Lubecore Technical Announcement

HP-400 Compact Chief Pump Upgrades in Response to Field Issues

Summary of Pump Field Issues

Following the introduction of the HP400 two challenges became apparent with the pump operation.

1. Some hydraulic oil on a limited number of installs leaked into the grease delivery chamber.
2. Some elements became stuck in operation.

Field Issue Root Cause

The root causes for the issues listed above are:

1. Hydraulic pressures on certain installs were higher than expected.
2. The current actuator assembly in the pump is too long. It can stroke the MLP elements farther than the elements were designed to be stroked causing MLP elements to jam in some cases.

Resolution Summary

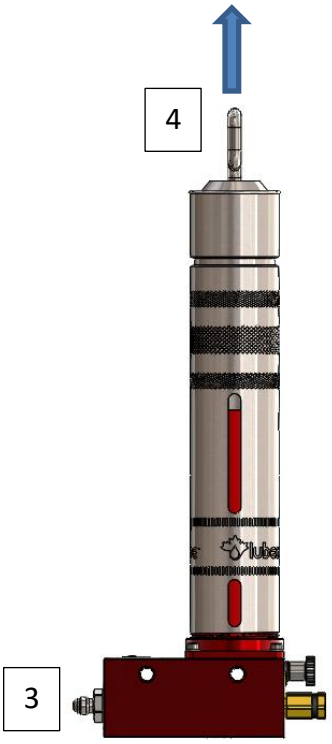
To resolve these issues, Lubecore has taken the following actions:

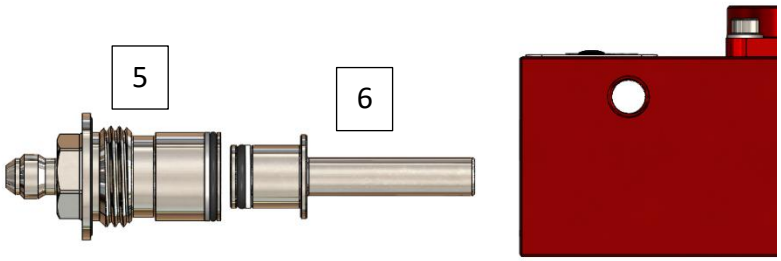
1. The O-Ring and back-up ring on the element actuator have been replaced by a T-Seal which is rated for pressures exceeding worst case pressures seen in the field. The T-Seal operating pressure rating is 5000 psi (345 bar).
2. The actuator assembly length and allowable stroke have been modified to prevent element overstroke and jamming.
3. The reduced stroke in the HP-400 limits the maximum grease output to a yellow element. Lubecore has found that installed applications have not required more than a green element output.
4. New actuators are being machined. Actuators with T-seal assemblies will be sent out for field retrofit this week.

Field Retro-fit

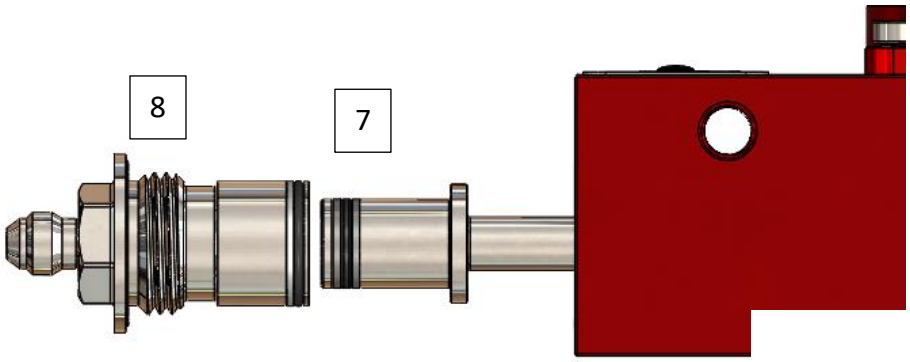
In order to install the new the actuator into the pump complete the following steps.

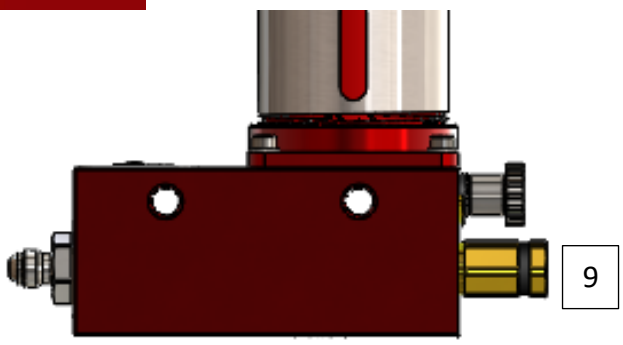
1. Start the machine and ensure that the hydraulic cylinder the HP-400 pump is plumbed into is at rest.
2. Turn the machine off.
3. Disconnect the hydraulic feedline from the pump inlet fitting at **location 3**.
4. Pull the push rod up on grease tube and lock into place to release grease pressure on pump cavity at **location 4**.





5. Remove the pump inlet fitting **(5)**. The pump actuator **(6)** will come out of the pump with the inlet fitting.
   Remove the actuator from the inlet fitting and discard the actuator.
6. Liberally lubricate the seal on the new actuator provided at **location 7**.





7. Install the actuator back into the inlet fitting.
8. Ensure the face O-ring is on the inlet fitting **(location 8)**. Then slide the inlet fitting and actuator assembled in step 7 back into the pump and tighten the inlet fitting.
9. Remove outlet line and external check valve fitting from the grease delivery element. (Note: not all installations feature an external check valve fitting)
10. Replace the grease delivery element **(item 9)** with a new element. (Note: Required only for units that are/have been operating in the field)
11. Reinstall the check valve and outlet line onto the grease delivery element.
12. Reinstall the hydraulic feed line to the pump.
13. Release the push rod on the grease tube.
14. Start the machine, and bleed the hydraulic feed line.