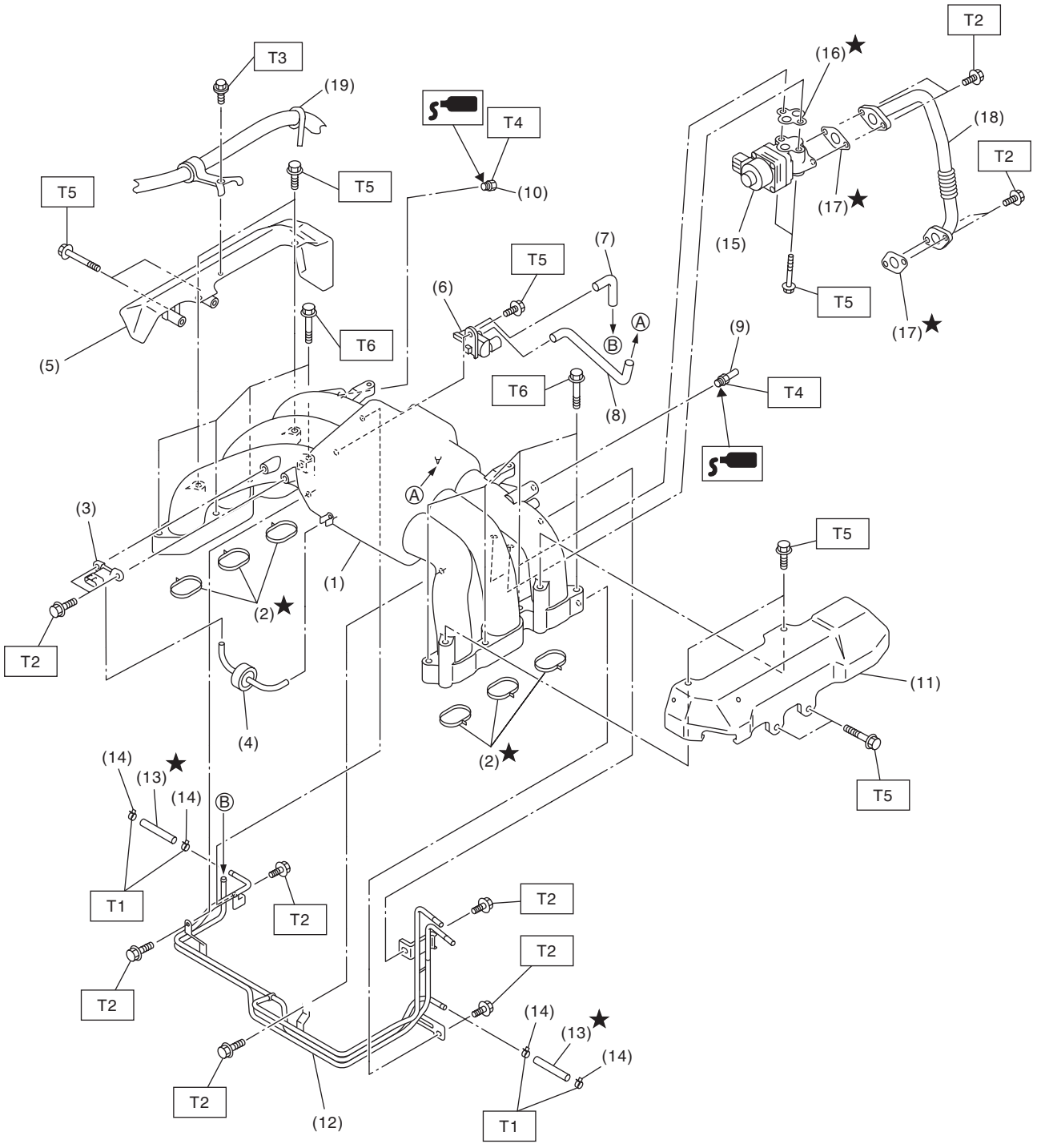
1. General Description

A: SPECIFICATION

Fuel tank	Capacity	64 L (16.9 US gal, 14.1 Imp gal)
	Location	Rear floor under
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 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

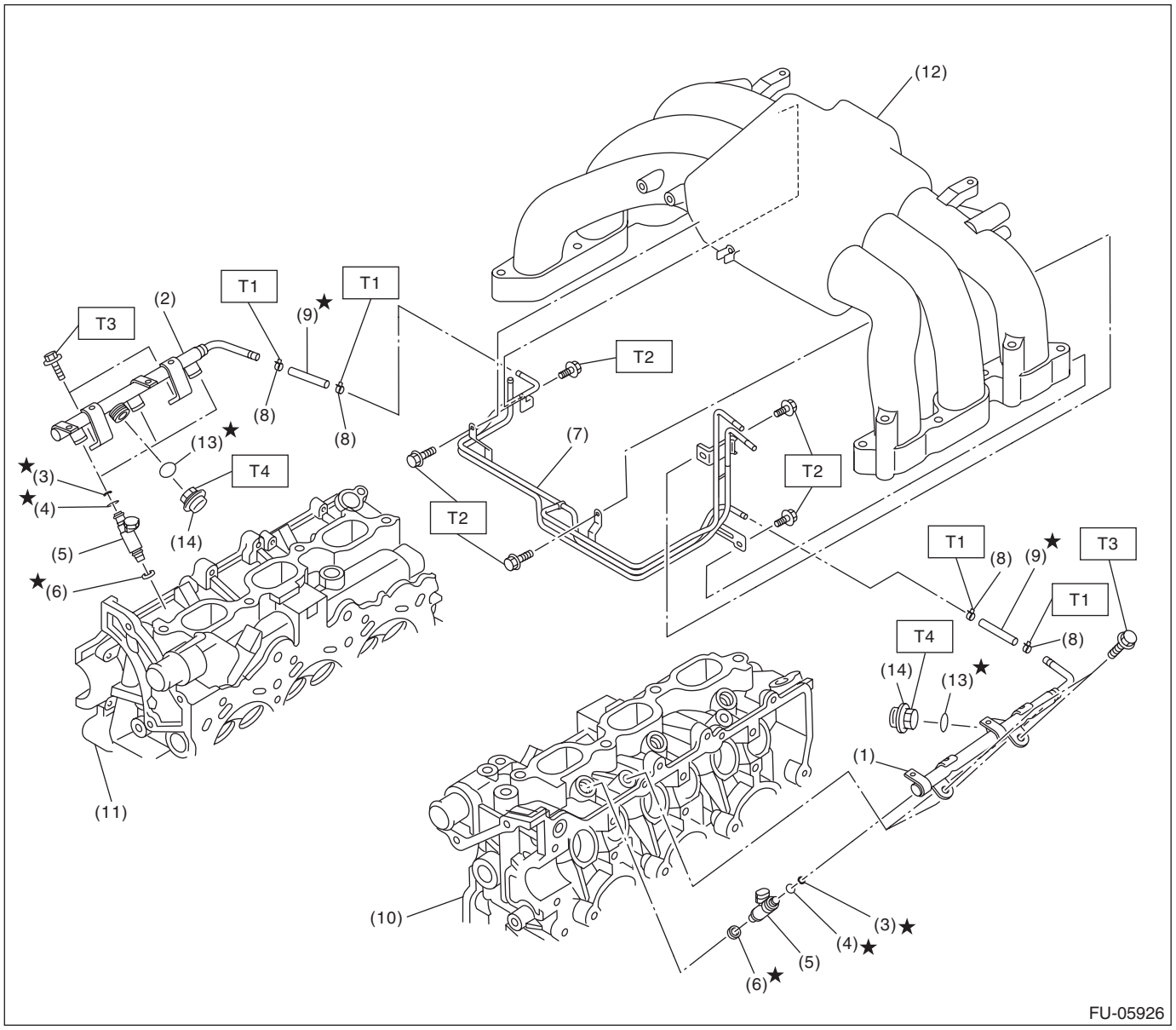


FU-05647

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

Tightening torque: N·m (kgf-m, ft-lb)
T1: 1.25 (0.1, 0.9)
T2: 6.4 (0.7, 4.7)
T3: 13 (1.3, 9.6)
T4: 17 (1.7, 12.5)
T5: 19 (1.9, 14.0)
T6: 25 (2.5, 18.4)

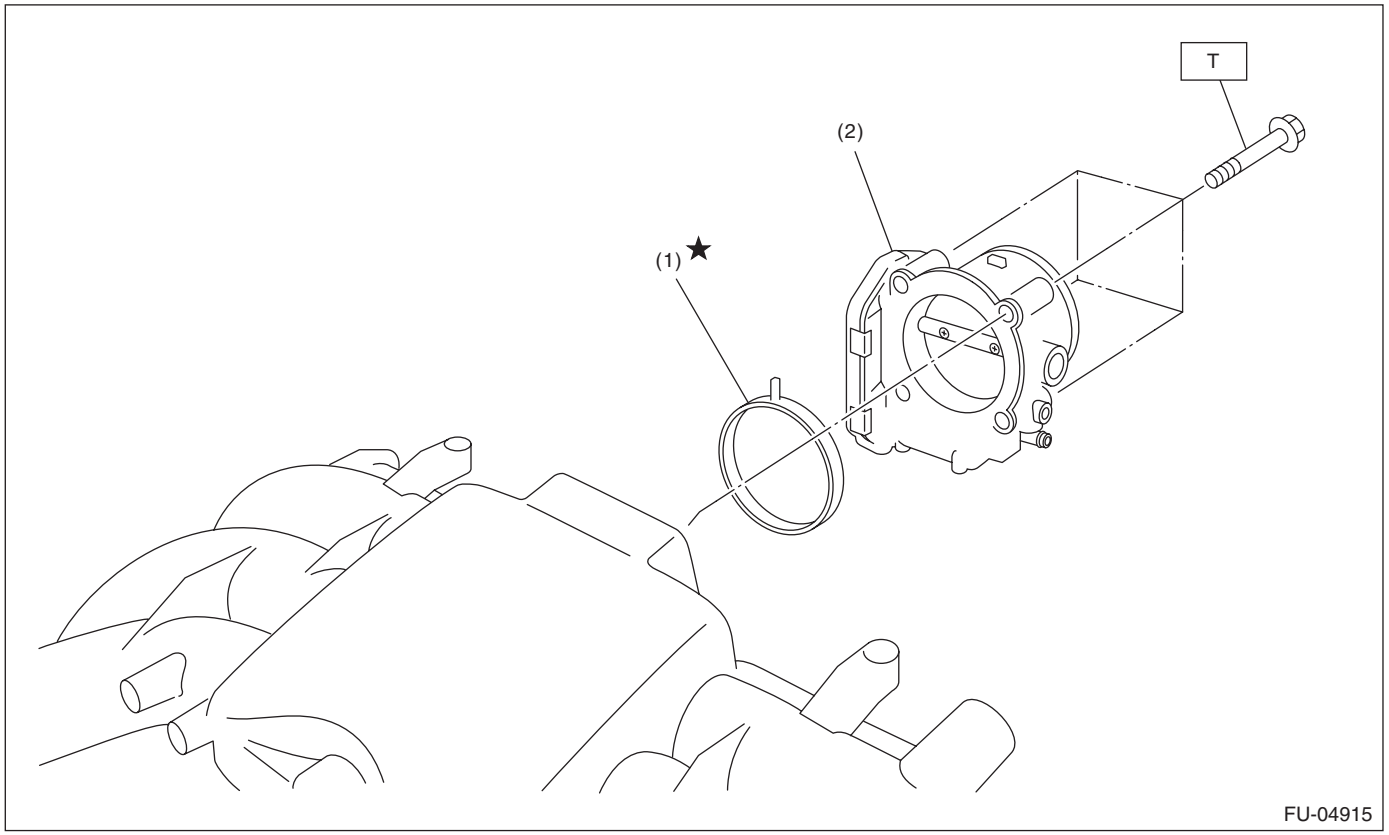
2. FUEL INJECTOR



(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)

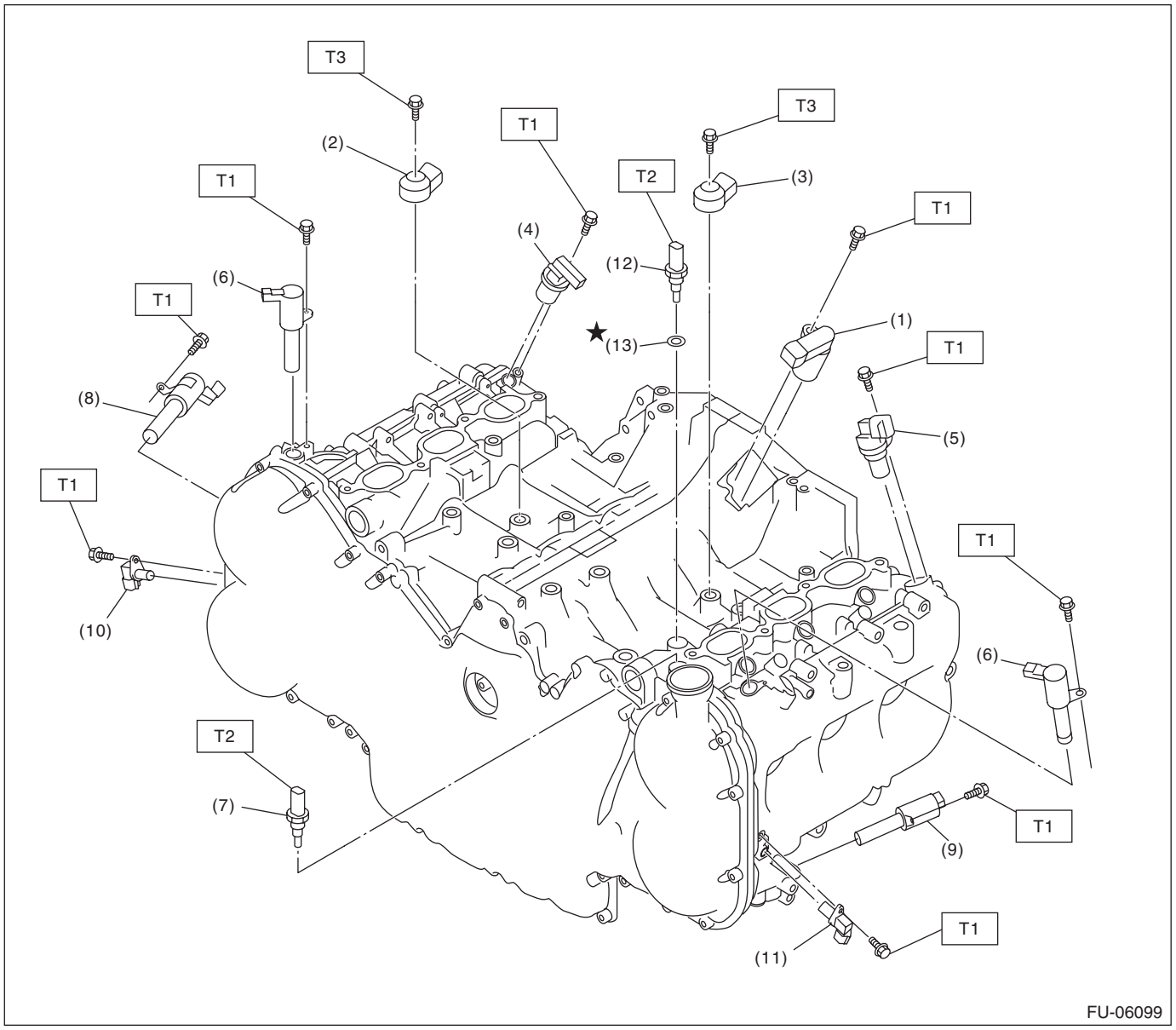
3. AIR INTAKE SYSTEM



(1) O-ring
(2) Throttle body

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

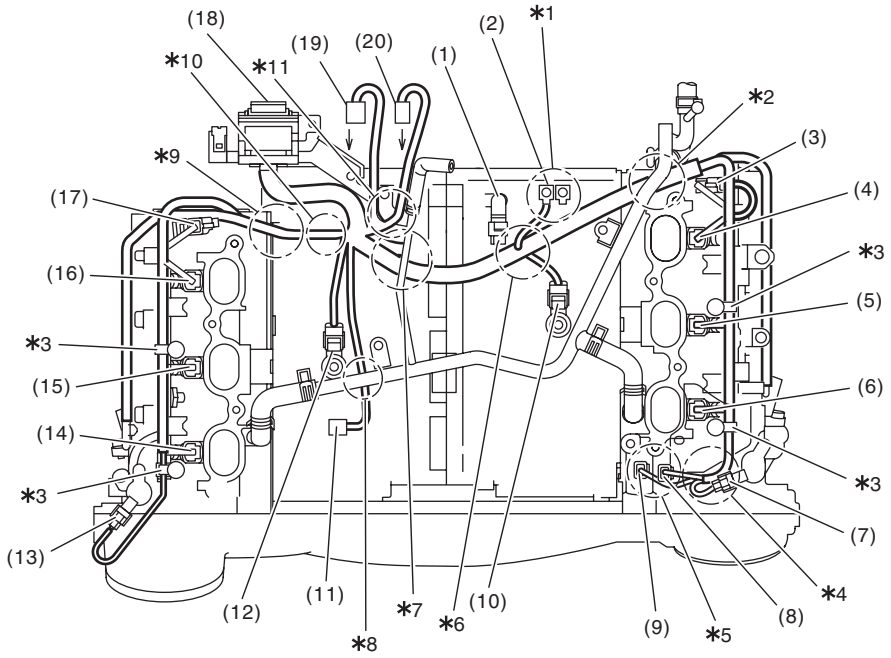
4. SENSOR

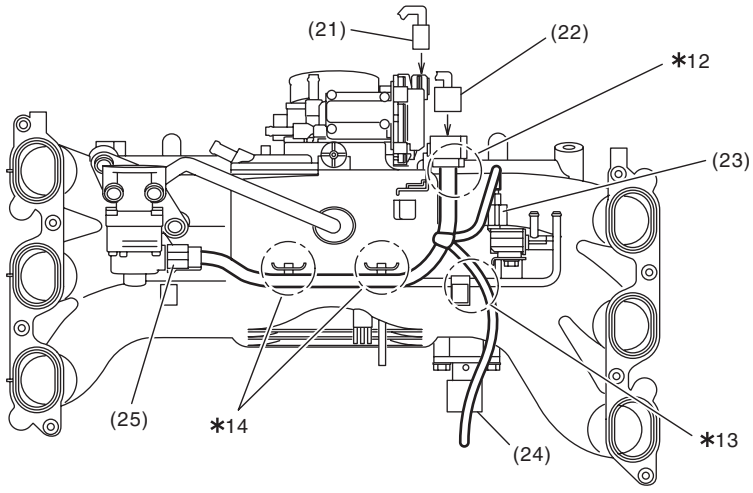


(1)	Crankshaft position sensor	(7)	Oil temperature sensor	(13)	Gasket
(2)	Knock sensor RH	(8)	Exhaust oil flow control solenoid valve RH		
(3)	Knock sensor LH	(9)	Exhaust oil flow control solenoid valve LH	***Tightening torque: N·m (kgf-m, ft-lb)***	
(4)	Intake camshaft position sensor RH	(10)	Exhaust 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)***

5. ENGINE HARNESS

Engine harness assembly diagram 1





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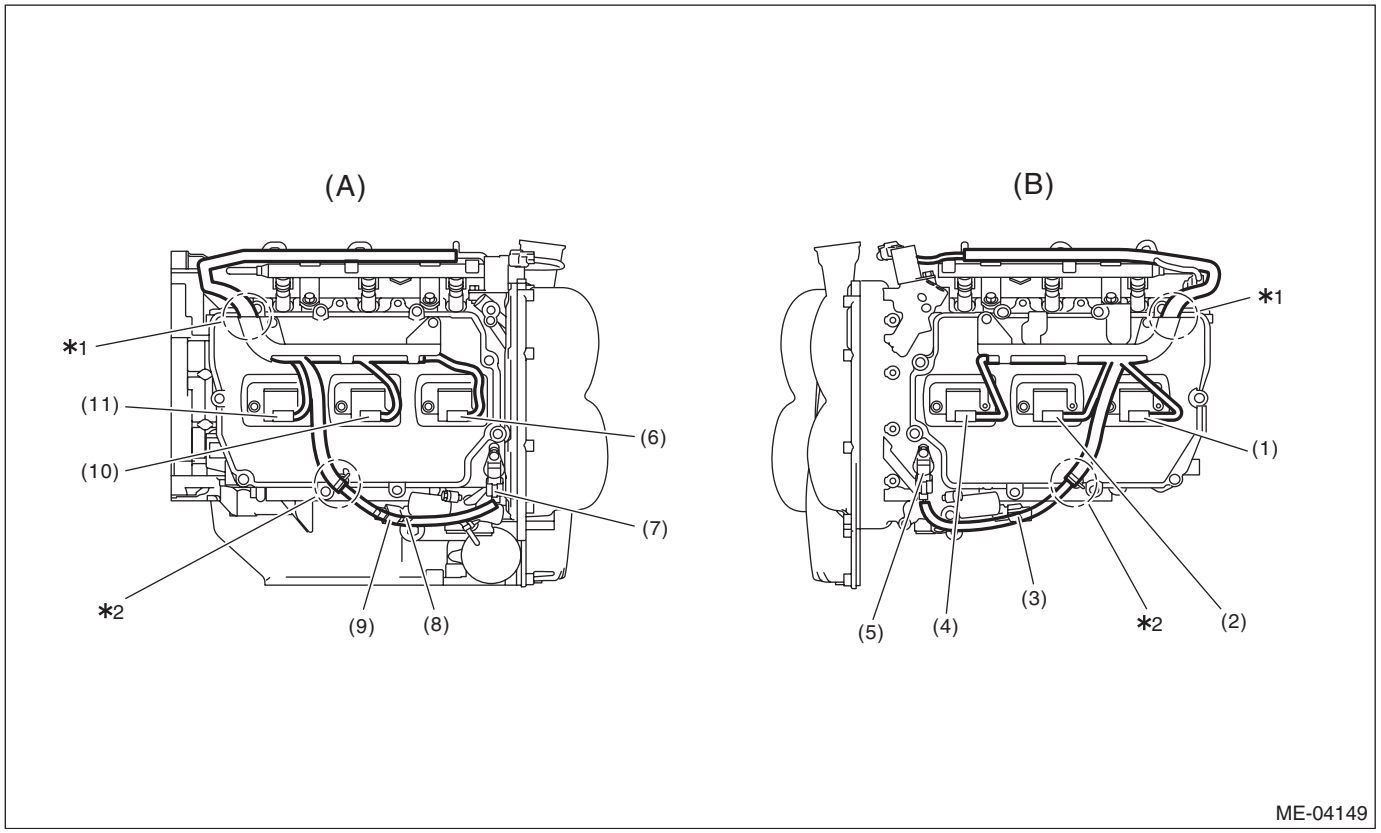
(A)	Cylinder block upper face	(B)	Intake manifold back surface		
(1)	Crankshaft position sensor connector	(10)	Knock sensor LH connector	(19)	Upper/lower connection connector (to intake manifold)
(2)	Engine ground	(11)	Power steering switch connector	(20)	Electronic throttle control connector (to intake 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.

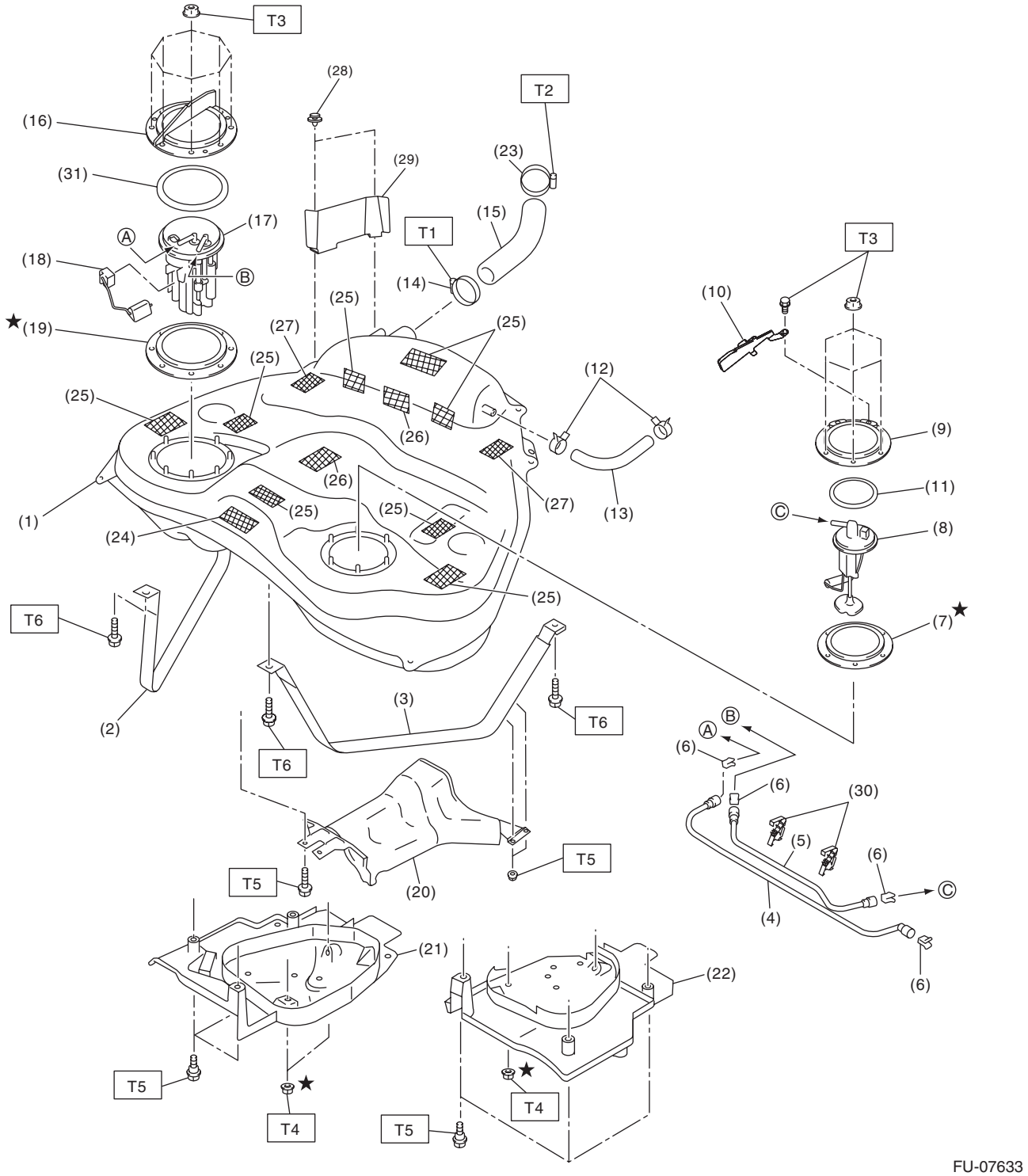
Engine harness assembly diagram 2



(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.

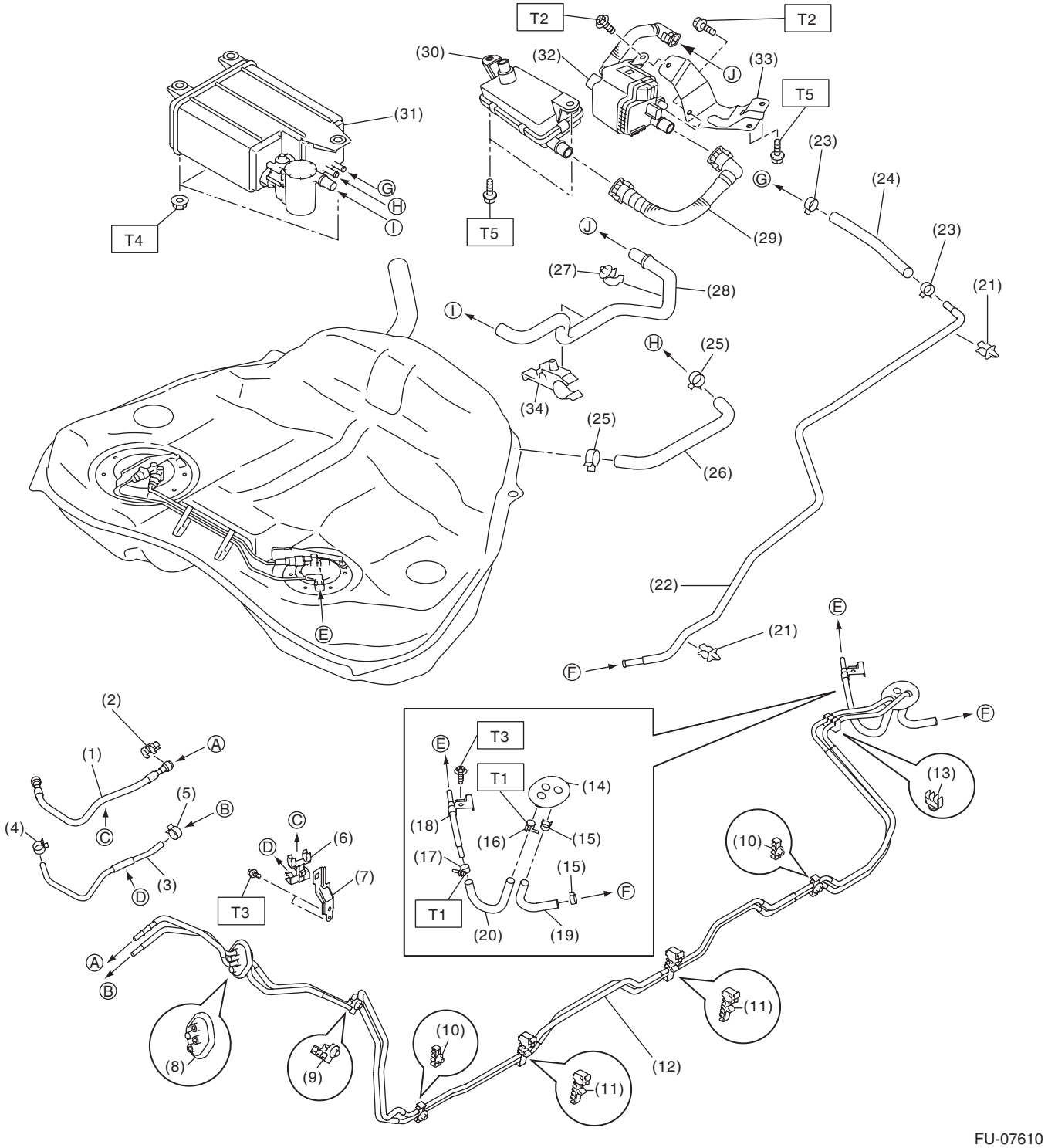
6. FUEL TANK


T3
(28)
T2
(16)
(29)
(23)
(31)
(17)
(15)
T1
Ⓐ
(18)
Ⓑ
(14)
T3
(10)
★(19)
(25)
(27)
(25)
(12)
(25)
(25)
(26)
(9)
(11)
(26)
(27)
(13)
Ⓒ
(1)
(25)
(25)
(8)
(24)
(25)
(7)★
T6
(3)
T6
(2)
T6
Ⓑ
Ⓐ
(6)
(6)
(30)
(5)
T5
T5
(6)
Ⓒ
(20)
(4)
(21)
(22)
(6)
T5
★
★
T4
T4
T5
FU-07633

(1) Fuel tank
(2) Fuel tank band RH
(3) Fuel tank band LH
(4) Fuel delivery tube
(5) Fuel sub delivery tube
(6) Retainer
(7) Fuel sub level sensor gasket
(8) Fuel sub level sensor
(9) Fuel sub level sensor upper plate
(10) Fuel sub level sensor protector
(11) Fuel sub level sensor upper plate cushion
(12) Clip
(13) Air vent hose
(14) Clamp
(15) Fuel filler hose
(16) Fuel pump upper plate
(17) Fuel pump ASSY
(18) Fuel level sensor
(19) Fuel level sensor gasket
(20) Heat shield cover
(21) Fuel tank protector RH
(22) Fuel tank protector LH
(23) Clamp
(24) Cushion
(25) Cushion
(26) Cushion
(27) Cushion
(28) Clip
(29) Fuel tank protector RH
(30) Fuel tube clamp
(31) Fuel pump upper plate cushion

Tightening torque: N·m (kgf-m, ft-lb)
T1: 2 (0.2, 1.5)
T2: 2.5 (0.3, 1.8)
T3: 4.4 (0.4, 3.2)
T4: 9 (0.9, 6.6)
T5: 18 (1.8, 13.3)
T6: 33 (3.4, 24.3)

7. FUEL LINE

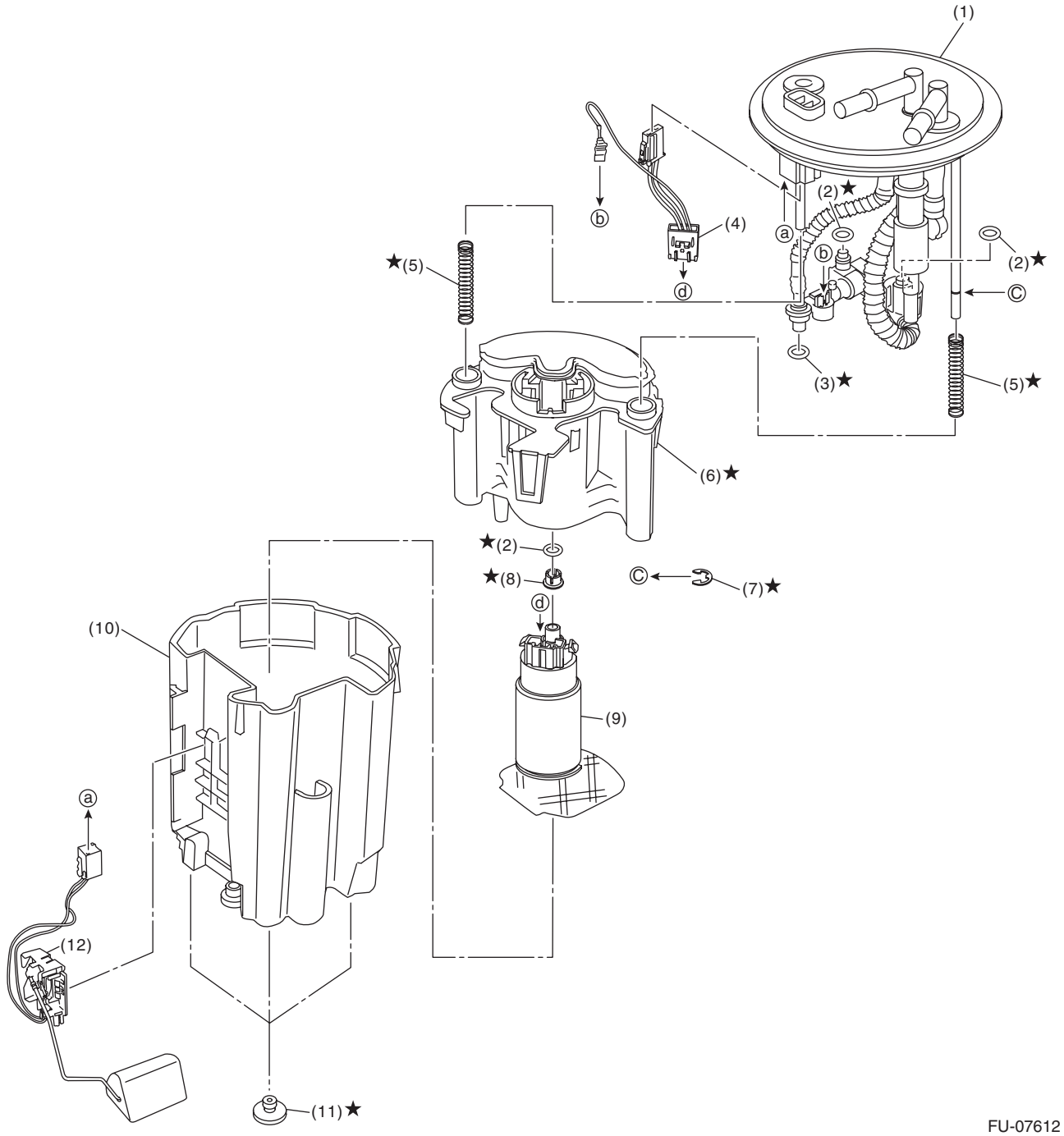


FU-07610

(1) Fuel delivery hose A
(2) Connect check cover
(3) Evaporation hose A
(4) Clip
(5) Clip
(6) Hose clamp
(7) Clamp bracket
(8) Grommet
(9) Clamp
(10) Clamp
(11) Clamp
(12) Fuel pipe ASSY
(13) Clamp
(14) Grommet
(15) Clip
(16) Clamp
(17) Clamp
(18) Fuel delivery pipe
(19) Evaporation hose B
(20) Fuel delivery hose B
(21) Clamp
(22) Purge pipe
(23) Clip
(24) Purge hose
(25) Clip
(26) Air vent hose
(27) Clip
(28) Drain hose
(29) Drain tube
(30) Drain filter
(31) Canister
(32) Leak check valve ASSY
(33) Bracket
(34) Clamp

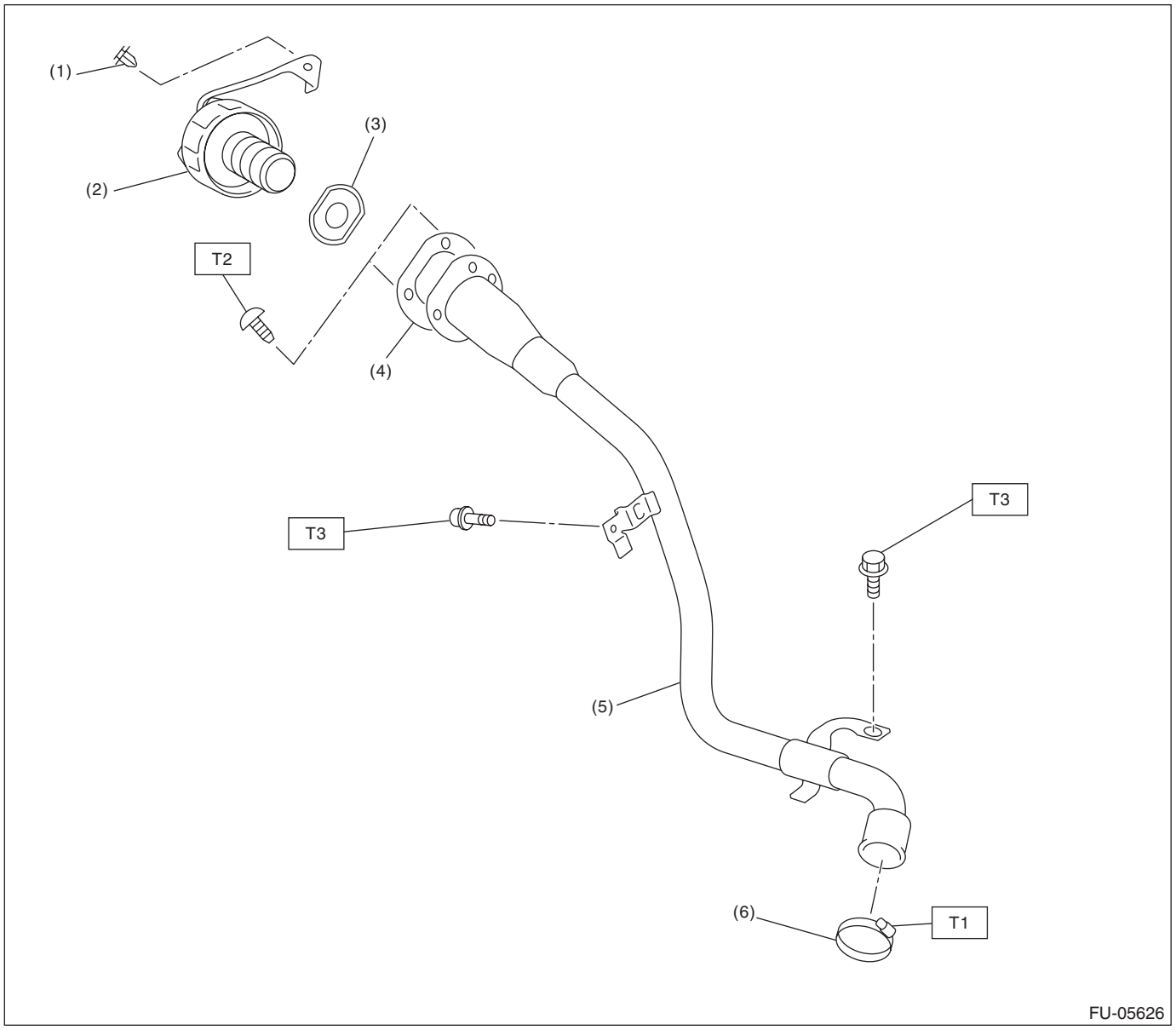
Tightening torque: N·m (kgf-m, ft-lb)
T1: 1.25 (0.1, 0.9)
T2: 5.4 (0.6, 4.0)
T3: 7.5 (0.8, 5.5)
T4: 8 (0.8, 5.9)
T5: 15 (1.5, 11.1)

8. FUEL PUMP



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

9. FUEL FILLER PIPE



(1) Clip
(2) Fuel filler cap
(3) Ring
(4) Gasket
(5) Fuel filler pipe
(6) Clamp

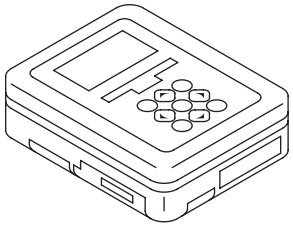
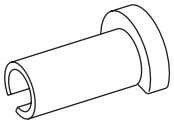
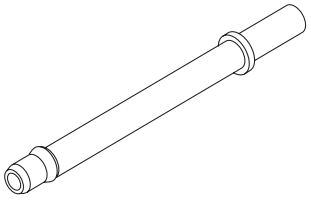
Tightening torque: N·m (kgf-m, ft-lb)
T1: 2.5 (0.3, 1.8)
T2: 4.5 (0.5, 3.3)
T3: 7.5 (0.8 5.5)

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.

D: PREPARATION TOOL

1. SPECIAL TOOL

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 removing the quick connector.
 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.