

How to Replace the Lubricating Oil and Oil Filter

Service Parts Used in the Procedure			
Part Description	Part Number	Quantity	Notes
Oil Filter Kit	DDE A4711800209	1	Single use part, kit includes oil filter, cap O-ring, and drain plug seal washer
Drain Plug Kit	DDE A4729900217	1	As required, kit includes drain plug and seal washer

The oil filter is an integral part of the lubrication system. Proper filter selection and maintenance are important to achieve satisfactory engine performance and service life. Filters are used to maintain a clean system, not to clean a contaminated system. The maintenance intervals for the appropriate duty cycle are listed in tables in the Operators manual.

Change the engine oil and replace the lubricating oil filter as follows:

Note: If the oil is contaminated by fuel or coolant, it may be necessary to remove the oil pan, oil pump, and oil pump suction manifold to drain the remaining oil held back by the anti-drainback valve. It is important to remove all contaminated oil from the engine.

Note: Only change the engine oil when its temperature is approximately 60°C (140°F) or higher. Changing cold engine oil will result in extended drain times.

Warning: PERSONAL INJURY

To avoid injury, never remove any engine component while the engine is running.

Warning: PERSONAL INJURY

To avoid injury from hot surfaces, wear protective gloves, or allow engine to cool before removing any component.

- Turn ignition OFF, apply parking brake, chock wheels, and perform any other applicable safety steps.

Caution: ELECTRICAL SHOCK

To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

- Disconnect batteries.

- Open the hood.

4. If necessary, remove the bumper for access. Refer to the Original Equipment Manufacturer (OEM) procedure.

Notice: Use care to prevent foreign material from entering the oil filter housing.

5. Clean the outside of the oil filter housing.

6. Using a 36 mm socket, unscrew the oil filter cap and filter assembly and allow the oil to drain into the housing. After draining is complete, remove the assembly from the housing.

7. Remove the oil filter element by pressing and twisting the side and detaching it from the cap.

8. Remove the oil filter cap O-ring (single-use part). Lightly coat a new O-ring with clean engine oil and install it onto the filter cap.

9. Check the oil filter housing for any debris and remove as necessary.

10. Insert a new oil filter element securely into the oil filter cap.

11. Insert the oil filter element and cap assembly into the housing. Tighten the cap and torque to 55 N·m (40 lb·ft).

12. Place a suitable drain pan, 47 L (50 qt) or more, under the oil pan.

Notice: Do not use any power or air tools on the oil drain plug while performing maintenance or repairs. These tools can damage the oil pan.

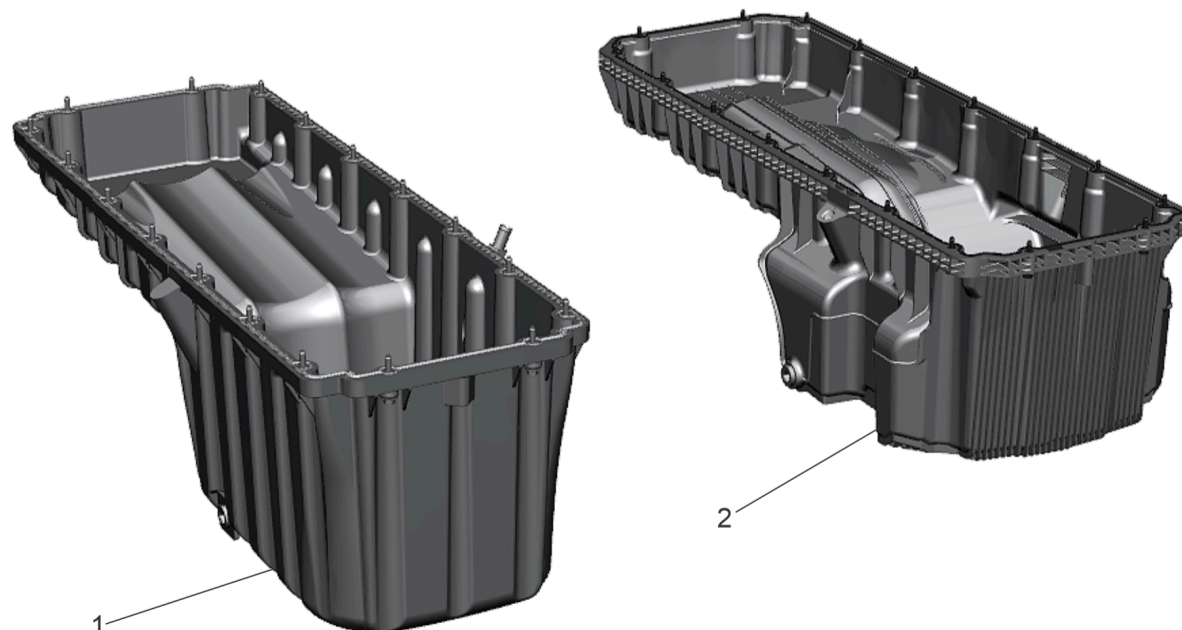
Note: The oil pan contains multiple plugs that can be used for various options and applications. The oil drain plug is the lowest plug on the oil pan.

13. Carefully unscrew the oil drain plug and allow oil to drain out. Remove the oil drain plug seal washer (single use part).

14. Is the unit equipped with an updated thermoplastic oil pan (2)?

a. Yes, [go to step 15](#)

b. No, [go to step 17](#)

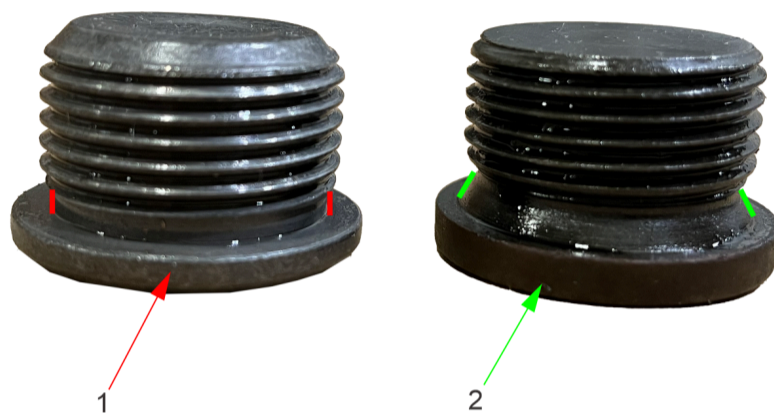


15. Inspect the drain plug that was removed for draining. Is the oil pan equipped with the correct drain plug with chamfer (2)?

a. Yes, [go to step 17](#)

Note: Updated thermoplastic oil pans may be equipped with an incorrect drain plug(s) which can create an oil leak from the drain plug(s).

b. No, [go to step 16](#)



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Fig. 2, Incorrect Drain Plug (1) and Correct Drain Plug w/ Chamfer (2)

16. Remove the drain plug on the opposite side of the pan and inspect for correct drain plug (1). Incorrect drain plug(s) should NOT be re-used (refer to parts table).

17. Install the oil pan drain plug with a new seal washer and torque the plug.
- On a plastic oil pan, torque plug to 45 N·m (33 lb·ft).
 - On an aluminum oil pan, torque plug to 60 N·m (44 lb·ft).

Notice: Do not add oil if the oil reading is between the crosshatch area on the dipstick. There are approximately 5.0 L (5.2 qt) from the add mark to the full mark. Overfilling the oil pan can cause engine damage.

18. Add new engine oil through the oil fill tube in the following amount; see [Engine Oil Capacities](#). Verify the oil level reading is between the full and add marks on the dipstick.

Warning: PERSONAL INJURY

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

- Always start and operate an engine in a well ventilated area.
- If operating an engine in an enclosed area, vent the exhaust to the outside.

- Do not modify or tamper with the exhaust system or emission control system.

ⓘ Warning: PERSONAL INJURY

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.

ⓘ Warning: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

📌 Notice: If oil pressure is still absent after approximately 10 seconds, stop the engine and determine the cause. Running the engine with no or low oil pressure can result in engine damage.

19. Start engine (key ON, engine ON) with the accelerator pedal released. Monitor the oil pressure gauge or indicator lamp. Keep the engine running at idling speed (less than 700 rpm) until the oil pressure reading is 70 kPa (10.2 psi) or more.

20. Turn ignition OFF.

ⓘ Warning: FIRE HAZARD

Do not power wash or steam clean the engine bay in the area of vehicle electrical components, unless specified by vehicle manuals or service literature. Power washing/steam cleaning can permanently damage these components, which could result in fire, personal injury, or property damage.

21. Steam clean the area of repair to remove any residual fluids.

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22. Start engine (key ON, engine ON) and inspect for leaks.

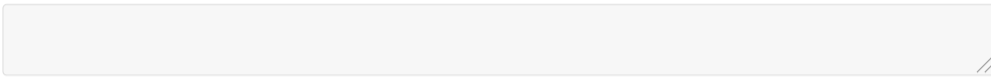
Notice: Do not add oil if the oil reading is between the crosshatch area on the dipstick. There are approximately 5.0 L (5.2 qt) from the add mark to the full mark. Overfilling the oil pan can cause engine damage.

Note: If the engine operating temperature is below 60°C (140°F), the engine must be on a level surface and then shut down for 60 minutes for an accurate oil level reading. Otherwise, the engine must be brought up to an operating temperature of 60°C (140°F), parked on a level surface and then shut down for 20 minutes for an accurate oil level reading.

23. Turn ignition OFF. Check oil level. If necessary, add oil, no more than 5.0 L (5.2 qt) at a time, up to the maximum fill level on the oil dipstick.

NOTE:

Component Code / VMRS = 045-011-005 Element – Engine Oil Filter



Note:

045-011-005
REPLACE
EA5

Parent topic: [Lubrication System General Procedures](#)

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