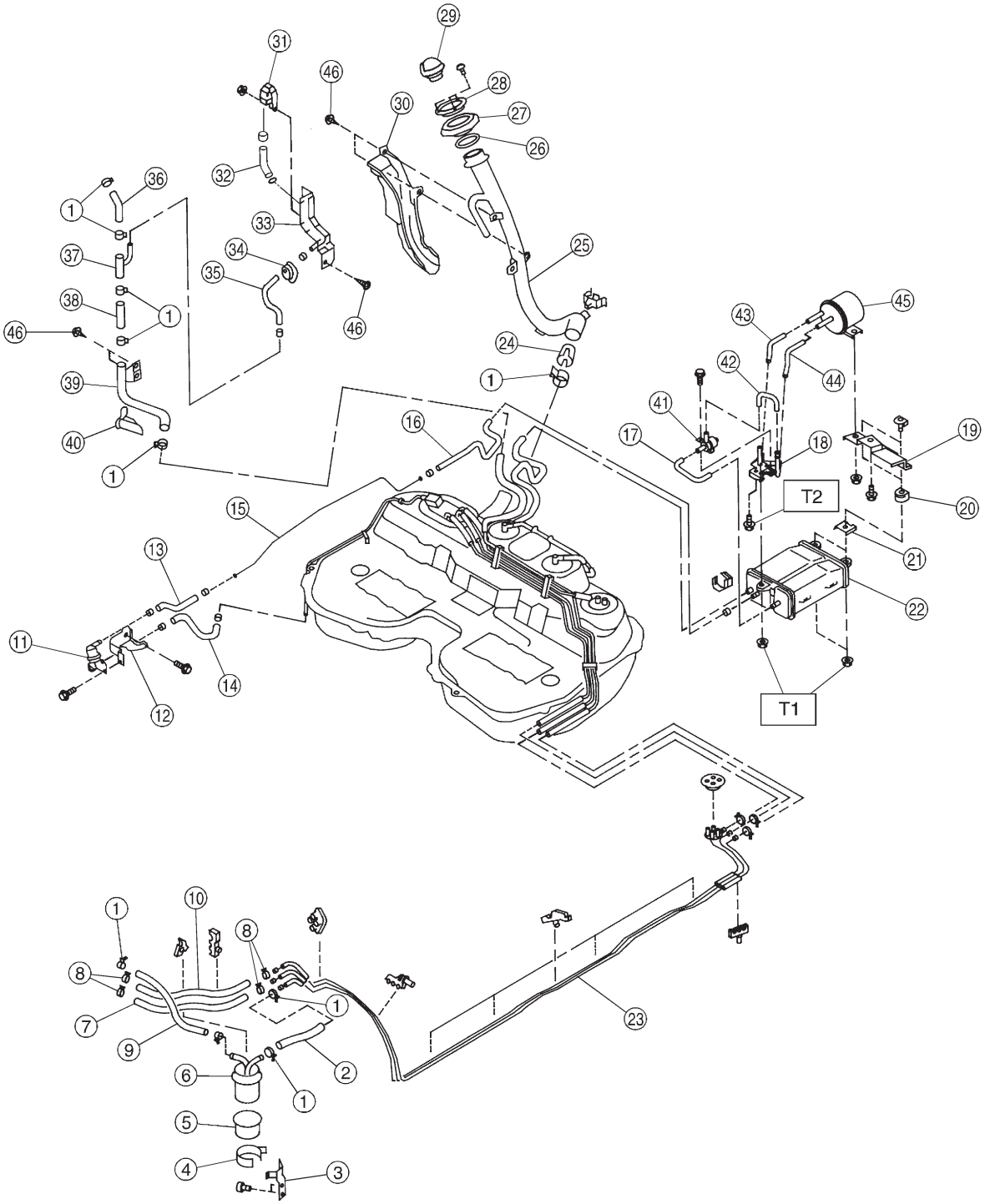
2. Fuel Line

1. 2200 cc FWD AND 2500 cc MODEL



① Clamp
② Fuel delivery hose A
③ Fuel filter bracket
④ Fuel filter holder
⑤ Fuel filter cup
⑥ Fuel filter
⑦ Evaporation hose
⑧ Clip
⑨ Fuel delivery hose B
⑩ Fuel return hose
⑪ Air vent hose
⑫ Canister
⑬ Canister hose A
⑭ Two-way valve
⑮ Canister hose B
⑯ Canister hose C
⑰ Canister bracket
⑱ Fuel pipe ASSY

2. 2200 cc AWD MODEL

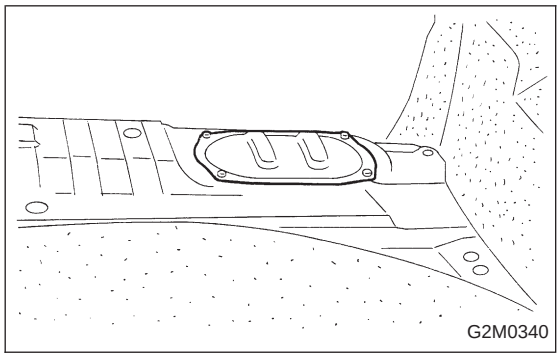


① Clamp
② Fuel delivery hose A
③ Fuel filter bracket
④ Fuel filter holder
⑤ Fuel filter cup
⑥ Fuel filter
⑦ Evaporation hose
⑧ Clip
⑨ Fuel delivery hose B
⑩ Fuel return hose
⑪ Roll over valve
⑫ Roll over valve bracket
⑬ Evaporation hose H
⑭ Evaporation hose I
⑮ Evaporation pipe B
⑯ Canister hose A
⑰ Canister hose B
⑱ Canister holder
⑲ Canister upper bracket
⑳ Cushion rubber
㉑ Canister lower bracket
㉒ Canister
㉓ Fuel pipe ASSY
㉔ Fuel filler valve
㉕ Fuel filler pipe
㉖ Packing
㉗ Ring A
㉘ Ring B
㉙ Fuel filler cap
㉚ Fuel filler pipe protector
㉛ Fuel tank pressure sensor
㉜ Fuel tank pressure sensor hose A
㉝ Fuel tank pressure sensor bracket
㉞ Grommet
㉟ Fuel tank pressure sensor hose B
㊱ Air ventilator hose A
㊲ Air ventilator pipe A
㊳ Air ventilator hose B
㊴ Air ventilator pipe B
㊵ Air ventilator pipe protector
㊶ Vent control solenoid valve
㊷ Vent control solenoid valve hose
㊸ Air filter hose A
㊹ Air filter hose B
㊺ Air filter
㊻ Tapping screw

Tightening torque: N·m (kg-m, ft-lb)
T1: 23±7 (2.3±0.7, 17±5.1)
T2: 25±7 (2.5±0.7, 18±5.1)

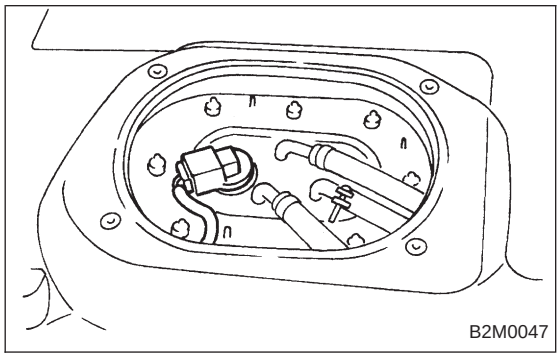
1. Precautions

WARNING:
- **Place “No fire” signs near the working area.**
- **Disconnect ground terminal from battery.**
- **Be careful not to spill fuel on the floor.**

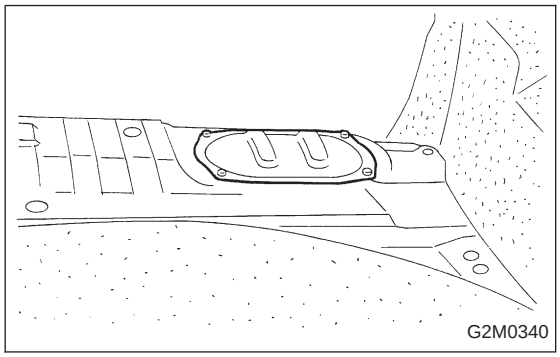


A: RELEASING OF FUEL PRESSURE

1) Take off floor mat.
2) Remove access hole lid.

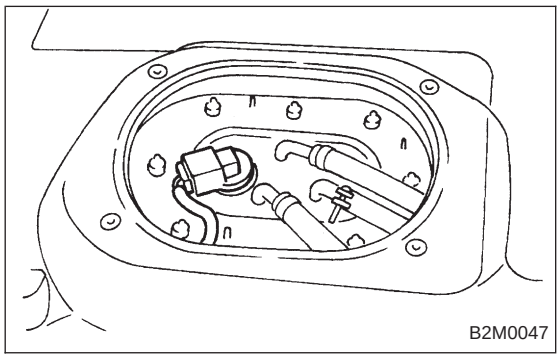


3) Disconnect connector from fuel pump.
4) Start the engine, and run it until it stalls.
5) After the engine stalls, crank it for five more seconds.
6) Turn ignition switch OFF.

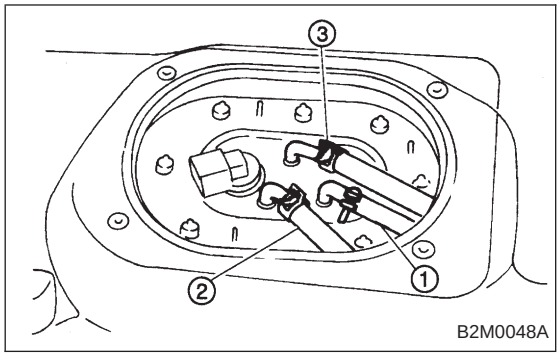


B: DRAINING OF FUEL

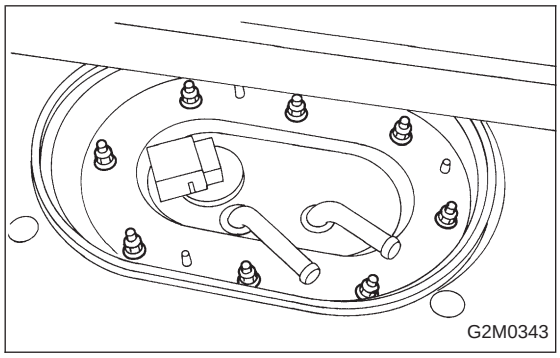
1) Remove rear seat and seat back.
2) Remove access hole lid.



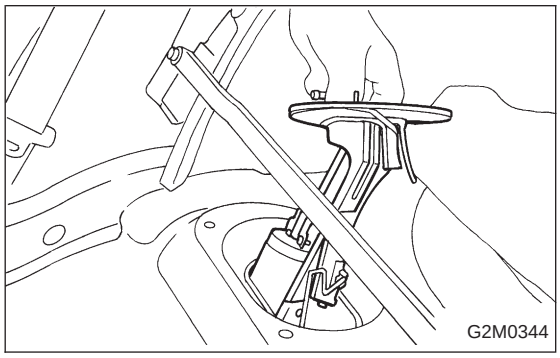
3) Disconnect connector from fuel pump.
4) Release fuel pressure. <Ref. to 2-8 [W1A0].>



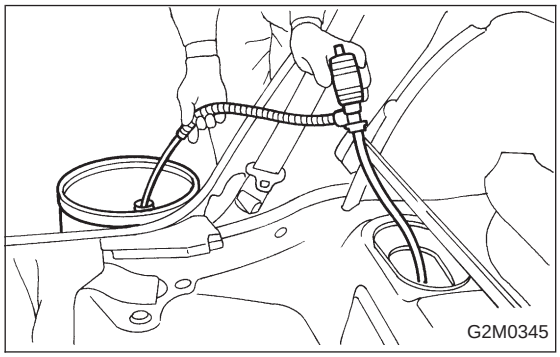
5) Disconnect fuel delivery hose ① and return hose ②.
6) Disconnect jet pump hose ③. (AWD model)



7) Remove nuts which install fuel pump assembly onto fuel tank.

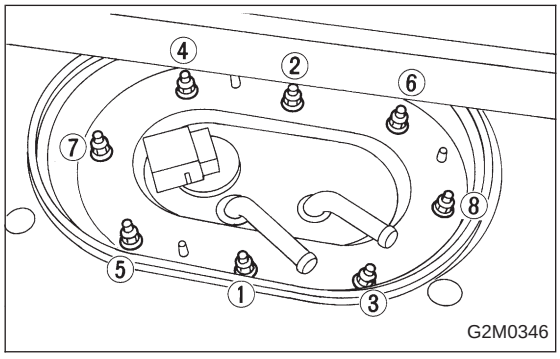


8) Take off fuel pump from fuel tank.



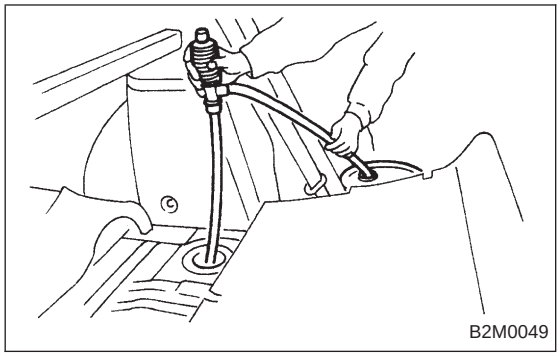
9) Drain fuel from fuel tank by using a hand pump.

WARNING:
Do not use a motor pump when draining fuel.



10) After draining fuel, reinstall fuel pump.
Tighten nuts in numerical sequence shown in Figure to specified torque.

Tightening torque:
4.4±1.5 N·m (0.45±0.15 kg-m, 3.3±1.1 ft-lb)


B2M0049

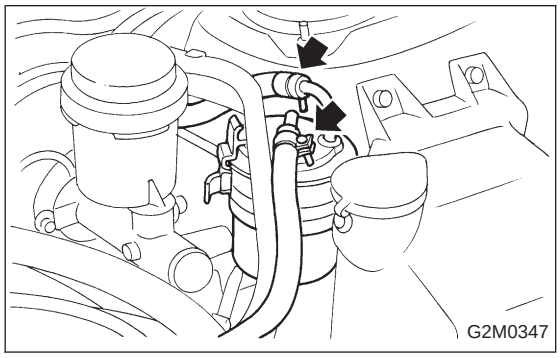
11) On AWD model, after removing fuel sub meter unit, drain fuel from there.

WARNING:
Do not use a motor pump when draining fuel.

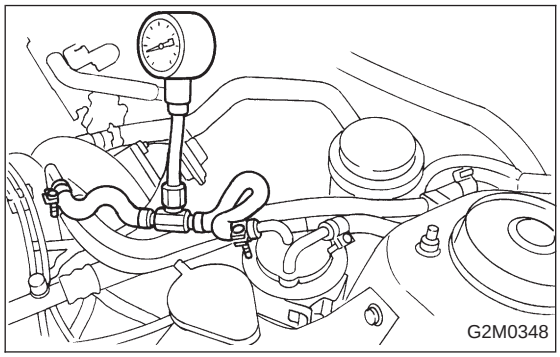
2. On-Car Services

A: MEASUREMENT OF FUEL PRESSURE

1) Release fuel pressure. <Ref. to 2-8 [W1A0].>
2) Connect connector to fuel pump.


G2M0347

3) Disconnect fuel delivery hoses from fuel filter, and connect fuel pressure gauge.


G2M0348

4) Start the engine.
5) Measure fuel pressure while disconnecting pressure regulator vacuum hose from collector chamber.

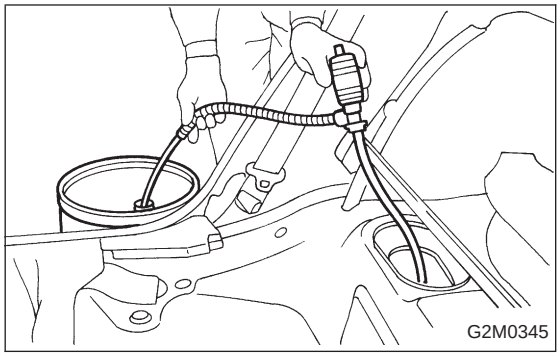
Fuel pressure:
235 — 265 kPa (2.4 — 2.7 kg/cm^2, 34 — 38 psi)

6) After connecting pressure regulator vacuum hose, measure fuel pressure.

Fuel pressure:
177 — 206 kPa (1.8 — 2.1 kg/cm^2, 26 — 30 psi)

WARNING:
Before removing fuel pressure gauge, release fuel pressure.

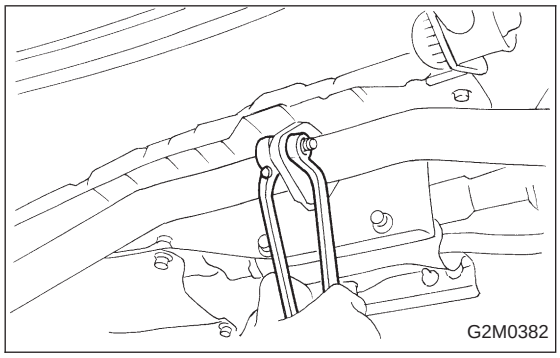
NOTE:
If out of specification as measured at step 6), check or replace pressure regulator and pressure regulator vacuum hose.


G2M0345

3. Fuel Tank

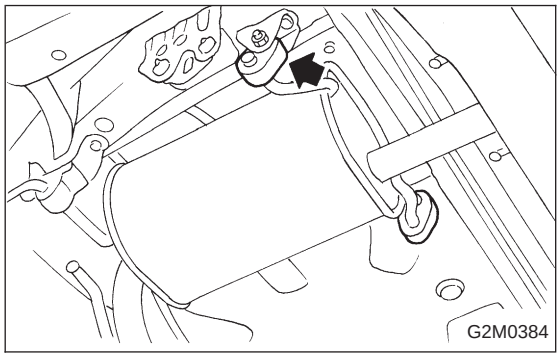
A: REMOVAL

1) Release fuel pressure. <Ref. to 2-8 [W1A0].>
2) Drain fuel from fuel tank. <Ref. to 2-8 [W1B0].>


G2M0382

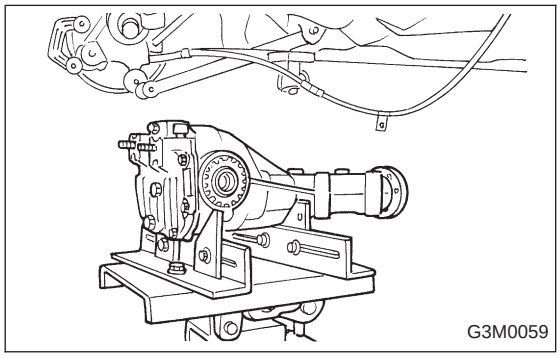
3) Remove rear exhaust pipe.
   (1) Lift-up the vehicle.
   (2) Separate rear exhaust pipe from center exhaust pipe.
   (3) Separate rear exhaust pipe from muffler.
   (4) Remove bracket from rubber cushion, and remove exhaust pipe.

NOTE:
To facilitate the removal of parts, apply a coat of SUBARU CRC5-56 (Part No. 004301003)
<Ref. to 2-9 [W2A0].>


G2M0384

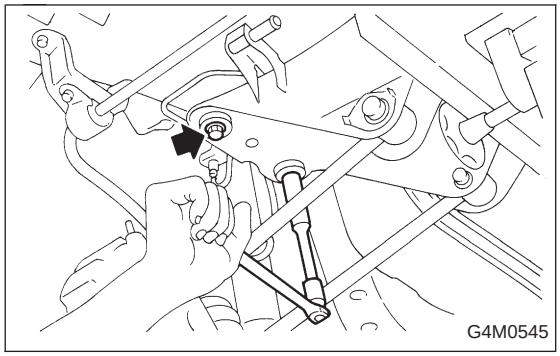
4) Remove muffler assembly.

NOTE:
To facilitate the removal of parts, apply a coat of SUBARU CRC5-56 (Part No. 004301003)
<Ref. to 2-9 [W3A0].>

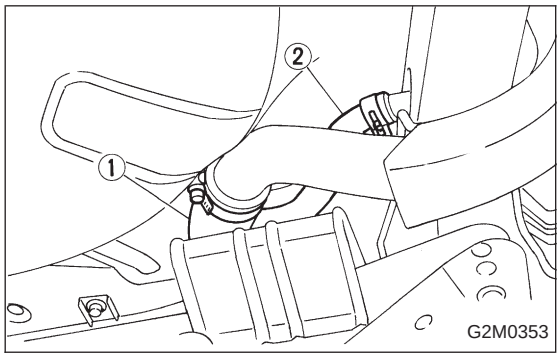

G3M0059

5) Remove rear differential assembly. (AWD model)
   (1) Remove rear axle shafts from rear differential assembly.
   (2) Remove rear differential front cover.
   (3) Remove propeller shaft.
   (4) Remove lower differential bracket.
   (5) Set transmission jack under rear differential.
   (6) Remove bolts which install rear differential onto rear crossmember.

<Ref. to 3-4 [W2B0].>


G4M0545

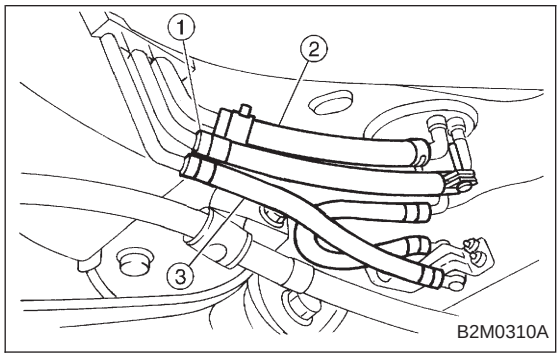
6) Remove rear crossmember. (AWD model)
<Ref. to 4-1 [W11A0].>



G2M0353

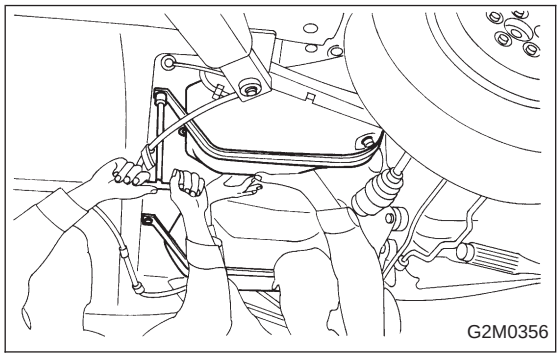
7) Loosen clamp, and disconnect fuel filler hose from pipe.
8) Loosen clamp, and disconnect air vent hose from air vent pipe.

① Fuel filler hose
② Air vent hose



B2M0310A

9) Loosen clip and clamps, and disconnect fuel delivery hose ①, return hose ② and evaporation hose ③.

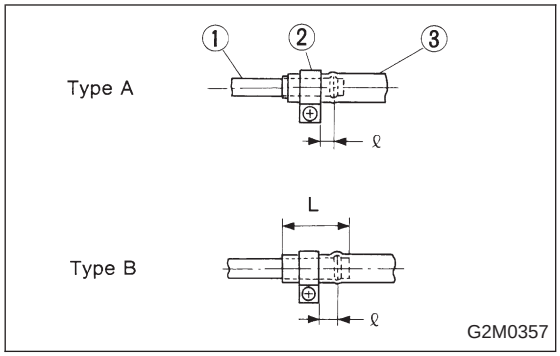

G2M0356

10) While holding fuel tank, remove bolts from bands and dismount fuel tank.

WARNING:
A helper is required to perform step 10).

B: INSTALLATION

Installation is in the reverse order of removal. Do the following:
1) When installing fuel tank, have a helper hold fuel tank while installing bands.
2) Before tightening band mounting bolts, connect fuel system hoses.



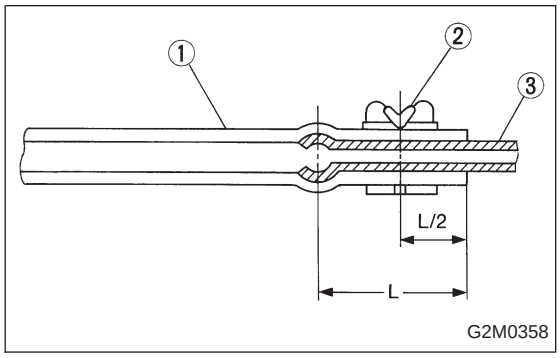
3) Install hose and hold down clips at positions indicated in Figure.

Tightening torque:
1.0 $^{+0.5}_{-0}$ N·m (0.1 $^{+0.05}_{-0}$ kg-m, 0.7 $^{+0.4}_{-0}$ ft-lb)

Type A: When fitting length is specified.
Type B: When fitting length is not specified.

① Fitting
② Clamp
③ Hose

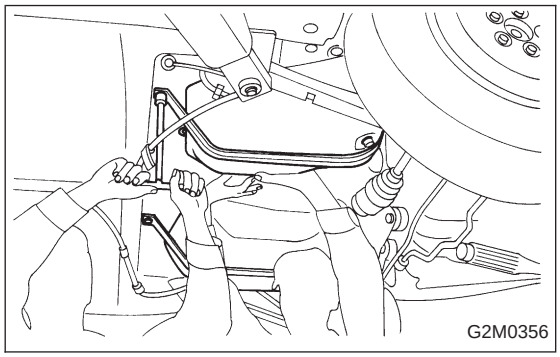
ℓ : 1.0 — 4.0 mm (0.039 — 0.157 in)
L: 20 — 25 mm (0.79 — 0.98 in)



① Hose
② Clip
③ Pipe

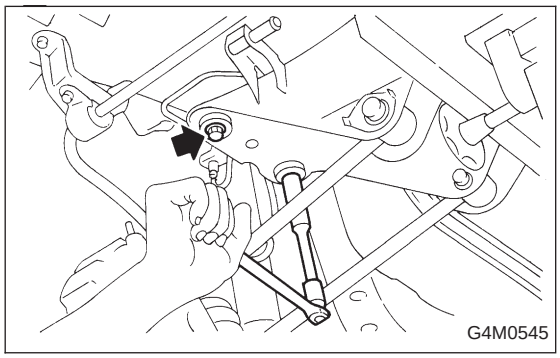
Fuel return hose:
L = 20 — 25 mm (0.79 — 0.98 in)

Evaporation hose:
L = 15 — 20 mm (0.59 — 0.79 in)

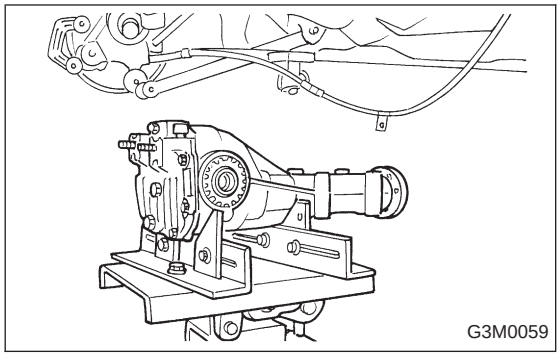


4) Tighten band mounting bolts.

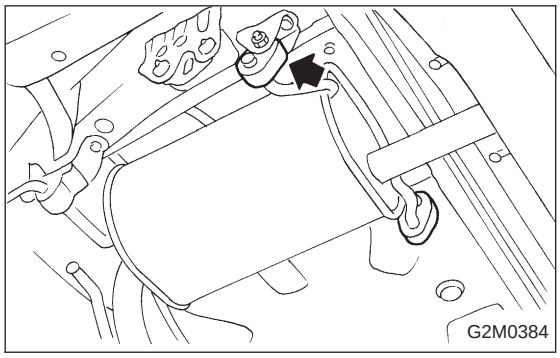
Tightening torque:
33±10 N·m (3.4±1.0 kg-m, 25±7 ft-lb)



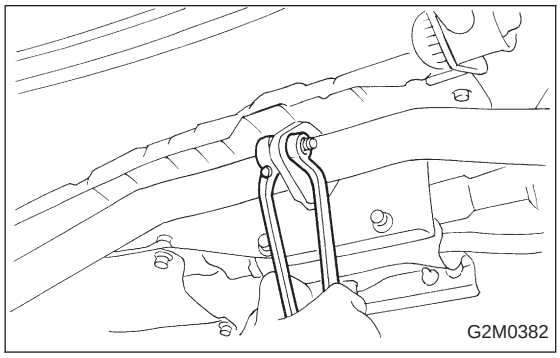
5) Install rear crossmember. <Ref. to 4-1 [W11C0].>


G3M0059

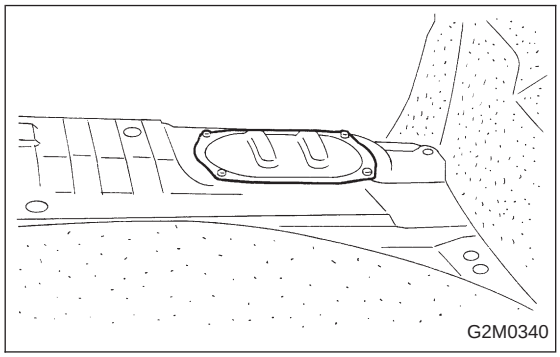
6) Install rear differential assembly. <Ref. to 3-4 [W2F0].>


G2M0384

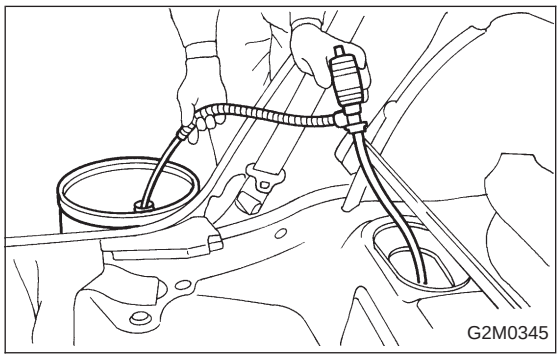
7) Install muffler assembly.


G2M0382

8) Install heat sealed cover.
9) Install rear exhaust pipe.


G2M0340

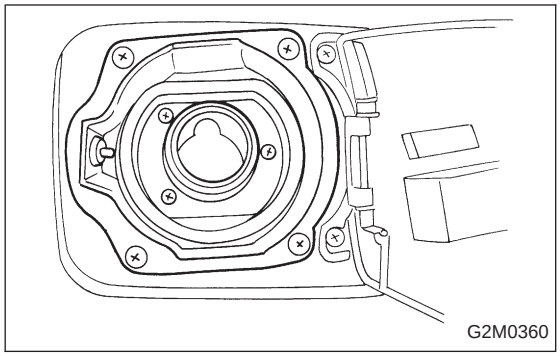
10) Lower the vehicle, and connect connector to fuel pump.
11) Install access hole lid.


G2M0345

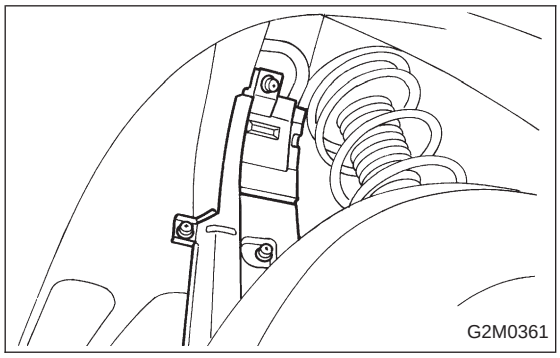
4. Fuel Filler Pipe

A: REMOVAL

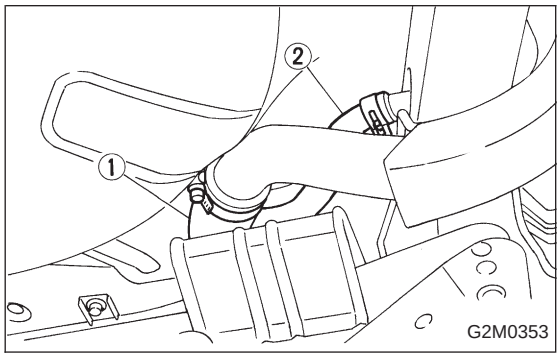
1) Release fuel pressure. <Ref. to 2-8 [W1A0].>
2) Drain fuel from fuel tank. <Ref. to 2-8 [W1B0].>



3) Remove right rear wheel.
4) Open fuel filler flap and remove filler cap.
5) Remove screws holding packing in place.

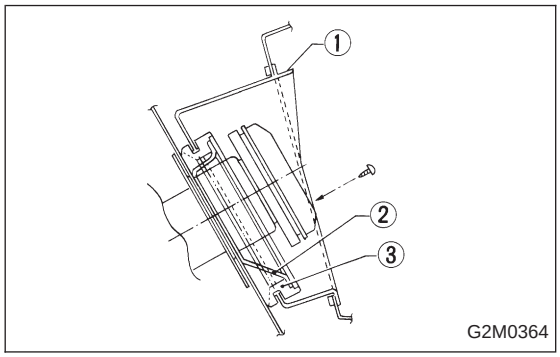


6) Lift-up the vehicle.
7) Remove fuel filler pipe protector.



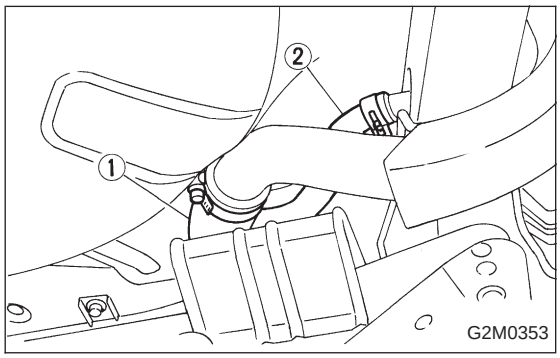
8) Remove clip, and separate air vent hose from pipe.
9) Loosen clamp, and separate fuel filler hose from pipe.
① Fuel filler hose
② Air vent hose
10) Remove fuel filler pipe to under side of the vehicle.

B: INSTALLATION



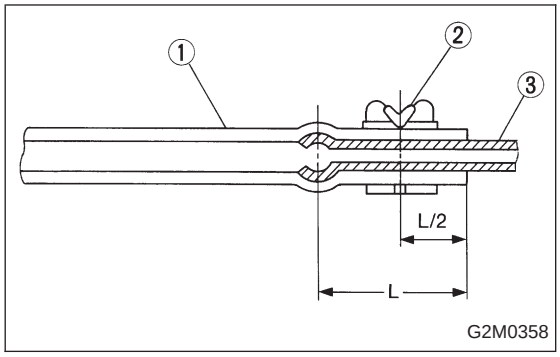
1) Hold fuel filler flap open.
2) Set fuel saucer ① with rubber packing ③, and insert fuel filler pipe into hole from the inner side of apron.
3) Align holes in fuel filler pipe neck and set cup ②, and tighten screws.

NOTE:
If edges of rubber packing are folded toward the inside, straighten it with a screwdriver.



4) Insert fuel filler hose approximately 25 to 30 mm (0.98 to 1.18 in) over the lower end of fuel filler pipe and tighten clamp.
① Fuel filler hose
② Air vent hose

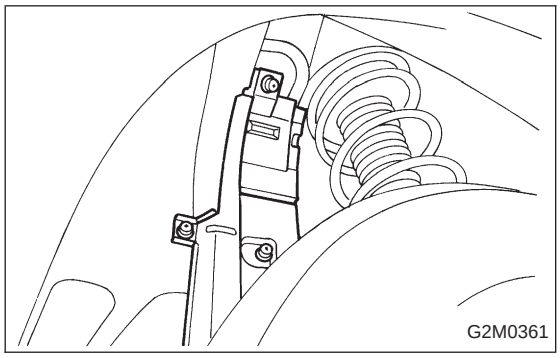
CAUTION:
Do not allow clips to touch air vent hose and rear suspension crossmember.



5) Insert air vent hose approximately 25 to 30 mm (0.98 to 1.18 in) into the lower end of air vent pipe and hold clip.

① Hose
② Clip
③ Pipe

L = 25 — 30 mm (0.98 — 1.18 in)

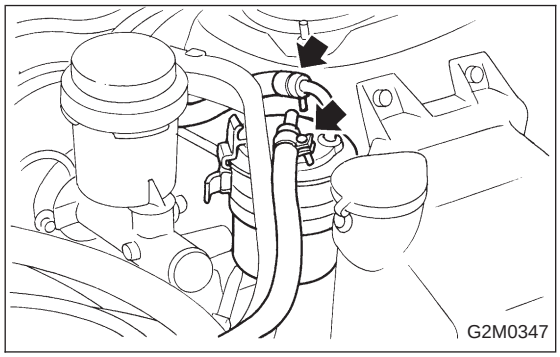


6) Install fuel filler pipe protector.
7) Install right rear wheel.

5. Fuel Filter

A: REMOVAL

1) Release fuel pressure. <Ref. to 2-8 [W1A0].>



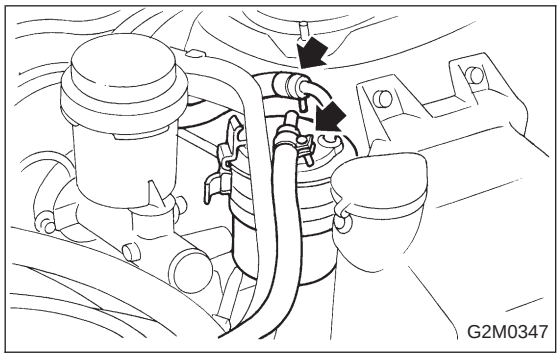
2) Disconnect fuel delivery hoses from fuel filter.
3) Remove filter from holder.

B: INSPECTION

1) Check the inside of fuel filter for dirt and water sediment.
2) If it is clogged, or if replacement interval has been reached, replace it.
3) If water is found in it, shake and expel the water from inlet port.

C: INSTALLATION

CAUTION:
● If fuel hoses are damaged at the connecting portion, replace it with a new one.
● If clamps are badly damaged, replace with new ones.

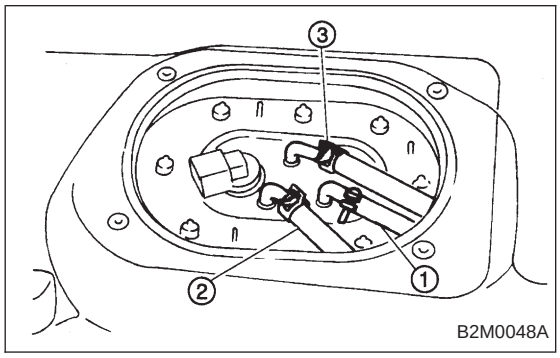

G2M0347

1) Installation is in the reverse order of removal.
2) Tighten hose clamp screws.

Tightening torque:
1.0 $^{+0.5}_{-0}$ N·m (0.1 $^{+0.05}_{-0}$ kg-m, 0.7 $^{+0.4}_{-0}$ ft-lb)

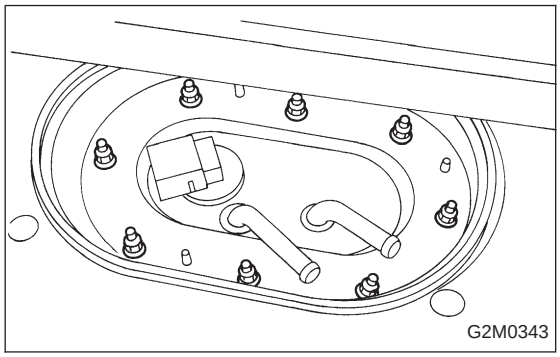
6. Fuel Pump

A: REMOVAL

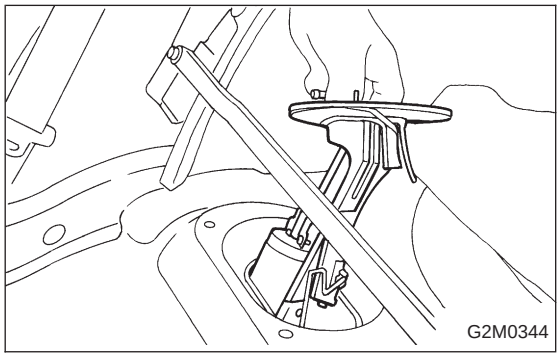


B2M0048A

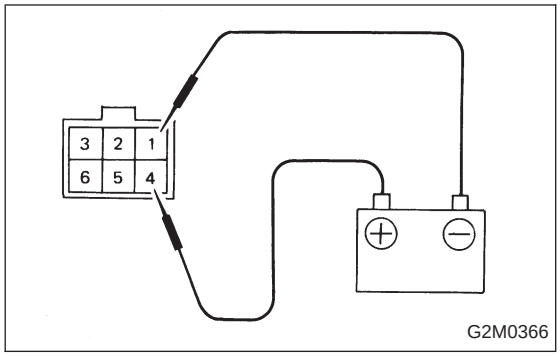
1) Release fuel pressure. <Ref. to 2-8 [W1A0].>
2) Disconnect fuel delivery hose ① and return hose ②.
3) Disconnect jet pump hose ③. (AWD model)


G2M0343

4) Remove nuts which install fuel pump assembly onto fuel tank.


G2M0344

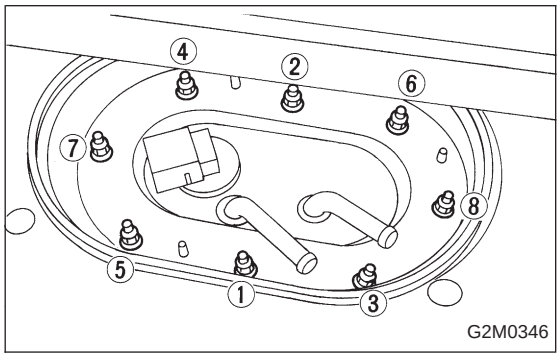
5) Take off fuel pump from fuel tank.



B: INSPECTION

Connect lead harness to connector terminal of fuel pump, and apply battery power supply to check whether the pump operate.

WARNING:
- **Wipe off the fuel completely.**
- **Keep battery as far apart from fuel pump as possible.**
- **Be sure to turn the battery supply ON and OFF on the battery side.**
- **Do not run fuel pump for a long time under non-load condition.**

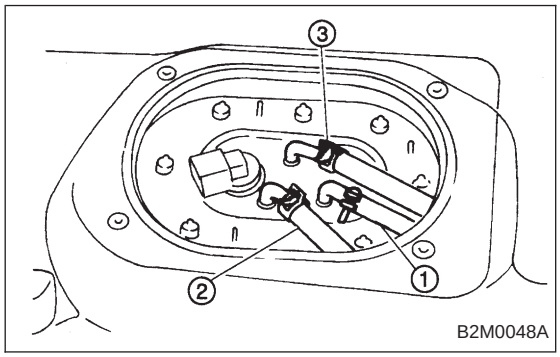


C: INSTALLATION

Installation is in the reverse order of removal. Do the following:

(1) Always use new gaskets.
(2) Ensure sealing portion is free from fuel or foreign particles before installation.
(3) Tighten nuts in numerical sequence shown in Figure to specified torque.

Tightening torque:
4.4±1.5 N·m (0.45±0.15 kg-m, 3.3±1.1 ft-lb)

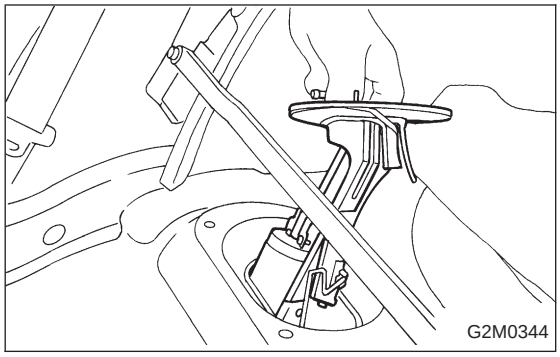


7. Fuel Meter Unit

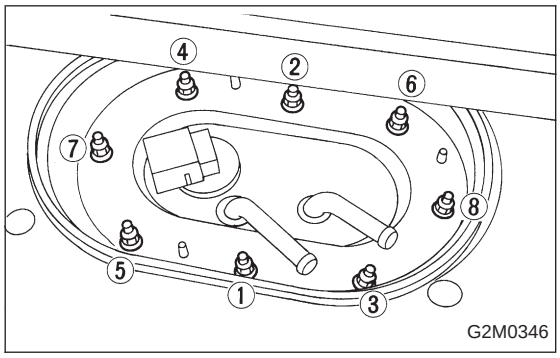
A: REMOVAL

NOTE:
Fuel meter unit is built in fuel pump assembly.

1) Release fuel pressure. <Ref. to 2-8 [W1A0].>
2) Disconnect fuel delivery hose ① and return hose ②.
3) Disconnect jet pump hose ③. (AWD model)



4) Remove nuts which install fuel pump assembly onto fuel tank.
5) Take off fuel pump assembly.



B: INSTALLATION

Installation is in the reverse order of removal. Do the following:

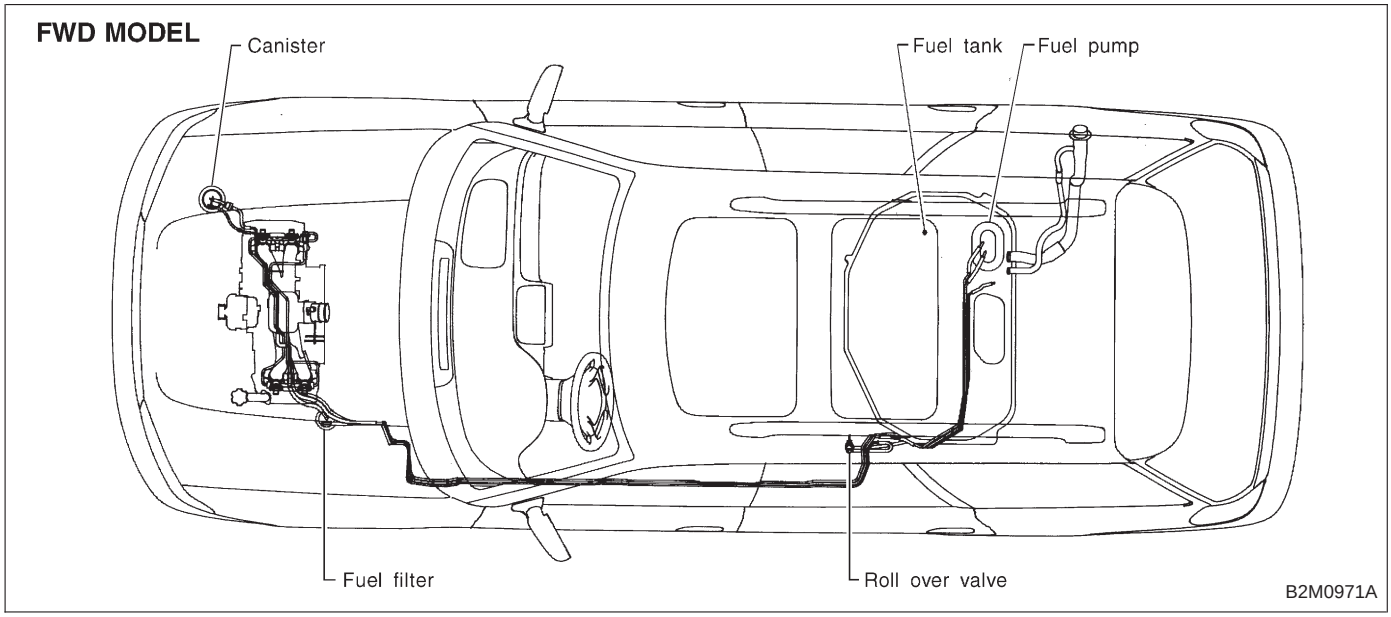
(1) Always use new gaskets.
(2) Ensure sealing portion is free from fuel or foreign particles before installation.
(3) Tighten nuts in numerical sequence shown in Figure to specified torque.

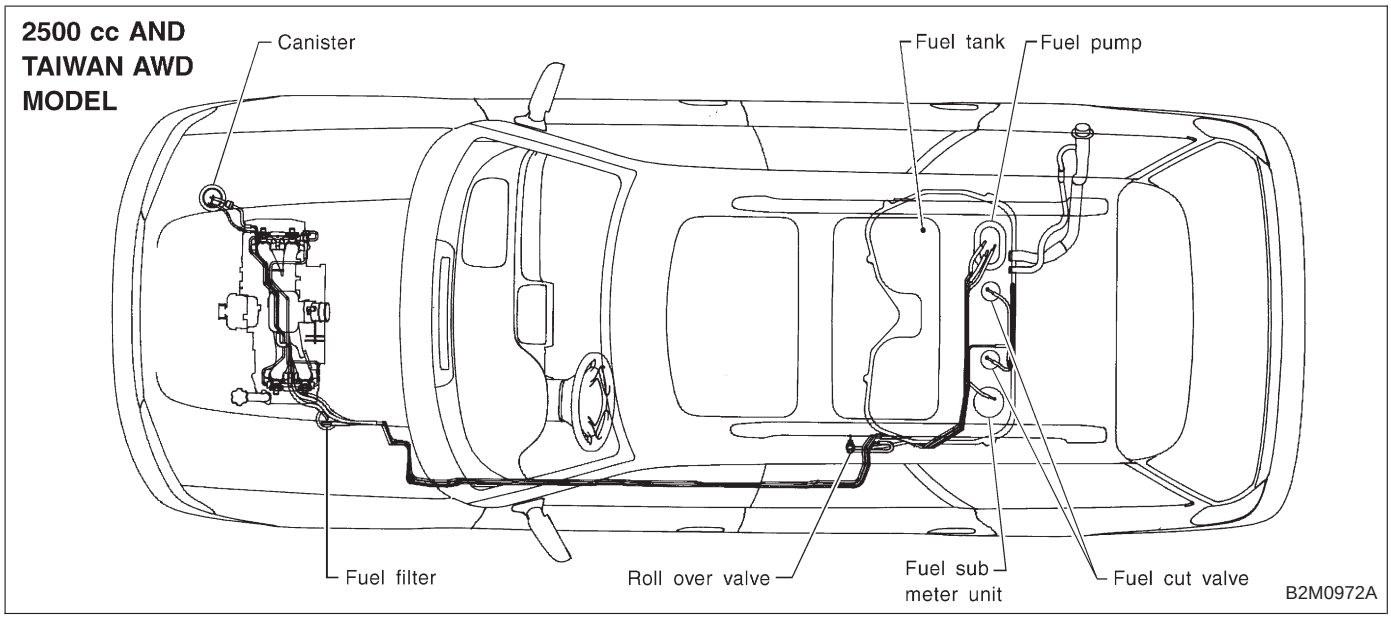
Tightening torque:
4.4±1.5 N·m (0.45±0.15 kg-m, 3.3±1.1 ft-lb)

8. Fuel Delivery, Return and Evaporation Lines

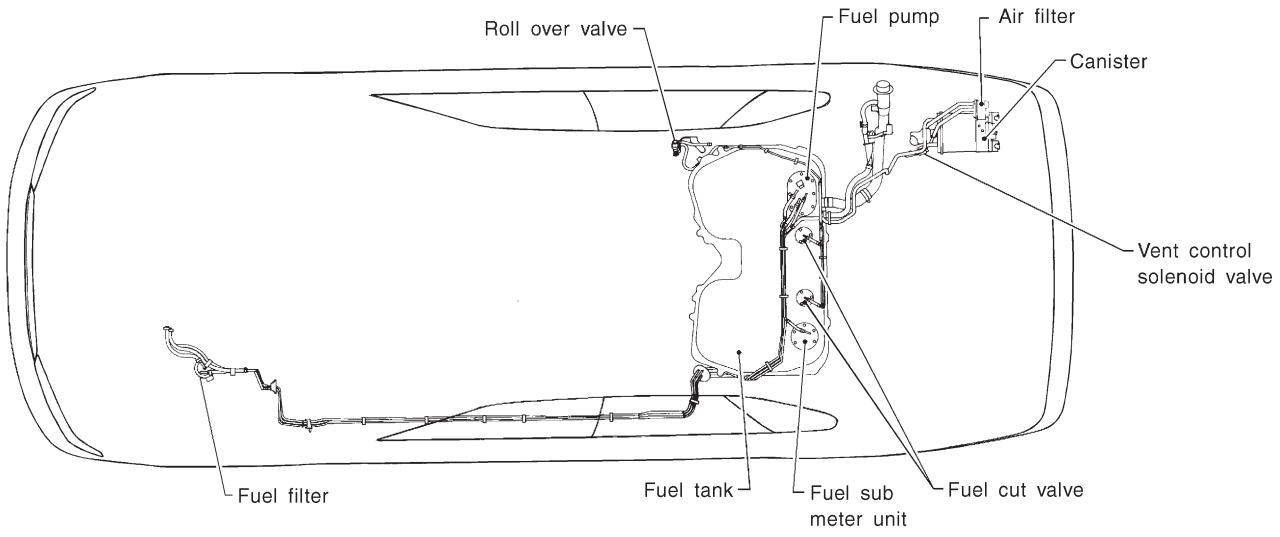
A: REMOVAL

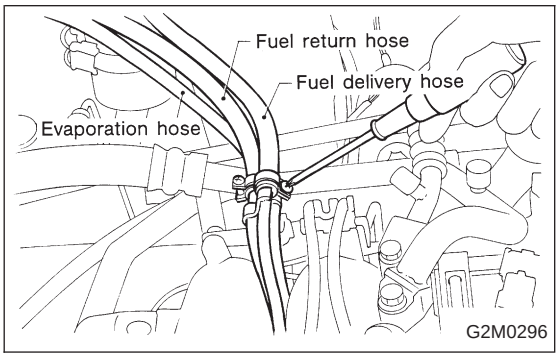
1) Release fuel pressure. <Ref. to 2-8 [W1A0].>
2) Remove inner trim, insulator and rear seat.
3) Remove fuel delivery pipes and hoses, fuel return pipes and hoses, and evaporation pipes and hoses.



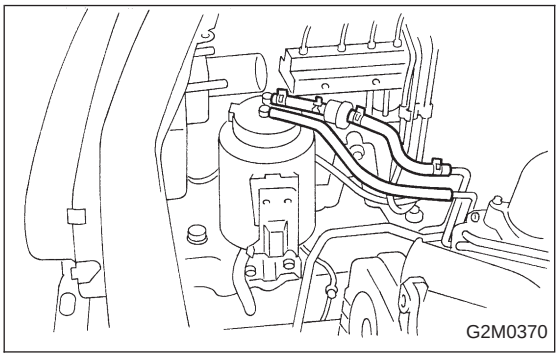


2200 cc AWD EXCEPT TAIWAN MODEL

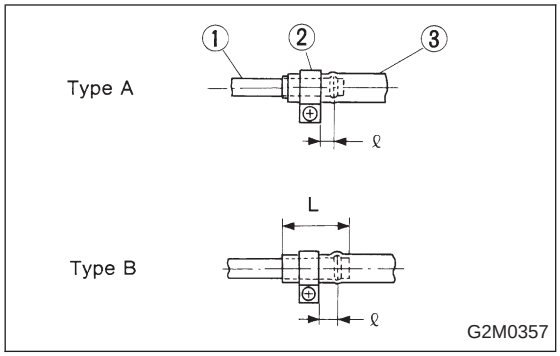




4) In engine compartment, detach fuel delivery hose, return hose and evaporation hose.



5) In engine compartment, detach canister hoses from canister. (Except 2200 cc AWD model)



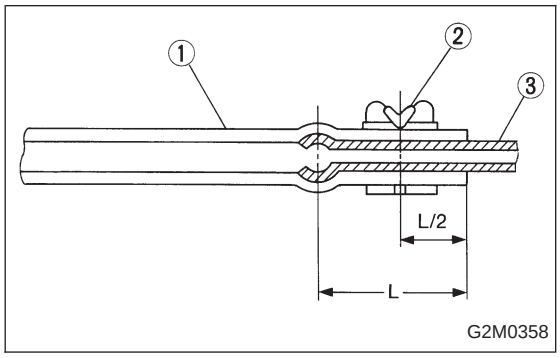
B: INSTALLATION

Installation is in the reverse order of removal.
1) Connect fuel delivery hose to pipe with an overlap of 20 to 25 mm (0.79 to 0.98 in).

Type A: When fitting length is specified.
Type B: When fitting length is not specified.

① Fitting
② Clamp
③ Hose

ℓ : 1.0 — 4.0 mm (0.039 — 0.157 in)
L: 20 — 25 mm (0.79 — 0.98 in)

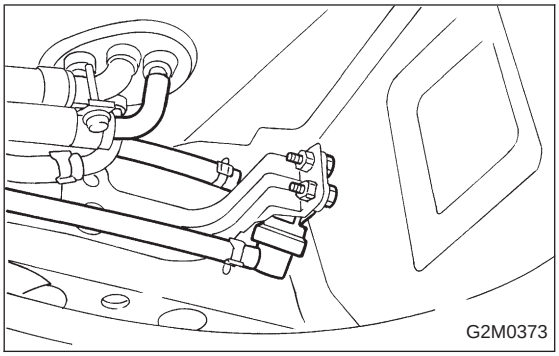


2) Connect evaporation hose to pipe by approx. 15 mm (0.59 in) from hose end.

① Hose
② Clip
③ Pipe

L = 15 — 20 mm (0.59 — 0.79 in)

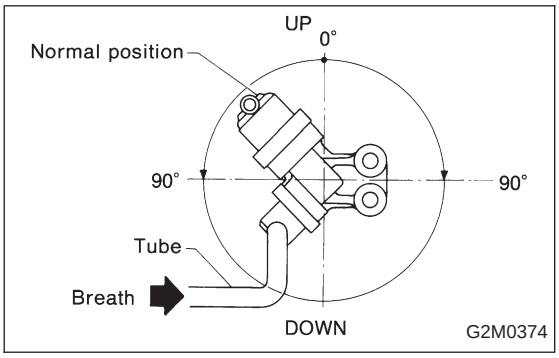
CAUTION:
Be sure to inspect hoses and their connections for any leakage of fuel.


G2M0373

9. Roll Over Valve

A: REMOVAL

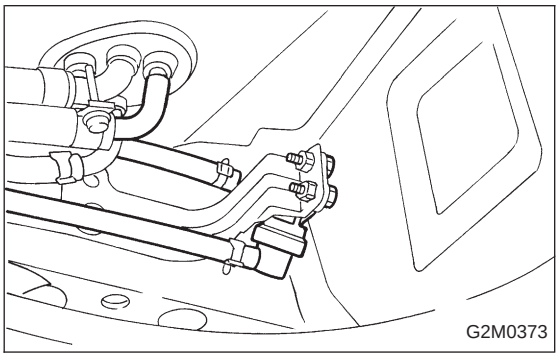
1) Lift up the vehicle.
2) Remove roll over valve with bracket.
3) Disconnect hoses from roll over valve, and remove it from bracket.



G2M0374

B: INSPECTION

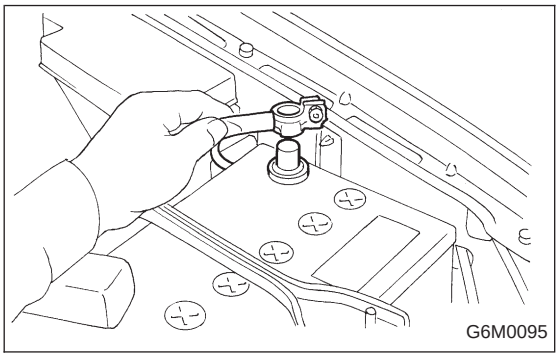
1) Connect hoses to roll over valve as shown in Figure.
2) While blowing through open end of hose, tilt valve at least 90° left and right from normal position.
3) Ensure that there is no air flow when hose is tilted greater than 90°.


G2M0373

C: INSTALLATION

Installation is in the reverse order of removal.

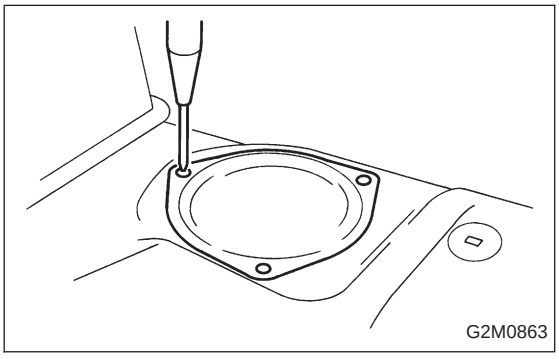
CAUTION:
- **Do not install top side of valve down.**
- **Before installing bracket on body, securely fit concave part of bracket to hole in body.**


G6M0095

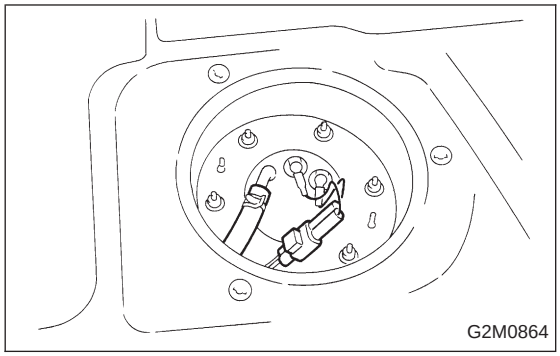
10. Fuel Sub Meter Unit (AWD model only)

A: REMOVAL AND INSTALLATION

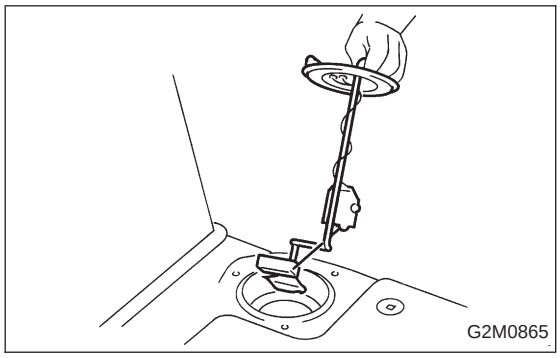
1) Disconnect battery ground cable.


G2M0863

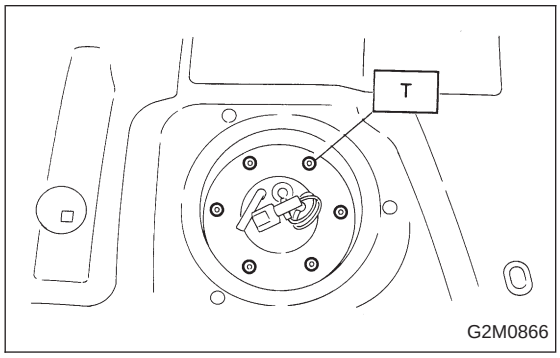
2) Remove rear seat.
3) Remove service hole cover.



4) Disconnect connector from fuel sub meter.
5) Disconnect jet pump hose.

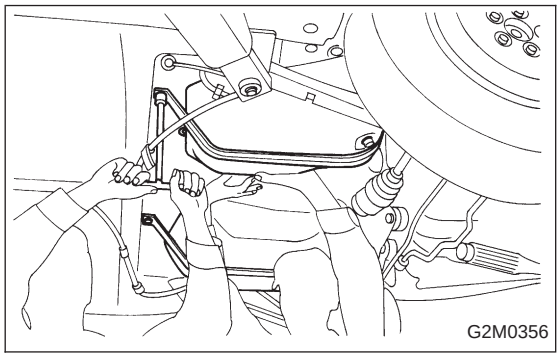


6) Remove fuel sub meter unit.



7) Installation is in the reverse order of removal procedure.

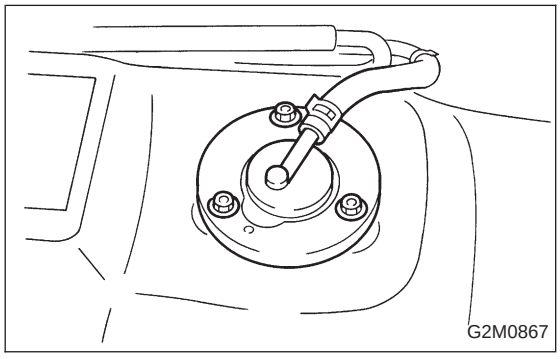
Tightening torque:
T: 3 — 6 N·m (0.3 — 0.6 kg-m, 2.2 — 4.3 ft-lb)



11. Fuel Cut Valve (AWD model only)

A: REMOVAL AND INSTALLATION

1) Remove fuel tank. <Ref. to 2-8 [W3A0].>



2) Disconnect evaporation hose from fuel cut valve.
3) Remove fuel cut valve.
4) Installation is in the reverse order of removal procedure.

Tightening torque:
4.4±1.5 N·m (0.45±0.15 kg-m, 3.3±1.1 ft-lb)

1. Fuel System

Trouble and possible cause		Corrective action
1. Insufficient fuel supply to the injector		
1)	Fuel pump will not operate.	
	◯ Defective terminal contact.	Inspect connections, especially ground, and tighten securely.
	◯ Trouble in electromagnetic or electronic circuit parts.	Replace fuel pump.
2)	Lowering of fuel pump function.	Replace fuel pump.
3)	Clogged dust or water in the fuel filter.	Replace fuel filter, clean or replace fuel tank.
4)	Clogged or bent fuel pipe or hose.	Clean, correct or replace fuel pipe or hose.
5)	Air is mixed in the fuel system.	Inspect or retighten each connection part.
6)	Clogged or bent breather tube or pipe.	Clean, correct or replace air breather tube or pipe.
7)	Damaged diaphragm of pressure regulator.	Replace.
2. Leakage or blow out fuel		
1)	Loosened joints of the fuel pipe.	Retightening.
2)	Cracked fuel pipe, hose and fuel tank.	Replace.
3)	Defective welding part on the fuel tank.	Replace.
4)	Defective drain packing of the fuel tank.	Replace.
5)	Clogged or bent air breather tube or air vent tube.	Clean, correct or replace air breather tube or air vent tube.
3. Gasoline smell inside of compartment		
1)	Loose joints at air breather tube, air vent tube and fuel filler pipe.	Retightening.
2)	Defective packing air tightness on the fuel saucer.	Correct or replace packing.
3)	Cracked fuel separator.	Replace separator.
4. Defective fuel meter indicator		
1)	Defective operation of fuel meter unit.	Replace.
2)	Defective operation of fuel meter.	Replace.
5. Noise		
1)	Large operation noise or vibration of fuel pump.	Replace.

NOTE:
When the vehicle is left unattended for an extended period of time, water may accumulate in the fuel tank.

- To prevent water condensation:

1) Top off the fuel tank or drain the fuel completely.
2) Drain water condensation from the fuel filter.

- Refilling the fuel tank:

Refill the fuel tank while there is still some fuel left in the tank.

- Protecting the fuel system against freezing and water condensation:

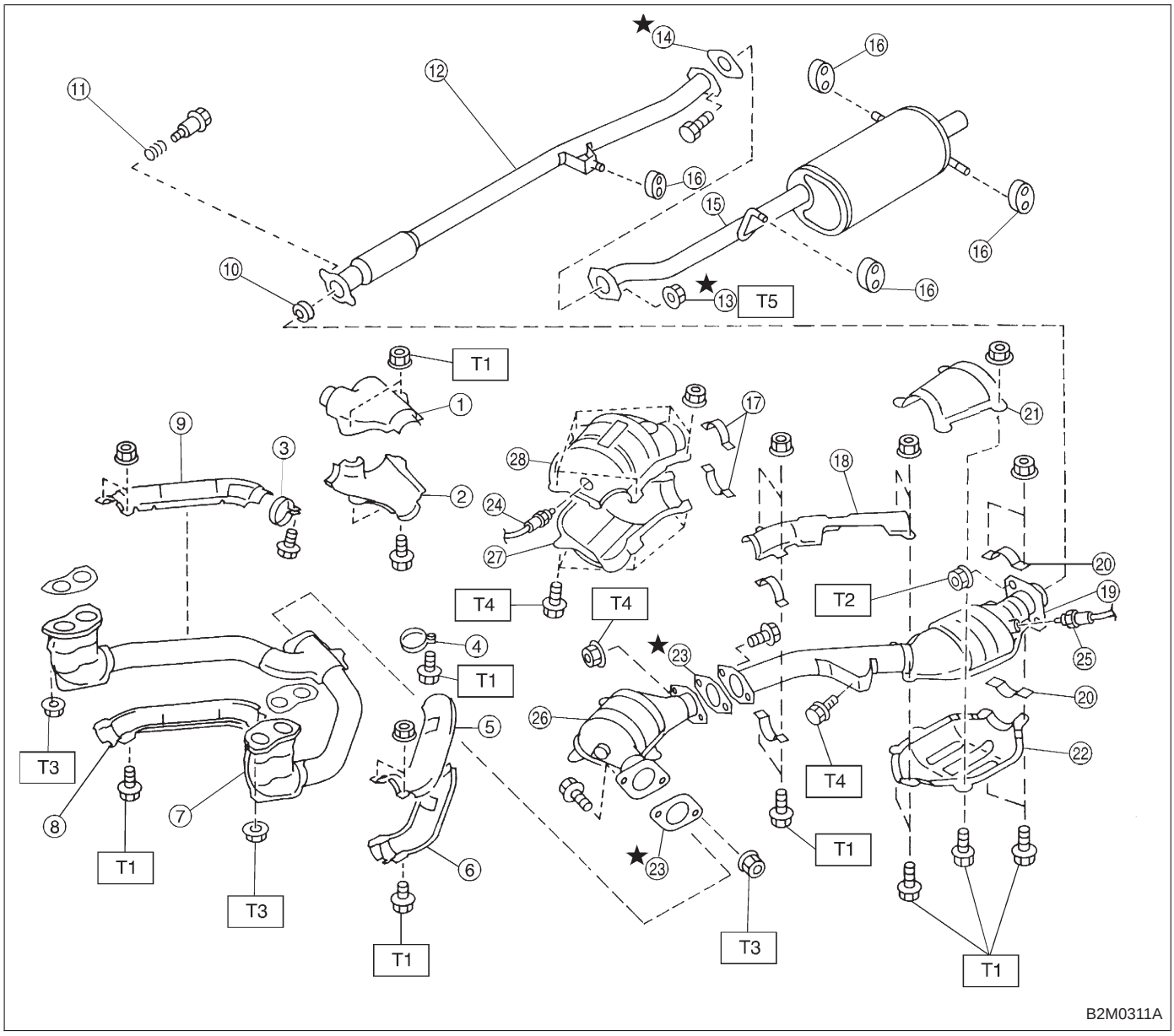
1) Cold areas
In snow-covered areas, mountainous areas, skiing areas, etc. where ambient temperatures drop below 0°C (32°F) throughout the winter season, use an anti-freeze solution in the cooling system. Refueling will also complement the effect of anti-freeze solution each time the fuel level drops to about one-half. After the winter season, drain water which may have accumulated in the fuel filter and fuel tank in the manner same as that described under affected areas as below.
2) Affected areas
When water condensation is notched in the fuel filter, drain water from both the fuel filter and fuel tank or use a water removing agent (or anti-freeze solution) in the fuel tank.

- Observe the instructions, notes, etc., indicated on the label affixed to the anti-freeze solution (water removing agent) container before use.

EXHAUST SYSTEM 2-9

1. Exhaust System

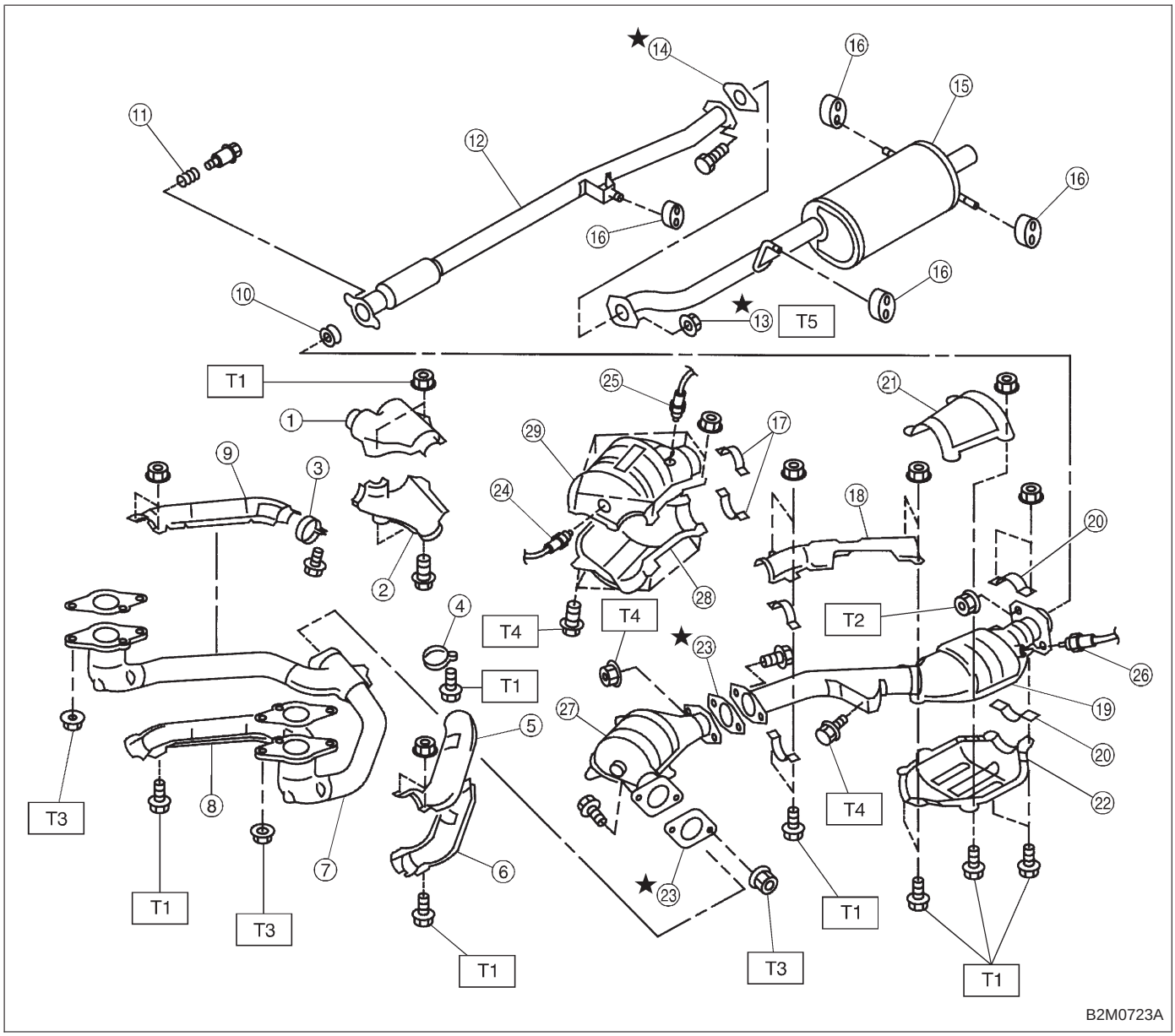
1. 2500 cc MODEL



① Upper front exhaust pipe cover CTR
② Lower front exhaust pipe cover CTR
③ Band RH
④ Band LH
⑤ Upper front exhaust pipe cover LH
⑥ Lower front exhaust pipe cover LH
⑦ Front exhaust pipe
⑧ Lower front exhaust pipe cover RH
⑨ Upper front exhaust pipe cover RH
⑩ Gasket
⑪ Spring
⑫ Rear exhaust pipe
⑬ Self-locking nut
⑭ Gasket
⑮ Muffler
⑯ Cushion rubber
⑰ Clamp
⑱ Upper center exhaust pipe cover
⑲ Center exhaust pipe
⑳ Clamp B
㉑ Upper rear catalytic converter cover
㉒ Lower rear catalytic converter cover
㉓ Gasket
㉔ Front oxygen sensor
㉕ Rear oxygen sensor
㉖ Front catalytic converter
㉗ Lower front catalytic converter cover
㉘ Upper front catalytic converter cover

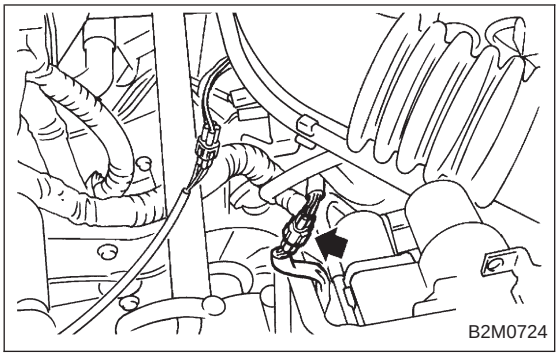
Tightening torque: N·m (kg-m, ft-lb)
T1: 13±3 (1.3±0.3, 9.4±2.2)
T2: 18±5 (1.8±0.5, 13.0±3.6)
T3: 30±5 (3.1±0.5, 22.4±3.6)
T4: 35±5 (3.6±0.5, 26.0±3.6)
T5: 48±5 (4.9±0.5, 35.4±3.6)

2. 2200 cc MODEL



① Upper front exhaust pipe cover CTR
② Lower front exhaust pipe cover CTR
③ Band RH
④ Band LH
⑤ Upper front exhaust pipe cover LH
⑥ Lower front exhaust pipe cover LH
⑦ Front exhaust pipe
⑧ Lower front exhaust pipe cover RH
⑨ Upper front exhaust pipe cover RH
⑩ Gasket
⑪ Spring
⑫ Rear exhaust pipe
⑬ Self-locking nut
⑭ Gasket
⑮ Muffler
⑯ Cushion rubber
⑰ Clamp
⑱ Upper center exhaust pipe cover
⑲ Center exhaust pipe
⑳ Clamp B
㉑ Upper rear catalytic converter cover
㉒ Lower rear catalytic converter cover
㉓ Gasket
㉔ Front oxygen sensor
㉕ Rear oxygen sensor (California 2200 cc model)
㉖ Rear oxygen sensor (Except California 2200 cc model)
㉗ Front catalytic converter
㉘ Lower front catalytic converter cover
㉙ Upper front catalytic converter cover

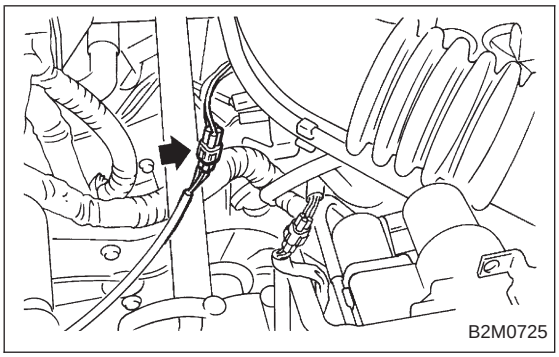
Tightening torque: N·m (kg-m, ft-lb)
T1: 13±3 (1.3±0.3, 9.4±2.2)
T2: 18±5 (1.8±0.5, 13.0±3.6)
T3: 30±5 (3.1±0.5, 22.4±3.6)
T4: 35±5 (3.6±0.5, 26.0±3.6)
T5: 48±5 (4.9±0.5, 35.4±3.6)


B2M0724

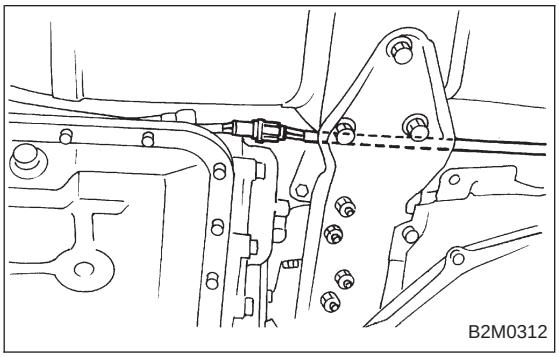
1. Front Exhaust Pipe and Center Exhaust Pipe

A: REMOVAL

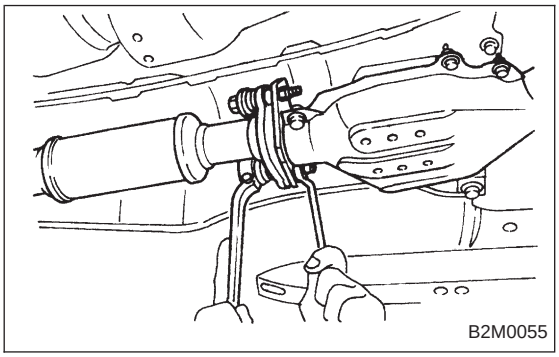
1) Disconnect front oxygen sensor connector.


B2M0725

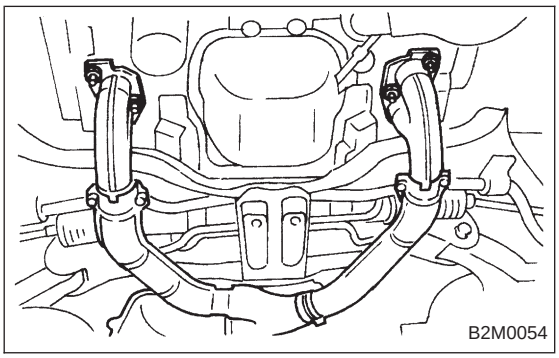
2) Disconnect rear oxygen sensor connector. (California 2200 cc model)


B2M0312

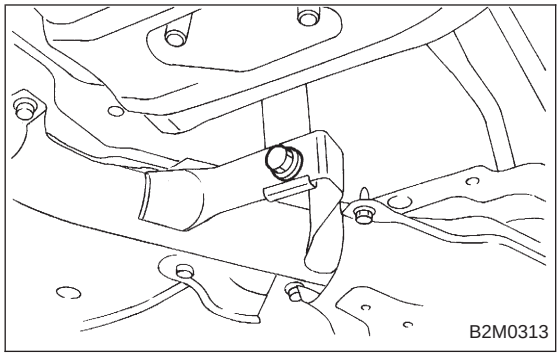
3) Lift-up the vehicle.
4) Disconnect rear oxygen sensor connector. (Except California 2200 cc model)


B2M0055

5) Separate center exhaust pipe from rear exhaust pipe.

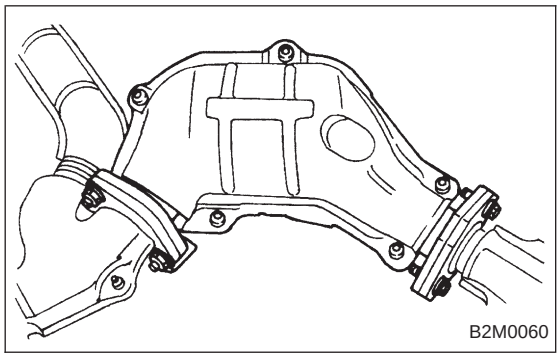

B2M0054

6) Remove bolts which hold front exhaust pipe onto cylinder heads.



7) Remove front exhaust pipe and center exhaust pipe from hanger bracket.

CAUTION:
Be careful not to pull down front exhaust pipe and center exhaust pipe.



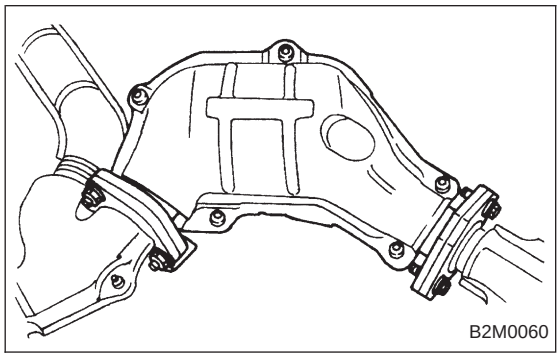
8) Separate front exhaust pipe from front catalytic converter.

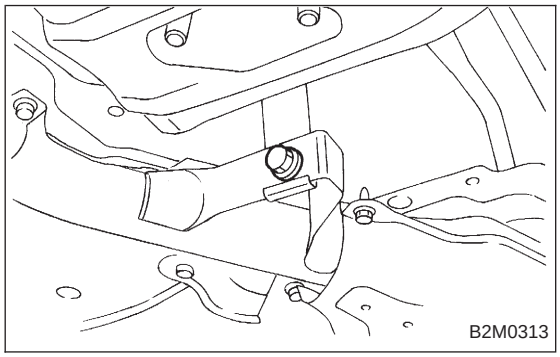
B: INSTALLATION

CAUTION:
Replace gaskets with new ones.

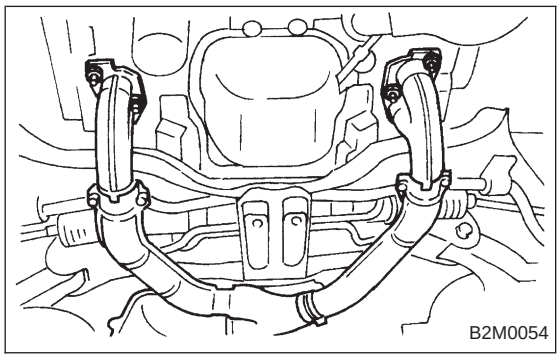
1) Install front catalytic converter to front exhaust pipe.

Tightening torque:
30±5 N·m (3.1±0.5 kg-m, 22.4±3.6 ft-lb)



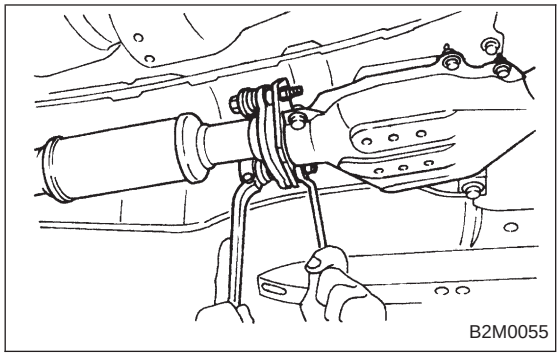


2) Install front exhaust pipe and center exhaust pipe.
And temporarily tighten bolt which installs center exhaust pipe to hanger bracket.



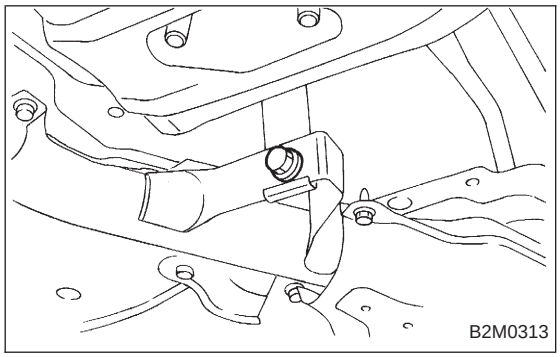
3) Tighten bolts which hold front exhaust pipe onto cylinder heads.

Tightening torque:
30±5 N·m (3.1±0.5 kg-m, 22.4±3.6 ft-lb)


B2M0055

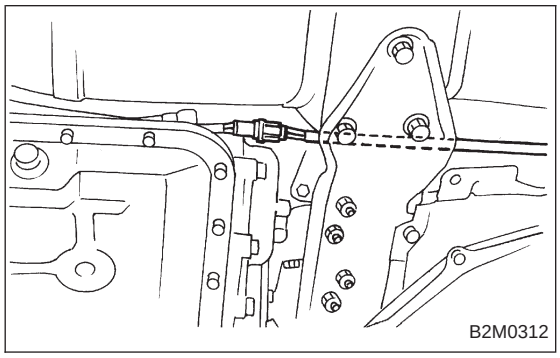
4) Install center exhaust pipe to rear exhaust pipe.

Tightening torque:
18±5 N·m (1.8±0.5 kg-m, 13.0±3.6 ft-lb)

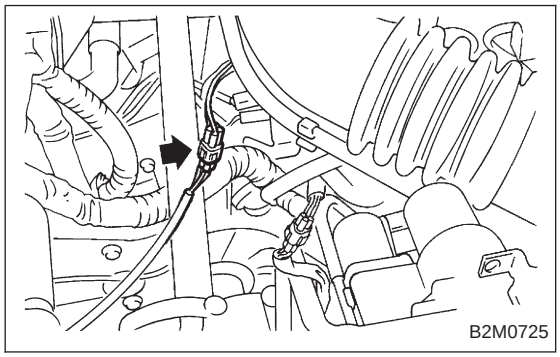

B2M0313

5) Tighten bolt which holds center exhaust pipe to hanger bracket.

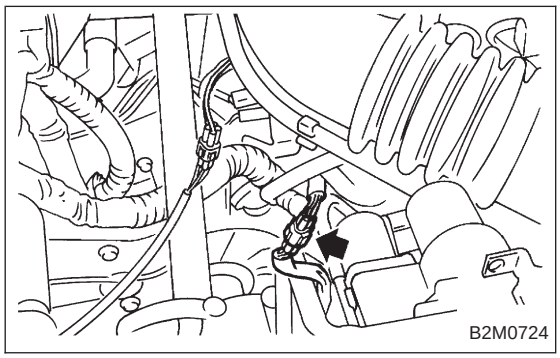
Tightening torque:
35±5 N·m (3.6±0.5 kg-m, 26.0±3.6 ft-lb)


B2M0312

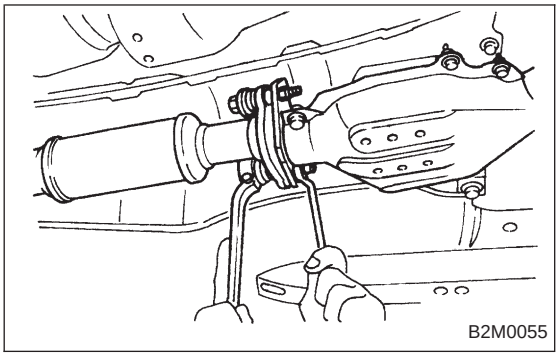
6) Connect rear oxygen sensor connector. (Except California 2200 cc model)


B2M0725

7) Lower the vehicle.
8) Connect rear oxygen sensor connector. (California 2200 cc model)


B2M0724

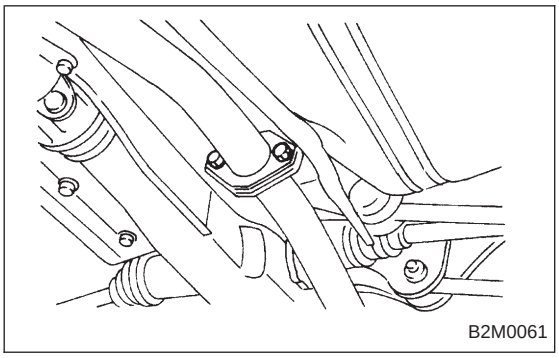
9) Connect front oxygen sensor connector.


B2M0055

2. Rear Exhaust Pipe

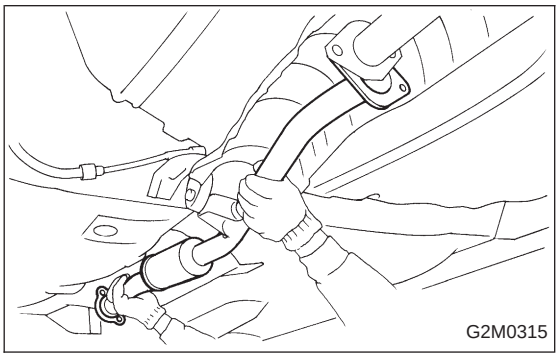
A: REMOVAL

1) Separate rear exhaust pipe from center exhaust pipe.


B2M0061

2) Separate rear exhaust pipe from muffler.

CAUTION:
Be careful not to pull down rear exhaust pipe.


G2M0315

3) Remove rear exhaust pipe bracket from rubber cushion.

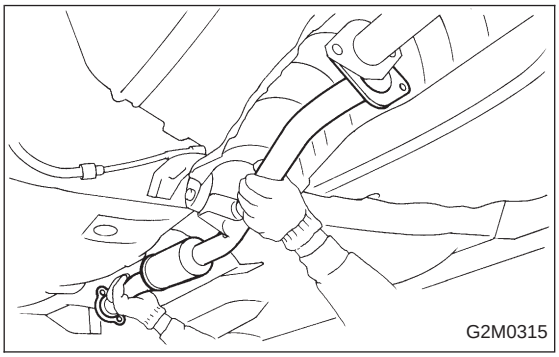
NOTE:
To facilitate removal, apply a coat of SUBARU CRC or equivalent to pipe bracket in advance.
SUBARU CRC (Part No. 004301003)

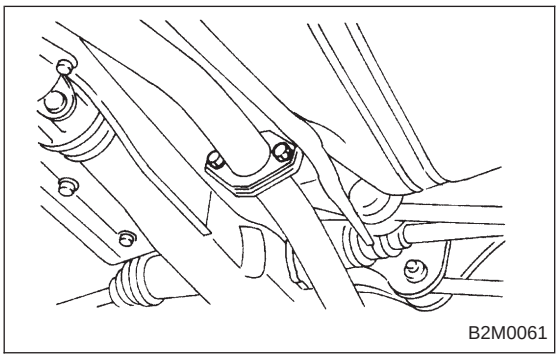
B: INSTALLATION

CAUTION:
Replace gaskets with new ones.

1) Install rear exhaust pipe bracket to rubber cushion.

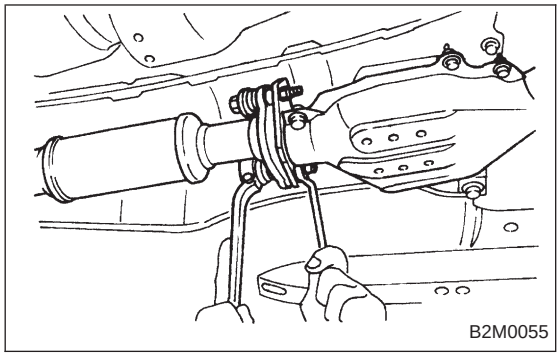
NOTE:
To facilitate installation, apply a coat of SUBARU CRC or equivalent to mating area of rubber cushion in advance.
SUBARU CRC (Part No. 004301003)


G2M0315


B2M0061

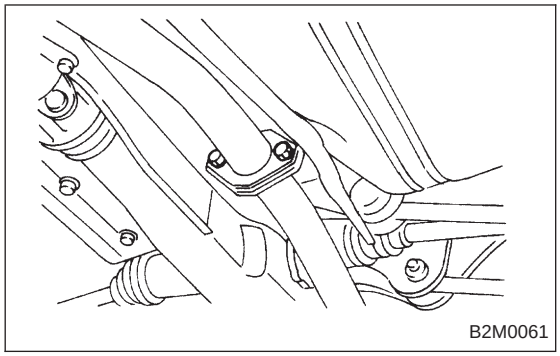
2) Install rear exhaust pipe to muffler.

Tightening torque:
48±5 N·m (4.9±0.5 kg-m, 35.4±3.6 ft-lb)



3) Install rear exhaust pipe to center exhaust pipe.

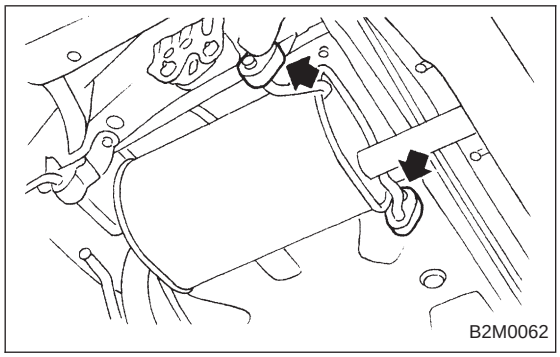
Tightening torque:
18±5 N·m (1.8±0.5 kg-m, 13.0±3.6 ft-lb)


B2M0061

3. Muffler

A: REMOVAL AND INSTALLATION

1) Separate muffler from rear exhaust pipe.

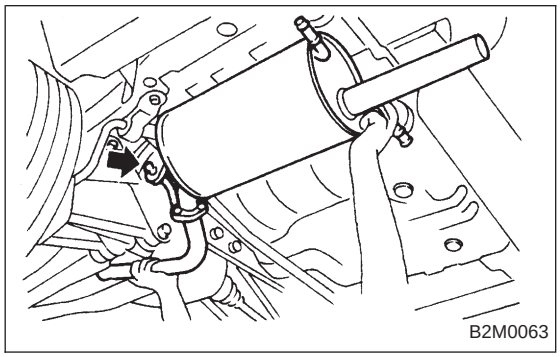

B2M0062

2) Remove left and right rubber cushions.

CAUTION:
Be careful not to pull down muffler.

NOTE:
To facilitate removal, apply a coat of SUBARU CRC or equivalent to mating area of rubber cushions in advance.

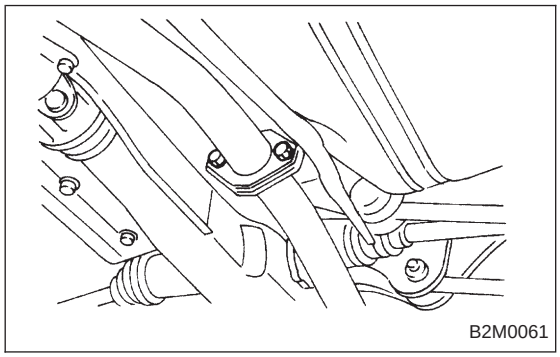
SUBARU CRC (Part No. 004301003)


B2M0063

3) Remove front rubber cushion, and detach muffler assembly.

NOTE:
To facilitate removal, apply a coat of SUBARU CRC or equivalent to mating area of rubber cushion in advance.

SUBARU CRC (Part No. 004301003)


B2M0061

4) Installation is in the reverse order of removal.

CAUTION:
Replace gasket with a new one.

Tightening torque:
48±5 N·m (4.9±0.5 kg-m, 35.4±3.6 ft-lb)

1. Clutch System

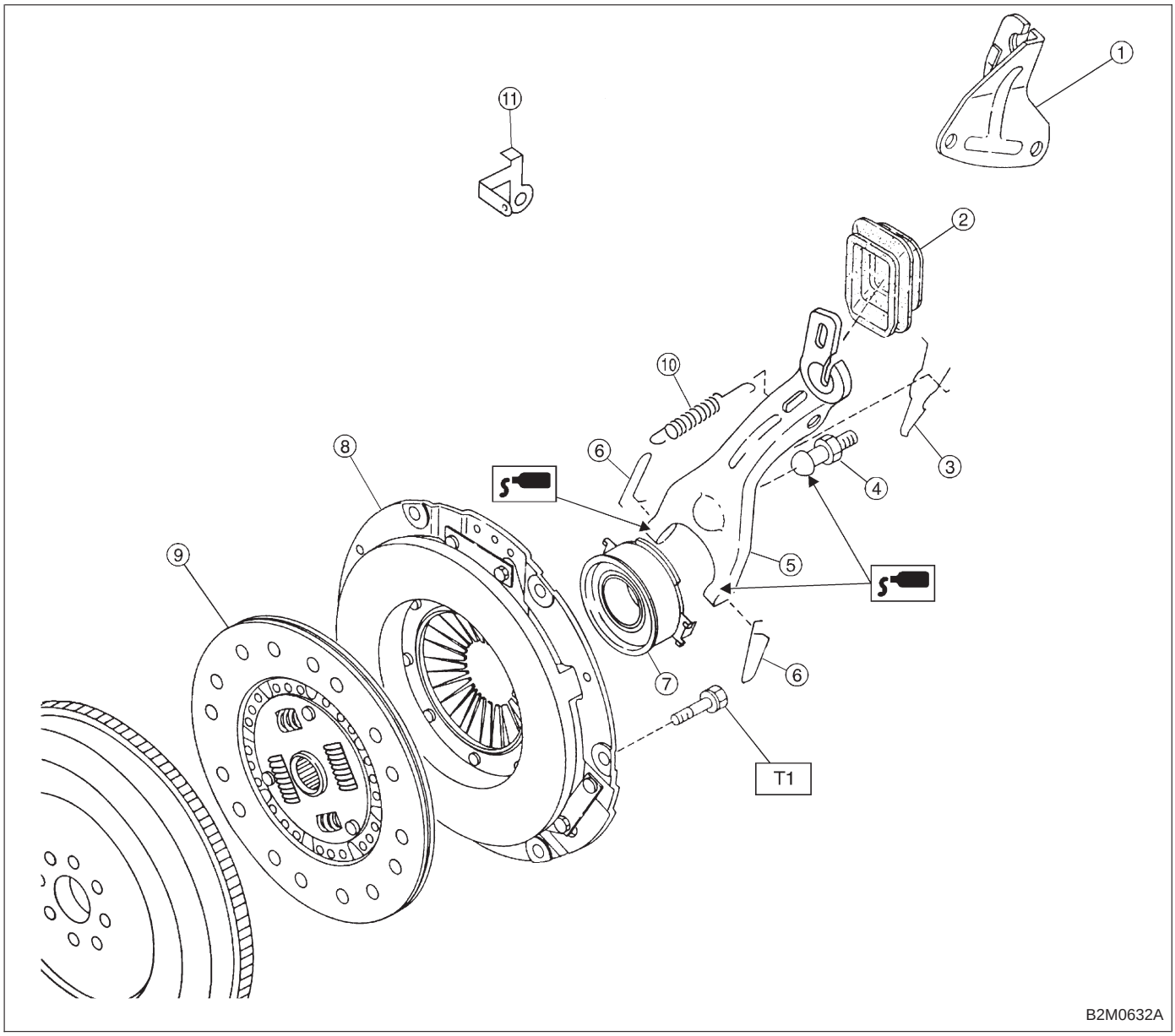
A: SPECIFICATIONS

		2200 cc
Clutch cover	Diaphragm set load kg (lb)	450 (992)
Clutch disc	Facing material	Woven
	O.D. x I.D. x thickness mm (in)	225 x 150 x 3.5 (8.86 x 5.91 x 0.138)
	Spline O.D. mm (in) (No. of teeth)	25.2 (0.992) (24)
Clutch release lever ratio		3.0
Release bearing		Grease-packed self-aligning

B: SERVICE DATA

			2200 cc
Clutch pedal	Full stroke mm (in)		140 — 150 (5.51 — 5.91)
Release lever	Stroke mm (in)		24 — 26 (0.94 — 1.02)
	Play at release lever center mm (in)		3 — 4 (0.12 — 0.16)
Clutch disc	Depth of rivet head mm (in)	Standard	1.3 — 1.9 (0.051 — 0.075)
		Limit of sinking	0.3 (0.012)
	Limit for runout mm (in)		1.0 (0.039) at R = 107 (4.21)

1. Clutch System



① Clutch cable bracket
② Clutch release lever sealing
③ Retainer spring
④ Pivot
⑤ Clutch release lever
⑥ Clip
⑦ Clutch release bearing
⑧ Clutch cover
⑨ Clutch disc
⑩ Return spring (Models without hill holder only)
⑪ Clutch return spring bracket

Tightening torque: N·m (kg-m, ft-lb)
T1: 15.7±1.5 (1.6±0.15, 11.6±1.1)

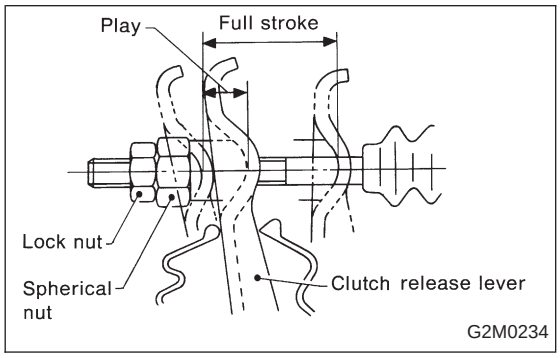
1. General

A: PRECAUTION

When servicing clutch system, pay attention to the following items.

1. MECHANICAL APPLICATION TYPE

1) Check the routing of clutch cable for smoothness.
2) Excessive tightness or looseness of clutch cable have a bad influence upon the cable durability.
3) Apply grease sufficiently to the connecting portion of clutch pedal.
4) Apply grease sufficiently to the release lever portion.
5) Position clutch cable through the center of toe board hole and route it smoothly. Adjustment is done by moving the outer cable.
6) Make sure not to let the clutch chatter when starting forward or rearward. If clutch chattering occurs, readjust so that the bend of clutch outer cable becomes flatter.



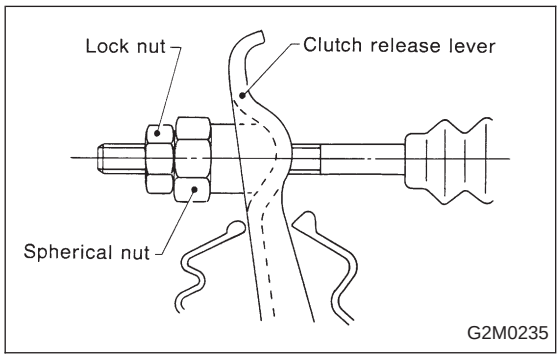
2. On-Car Service

1. MECHANICAL APPLICATION TYPE

1) Remove release lever return spring from lever (Models without hill holder only).
2) Adjust spherical nut so that the play is within the specified value at the lever end (center of spherical nut).

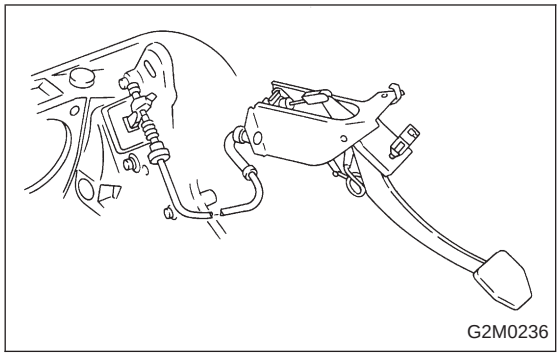
CAUTION:
Take care not to twist the cable during adjustment

Play: 3 — 4 mm (0.12 — 0.16 in)
Full stroke: 24 — 26 mm (0.94 — 1.02 in)

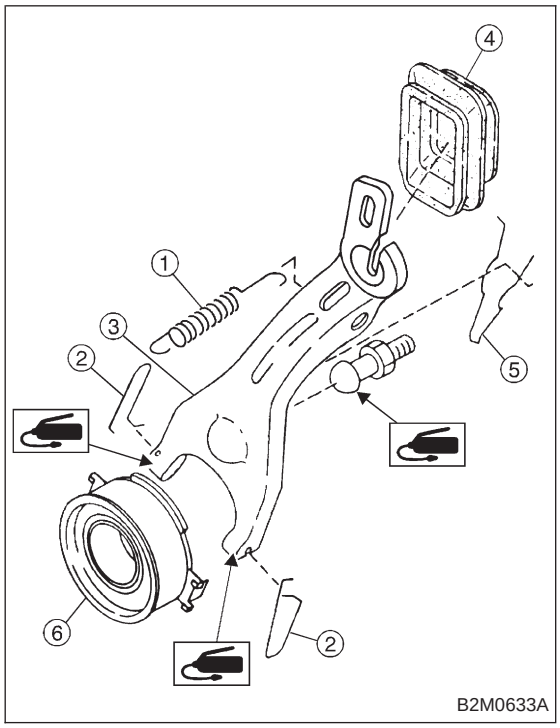


3) Upon completion of adjustment, securely lock spherical nut with lock nut.
Install return spring on lever (Models without hill holder only).

NOTE:
Hook the long hook side of the return spring with the lever (Models without hill holder only).



4) Depress clutch pedal to assure there is no abnormality in the clutch system.



3. Release Bearing and Lever

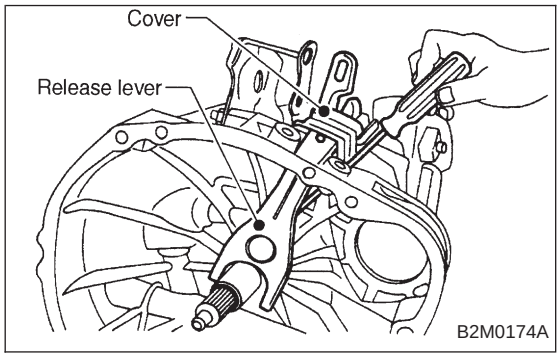
A: REMOVAL

1. MECHANICAL APPLICATION TYPE

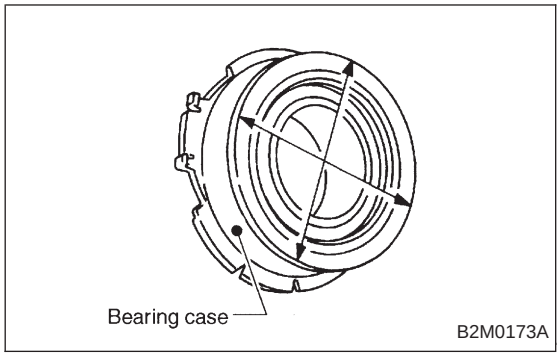
1) Remove release lever return spring ① (Models without hill holder only).
2) Remove the two clips ② from clutch release lever ③ and remove release bearing ⑥.

CAUTION:
Be careful not to deform clips.

3) Remove release lever seal ④.



4) Remove release lever retainer spring from release lever pivot with a screwdriver by accessing it through clutch housing release lever hole. Then remove release lever.



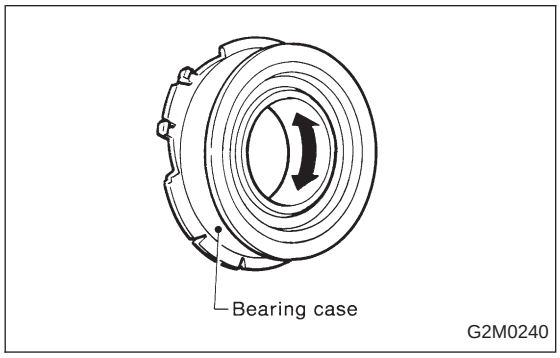
B: INSPECTION

1. RELEASE BEARING

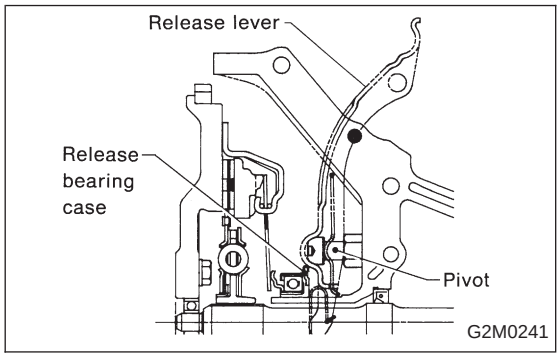
CAUTION:
Since this bearing is grease sealed and is of a nonlubrication type, do not wash with gasoline or any solvent when servicing the clutch.

1) Check the bearing for smooth movement by applying force in the radial direction.

Radial direction stroke:
FWD; Approx.
1.0 mm (0.039 in)
AWD; Approx.
1.4 mm (0.055 in)



2) Check the bearing for smooth rotation by applying pressure in the thrust direction.
3) Check wear and damage of bearing case surface contacting with lever.

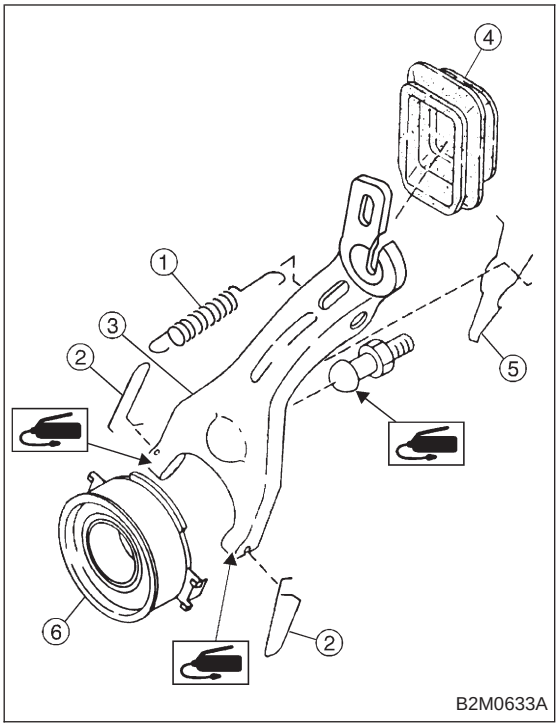


2. RELEASE LEVER

Check lever pivot portion and the point of contact with release bearing case for wear.

C: INSTALLATION

CAUTION:
Before or during assembling, lubricate the following points with a light coat of grease.
- **Inner groove of release bearing**
- **Contact surface of lever and pivot**
- **Contact surface of lever and bearing**
- **Transmission main shaft spline (Use grease containing molybdenum disulphide.)**



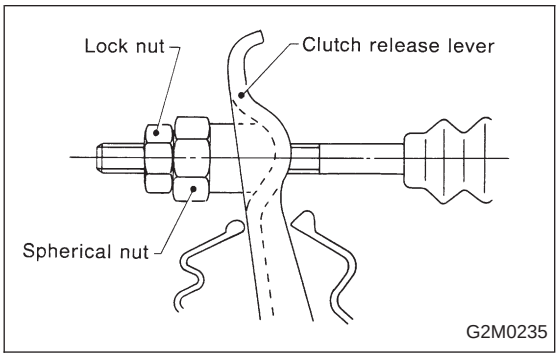
1. MECHANICAL APPLICATION TYPE

1) While pushing release lever ③ to pivot and twisting it to both sides, fit retainer spring ⑤ onto the constricted portion of pivot.

NOTE:
Confirm that retainer spring is securely fitted by observing it through the main case hole.

2) Install release bearing ⑥ and fasten it with two clips ②.

3) Install release lever seal ④.

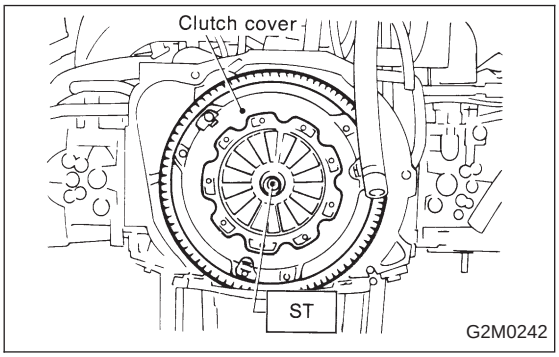


4) After remounting engine and transmission on body, make adjustment of the clutch release lever end play.

CAUTION:
Take care not to twist the cable during adjustment.

5) Install release lever return spring (Models without hill holder only).

NOTE:
Hook up the return spring to right side hole of the release lever.



4. Clutch Disc and Cover

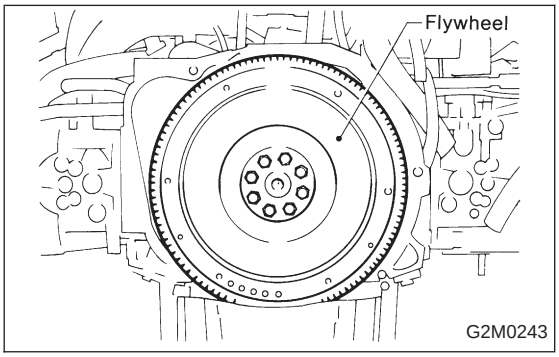
A: REMOVAL

1) Install ST on flywheel.

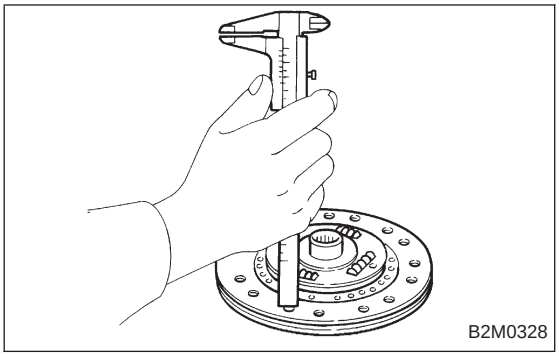
ST 498497100 CRANKSHAFT STOPPER

2) Remove clutch cover and clutch disc.

CAUTION:
- **Take care not to allow oil on the clutch disc facing.**
- **Do not disassemble either clutch cover or clutch disc.**



3) Remove flywheel.


B2M0328

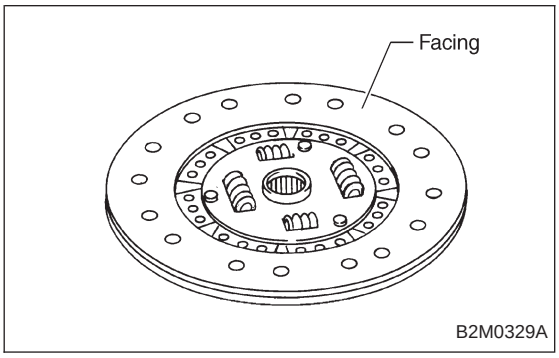
B: INSPECTION

1. CLUTCH DISC

1) Facing wear
Measure the depth of rivet head from the surface of facing. Replace if facings are worn locally or worn down to less than the specified value.

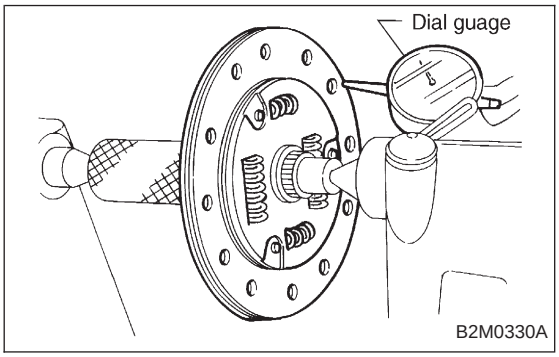
Depth of rivet head:
Standard value
1.3 — 1.9 mm (0.051 — 0.075 in)
Limit of sinking
0.3 mm (0.012 in)

CAUTION:
Do not wash clutch disc with any cleaning fluid.



B2M0329A

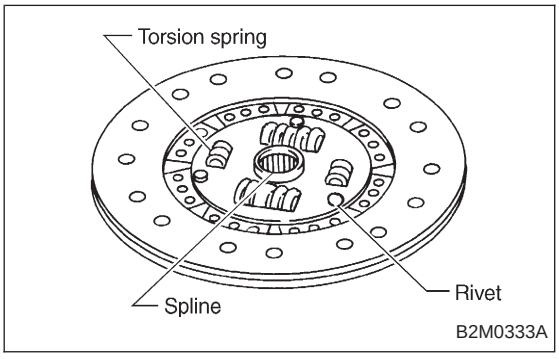
2) Hardened facing
Correct by using emery paper or replace.
3) Oil soakage on facing
Replace clutch disc and inspect transmission front oil seal, transmission case mating surface, engine rear oil seal and other points for oil leakage.



B2M0330A

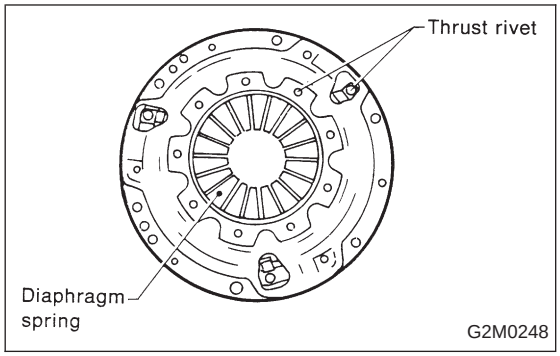
4) Deflection on facing
If deflection exceeds the specified value at the outer circumference of facing, repair or replace.

Limit for deflection:
1.0 mm (0.039 in) at R = 107 mm (4.21 in)



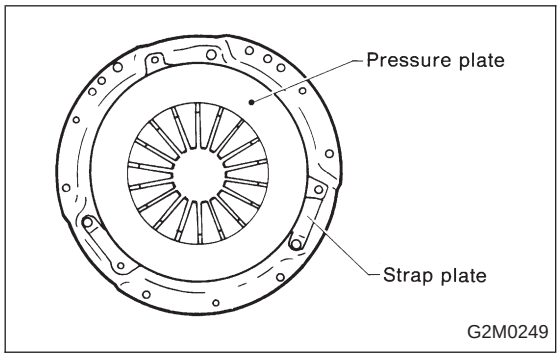
B2M0333A

5) Worn spline, loose rivets and torsion spring failure
Replace defective parts.

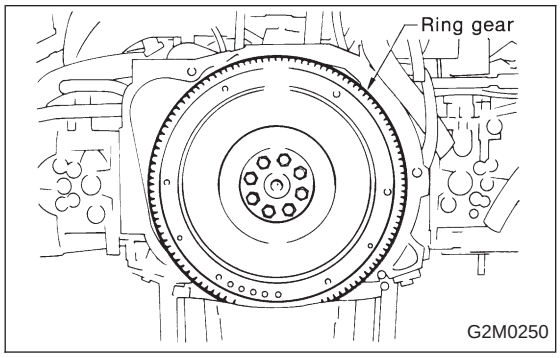


2. CLUTCH COVER

Visually check for the following items without disassembling, and replace or repair if defective.
1) Loose thrust rivet.
2) Damaged or worn bearing contact area at center of diaphragm spring.



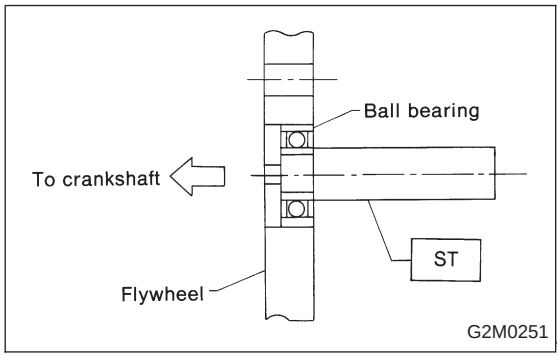
3) Damaged or worn disc contact surface of pressure plate.
4) Loose strap plate setting bolt.
5) Worn diaphragm sliding surface.



3. FLYWHEEL

CAUTION:
Since this bearing is grease sealed and is of a nonlubrication type, do not wash with gasoline or any solvent.

1) Damage of facing and ring gear
If defective, replace flywheel.

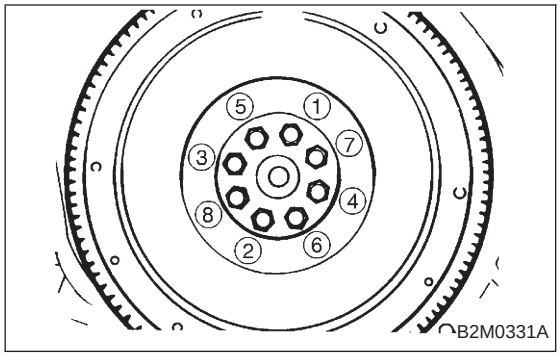


2) Smoothness of rotation
Rotate ball bearing applying pressure in thrust direction.

If noise or excessive play is noted, replace ball bearing as follows:

(1) Drive out ball bearing from flywheel.
(2) Press bearing into flywheel until bearing end surface is flush with clutch disc contact surface of flywheel. Do not press inner race.

ST 899754112 SNAP RING PRESS



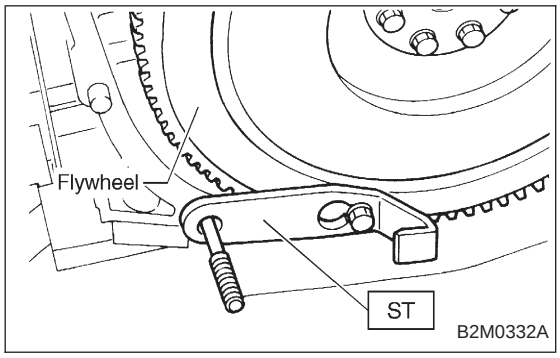
C: INSTALLATION

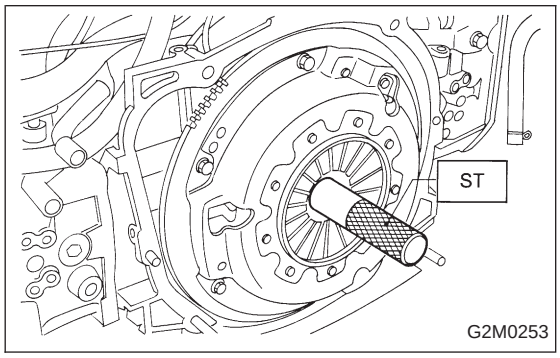
1) Install flywheel.
2) Install ST, and tighten the flywheel attaching bolts to the specified torque.

ST 498497100 CRANKSHAFT STOPPER

Tightening torque:
72±3 N·m (7.3±0.3 kg-m, 52.8±2.2 ft-lb)

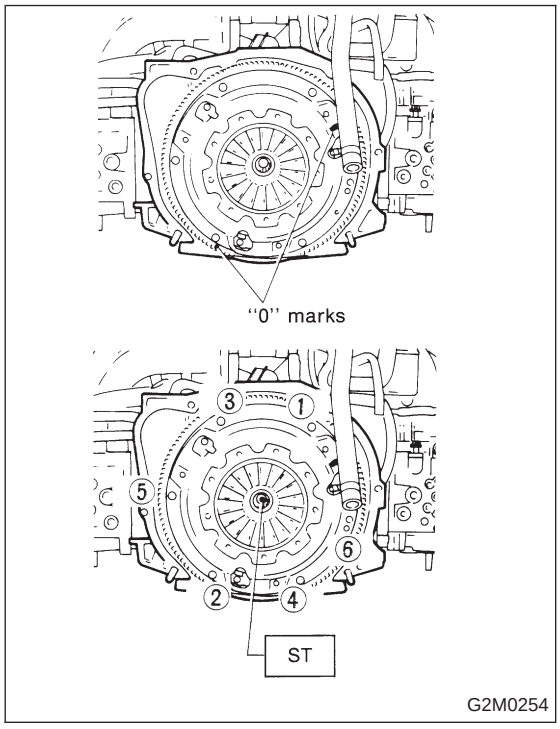
NOTE:
Tighten flywheel installing bolts gradually. Each bolt should be tightened to the specified torque in a crisscross fashion.





3) Insert ST into the clutch disc and install them on the flywheel by inserting the ST end into the pilot bearing.

ST 499747100 CLUTCH DISC GUIDE



4) Install clutch cover on flywheel and tighten bolts to the specified torque.

NOTE:
- When installing the clutch cover on the flywheel, position the clutch cover so that there is a gap of 120° or more between “0” marks on the flywheel and clutch cover. (“0” marks indicate the directions of residual unbalance.)
- Note the front and rear of the clutch disc when installing.
- Tighten clutch cover installing bolts gradually. Each bolt should be tightened to the specified torque in a crisscross fashion.

Tightening torque:
15.7±1.5 N·m (1.6±0.15 kg-m, 11.6±1.1 ft-lb)

5) Remove ST.

ST 499747100 CLUTCH DISC GUIDE