

## 1. DRAIN CRANKCASE OIL

Drain pump crankcase by removing the oil drain plug located at the bottom of the pump. Also remove the oil fill cap or plug. NOTE: On older pump models that DO NOT have the oil drain plug, oil needs to be drained after the head, diaphragm and piston sleeve have been removed. NOTE: When re-installing piston sleeves, the oil holes must always align parallel with the pump crankshaft.

## 2. EXTERNAL MANIFOLD REMOVAL

If your pump has external manifolds, these must be removed prior to head removal.

## 3. HEAD REMOVAL

Remove the head bolts, and then remove the pump heads which may require some "light" prying.

## 4. DIAPHRAGM REMOVAL

Turn crankshaft to bring piston up to the top of its stroke, remove the diaphragm bolt and washer, then remove the diaphragm.

## 5. CRANKCASE CLEANING

To properly clean the crankcase you need to remove the piston sleeves and wash the crankcase with parts washing solution or equivalent. Before re-installing the piston sleeves, apply a light coating of oil to both the pistons and sleeves. NOTE: Make sure the oil holes in the piston sleeve align parallel with the pump crankshaft.

## 6. INSTALLING NEW DIAPHRAGMS

Install the diaphragm bolt and washer into the new diaphragm. Install this assembly to the piston, flat side of the diaphragm down. Use blue threadlocker or equivalent on the diaphragm bolt. Then torque to the recommended specs. Now rotate crankshaft to bring the piston and diaphragm to the bottom of its stroke. Then seat the outside edge of the diaphragm into the pump body.

## 7. HEAD INSTALL

When reinstalling the pump heads, it is very IMPORTANT to make sure that the pump valves or check valves are installed correctly. For each cylinder or head assembly there are two valves, one valve lets fluid "IN" the head assembly (suction), the other valve lets fluid "OUT" of the head assembly (discharge). PAY VERY CLOSE ATTENTION TO THIS! Then torque pump heads to rated torque specs. WARNING: Never run any UDOR diaphragm pump with the pump valves or check valves installed incorrectly. Failure to follow this warning could result in personal injury, property damage or damage to the pump and will void any and all warranties.

## 8. INSTALLING PULSATION DAMPENER DIAPHRAGM

Bleed off the air in the chamber and then remove the cover bolts, cover and diaphragm. Install the new diaphragm dome down. Reinstall cover and torque to recommended specs. Recharge dampener with air to 20% of the pumps operating pressure.

## 9. REFILL PUMP CRANKCASE

Check the oil drain plug, making sure that it is installed in the crankcase. Fill the pump with UDOR LUBE premium pump oil or SAE 30 weight non-detergent oil to the recommended mark on the oil sight glass/gauge; about halfway on the oil sight glass/gauge. Rotate the crankshaft while filling to eliminate air pockets.

## 10. INITIAL START UP

Run pump for five minutes under NO Load condition or in full by-pass only. This will evacuate any remaining air pockets in the crankcase. Turn pump off and re-check oil level. Refill as necessary to proper oil level.

**IMPORTANT:** During initial start up, monitor the oil color. If it turns milky white, the diaphragms were not seated or installed correctly.

**WARNING!:** UDOR Diaphragm Pumps are positive displacement pumps, therefore a properly designed pressure relief valve or pressure regulating valve must be installed on the pump or in the discharge plumbing. A secondary safety relief valve is also recommended. Failure to install a pressure relief valve or pressure regulating valve could result in personal injury, property damage or damage to the pump or system and void any warranty. In no way does UDOR USA assume any liability or responsibility for the construction or operation of a customer's or potential customer's high pressure system.