

General Description

LUBRICATION

1. General Description

A: SPECIFICATION

Lubrication method		Forced lubrication	
Oil pump	Pump type		Trochoid type
	Number of teeth		Inner rotor 7 Outer rotor 8
	Outer rotor diameter × thickness		mm (in) 76 × 30.2 (2.99 × 1.19)
Oil filter	Filter type		Full-flow filter type
	Filtration area		cm ² (sq in) 1,300 (201.5)
	By-pass valve opening pressure		kPa (kg/cm ² , psi) 160 (1.63, 23.2)
	Outer diameter × width		mm (in) 80 × 75 (3.15 × 2.95)
	Installation screw specifications		M 20 × 1.5
Relief valve working pressure		kPa (kg/cm ² , psi) 708 (7.2, 102.7)	
Oil pressure switch	Type		Immersed contact point type
	Operating voltage — power consumption		12 V — 3.4 W or less
	Warning light operating pressure		kPa (kg/cm ² , psi) 15 (0.15, 2.2)
	Proof pressure		kPa (kg/cm ² , psi) 980 (10.0, 142) or more
Engine oil	Capacity (at overhaul)		ℓ (US qt, Imp qt) 7.8 (8.2, 6.9)
	When replacing engine oil and oil filter		ℓ (US qt, Imp qt) 6.5 (6.9, 5.7)
	When replacing engine oil only		ℓ (US qt, Imp qt) 6.3 (6.7, 5.5)

Recommended oil:

Oil conforming to one of the following standard

- Those with an API standard SM "Energy Conserving" logo
- Those with ILSAC standard 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							
5W-30 (2)							

(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:

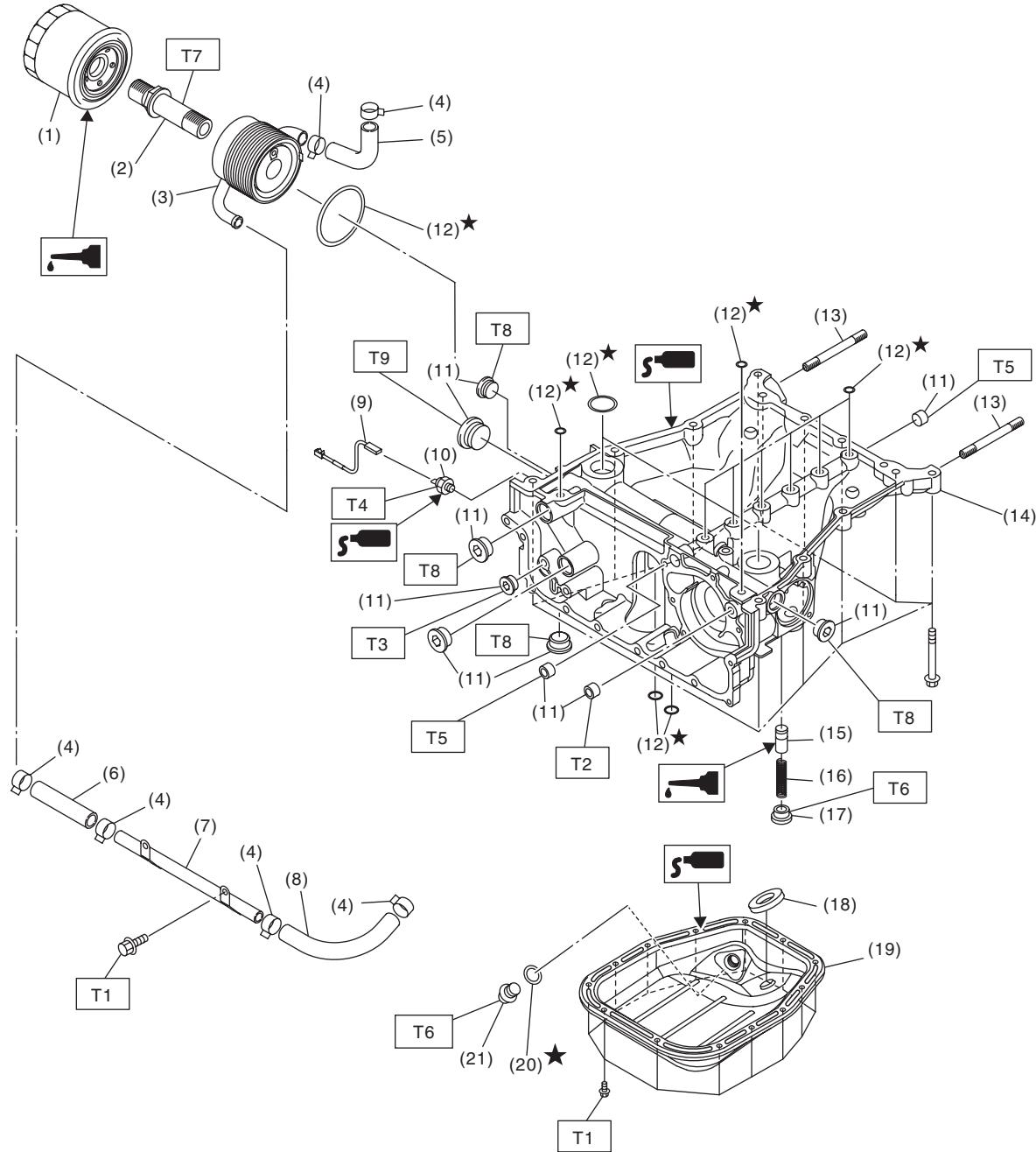
- The proper viscosity oil helps the engine maintain its ideal temperature, and cranking speed increased by reducing viscosity friction in hot condition.
- If the vehicle is used in regions of high temperatures or in other severe environments, use oil with the viscosities shown below.

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-02371

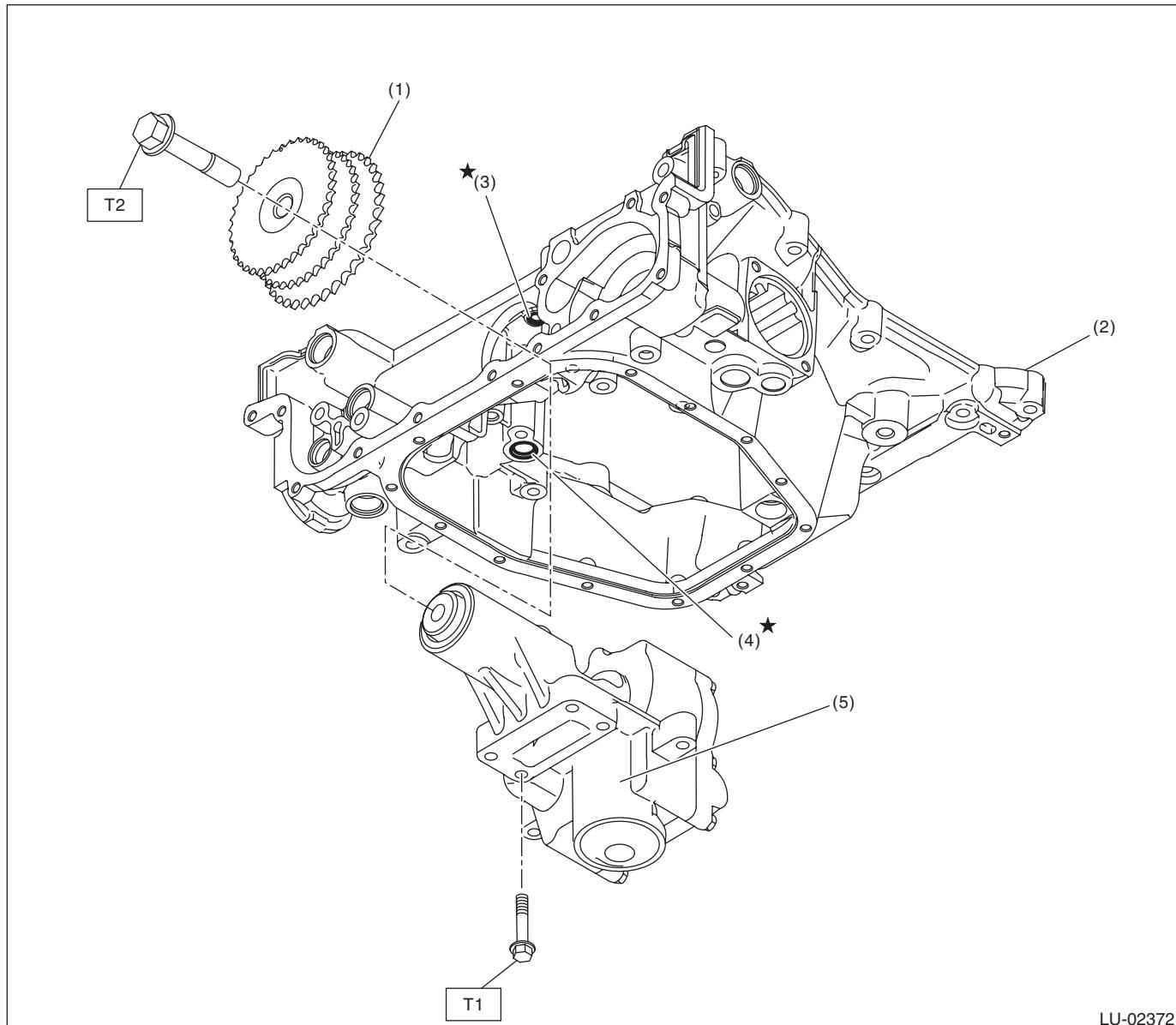
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(1) Oil filter	(12) O-ring
(2) Oil cooler connector	(13) Stud bolt
(3) Oil cooler	(14) Oil pan upper
(4) Clamp	(15) Relief valve
(5) Water hose	(16) Relief valve spring
(6) Water hose	(17) Relief plug
(7) Engine oil cooler water pipe	(18) Oil pan magnet
(8) Water hose	(19) Oil pan lower
(9) Oil pressure switch harness	(20) Gasket
(10) Oil pressure switch	(21) Drain plug
(11) Plug	

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

2. OIL PUMP



LU-02372

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

- (4) O-ring
- (5) Oil pump

Tightening torque: N·m (kgf-m, ft-lb)

T1: 13 (1.3, 9.6)

T2: 120 (12.2, 88.5)

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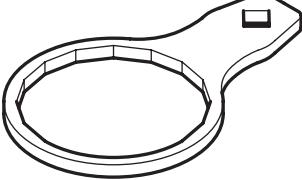
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C: CAUTION

- 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.