# 1. General Description

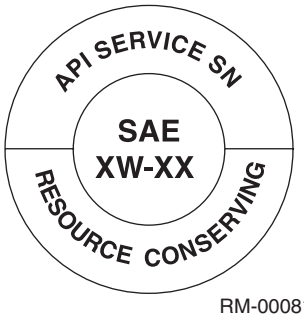
## A: SPECIFICATION

| | | | | | |
|---|---|---|---|---|---|
| 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 × 14 (3.03 × 0.55) |
| | Performance (Oil temperature 120°C (248°F)) | 600 rpm | Discharge pressure | kPa (kg/cm$^2$, psi) | 35 (0.4, 5.1) |
| | | | Discharge rate | L (US qt, Imp qt)/min | 7.4 (7.8, 6.5) or more |
| | | 6,700 rpm | Discharge pressure | kPa (kg/cm$^2$, psi) | 321 (3.3, 46.6) |
| | | | Discharge rate | L (US qt, Imp qt)/min | 60.2 (63.6, 53.0) or more |
| | Relief valve working pressure | | | kPa (kg/cm$^2$, psi) | 700 (7.1, 102) |
| Oil filter | Filter type | | | | Full-flow filter type |
| | Filtration area cm$^2$ (sq in) | | Outer diameter: 80 mm (3.15 in) (black) | | 900 (139.5) |
| | | | Outer diameter: 67.4 mm (2.65 in) (blue) | | 867 (134.3) |
| | By-pass valve opening pressure | | | kPa (kg/cm$^2$, psi) | 160 (1.6, 23.2) |
| | Outer diameter × Width mm (in) | | Outer diameter: 80 mm (3.15 in) (black) | | 80 × 65 (3.15 × 2.55) |
| | | | 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 (kg/cm$^2$, psi) | 14.7 (0.1, 2.1) |
| | Proof pressure | | | kPa (kg/cm$^2$, psi) | 981 (10, 142.2) |
| Engine oil | Total capacity (at overhaul) | | | L (US qt, Imp qt) | 6.0 (6.3, 5.3) |
| | When replacing engine oil and oil filter | | | L (US qt, Imp qt) | 5.1 (5.4, 4.5) |
| | When replacing engine oil only | | | L (US qt, Imp qt) | 4.9 (5.2, 4.3) |

***Specified oil:***

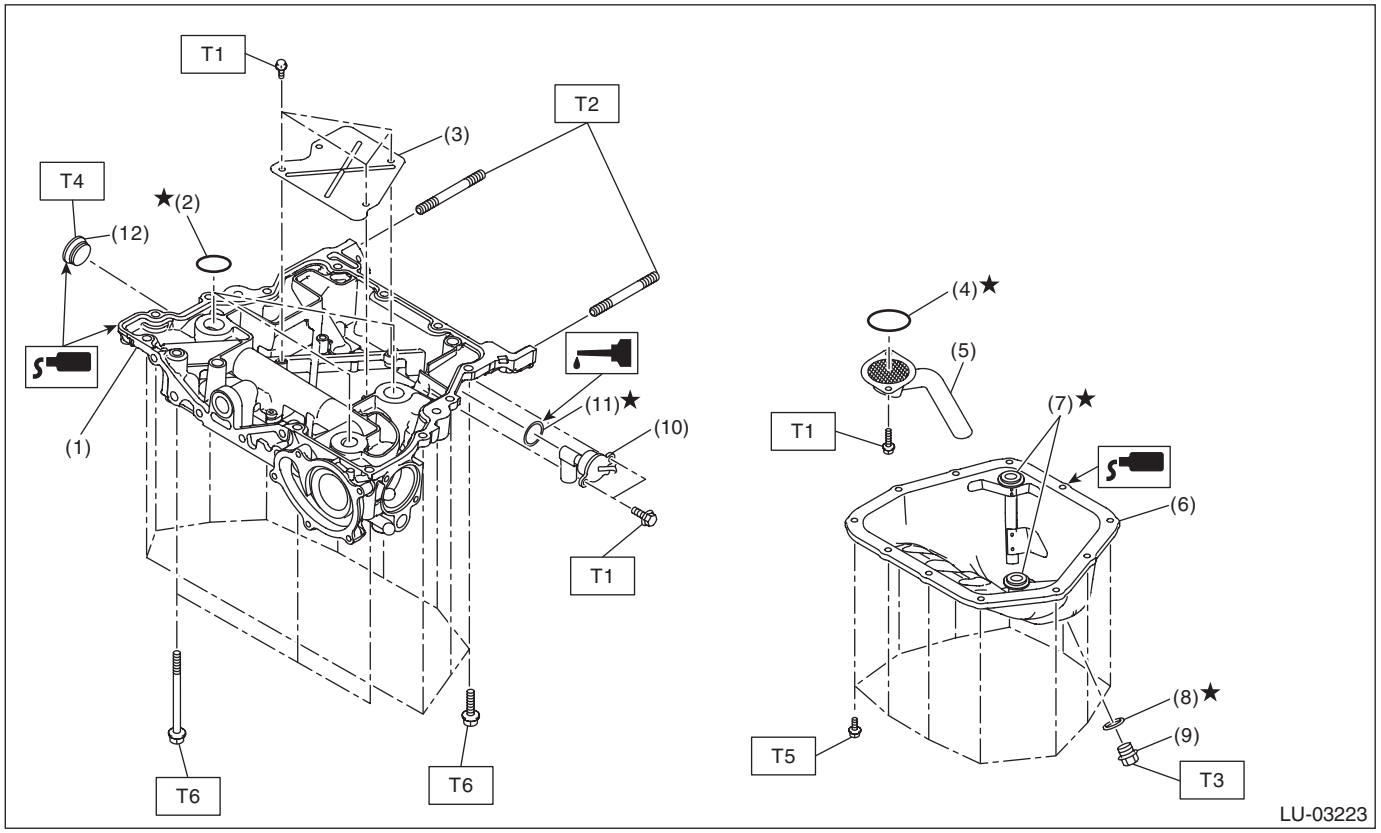
**CAUTION:**
- **Use 5W-30 (synthetic oil).**
- **It is acceptable to fill an engine with oil of another brand when replacing the oil, but make sure to use the following engine oil specified by Subaru.**

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

| Engine oil standard | | SAE viscosity No. |
|---|---|---|
|  <br>RM-00081<br>Those with the API standard SN "Resource Conserving" or SM "Energy Conserving" logo. | or |  <br>RM-00002<br>Those with the ILSAC standard GF-4 or GF-5 "starburst mark" displayed on top of the container. | 5W-30 (synthetic oil) |

# B: COMPONENT

## 1. OIL PAN AND STRAINER

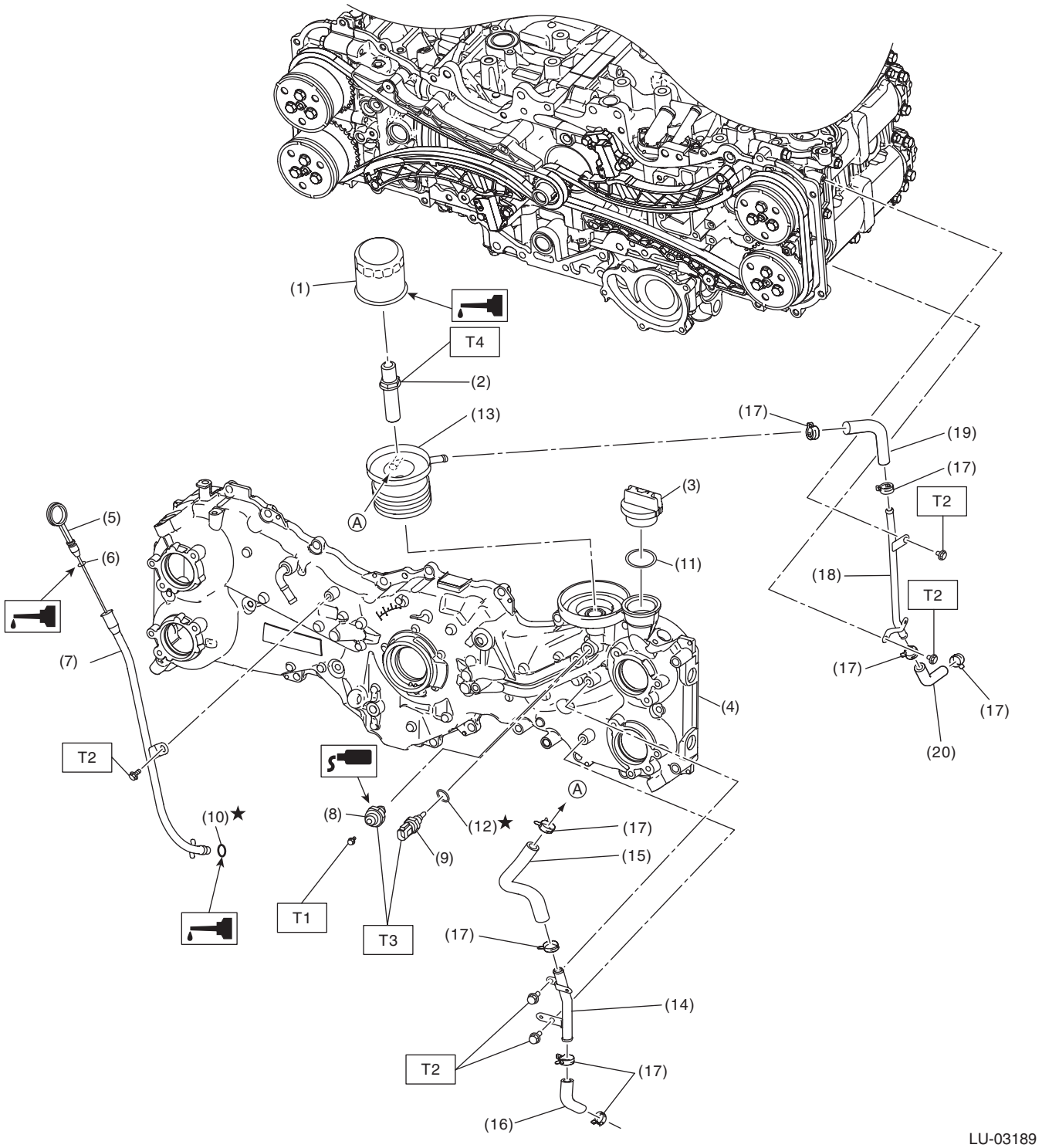



(1) Oil pan upper
(2) O-ring
(3) Baffle plate
(4) O-ring
(5) Oil strainer
(6) Oil pan
(7) Oil pan seal ring
(8) Drain plug gasket
(9) Drain plug
(10) Oil level switch
(11) O-ring
(12) Plug

***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: 90 (9.2, 66.4)***
***T5: <Ref. to LU(w/o STI)-21, OIL PAN AND STRAINER, INSTALLATION, Oil Pan and Strainer.>***
***T6: <Ref. to LU(w/o STI)-27, OIL PAN UPPER, INSTALLATION, Oil Pan and Strainer.>***

## 2. OIL FILTER AND OIL LEVEL GAUGE



(1) Oil filter
(2) Oil cooler connector
(3) Oil filler cap
(4) Chain cover
(5) Oil level gauge
(6) O-ring
(7) Oil level gauge guide
(8) Oil pressure switch
(9) Engine oil temperature sensor
(10) O-ring
(11) O-ring
(12) Gasket
(13) Oil cooler
(14) Front engine oil cooler pipe
(15) Front engine oil cooler hose A
(16) Front engine oil cooler hose B
(17) Clip
(18) Side engine oil cooler pipe
(19) Side engine oil cooler hose A
(20) Side engine oil cooler hose B

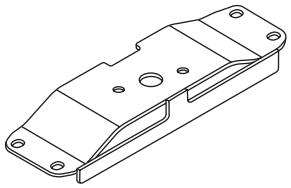
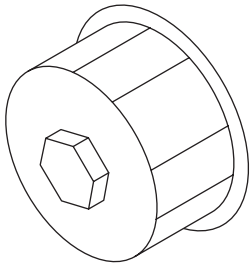
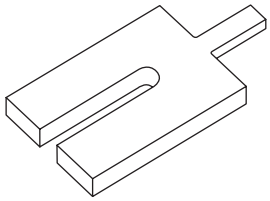
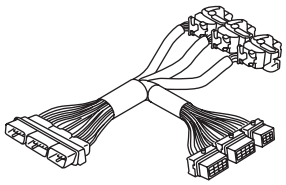
| ***Tightening torque: N·m (kgf-m, ft-lb)*** |
|---|
| ***T1: 1.5 (0.2, 1.1)*** |
| ***T2: 6.4 (0.7, 4.7)*** |
| ***T3: 18 (1.8, 13.3)*** |
| ***T4: 45 (4.6, 33.2)*** |

## C: CAUTION

- Prior to starting work, pay special attention to the following:
  1. Always wear work clothes, a work cap, and 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 |
|---|---|---|---|
|  ST41099YC001 | 41099YC001 (Newly adopted tool) | ST REAR MOUNT | Used for removing and installing oil level switch. (CVT model) |
|  ST-498547000 | 498547000 | OIL FILTER WRENCH | Used for removing and installing oil filter (black). (Outer diameter: 80 mm (3.15 in)) |
|  ST18632AA030 | 18632AA030 (Newly adopted tool) | STAND ASSY | Used for removing and installing oil pan. |
|  ST18460AA030 | 18460AA030 | CHECK BOARD | Used for inspecting the oil level switch. |

## 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. |