

General Description

LUBRICATION

1. General Description

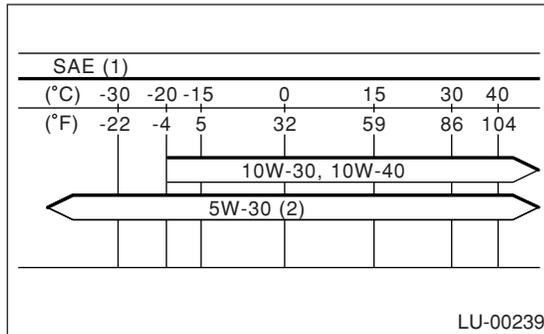
A: SPECIFICATION

Lubrication method			Forced lubrication		
Oil pump	Pump type		Trochoid type		
	Number of teeth	Inner rotor	9		
		Outer rotor	10		
	Outer rotor diameter × thickness		mm (in)	78 × 10 (3.07 × 0.47)	
	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)	0.02 — 0.07 (0.0008 — 0.0028)	
	Case clearance between outer rotor and pump case		Standard value	mm (in)	0.10 — 0.175 (0.0039 — 0.0069)
	Performance at 80°C (176°F)	600 rpm	Discharge pressure	kPa (kg/cm ² , psi)	98 (1.0, 14)
			Discharge	ℓ (US qt, Imp qt)/min.	4.6 (4.9, 4.0) or more
		5,000 rpm	Discharge pressure	kPa (kg/cm ² , psi)	294 (3.0, 43)
Discharge			ℓ (US qt, Imp qt)/min.	47.0 (49.7, 41.4) or more	
Relief valve working pressure		kPa (kg/cm ² , psi)	588 (6.0, 85)		
Oil filter	Filter type		Full-flow filter type		
	Filtration area	cm ² (sq in)	Outer diameter 68 mm (2.68 in)	800 (124)	
			Outer diameter 65 mm (2.56 in)	470 (72.9)	
	By-pass valve opening pressure		kPa (kg/cm ² , psi)	160 (1.63, 23.2)	
	Outer diameter × width	mm (in)	Outer diameter 68 mm (2.68 in)	68 × 65 (2.68 × 2.56)	
			Outer diameter 65 mm (2.56 in)	65 × 74.4 (2.56 × 2.93)	
Installation screw specifications			M 20 × 1.5		
Oil pressure switch	Type		Immersed contact point type		
	Working voltage — wattage		12 V — 3.4 W or less		
	Warning light activation pressure		kPa (kg/cm ² , psi)	14.7 (0.15, 2.1)	
	Proof pressure		kPa (kg/cm ² , psi)	981 (10, 142) or more	
Oil capacity (at replacement)		ℓ (US qt, Imp qt)	4.0 (4.2, 3.5)		

Recommended oil:

API standard SL with the “Energy Conserving” logo is printed (if you cannot obtain the oil with SL grade, you may use SJ grade “ENERGY CONSERVING” oil.)

ILSAC standard, GF-3 or New API certification mark (Star burst mark) label is on the container



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

The proper viscosity helps vehicle get good cold and hot starting by reducing viscous friction and thus increasing cranking speed.

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.

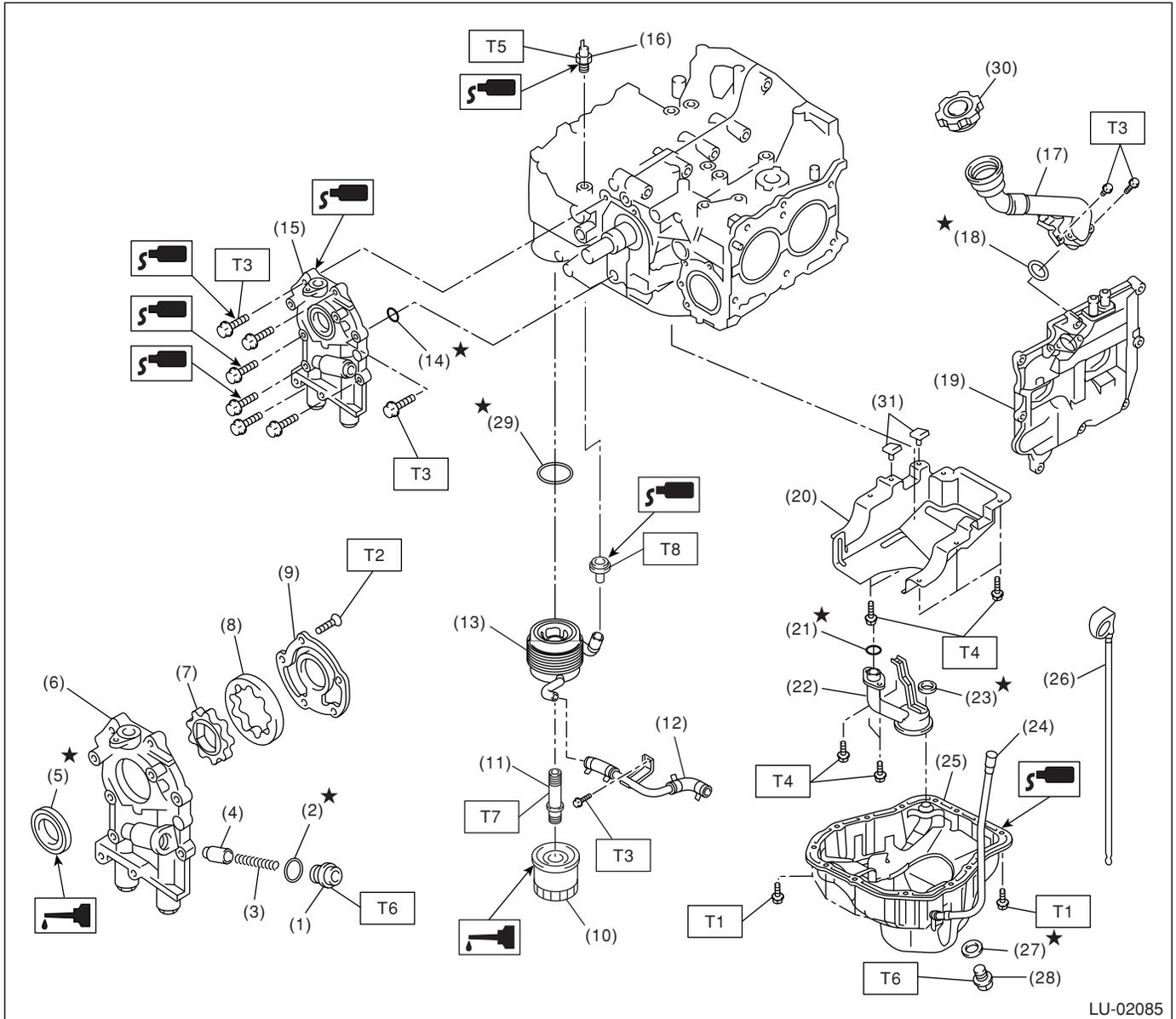
NOTE:

If the vehicle is used in areas with very high temperatures or for other heavy duty applications, the following viscosity oils may be used: API standard: SL or SJ

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

General Description

B: COMPONENT



LU-02085

- | | | |
|---------------------------|----------------------------|---------------------|
| (1) Plug | (15) Oil pump ASSY | (29) O-ring |
| (2) Gasket | (16) Oil pressure switch | (30) Oil filler cap |
| (3) Relief valve spring | (17) Oil filler duct | (31) Seal |
| (4) Relief valve | (18) O-ring | |
| (5) Oil seal | (19) Rocker cover | |
| (6) Oil pump case | (20) Baffle plate | |
| (7) Inner rotor | (21) O-ring | |
| (8) Outer rotor | (22) Oil strainer | |
| (9) Oil pump cover | (23) Gasket | |
| (10) Oil filter | (24) Oil level gauge guide | |
| (11) Oil cooler connector | (25) Oil pan | |
| (12) Water bypass pipe | (26) Oil level gauge | |
| (13) Oil cooler | (27) Metal gasket | |
| (14) O-ring | (28) Drain plug | |

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

- T1: 5 (0.5, 3.6)**
T2: 5.4 (0.55, 4.0)
T3: 6.4 (0.65, 4.7)
T4: 10 (1.0, 7.0)
T5: 25 (2.5, 18.1)
T6: 44 (4.5, 32.5)
T7: 54 (5.5, 40)
T8: 69 (7.0, 50)

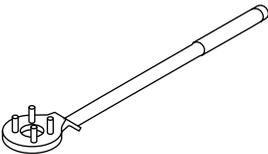
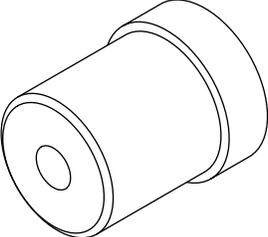
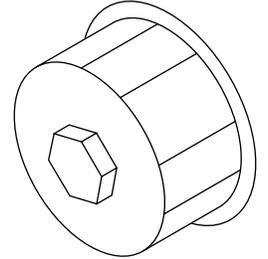
C: CAUTION

- Wear work clothing, including a cap, protective goggles and protective shoes during operation.
- 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.

- Be careful not to burn yourself, because each part on the vehicle is hot after running.
- 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 electrical connectors of sensors or units, be sure to disconnect the ground cable from battery.

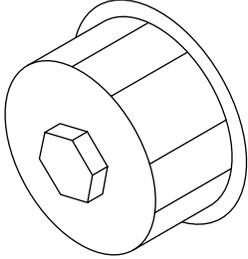
D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p style="text-align: center;">ST-499977100</p>	499977100	CRANK PULLEY WRENCH	Used for stopping rotation of crank pulley when removing and tightening crank pulley bolt.
 <p style="text-align: center;">ST-499587100</p>	499587100	OIL SEAL INSTALLER	Used for installing oil seal into oil pump.
 <p style="text-align: center;">ST18332AA000</p>	18332AA000	OIL FILTER WRENCH	Used for removing and installing oil filter. (Outer diameter: 68 mm (2.68 in))

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ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 <p>ST18332AA010</p>	18332AA010	OIL FILTER WRENCH	Used for removing and installing oil filter. (Outer diameter: 65 mm (2.56 in))