

## REPLACING PUMP VALVES

1. All inlet and discharge valves can be serviced without disrupting the inlet or discharge plumbing.
2. To service the valves, remove valve caps.
3. Remove the valve assembly from the valve cavity.
4. Remove o-ring from valve cavity.
5. Only one valve kit is necessary to replace all the valves in the pump. The kit includes new valve o-rings and valve assemblies.
6. Install o-ring into cavity.
7. Insert valve assembly into valve cavity.
8. Install valve cap and torque to specifications. NOTE: Use "blue" threadlocker or equivalent on all valve caps.

## REMOVING PUMP HEAD

1. Remove the bolts from the pump head.
2. Separate the head from the crankcase. NOTE: It may be necessary to tap head lightly with a plastic or rubber mallet to loosen.

**CAUTION:** Do not damage plungers when removing the head.

3. The packing assemblies typically come off with the head. At this point, inspect ceramic plungers. Plunger surfaces should be smooth and free from scoring and cracks. IF NOT, replace plunger.

## REPLACING CERAMIC PLUNGERS

1. Remove plunger nut or bolt, then remove plunger from piston rod.
2. If slinger washer comes off with the plunger, be certain this is reinstalled or replaced before a new plunger is installed.
3. Separate plunger bolt from plunger.
4. Install new o-ring, PTFE back-up ring and washer on plunger bolt or stem. NOTE: A film of grease on the outside of the o-rings ensures a better installation.
5. Carefully insert plunger bolt into plunger. NOTE: Use "red" threadlocker or equivalent on all plunger nuts or bolts.
6. Slide new plunger over the piston guide and torque to specifications.

## REPLACING WET END SEAL KIT

1. Insert proper seal stack extractor tool or reversible pliers through seal retainer. Extract retainers, packings and spreader rings.
2. Only one seal kit is necessary to replace the wet end seals in the pump. The kit includes low pressure seals, high pressure seals, spreader rings and long life rings.
3. Place proper seal insertion sleeve into cylinder and install plastic spreader ring into bottom of the cylinder flat side down. Insert brown high pressure seal into seal insertion sleeve flat side up and tap firmly into place. Remove insertion sleeve.
4. Install long life ring on top of the high pressure seal and insert middle brass ring.
5. Install the black low pressure seal into upper brass ring (flat side goes into the upper brass ring), lightly grease the outer o-ring and insert into cylinder.
6. Coat each plunger and seal stack with grease and carefully reinstall the pump head. NOTE: It may be necessary to tap pump head lightly with a plastic or rubber mallet. Install head bolts and torque to specifications.

## CHANGING PUMP OIL

1. Change pump oil after the first 50 hour break-in period, then change pump oil after every 500 hours of use.
2. Remove oil drain plug from back cover or under pump. Drain oil.
3. Re-install oil drain plug.
4. Fill pump crankcase with UDOR LUBE Premium Pump Oil or SAE 30W non-detergent oil to the recommended mark on the oil sight glass/gauge, about halfway on the oil sight glass/gauge.

**WARNING!:** UDOR Plunger Pumps are positive displacement pumps, therefore a properly designed pressure relief valve or unloader 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 unloader 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.