

# General Description

## LUBRICATION

### 1. General Description

#### A: SPECIFICATION

Lubrication method					Forced lubrication	
Pump type					Trochoid type	
Number of teeth					7	
					8	
Outer rotor diameter × thickness				mm (in)	76 × 30.2 (2.99 × 1.19)	
Oil pump	Performance (Oil temperature 80°C (176°F))	600 rpm	Discharge pressure	kPa (kgf/cm <sup>2</sup> , psi)	98 (1.0, 14)	
			Discharge rate	ℓ (US qt, Imp qt)/min.	5.0 (5.3, 4.4) or more	
		6,000 rpm	Discharge pressure	kPa (kgf/cm <sup>2</sup> , psi)	392 (4.0, 57)	
			Discharge rate	ℓ (US qt, Imp qt)/min.	82.8 (87.5, 72.9) or more	
Oil filter	Filter type					
	Filtration area					
	By-pass valve opening pressure					
	Outer diameter × width					
	Installation screw specifications					
Oil pressure switch	Type					
	Operating voltage — power consumption					
	Warning light operating pressure					
	Proof pressure					
Engine oil	Total capacity (at overhaul)					
	When replacing engine oil and oil filter					
	When replacing engine oil only					

#### Recommended oil:

**Oil corresponding to either of the following standards.**

- **For API standard, oil with SM “Energy Conserving” logo**
- **For ILSAC standard, oil with GF-4 “Star burst mark” label on the container**

SAE (1)							
(°C)	-30	-20	-15	0	15	30	40
(°F)	-22	-4	5	32	59	86	104
10W-30, 10W-40, 10W-50							
5W-30 (2), 5W-40							
LU-02488							

(1) SAE viscosity No. and applicable temperature  
 (2) Recommended

#### CAUTION:

**It is acceptable to fill an engine with oil of another brand when replacing the oil, but make sure to use an oil with an API standard and SAE viscosity number specified by Subaru.**

#### NOTE:

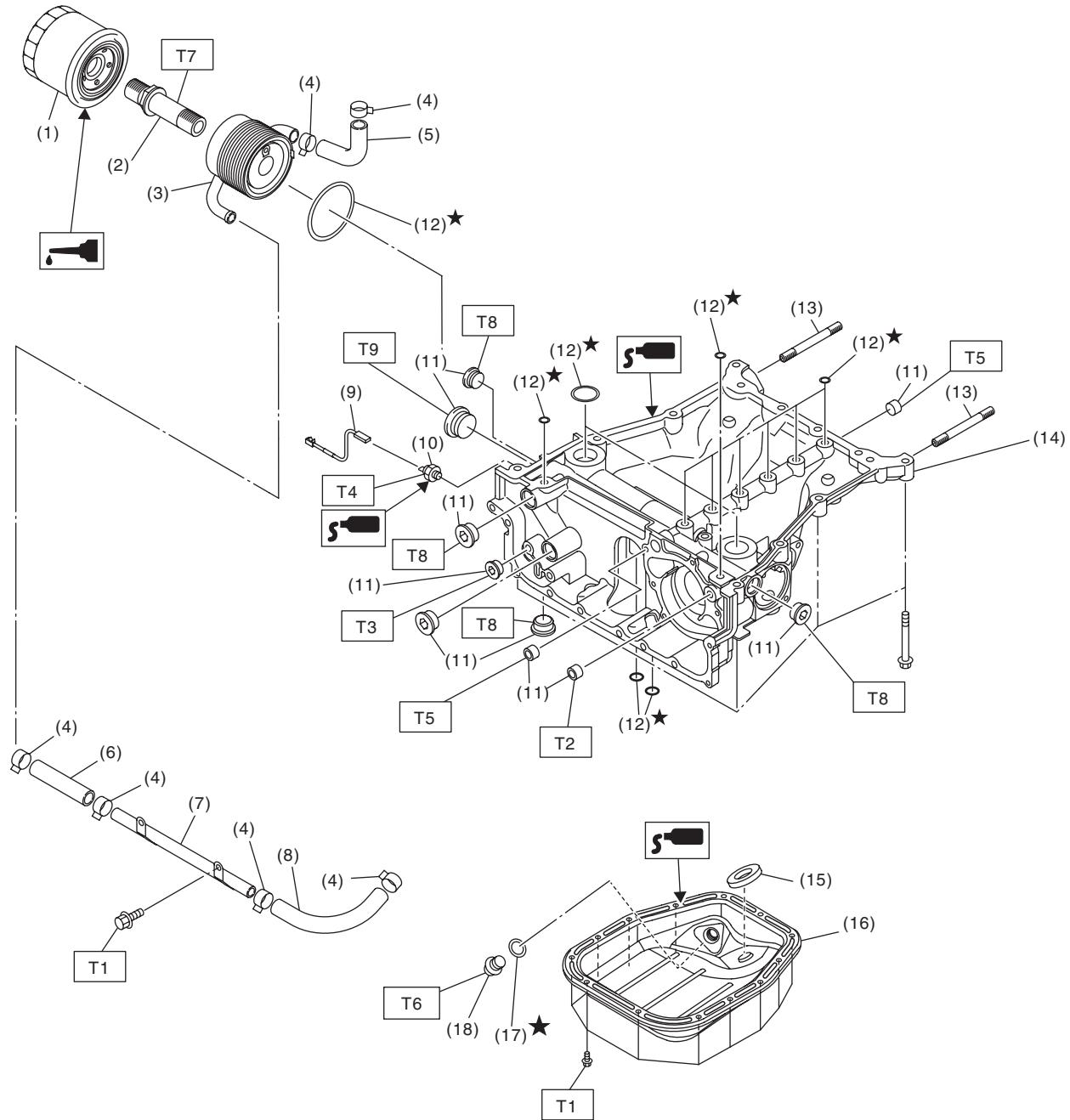
- The proper viscosity oil helps the engine maintain its ideal temperature, and cranking speed increased by reducing viscosity friction in hot condition.
- If the vehicle is used in regions of high temperatures or in other severe environments, use oil with the viscosities shown below.

API standard: SM or SL

SAE viscosity No.: 30, 40, 10W-50, 20W-40, 20W-50

### B: COMPONENT

#### 1. OIL PAN UPPER, OIL COOLER, OIL FILTER



LU-02552

# General Description

## LUBRICATION

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(1) Oil filter	(10) Oil pressure switch
(2) Oil cooler connector	(11) Plug
(3) Oil cooler	(12) O-ring
(4) Clamp	(13) Stud bolt
(5) Water hose	(14) Oil pan upper
(6) Water hose	(15) Oil pan magnet
(7) Engine oil cooler water pipe	(16) Oil pan lower
(8) Water hose	(17) Gasket
(9) Oil pressure switch harness	(18) Drain plug

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

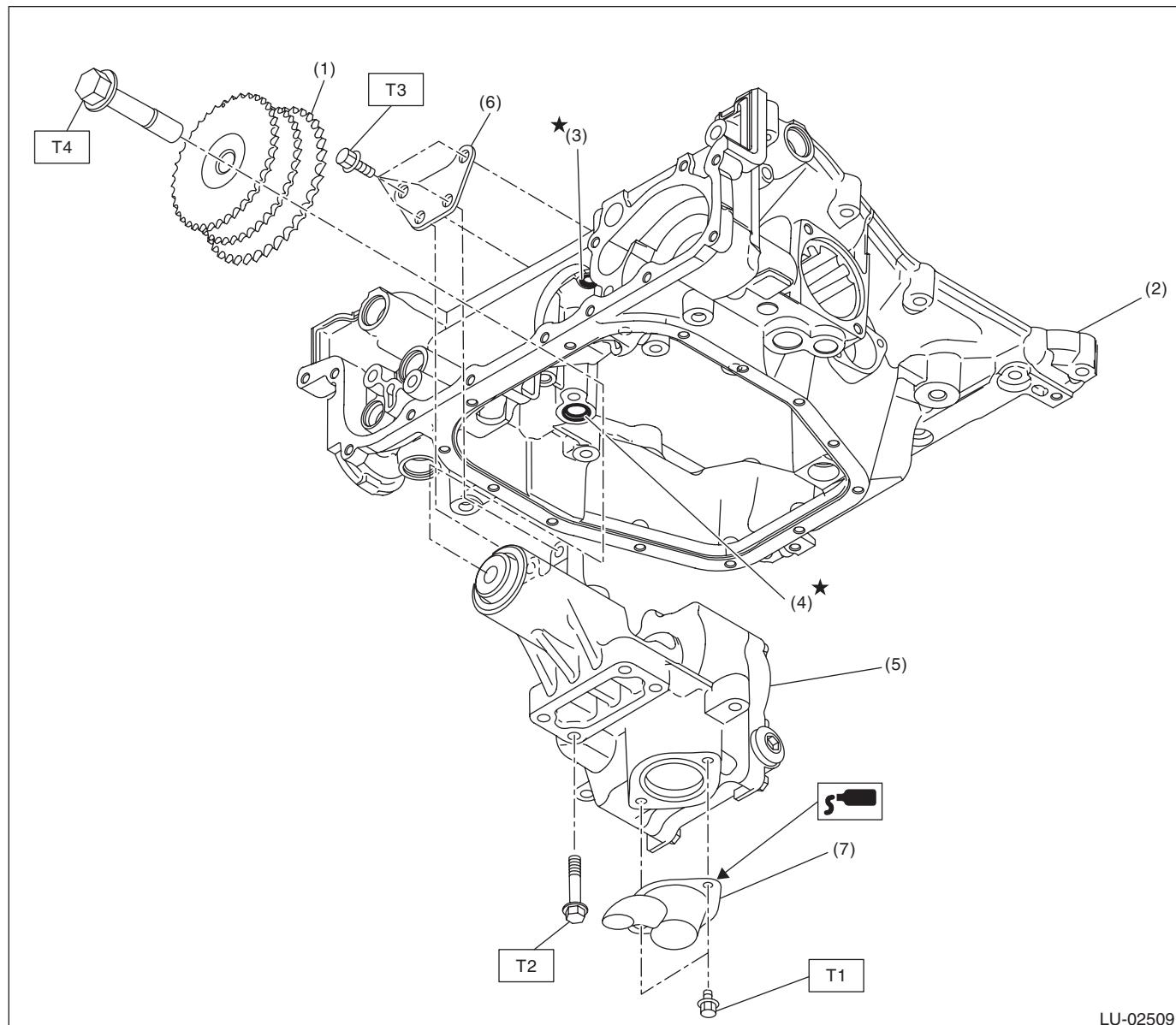
<i>T1:</i> 6.4 (0.7, 4.7)
<i>T2:</i> 17 (1.7, 12.5)
<i>T3:</i> 23 (2.3, 17.0)
<i>T4:</i> 25 (2.5, 18.4)
<i>T5:</i> 34 (3.5, 25.1)
<i>T6:</i> 44 (4.5, 32.5)
<i>T7:</i> 54 (5.5, 39.8)
<i>T8:</i> 60 (6.1, 44.3)
<i>T9:</i> 90 (9.2, 66.4)

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## 2. OIL PUMP



- (1) Idler sprocket
- (2) Oil pan upper
- (3) O-ring
- (4) O-ring

- (5) Oil pump
- (6) Stiffener
- (7) Strainer

**Tightening torque: N·m (kgf·m, ft·lb)**  
**T1: 6.4 (0.7, 4.7)**  
**T2: 13 (1.3, 9.6)**  
**T3: 24 (2.4, 17.7)**  
**T4: 120 (12.2, 88.5)**

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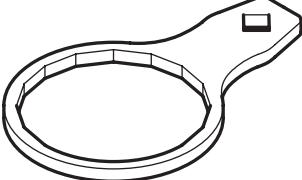
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### C: CAUTION

- 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.
- Before applying liquid gasket, completely remove the old liquid gasket and degrease it.
- 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 battery.
- If the engine oil is spilt over exhaust pipe or the under cover, wipe it off with cloth to avoid emitting smoke or causing a fire.
- Prepare a container and cloth to prevent scattering of oil when performing work where engine coolant 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 oil.

### D: PREPARATION TOOL

#### 1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18332AA020	18332AA020	OIL FILTER WRENCH	Used for removing and installing oil filter.