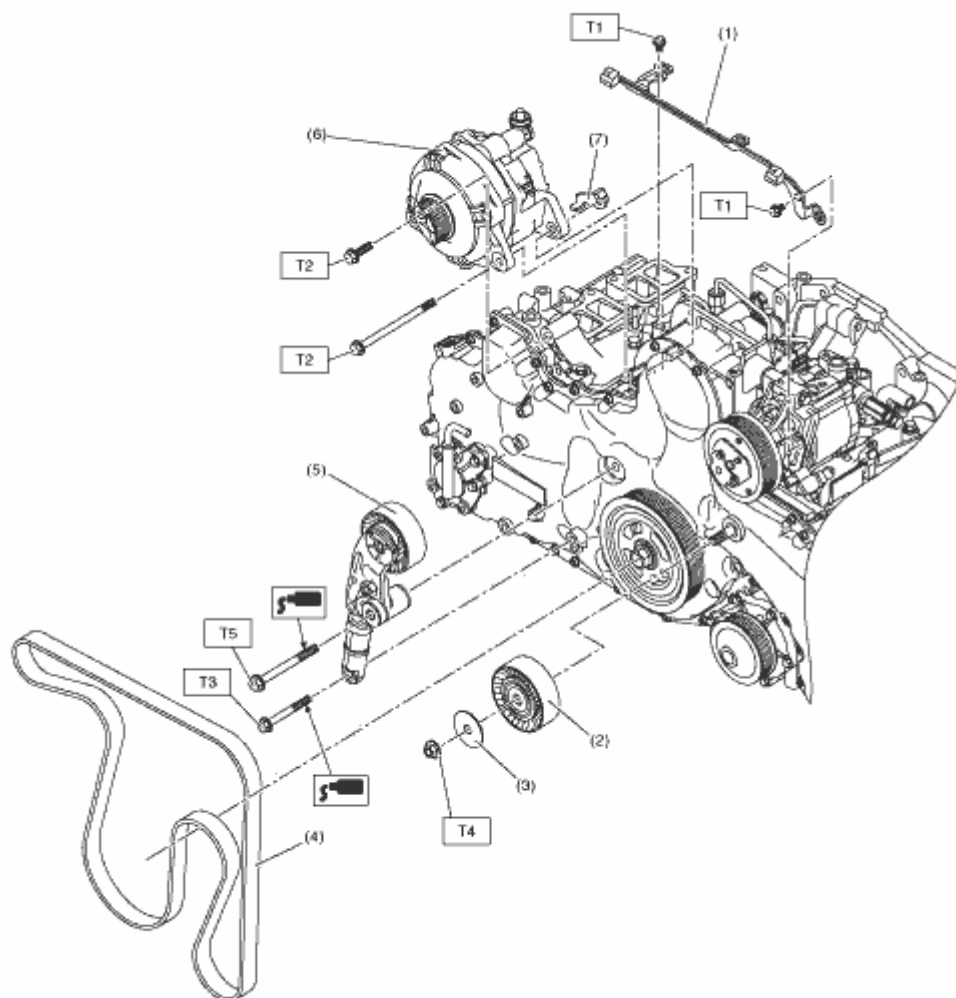


COMPONENT

1. V-BELT & GENERATOR



ME-03644

(1) Collector cover bracket (5) V-belt tensioner **Tightening torque:N·m (kgf-m, ft-lb)**

(2) Idler pulley (6) Generator **T1: 6.4 (0.7, 4.7)**

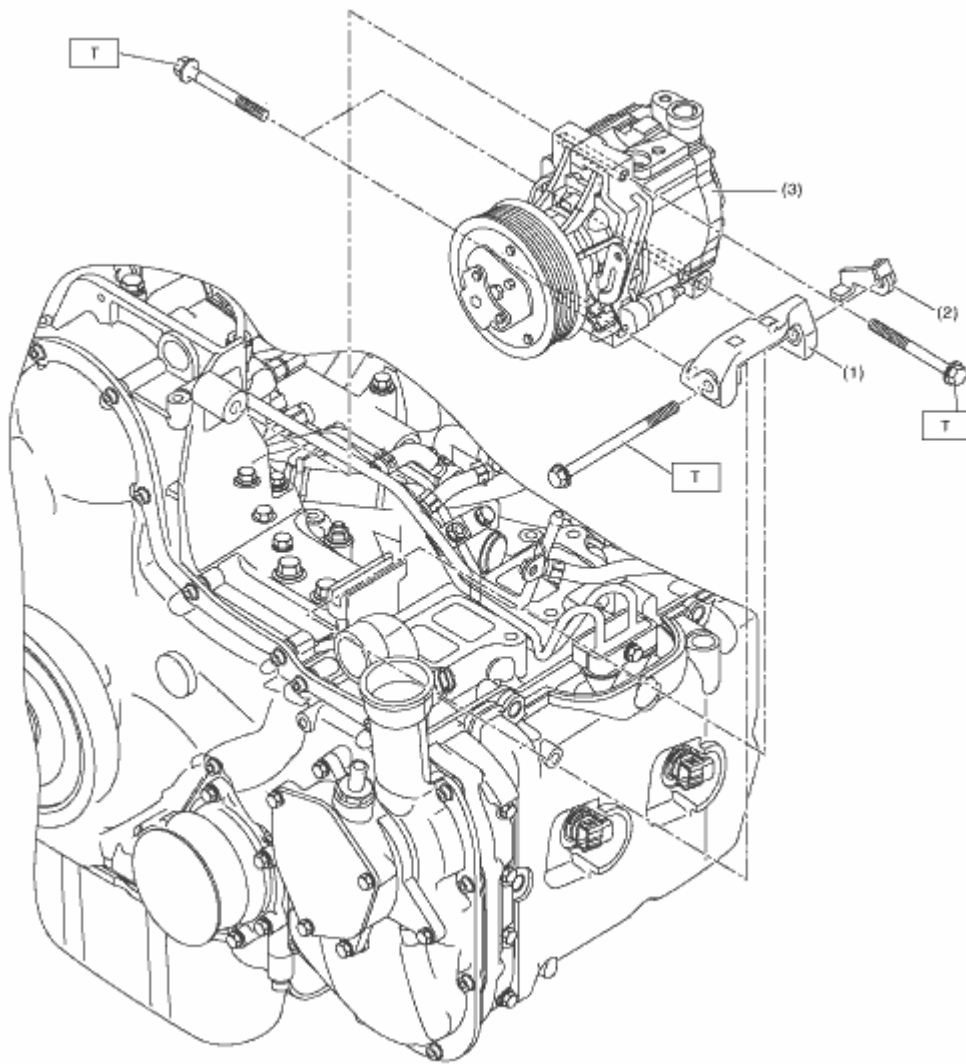
(3) Idler pulley cover (7) Generator bracket **T2: 25 (2.5, 18.4)**

(4) V-belt **T3: 30 (3.1, 22.1)**

T4: 33 (3.4, 24.3)

T5: 57 (5.8, 42.0)

2. A/C COMPRESSOR



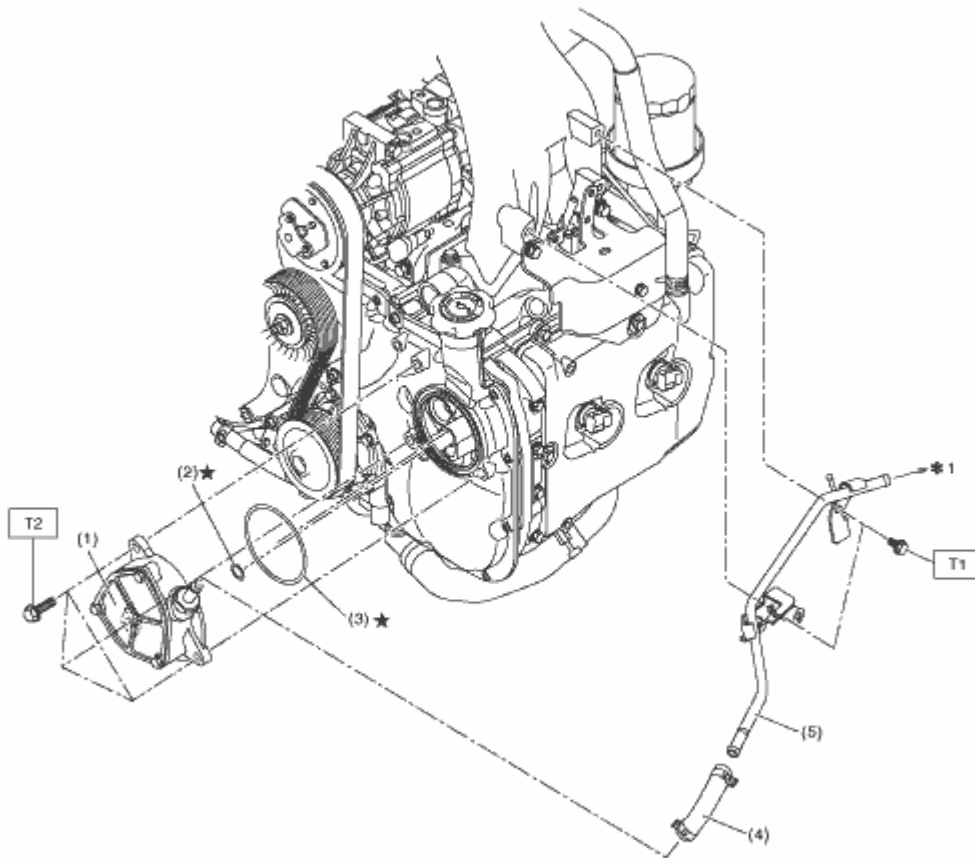
ME-03645

(1) A/C compressor bracket (3) A/C compressor **Tightening torque:N·m (kgf-m, ft-lb)**

(2) A/C compressor plate

T: 25 (2.5, 18.4)

3. VACUUM PUMP



ME-03646

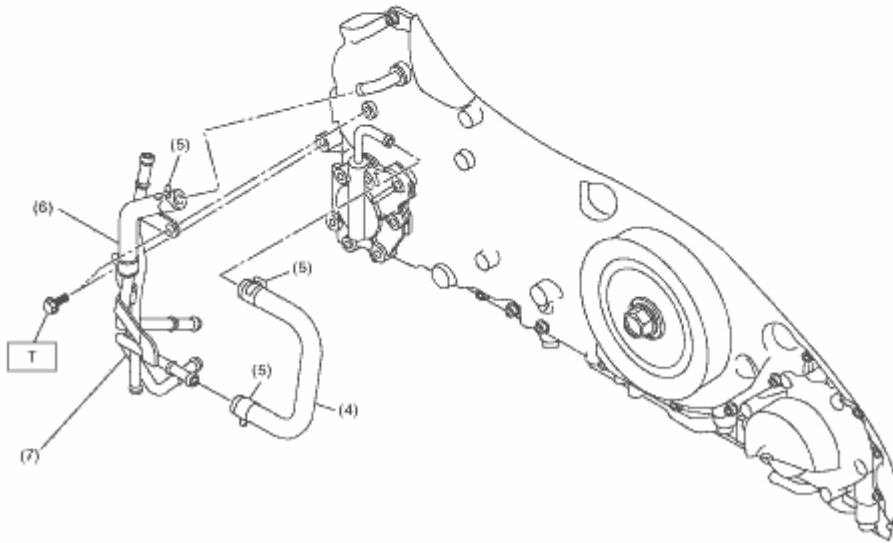
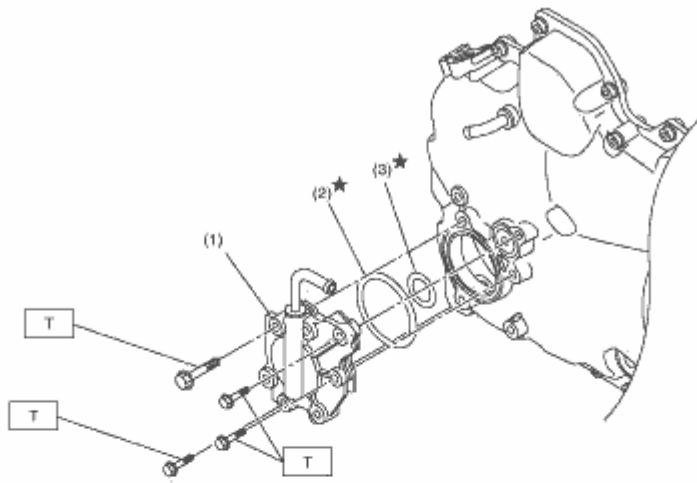
(1) Vacuum pump (4) Vacuum hose **Tightening torque:N·m (kgf-m, ft-lb)**

(2) O-ring (5) Air by-pass pipe **T1: 6.4 (0.7, 4.7)**

(3) O-ring **T2: 19 (1.9, 14.0)**

*1: To the brake booster

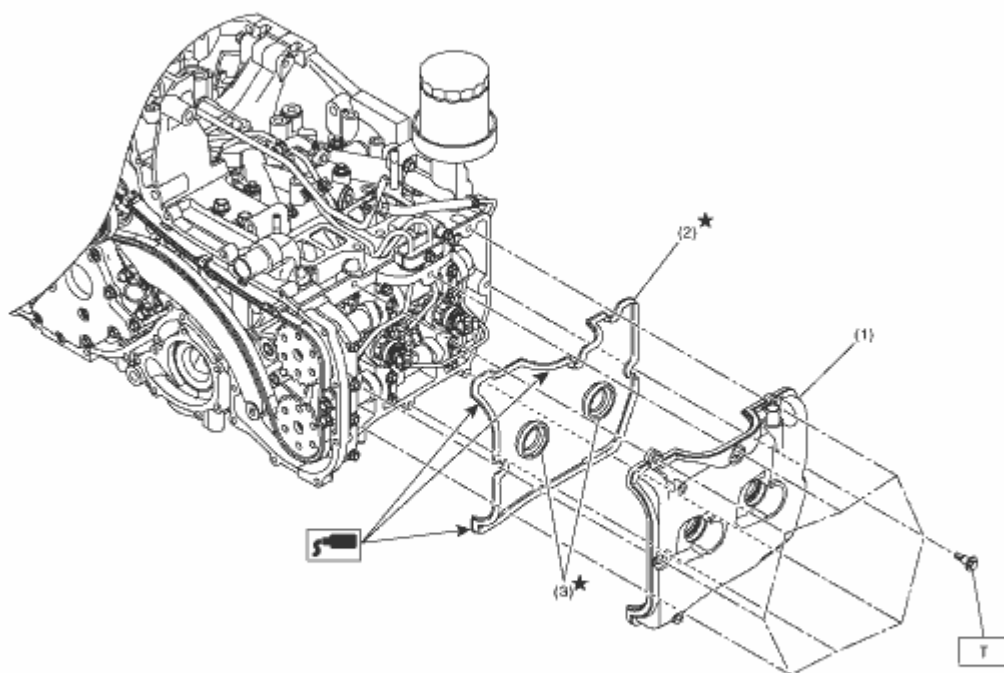
4. SCAVENGE PUMP



ME-03654

- | | | |
|-------------------|----------------|--|
| (1) Scavenge Pump | (5) Clamp | Tightening torque: N·m (kgf-m, ft-lb) |
| (2) O-ring | (6) Turbo hose | T: 6.4 (0.7, 4.7) |
| (3) O-ring | (7) Turbo pipe | |
| (4) Turbo hose | | |

5. ROCKER COVER



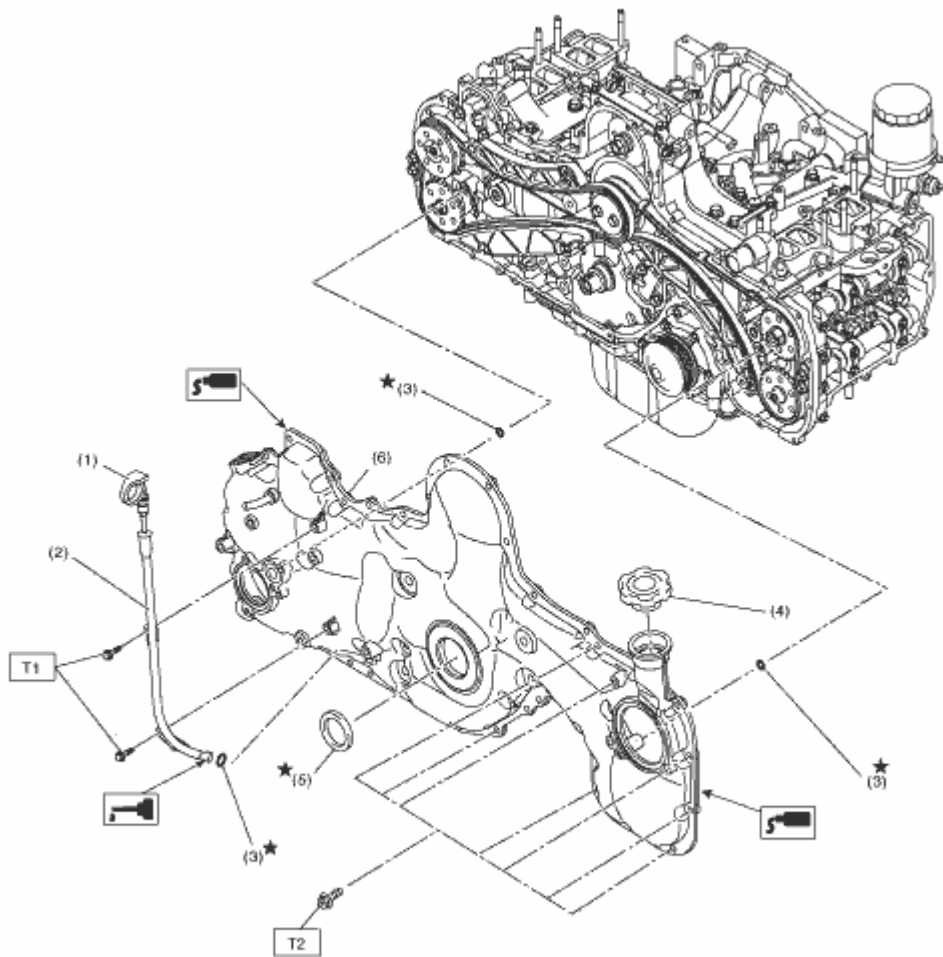
ME-03647

(1) Rocker cover (3) Fuel injector gasket **Tightening torque: N·m (kgf-m, ft-lb)**


(2) Rocker cover gasket

T: 6.4 (0.7, 4.7)

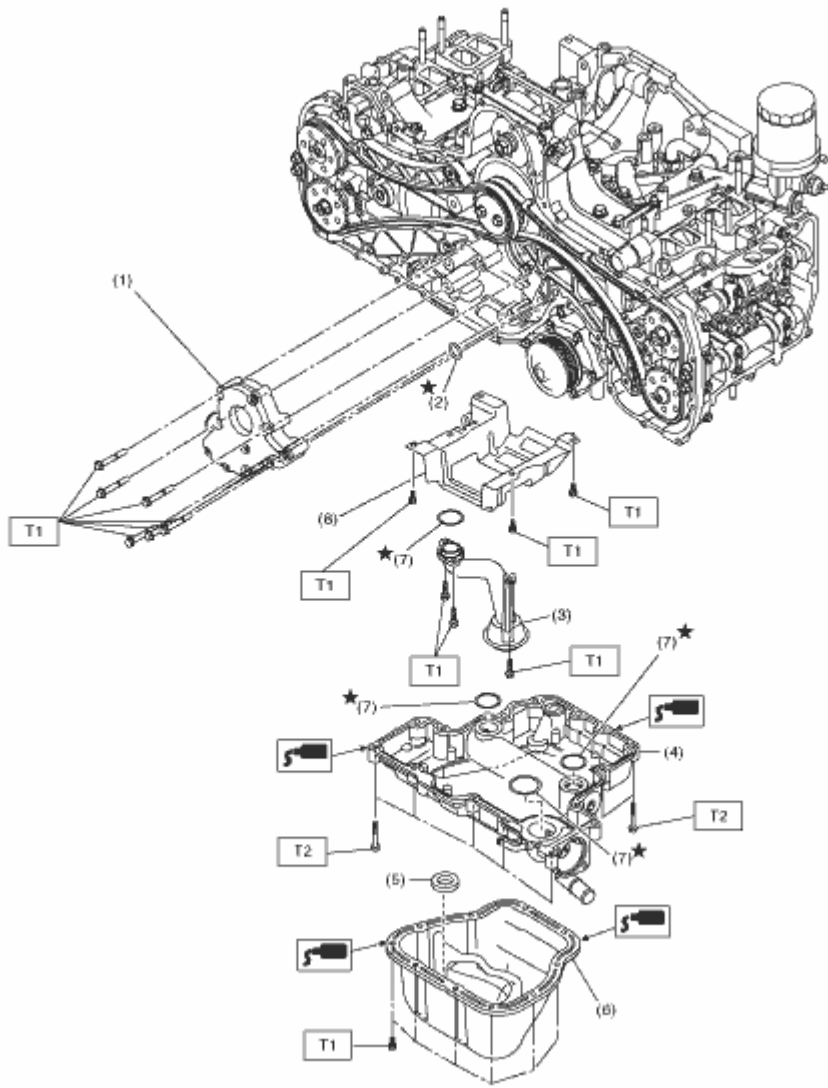
6. CHAIN COVER



LU-02427

- | | | |
|---------------------------|--------------------|--|
| (1) Oil level gauge | (4) Oil filler cap | Tightening torque: N·m (kgf-m, ft-lb) |
| (2) Oil level gauge guide | (5) Oil seal | T1: 6.4 (0.7, 4.7) |
| (3) O-ring | (6) Chain cover | T2:  |

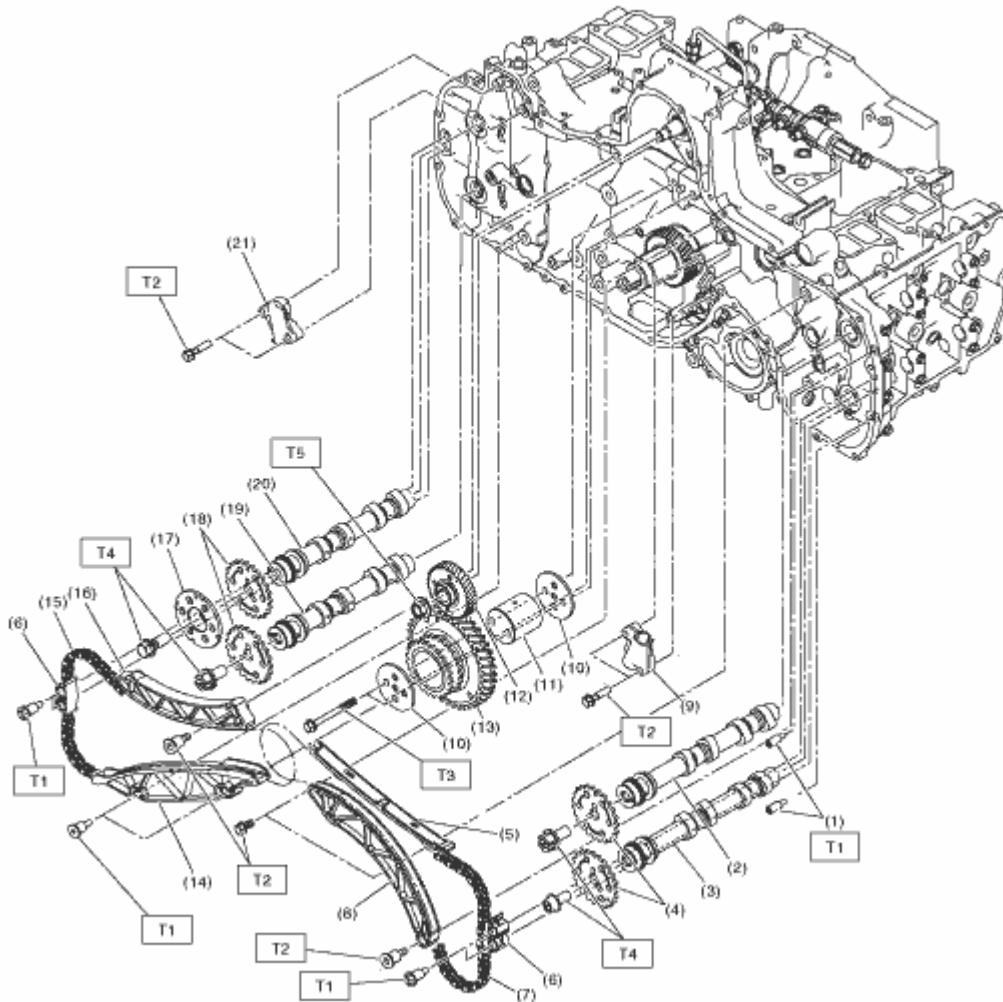
7. OIL PUMP AND OIL PAN




LU-02428

- | | | |
|-------------------|-------------------|---|
| (1) Oil pump | (5) Magnet | Tightening torque:N·m (kgf-m, ft-lb) |
| (2) O-ring | (6) Oil pan lower | T1: 6.4 (0.7, 4.7) |
| (3) Strainer | (7) O-ring | T2: 18 (1.8, 13.3) |
| (4) Oil pan upper | (8) Baffle plate | |

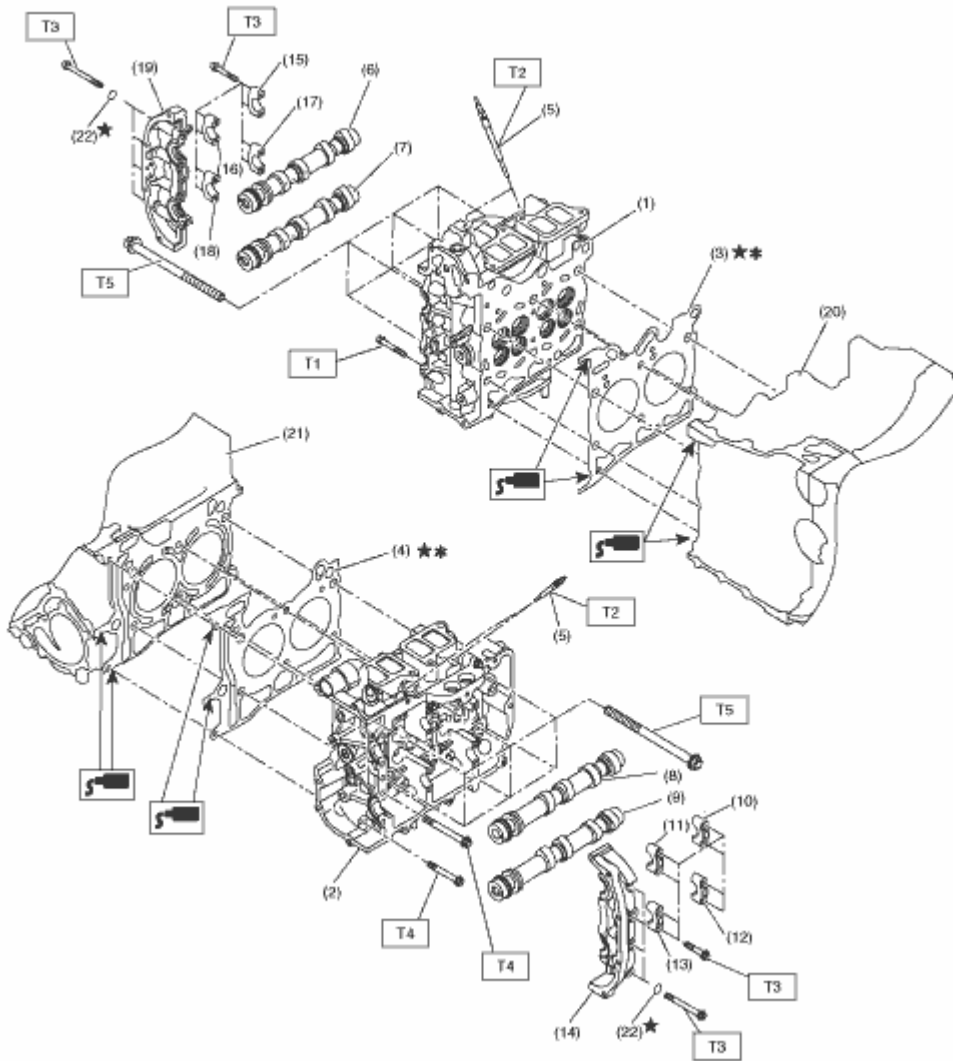
8. TIMING CHAIN




ME-03648

- | | | |
|--|--|--|
| (1) Chain guide (sprocket) | (11) Reduction sprocket and gear shaft | (21) Chain tensioner (RH) |
| (2) Intake camshaft (LH) | (12) Fuel pump gear | |
| (3) Exhaust camshaft (LH) | (13) Reduction sprocket and gear | Tightening torque: N-m (kgf-m, ft-lb) |
| (4) Camshaft sprocket (LH) | (14) Chain guide (RH) | T1: 6.4 (0.7, 4.7) |
| (5) Chain guide (LH) | (15) Timing chain (RH) | T2: 16 (1.6, 11.8) |
| (6) Chain guide (between cams) | (16) Chain tensioner lever (RH) | T3: 25 (2.5, 18.4) |
| (7) Timing chain (LH) | (17) Cam shaft plate | T4:  |
| (8) Chain tensioner lever (LH) | (18) Camshaft sprocket (RH) | T5: 63.7 (6.5, 47.0) |
| (9) Chain tensioner (LH) | (19) Exhaust camshaft (RH) | |
| (10) Reduction sprocket and gear plate | (20) Intake camshaft (RH) | |

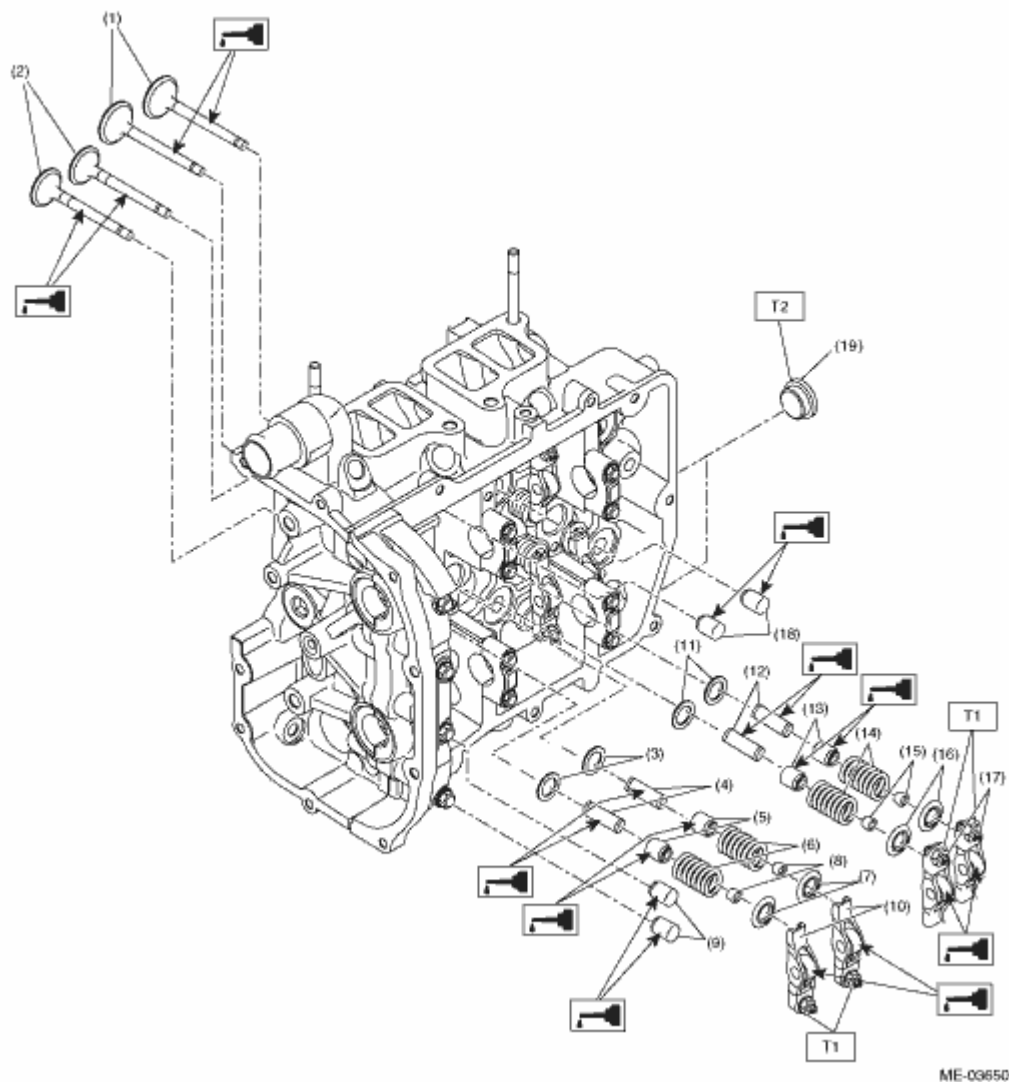
9. CYLINDER HEAD AND CAMSHAFT



ME-03649

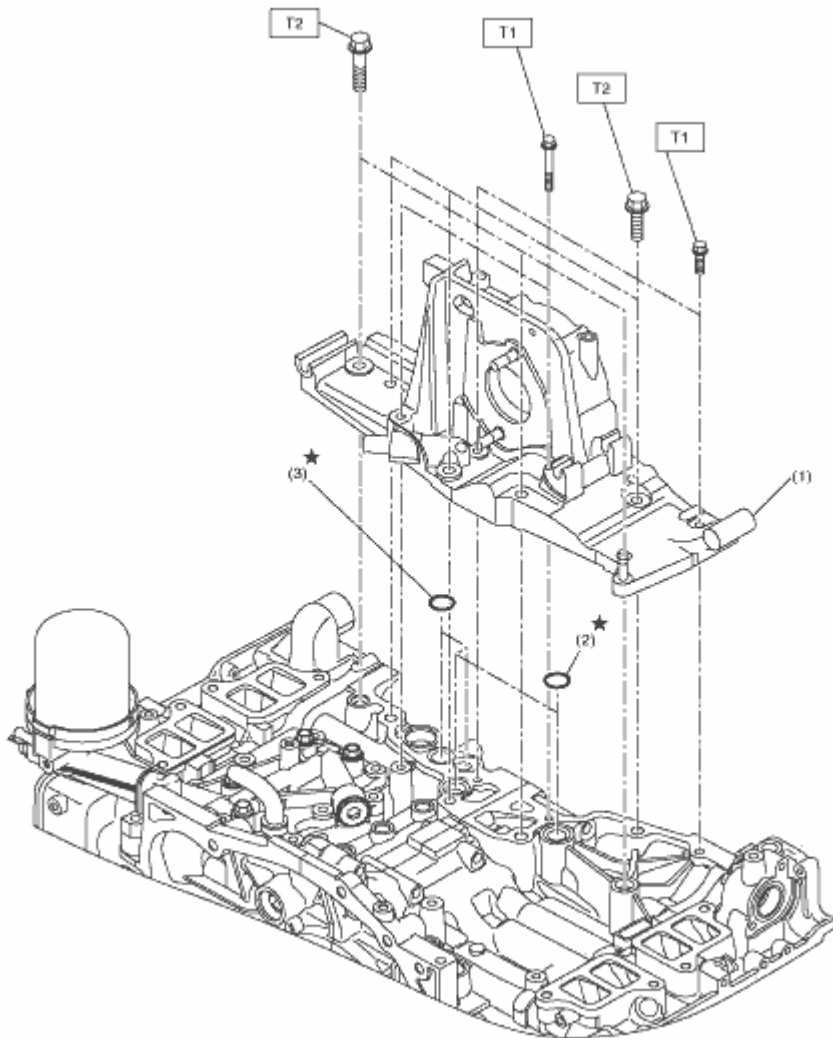
- | | | |
|------------------------------------|---------------------------------------|--|
| (1) Cylinder head (RH) | (11) Intake camshaft cap (Center LH) | (21) Cylinder block (LH) |
| (2) Cylinder head (LH) | (12) Exhaust camshaft cap (Rear LH) | (22) Seal washer |
| (3) Cylinder head gasket (RH) | (13) Exhaust camshaft cap (Center LH) | |
| (4) Cylinder head gasket (LH) | (14) Front camshaft cap (LH) | Tightening torque:N·m (kgf-m, ft-lb) |
| (5) Glow plug | (15) Intake camshaft cap (Rear RH) | T1: 6.4 (0.7, 4.7) |
| (6) Intake camshaft (RH) | (16) Intake camshaft cap (Center RH) | T2: 11.5 (1.2, 8.5) |
| (7) Exhaust camshaft (RH) | (17) Exhaust camshaft cap (Rear RH) | T3: 9.75 (1.0, 7.2) |
| (8) Intake camshaft (LH) | (18) Exhaust camshaft cap (Center RH) | T4: 18 (1.8, 13.3) |
| (9) Exhaust camshaft (LH) | (19) Front camshaft cap (RH) | T5:  |
| (10) Intake camshaft cap (Rear LH) | (20) Cylinder block (RH) | |

10. CYLINDER HEAD



- | | | |
|-------------------------------------|-------------------------------------|--|
| (1) Intake valve | (9) Rocker arm pivot (exhaust) | (17) Valve rocker (intake) |
| (2) Exhaust valve | (10) Valve rocker (exhaust) | (18) Rocker arm pivot (intake) |
| (3) Valve spring sheet (exhaust) | (11) Valve spring sheet (intake) | (19) Plug |
| (4) Valve guide (exhaust) | (12) Valve guide (intake) | |
| (5) Stem seal (exhaust) | (13) Stem seal (intake) | Tightening torque: N·m (kgf·m, ft·lb) |
| (6) Valve spring (exhaust) | (14) Valve spring (intake) | T1: 10 (1.0, 7.4) |
| (7) Valve spring retainer (exhaust) | (15) Valve collet (intake) | T2: 60 (6.1, 44.3) |
| (8) Valve collet (exhaust) | (16) Valve spring retainer (intake) | |

11. GENERATOR BRACKET



ME-03651

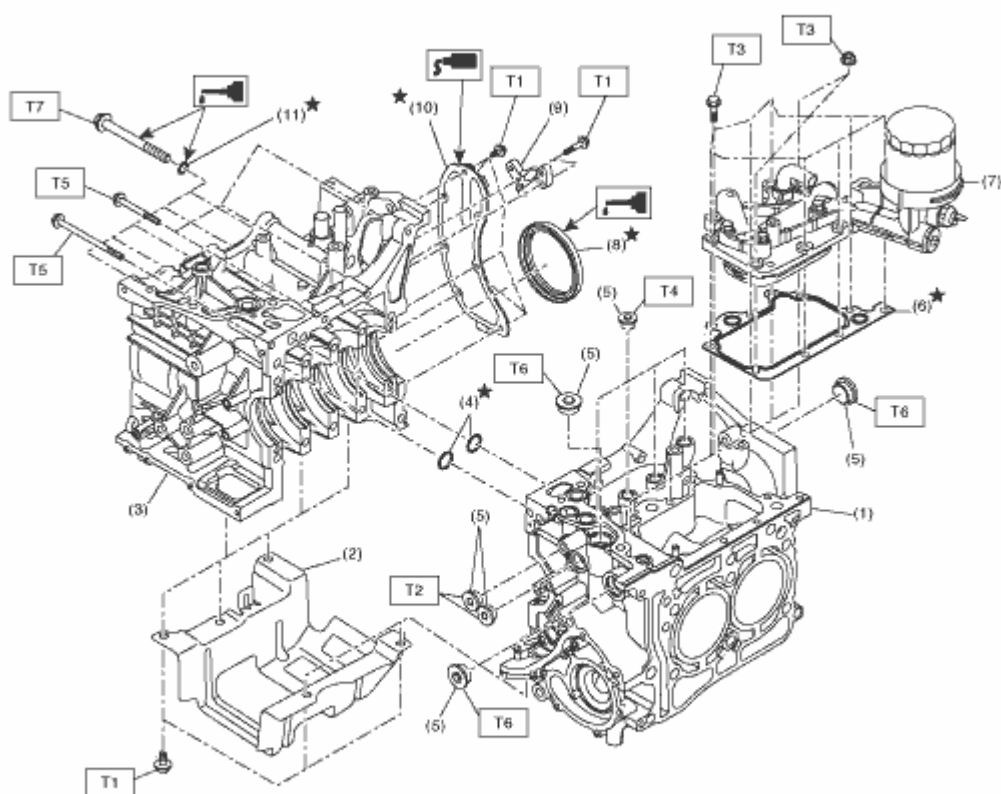
(1) Generator bracket (3) O-ring **Tightening torque:N·m (kgf-m, ft-lb)**

(2) O-ring

T1: 6.4 (0.7, 4.7)

T2: 33 (3.4, 24.3)

12. CYLINDER BLOCK



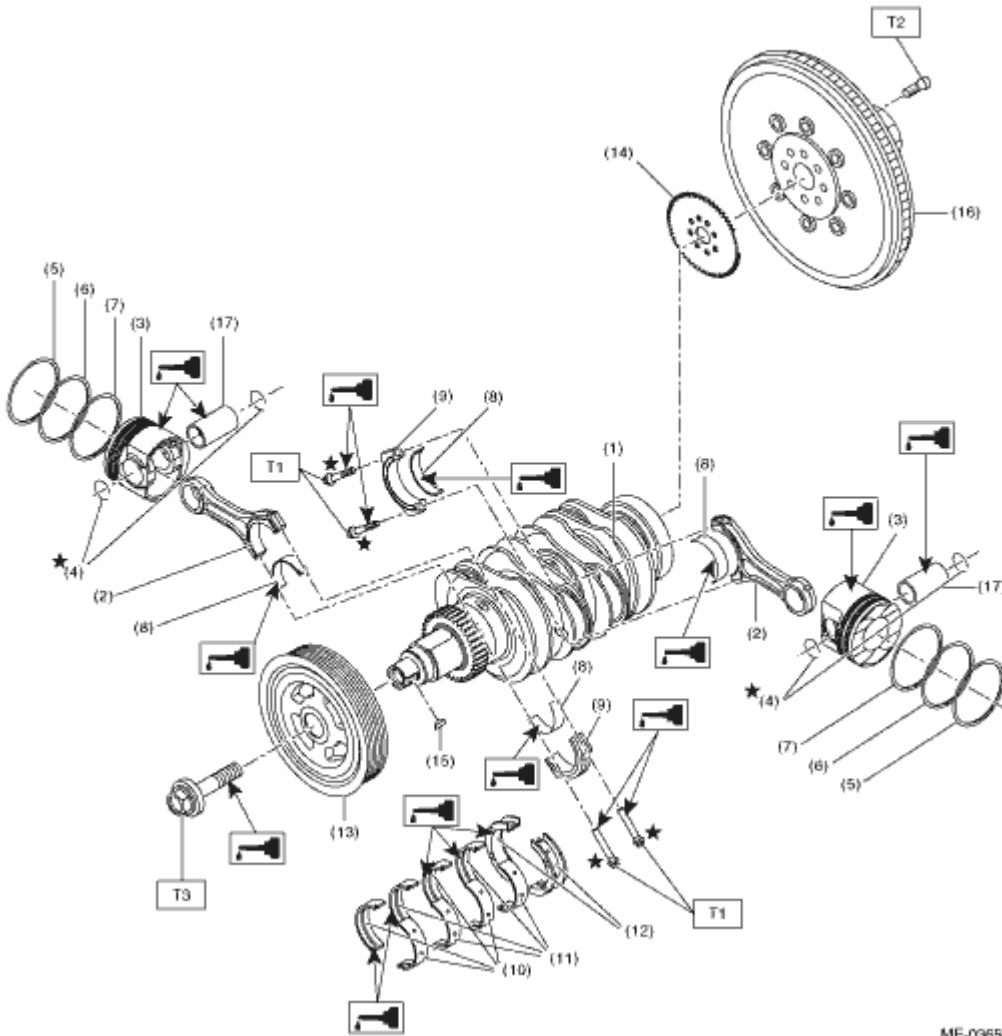
ME-03652

- (1) Cylinder block (LH)
- (2) Baffle
- (3) Cylinder block (RH)
- (4) O-ring
- (5) Plug
- (6) Gasket
- (7) Oil cooler ASSY
- (8) Oil seal
- (9) Crankshaft sensor holder
- (10) Oil separator cover
- (11) Seal washer

Tightening torque: N·m (kgf-m, ft-lb)

- T1: 6.4 (0.7, 4.7)**
- T2: 37 (3.8, 27.3)**
- T3: 19 (1.9, 14.0)**
- T4: 23 (2.3, 17.0)**
- T5: 25 (2.5, 18.4)**
- T6: 70 (7.1, 51.6)**
- T7: **

13. CRANKSHAFT AND PISTON

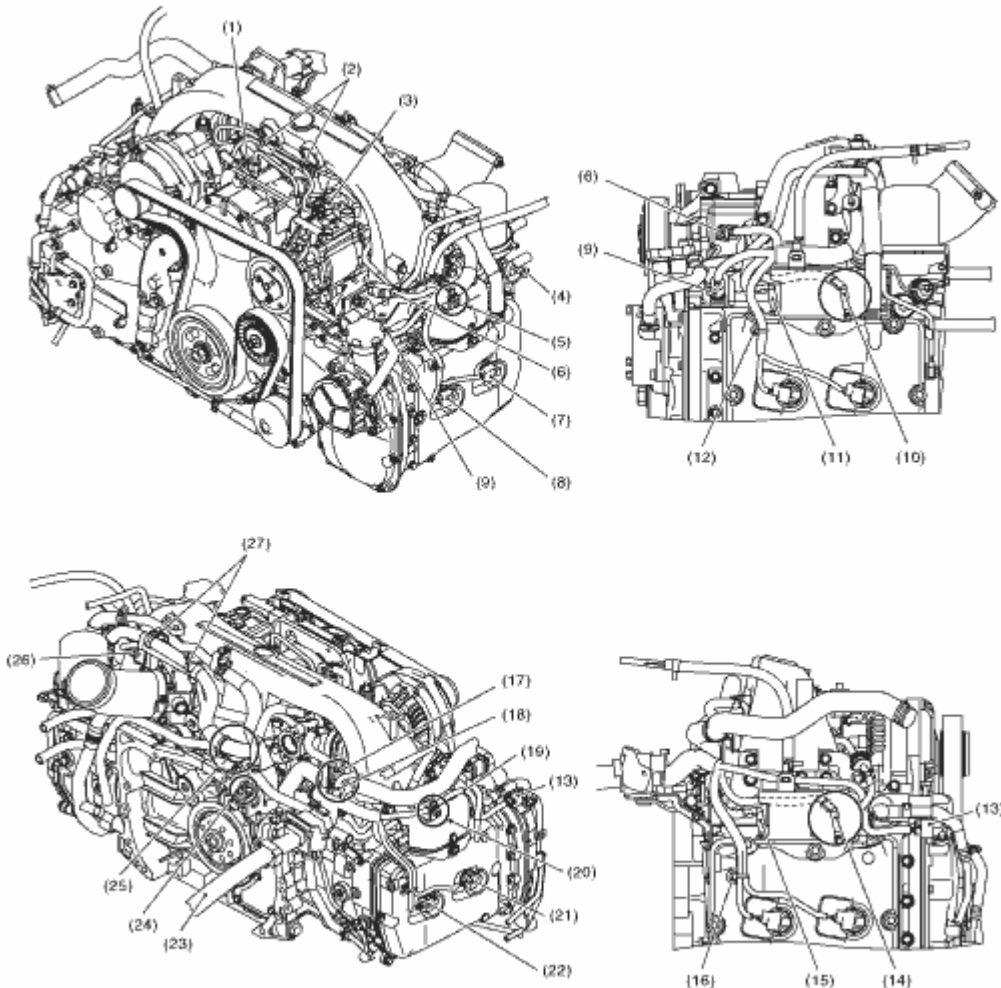


ME-09653

- | | | |
|----------------------------|--------------------------------|--|
| (1) Crankshaft | (9) Connecting rod cap | (17) Piston pin |
| (2) Connecting rod | (10) Crankshaft bearing #1, #3 | |
| (3) Piston | (11) Crankshaft bearing #2, #4 | Tightening torque: N·m (kgf-m, ft-lb) |
| (4) Snap ring | (12) Crankshaft bearing #5 | T1:  |
| (5) Top ring | (13) Crank pulley | T2:  |
| (6) Second ring | (14) Crankshaft sensor plate | T3:  |
| (7) Oil ring | (15) Woodruff key | |
| (8) Connecting rod bearing | (16) Flywheel | |

14. ENGINE HARNESS

- Structural diagram 1

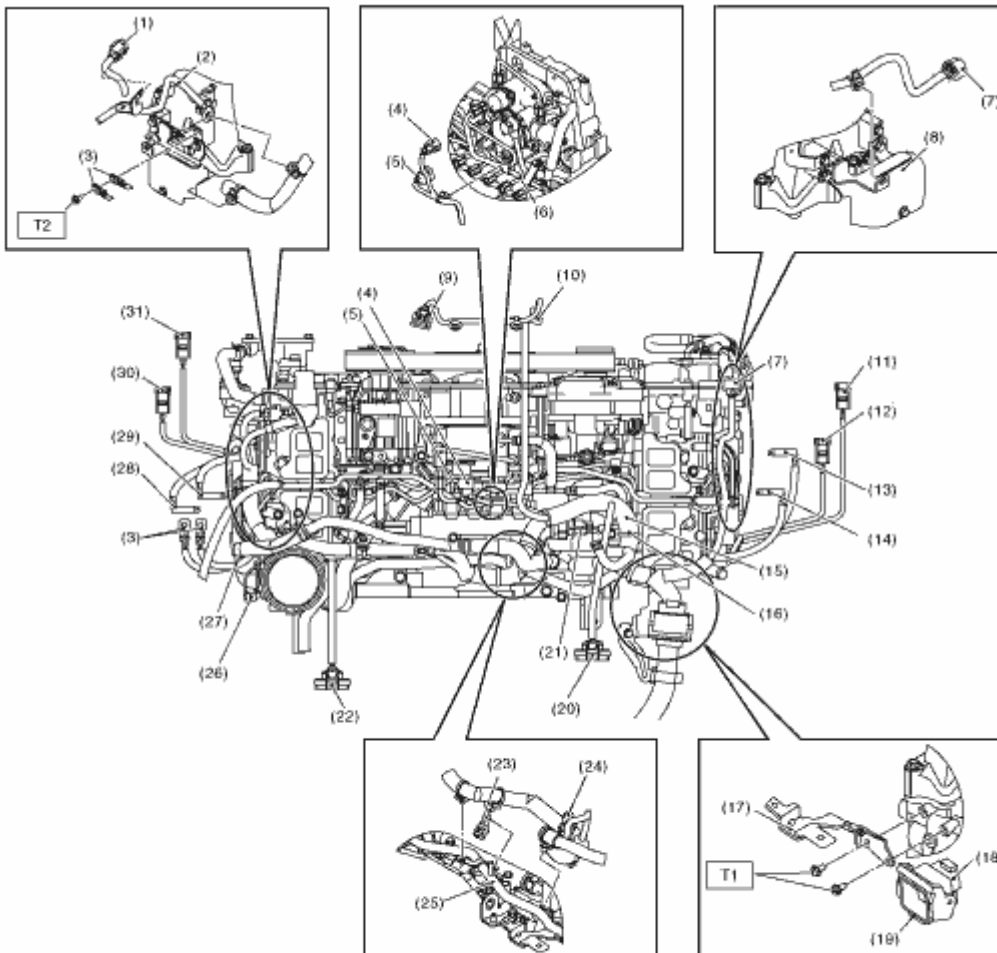


FU-03841

- (1) Boost control valve
- (2) Attach the engine harness clip securely to the vacuum pipe stay.
- (3) Manifold absolute pressure and intake air temperature sensor
- (4) Oil pressure switch
- (5) Attach the engine harness clip securely on the intake manifold protector.
- (6) Glow docking connector
- (7) Fuel injector (#4)
- (8) Fuel injector (#2)
- (9) Engine coolant temperature sensor
- (10) Glow plug (#4)
- (11) Glow plug (#2)
- (12) Attach the engine harness clip securely on the rocker cover.
- (13) Camshaft position sensor
- (14) Glow plug (#1)
- (15) Glow plug (#3)
- (16) Attach the engine harness clip securely on the rocker cover.
- (17) EGR control valve
- (18) Insert the harness connected to the EGR control valve to the under the air breather hose.

- (19) Pass the harness connected to the camshaft position sensor under the vacuum hose.
- (20) Attach the engine harness clip securely on the intake manifold protector.
- (21) Fuel injector (#1)
- (22) Fuel injector (#3)
- (23) Body harness
- (24) Crankshaft position sensor
- (25) Attach the engine harness clip securely on the engine coolant pipe. (2 locations)
- (26) Throttle position sensor
- (27) Attach the engine harness clip securely to the air breather pipe.

• Structural diagram 2



FU-03842

- (1) Docking connector (Attach the harness connector securely onto the stay lock.)
- (2) By-pass air pipe
- (3) Engine ground
- (4) Suction control valve
- (5) Fuel temperature sensor
- (6) Fuel pipe
- (7) Camshaft position sensor

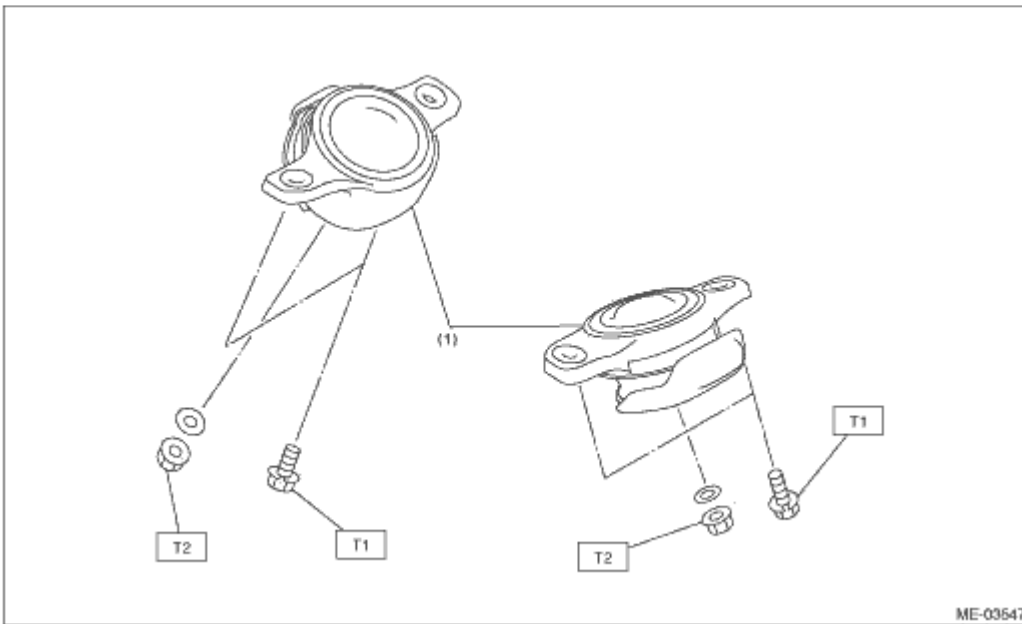
- (8) Intake manifold protector
- (9) Manifold absolute pressure and intake air temperature sensor
- (10) Boost control valve
- (11) Fuel injector (#1)
- (12) Fuel injector (#3)
- (13) Glow plug (#1)
- (14) Glow plug (#3)
- (15) Route the engine harness above the fuel pipe.
- (16) Attach the engine harness clip securely to the fuel return pipe stay.
- (17) Engine harness stay
- (18) Docking connector
- (19) Attach the harness connector securely to the lock part of the engine harness stay.
- (20) EGR control valve
- (21) Common rail pressure sensor
- (22) Throttle position sensor
- (23) Crankshaft position sensor
- (24) EGR control valve
- (25) Water pipe
- (26) Oil pressure switch
- (27) Route the engine ground under the engine harness.
- (28) Glow plug (#4)
- (29) Glow plug (#2)
- (30) Fuel injector (#4)
- (31) Fuel injector (#2)

Tightening torque:N·m (kgf-m, ft-lb)

T1: 6.4 (0.7, 4.7)

T2: 19 (1.9, 14.0)

15. ENGINE MOUNTING



(1) Front cushion rubber

Tightening torque:N·m (kgf·m, ft·lb)

T1: 35 (3.6, 25.8)

T2: 85 (8.7, 62.7)