

# 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)		86 × 13 (3.39 × 0.51)
	Tip clearance between inner and outer rotors mm (in)		0.04 — 0.14 (0.0016 — 0.0055)
	Side clearance between inner rotor and pump case mm (in)		0.020 — 0.046 (0.0008 — 0.0018)
Case clearance between outer rotor and pump case mm (in)		0.110 — 0.175 (0.0043 — 0.0069)	
Oil filter	Filter type		Full-flow filter type
	Filtration area cm <sup>2</sup> (sq in)		1,300 (201.5)
	By-pass valve opening pressure kPa (kg/cm <sup>2</sup> , 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 <sup>2</sup> , 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 <sup>2</sup> , psi)		15 (0.15, 2.2)
	Proof pressure kPa (kg/cm <sup>2</sup> , psi)		980 (10.0, 142) or more
Engine oil	Capacity (at overhaul) ℓ (US qt, Imp qt)		7.2 (7.6, 6.3)
	When replacing engine oil and oil filter ℓ (US qt, Imp qt)		5.7 (6.0, 5.0)
	When replacing engine oil only ℓ (US qt, Imp qt)		5.5 (5.8, 4.8)

#### Recommended oil:

**Those with an API standard SM “Energy Conserving” logo.**

**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
LU-02203	

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

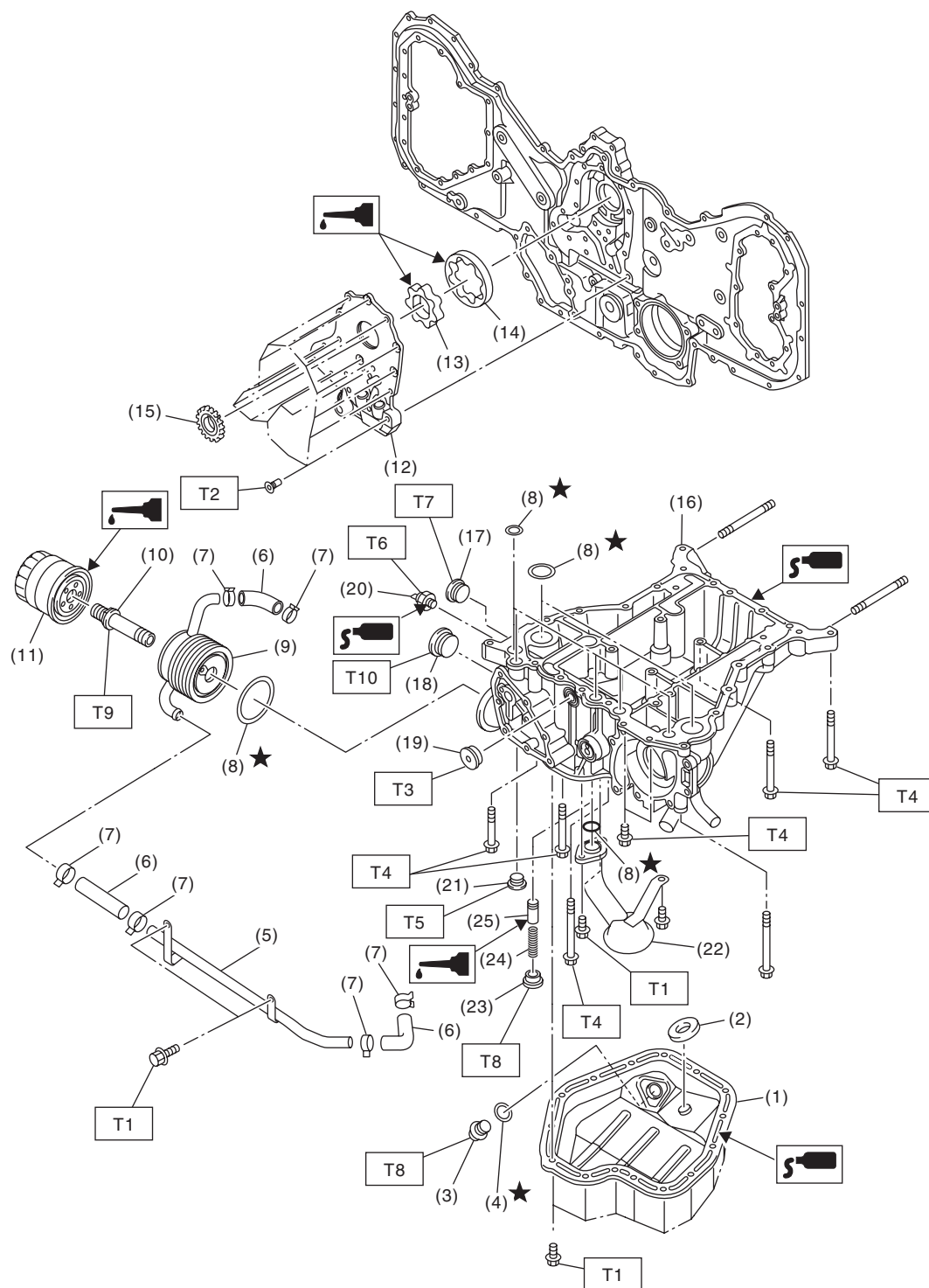
#### CAUTION:

**When replenishing oil, it does not matter if the oil to be added is a different brand from that in the engine; however, use oil having the API standard and SAE viscosity No. designated by SUBARU.**

#### NOTE:

If the vehicle is used in areas with very high temperatures or for other heavy duty applications, the following viscosity oils must be used: API standard: SM or SL  
SAE viscosity No.: 30, 40, 10W-50, 20W-40, 20W-50

## B: COMPONENT



LU-02282

## General Description

### LUBRICATION

- |                           |                          |
|---------------------------|--------------------------|
| (1) Oil pan lower         | (14) Outer rotor         |
| (2) Magnet                | (15) Crank sprocket      |
| (3) Drain plug            | (16) Oil pan upper       |
| (4) Gasket                | (17) Plug                |
| (5) Oil cooler pipe       | (18) Plug                |
| (6) Hose                  | (19) Plug                |
| (7) Clamp                 | (20) Oil pressure switch |
| (8) O-ring                | (21) Plug                |
| (9) Oil cooler            | (22) Oil strainer        |
| (10) Oil cooler connector | (23) Plug                |
| (11) Oil filter           | (24) Relief valve spring |
| (12) Oil pump cover       | (25) Relief valve        |
| (13) Inner rotor          |                          |

<b>Tightening torque: N·m (kgf-m, ft-lb)</b>	
<b>T1:</b>	<b>6.4 (0.65, 4.7)</b>
<b>T2:</b>	<b>&lt;Ref. to LU(H6DO)-8, INSTALLATION, Oil Pump.&gt;</b>
<b>T3:</b>	<b>16 (1.6, 12)</b>
<b>T4:</b>	<b>18 (1.8, 13)</b>
<b>T5:</b>	<b>23 (2.3, 17)</b>
<b>T6:</b>	<b>25 (2.5, 18)</b>
<b>T7:</b>	<b>37 (3.8, 27)</b>
<b>T8:</b>	<b>44 (4.5, 33)</b>
<b>T9:</b>	<b>54 (5.5, 40)</b>
<b>T10:</b>	<b>90 (9.2, 66)</b>

### 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.

### D: PREPARATION TOOL

#### 1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
<p>ST-499977100</p>	499977100	CRANK PULLEY WRENCH	Used for stopping rotation of crank pulley when removing and tightening crank pulley bolt.
<p>ST-498547000</p>	498547000	OIL FILTER WRENCH	Used for removing and installing oil filter.