

General Description

FUEL INJECTION (FUEL SYSTEMS)

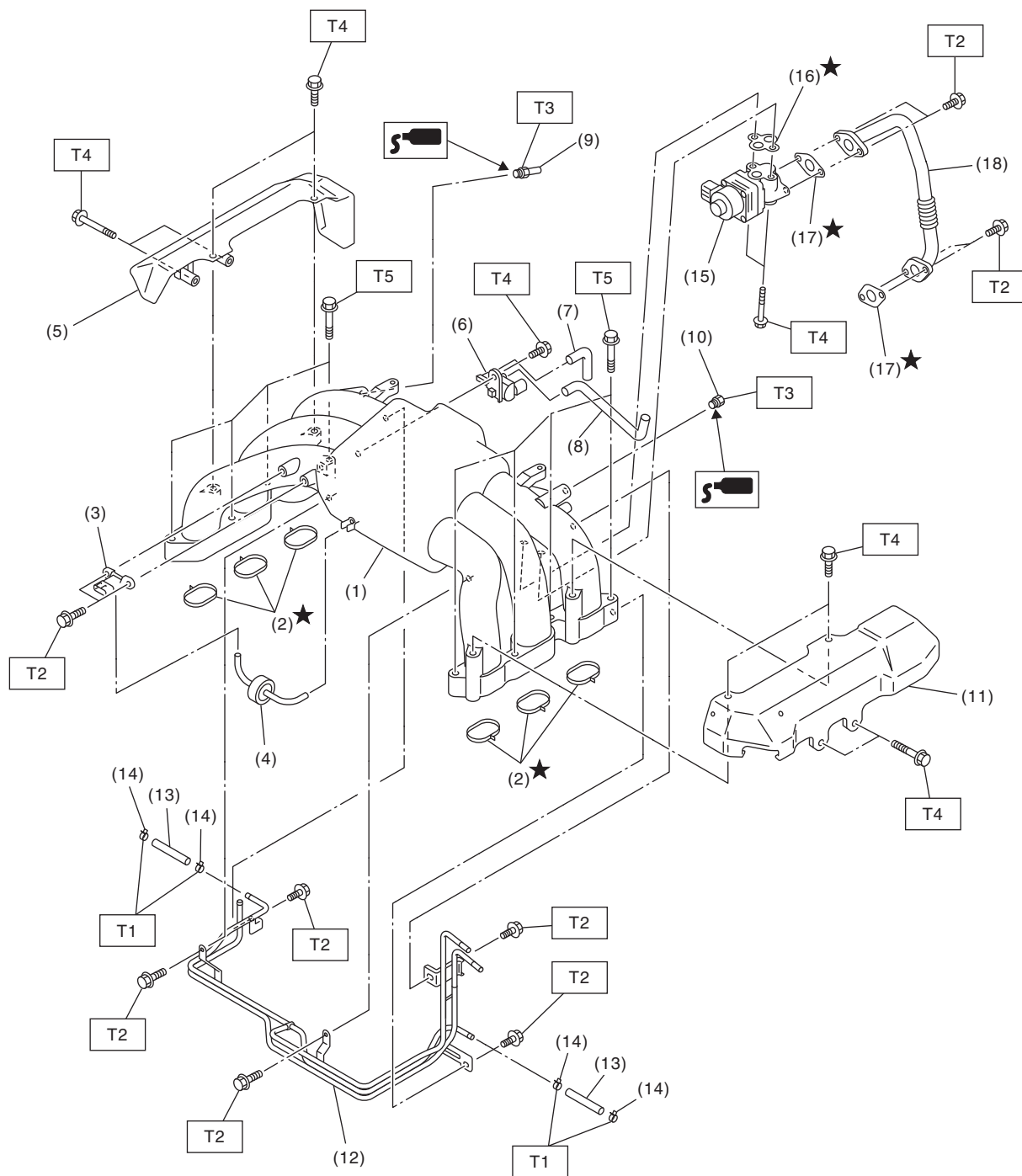
1. General Description

A: SPECIFICATION

Fuel tank	Capacity	70 ℓ (18.5 US gal, 15.4 Imp gal)
	Install locations	Rear floor under
Fuel pump	Type	Impeller
	Shutoff discharge pressure	850 kPa (8.67 kg/cm ² , 123.3 psi) or less
	Discharge rate	155 ℓ (41 US gal, 34.1 Imp gal)/h or more. [12 V at 300 kPa (3.06 kg/cm ² , 43.5 psi)]
Fuel filter		In-tank type

B: COMPONENT

1. INTAKE MANIFOLD



FU-04653

General Description

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- | | |
|---------------------------------------|-----------------------------|
| (1) Intake manifold | (10) PLUG |
| (2) O-ring | (11) Fuel pipe protector LH |
| (3) Manifold absolute pressure sensor | (12) Fuel pipe ASSY |
| (4) Filter | (13) Hose |
| (5) Fuel pipe protector RH | (14) Clamp |
| (6) Purge control solenoid valve | (15) EGR valve |
| (7) Hose | (16) Gasket |
| (8) Hose | (17) Gasket |
| (9) Nipple | (18) EGR pipe |

Tightening torque:N·m (kgf-m, ft-lb)

T1: 1.25 (0.1, 0.9)

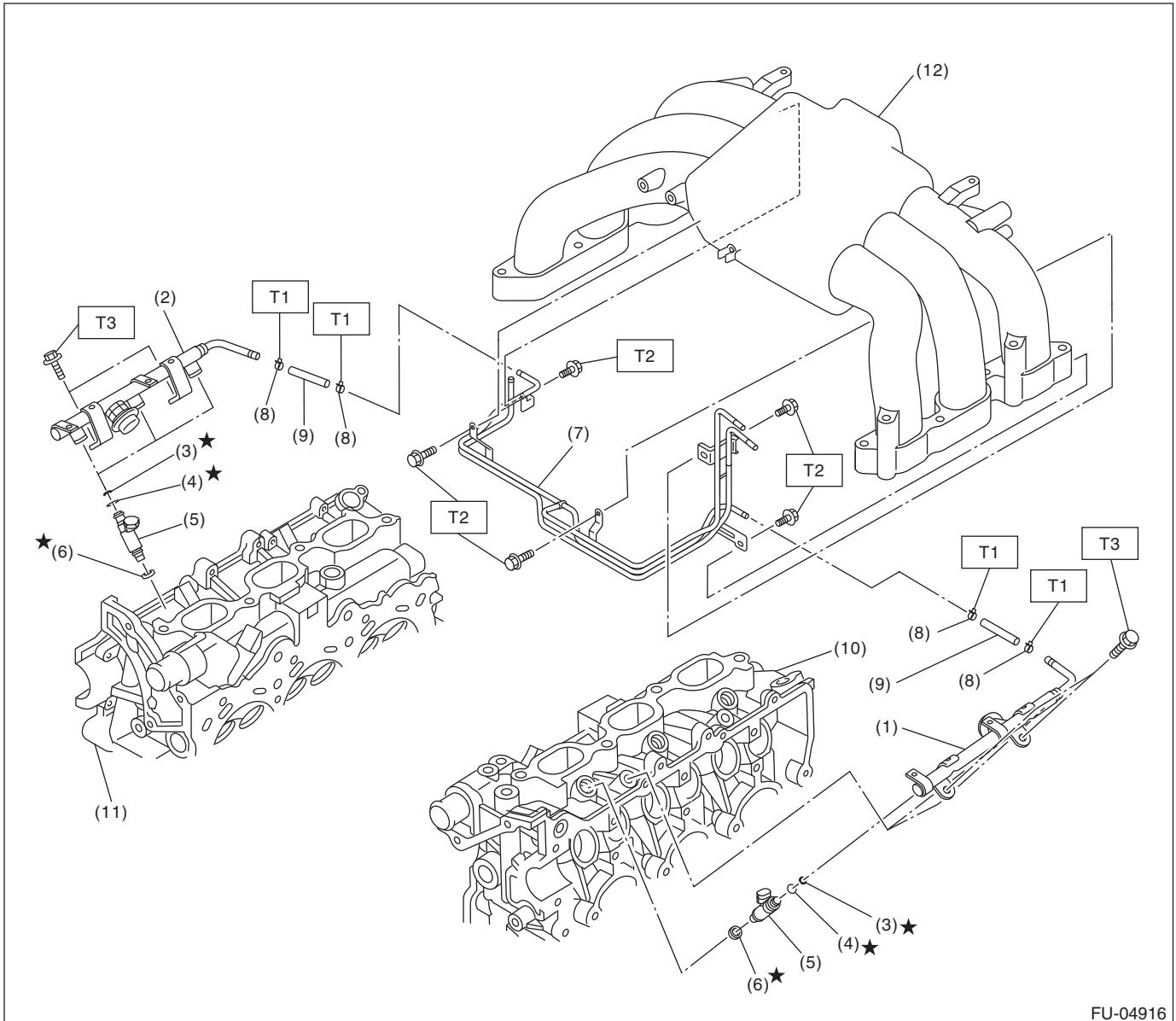
T2: 6.4 (0.7, 4.7)

T3: 17 (1.7, 12.5)

T4: 19 (1.9, 14.0)

T5: 25 (2.5, 18.4)

2. FUEL INJECTOR



FU-04916

- | | |
|---------------------------|-----------------------|
| (1) Fuel injector pipe LH | (7) Fuel pipe ASSY |
| (2) Fuel injector pipe RH | (8) Clamp |
| (3) O-ring | (9) Hose |
| (4) Injection rubber | (10) Cylinder head LH |
| (5) Fuel injector | (11) Cylinder head RH |
| (6) Seal ring | (12) Intake manifold |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 1.25 (0.1, 0.9)

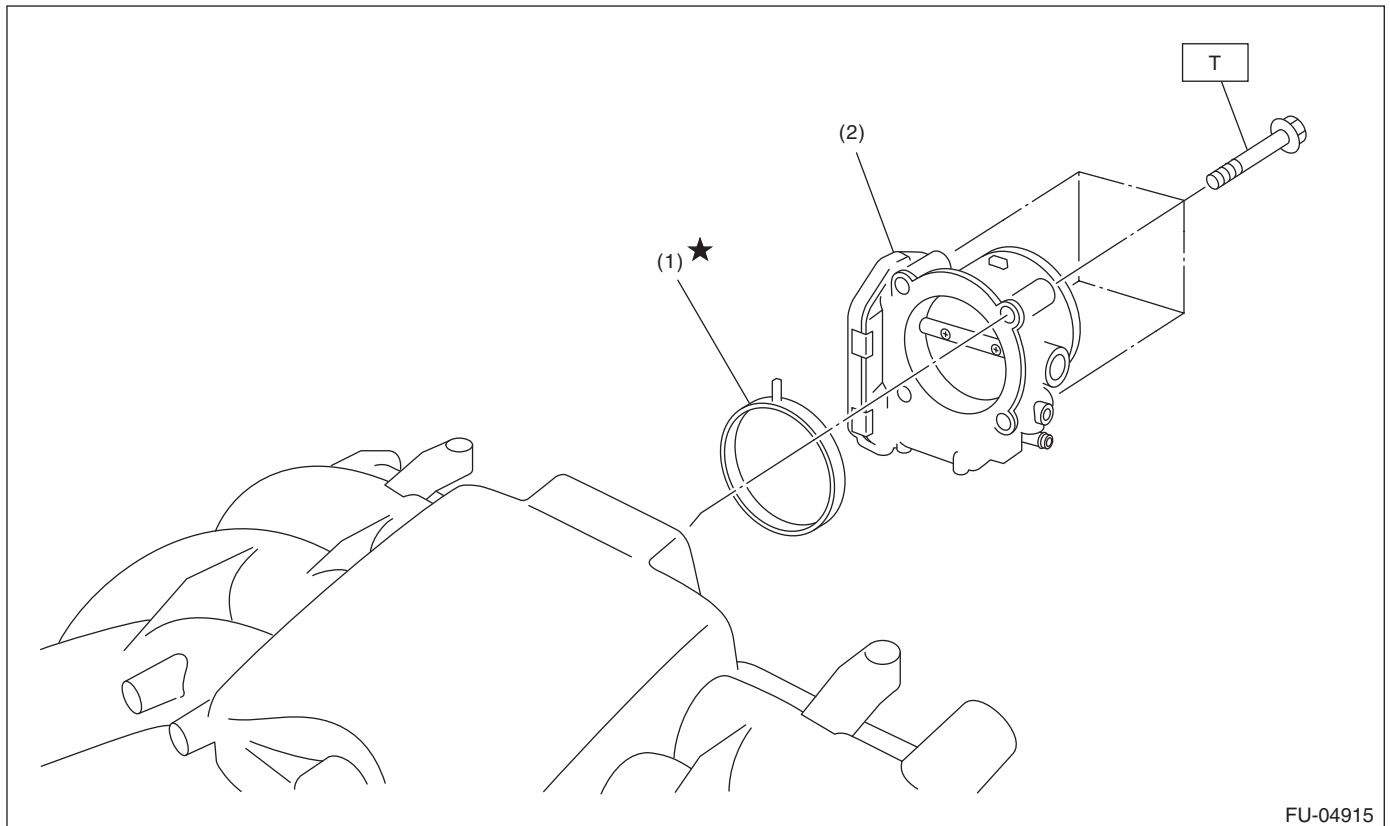
T2: 6.4 (0.7, 4.7)

T3: 19 (1.9, 14.0)

General Description

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3. AIR INTAKE SYSTEM



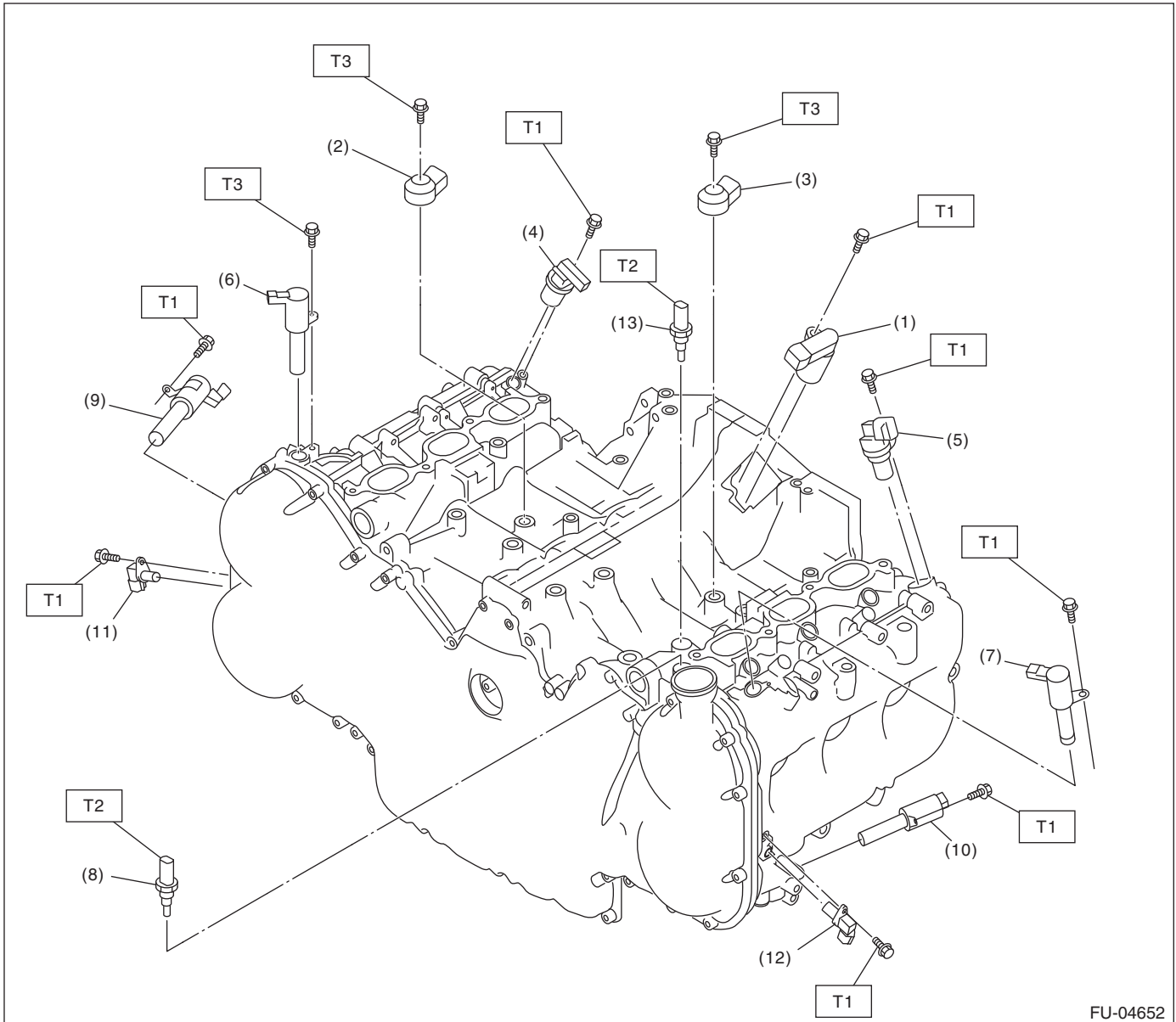
(1) O-ring

(2) Throttle body

Tightening torque: N·m (kgf-m, ft-lb)

T: 8 (0.8, 5.9)

4. SENSOR



FU-04652

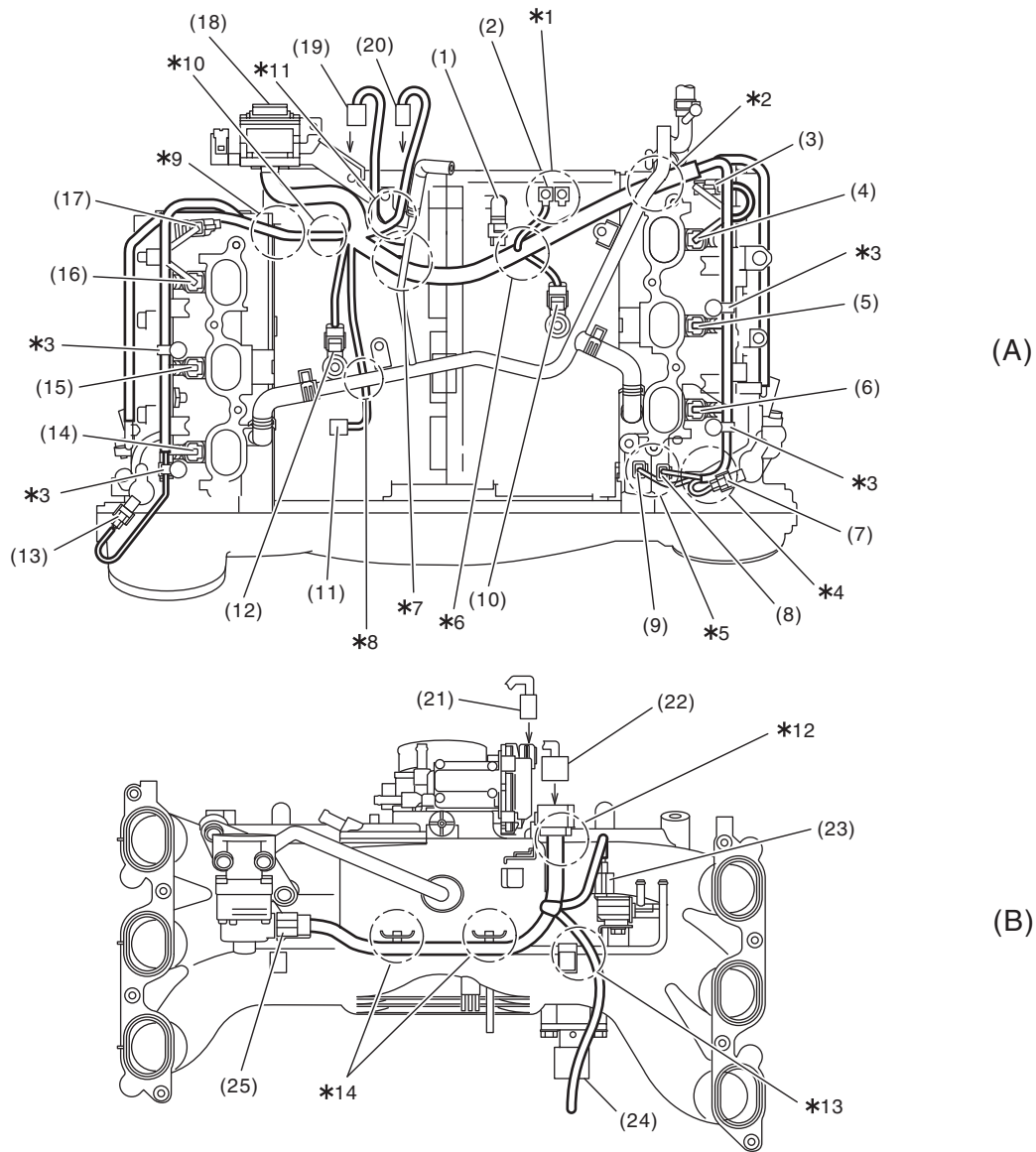
(1) Crankshaft position sensor	(7) Intake oil flow control solenoid valve LH	(13) Engine coolant temperature sensor
(2) Knock sensor RH	(8) Oil temperature sensor	
(3) Knock sensor LH	(9) Exhaust oil flow control solenoid valve RH	Tightening torque: N·m (kgf-m, ft-lb)
(4) Intake camshaft position sensor RH	(10) Exhaust oil flow control solenoid valve LH	T1: 6.4 (0.7, 4.7)
(5) Intake camshaft position sensor LH	(11) Exhaust camshaft position sensor RH	T2: 22 (2.2, 16.2)
(6) Intake oil flow control solenoid valve RH	(12) Exhaust camshaft position sensor LH	T3: 25 (2.5, 18.4)

General Description

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5. ENGINE HARNESS

Engine harness assembly diagram 1



ME-04534

General Description

FUEL INJECTION (FUEL SYSTEMS)

(A) Cylinder block upper face	(B) Intake manifold back surface		
(1) Crankshaft position sensor connector	(10) Knock sensor LH connector	(19) Upper/lower connection connector (To intake manifold)	
(2) Engine ground	(11) Power steering switch connector	(20) Electronic throttle control connector (To intake manifold)	
(3) Intake camshaft position sensor LH connector	(12) Knock sensor RH connector	(21) Electronic throttle control connector (From upper part of the cylinder block)	
(4) #6 injector connector	(13) Intake oil flow control solenoid valve RH connector	(22) Upper/lower connection connector (From upper part of the cylinder block)	
(5) #4 injector connector	(14) #1 injector connector	(23) Purge control solenoid valve connector	
(6) #2 injector connector	(15) #3 injector connector	(24) Manifold absolute pressure sensor connector	
(7) Intake oil flow control solenoid valve LH connector	(16) #5 injector connector	(25) EGR valve connector	
(8) Oil temperature sensor connector	(17) Intake camshaft position sensor RH connector		
(9) Engine coolant temperature sensor connector	(18) Engine harness docking connector		

*1: Install so that engine ground terminals face the rear side of vehicle.

*2: Route under the heater pipe.

*3: Attach the engine harness fixing clip to the fuel pipe stay.

*4: Route from the cutout portion on the fuel pipe protector LH.

*5: Be careful not to mix up the connectors of oil temperature sensor and engine coolant temperature sensor.

*6: Route between crankshaft position sensor and knock sensor LH.

*7: Route under the heater pipe.

*8: Route under the heater pipe.

*9: Route under the fuel pipe.

*10: Attach the engine harness fixing clip to the fixing boss on the cylinder block.

*11: Route over the heater pipe stay.

*12: Securely install the engine harness fixing stay.

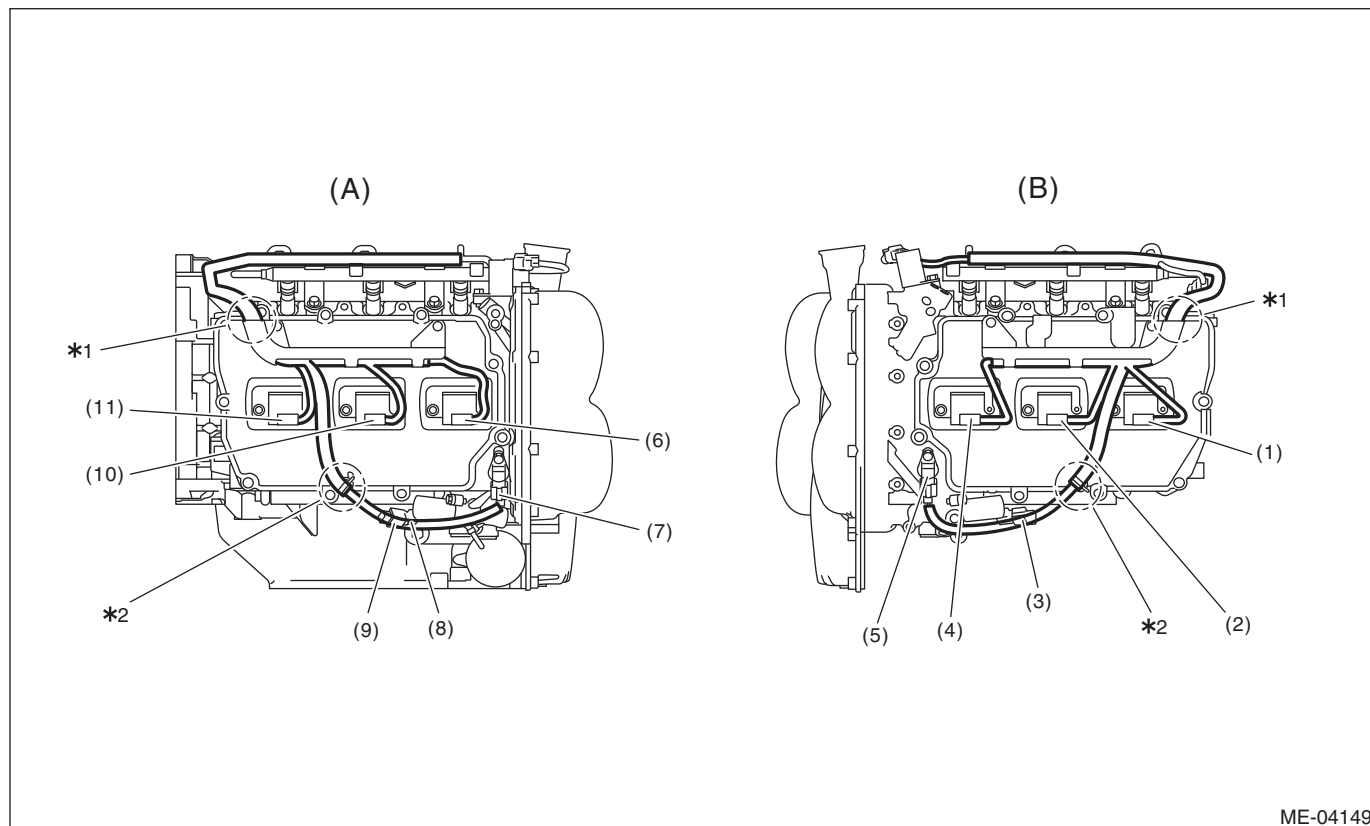
*13: Route outside the fuel pipe.

*14: Attach the engine harness fixing clip to the fixing stay on the intake manifold.

General Description

FUEL INJECTION (FUEL SYSTEMS)

Engine harness assembly diagram 2



(A) Right side of the engine

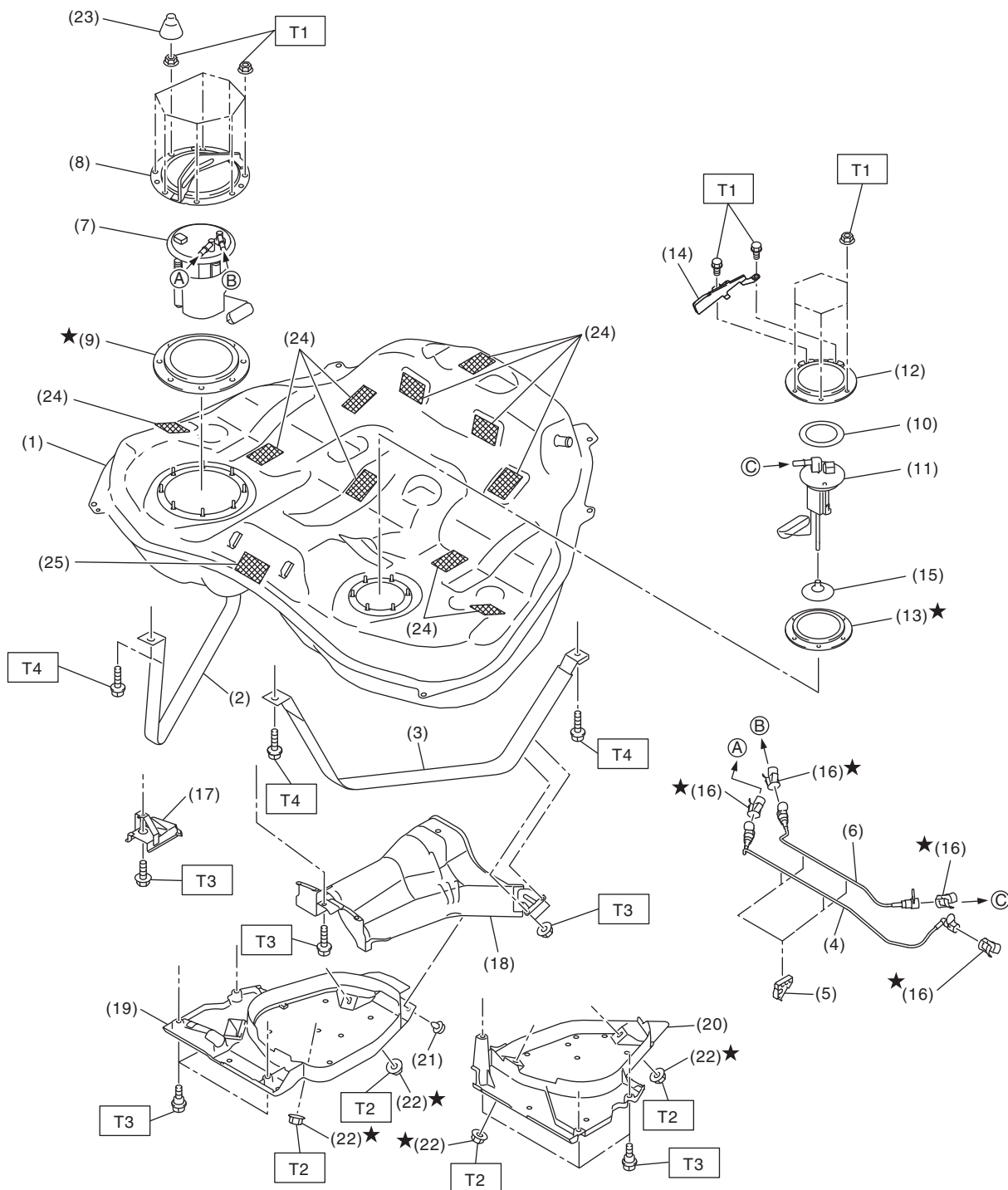
(B) Left side of the engine

- | | | |
|--|---|--|
| (1) #6 ignition coil connector | (5) Exhaust camshaft position sensor LH connector | (9) Exhaust oil flow control valve solenoid RH connector |
| (2) #4 ignition coil connector | (6) #1 injector connector | (10) #3 ignition coil connector |
| (3) Exhaust oil flow control valve solenoid LH connector | (7) Exhaust camshaft position sensor RH connector | (11) #5 ignition coil connector |
| (4) #2 ignition coil connector | (8) Oil pressure switch connector | |

*1: Align the engine harness stay end with the end of engine harness identification tape.

*2: Attach the engine harness fixing clip to the fixing boss on the rocker cover.

6. FUEL TANK



FU-05148

General Description

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(1) Fuel tank	(12) Fuel sub level sensor upper plate	(23) Rubber cap
(2) Fuel tank band RH	(13) Fuel sub level sensor gasket	(24) Cushion
(3) Fuel tank band LH	(14) Fuel sub level sensor protector	(25) Cushion
(4) Fuel delivery tube	(15) Fuel sub level sensor filter	
(5) Tube clamp	(16) Retainer	
(6) Fuel sub delivery tube	(17) Stopper	
(7) Fuel pump ASSY	(18) Heat shield cover	
(8) Fuel pump upper plate	(19) Fuel tank protector RH	
(9) Fuel pump gasket	(20) Fuel tank protector LH	
(10) Fuel sub level sensor upper plate cushion	(21) Clip	
(11) Fuel sub level sensor	(22) Self-locking nut	

Tightening torque:N·m (kgf-m, ft-lb)

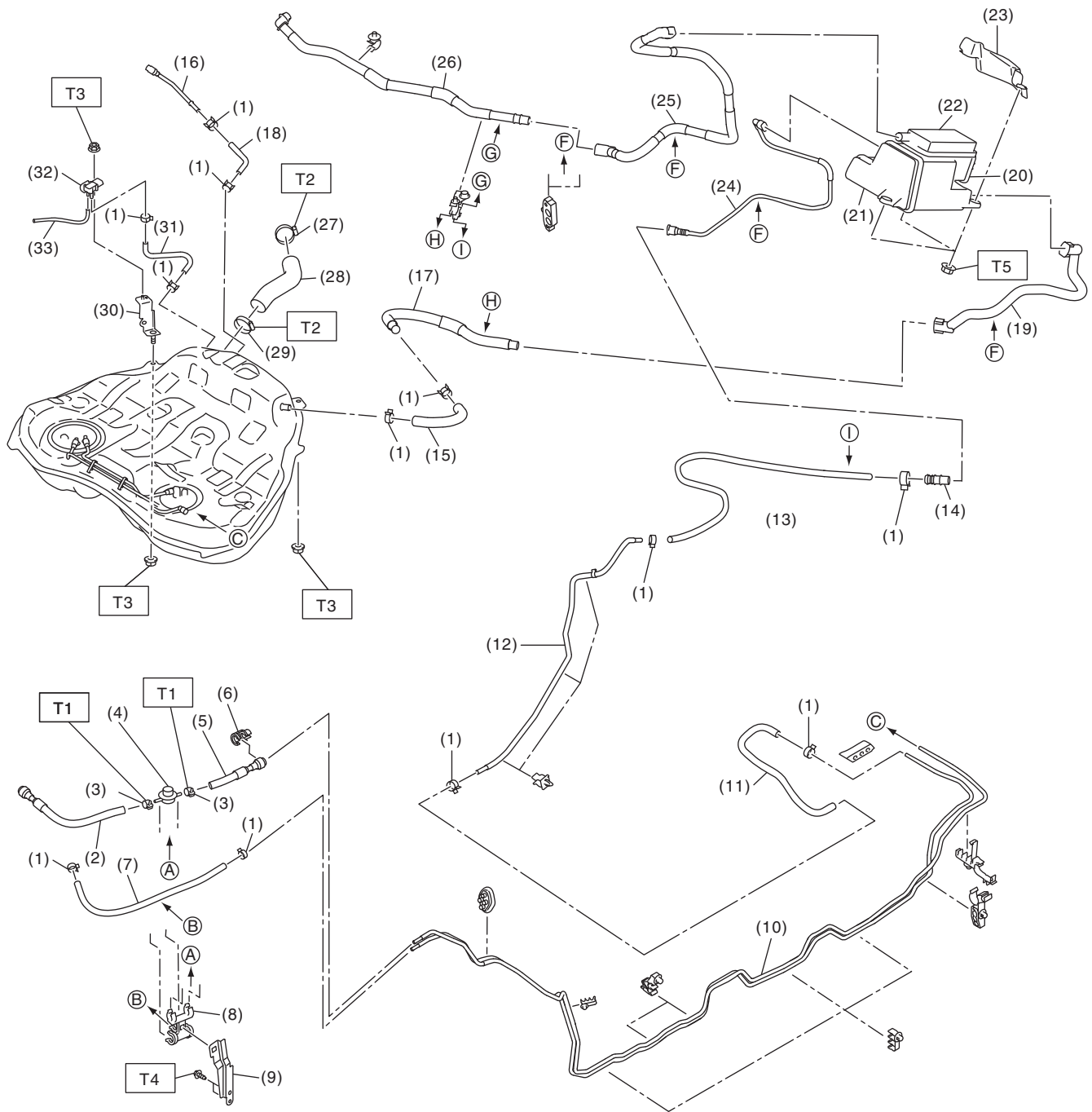
T1: 4.4 (0.4, 3.2)

T2: 9 (0.9, 6.6)

T3: 18 (1.8, 13.3)

T4: 33 (3.4, 24.3)

7. FUEL LINE



FU-05096

General Description

FUEL INJECTION (FUEL SYSTEMS)

(1) Clip	(15) Air vent hose A	(29) Clamp
(2) Fuel delivery hose A	(16) Circulate tube	(30) Fuel tank pressure sensor bracket
(3) Clamp	(17) Air vent tube	(31) Pressure hose
(4) Fuel damper	(18) Circulate hose	(32) Fuel tank pressure sensor
(5) Fuel delivery hose B	(19) Vent tube	(33) Vacuum hose
(6) Connect check cover	(20) Drain valve	
(7) Evaporation hose	(21) Canister	<i>Tightening torque:N·m (kgf-m, ft-lb)</i>
(8) Fuel damper holder	(22) Drain filter	<i>T1: 1.25 (0.1, 2.9)</i>
(9) Damper bracket	(23) Canister protector	<i>T2: 2.5 (0.3, 1.8)</i>
(10) Fuel pipe ASSY	(24) Charge tube	<i>T3: 7.35 (0.7, 5.4)</i>
(11) Purge hose A	(25) Canister drain tube	<i>T4: 7.5 (0.8, 5.5)</i>
(12) Purge pipe	(26) Drain tube ASSY	<i>T5: 8 (0.8, 5.9)</i>
(13) Purge hose B	(27) Clamp	
(14) Connector	(28) Fuel filler hose	

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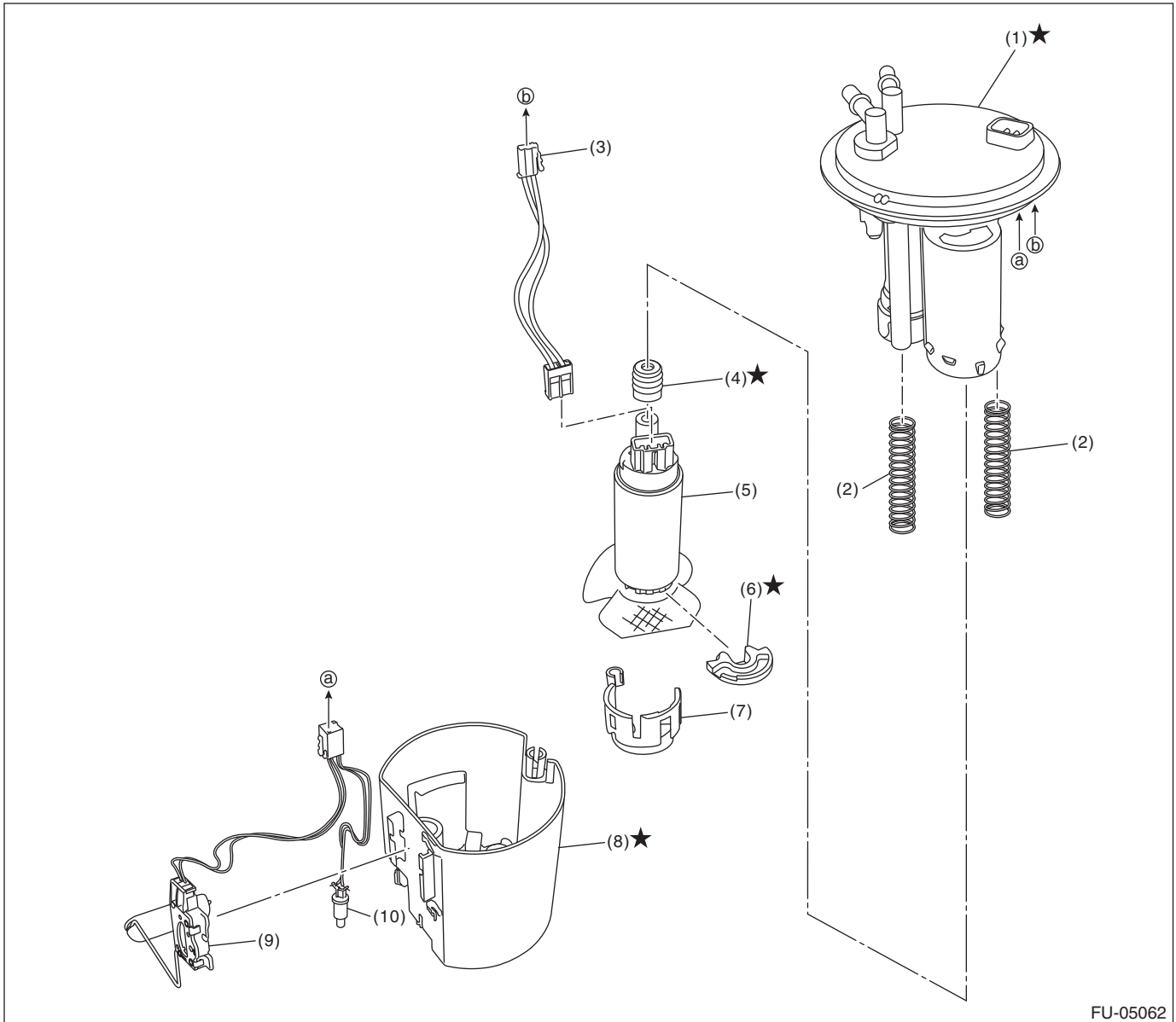
[illegible]

- Tightening torque:N·m (kgf·m, ft·lb)**
T1: 1 (0.1, 0.7)
T2: 7.35 (0.7, 5.4)
T3: 7.5 (0.8, 5.5)

General Description

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9. FUEL PUMP



FU-05062

- | | | |
|--------------------------|----------------------------|------------------------------|
| (1) Fuel filter assembly | (5) Fuel pump | (9) Fuel level sensor |
| (2) Pump module spring | (6) Support rubber cushion | (10) Fuel temperature sensor |
| (3) Fuel pump harness | (7) Fuel pump holder | |
| (4) Gasket spacer | (8) Fuel chamber ASSY | |

C: CAUTION

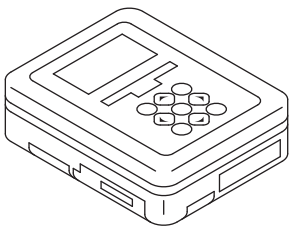
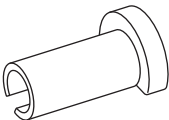
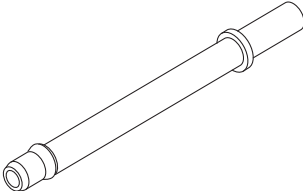
- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly and replacement.
- Vehicle components are extremely hot after driving. Be wary of receiving burns from heated parts.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or rigid racks at the specified points.
- Before disconnecting connectors of sensors or units, be sure to disconnect the ground cable from battery.
- Place “NO OPEN FLAMES” signs near the working area.
- Prepare a container and cloth to prevent scattering of fuels when performing work where fuels can be spilled. If the oil spills, wipe it off immediately to prevent from penetrating into floor or flowing out for environmental protection.
- Follow all government and local regulations concerning disposal of refuse when disposing fuel.

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D: PREPARATION TOOL

1. ST

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for draining fuel and each inspection.
 ST42099AE000	42099AE000	QUICK CONNECTOR RELEASE	Used for disconnecting quick connector of the engine compartment.
 ST18471AA000	18471AA000	FUEL PIPE ADAPTER	Used for draining fuel.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Oscilloscope	Used for inspecting the waveform of each sensor.