

General Description

FUEL INJECTION (FUEL SYSTEMS)

1. General Description

A: SPECIFICATION

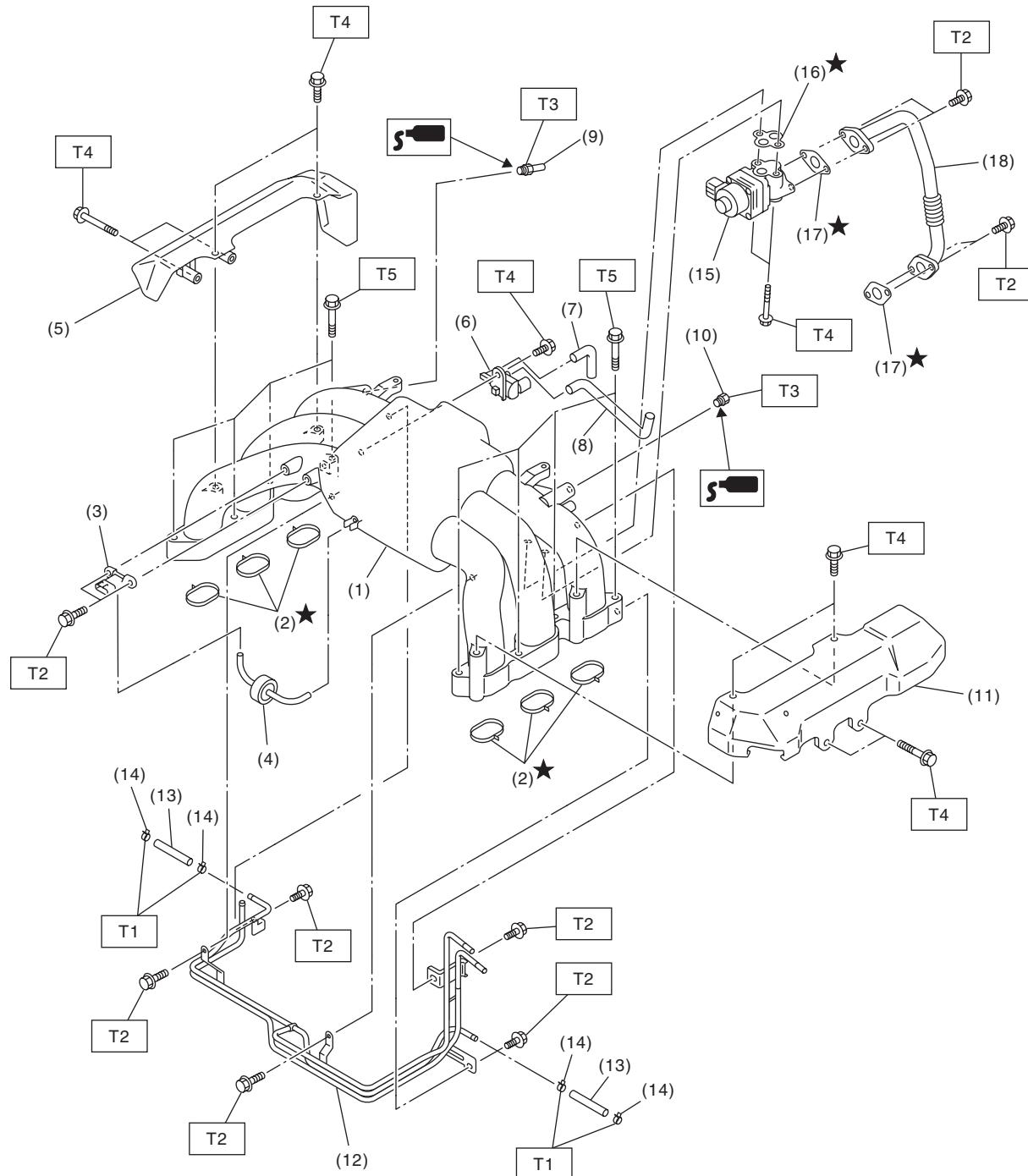
Fuel tank	Capacity	64 ℥ (16.9 US gal, 14.1 Imp gal)
	Install locations	Rear floor bottom
Fuel pump	Type	Impeller
	Shutoff discharge pressure	550 — 850 kPa (5.61 — 8.67 kg/cm ² , 79.8 — 123.3 psi)
	Discharge rate	155 ℥ (41 US gal, 34.1 Imp gal)/h or more [12 V at 300 kPa (3.06 kg/cm ² , 43.5 psi)]
Fuel filter		In-tank type

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B: COMPONENT

1. INTAKE MANIFOLD



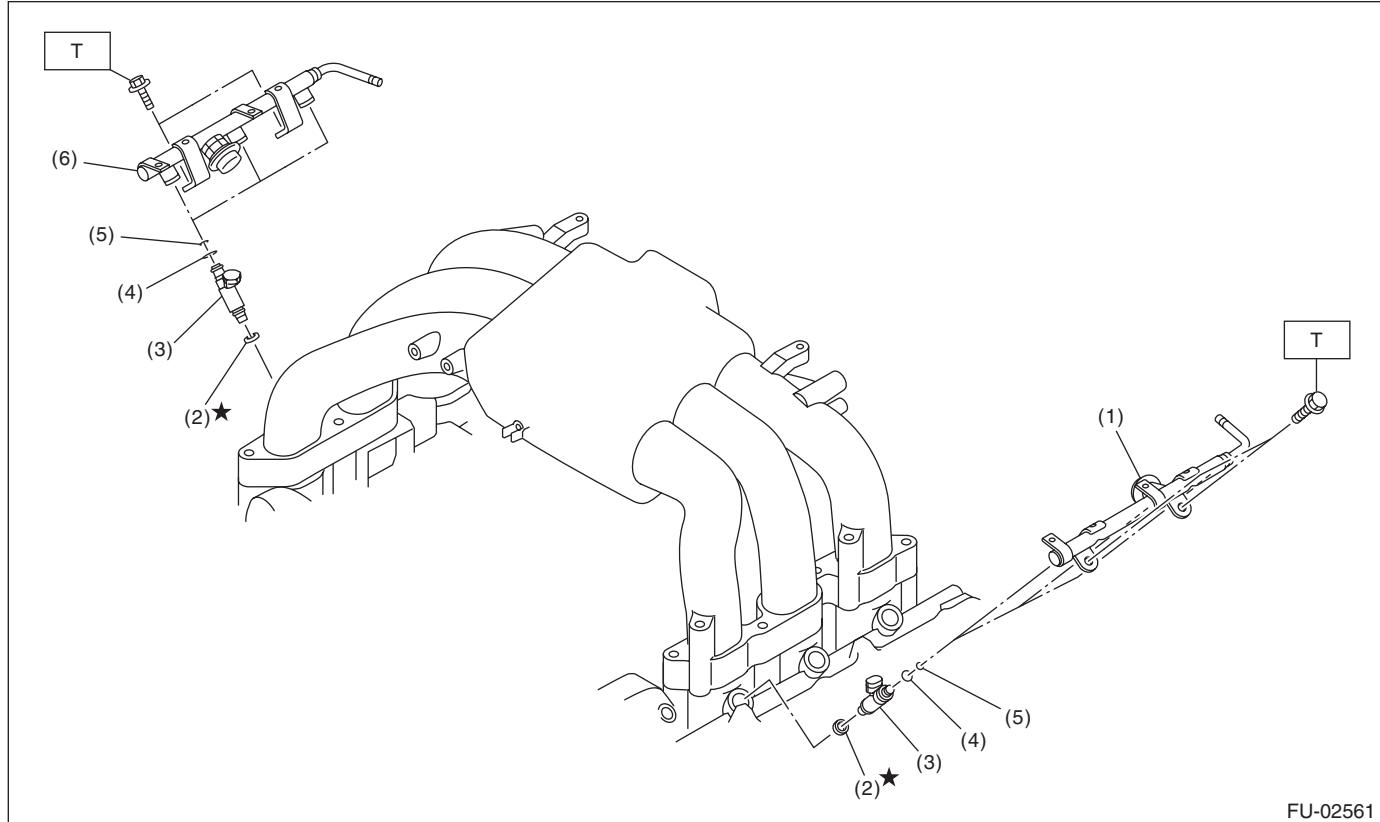
FU-04653

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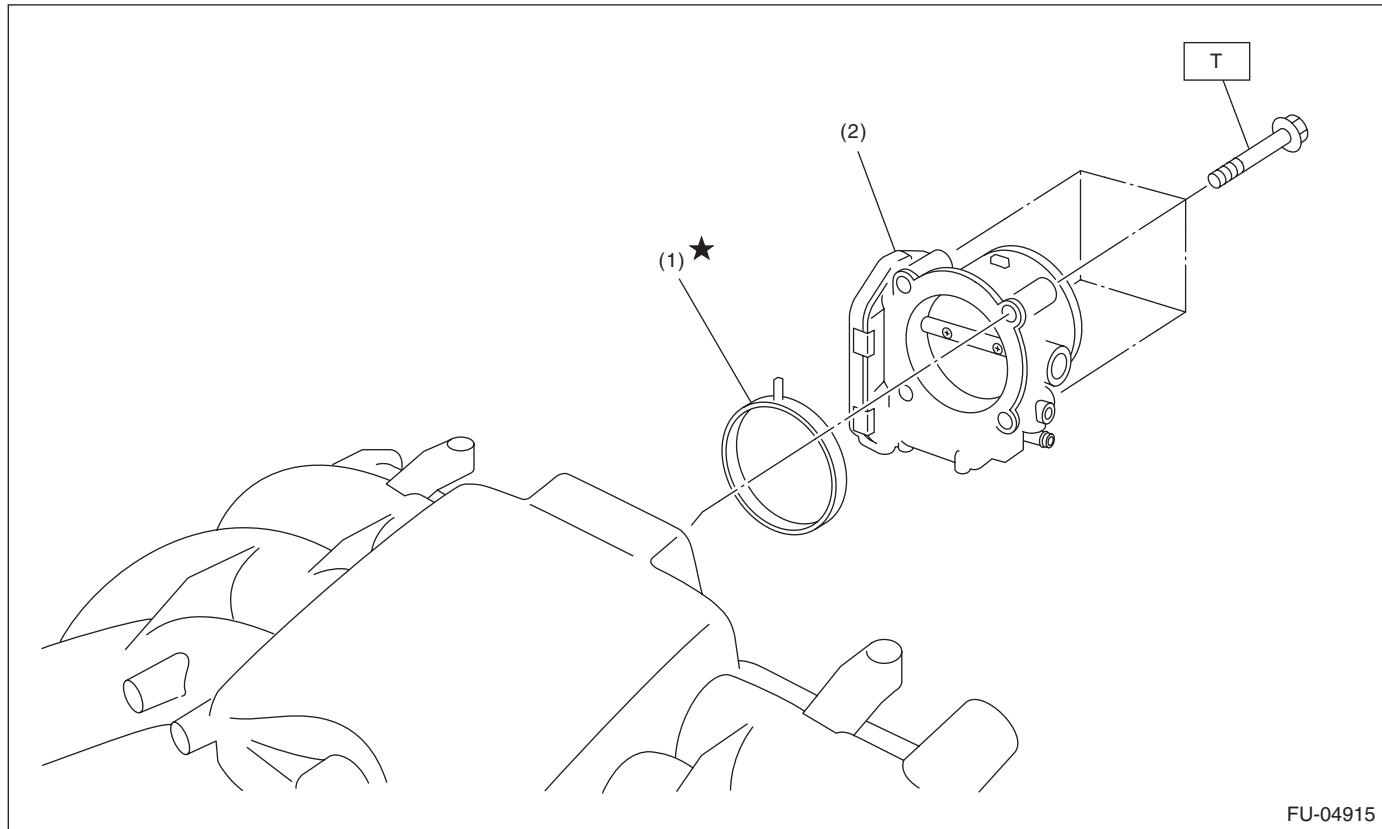
(1) Intake manifold	(10) Nipple	(18) EGR pipe
(2) O-ring	(11) Fuel pipe protector LH	
(3) Manifold absolute pressure sensor	(12) Fuel pipe ASSY	
(4) Filter	(13) Hose	Tightening torque:N·m (kgf·m, ft·lb)
(5) Fuel pipe protector RH	(14) Clamp	T1: 1.25 (0.1, 0.9)
(6) Purge control solenoid valve	(15) EGR valve	T2: 6.4 (0.7, 4.7)
(7) Hose	(16) Gasket	T3: 17 (1.7, 12.5)
(8) Hose	(17) Gasket	T4: 19 (1.9, 14.0)
(9) Plug		T5: 25 (2.5, 18.4)

2. FUEL INJECTOR



(1) Fuel injector pipe LH	(4) Injection rubber	Tightening torque:N·m (kgf·m, ft·lb)
(2) Insulator	(5) O-ring	T: 19 (1.9, 14.0)
(3) Fuel injector	(6) Fuel injector pipe RH	

3. AIR INTAKE SYSTEM



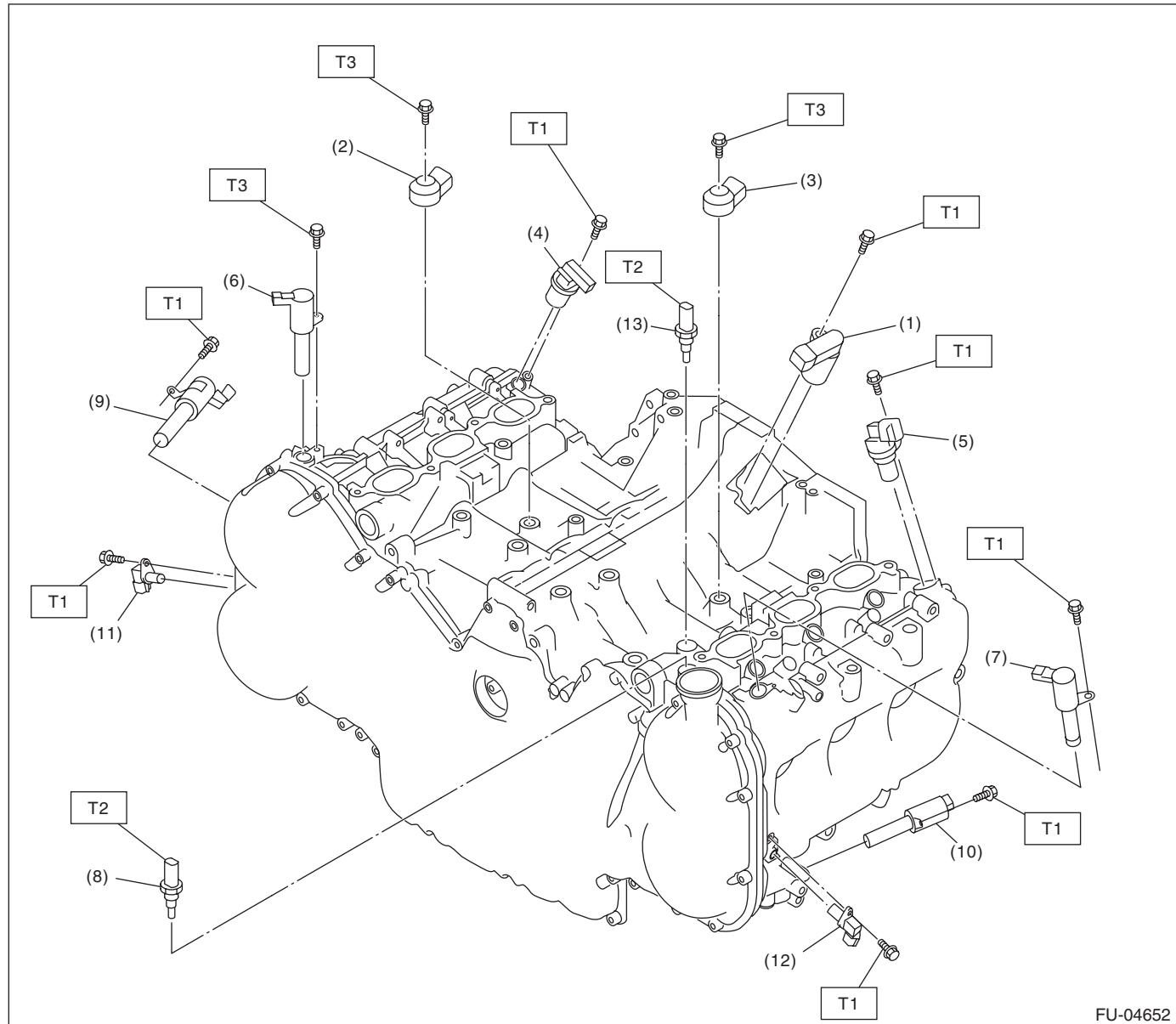
- (1) O-ring
- (2) Throttle body

Tightening torque: N·m (kgf·m, ft-lb)
T: 8 (0.8, 5.9)

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4. SENSOR

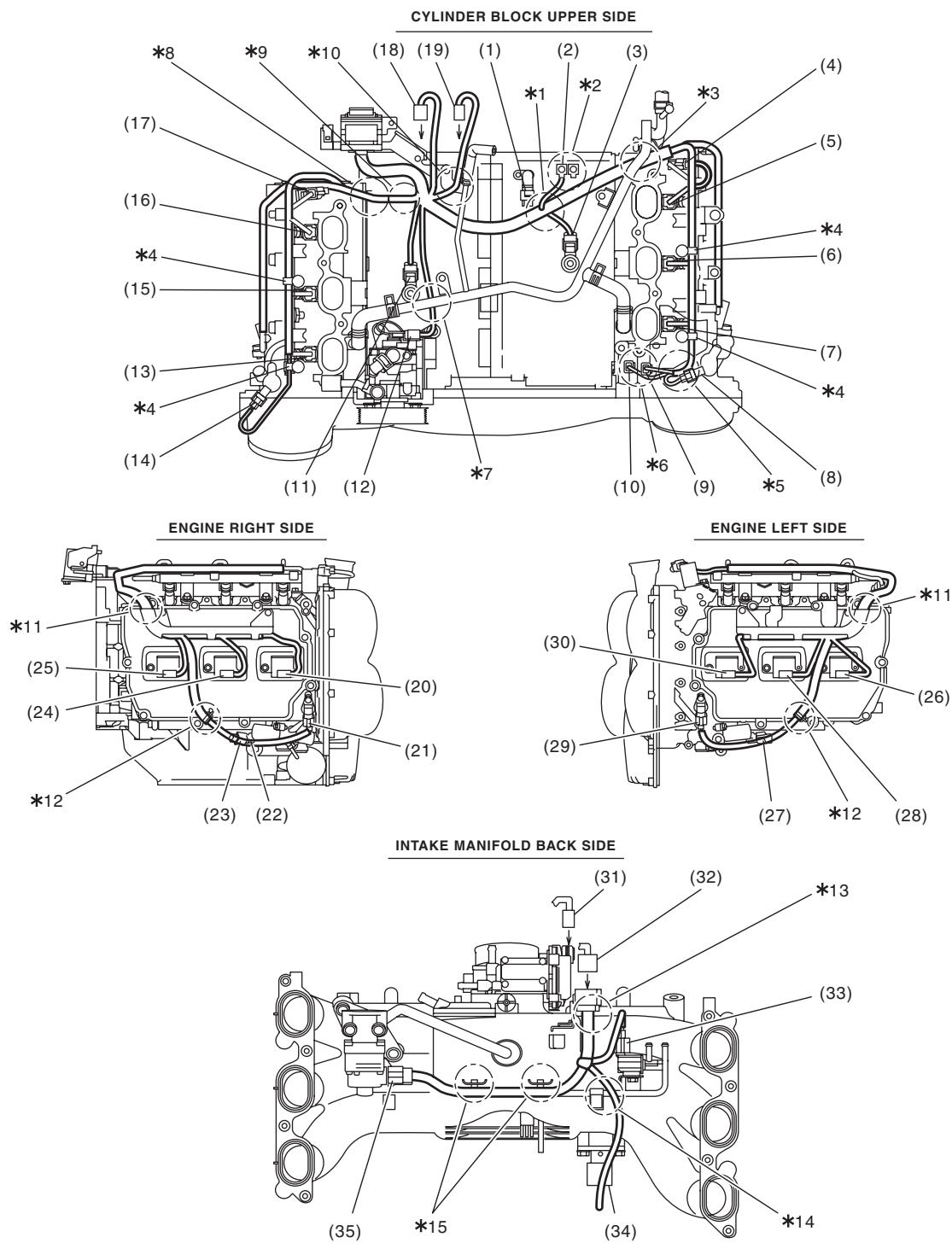


(1) Crankshaft position sensor	(7) Intake oil flow control solenoid valve LH	(13) Engine coolant temperature sensor	
(2) Knock sensor RH	(8) Oil temperature sensor	Tightening torque:N·m (kgf·m, ft·lb)	
(3) Knock sensor LH	(9) Exhaust oil flow control solenoid valve RH	T1: 6.4 (0.7, 4.7)	
(4) Intake camshaft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

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5. ENGINE HARNESS



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(1) Crankshaft position sensor connector	(13) #1 injector connector	(25) #5 ignition coil connector
(2) Engine ground	(14) Intake oil flow control solenoid valve RH connector	(26) #6 ignition coil connector
(3) Knock sensor LH connector	(15) #3 injector connector	(27) Exhaust oil flow control solenoid valve LH connector
(4) Intake camshaft position sensor LH connector	(16) #5 injector connector	(28) #4 ignition coil connector
(5) #6 injector connector	(17) Intake camshaft position sensor RH connector	(29) Exhaust camshaft position sensor LH connector
(6) #4 injector connector	(18) Upper/lower connection connector (To intake manifold)	(30) #2 ignition coil connector
(7) #2 injector connector	(19) Electronic throttle control connector (To intake manifold)	(31) Electronic throttle control connector (From upper part of the cylinder block)
(8) Intake oil flow control solenoid valve LH connector	(20) #1 ignition coil connector	(32) Upper/lower connection connector (From upper part of the cylinder block)
(9) Oil temperature sensor connector	(21) Exhaust camshaft position sensor RH	(33) Purge control solenoid valve connector
(10) Engine coolant temperature sensor connector	(22) Oil pressure switch connector	(34) Manifold absolute pressure sensor connector
(11) Knock sensor RH connector	(23) Exhaust oil flow control solenoid valve RH connector	(35) EGR valve connector
(12) Power steering switch connector	(24) #3 ignition coil connector	

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

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

*3: Route the harness under the heater hose.

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

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

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

*7: Route the harness under the heater hose.

*8: Route under the fuel pipe.

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

*10: Route the harness over the heater hose stay.

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

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

*13: Securely install the engine harness fixing stay.

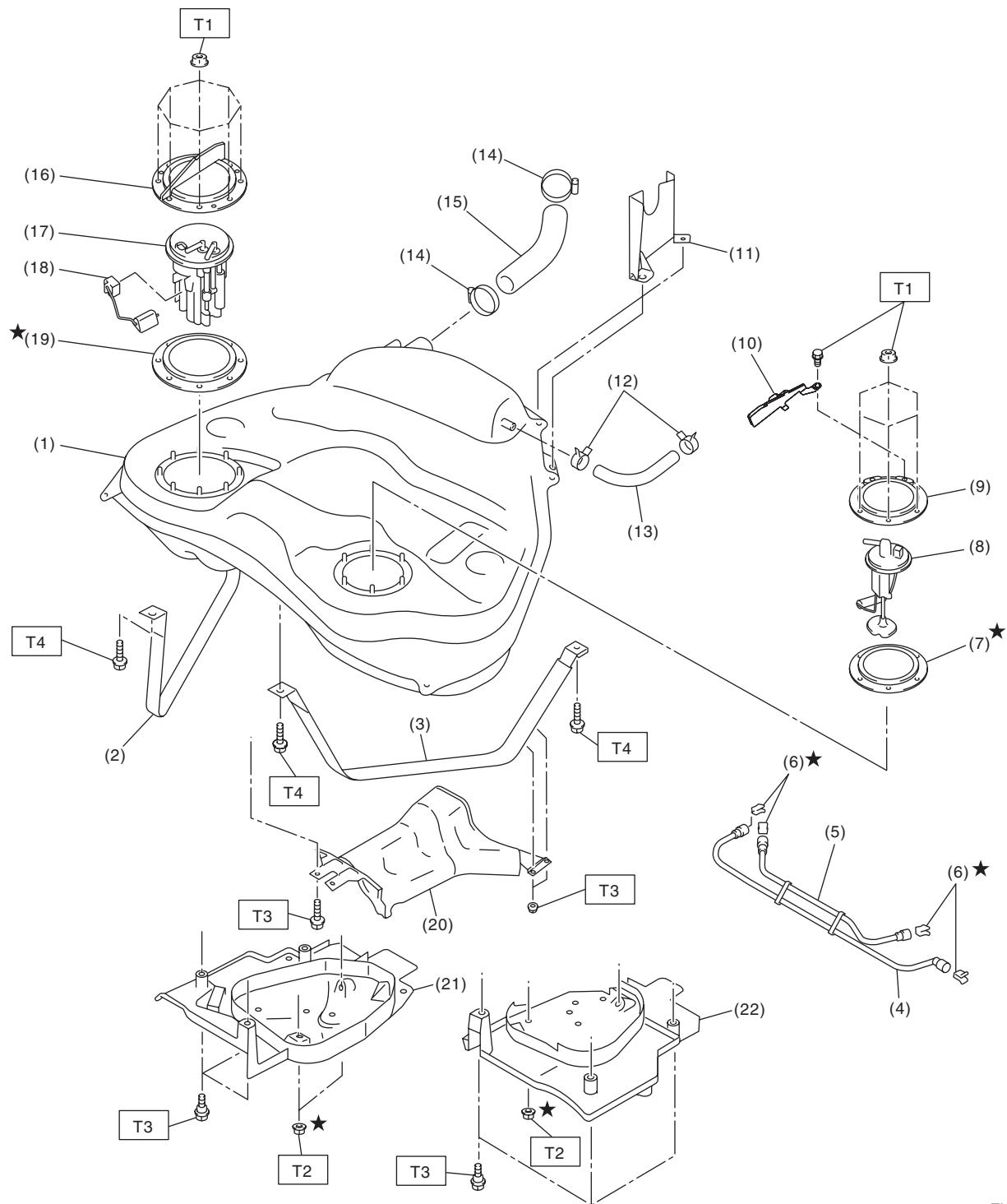
*14: Route outside the fuel pipe.

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

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6. FUEL TANK



FU-04036

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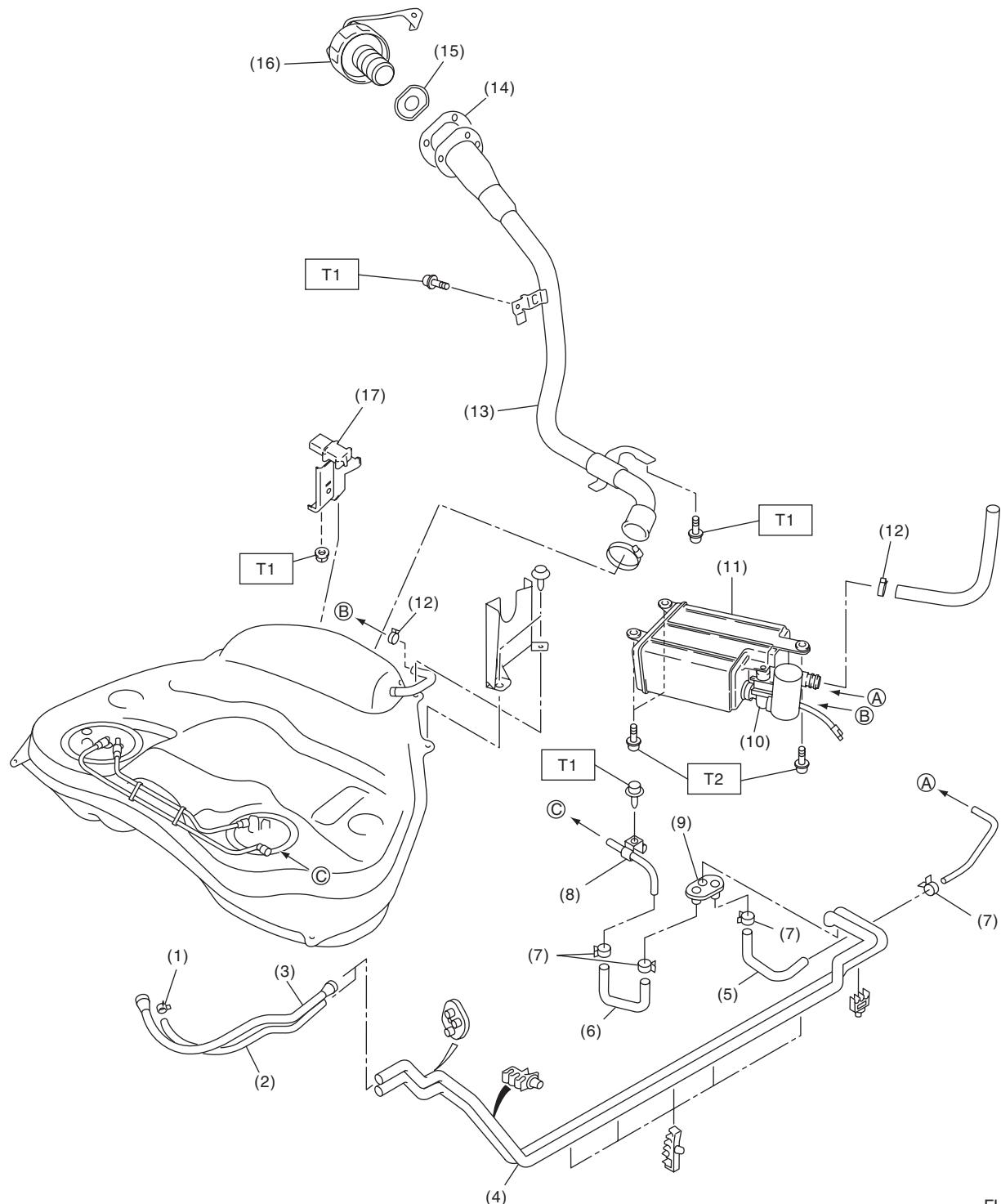
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(1) Fuel tank	(11) Fuel tank protector LH (Rear)	(21) Fuel tank protector RH (Front)
(2) Fuel tank band RH	(12) Clip	(22) Fuel tank protector LH (Front)
(3) Fuel tank band LH	(13) Evaporation hose	
(4) Delivery tube	(14) Clamp	<i>Tightening torque:N·m (kgf·m, ft-lb)</i>
(5) Jet pump tube	(15) Fuel filler hose	<i>T1: 4.4 (0.4, 3.2)</i>
(6) Retainer	(16) Fuel pump upper plate	<i>T2: 9 (0.9, 6.6)</i>
(7) Fuel sub level sensor gasket	(17) Fuel pump ASSY	<i>T3: 18 (1.8, 13.3)</i>
(8) Fuel sub level sensor	(18) Fuel level sensor	<i>T4: 33 (3.4, 24.3)</i>
(9) Fuel sub level sensor upper plate	(19) Fuel pump gasket	
(10) Bracket	(20) Heat shield cover	

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7. FUEL LINE



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(1) Clamp	(8) Fuel pipe ASSY	(15) Ring
(2) Evaporation hose A	(9) Grommet	(16) Fuel filler cap
(3) Fuel delivery hose A	(10) Drain valve	(17) Fuel tank pressure sensor
(4) Fuel pipe ASSY	(11) Canister	
(5) Evaporation hose B	(12) Clamp	
(6) Fuel delivery hose B	(13) Fuel filler pipe	
(7) Clamp	(14) Gasket	

Tightening torque:N·m (kgf·m, ft-lb)

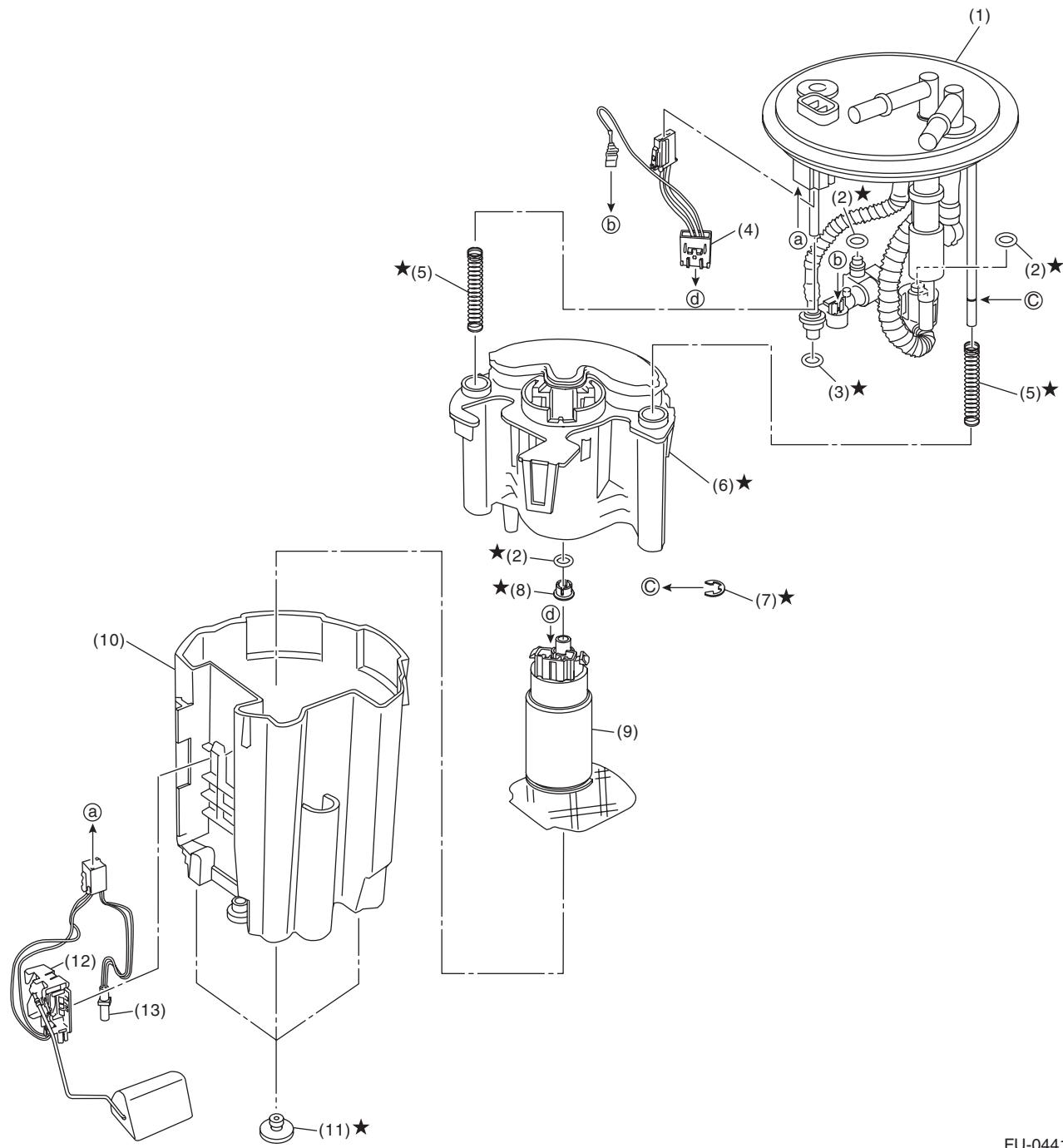
T1: 7.35 (0.7, 5.4)

T2: 8 (0.8, 5.9)

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8. FUEL PUMP



FU-04413

(1) Sub tank bracket ASSY	(6) Fuel filter	(11) Cushion
(2) O-ring	(7) Clip	(12) Fuel level sensor
(3) O-ring	(8) Spacer	(13) Fuel temperature sensor
(4) Fuel pump harness	(9) Pump ASSY	
(5) Spring	(10) Sub tank	

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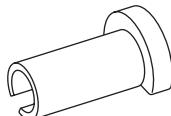
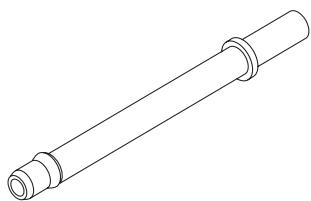
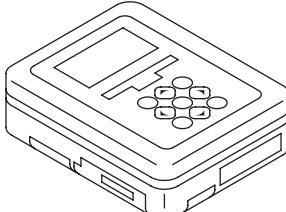
C: CAUTION

- 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 the 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 fuel 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

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