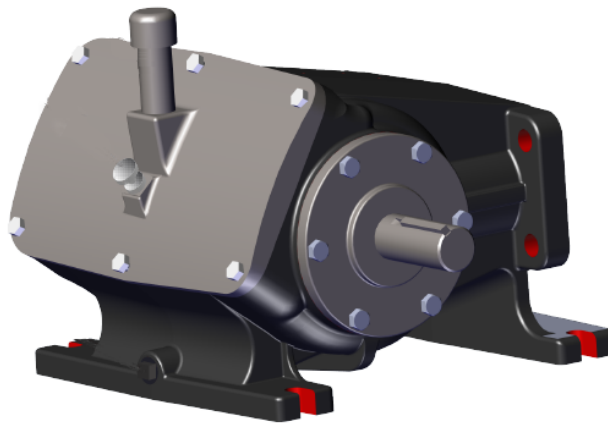
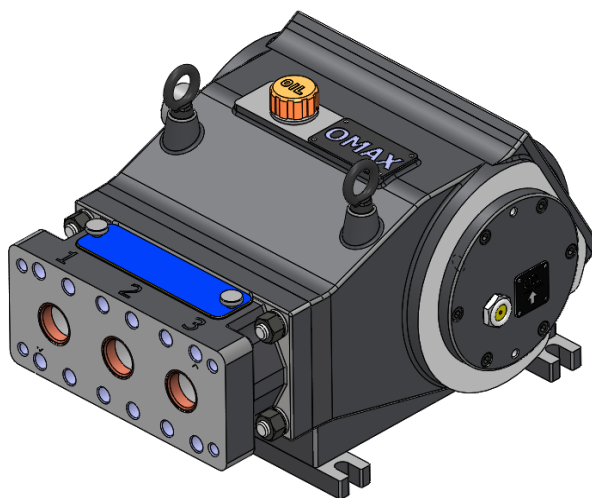


# MAXIEM®, EnduroMAX® and Legacy OMAX® Pump Crankcase Oil Change

## Maintenance Guide



Myers Crankcase



OMAX Crankcase

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# Safety

## Equipment Labels

The following safety labels may appear on the equipment. If ignored, physical injury, death, or equipment damage may occur. Read the safety information before installing, operating, or maintaining the equipment.



### **WARNING! Electrical shock hazard**

This symbol indicates the presence of life-threatening voltages. Never access areas labeled as such without first taking appropriate safety precautions: locking out power, verifying no voltage is present on circuits prior to maintenance activities, etc.



### **Lockout power!**

Never perform maintenance on your OMAX equipment with the main AC disconnect ON, unlocked, or with the pump in operation. Always follow standard lockout/tagout procedures.



### **Wear approved eye protection**

Always wear approved safety goggles whenever cutting. Regular glasses do not provide sufficient eye protection! Have an eyewash station located near the work area in the event abrasive spray splashes into your eyes. The garnet abrasive is not a chemical irritant, but if not quickly washed out, it can injure an eye just as any sand would. In addition, tank water could contain particles from the material or chemicals irritants.



### **Wear gloves**

Bacteria in the tank water can build up. A minor break in the skin can introduce harmful bacteria into a wound. Always wear protective gloves if you have cuts or open wounds on your hands. When setting up material for cutting, wear gloves that provide protection against sharp metal edges.



### **Read the operation guide!**

Read your equipment's operation guide for specific operator instructions and additional safety requirements.



### **Electrostatic discharge**

Attention! Observe precautions for handling electrostatic sensitive devices.

## Safety Legend

The following safety signal-word panels and paragraph notifications may appear throughout this guide. Each provides safety-issue identification and recommended actions to avoid the hazard. Be alert! Follow the recommended safety actions and precautions to prevent injury or damage to the equipment.

### **⚠ WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

### **⚠ CAUTION**







Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

### **NOTICE**

Used to address practices not related to physical injury — property damage only.

**NOTE:** *Used to provide supplementary information, emphasize a point or give a tip for easier operation.*

# Required Tools

Icon	Tool	Size(s)
	Open-end wrench	7/8 in. 9/16 in.
	Socket wrench	
	Socket	23 mm
	Round-jawed channel pliers	
	Work Gloves	
	Oil funnel	

# Introduction

EnduroMAX (30-100 hp), MAXIEM (20-40 hp), and legacy OMAX pumps require preventative maintenance to provide optimum performance. OMAX recommends changing the crankcase oil, as per the specified interval, to prevent damage. Without regular oil changes, excessive wear and damage to crankcase bearings may occur. The following maintenance guide provides manufacturer recommended instructions on how to change the oil in the crankcase and how often.

# Preparation

1. Ensure the work area is free of garnet and other debris by thoroughly wiping the **pump** clean prior to work.
2. Turn the **main AC power** to the machine and pump **OFF** and place a Lockout Tag on the power disconnect to alert others that maintenance is in progress.
3. Turn the water and air supply **OFF**.
4. Bleed off any residual air pressure from the system by removing the **airline** from the main air source and ensure there is no pressurized water in the **high-pressure lines**.
5. Remove or open the **covers** on the pump. Depending on the style, top and side **covers** may require removal to gain access to the **crankcase**.
6. Safely stow any **covers** and **panels** removed so they are not damaged during the maintenance period.

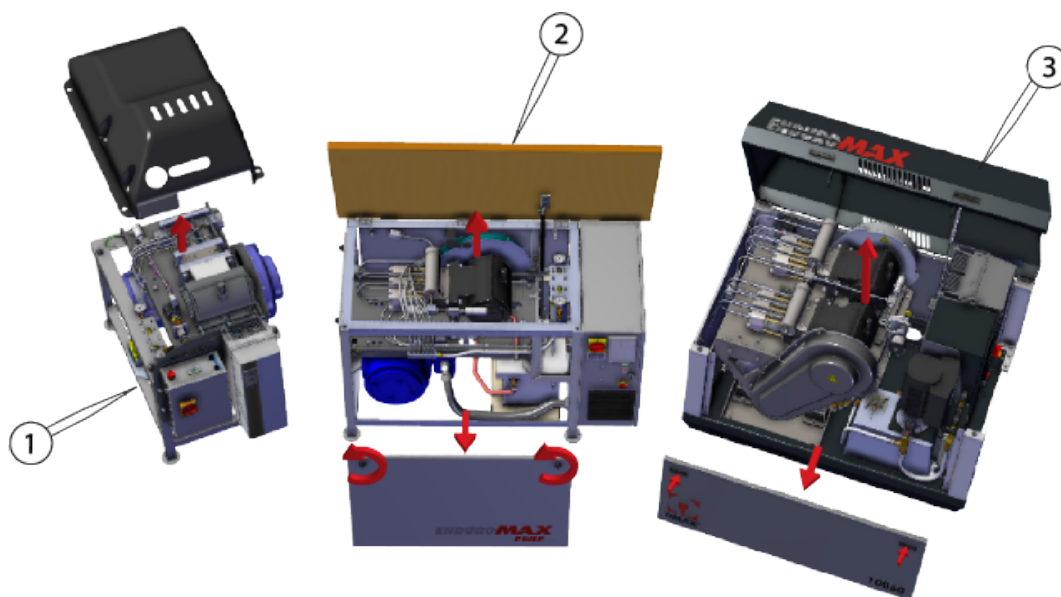


Figure 1

[1] MAXIEM pumps

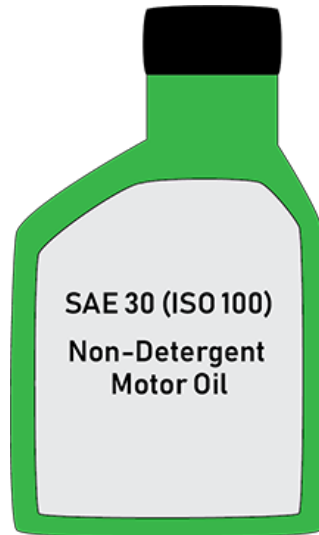
[2] EnduroMAX pumps

[3] EnduroMAX 100 hp pumps

# Oil Specifications

MAXIEM, EnduroMAX, and legacy OMAX pumps require 3 quarts (2.8 liters) of oil per crankcase. If the pump has an OMAX crankcase, 3.5 quarts (3.3 liters) of oil are required.

- For normal operating environments, use SAE 30 (ISO 100) non-detergent motor oil.
- When operating environments exceed 90 degrees F (32 degrees C), use SAE 40 (ISO 150) non-detergent motor oil.





# Maintenance Schedule

To avoid excessive wear and damage to crankcase bearings, change the oil according to the intervals specified in the following table.

**NOTE:** *Immediately perform an unscheduled oil change any time oil becomes contaminated with water or other debris.*

Operating Conditions/Pump Usage	Oil Change Frequency
New pumps	After first 50 hours of operation
After first oil change	Every 300 hours

# Drain Plugs and Caps

The crankcases used in the MAXIEM, EnduroMAX, and legacy OMAX pumps are all accessible from the top of the machine with minor differences in drain plug design, location, and orientation.

- MAXIEM pumps are equipped with a **1/2 in. NPT drain plug** that screws directly into a drain hole at the base of the **crankcase block**[1].
- EnduroMAX pumps are equipped with remote drains located on the front of the **pump frame**[2]. The drain hole is plugged with a **drain cap**.
- EnduroMAX 100 hp pumps feature two **drains**, one for each **crankcase**. Both are remotely located on the **pump frame** [3]. The drain holes are plugged with **drain caps**.

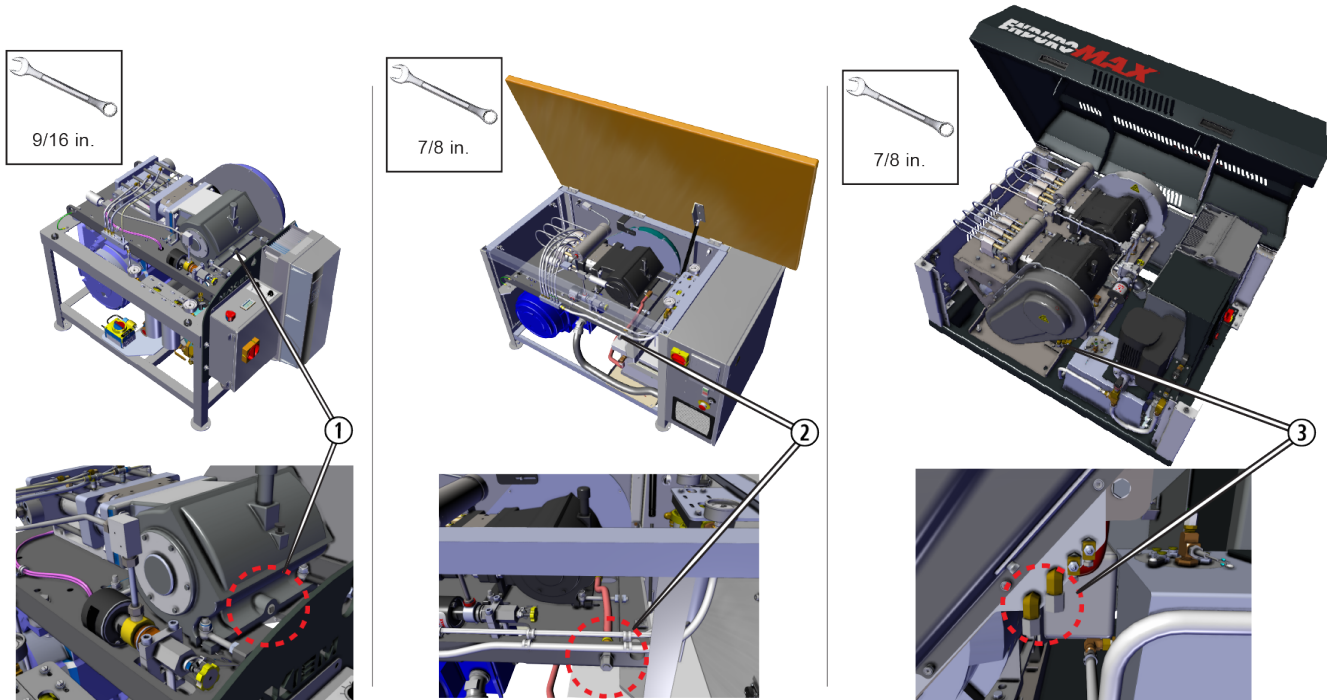


Figure 2

[1] MAXIEM pumps    [2] EnduroMAX pumps    [3] EnduroMAX 100 hp pumps

# Drain Oil

1. Loosen the **drain plug or cap(s)**. Do not fully remove the **drain plug or cap(s)**, but ensure it is loose enough to be unscrewed by hand.
  2. Loosen the **oil cap** (breather plug).
  3. Remove the **dipstick** from the **Myers crankcase** and place a clean towel over the opening to protect internal components from debris and contamination while draining. The **OMAX crankcase** has an oil fill window, instead of a **dipstick**, for the operator to monitor the oil level.
  4. Place a 4 quart (3.7 liter) minimum capacity **drain pan** directly under the **drain hole** (per crankcase on the 100 hp pump).
- MAXIEM pumps feature a built-in platform for placing a **drain pan** [1]. The platform is mounted on the charge pump and accessible from the back of the machine.
  - EnduroMAX pumps feature remote drains at the front of the machine. Drain pans may be handheld or placed on an **elevated support** [2] [3].

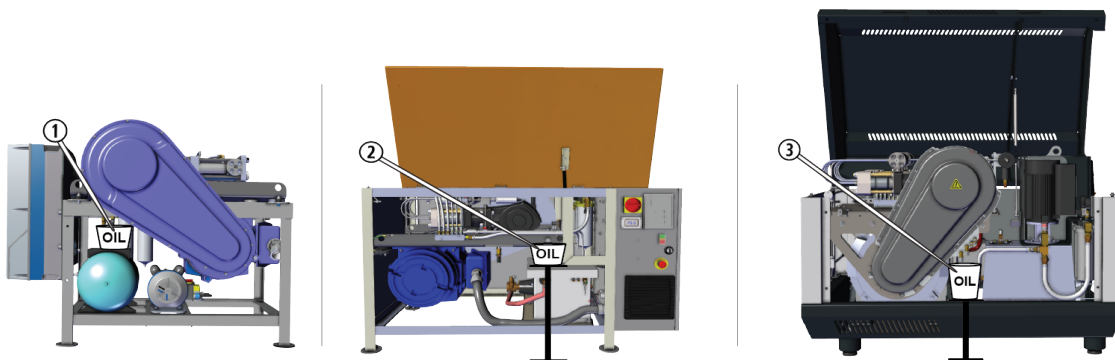


Figure 3

## ⚠ CAUTION

Crankcase oil may be hot. Use gloves when removing the plug to prevent hot oil from flowing out and burning hands and fingers.

5. Remove the **drain plug or drain cap** by hand and allow the oil to drain.

6. If draining oil from an **OMAX** crankcase, remove and clean the two **plug magnets** [1]. Replace the plugs and tighten.

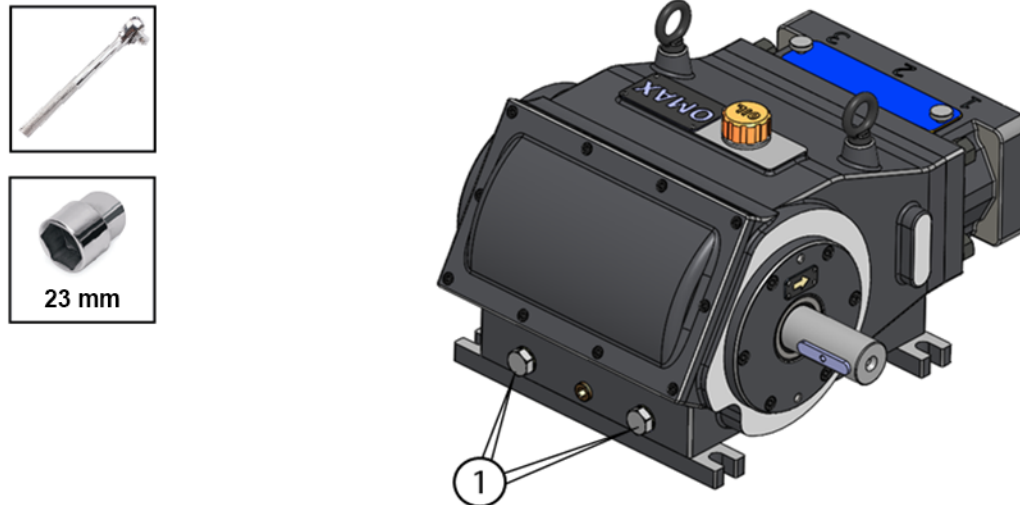


Figure 4

7. Apply shop air to force any residual oil out the drain hole.
- For Myers crankcase, carefully apply shop air into the **dip stick hole**[2] and force any residual oil out the **drain hole** [1].
  - For OMAX crankcase, carefully apply shop air into the filler pipe surrounding the top with a rag.

## NOTICE

Over-pressuring the crankcase with air may damage internal seals.

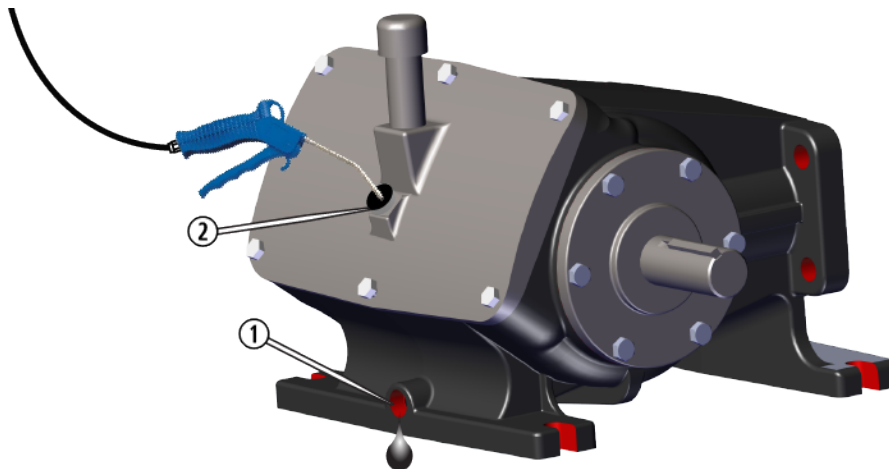


Figure 5

8. Properly dispose of all used oil and clean any oil spills around the **pump** drain area.

**NOTE:** *Follow all governing environmental regulations when disposing of used oil.*

9. Replace the **drain plug** or **drain cap(s)**.

**NOTE:** When working on a Myers Crankcase [1], continue to the next step. If working on an OMAX Crankcase [2], the crankcase is ready to be filled (see "Fill Crankcase").

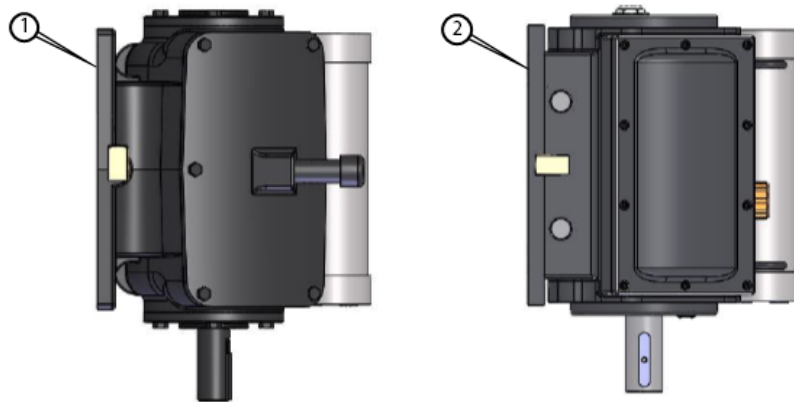


Figure 6

10. Replace the **dipstick** with the **flat-side up** [1]. The flat side provides **clearance** [2] for the **rod bolt**. Ensure the **dipstick** is fully seated.

## NOTICE

If the dipstick is inserted round-side up, damage to the crankcase may occur.

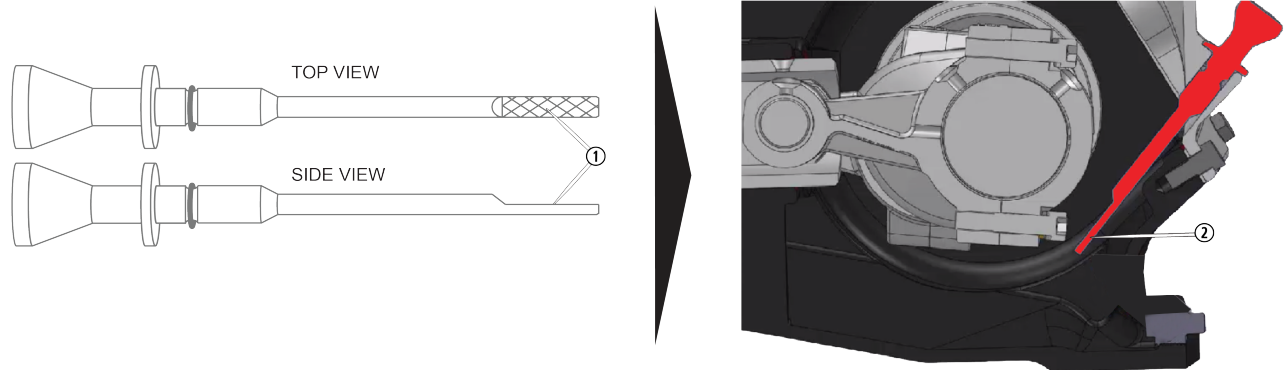


Figure 7

# Fill Crankcase

1. Remove the breather cap.

a. For a Myers crankcase, remove the **breather cap** from the **filler pipe**[1] on the **Myers crankcase**.

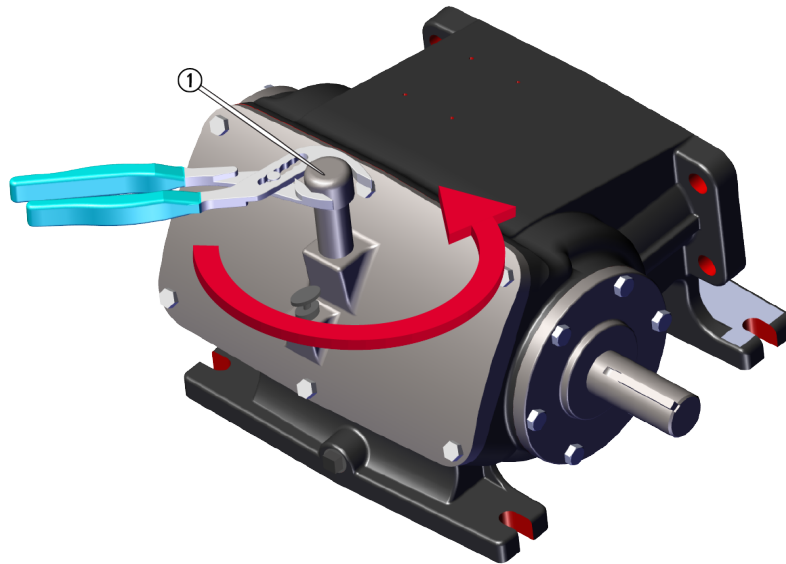


Figure 8

b. Remove the **breather cap** [1] by hand on an **OMAX crankcase**.

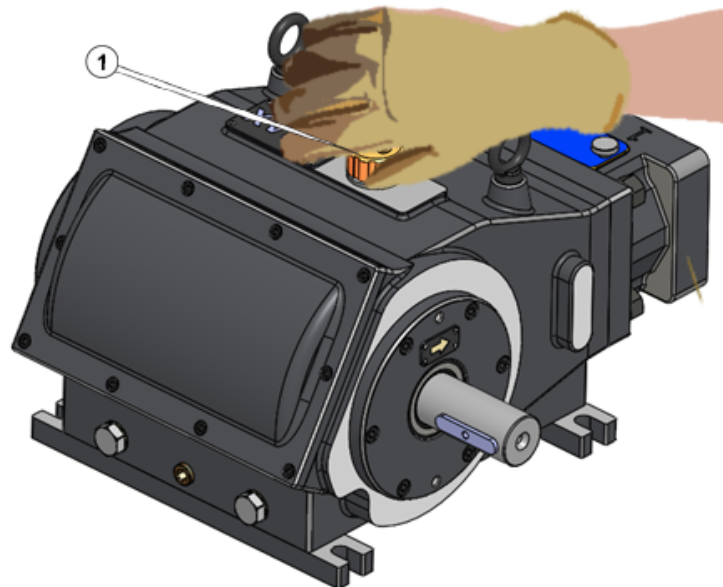


Figure 9

2. Fill with correct amount of oil. (See Oil Specifications section for additional oil information.)

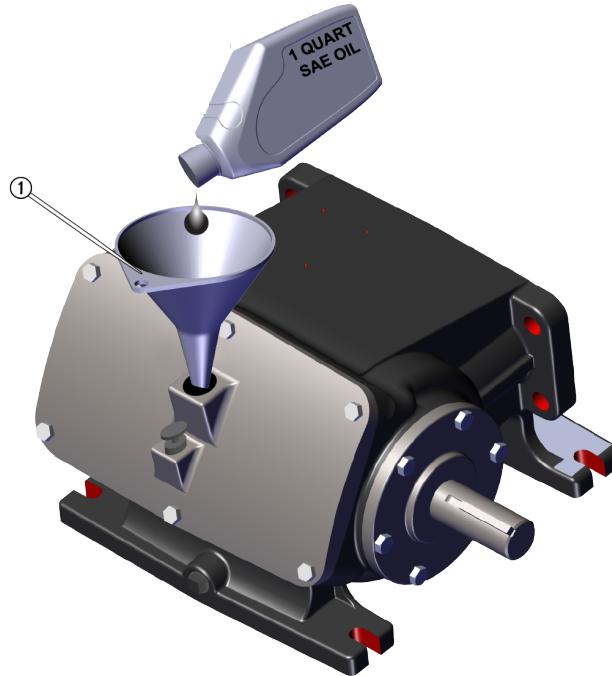
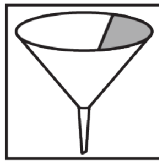


Figure 10

3. Replace the **breather cap**.

# Verify Oil Level

Complete the oil changing process by checking the oil level.

## Myers Crankcase

The **dashed line** [1] on the **dipstick** indicates the full oil level.

**NOTE:** *3 quarts (2.8 liters) of oil fills the crankcase.*

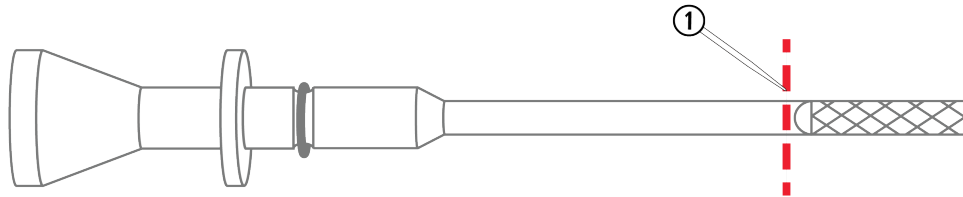


Figure 11

1. When taking a measurement, clean the lower half of the **dipstick** with a clean rag.
2. Fully seat the **dipstick** into the opening and then remove the **dipstick**.
3. A coating of oil should extend up the end of the **dipstick** and to the area just above the transition from flat to round.
4. If there is too much or too little oil in the **crankcase**, drain or add oil as necessary.
5. Inspect the **O-ring seal** on the **dipstick** and replace if damaged.



## OMAX Crankcase

The OMAX crankcase has an [1] **Oil fill window** to view the oil level.

**NOTE:** *3.5 quarts (3.3 liters) of oil fills the crankcase.*

1. Verify the **oil level** [1] is up to the **OIL line**.

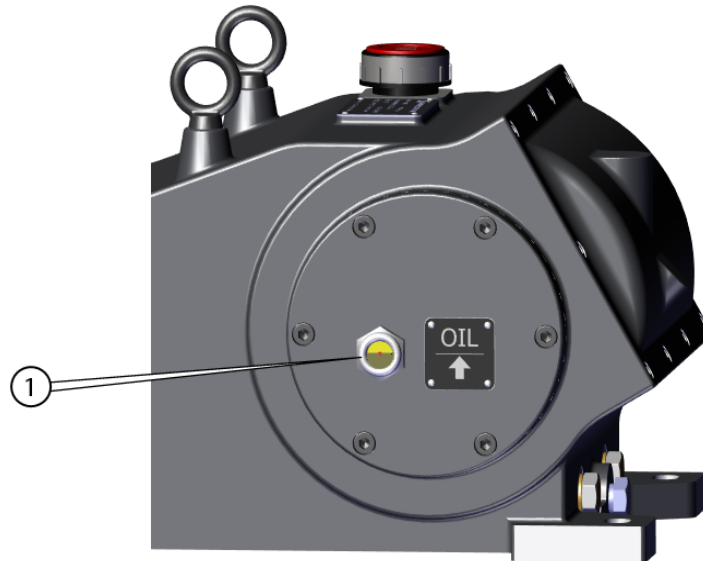


Figure 12

2. If there is too much or too little oil in the **crankcase**, drain or add oil as necessary.

# Prepare for Operation

1. Use a rag to clean all maintenance areas.
2. Replace all **side panels** and **covers**.

# Customer Support

Refer to the **omax.com** web site for technical support contact information.

Original Instructions in English

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