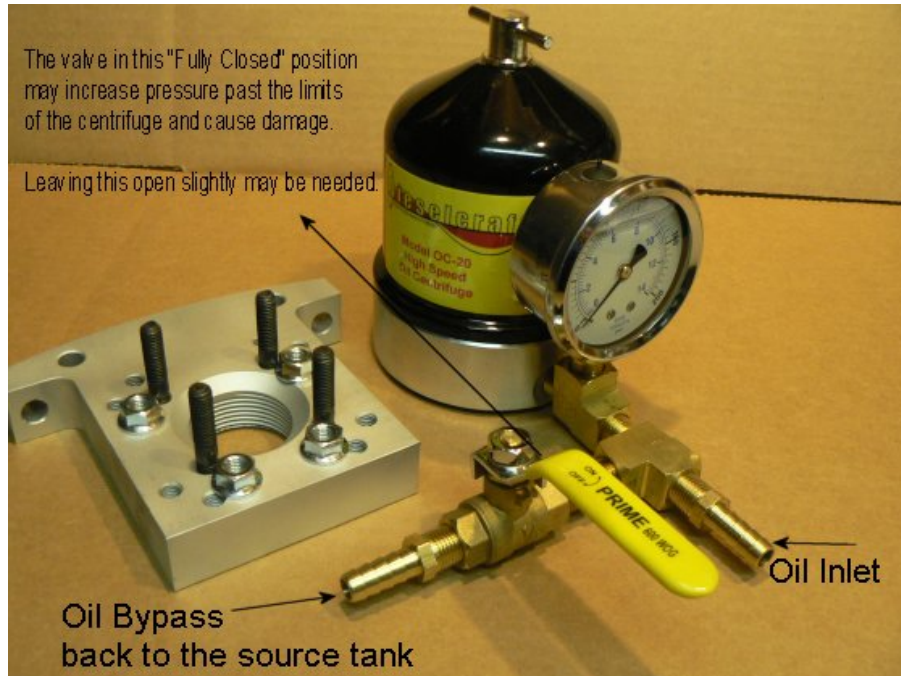


# Dieselpcraft Oil Centrifuges Model #OC20 and OC-50 Assembly Instructions

April 08



Assemble the brass fittings and pressure gage to configure the centrifuge control valve as pictured.

You will need to run a 3/8 ID minimum incoming and return line from the bypass ball valve back to your source tank of waste oil. Clear reinforced vinyl hose can be used for suction and return ONLY. Black reinforced hydraulic hose is needed for the pressure line.

Some pumps are supplied with a built in or adjustable bypass. This may experience a problem after some oils cool or if the WVO is extremely dirty so always start your system with this bypass valve fully open. It is now pictured Fully Closed.

To control the centrifuge speed and pressure, start pump with valve full open.

1. As you close the valve the pressure will increase. **Never allow the pressure to go past 80PSI.** This may require you to leave the valve open just slightly.
2. The excess flow is returned to your tank.

The studs, nuts and gasket must be installed on the top side of the mount for proper installation. **Studs and gasket are enclosed with the centrifuge.**

When using the mount you can mount the centrifuge against the wall of a 55 gallon drum. Using the two through holes on the top of the plate you can mount over the top of a tank, top of a frame rail or as you see fit to best make the installation.

You are able to mount an OC-20 and OC-50 centrifuge with the inlet in any direction by selecting the appropriate hole pattern on this plate.

The large thread in the bottom of the plate is an **1 1/4" NPT Pipe Thread**. DO NOT use a drain smaller than 1 1/4" for an OC-50 or 1 inch for an OC-20. The oil will back up into the centrifuge, flood and stop working.

If the rotor spins for a minute then slows you have a restriction in your drain. If the drain is smaller even by 1/8 inch, the oil will not drain properly. If you have added a valve to your drain, make sure that the through hole of the valve is also the correct size. **In some cases a 1 inch ball valve does not have a 1 inch hole through it. Same for 1 1/4 inch ball valves.**

Too many elbows also will restrict the draining and may cause the flooding.



## If you are doing Waste Vegetable Oil, Biodiesel or Waste Motor Oil

**CAUTION:** Hot oil can be dangerous and may burn the skin. Wear proper protective clothing when working with hot engine parts and hot oils. Avoid unnecessary skin contact with oil.

The flow is the key.

**OC-20 centrifuge** can only handle 55GPH. You need a pump that will give you 100 PSI at .93 GPM / 55 GPH for ultimate performance.

**OC-50 centrifuge** can only handle 108GPH. You need a pump that will give you 100 PSI at 1.8 GPM / 108 GPH for ultimate performance.

The minimum operating pressure is 40 PSI.

The viscosity also enters into the equation, the thinner the better so heating the fuel to 140+ will also increase performance. Oil at 180F degrees is best. Make sure all your components can handle 180F degrees BEFORE you increase the temperature.

Straight room temp vegetable oil will not work.

In most cases the pump will limit the maximum temperature. **We suggest you not exceed oil temperature of 210 F.**

Always start the pump with the ball valve open. You will see the oil will return to the source tanks via the ball valve. As you slowly close the valve you will see the pressure increase. Close the valve until the gage hits 80 PSI and NOT MORE.

At 80 PSI and above the rotor speed is more than 7000 rpm and the rotor is bound to produce noise and vibrations at that speed. If you have excessive vibration call the factory.

### Maximum operating pressure is 80 PSI.

However, two things must be checked:

- 1) The rotor cover and rotor are correctly matched in assembly with the engraved arrows matching correctly.
- 2) That both the nozzles are clean and are able to pass the fluid. Stop for a while and as soon as you get a feel that the rotor has stopped, open the centrifuge cover. If oil continues to drain from both nozzles, the nozzles are OK."

Opposite the inlet port is a hex plug. Remove this and you will find a spring and plunger. For stationary application where you are not mounting the centrifuge on an engine, remove the spring only. Leave the plunger in place. Replace the hex plug.

In some case the spring has already been removed. You will find it in with the brass fittings. You will have to install the spring if you use the centrifuge pump to transfer oil from the process tanks to another tank.

## Trouble Shooting:

### The rotor does not spin.

1. The check valve spring IS installed make sure you have pressure to the centrifuge. Make sure you have at least 40 PSI.

To test the flow to the centrifuge and rotor take an empty soda bottle and place it over the spindle after you remove the rotor. Start the pump and slowly close the valve. If you do not see oil coming from the two holes in the center shaft there is a blockage in the shaft or the piston in the base is stuck. (See the note about removing the spring) If the piston is stuck, remove the inlet hose then using a screw driver push the piston back. It may take a light tap with a SMALL hammer to make it move. DO NOT BEAT WILDLY upon the screw driver. Once the piston is "back", reassemble and test the centrifuge.

2. Make sure the rotor spins freely by hand.

After the use of some vegetable oils you will find the centrifuge will "gum up" from the cooled oil. Use hot water and detergent to clean the rotor after use.

Use an automotive "brake cleaning spray" to clean the rotor shaft and the holes in the shaft that the oil come up through to enter the rotor.

3. Confirm that the seal between the rotor and the base are intact and the o-ring is not cut or protruding.

4. If you have over pressured the rotor the nut that holds the rotor cover to the base will show a gap and will not tighten down. You must replace the rotor. Contact Dieselcraft.

5. If the rotor spins for a minute then slows you have a restriction in your drain. For OC-20 the MINIMUM ID of a drain must be 1 inch and 1 ¼ for OC-50's. If the drain is smaller even by 1/8 inch the oil will not drain properly. The oil will back up into the centrifuge and cause it to flood. If you have added a valve to your drain, make sure that the through hole of the valve is also the correct size. A 1 inch ball valve does not have a 1 inch hole through it. Same for 1 ¼ inch ball valves.

Too many elbows also will restrict the drain and cause the flooding.

6. Call the factory.

### Special Note

The OC-50 is supplied with a strap clamp that MUST be used for mobile applications. In stationary applications you may see that adding the strap clamp, the unit runs quieter.

Install the strap clamp and tighten its t-nut.

All units are tested but if you use an additional rotor you may experience chatter from the centrifuge. This is the rotor hitting the **cover t-nut**.

If you have a problem concerning chatter please contact us.

## Cleaning the Dieselcraft Centrifuge

**CAUTION: Hot oil** can be dangerous and may burn the skin. Wear proper protective clothing when working with hot engine parts and hot oils. Avoid unnecessary skin contact with oil.

The Dieselcraft Centrifuge is very simple. It does not require any expendable parts or filters. At every service period, you just have to open the centrifuge rotor, remove all dirt collected in the rotor then re fit the rotor and centrifuge cover.

1. Unscrew top nut and remove the centrifuge cover.
2. Lift the rotor completely off the shaft quickly and allow it to drain into an appropriate container.
3. Prepare to unscrew rotor nut. Place the rotor, nozzles down over a 1-2" wide wooden block. You will see the block will stop the rotor from turning. Unscrew the rotor nut. The rotor nut can be opened by hand. If it is tight, unscrew it with a small adjustable wrench. **Never grip the rotor nut tightly in clamping device like a bench vice. It may damage the rotor body permanently.** Remove rotor cover and deflector inside.

4. Remove the dirt collected from inside the rotor cover by the use of a plastic or dull metal scraper. Clean all the rotor parts thoroughly.

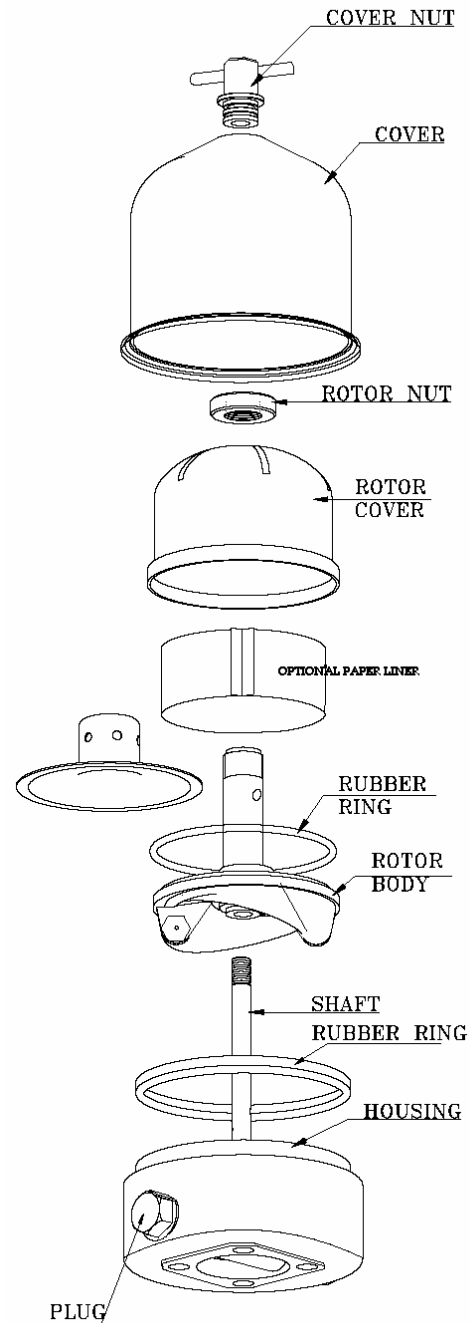
The dirt removed from engine oil is considered Hazardous Material. Dispose of it in the proper manner based your the laws of your county or state.

### **Re-Assembly**

Always ensure that the arrow marks on rotor cover and rotor are matched after assembling the rotor. The rotor body is dynamically balanced. Mismatch of arrow marks on rotor cover and rotor will result in excessive vibration.

Do not over tighten the top nut. Tighten just enough to prevent leakage of oil from centrifuge cover and housing. Over tightening top nut will damage the centrifuge permanently.

Do not drop, hammer upon, distort or force during disassembly or reassembly. You may damage the device and void the warranty.



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**5 Year Warranty**

**Warranty:** Dieselcraft Engineering guarantees products to be free from defects in material and workmanship for a period of 60 months from date of purchase. Buyer's sole remedy is limited to replacement of a like unit.