

CAUTION



- **ALWAYS** be environmentally responsible.
- Follow the guidelines of the EPA or other governmental agencies for the proper disposal of hazardous materials such as engine oil, diesel fuel and engine coolant. Consult the local authorities or reclamation facility.
- **NEVER** dispose of hazardous materials irresponsibly by dumping them into a sewer, on the ground, or into ground water or waterways.
- Failure to follow these procedures may seriously harm the environment.

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The engine oil on a new engine becomes contaminated from the initial break-in of internal parts. The initial 50 hour oil change and filter cleaning is very important.

Drain the engine oil as follows:

1. Make sure the engine is level.
2. Start the engine and bring it up to operating temperature.
3. Stop the engine.
4. Position a container under the engine to collect waste oil.

5. Remove the drain plug located on the bottom of the cylinder block (**Figure 5-3, (2)**). Allow oil to drain.

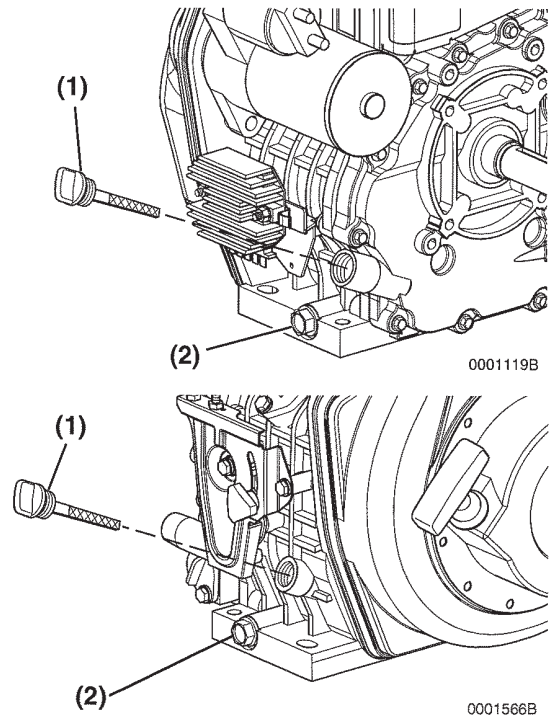


Figure 5-3

6. Remove the oil cap / dipstick (**Figure 5-3, (1)**) to allow the engine oil to drain more easily.
7. After all oil has been drained from the engine, reinstall the drain plug (**Figure 5-3, (2)**) and tighten to 173 - 208 lb-in. (19.6 - 23.5 N·m, 2.0 - 2.4 kgf·m).
8. Dispose of used oil properly.
9. Inspect engine oil filter. *See Clean / Inspect Engine Oil Filter on page 5-28.*

PERIODIC MAINTENANCE

10. Add engine oil (**Figure 5-4, (4)**) as needed until the level is between the upper (**Figure 5-4, (2)**) and lower lines (**Figure 5-4, (3)**) on the oil cap / dipstick (**Figure 5-4, (1)**).

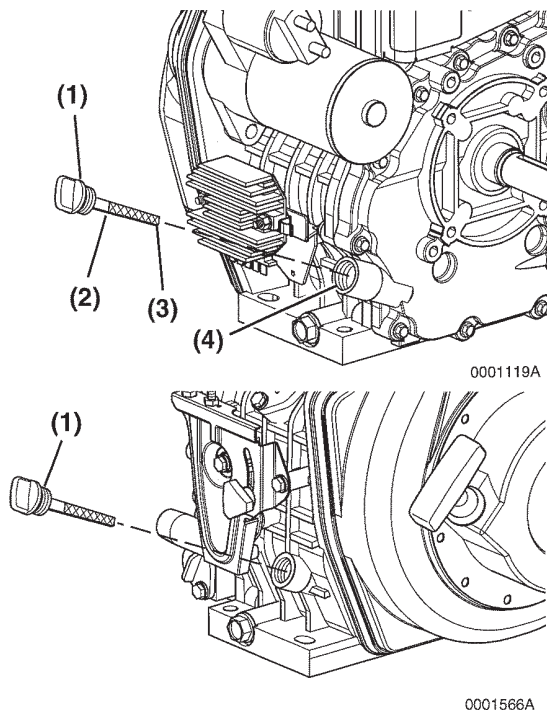


Figure 5-4

11. Add new engine oil to the engine as specified in *Adding Engine Oil* on page 4-17.

CAUTION

- **NEVER** overfill the engine with engine oil.
- **ALWAYS** keep the oil level between the upper and lower lines on the oil cap / dipstick.

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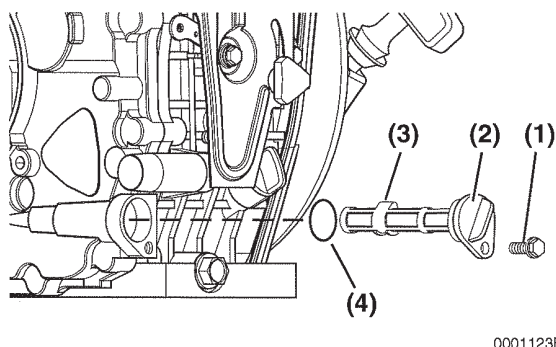
12. Warm up the engine by running it for five minutes and check for any engine oil leaks.
13. After engine is warm, shut it off and let it sit for 10 minutes.

14. Recheck the engine oil level by reinserting the oil cap / dipstick into the crankcase and turn clockwise for one half revolution to engage the first thread in the crankcase opening. See *Checking Engine Oil* on page 4-17.

15. Add oil if necessary.

16. Replace the oil cap / dipstick and tighten by hand. Over-tightening may damage the cap. If any engine oil is spilled, wipe it away with a clean cloth.

Clean / Inspect Engine Oil Filter



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Figure 5-5

Note: It is recommended that this procedure be performed at the same time as the *Replace Engine Oil* procedure.

1. Remove the oil filter retaining bolt (**Figure 5-5, (1)**).
2. Drain engine oil. See *Replace Engine Oil* on page 5-26.
3. Pull the oil filter cap (**Figure 5-5, (2)**) out and remove the oil filter (**Figure 5-5, (3)**).
4. Clean the oil filter in suitable parts cleaner or replace if damaged.
5. Lubricate the O-ring (**Figure 5-5, (4)**) with oil and reinstall the oil filter (**Figure 5-5, (3)**). Replace filter if damaged.

Applicable Engine Oil Filter Part No.

L48V, L70V and L100V	114250-35070
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6. Make sure the oil filter cap is fully seated (**Figure 5-5, (2)**).

7. Reinstall and tighten the oil filter retaining bolt (**Figure 5-5, (1)**).
8. Add new engine oil to the engine as specified in *Adding Engine Oil on page 4-17*.
9. Warm up the engine by running it for five minutes and check for any engine oil leaks.
10. After engine is warm, shut it off and let it sit for 10 minutes.
11. Recheck the engine oil level by reinserting the oil cap / dipstick into the crankcase and turn clockwise for one half revolution to engage the first thread in the crankcase opening. See *Checking Engine Oil on page 4-17*.
12. Replace the oil cap / dipstick (**Figure 5-4, (1)**) and tighten by hand. Over-tightening may damage the cap. If any engine oil is spilled, wipe it away with a clean cloth.

Every 50 Hours of Operation

Perform the following maintenance every 50 hours of operation.

- **Clean Inlet Fuel Screen**

Clean Inlet Fuel Screen

⚠ DANGER



FIRE AND EXPLOSION HAZARD!

- Diesel fuel is flammable and explosive under certain conditions.
- **ALWAYS** put an approved container under any opening to catch the fuel when removing any fuel system component to perform maintenance (such as changing the fuel filter).
- **NEVER** use a shop rag to catch the fuel. Vapors from the rag are flammable and explosive.
- **ALWAYS** wipe up any spills immediately.
- **ALWAYS** wear eye protection. The fuel system is under pressure and fuel could spray out when you remove any fuel system component.
- Failure to comply will result in death or serious injury.

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