



## Material Handling Solutions



# Don't let "Wear and Tear" drop your operation.

## Maintenance vs. Repairs

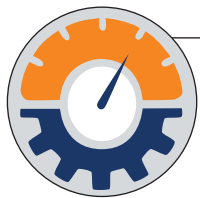
**Maintenance** is the routine scheduled services, inspections, and part(s) replacements recommended for your VRC based upon use and environment.

**Repair** services are required when your VRC is not working properly and usually occurs at the least convenient time possible.

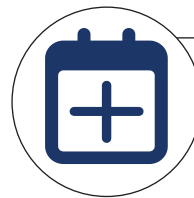
**Prepare** ahead of time for the maintenance work and save yourself the stress of non-scheduled down time, the high cost of replacement parts, and the cost of required man-hours.

**Oil Change = 30 minutes.**

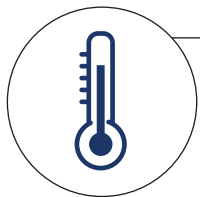
**Repair Damage = 8 man-hours per cylinder + downtime.**



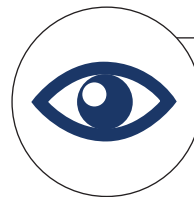
The performance of the hydraulic pump and motor is closely tied to system cleanliness. Clean oil, proper viscosity, and ambient operating temperature are key factors in prolonging the life of the hydraulic pump.



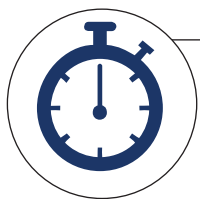
Review the hydraulic oil level every week. Change the hydraulic oil filter after the first 1000 cycles or 30 days of operation, whichever comes first. Then drain and clean the tank, change the hydraulic oil, and change the hydraulic oil filter after 6,000 cycles or once per year, whichever comes first.



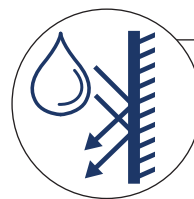
Heat, high pressure, and contamination all speed up oxidation which results in gum, sludge, plugged valves, and excessive wear on the components.



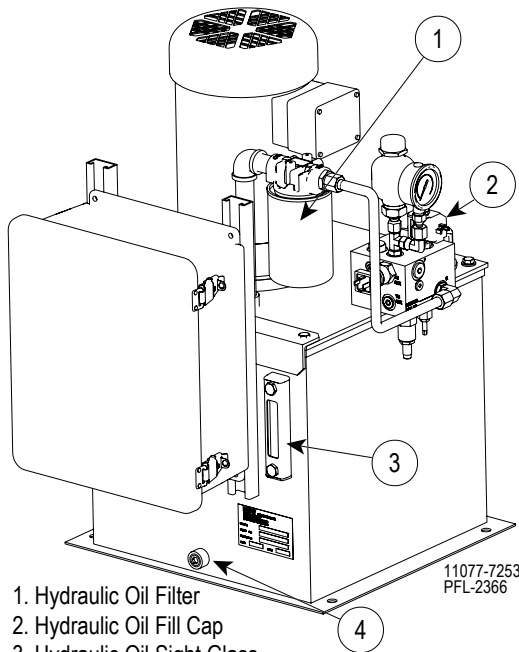
Look at the fluid level indicator on the side of the pump. If it's cloudy, off-color, contains suspended sediment, or liquid layers, it's time to change the hydraulic oil and filter.



Over time, the thinning of the oil due to heat buildup may cause the platform not to rise, and damage the hydraulic pump.



Corrosive environments will require more frequent oil and filter changes to maintain the integrity of the system.



1. Hydraulic Oil Filter
2. Hydraulic Oil Fill Cap
3. Hydraulic Oil Sight Glass
4. Hydraulic Oil Drain Plug

## Did you know?

**Color** ISO 32 hydraulic oil is clear, honey colored, and odorless. If the oil is milky or brown, it's time to change the oil.

**Drum Oil** International Standards for Hydraulic Fluids published a method for coding the level of contamination in ISO 4406. It states that new hydraulic oil straight from the drum has a typical cleanliness level of 23/21/18. That is 16 to 64 times dirtier than what most hydraulic systems require.

**Dust** A dusty environment will allow dust particles to enter the hydraulic system through the breather holes on the tank or through the seals on the cylinder. The hydraulic oil will need to be changed more often.

**Flushing** If contamination is evident in fluid samples or in the hydraulic tank, accumulation has also occurred within the system plumbing. These deposits interfere with the operation of the VRC and must be flushed.

**NOTE:** PFlow Industries offers four (4) different ISO 32W oils.

- Standard - PFlow part #9000-9700
- Food Grade - PFlow part #9000-9702
- Biodegradable - PFlow part #9000-9701
- ATF for low temperature environments - PFlow part #9000-9699

## Tools Needed

- 5 - 10 gallons (19 - 38 liters) of ISO 32 hydraulic oil with a non-foaming additive
- Funnel with a screen
- Clean, lint-free cloth
- Hydraulic oil filter PFlow part #9760-0010

## Changing the Oil in a Hydraulic System

Contamination must be periodically removed from the hydraulic system. It is advisable to drain the hydraulic oil after the oil is warmed to about 150°F (66°C). When doing this, the oil impurities have not yet settled and can be removed along with the drained oil.

1. Lower the carriage to the floor. Make sure the cylinders are fully extended.
2. Remove power, and follow OSHA electrical lockout/tagout requirements.
3. Place a catch basin below the hydraulic oil drain plug.
4. Remove the drain plug to drain the hydraulic fluid system.
5. Open the reservoir tank and wipe the inside of the reservoir tank with a clean, lint-free cloth.
6. Replace the rubber gasket seal on the reservoir tank lid.
7. Replace the top of the reservoir tank and close tightly.
8. Wipe the drain plug with a clean, lint-free cloth and replace.
9. Replace the oil filter with a new, factory-authorized oil filter replacement.
10. Remove the fill cap.
11. Use a funnel with a screen and pour ISO 32 hydraulic oil with a non-foaming additive into the reservoir tank. The tank capacity may be 5 - 10 gallons (19 - 38 liters).
12. Replace the fill cap and tighten.
13. Remove OSHA electrical lockout/tagout requirements and restore power.