

## General Description

### FUEL INJECTION (FUEL SYSTEMS)

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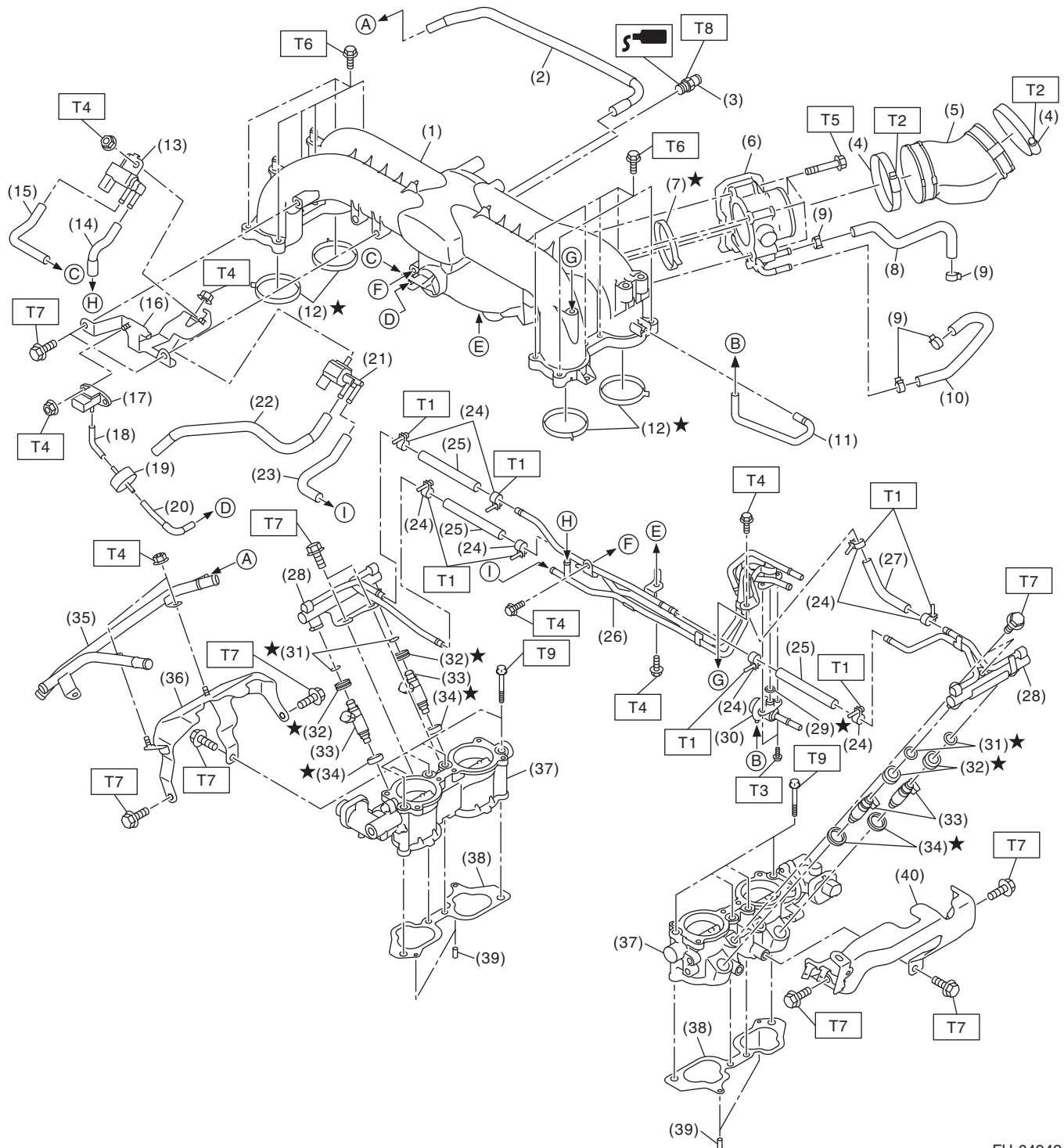
## 1. General Description

### A: SPECIFICATION

Fuel tank	Capacity	70 ℓ (18.5 US gal, 15.4 Imp gal)
	Install locations	Under rear seat
Fuel pump	Type	Impeller
	Shutoff discharge pressure	850 kPa (8.67 kgf/cm <sup>2</sup> , 123.3 psi) or less
	Discharge rate	175 ℓ (46.2 US gal, 38.5 Imp gal)/h or more. [12 V at 300 kPa (3.06 kgf/cm <sup>2</sup> , 43.5 psi)]
Fuel filter		In-tank type

## B: COMPONENT

### 1. INTAKE MANIFOLD 1



FU-04942

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(1) Intake manifold	(18) Vacuum hose C	(35) PCV pipe
(2) Vacuum control hose	(19) Filter	(36) Intake manifold protector RH
(3) PCV valve	(20) Vacuum hose D	(37) Tumble generator valve ASSY
(4) Clamp	(21) Purge control solenoid valve 2	(38) Gasket
(5) Intake duct	(22) Vacuum hose E	(39) Knock pin
(6) Throttle body	(23) Vacuum hose F	(40) Intake manifold protector LH
(7) O-ring	(24) Clamp	
(8) Preheater hose A	(25) Fuel hose A	
(9) Clip	(26) Fuel delivery pipe	
(10) Preheater hose B	(27) Fuel hose B	
(11) Pressure regulator vacuum hose	(28) Fuel pipe	
(12) O-ring	(29) O-ring	
(13) Purge control solenoid valve 1	(30) Pressure regulator	
(14) Vacuum hose A	(31) O-ring	
(15) Vacuum hose B	(32) Grommet	
(16) Solenoid valve bracket	(33) Fuel injector	
(17) Manifold absolute pressure sensor	(34) Seal ring	

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#### ***Tightening torque:N·m (kgf-m, ft-lb)***

***T1: 1.25 (0.1, 0.9)***

***T2: 3 (0.3, 2.2)***

***T3: 3.45 (0.4, 2.5)***

***T4: 6.4 (0.7, 4.7)***

***T5: 8 (0.8, 5.9)***

***T6: 8.3 (0.8, 6.1)***

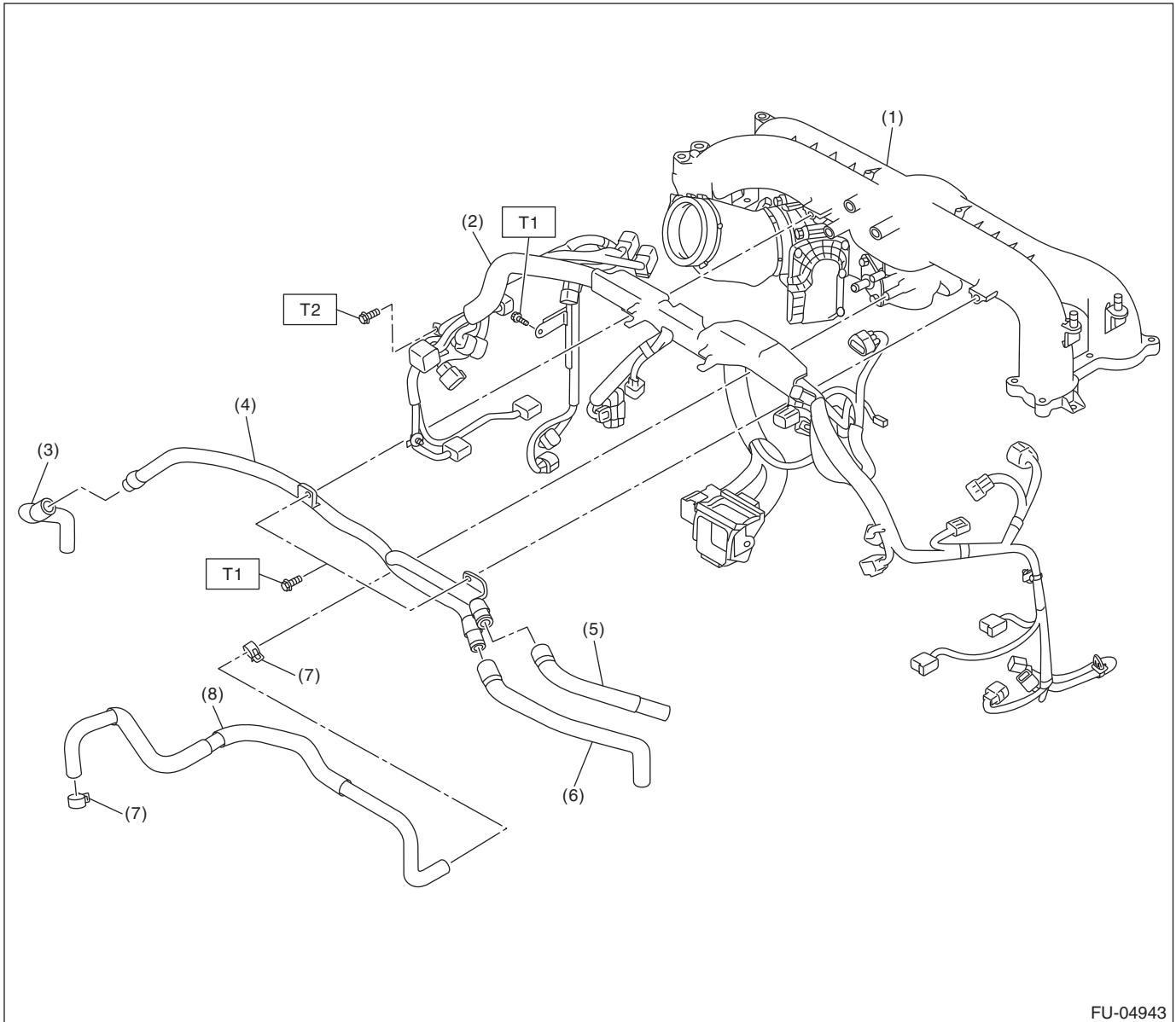
***T7: 19 (1.9, 14.0)***

***T8: 23 (2.3, 17.0)***

***T9: 25 (2.5, 18.4)***

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## 2. INTAKE MANIFOLD 2



FU-04943

- |                     |                               |
|---------------------|-------------------------------|
| (1) Intake manifold | (5) Vacuum hose B             |
| (2) Engine harness  | (6) Vacuum hose C             |
| (3) Vacuum hose A   | (7) Clip                      |
| (4) PCV pipe        | (8) Brake booster vacuum hose |

**Tightening torque: N·m (kgf-m, ft-lb)**

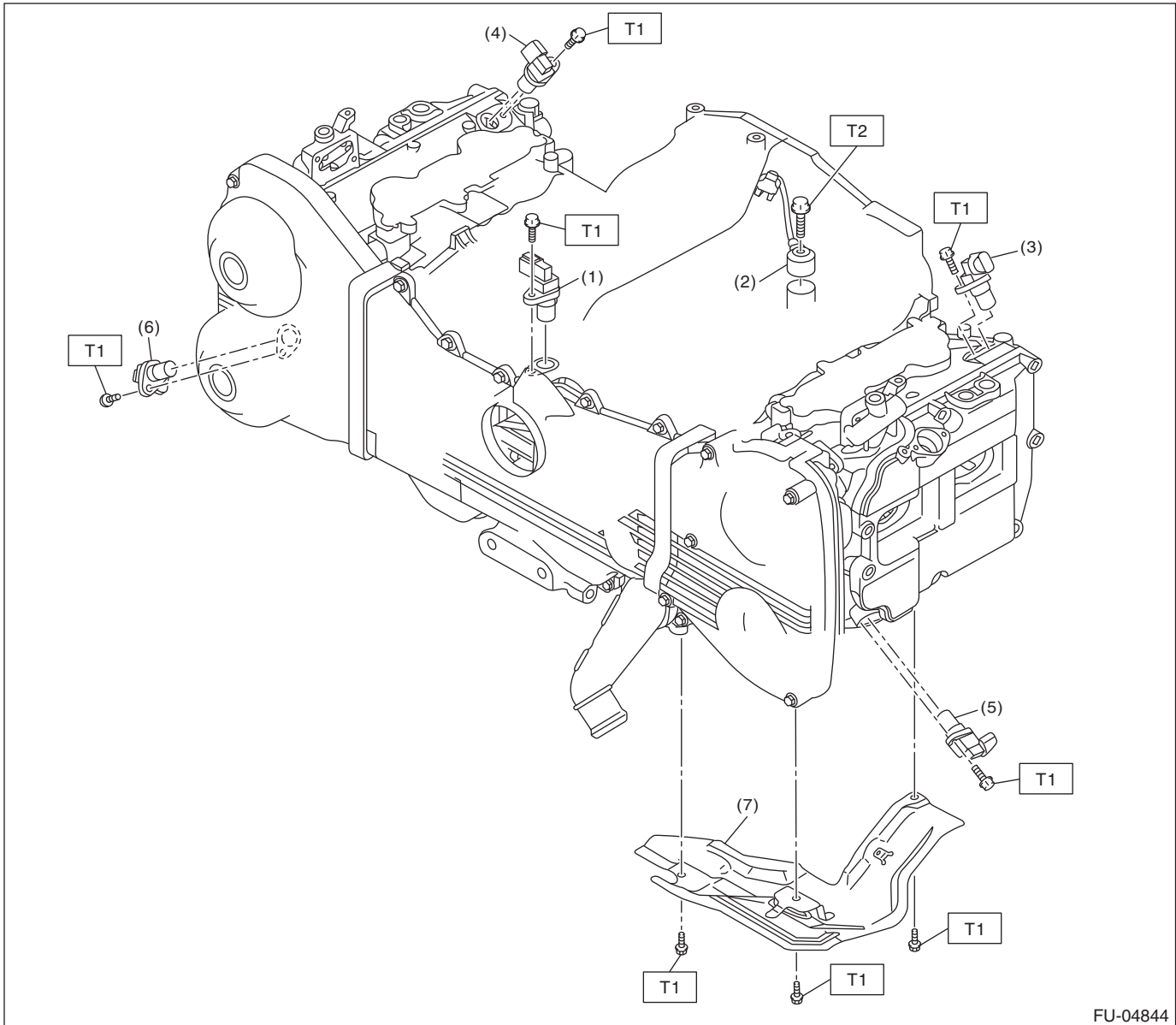
**T1: 6.4 (0.7, 4.7)**

**T2: 19 (1.9, 14.0)**

## General Description

### FUEL INJECTION (FUEL SYSTEMS)

### 3. CRANKSHAFT POSITION, CAMSHAFT POSITION AND KNOCK SENSORS



FU-04844

(1) Crankshaft position sensor

(5) Exhaust camshaft position sensor  
LH

**Tightening torque: N·m (kgf-m, ft-lb)**

(2) Knock sensor

(6) Exhaust camshaft position sensor  
RH

**T1: 6.4 (0.7, 4.7)**

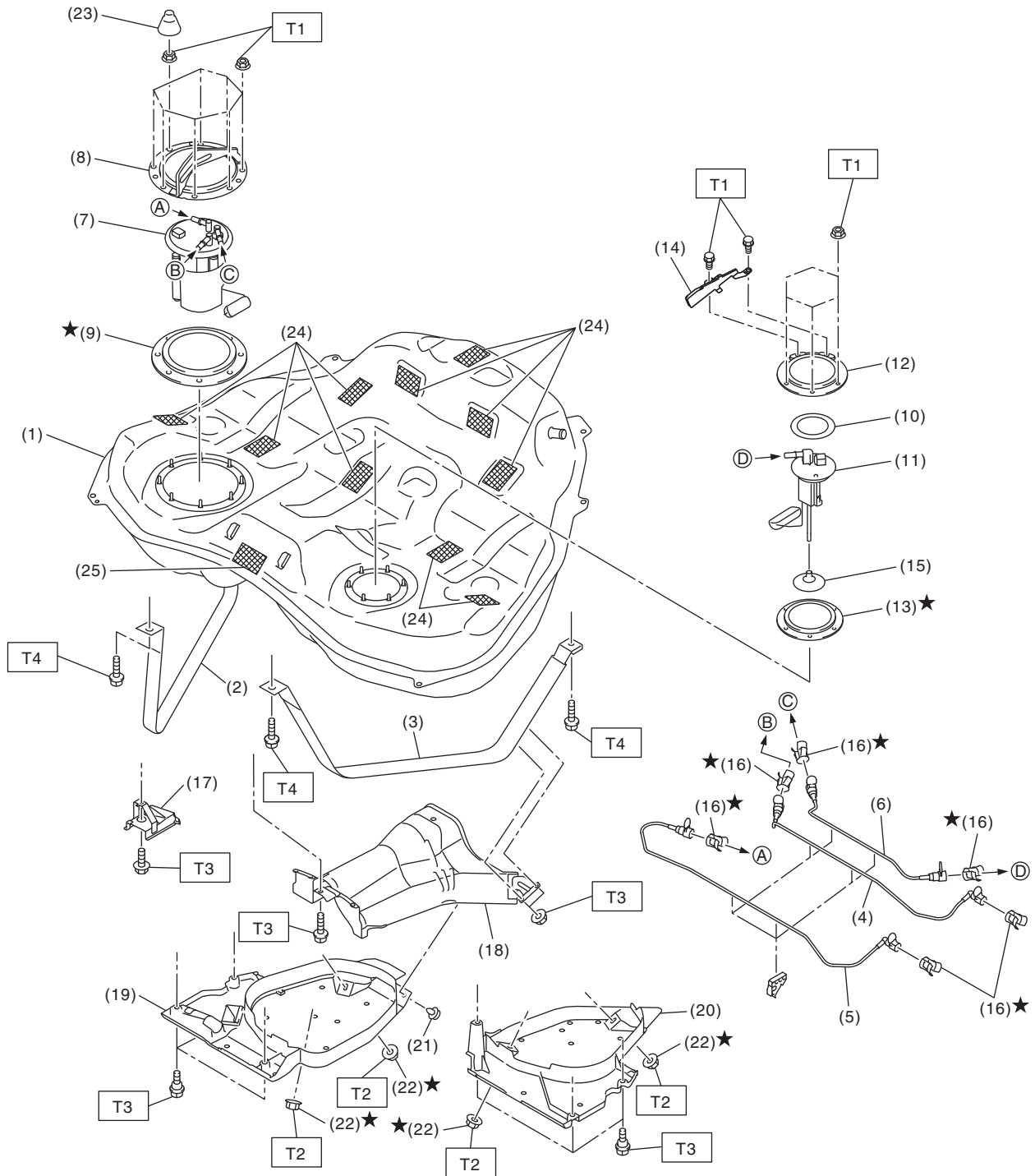
(3) Intake camshaft position sensor  
LH

(7) Engine harness cover

**T2: 24 (2.4, 17.7)**

(4) Intake camshaft position sensor  
RH

### 4. FUEL TANK



FU-04944

## General Description

### FUEL INJECTION (FUEL SYSTEMS)

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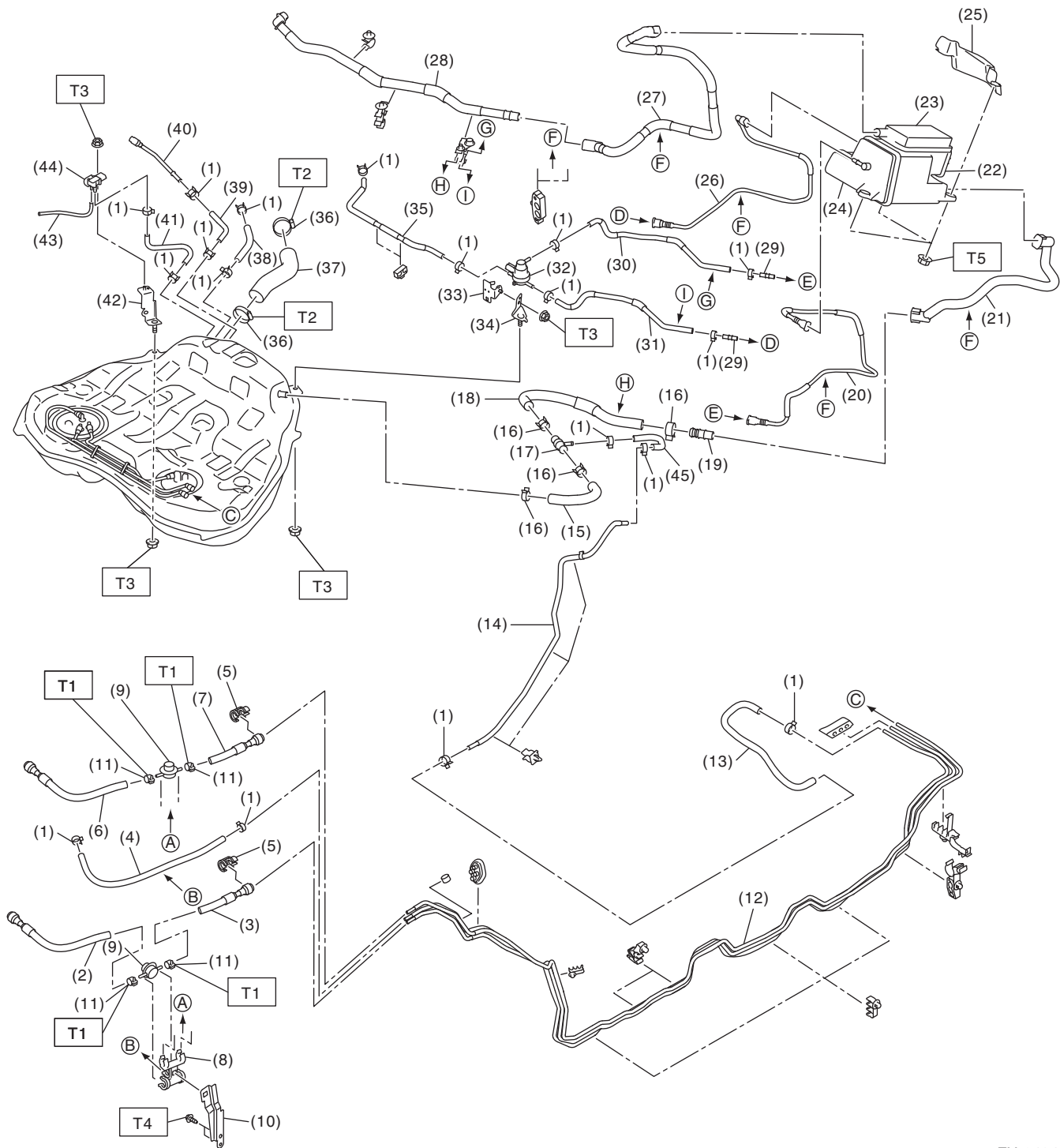
- |  |  |                 |
|--|--|-----------------|
| (1) Fuel tank                                  | (12) Fuel sub level sensor upper plate | (23) Rubber cap |
| (2) Fuel tank band RH                          | (13) Fuel sub level sensor gasket      | (24) Cushion    |
| (3) Fuel tank band LH                          | (14) Fuel sub level sensor protector   | (25) Cushion    |
| (4) Fuel delivery tube                         | (15) Fuel sub level sensor filter      |                 |
| (5) Fuel return tube                           | (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                  |                 |

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***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)***

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### 5. FUEL LINE



FU-04945

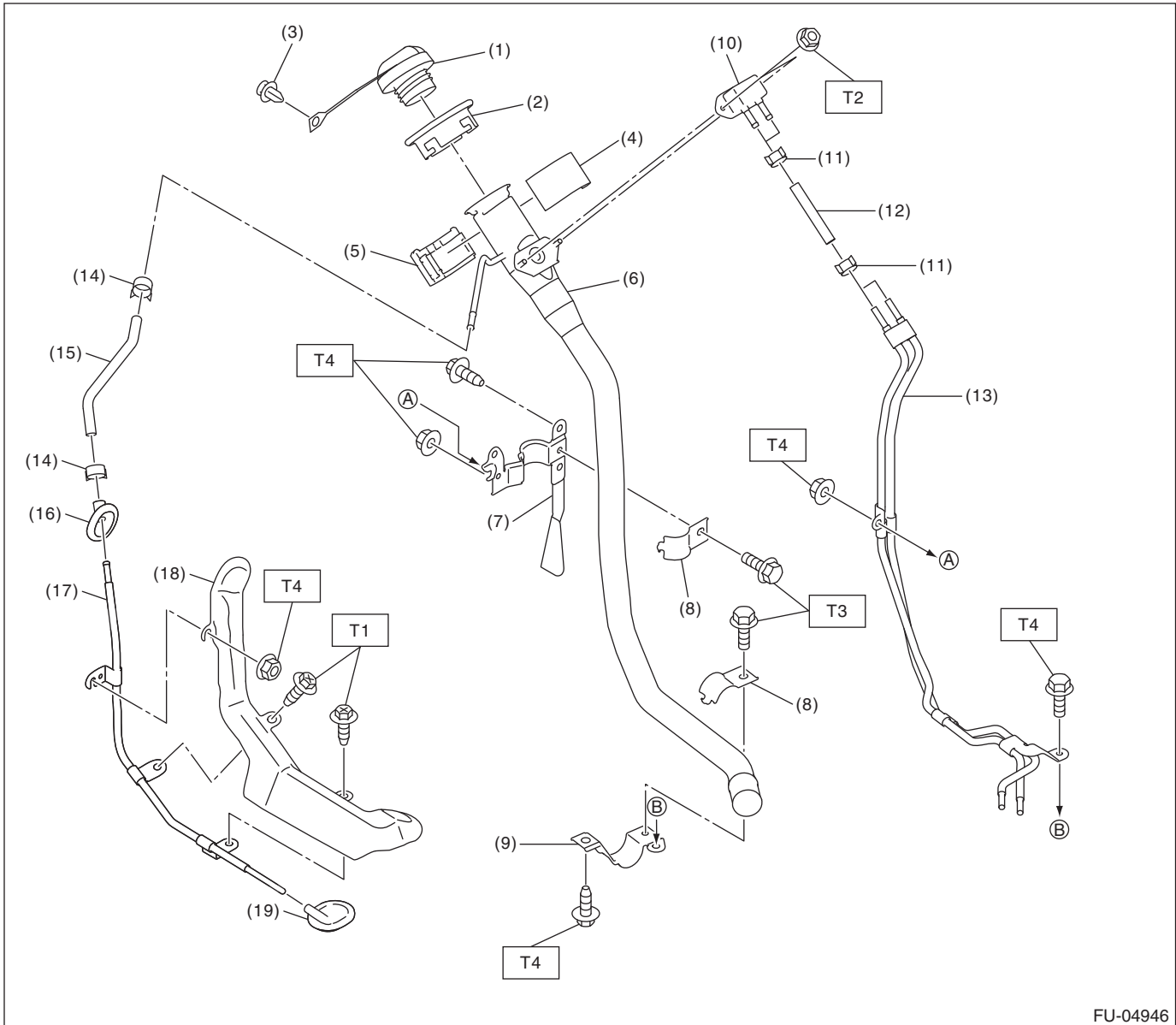


## General Description

### FUEL INJECTION (FUEL SYSTEMS)

(1) Clip	(19) Connector	(37) Fuel filler hose
(2) Fuel return hose A	(20) PCV drain tube	(38) Charge hose
(3) Fuel return hose B	(21) Vent tube	(39) Circulate hose
(4) Evaporation hose	(22) Drain valve	(40) Circulate tube
(5) Connect check cover	(23) Drain filter	(41) Pressure hose
(6) Fuel delivery hose A	(24) Canister	(42) Fuel tank pressure sensor bracket
(7) Fuel delivery hose B	(25) Canister protector	(43) Vacuum hose
(8) Fuel damper holder	(26) Charge tube	(44) Fuel tank pressure sensor
(9) Fuel damper	(27) Canister drain tube	(45) Purge hose B
(10) Fuel damper bracket	(28) Drain tube ASSY	
(11) Clamp	(29) Connector	
(12) Fuel pipe ASSY	(30) PCV drain hose	<b><i>Tightening torque:N·m (kgf-m, ft-lb)</i></b>
(13) Purge hose A	(31) PCV outlet hose	<b><i>T1: 1.25 (0.1, 0.9)</i></b>
(14) Purge pipe	(32) Pressure control solenoid valve	<b><i>T2: 2.5 (0.3, 1.8)</i></b>
(15) Air vent hose A	(33) Pressure control solenoid valve bracket A	<b><i>T3: 7.35 (0.7, 5.4)</i></b>
		<b><i>T4: 7.5 (0.8, 5.5)</i></b>
(16) Clip	(34) Pressure control solenoid valve bracket B	<b><i>T5: 8 (0.8, 5.9)</i></b>
(17) Connector	(35) PCV inlet hose	
(18) Air vent hose B	(36) Clamp	

### 6. FUEL FILLER PIPE



FU-04946

- |                                |                                 |              |
|--------------------------------|---------------------------------|--------------|
| (1) Fuel filler cap            | (10) Shut valve                 | (19) Grommet |
| (2) Fuel filler pipe protector | (11) Clip                       |              |
| (3) Clip                       | (12) Evaporation hose A         |              |
| (4) Neck holder A              | (13) Evaporation pipe A         |              |
| (5) Neck holder B              | (14) Clip                       |              |
| (6) Fuel filler pipe           | (15) Evaporation hose B         |              |
| (7) Fuel filler pipe bracket A | (16) Grommet                    |              |
| (8) Fuel filler pipe bracket B | (17) Evaporation pipe B         |              |
| (9) Fuel filler pipe bracket C | (18) Evaporation pipe protector |              |

**Tightening torque: N·m (kgf-m, ft-lb)**

**T1: 1 (0.1, 0.7)**

**T2: 4.5 (0.5, 3.3)**

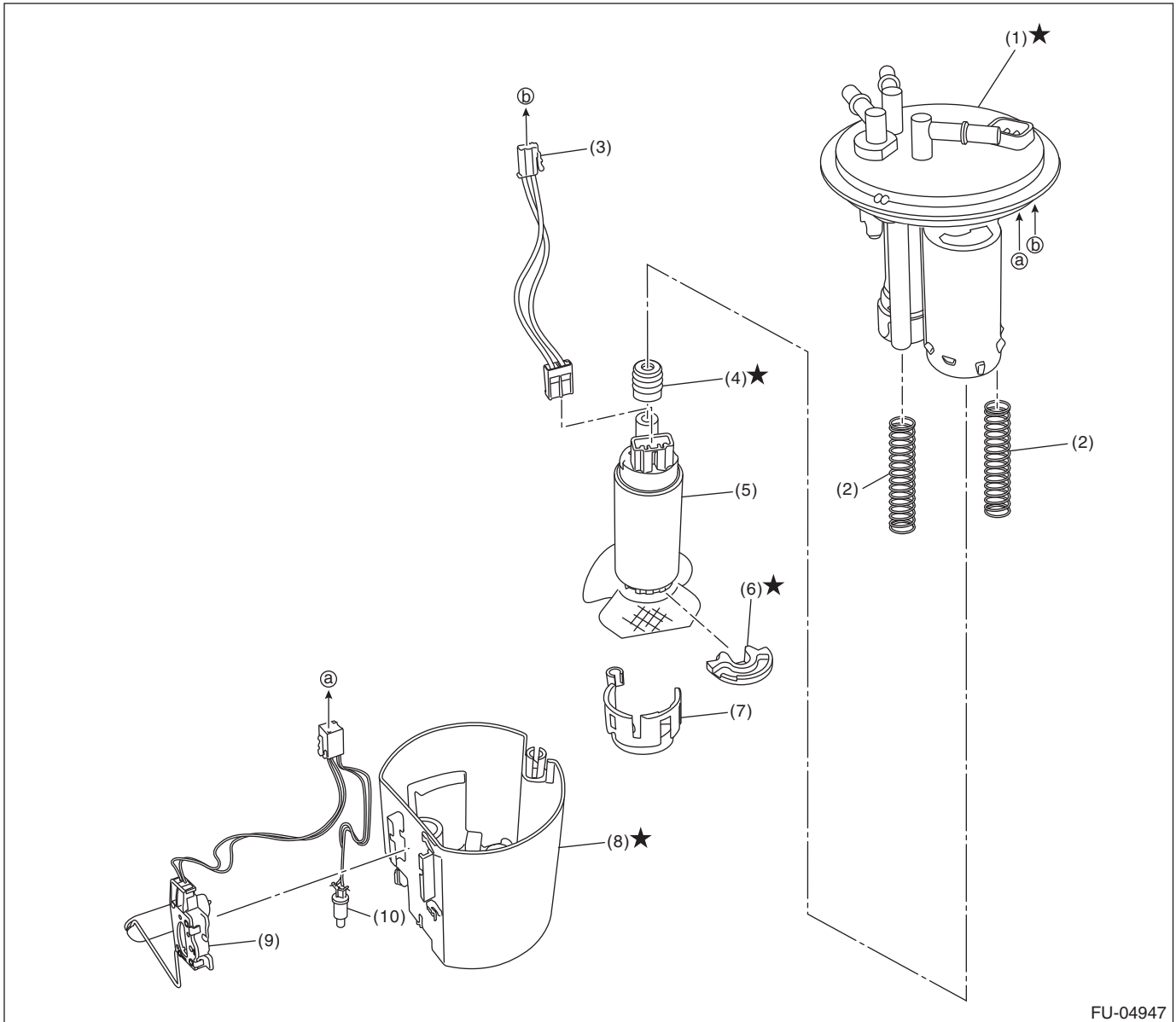
**T3: 7.35 (0.7, 5.4)**

**T4: 7.5 (0.8, 5.5)**

# General Description

## FUEL INJECTION (FUEL SYSTEMS)

### 7. FUEL PUMP



FU-04947

- |                          |                            |                              |
|--------------------------|----------------------------|------------------------------|
| (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**

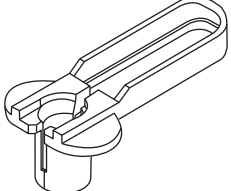
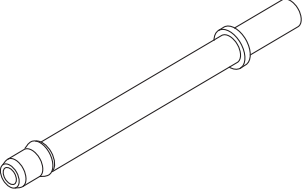
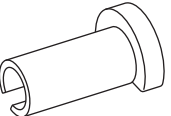
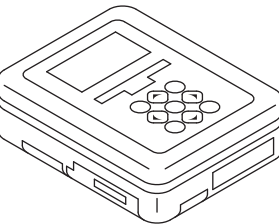
- Wear appropriate work clothing, including a cap, protective goggles and protective shoes when performing any work.
- Remove contamination including dirt and corrosion before removal, installation or disassembly.
- Keep the disassembled parts in order and protect them from dust and dirt.
- Before removal, 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 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

### 1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18371AA000	18371AA000	CONNECTOR REMOVER	Used for disconnecting the quick connector on the fuel return hose of the engine compartment (intake manifold).
 ST18471AA000	18471AA000	FUEL PIPE ADAPTER	Used for draining fuel.
 ST42099AE000	42099AE000	QUICK CONNECTOR RELEASE	Used for disconnecting quick connector of the engine compartment.
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for draining fuel and each inspection.

### 2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Oscilloscope	Used for inspecting the waveform of each sensor.
Sensor socket	Used for removing and installing the front oxygen (A/F) sensor and rear oxygen sensor.