

General Description

FUEL INJECTION (FUEL SYSTEMS)

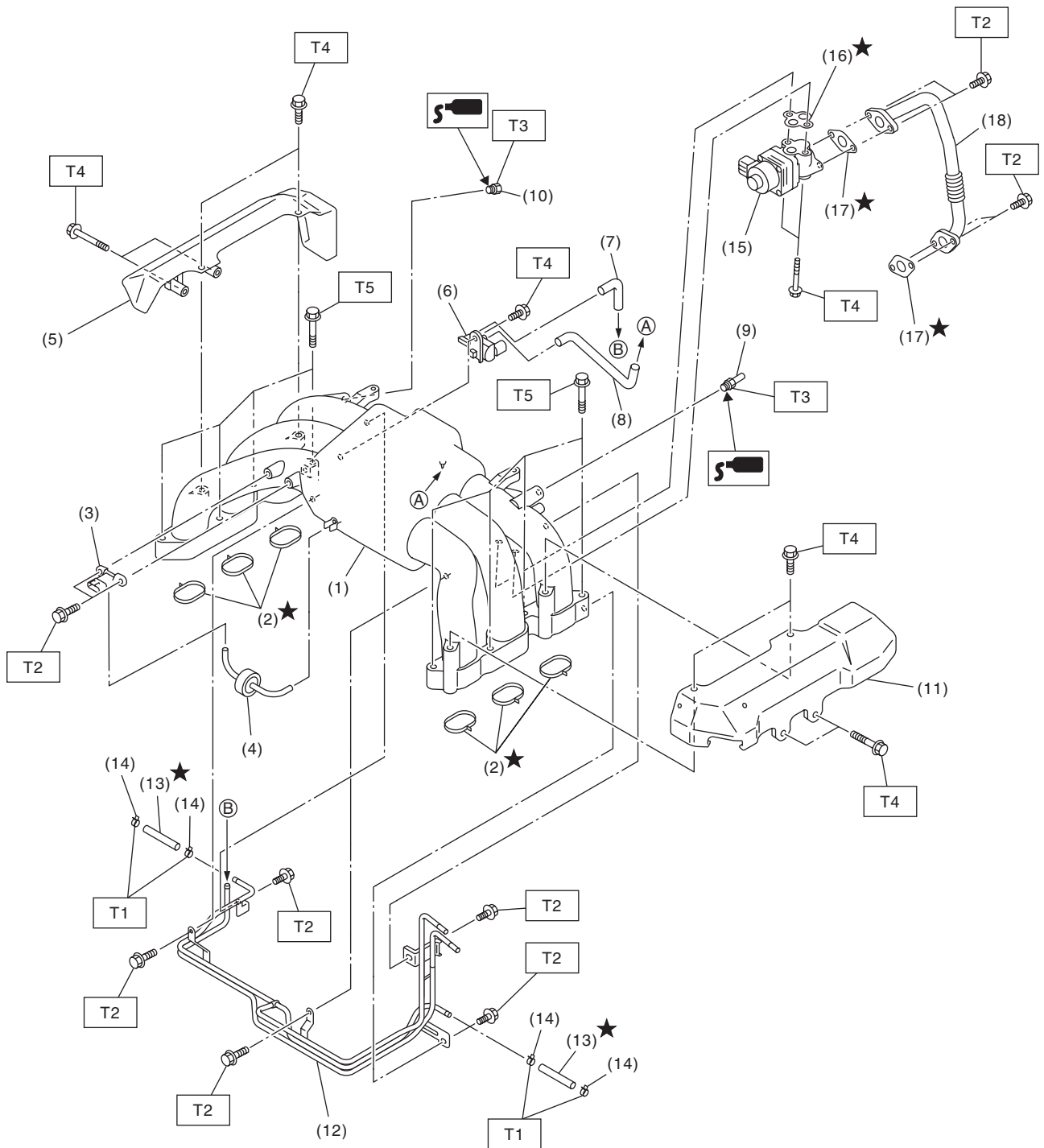
1. General Description

A: SPECIFICATION

Fuel tank	Capacity	70 L (18.5 US gal, 15.4 Imp gal)
	Location	Under rear seat
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-06469

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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) Fuel 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)

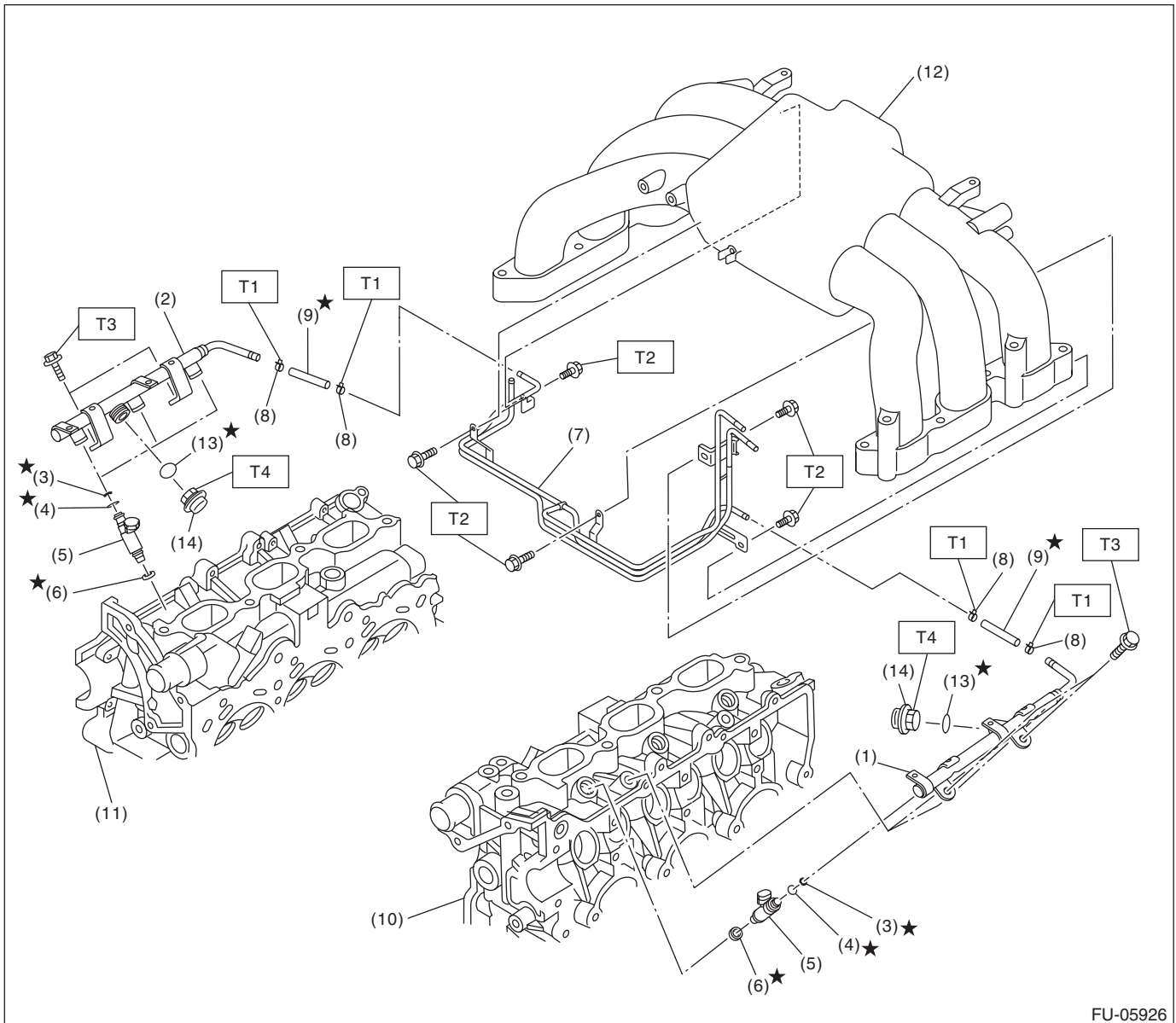
T2: 6.4 (0.7, 4.7)

T3: 17 (1.7, 12.5)

T4: 19 (1.9, 14.0)

T5: 25 (2.5, 18.4)

2. FUEL INJECTOR



FU-05926

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|---------------------------|-----------------------|
| (1) Fuel injector pipe LH | (8) Clamp |
| (2) Fuel injector pipe RH | (9) Fuel hose |
| (3) O-ring | (10) Cylinder head LH |
| (4) Injection rubber | (11) Cylinder head RH |
| (5) Fuel injector | (12) Intake manifold |
| (6) Seal ring | (13) Gasket |
| (7) Fuel pipe ASSY | (14) Pulsation damper |

Tightening torque: N·m (kgf·m, ft·lb)

T1: 1.25 (0.1, 0.9)

T2: 6.4 (0.7, 4.7)

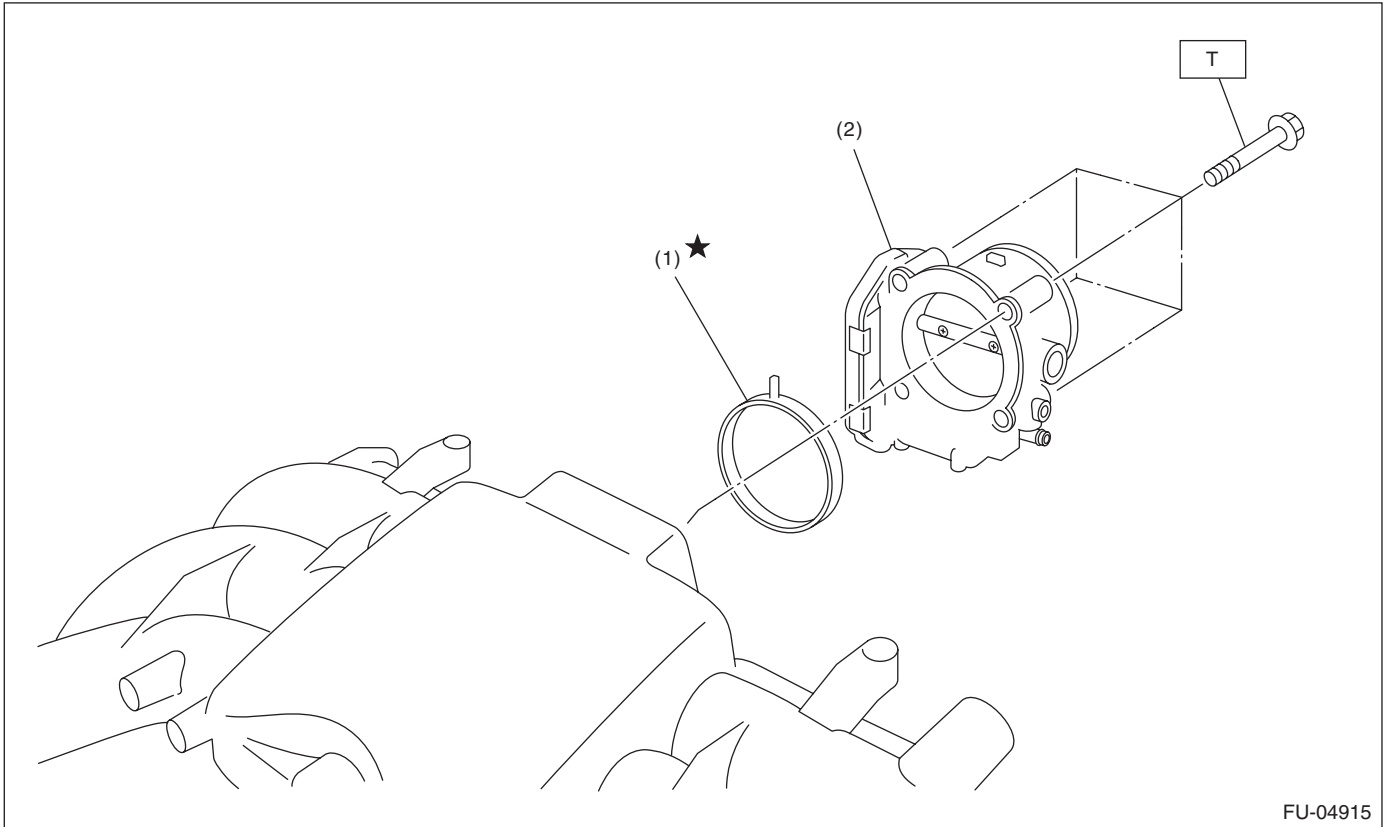
T3: 19 (1.9, 14.0)

T4: 21.6 (2.2, 15.9)

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3. AIR INTAKE SYSTEM



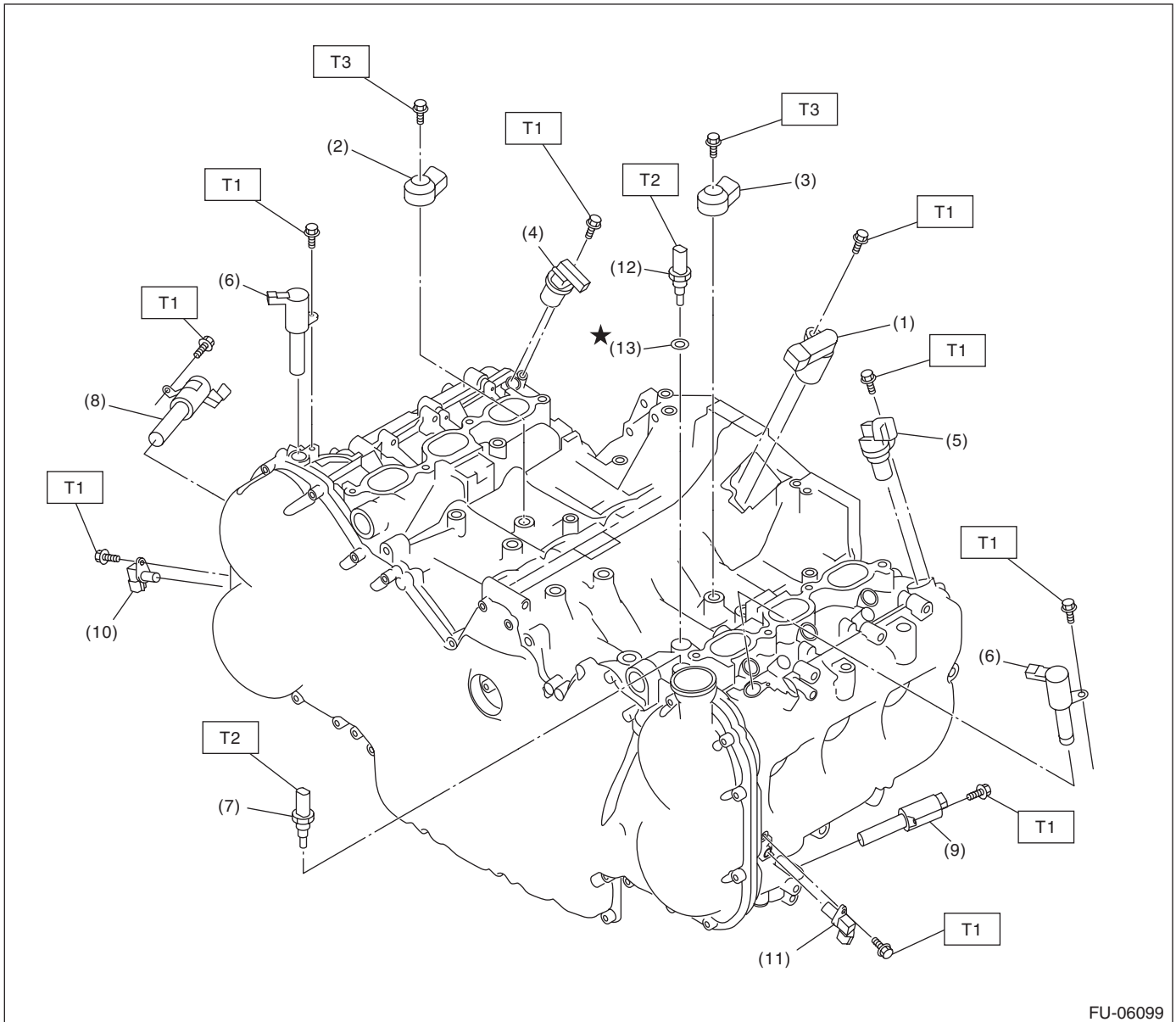
(1) O-ring

(2) Throttle body

Tightening torque: N·m (kgf·m, ft·lb)

T: 8 (0.8, 5.9)

4. SENSOR



FU-06099

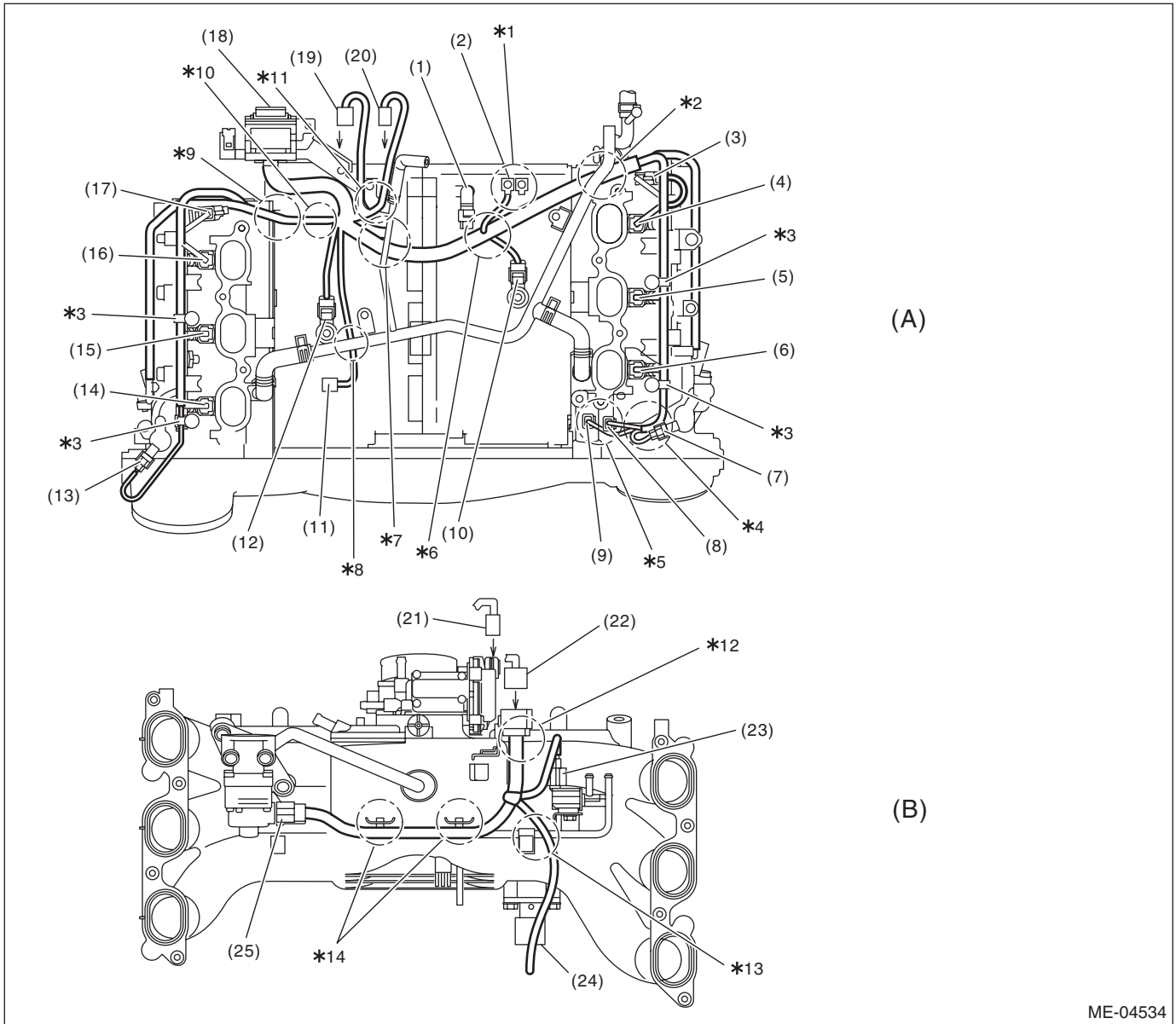
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|--|--|--|
| (1) Crankshaft position sensor | (7) Oil temperature sensor | (13) Gasket |
| (2) Knock sensor RH | (8) Exhaust oil flow control solenoid valve RH | |
| (3) Knock sensor LH | (9) Exhaust oil flow control solenoid valve LH | Tightening torque: N·m (kgf-m, ft-lb) |
| (4) Intake camshaft position sensor RH | (10) Exhaust camshaft position sensor RH | T1: 6.4 (0.7, 4.7) |
| (5) Intake camshaft position sensor LH | (11) Exhaust camshaft position sensor LH | T2: 18 (1.8, 13.3) |
| (6) Intake oil flow control solenoid valve | (12) Engine coolant temperature sensor | T3: 25 (2.5, 18.4) |

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5. ENGINE HARNESS

Engine harness assembly diagram 1



ME-04534

General Description

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(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.

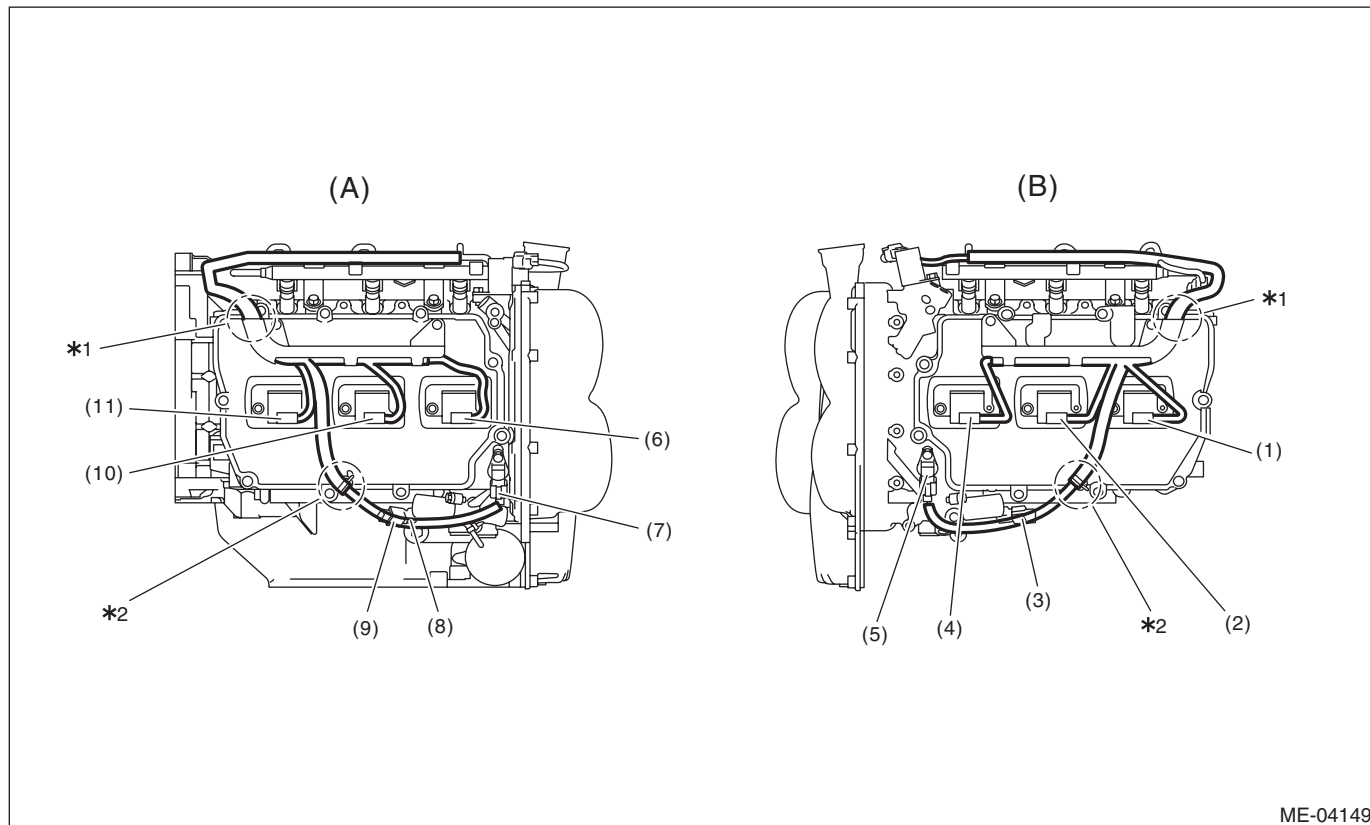
*13: Route outside the fuel pipe.

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

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FUEL INJECTION (FUEL SYSTEMS)

Engine harness assembly diagram 2



(A) Right side of the engine

(B) Left side of the engine

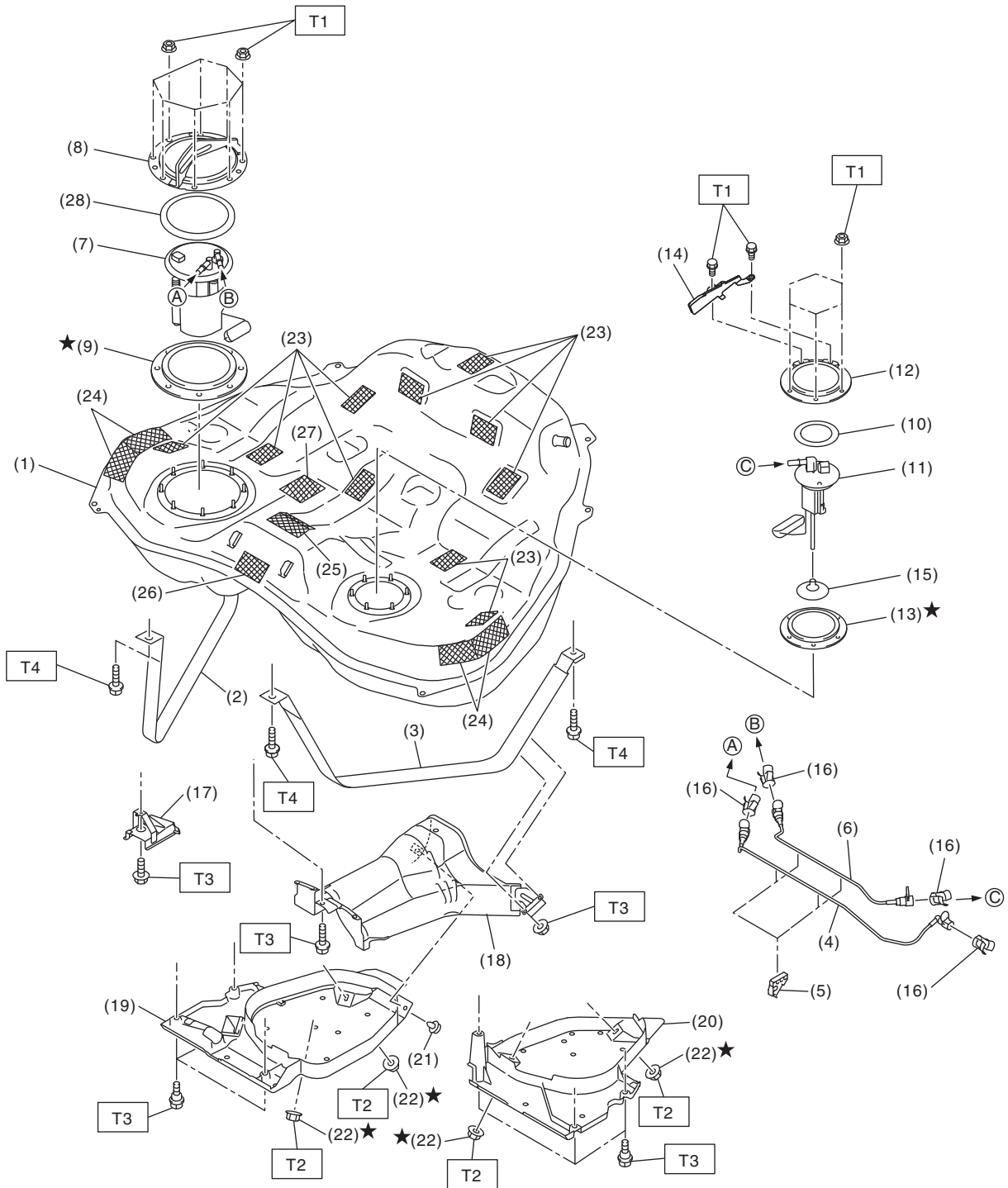
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|--|---|--|
| (1) #6 ignition coil connector | (5) Exhaust camshaft position sensor LH connector | (9) Exhaust oil flow control valve solenoid RH connector |
| (2) #4 ignition coil connector | (6) #1 injector connector | (10) #3 ignition coil connector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

General Description

6. FUEL TANK



FU-08151

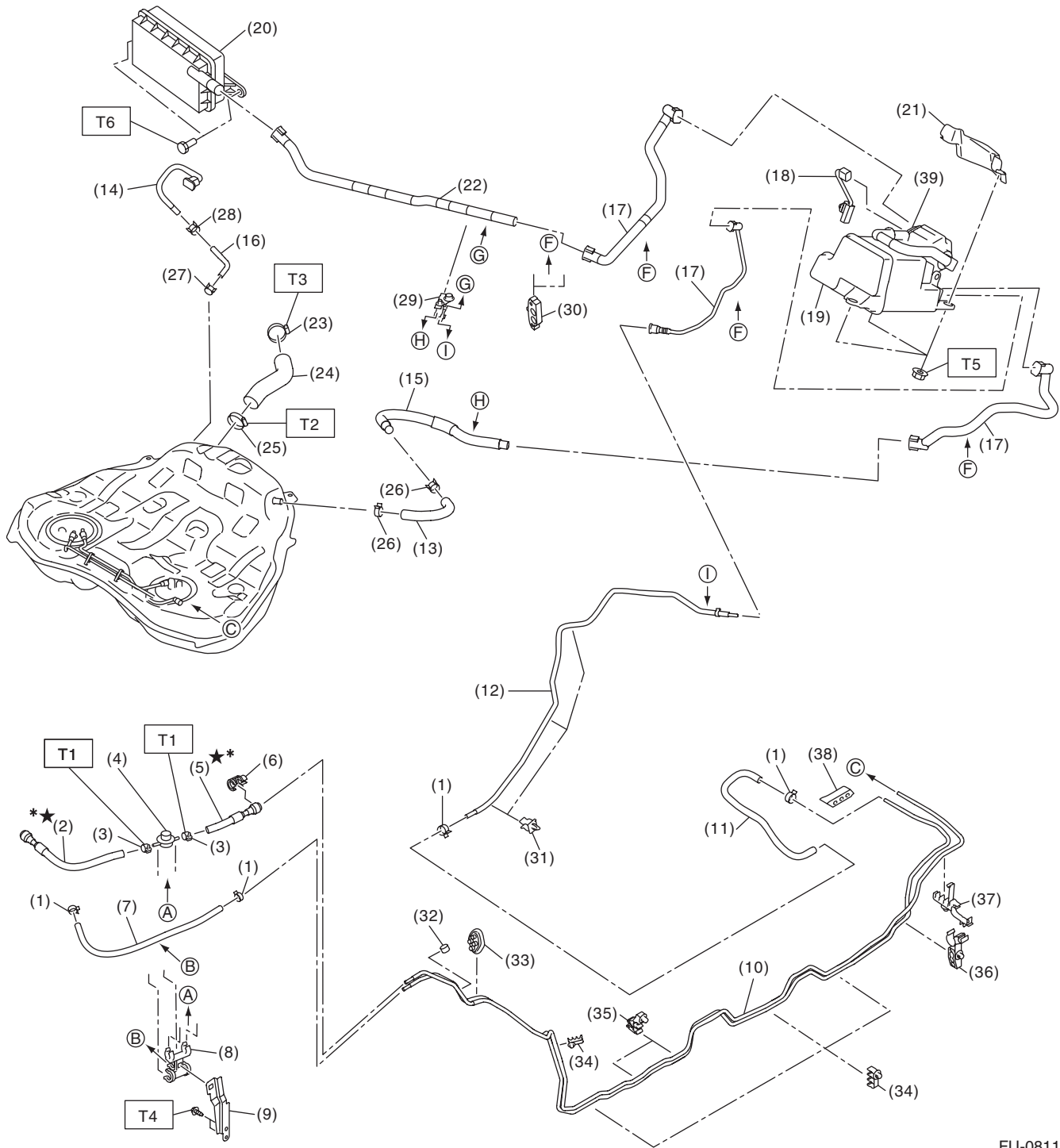
General Description

FUEL INJECTION (FUEL SYSTEMS)

(1) Fuel tank	(12) Fuel sub level sensor upper plate	(23) Cushion
(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	(26) Cushion
(5) Tube clamp	(16) Retainer	(27) Cushion
(6) Fuel sub delivery tube	(17) Stopper	(28) Fuel upper plate cushion
(7) Fuel pump ASSY	(18) Heat shield cover	<i>Tightening torque: N·m (kgf-m, ft-lb)</i>
(8) Fuel pump upper plate	(19) Fuel tank protector RH	<i>T1: 4.4 (0.4, 3.2)</i>
(9) Fuel pump gasket	(20) Fuel tank protector LH	<i>T2: 9 (0.9, 6.6)</i>
(10) Fuel sub level sensor upper plate cushion	(21) Clip	<i>T3: 18 (1.8, 13.3)</i>
(11) Fuel sub level sensor	(22) Self-locking nut	<i>T4: 33 (3.4, 24.3)</i>

General Description

7. FUEL LINE



FU-08114

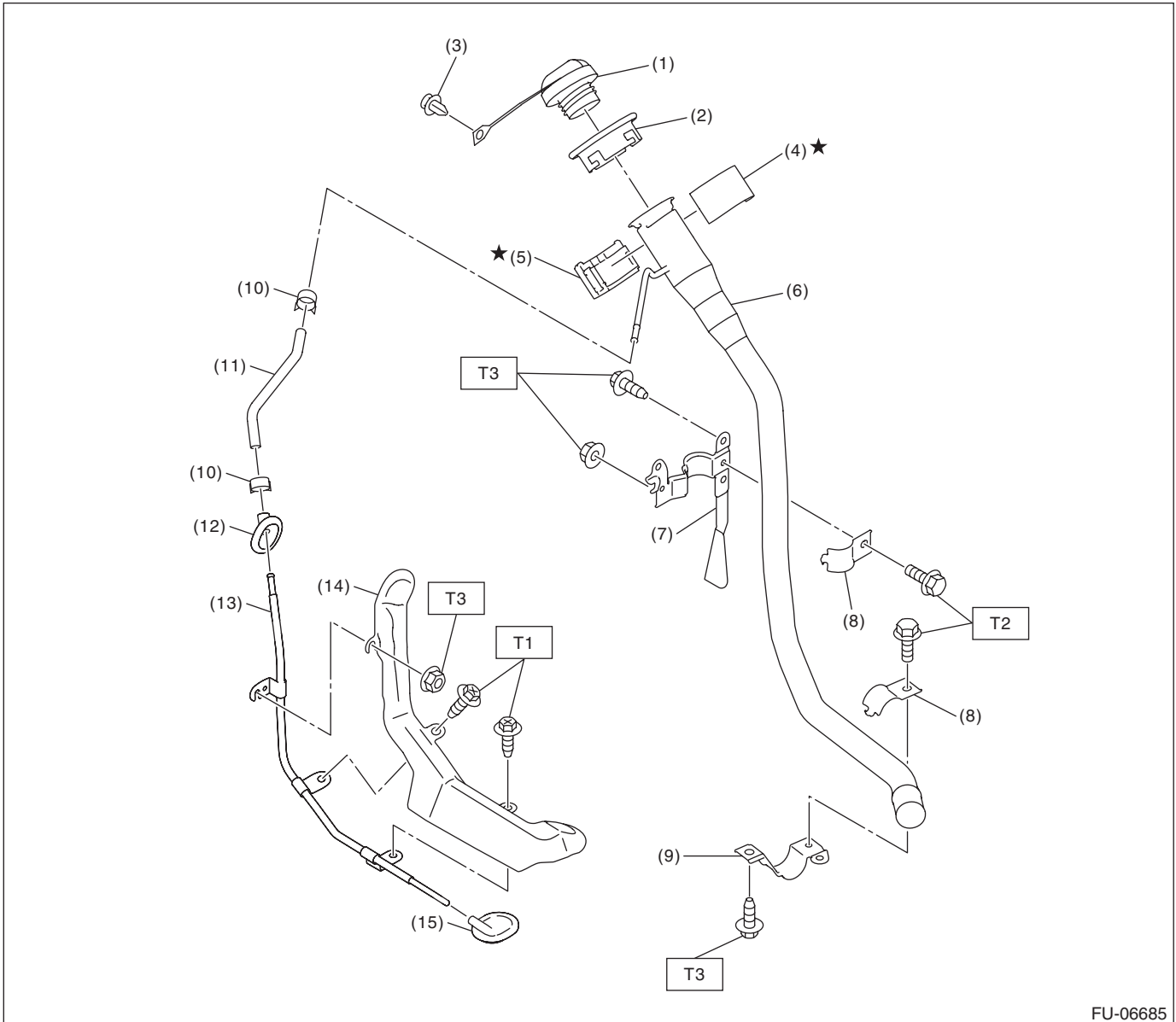
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FUEL INJECTION (FUEL SYSTEMS)

(1) Clip	(17) Canister tube ASSY	(33) Fuel pipe front grommet
(2) Fuel delivery hose A	(18) Connector ASSY	(34) Pipe clamp
(3) Clamp	(19) Canister	(35) Pipe clamp
(4) Fuel damper	(20) Drain filter	(36) Pipe clamp
(5) Fuel delivery hose B	(21) Canister protector	(37) Pipe clamp
(6) Connect check cover	(22) Drain tube ASSY	(38) Fuel pipe rear grommet
(7) Evaporation hose	(23) Clamp	(39) Leak check valve ASSY
(8) Fuel damper holder	(24) Fuel filler hose	
(9) Damper bracket	(25) Clamp	<hr/> Tightening torque: N·m (kgf-m, ft-lb)
(10) Fuel pipe ASSY	(26) Clip	T1: 1.25 (0.1, 2.9)
(11) Purge hose	(27) Clip	T2: 2 (0.2, 1.5)
(12) Purge pipe	(28) Clip	T3: 2.5 (0.3, 1.8)
(13) Air vent hose A	(29) Tube clamp	T4: 7.5 (0.8, 5.5)
(14) Circulate tube	(30) Tube clamp	T5: 8 (0.8, 5.9)
(15) Air vent tube	(31) Pipe clamp	T6: 7.5 (0.8, 5.5)
(16) Circulate hose	(32) Bushing	<hr/>

General Description

8. FUEL FILLER PIPE



FU-06685

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|--------------------------------|--------------------------------|---------------------------------|
| (1) Fuel filler cap | (8) Fuel filler pipe bracket B | (14) Evaporation pipe protector |
| (2) Fuel filler pipe protector | (9) Fuel filler pipe bracket C | (15) Grommet |
| (3) Clip | (10) Clip | |
| (4) Neck holder A | (11) Evaporation hose | |
| (5) Neck holder B | (12) Grommet | |
| (6) Fuel filler pipe | (13) Evaporation pipe | |
| (7) Fuel filler pipe bracket A | | |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 1 (0.1, 0.7)

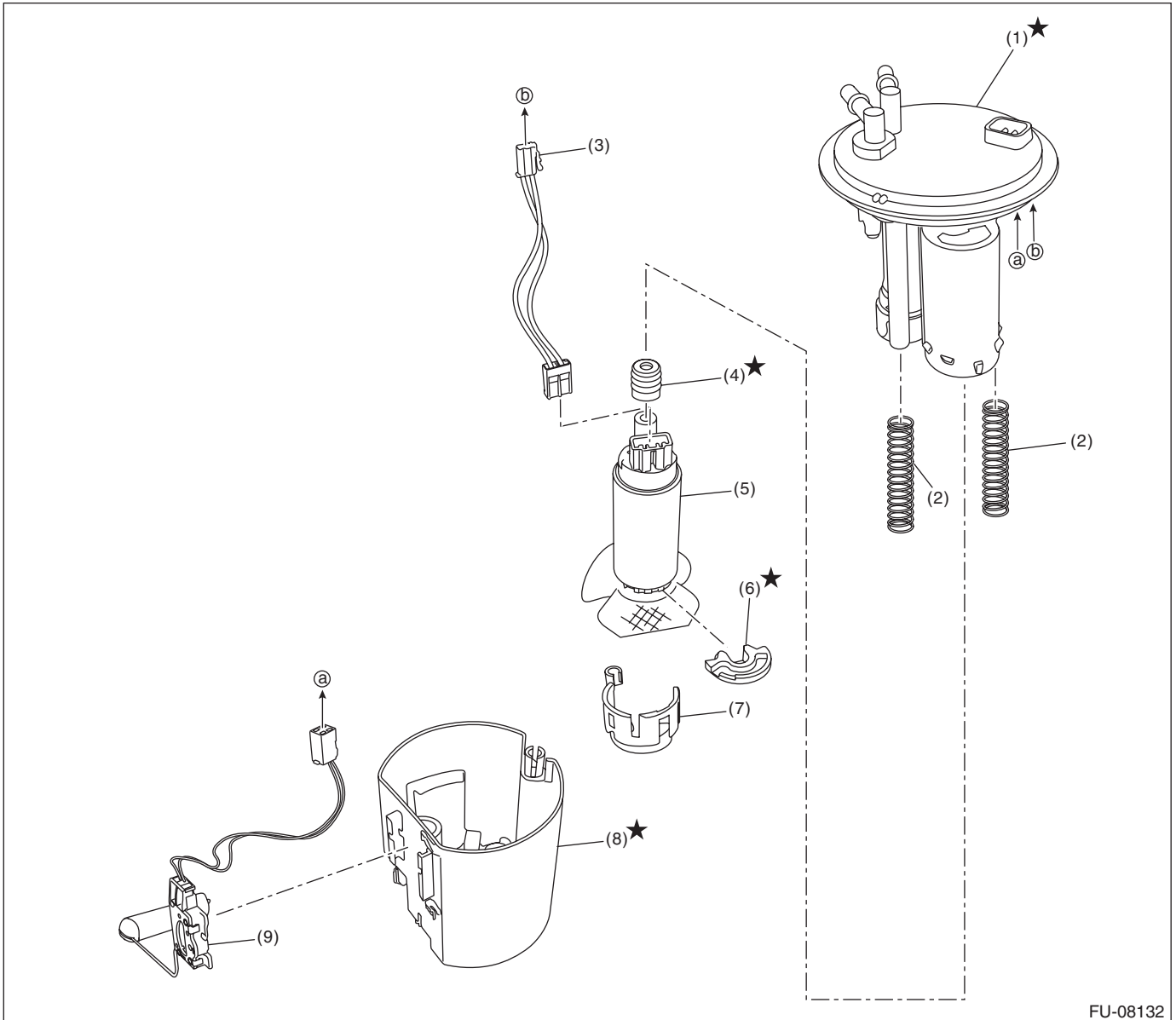
T2: 7.35 (0.7, 5.4)

T3: 7.5 (0.8, 5.5)

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9. FUEL PUMP



FU-08132

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

C: CAUTION

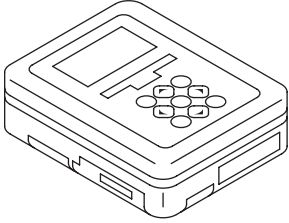
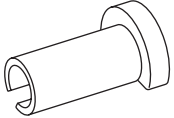
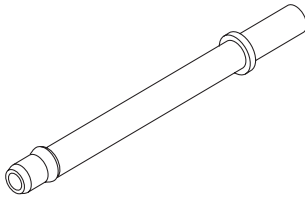
- Prior to starting work, pay special attention to the following:
 1. Always wear work clothes, a work cap, and protective shoes. Additionally, wear a helmet, protective goggles, etc. if necessary.
 2. Protect the vehicle using a seat cover, fender cover, etc.
 3. Prepare the service tools, clean cloth, containers to catch grease and oil, etc.
- 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.
- Vehicle components are extremely hot immediately after driving. Be wary of receiving burns from heated parts.
- When performing a repair, identify the cause of trouble and avoid unnecessary removal, disassembly and replacement.
- Before disconnecting connectors of sensors or units, be sure to disconnect the ground cable from battery.
- Always use the jack-up point when the shop jacks or rigid racks are used to support the vehicle.
- Remove contamination including dirt and corrosion before removal, installation, disassembly or assembly.
- Keep the removed parts in order and protect them from dust and dirt.
- All removed parts, if to be reused, should be reinstalled in the original positions with attention to the correct directions, etc.
- Bolts, nuts and washers should be replaced with new parts as required.
- Follow all government and local regulations concerning disposal of refuse when disposing fuel.

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D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST1B022XU0</p>	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for draining fuel and each inspection.
 <p style="text-align: center;">ST42099AE000</p>	42099AE000	QUICK CONNECTOR RELEASE	Used for removing the quick connector.
 <p style="text-align: center;">ST18471AA000</p>	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.