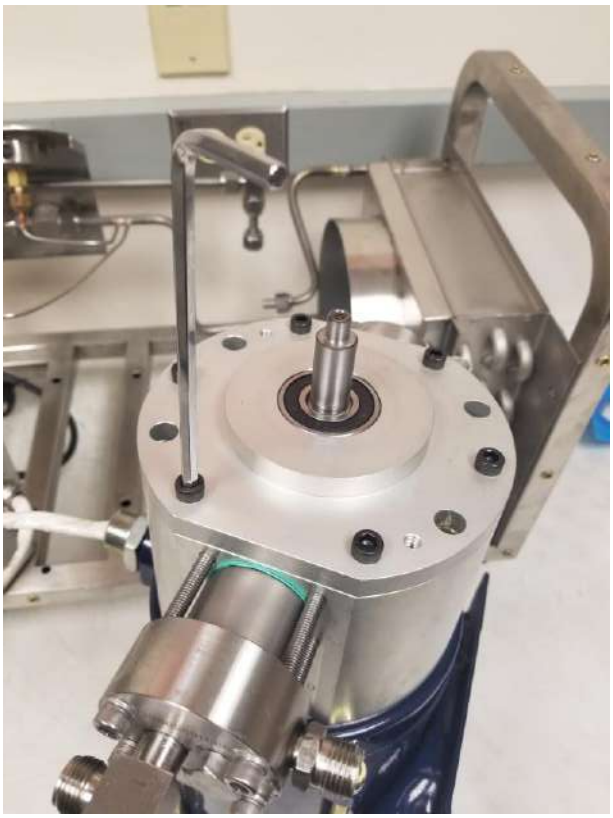
CMEP-OL Recovery Pump Rebuild Guide

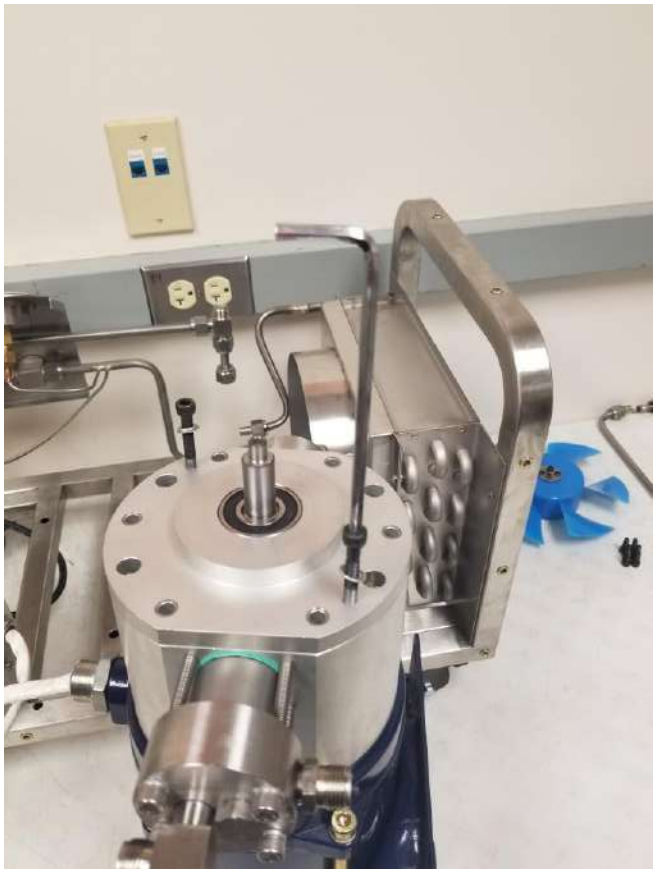
This guide will cover step by step on rebuilding the CMEP-OL Recovery pump. As per the manufacturer, rebuilding is needed around 2000 run time hours. This is the recommended time, however, depending on how the pump is ran, this may need to be done sooner. To rebuild the pump, you will need a set of metric allen keys, 2 adjustable wrenches, screwdrivers, a mallet, and snap ring pliers. You will also need threadlock adhesive. It is recommended to have a bearing puller, however, the job can be done without this tool. To begin, remove screws from the bottom of the outside casing. Once removed, the case will pull up off the pump frame. The internals of the pump will be exposed and a work can now begin.

Disconnect hard line connections to the pump motor/compressor as shown. This will free the motor from the frame and condensor and allow access to the head.

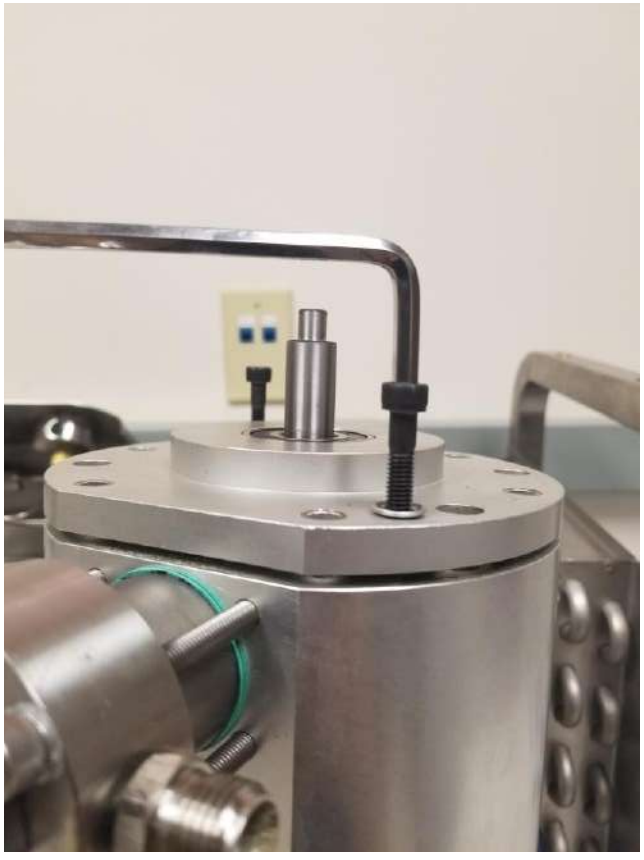
Once hard-lining is removed, disconnect the ground wire from the power supply. Remove nuts that secure pump motor to frame. (Pictured Above) Once pump is loose, turn pump on its side and use an allen key to remove the screws that secure the power supply to the frame. (Pictured Below)

Now that everything is detached from the frame, the motor/compressor can be pulled. Power supply must be turned to allow movement throughout the rebuild process. Use an allen key to remove bolt from center, then pull fan from the shaft. Once the fan is removed, remove the 4 bolts that secure cover to compressor. (Pictured Below)

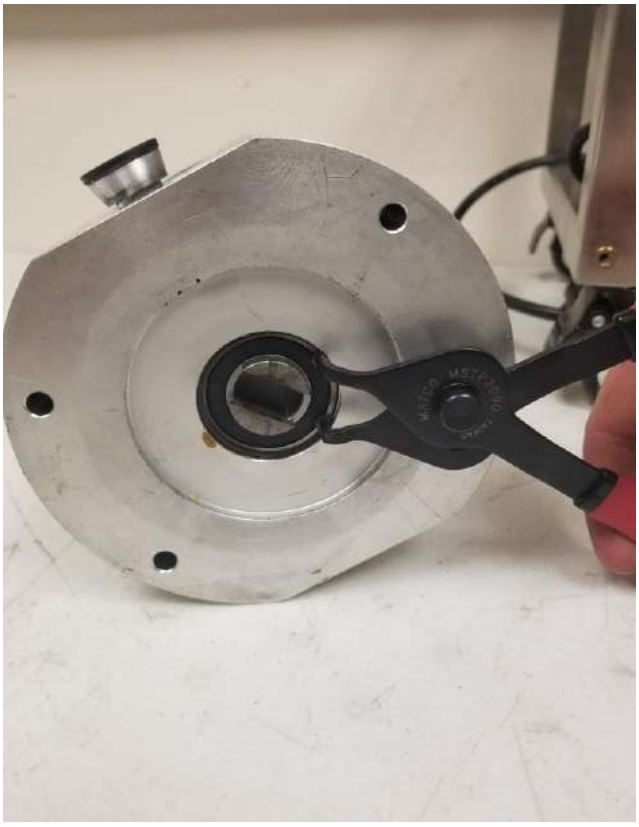




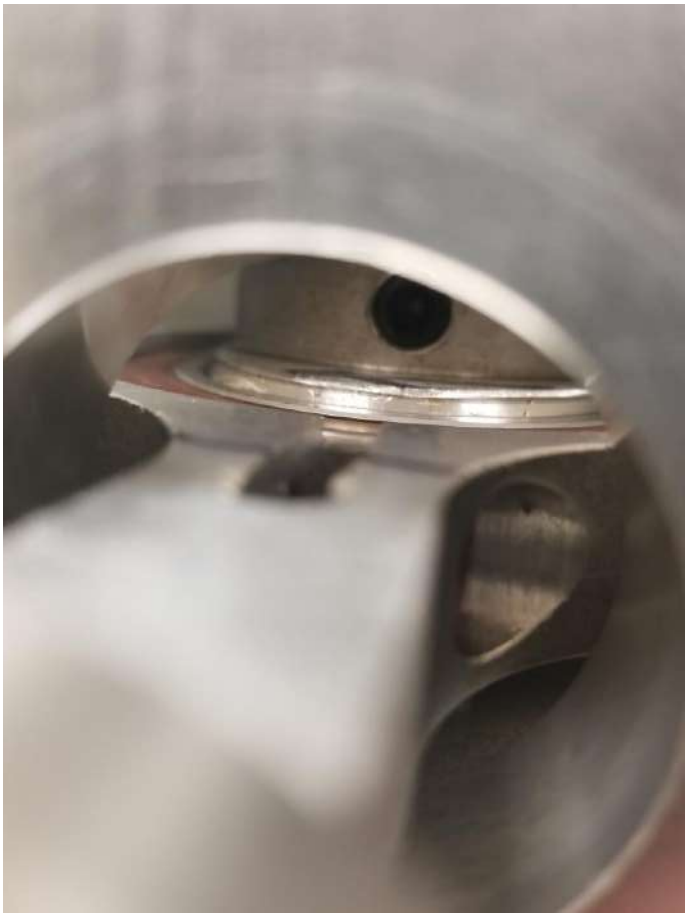
Place bolts that were removed from cover, and set into adjacent holes (as shown above). Alternately tighten bolts 1 turn each. This will pull the cover off the compressor. Shown below. Ensure even tightening occurs, so the cover lifts straight. Once cover is off, remove bolts.



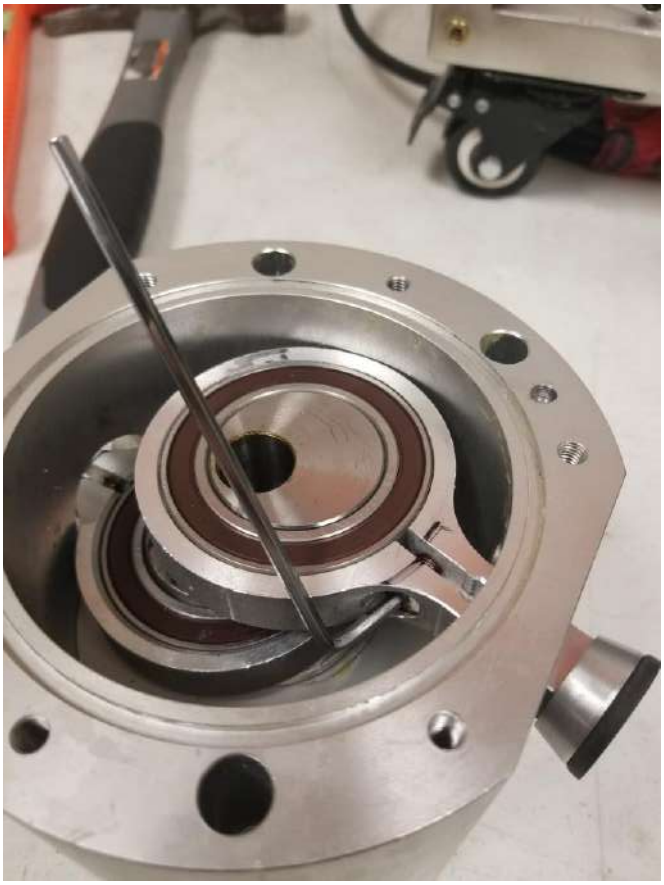
Remove the remaining 4 bolts from the compressor. This will allow the compressor to be removed from the motor. A wrench may be required to assist with leverage, as these bolts will be very tight and threadlocked into place. (as shown above) Once removed, detach compressor. Remove heads from compressor (shown below)

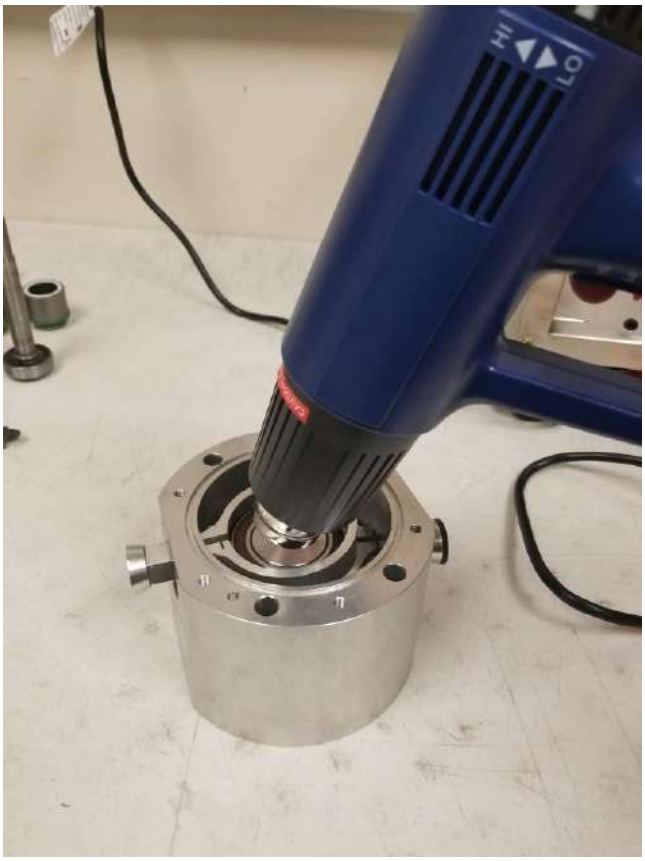


Remove cylinders from pistons. These may need to be twisted as they are removed. On the backside of the compressor, use snap ring pliers to remove the snap ring from in front of the bearing. (Shown above) In between the connection rods, there is a bolt that secures the piston assembly to the shaft. Look behind the piston and remove this bolt. This will loosen the piston assembly. (Shown below)



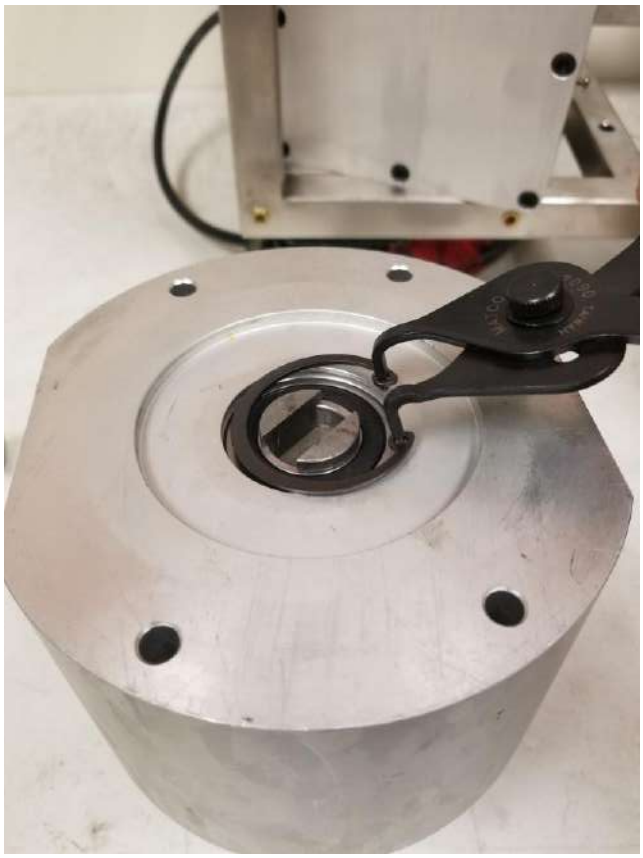
Place compressor blocks, so the shaft can be pushed thru. Use a mallet to assist removal. (Shown above). Remove the bolts from connection arm. This will loosen the connection arm from the bearing. Remove the bolt from the head gasket mount. This will allow gasket to be changed. (See below)



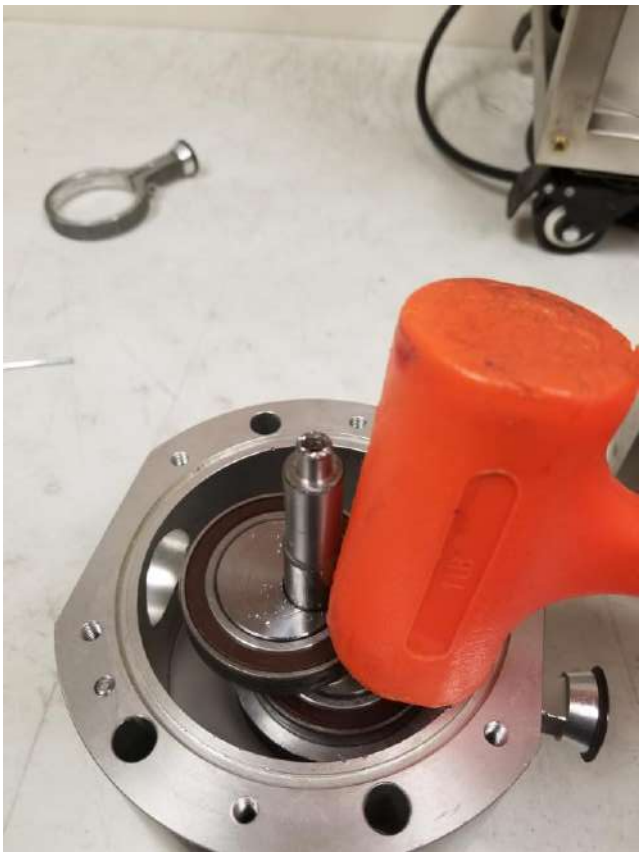


Use a heat gun to assist in removing connection rod from top bearing. Remove rod from bearing using a bearing puller or mallet. Once top rod is removed, remove bearings and connection rod from compressor housing. Remove connection arm from second bearing. Remove both bearings using a bearing puller or a mallet. (Shown Below)

Re-install bearing using mallet. Gently hit bearing edges around a circle to ensure bearing goes on smooth and even. Repeat for other side. Replace head gasket, then re-install head gasket mount. Use thread lock to secure mounting screw. (Shown below)

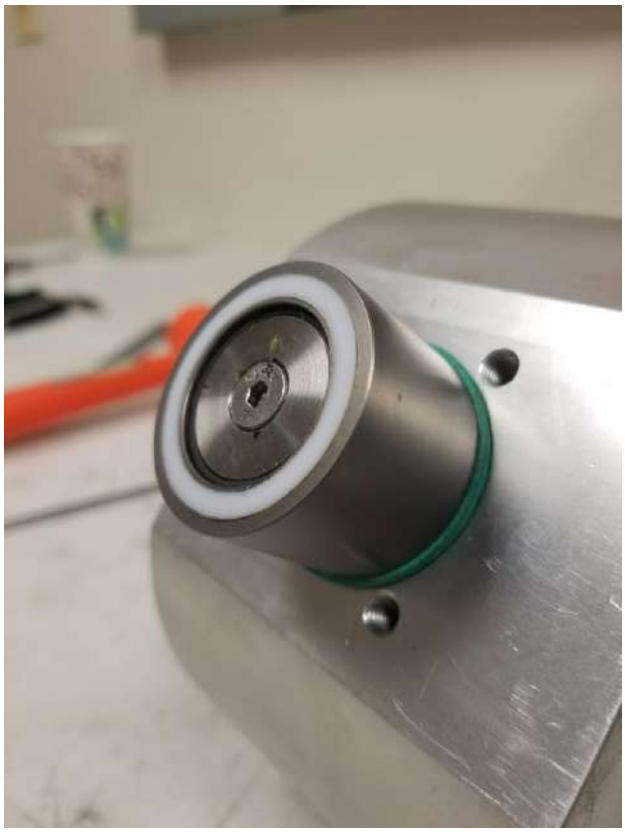


Use mallet to re-install shaft from rear of housing. The use of a food grade grease may be necessary to assist the installation. Re-install snap ring. (Shown above) Place connection rod and bearings onto shaft inside housing. Use mallet to re-install connection arms to bearings. Seal set screw with threadlock. (Shown below)

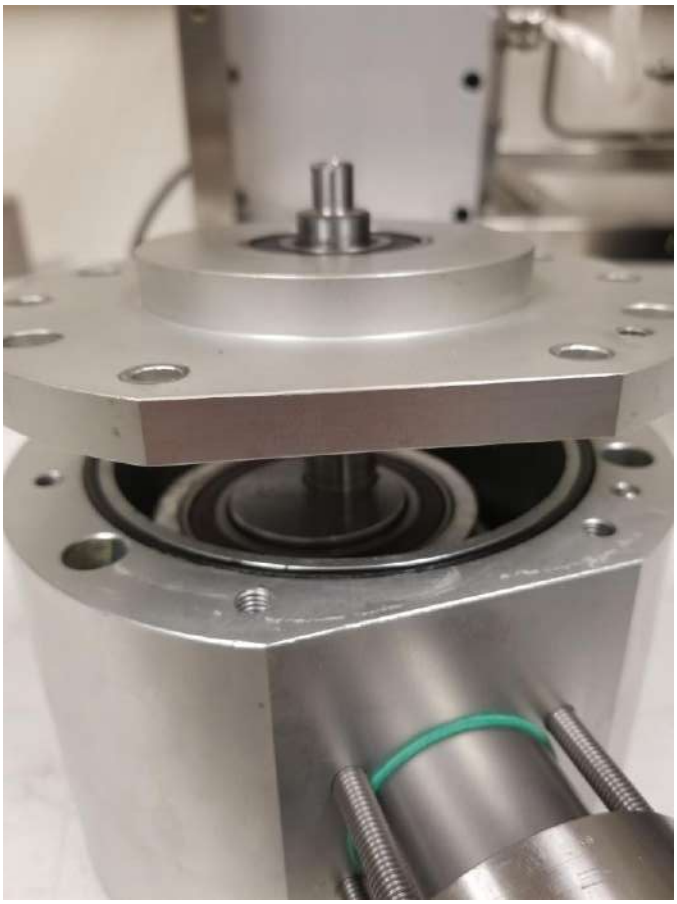


Seal connection rod set screw with thread lock (shown out of housing). Once the connection arod is set, spacing between housing and bottom connection rod should be about 1mm. Shown below is a spacing reference. The photo on the left shows an improper alignment. The piston sits too far to the left. It is important to have the connection rod centered, shown in the right photo. If not centered, loosen set screw on shaft and adjust placement.

Replace gaskets for piston cylinder. Use cylinder to form head gasket upwards against piston. It is important that the gasket be snug against the piston. Replace cylinders. Piston should sit ~ 1/2mm lower than flush. (Shown below) The rebuild kit comes with various thickness gaskets. Multiple gaskets are used to achieve this spacing. Once gaskets are replaced and spacing is correct, replace heads on compressor.



Use a wrench to spin the shaft. Ensure smooth rotation is achieved. If any sticking or knocks occur, remove heads and adjust cylinder spacing. Once rotation is smooth, replace compressor to motor and fasten with mounting bolts. Be sure to check left/right heads for proper orientation. Reattach compressor cap and fan, then re-install motor to framing. Re-attach hardlining and replace cover. The job is now complete.



+