

General Description

LUBRICATION

1. General Description

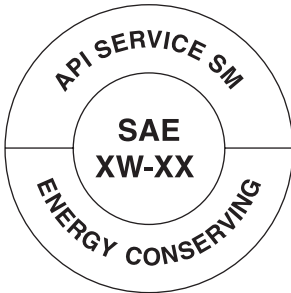

A: SPECIFICATION

Lubrication method				Forced lubrication
Oil pump	Pump type			Trochoid type
	Number of teeth	Inner rotor		11
		Outer rotor		12
	Outer rotor diameter × thickness mm (in)			77 × 12 (3.03 × 0.47)
	Performance (Oil temperature 120°C (248°F))	600 rpm	Discharge pressure kPa (kgf/cm ² , psi)	30 (0.3, 4.3)
			Discharge rate L (US qt, Imp qt)/min.	6.0 (6.3, 5.3) or more
		6,000 rpm	Discharge pressure kPa (kgf/cm ² , psi)	260 (2.7, 37.7)
			Discharge rate L (US qt, Imp qt)/min.	47 (49.7, 41.4) or more
Relief valve working pres- sure (2-step relief)	1st opening pressure kPa (kgf/cm ² , psi)		150 (1.5, 21.7)	
	Main opening pressure kPa (kgf/cm ² , psi)		570 (5.8, 82.6)	
Oil filter	Filter type			Full-flow filter type
	Filtration area cm ² (sq in)	Outer diameter: 68 mm (2.68 in) (Black)		1,300 (202)
		Outer diameter: 67.4 mm (2.65 in) (Blue)		867 (134.3)
	By-pass valve opening pressure kPa (kgf/cm ² , psi)			160 (1.6, 23.2)
	Outer diameter × width mm (in)	Outer diameter: 68 mm (2.68 in) (Black)		68 × 85 (2.68 × 3.35)
		Outer diameter: 67.4 mm (2.65 in) (Blue)		67.4 × 87.1 (2.65 × 3.43)
	Installation screw specifications			M 20 × 1.5
Oil pressure switch	Type			Immersed contact point type
	Operating voltage			12 V
	Warning light operating pressure kPa (kgf/cm ² , psi)			14.7 (0.1, 2.1)
	Proof pressure kPa (kgf/cm ² , psi)			981 (10, 142.2) or more
Engine oil	Total capacity (at overhaul) L (US qt, Imp qt)			5.7 (6.0, 5.0)
	When replacing engine oil and oil filter L (US qt, Imp qt)			4.8 (5.1, 4.2)
	When replacing engine oil only L (US qt, Imp qt)			4.6 (4.9, 4.0)

Specified oil:

CAUTION:

- Use 0W-20 (synthetic oil).
- It is acceptable to fill an engine with oil of another brand when replacing the oil, but make sure to use the following engine oil specified by Subaru.

Engine oil standard		SAE viscosity No.
<div><div><p>RM-00076</p><p>Those with the API standard SM “Energy Conserving” or SN “Resource Conserving” logo.</p></div><div>or</div><div><p>RM-00002</p><p>Those with the ILSAC standard GF-4 or GF-5 “starburst mark” displayed on top of the container.</p></div></div> <td>0W-20 (synthetic oil)</td>	0W-20 (synthetic oil)	

NOTE:

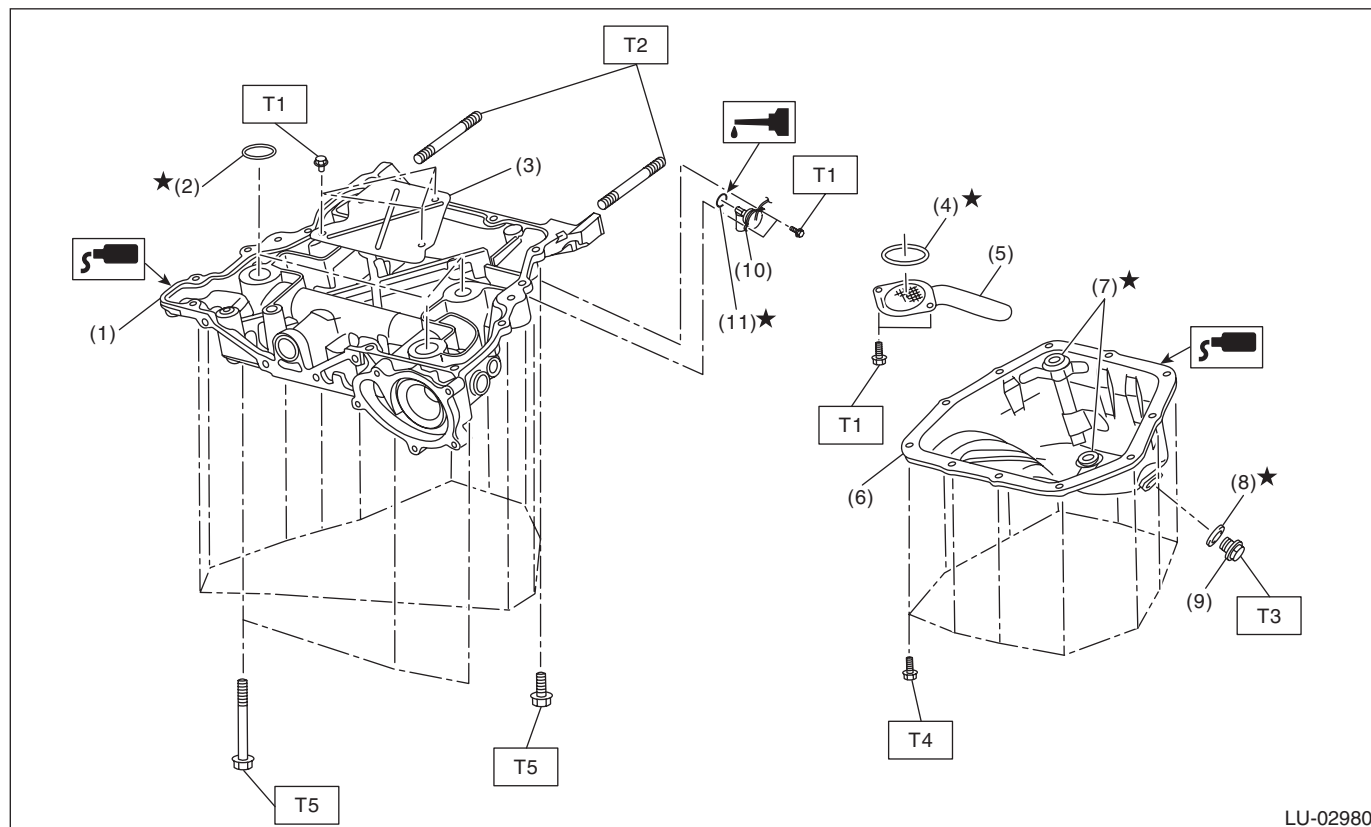
The proper viscosity oil helps the engine maintain its ideal temperature, and cranking speed increased by reducing viscosity friction in hot condition.

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B: COMPONENT

1. OIL PAN AND STRAINER



LU-02980

- | | |
|-------------------|-----------------------|
| (1) Oil pan upper | (7) Oil pan seal ring |
| (2) O-ring | (8) Drain plug gasket |
| (3) Baffle plate | (9) Drain plug |
| (4) O-ring | (10) Oil level switch |
| (5) Oil strainer | (11) O-ring |
| (6) Oil pan | |

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

T1: 6.4 (0.7, 4.7)

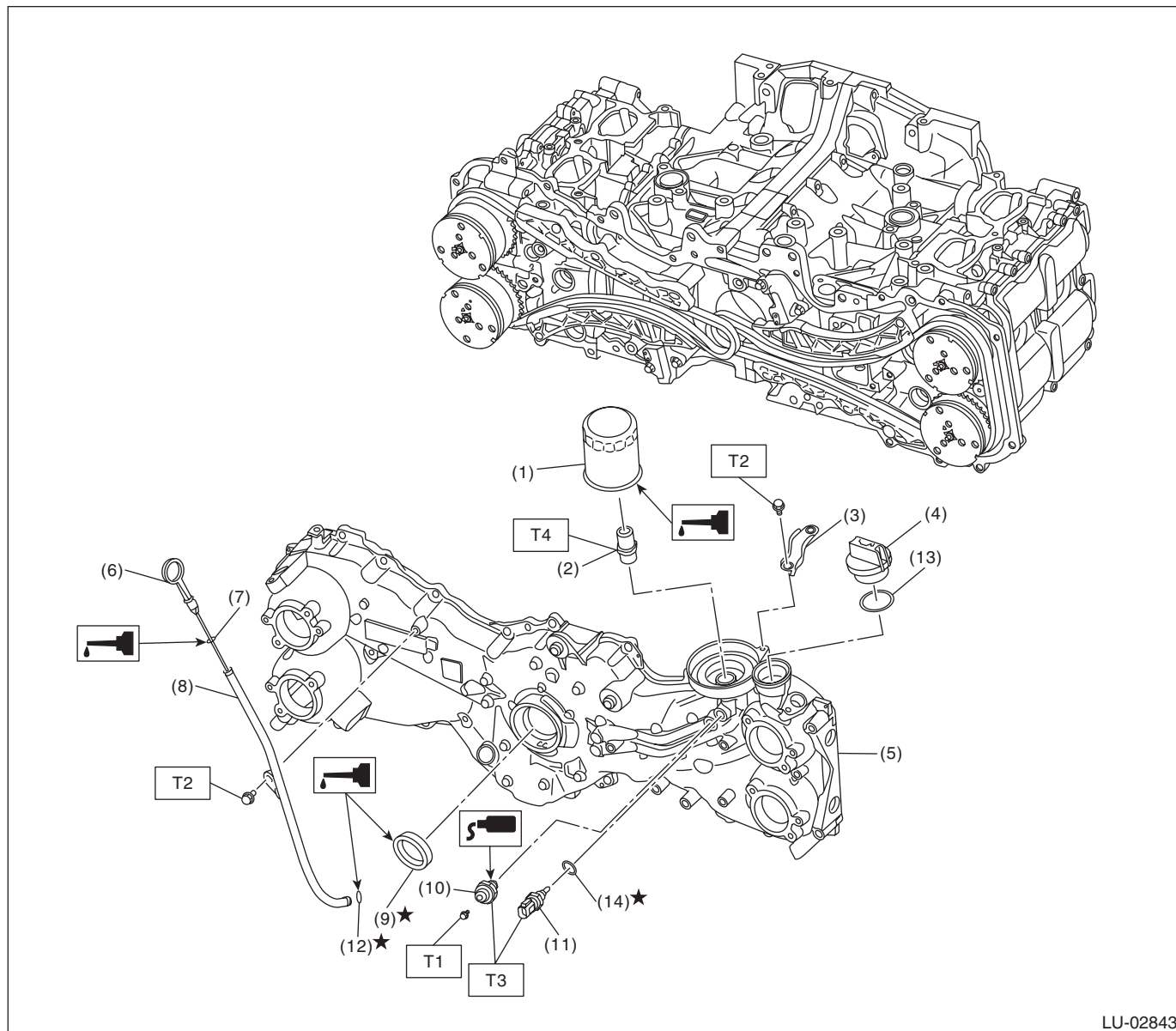
T2: 10 (1.0, 7.4)

T3: 41.7 (4.3, 30.8)

T4: <Ref. to LU(H4DO)-16, OIL PAN, INSTALLATION, Oil Pan and Strainer.>

T5: <Ref. to LU(H4DO)-18, OIL PAN UPPER, INSTALLATION, Oil Pan and Strainer.>

2. OIL FILTER AND OIL LEVEL GAUGE



LU-02843

- | | |
|-------------------------|------------------------------------|
| (1) Oil filter | (8) Oil level gauge guide |
| (2) Oil pump union | (9) Front oil seal |
| (3) Generator cord stay | (10) Oil pressure switch |
| (4) Oil filler cap | (11) Engine oil temperature sensor |
| (5) Chain cover | (12) O-ring |
| (6) Oil level gauge | (13) O-ring |
| (7) O-ring | (14) Gasket |

Tightening torque: N·m (kgf-m, ft-lb)

T1: 1.5 (0.2, 1.1)

T2: 6.4 (0.7, 4.7)

T3: 18 (1.8, 13.3)

T4: 45 (4.6, 33.2)

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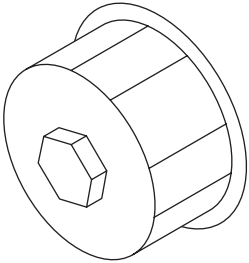
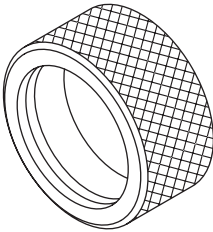
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C: CAUTION

- Prior to starting work, pay special attention to the following:
 1. Always wear work clothes, a safety cap, protective shoes. Additionally, wear a helmet, protective goggles, etc. if necessary.
 2. Protect the vehicle using a seat cover, fender cover, etc.
 3. Prepare the service tools, clean cloth, containers to catch grease and oil, etc.
- Prepare a container and cloth when performing work which oil possibly spills. If oil spills, wipe it off immediately to prevent from penetrating into floor or flowing out for environmental protection.
- Vehicle components are extremely hot immediately after driving. Be wary of receiving burns from heated parts.
- When performing a repair, identify the cause of trouble and avoid unnecessary removal, disassembly and replacement.
- Before disconnecting connectors of sensors or units, be sure to disconnect the ground cable from battery.
- Always use the jack-up point when the shop jacks or rigid racks are used to support the vehicle.
- Remove contamination including dirt and corrosion before removal, installation, disassembly or assembly.
- Keep the removed parts in order and protect them from dust and dirt.
- All removed parts, if to be reused, should be reinstalled in the original positions with attention to the correct directions, etc.
- Bolts, nuts and washers should be replaced with new parts as required.
- Be sure to tighten the fasteners including bolts and nuts to the specified torque.
- 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.
- Follow all government and local regulations concerning disposal of refuse when disposing of oil.

D: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST18332AA000	18332AA000	OIL FILTER WRENCH	Used for removing and installing oil filter (Black). (outer diameter: 68 mm (2.68 in))
 ST-398437700	398437700	OIL SEAL INSTALLER	Used for installing the front oil seal.

2. GENERAL TOOL

TOOL NAME	REMARKS
Oil filter wrench (65/67 mm 14 Flutes)	Used for removing and installing oil filter (Blue). (outer diameter: 67.4 mm (2.65 in))
Circuit tester	Used for measuring resistance and voltage.