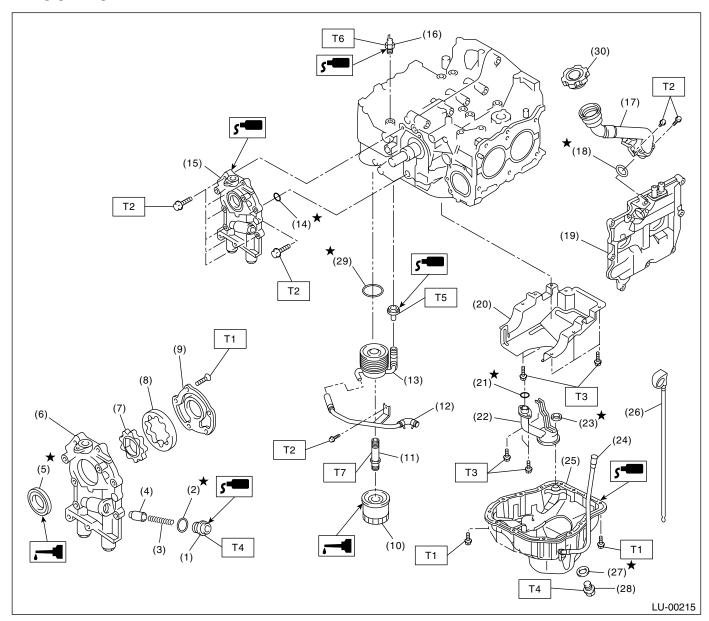
# 1. General Description

# A: SPECIFICATIONS

Lubrication me	Tip clearance between inner and outer rotor  Side clearance between inner rotor and pump case  Case clearance between outer rotor and pump case  Case clearance between outer rotor and pump case  Capacity at 80°C (176°F)  Capacity at 80°C (176°F)  Capacity at 80°C (176°F)  EIMIT  Discharge pressure  Discharge quantity  Discharge pressure  Discharge pressure  Discharge quantity  Relief valve operation pressure			Forced lubrication
	Pump type			Trochoid type
Oil pump	Number of teeth	Inner rotor		9
		Outer rotor		10
	Outer rotor diameter × thickness			78 × 10 mm (3.07 × 0.39 in)
	Tip clearance between inner and outer rotor		STANDARD	0.04 — 0.14 mm (0.0016 — 0.0055 in)
				0.18 mm (0.0071 in)
	·			0.02 — 0.07 mm (0.0008 — 0.0028 in)
				0.12 mm (0.0047 in)
	• •		STANDARD	0.10 — 0.175 mm (0.0039 — 0.0069 in)
			LIMIT	0.20 mm (0.0079 in)
	Capacity at 80°C (176°F)	600 rpm		98 kPa (1.0 kg/cm², 14 psi)
			_	4.6 & (4.9 US qt, 4.0 Imp qt)/min.
		5,000 rpm	•	294 kPa (3.0 kg/cm², 43 psi)
			_	47.0 @ (49.7 US qt, 41.4 Imp qt)/min.
	Relief valve operation pressure		LIMIT STANDARD LIMIT STANDARD LIMIT Discharge pressure Discharge quantity Discharge pressure Discharge pressure Discharge	588 kPa (6.0 kg/cm <sup>2</sup> , 85 psi)
	Туре		LIMIT STANDARD LIMIT STANDARD LIMIT Discharge pressure Discharge quantity Discharge pressure Discharge pressure Discharge pressure Discharge	Full-flow filter type
	Filtration area			800 cm <sup>2</sup> (124 sq in)
Oil filter	By-pass valve opening pressure			160 kPa (1.63 kg/cm <sup>2</sup> , 23.2 psi)
	Outer diameter × width			68 × 65 mm (2.68 × 2.56 in)
	Oil filter to engine thread size			M 20 × 1.5
	Туре			Immersed contact point type
Oil pressure switch	Working voltage — wattage			12 V — 3.4 W or less
	Warning light activation pressure			14.7 kPa (0.15 kg/cm², 2.1 psi)
	Proof pressure			More than 981 kPa (10 kg/cm², 142 psi)
Oil capacity (a	oil capacity (at replacement)			4.5 @ (4.8 US qt, 4.0 Imp qt)

### **B: COMPONENT**



- (1) Plug
- (2) Gasket
- (3) Relief valve spring
- (4) Relief valve
- (5) Oil seal
- (6) Oil pump case
- (7) Inner rotor
- (8) Outer rotor
- (9) Oil pump cover
- (10) Oil filter
- (11) Oil cooler connector
- (12) Water by-pass pipe
- (13) Oil cooler

- (14) O-ring
- (15) Oil pump ASSY
- (16) Oil pressure switch
- (17) Oil filler duct
- (18) O-ring
- (19) Rocker cover
- (20) Baffle plate
- (21) O-ring
- (22) Oil strainer
- (23) Gasket
- (24) Oil level gauge guide
- (25) Oil pan
- (26) Oil level gauge

- (27) Metal gasket
- (28) Drain plug
- (29) O-ring
- (30) Oil filler cap

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

- T1: 5 (0.5, 3.6)
- T2: 6.4 (0.65, 4.7)
- T3: 10 (1.0, 7.0)
- T4: 44 (4.5, 32.5)
- T5: 69 (7.0, 50.9)
- T6: 25 (2.5, 18.1)
- T7: 54 (5.5, 40)

#### C: CAUTION

- Wear working 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 or dirt.
- Before removal, installation or disassembly, be sure to clarify the failure. Avoid unnecessary removal, installation, disassembly, and replacement.
- Be careful not to burn your hands, because each part in the vehicle is hot after running.
- Be sure to tighten fasteners including bolts and nuts to the specified torque.
- Place shop jacks or safety stands 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 TOOLS

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
	499977100	CRANKSHAFT PULLEY WRENCH	Used for stopping rotation of crankshaft pulley when loosening and tightening crankshaft pulley bolt.
ST-499977100			
	18332AA000	OIL FILTER WRENCH	Used for removing and installing oil filter. (Outer diameter: 68 mm (2.68 in))
ST18332AA000			
ST18332AA010	18332AA010	OIL FILTER WRENCH	Used for removing and installing oil filter. (Outer diameter: 65 mm (2.56 in))
ST-499587100	499587100	OIL SEAL INSTALLER	Used for installing oil seal to oil pump.