

PERIODIC MAINTENANCE

When Vessel Is In The Water Preparing the Sail-Drive

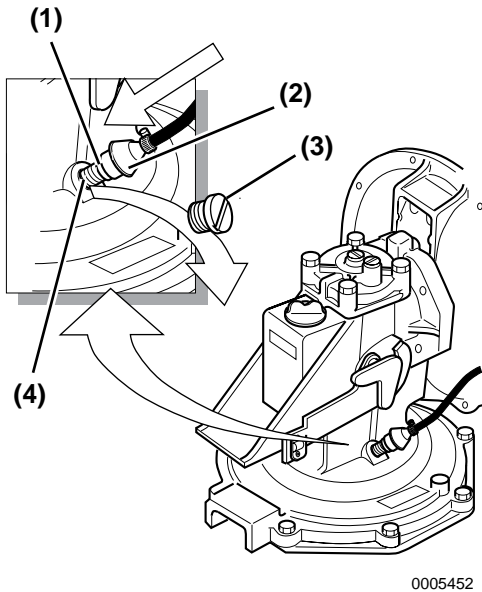


Figure 4

- 1 – O-Ring
- 2 – Adapter Joint
- 3 – Oil Changing Plug
- 4 – Thread M10x1.5

1. Remove the oil changing plug located under the shift lever.
2. Screw in an adapter joint with an O-ring. When using your own adapter joint, the maximum length of thread should be 12 mm.
3. Attach a stiff rubber hose (inner diameter 14 to 16 mm [0.5 to 0.625 in.]) with hose clamps to the adapter joint at the oil changing position (**Figure 4, (2)**). The hose must be long enough to reach the bucket or pump. If a Yanmar original rubber hose is to be used, the part number is 196440-92970.

Removing Oil

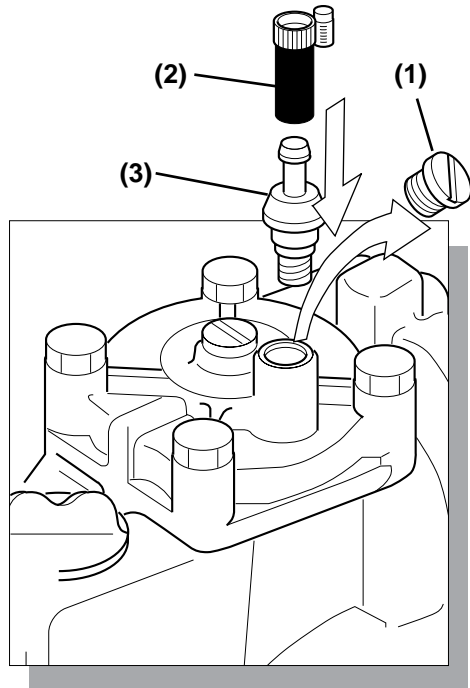


Figure 5

- 1 – Plug
- 2 – Air Pressure Hose
- 3 – Adapter Joint

Fastest Way: Blowing Out by using Air Pressure

*Note: Use Compressed Air (0.5 to 1 Bar [7.25 to 14.5 psi]) from main system, 12 V portable compressor or from portable hand pump or foot pump. **WARNING! ALWAYS wear safety glasses when using compressed air.***

1. Take out the plug from the upper case cover.
2. Screw in a second adapter joint with an O-ring at the oil inlet position. Screw in the oil plug at the dipstick position.
3. Connect the air pressure hose with hose clamps.

Option 1: Using Compressed air from main system or 12 V portable compressor.

1. Connect a hose to the top adapter joint and to a compressed air source (**Figure 5, (2)**). Within 10 to 15 minutes almost all oil will be blown out.

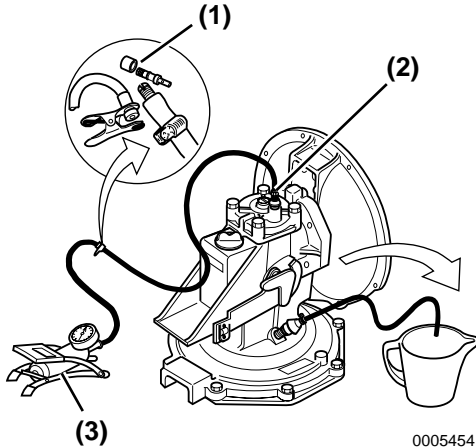


Figure 6

- 1 – One-Way (Non-Return) Valve
- 2 – Adapter Joint Screwed Into Cover
- 3 – Foot Pump

Option 2: Using Compressed air with help from a portable hand pump or foot pump

1. Install a one-way (non-return) valve (**Figure 6, (1)**) into the pressure line. This is done to maintain pressure during use of the pump.
2. Connect the hand pump or foot pump with pressure line to the adapter joint (**Figure 6, (2)**).
3. Pump out the oil until empty. The first 0.9 L (1 qt) will take approximately 3 minutes. The second part takes more time as mostly air will be pumped out; this will take approximately 12 minutes.

Using Yanmar Pump

Refer to *Preparing the Sail-Drive on page 42* and *Fastest Way: Blowing Out by using Air Pressure on page 42*.

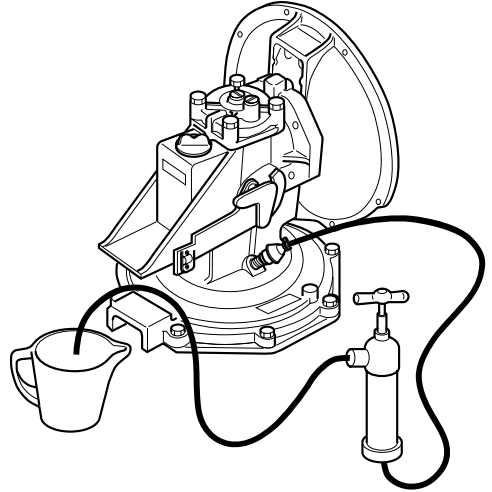


Figure 7

Connect the hand pump with hoses as shown above (**Figure 7**), and start pumping. Be aware that oil has to flow down through restricted parts of the casing and then back up again, so pressure will initially be high and pumping will be difficult. Pausing for a few minutes will help. After pumping out about 0.9 L (1 qt) of oil, mostly you will be pumping out air, but continuous pumping is necessary. Though approximately 100 to 200 ml (0.1 to 0.2 qt) of old oil will remain in the drive unit, it will not cause a problem when mixed with clean oil.

The hand pump and rubber hose are available from Yanmar, and are optional parts for SD50 / SD50-4T. Any type of hand pump or rubber hose (inner diameter 14 to 16 mm [0.5 to 0.625 in.]) available from your local supplier can be used.

PERIODIC MAINTENANCE

Replacing Oil

Refer to *Filling With Lubricating Oil - SD20, SD50 and SD50-4T* on page 19.

Fastest way: By using MerCruiser pump or simple market pump

Refer to *Preparing the Sail-Drive* on page 42.

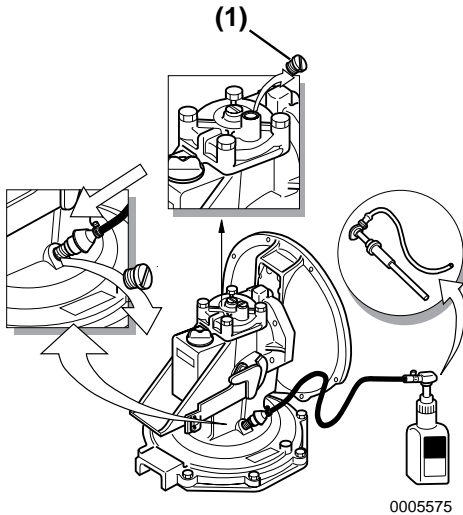


Figure 8

1 – Plug

1. Use a MerCruiser® pump like the one shown (**Figure 8**) or use a similar pump available locally.
2. Attach the pump to a new bottle of Quicksilver® High Performance Gear Lube from MerCruiser®.
3. Connect the hose with a hose clip to the adapter joint below the shift lever.
4. Remove the plug from the upper case cover (**Figure 8, (1)**).
5. Operate the pump to fill the Sail-Drive with oil. After bottle is empty, change the bottle while the pump and hose remain connected to the adapter joint.
6. After filling, first screw in and tighten the plug at the top cover (**Figure 8, (1)**). Then remove the oil bottle, pump, hose and adapter joint and screw in the oil plug with a gasket.

Using Yanmar Hand Pump

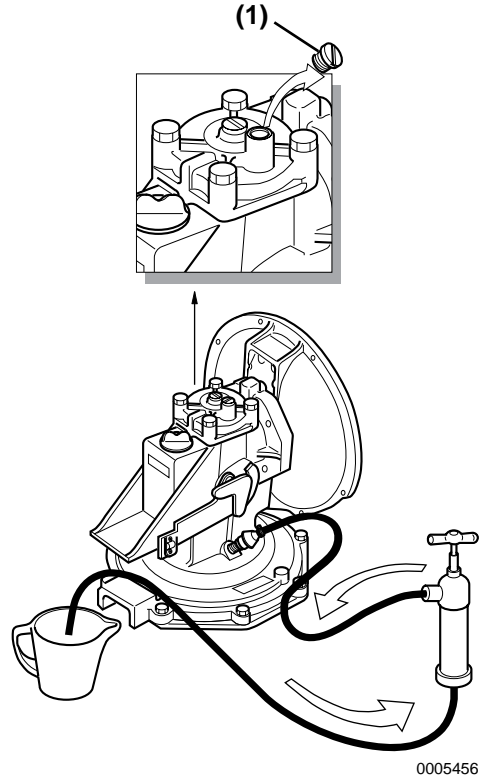


Figure 9

1 – Plug

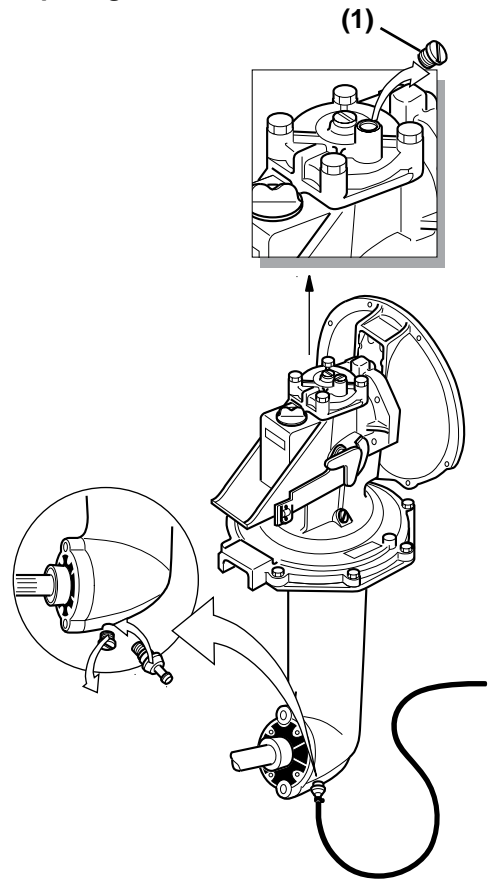
1. Connect the hoses as shown above (Figure 9).
2. Remove the plug from the upper case cover (Figure 9, (1)).
3. Operate the pump to fill the Sail-Drive with oil. Be aware that oil has to flow down through restricted parts of the casing and then back up again, so pressure will initially be high and pumping will be difficult. Pausing for a few minutes will help. The hand pump and rubber hose are available from Yanmar, and are optional parts for SD50 / SD50-4T. Any type of hand pump or rubber hose (inner diameter 14 to 16 mm [0.5 to 0.625 in.]) available locally can be used.
4. After filling, first screw in and tighten the plug at the top cover. Then remove the hand pump, hose and adapter joint and screw in the oil plug with a gasket.

Not Using Pump

Refer to *Filling With Lubricating Oil - SD20, SD50 and SD50-4T* on page 19.

When The Vessel Is Out Of The Water

Preparing The Sail-Drive



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Figure 10

1 - Plug

1. Remove the bottom drain plug.
2. Screw in the adapter joint with the O-ring. When using own adapter joint, maximum length of thread is 12 mm.
3. Attach a stiff rubber hose with an inner diameter of 14 to 16 mm (0.5 to 0.625 in.) with hose clamps to the adapter joint at the oil drain position. The hose must be long enough to drain to the bucket.
4. Remove the dipstick and oil inlet plug from the upper case cover.

PERIODIC MAINTENANCE

Removing Oil By Draining

Refer to *Preparing The Sail-Drive on page 45*.

Oil draining is possible when the vessel is out of the water but will take a greater amount of time.

1. After approximately 0.6 L (0.6 qt) has been drained, remove the oil changing plug. If you remove the plug before this, oil may spill out because maximum oil level is higher than the plug.

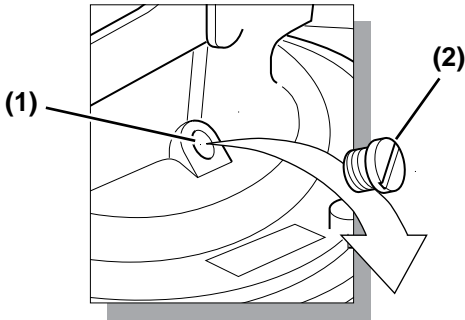


Figure 11

- 1 – Thread M10x1.5
- 2 – Oil Changing Plug

Fastest way: Blowing out by using Air pressure

Refer to *Preparing the Sail-Drive on page 42*, then to *Fastest Way: Blowing Out by using Air Pressure on page 42*. Be aware that oil is divided into two channels connected by the lower gear and lower drain port.

Replacing Oil

Refer to *Filling With Lubricating Oil - SD20, SD50 and SD50-4T on page 19*.

Using MerCruiser® Pump or simple market pump

Refer to *Preparing The Sail-Drive on page 45*.

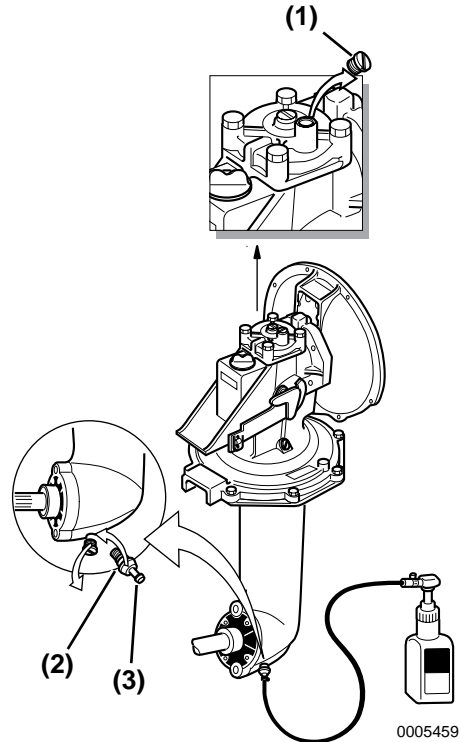


Figure 12

- 1 – Plug
- 2 – O-Ring
- 3 – Adapter Joint

1. Use a MerCruiser® pump with like the one shown above (**Figure 12**), or use a similar pump available locally.
2. Attach the pump to a new bottle of Quicksilver® High Performance Gear Lube from MerCruiser®.
3. Remove the oil changing plug from below the shift lever.
4. Connect the hose with a hose clip to the adapter joint at the drain position.
5. Take out the plug from the upper case cover.