

## GENERAL SERVICE INFORMATION

### ENGINE OIL

#### CAUTION

- **ALWAYS** use only the engine oil specified. Other engine oils may affect warranty coverage, cause internal engine components to seize and / or shorten engine life.
- **ALWAYS** prevent dirt and debris from contaminating the engine oil. Carefully clean the oil cap / dipstick and the surrounding area before you remove the cap.
- **NEVER** mix different types of engine oil. This may adversely affect the lubricating properties of the engine oil.
- **NEVER** overfill. Overfilling may result in white exhaust smoke, engine overspeed or internal damage.

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#### Engine Oil Specifications

Use an engine oil that meets or exceeds the following guidelines and classifications:

#### Service Categories

- API Service Categories CD or higher
- ACEA Service Categories E-3, E-4, and E-5
- JASO Service Category DH-1

#### Definitions

- API Classification [American Petroleum Institute]
- ACEA Classification [Association des Constructeurs Européens d'Automobilies]
- JASO [Japanese Automobile Standards Organization]

Note:

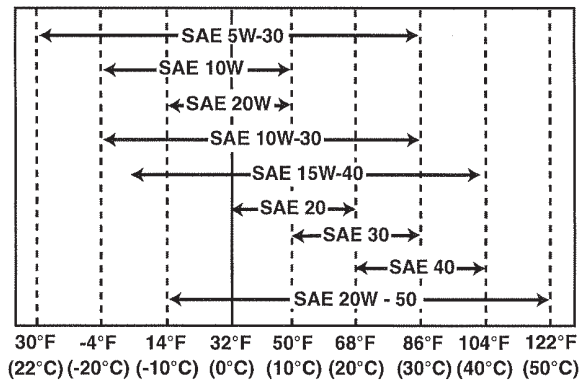
- Be sure the engine oil, engine oil storage containers, and engine oil filling equipment are free of sediments and water.
- Change the engine oil after the first 50 hours of operation and then at every 250 hours thereafter.
- Select the oil viscosity based on the ambient temperature where the engine is being operated. See the SAE Service Grade Viscosity Chart (**Figure 4-4**).
- Yanmar does not recommend the use of engine oil "additives."

#### Additional Technical Engine oil Requirements:

The engine oil must be changed when the Total Base Number (TBN) has been reduced to 2.0. TBN (mgKOH/g) test method; JIS K-201-5.2-2 (HCl), ASTM D4739 (HCl).

#### Engine Oil Viscosity

Select the appropriate engine oil viscosity based on the ambient temperature and use the SAE Service Grade Viscosity Chart in **Figure 4-4**.



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Figure 4-4

## Engine Oil Capacity (Typical)

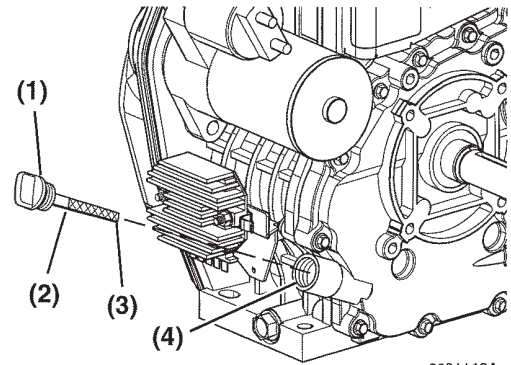
Note: Oil capacity will vary depending upon which optional oil pan is used. Refer to the operation manual provided by the driven machine manufacturer for the actual engine oil capacity of your machine.

The following are the engine oil capacities for various Yanmar LV Series engines.

Engine Model	Dipstick Upper Limit/ Lower Limit
L48V	0.85 / 0.58 qt (0.80 / 0.55 L)
L70V	1.11 / 0.69 qt (1.05 / 0.65 L)
L100V	1.70 / 1.06 qt (1.60 / 1.00 L)

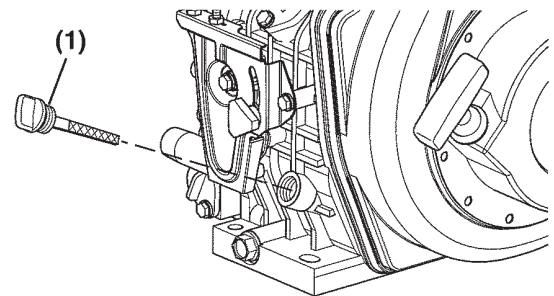
## Checking Engine Oil

1. Make sure engine is level.
2. Remove oil cap / dipstick (**Figure 4-5, (1)**) (**Figure 4-6, (1)**) from either location and wipe with clean cloth.
3. Reinsert oil cap / dipstick into the crankcase and turn clockwise for one half revolution to engage the first thread in the crankcase opening.
4. Remove oil cap / dipstick. The oil level should be between upper (**Figure 4-5, (2)**) and lower (**Figure 4-5, (3)**) lines on the oil cap / dipstick.
5. Fully reinsert oil cap / dipstick and hand-tighten. Over-tightening the oil cap / dipstick will damage it.



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Figure 4-5



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Figure 4-6

## Adding Engine Oil

1. Make sure engine is level.
2. Remove oil cap / dipstick (**Figure 4-5, (1)**) (**Figure 4-6, (1)**).
3. Add indicated amount of engine oil at either of the engine oil filler ports (**Figure 4-6, (4)**).
4. Wait one minute and check oil level.

### IMPORTANT

*NEVER overfill engine with oil. Engine damage will result.*

5. Add more oil if necessary.
6. Fully reinsert oil cap / dipstick and hand-tighten. Over-tightening the oil cap / dipstick will damage it.