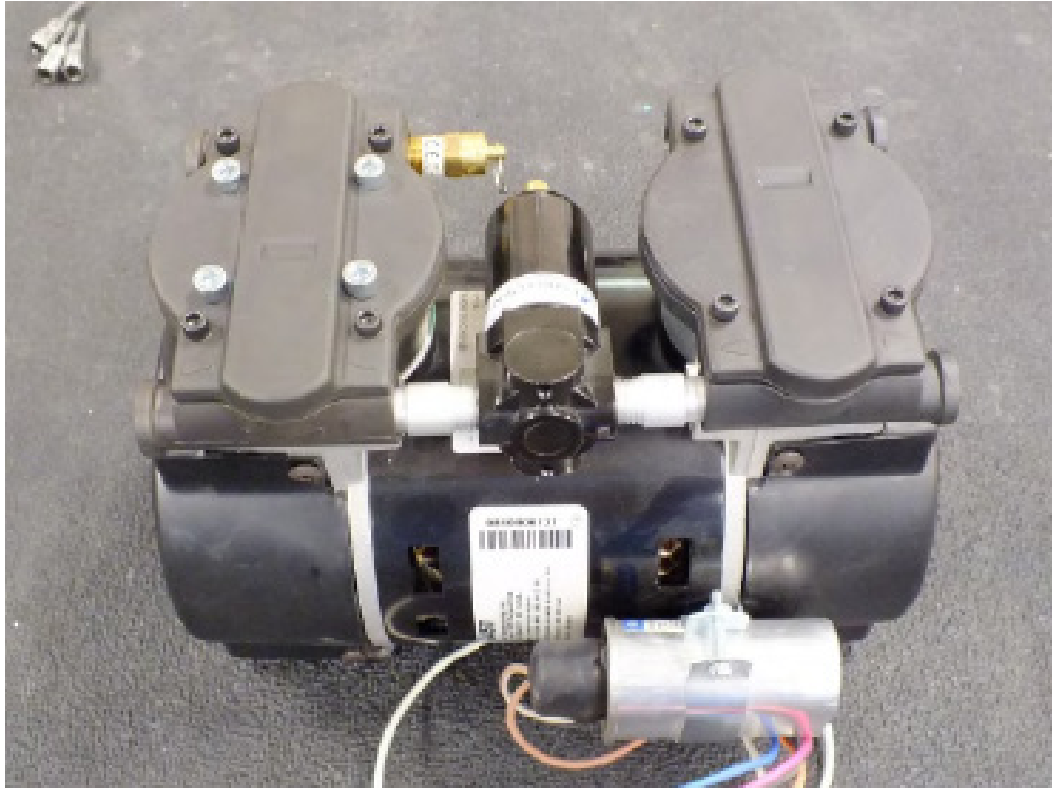


Humidity Generation and Calibration Equipment

THUNDER SCIENTIFIC®
CORPORATION THE HUMIDITY SOURCE

Model ACS2520

DACS2022 Gast Compressor Rebuild Procedure



Tech Support Document TSD-0289
Revision Date: July 16, 2018

623 WYOMING BLVD. SE



ALBUQUERQUE, NM 87123-3198
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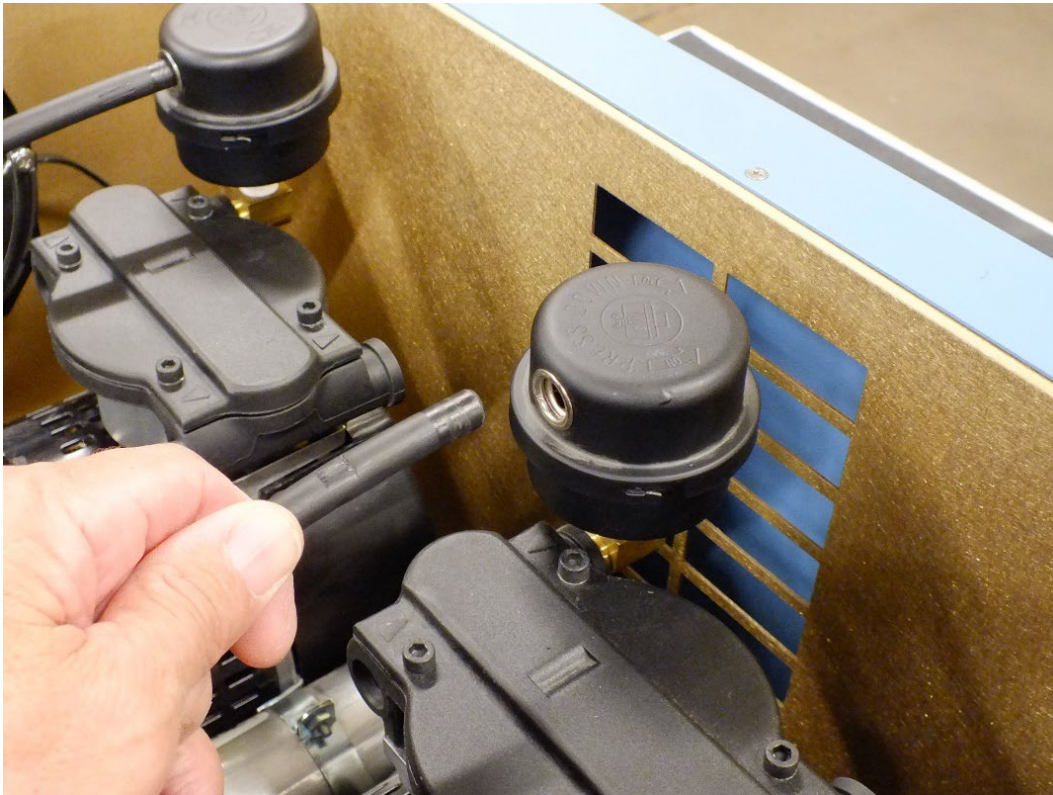
Tools Required:

- a) Bench Vise with Aluminum jaw covers
- b) ¼" torque wrench
- c) ¼" ratchet
- d) ¼" socket extension
- e) 1/8", 5/32", 3/16" hex driver sockets
- f) T20 Torx head socket
- g) #2 Philips head socket
- h) 5/16", 7/16", 9/16", AND 5/8" combination wrenches
- i) Flat head screwdriver
- j) Threadlocking compound (Loctite 242 recommended)

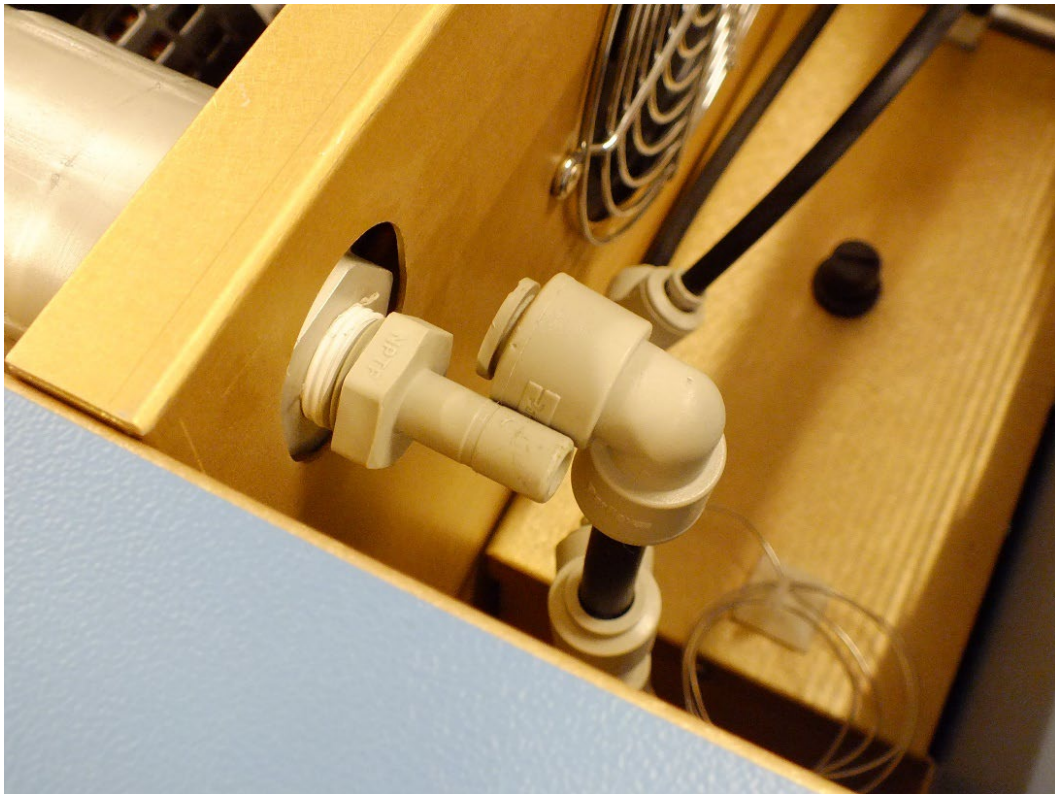
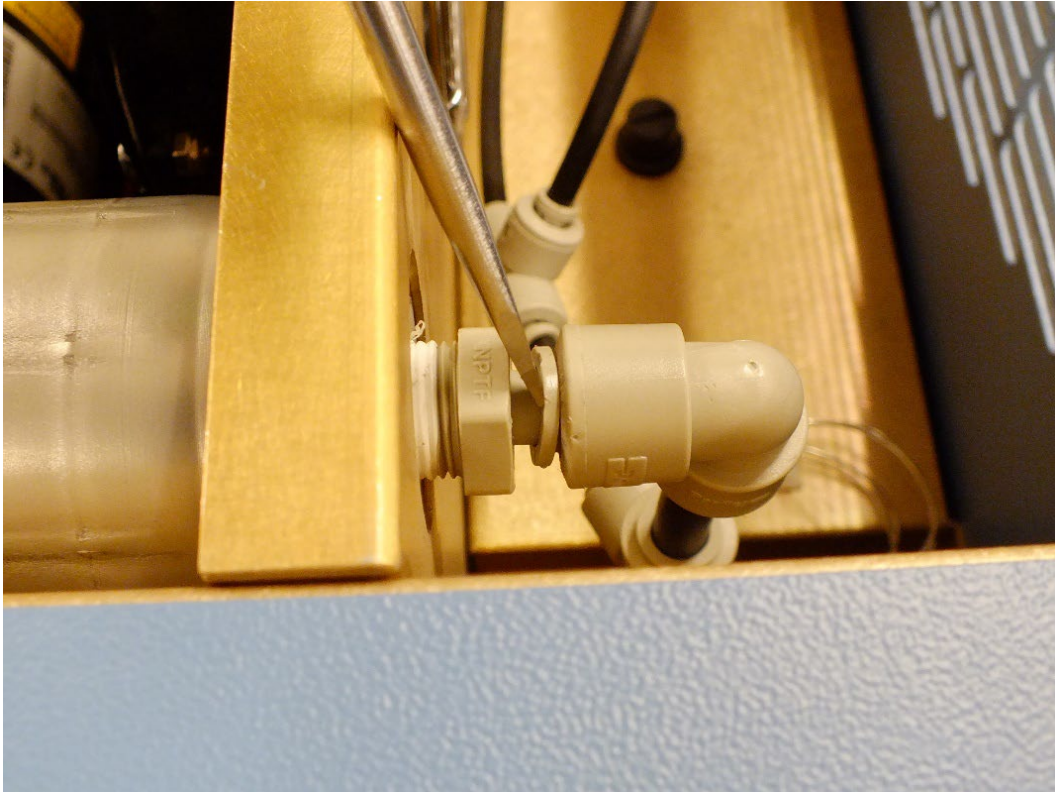
1. Disengage latches and remove top cover.



2. Using 5/8" wrench, remove intake filter from compressor.



3. Disconnect swivel elbow from air dryer outlet by compressing lock ring and simultaneously pulling elbow.



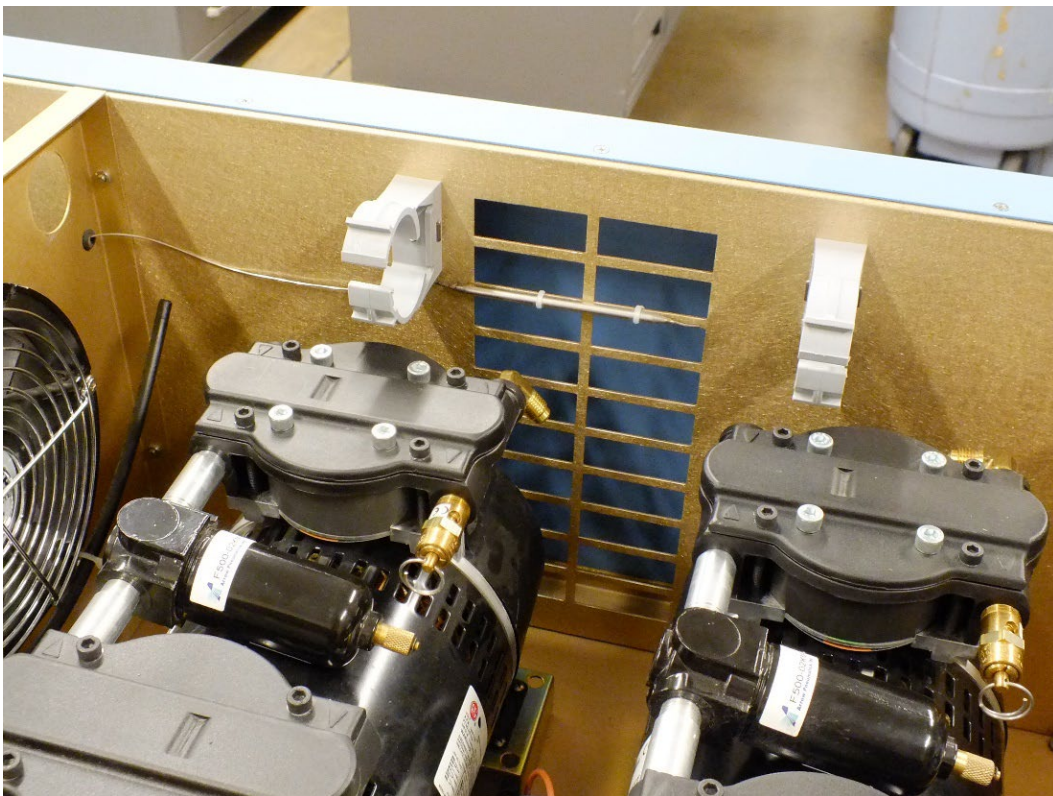
4. Disconnect purge line from air dryer.



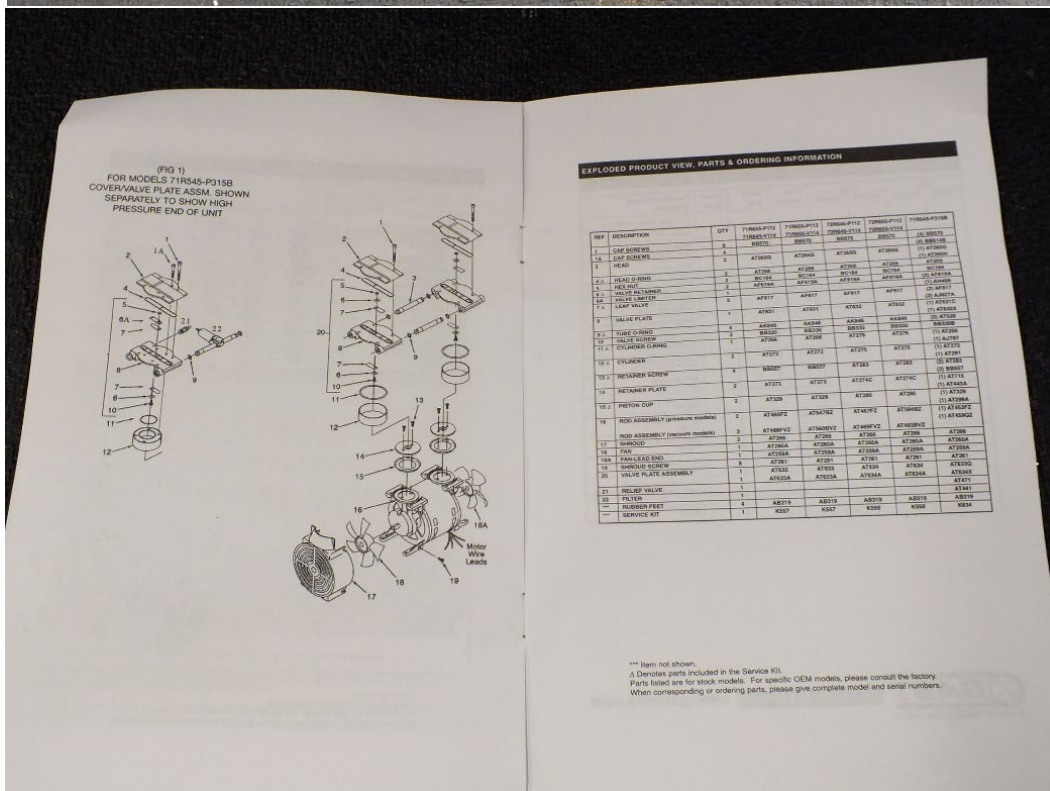
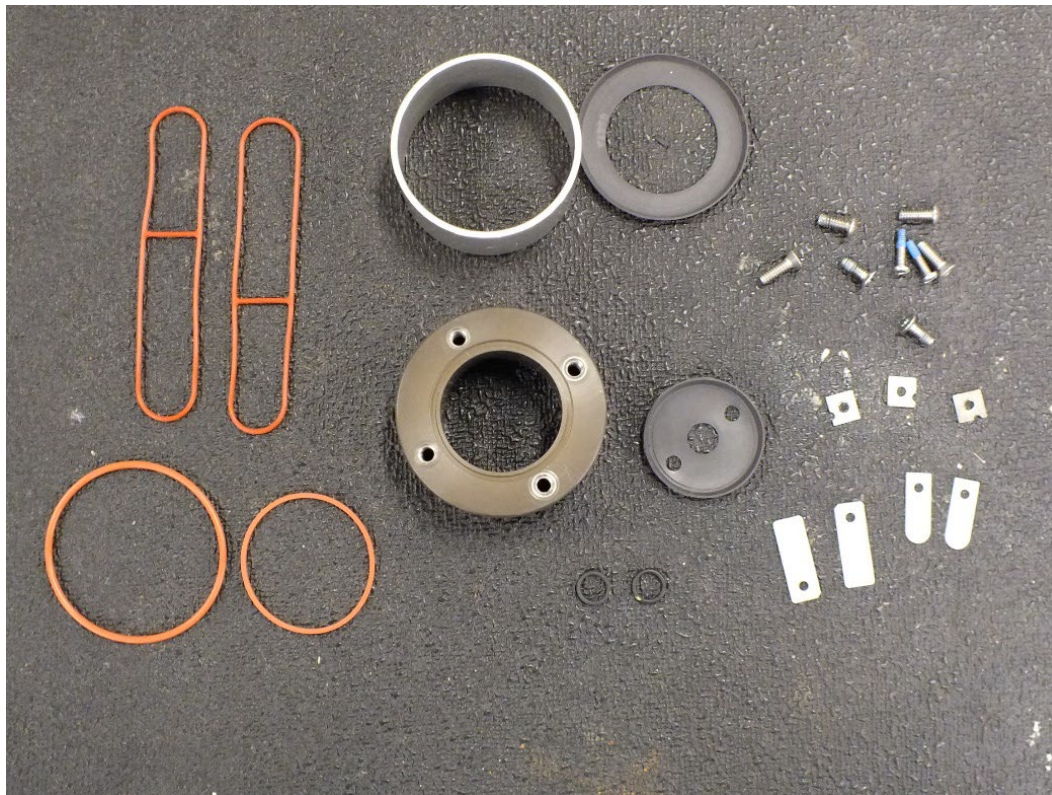
5. Unclip air dryer assembly and move out of the way.



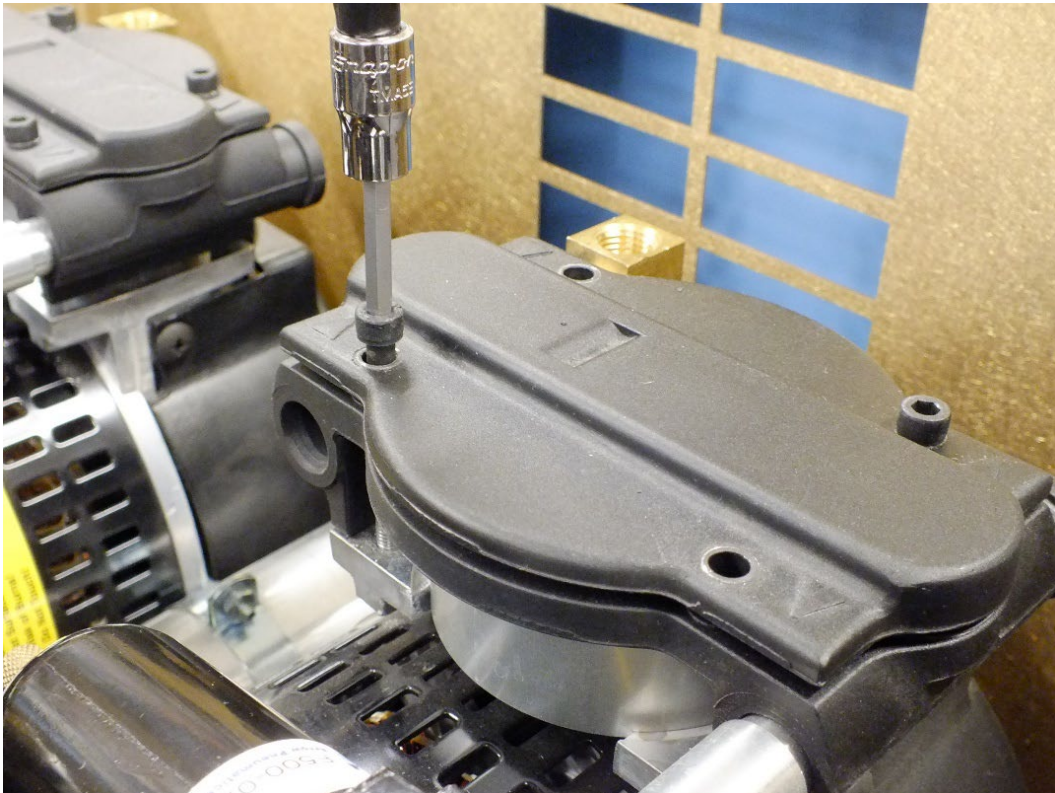
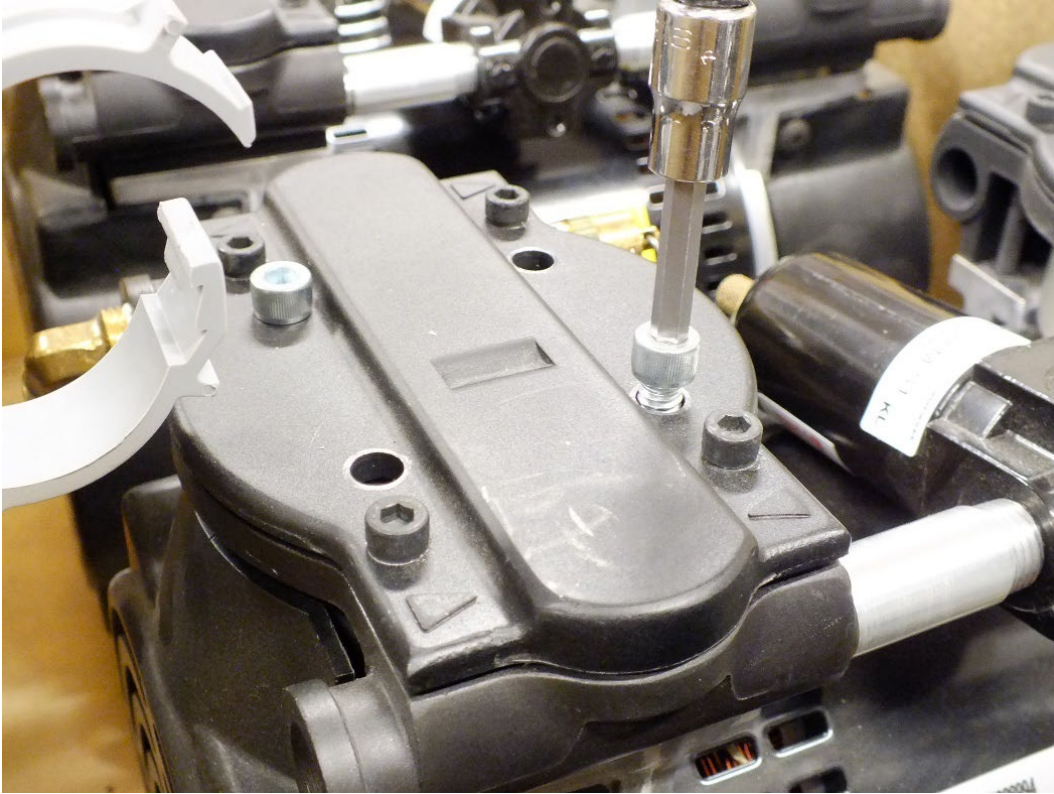
6. Using a 9/16" wrench, disconnect hoses and remove air dryer.



- Unpack rebuild kit and examine contents. A manual is included in the kit which contains an exploded view of the compressor with parts identification. Note that the exploded view shows the high-pressure option on the far left which is relevant to this compressor model.



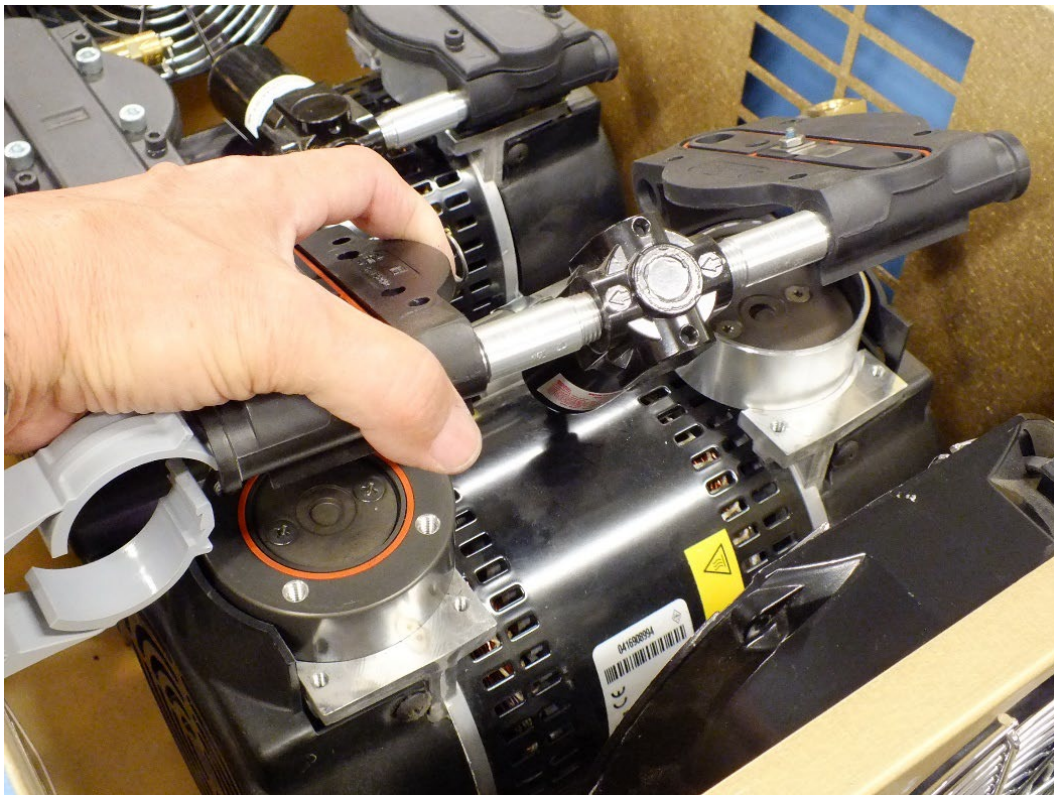
8. Remove head bolts from both heads using 3/16" and 5/32" hex driver sockets.

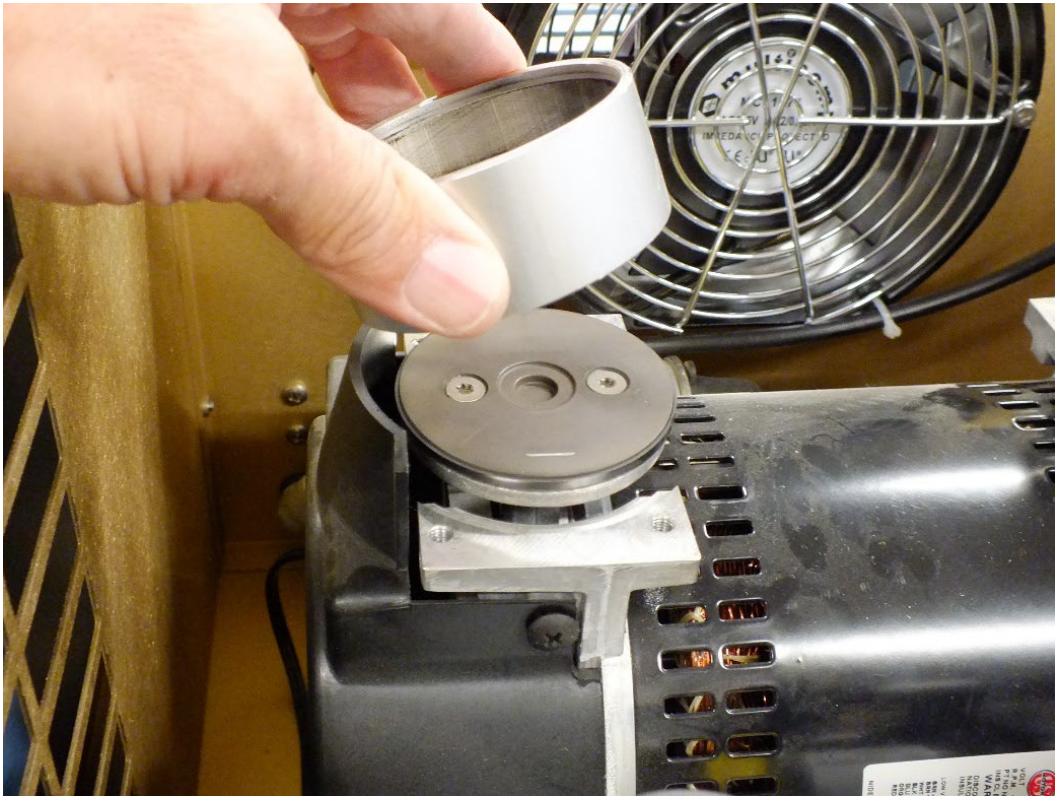


9. Remove both head covers.

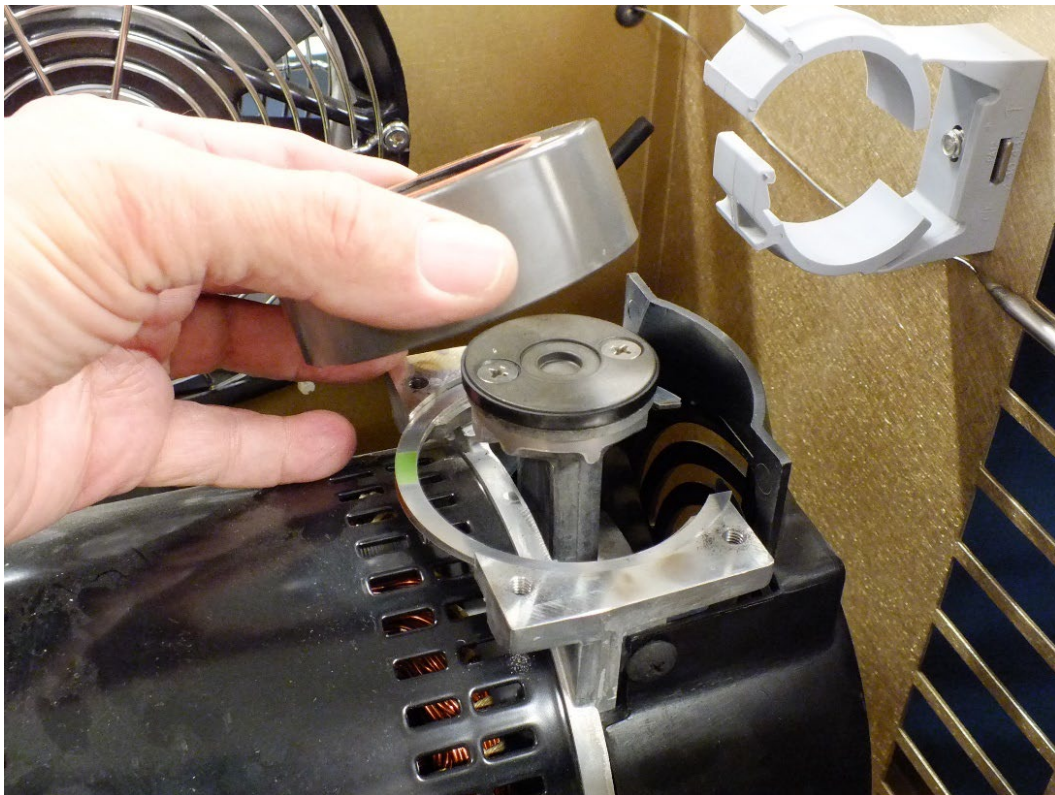


10. Remove the valve plates and filter assembly.

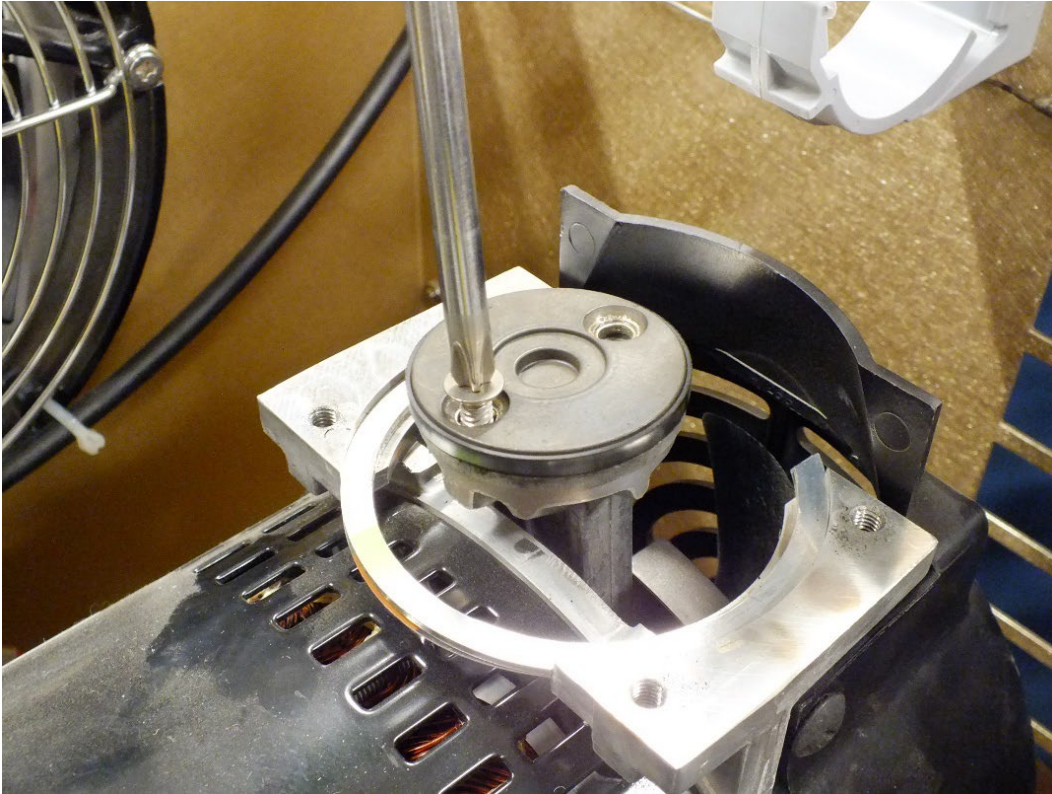




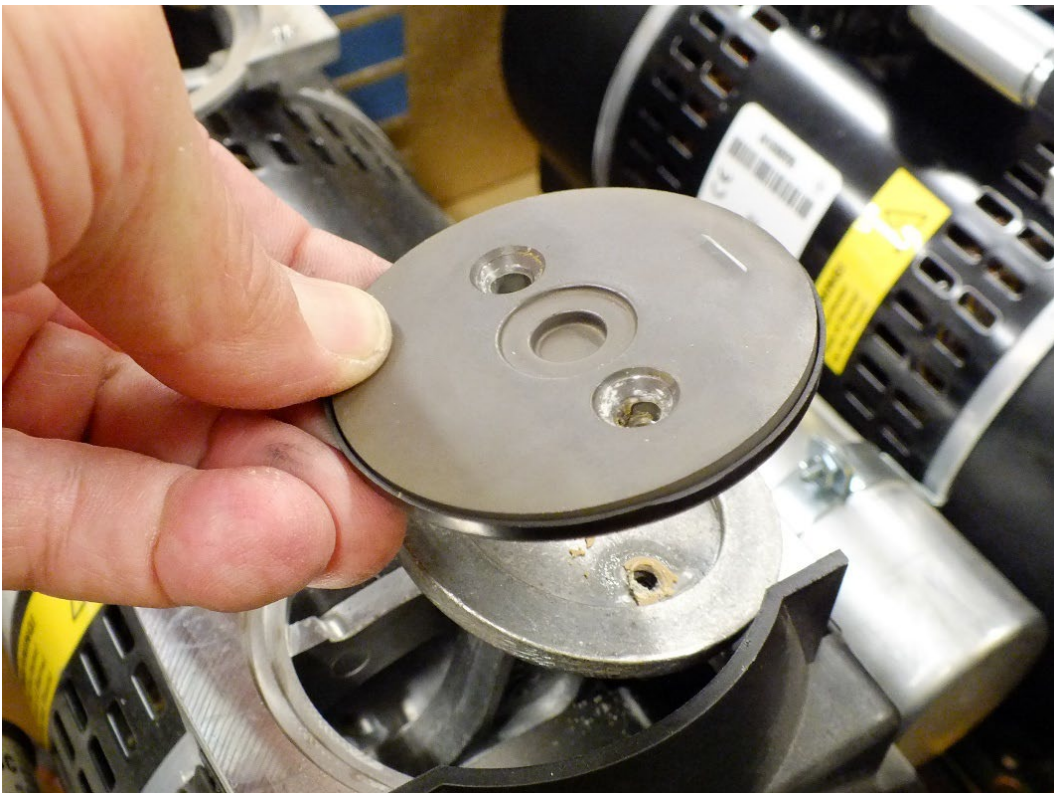
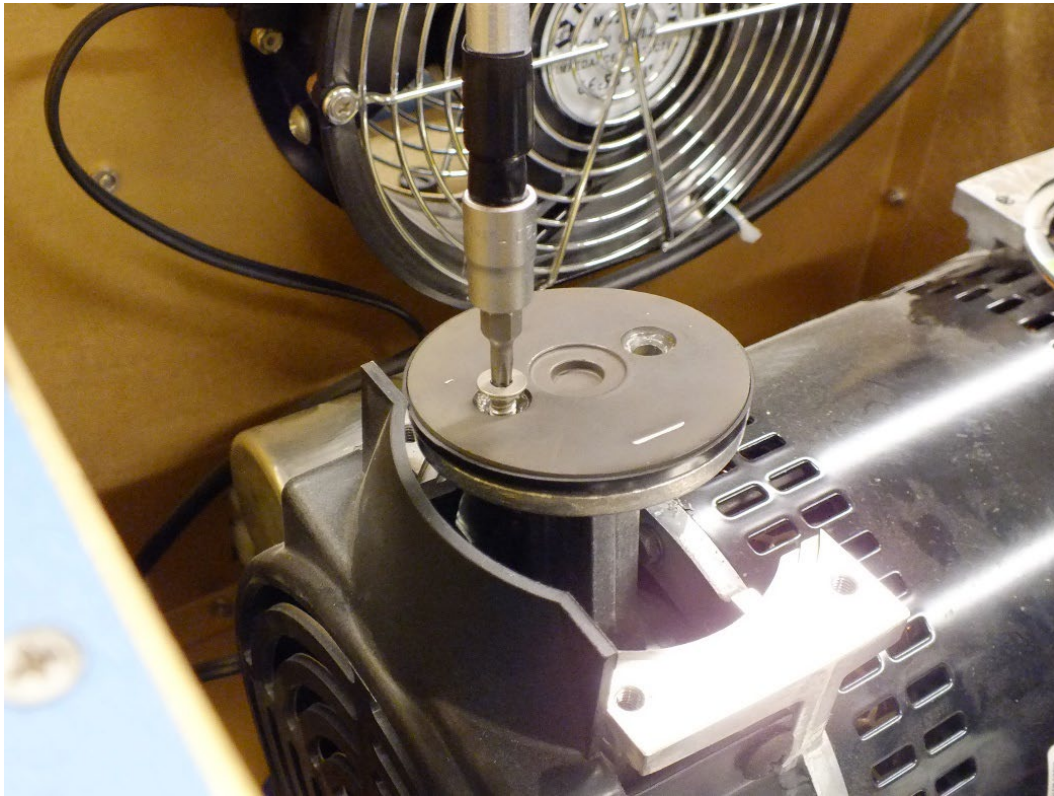
11. Remove both cylinders.



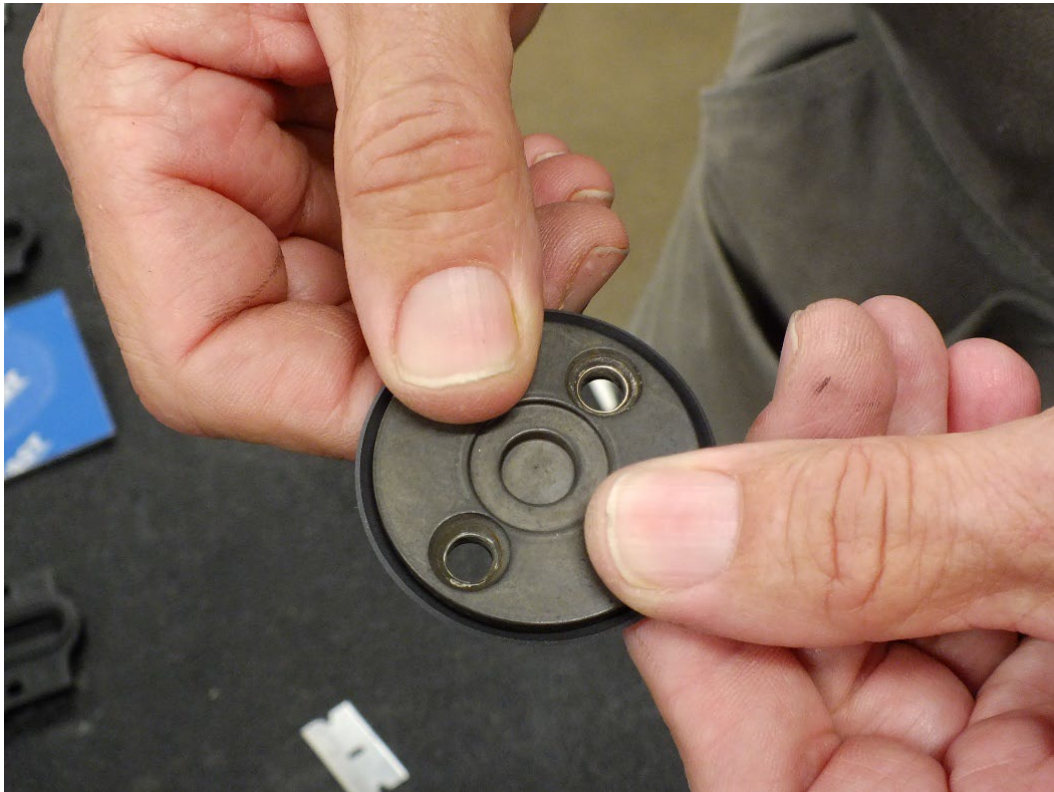
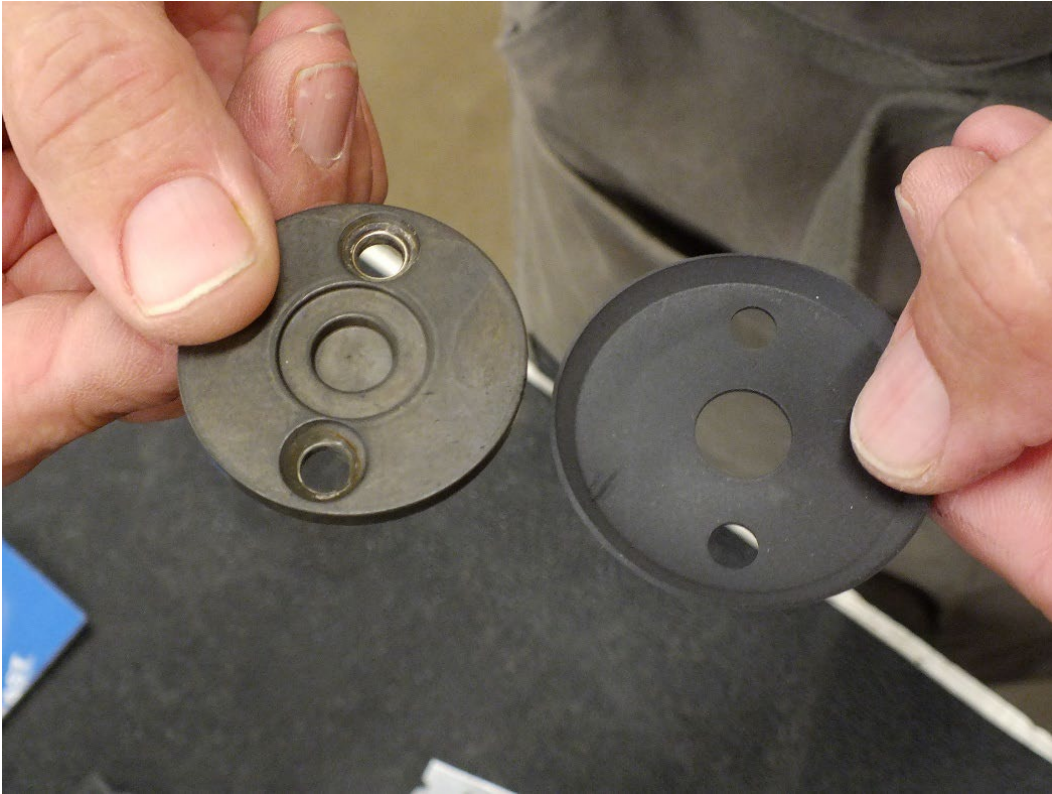
12. Using a #2 Phillips screwdriver, remove the screws from the high-pressure retainer plate and remove the retainer plates and piston cup.



13. Note the orientation of the mark on the low-pressure retainer plate. Depending on the year model of the compressor, use either a T20 torx driver or 1/8" hex driver socket to remove the screws from the low-pressure retainer plate. Remove the retainer plate and piston cup.

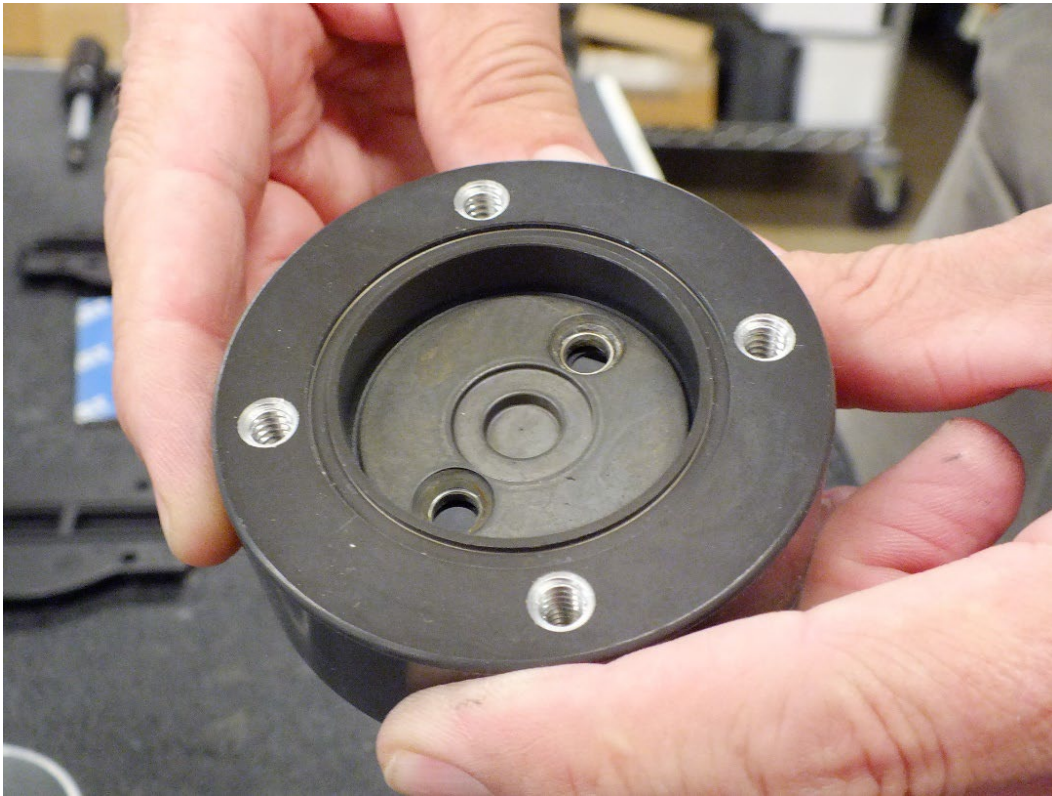


14. Place the high-pressure retainer plate over the replacement piston cup and align the holes.



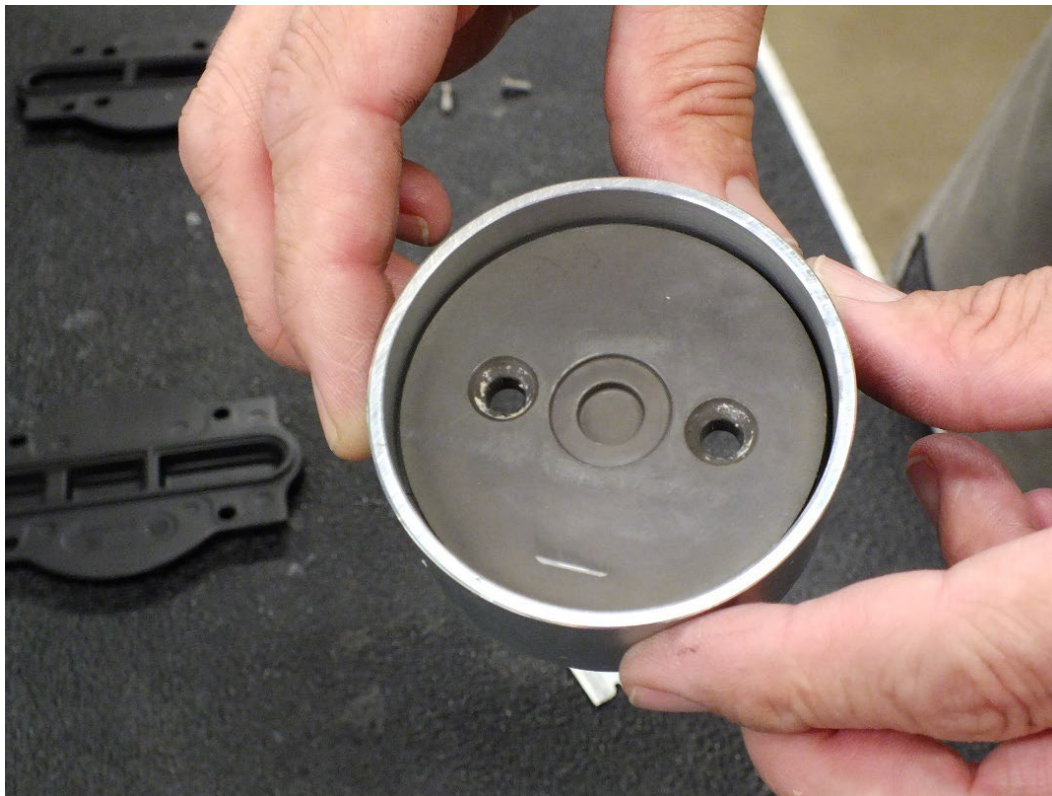
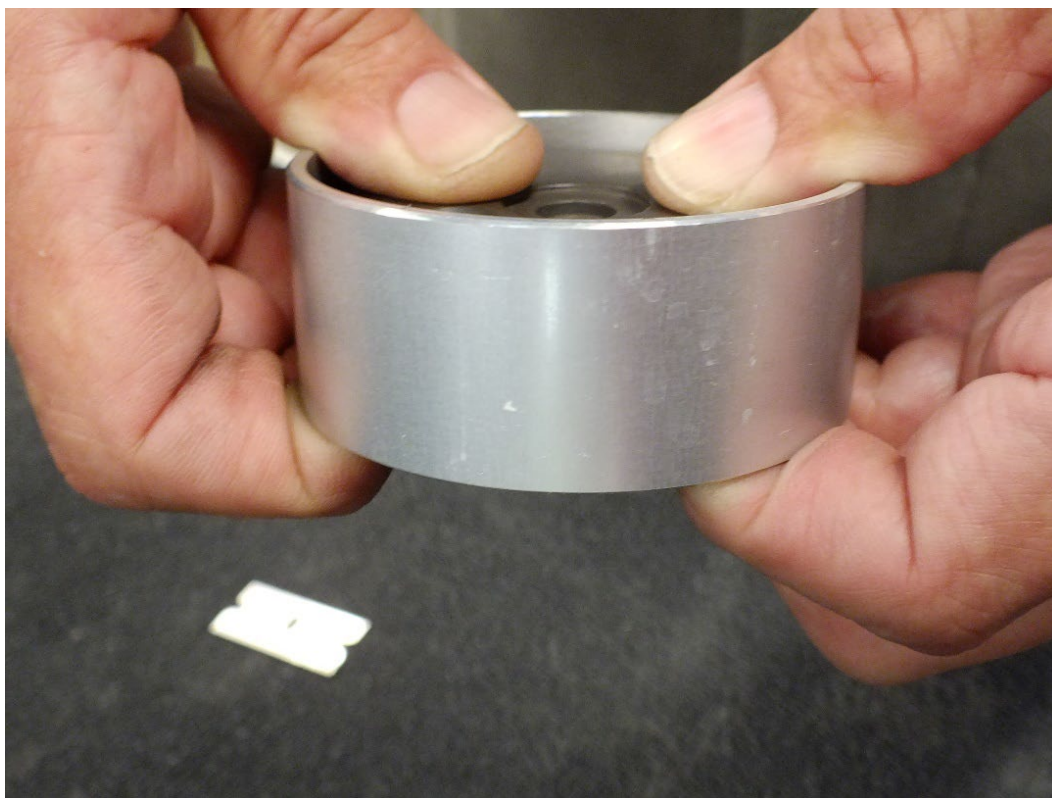
15. Place the piston cup and retainer plate over the top of the replacement cylinder and carefully press into the cylinder evenly as shown.



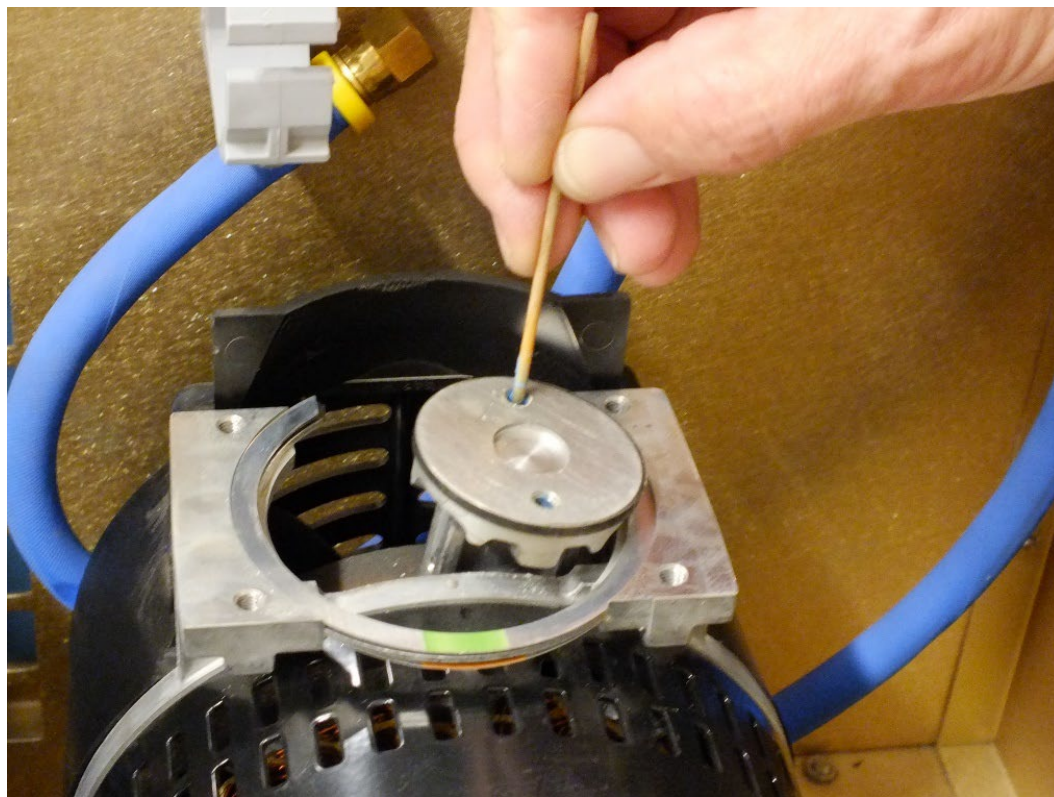
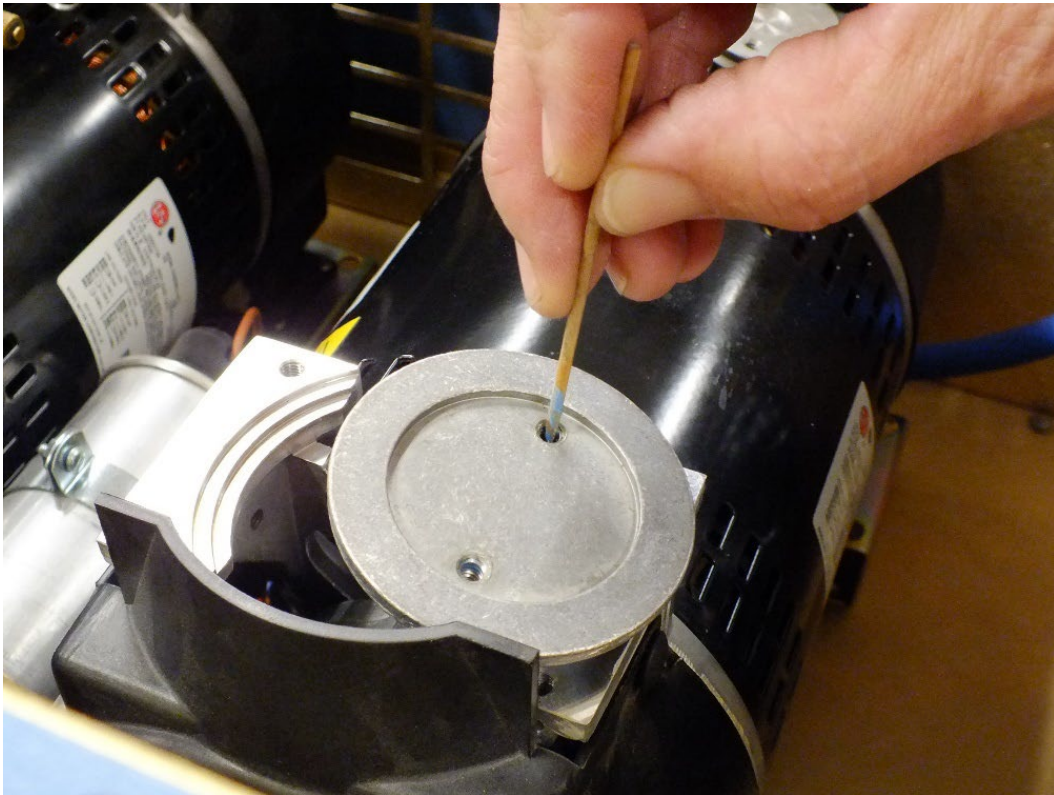


16. Repeat the previous step with the low-pressure cylinder.

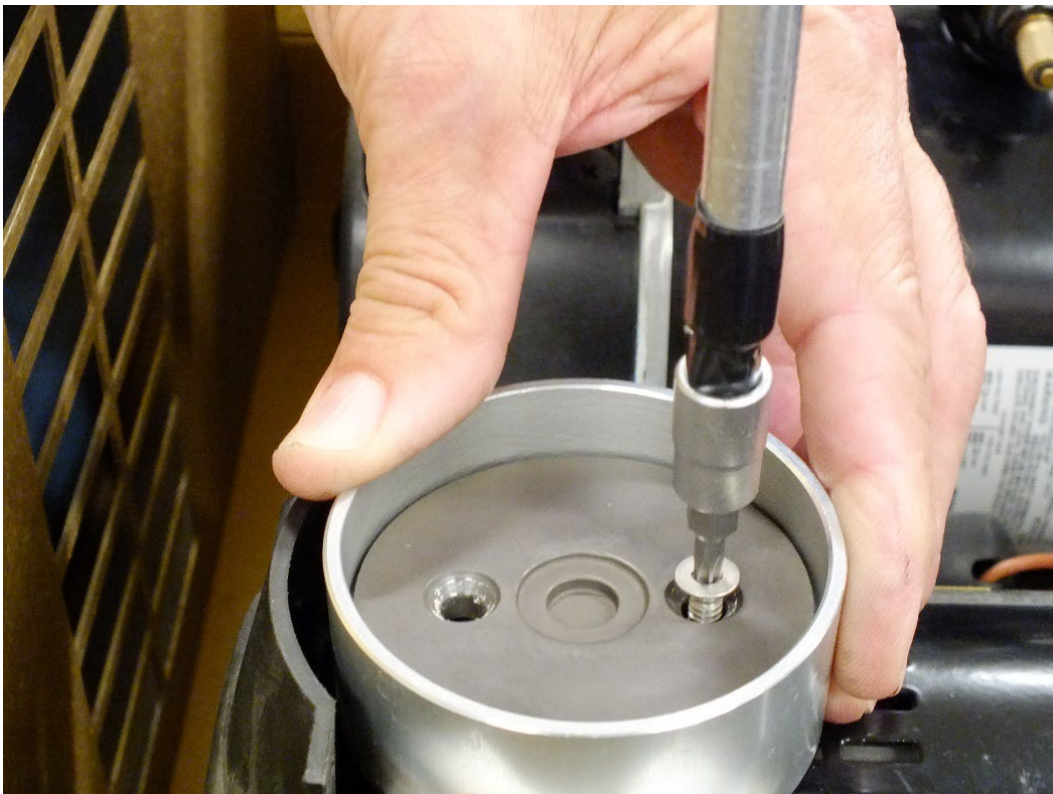
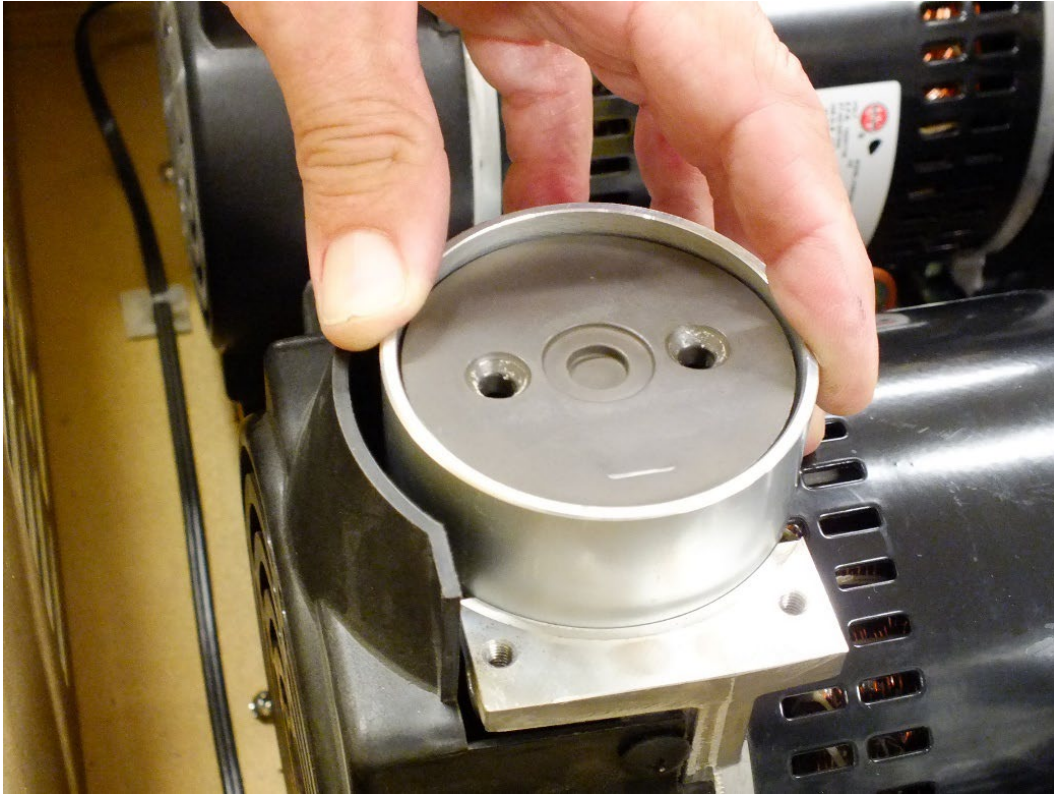




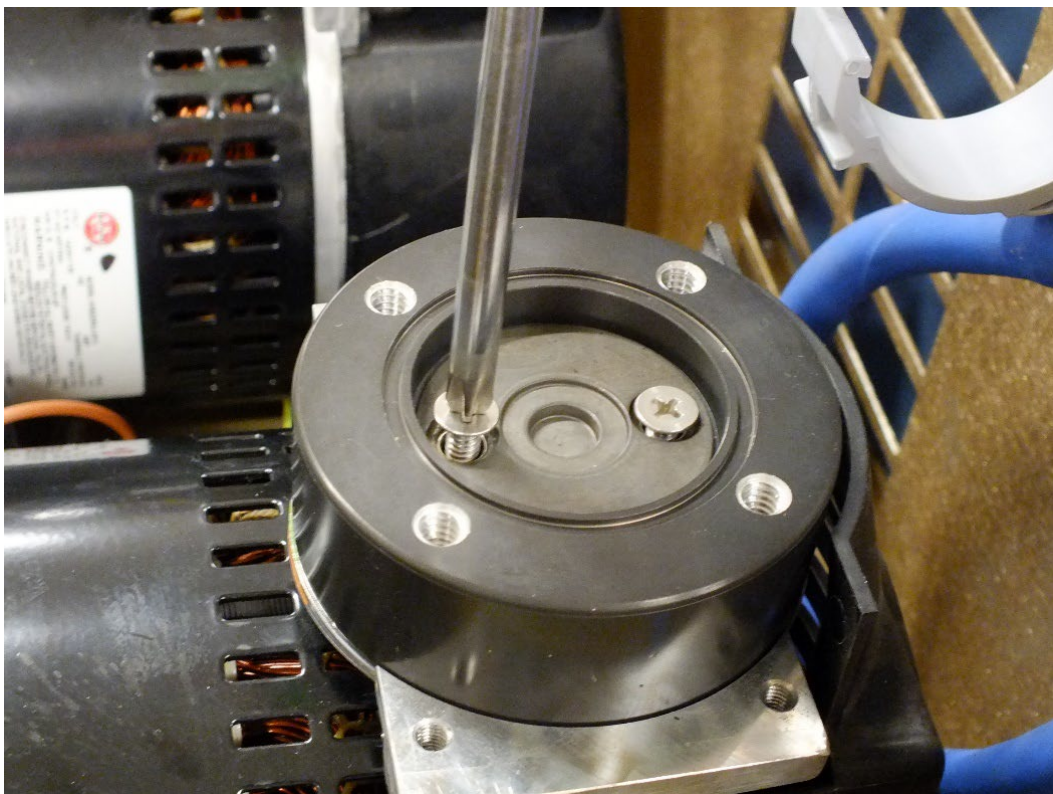
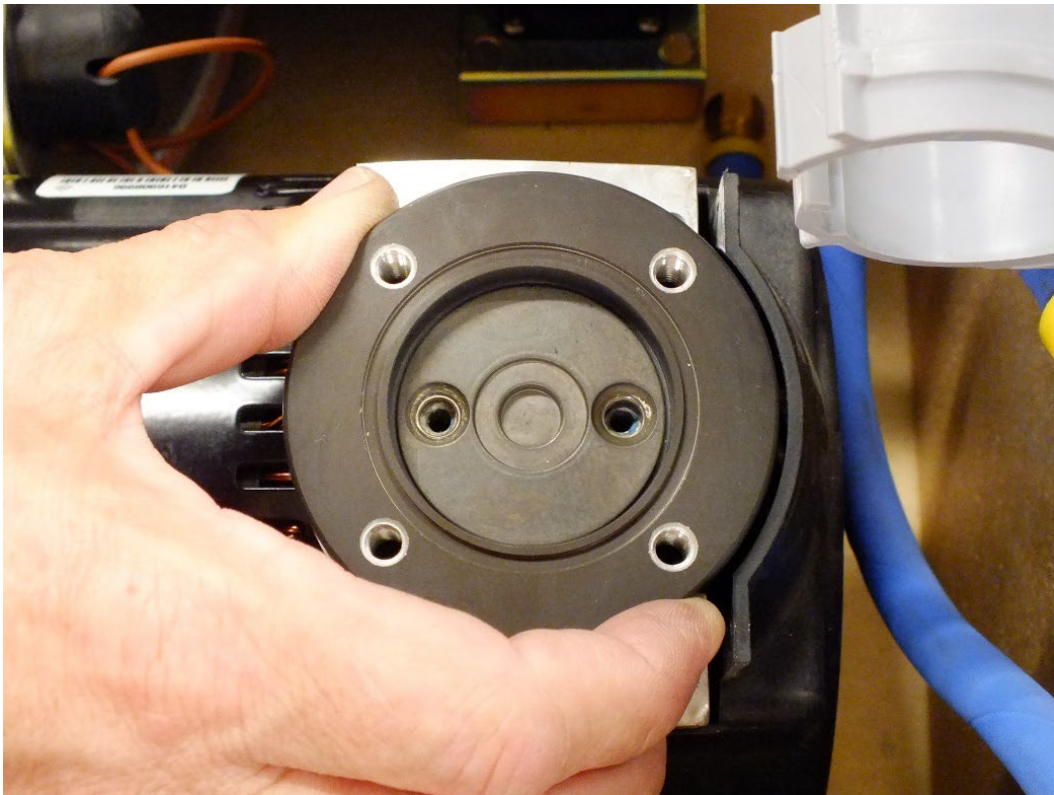
17. Apply thread lock compound to the threads in both rod assemblies.



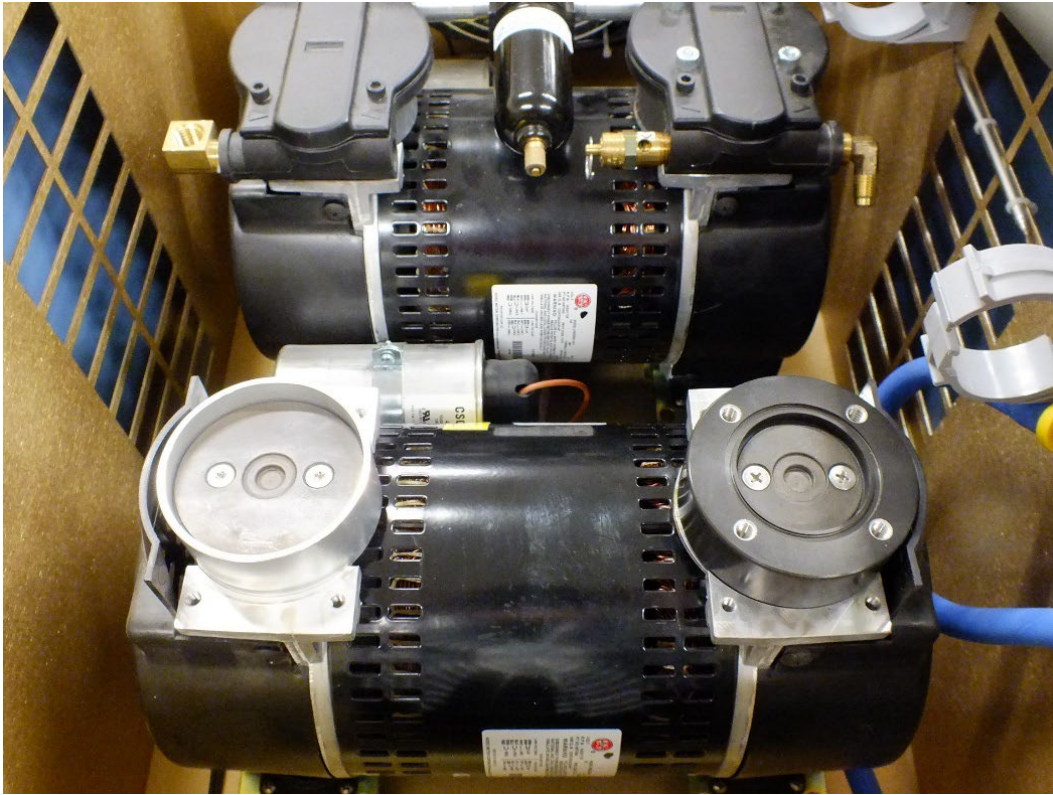
18. Ensuring that the mark atop the retainer plate is oriented correctly, carefully place the low-pressure cylinder/piston cup/retainer plate assembly evenly into the recess and secure with the matching replacement hardware that is provided in the rebuild kit.



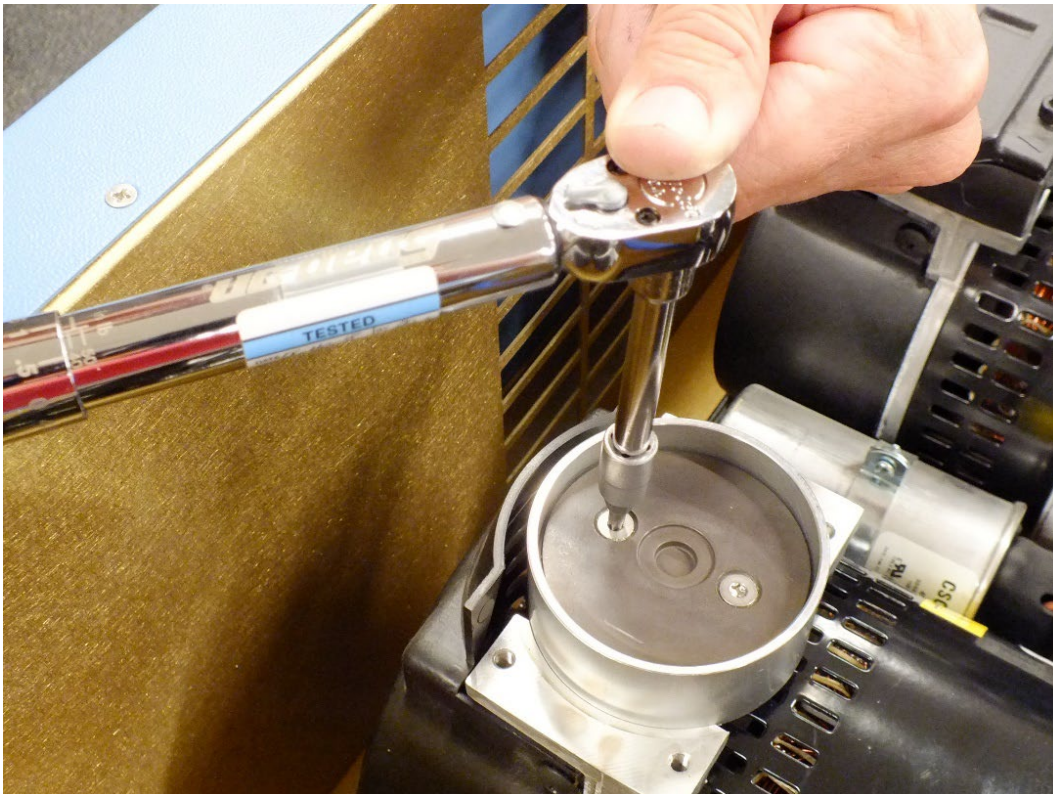
19. Repeat the previous step with the high-pressure cylinder.

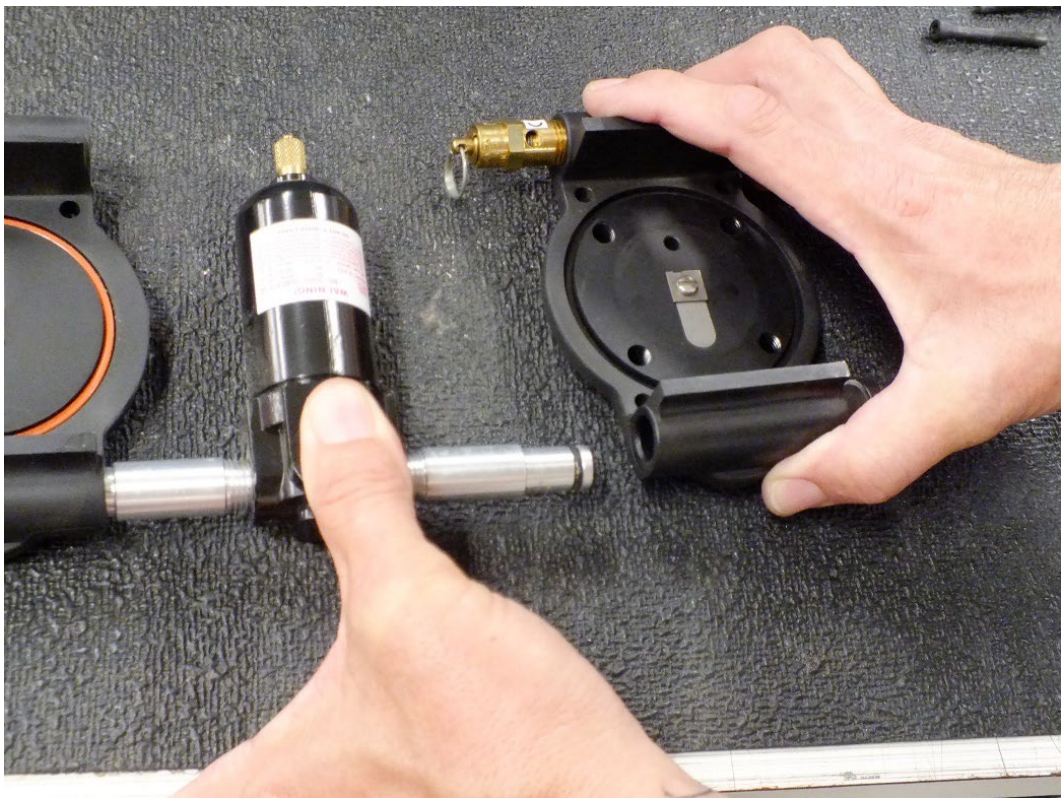
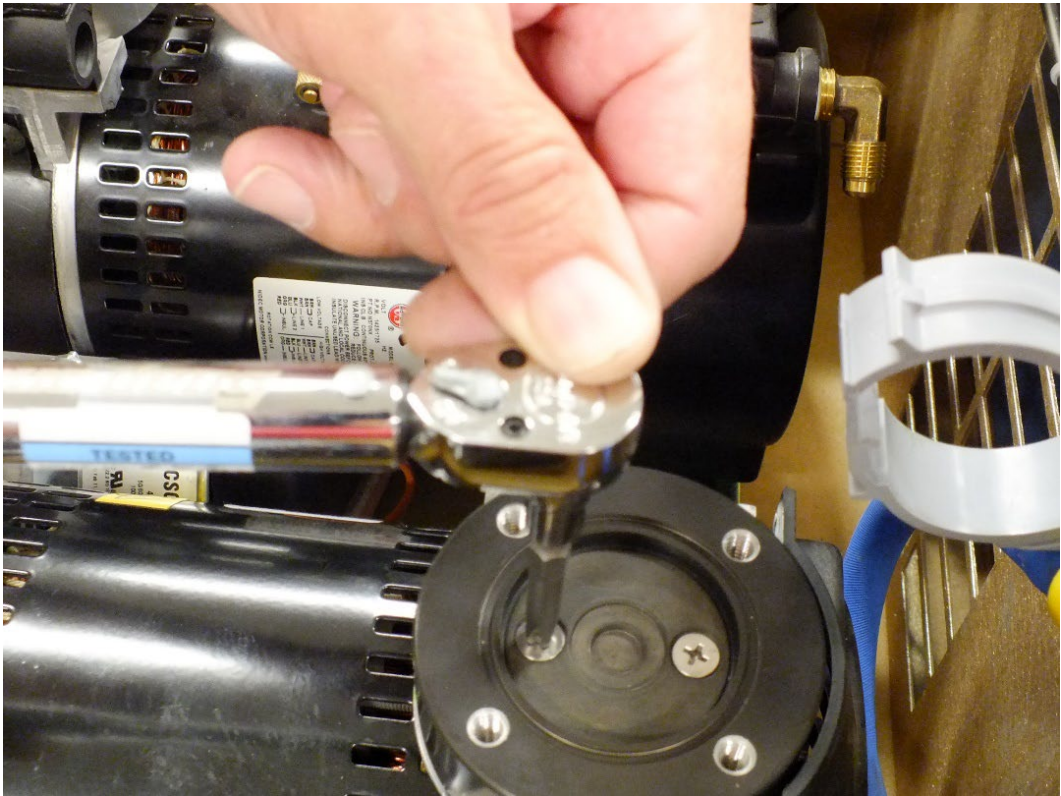


20. Check that both cylinders are still fully seated.

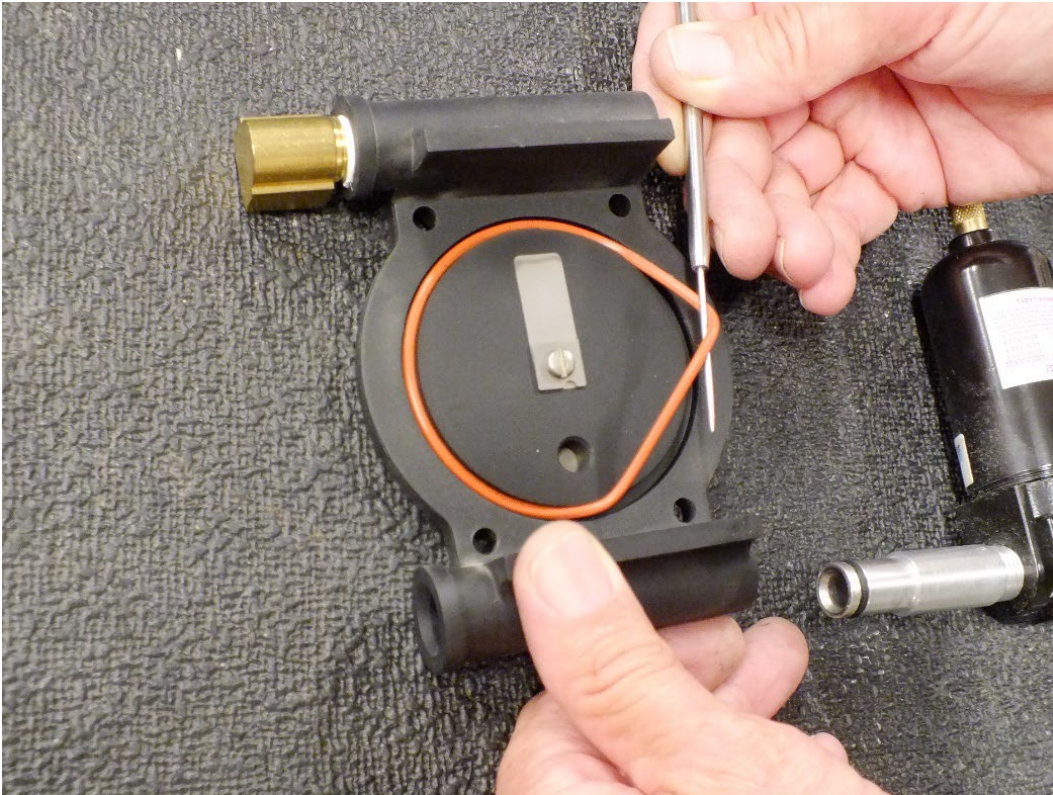


21. Torque retaining screws to 34-38 in.-lbs.

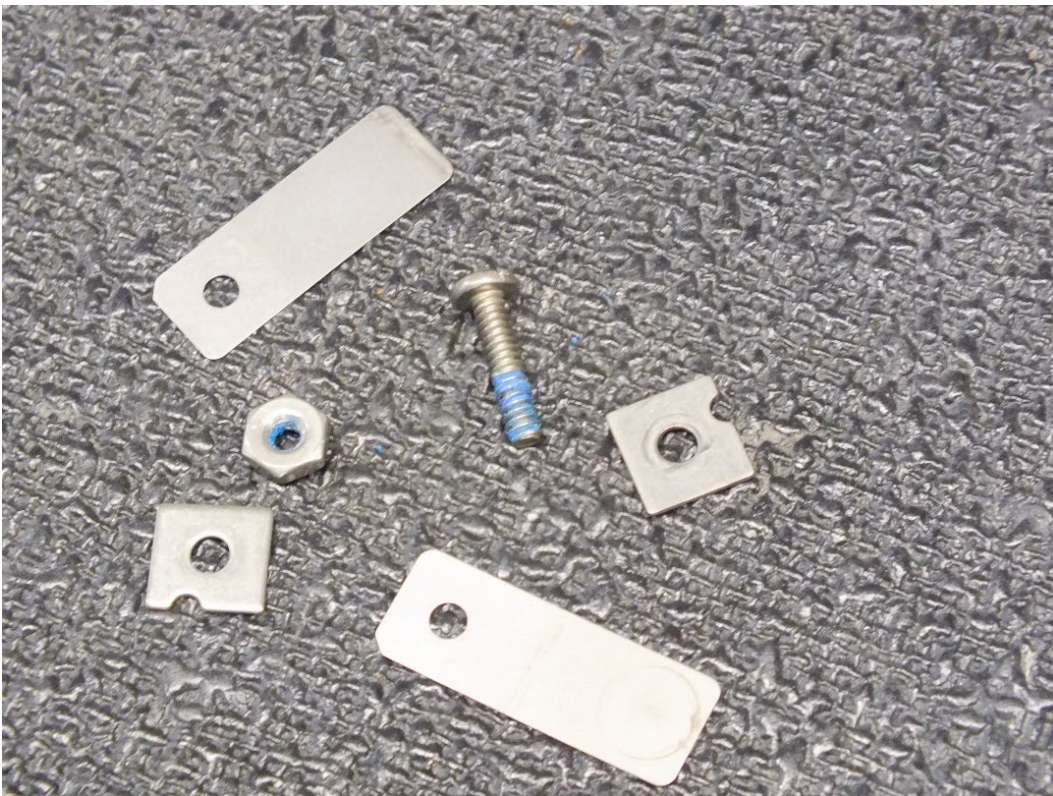
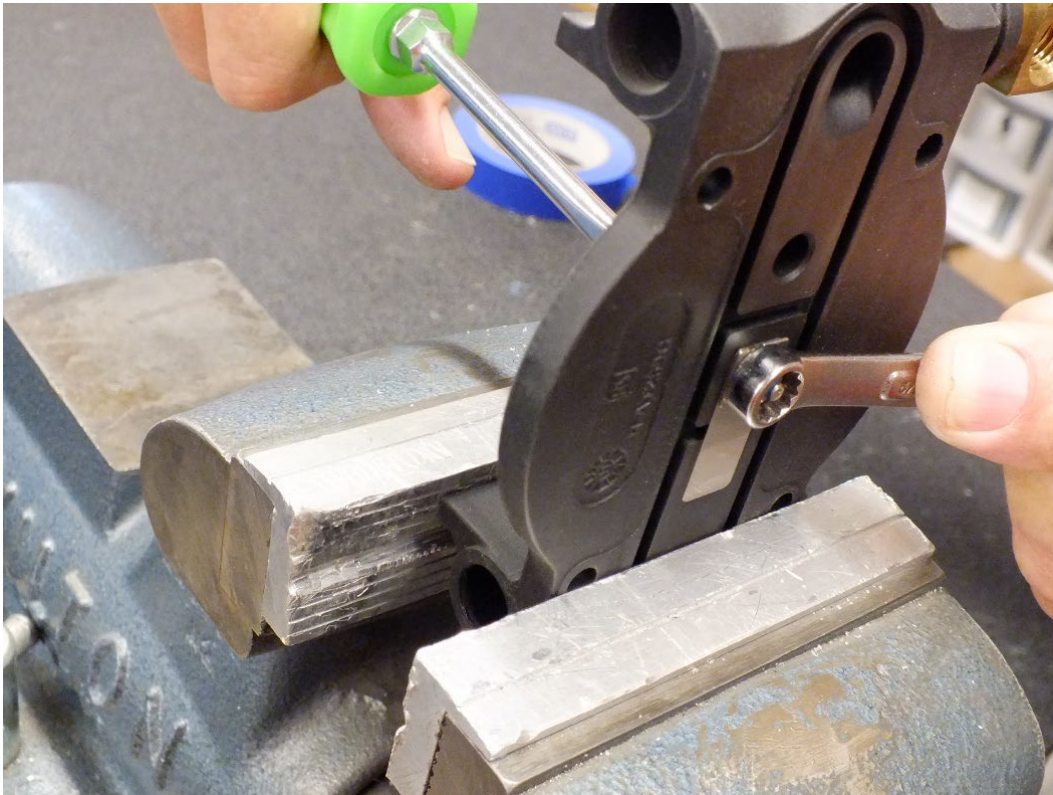




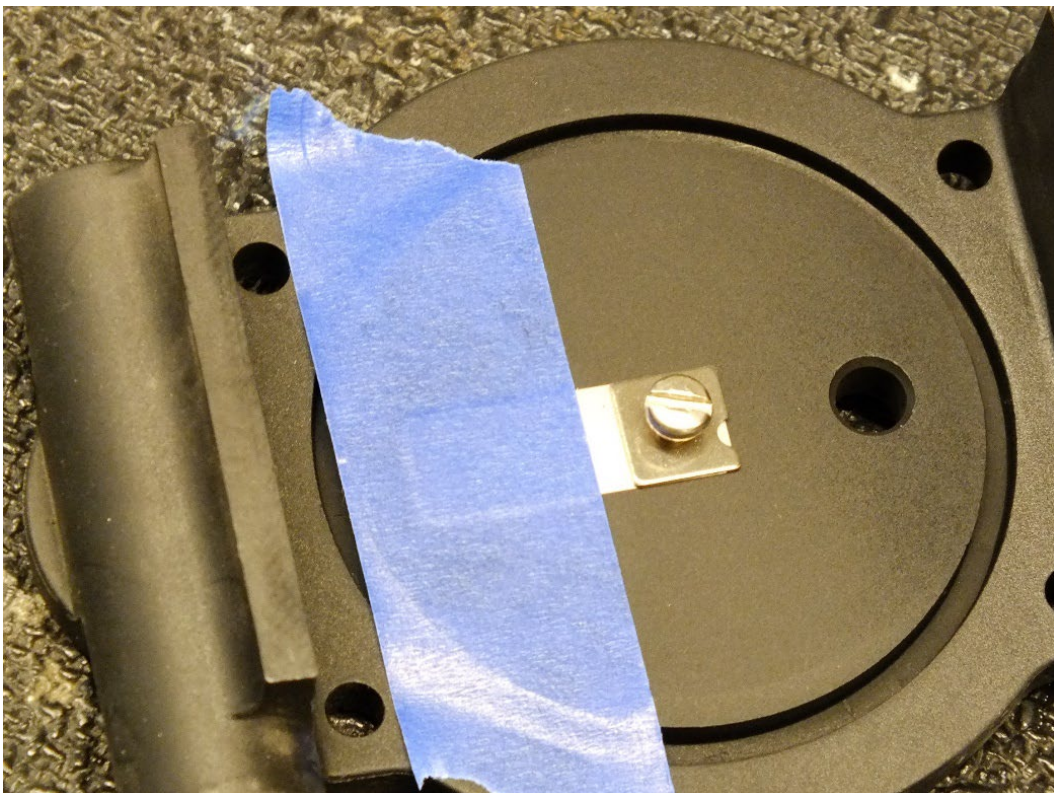
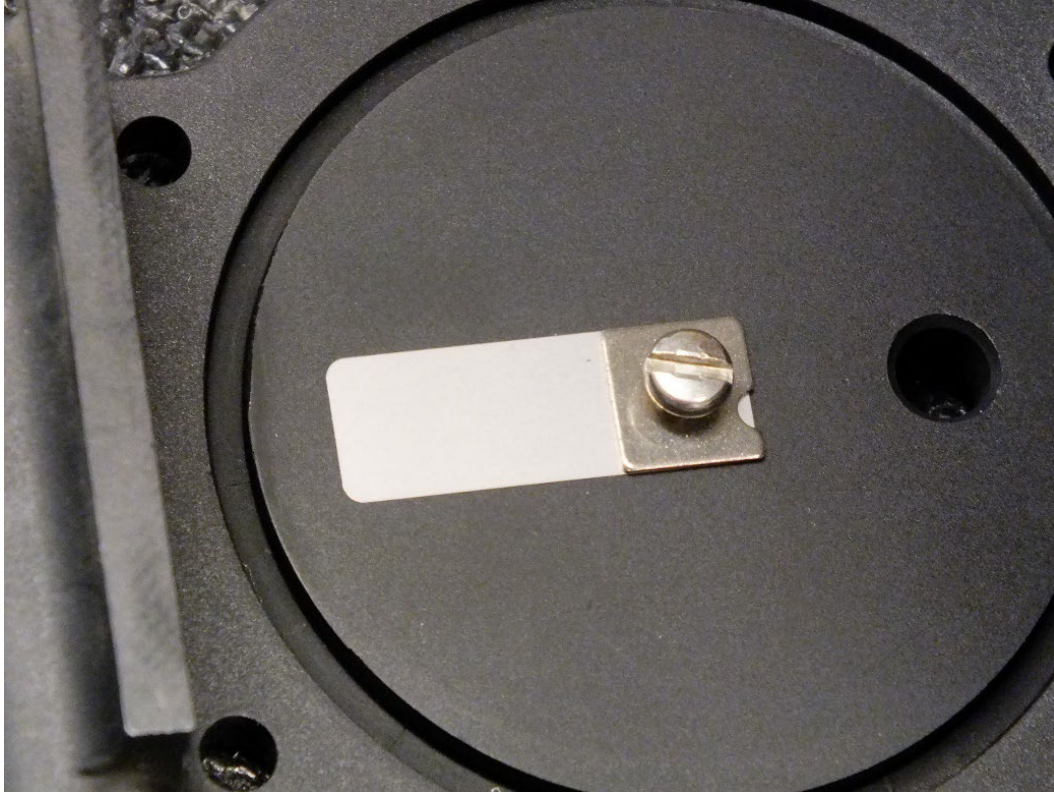
22. Remove valve plates from filter assembly and remove o-ring seals.

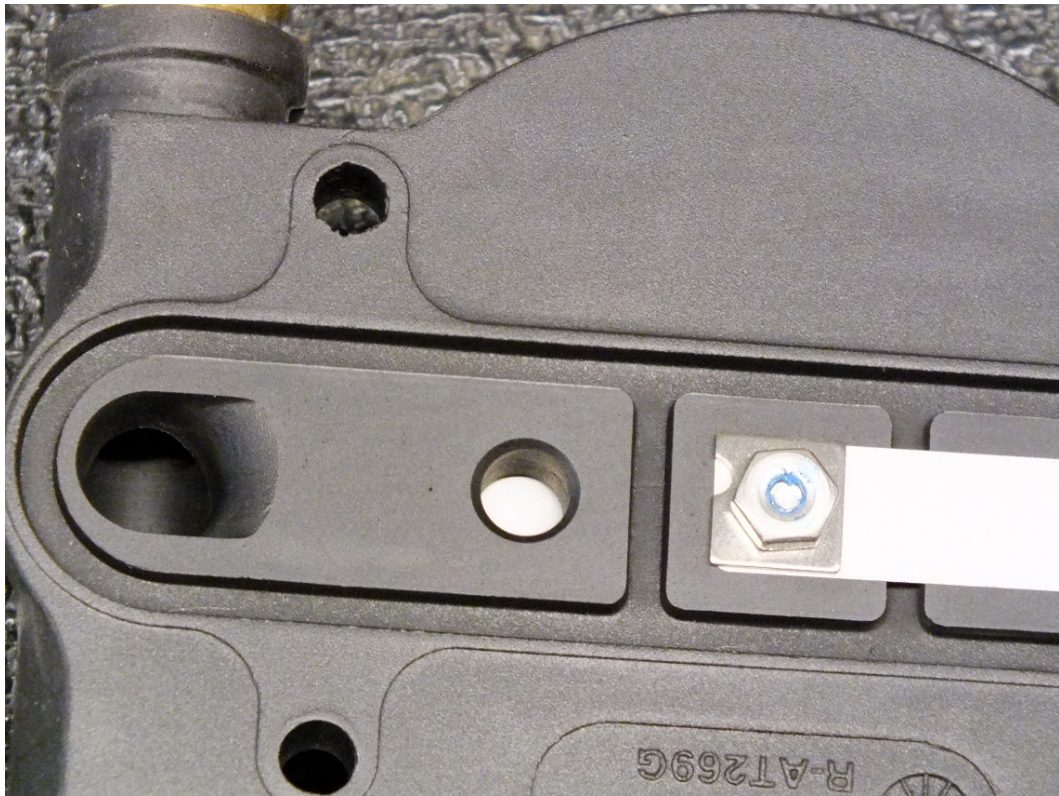


23. Clamp the low-pressure valve plate in a bench vise with soft jaw covers. Note the orientation of the valves. It may be helpful to place a pencil mark on the valve plate for proper reassembly. Remove the valves using a 5/16" wrench and flat-head screwdriver. Clean the valve plates with alcohol.

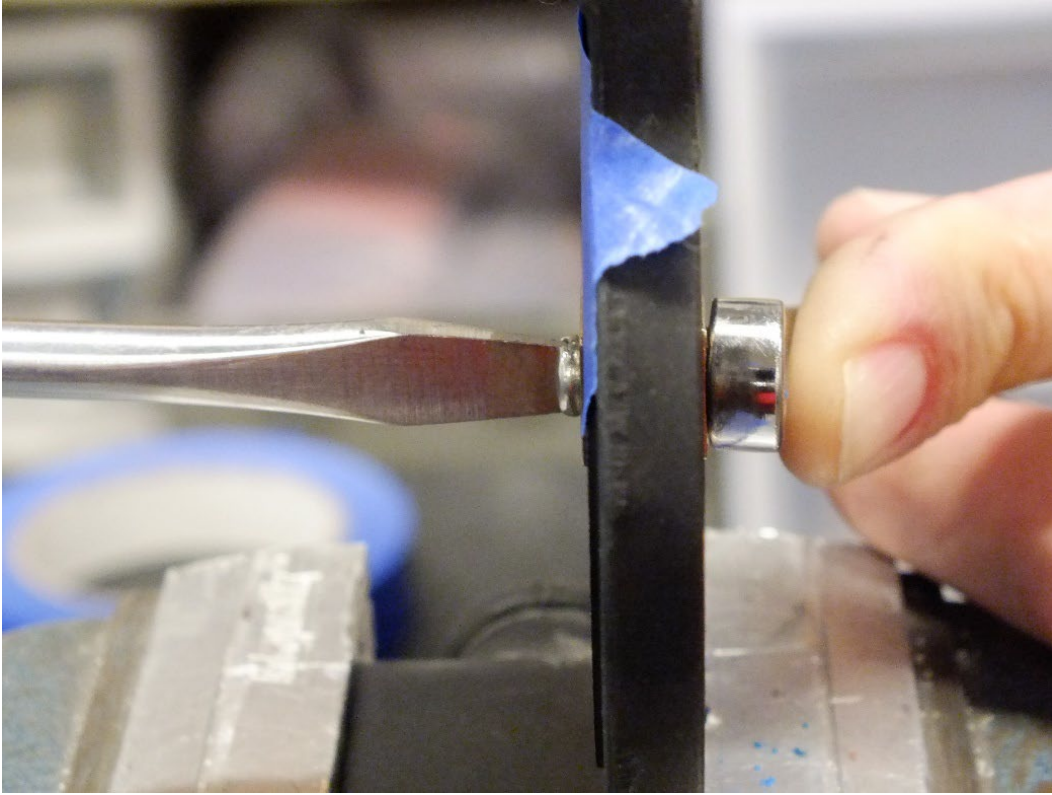


24. The valves are very fragile and should be handled with care. Note that the low-pressure valves are square on the end. Install new valves, retainer plates and screw onto the valve plate. The #6 nut may be re-used as a replacement but is not provided in the kit. Ensuring that the valves are oriented correctly, place a piece of tape over each valve so that they do not move while tightening the screw.





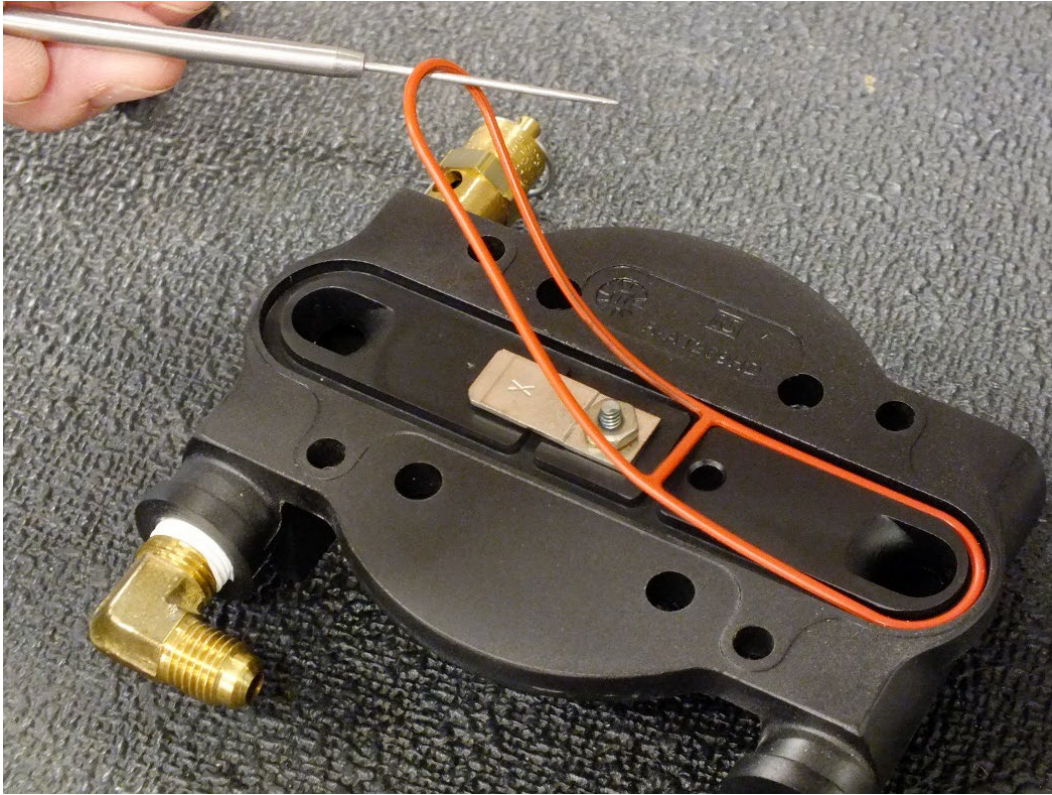
25. Clamp the valve plate in a vise and tighten screw.



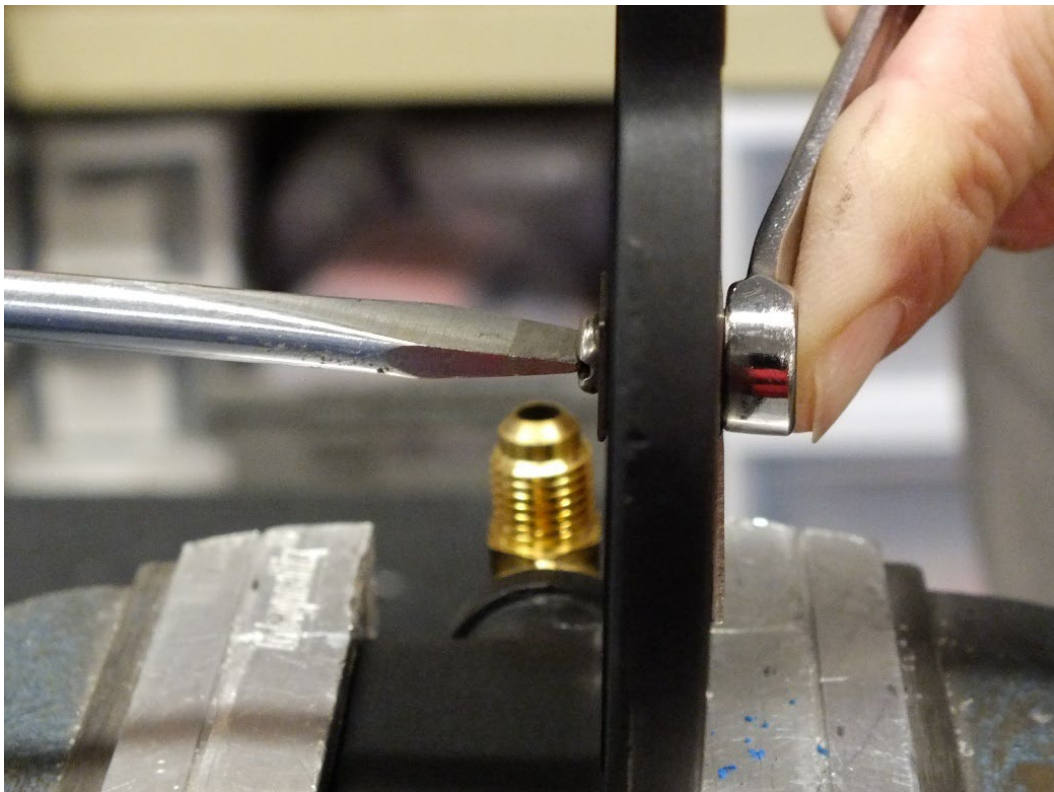
26. If the retainer plates are not aligned and square with the valve, loosen the screw slightly and adjust with a 7/16" wrench and re-tighten.



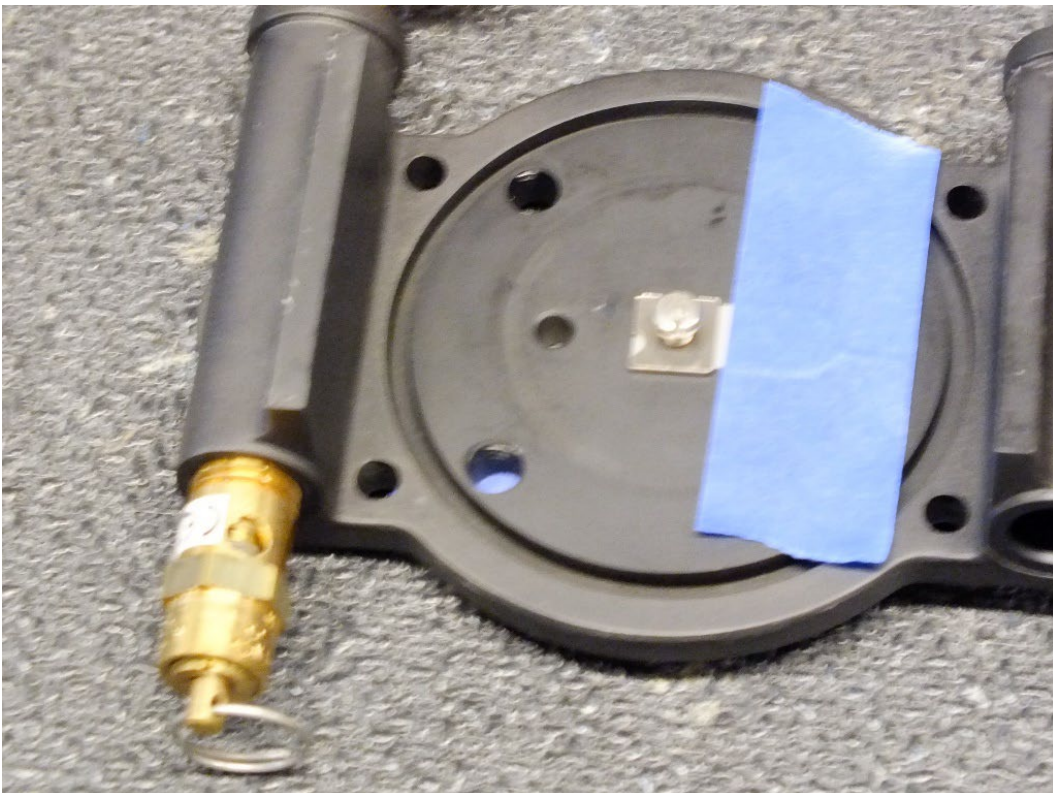
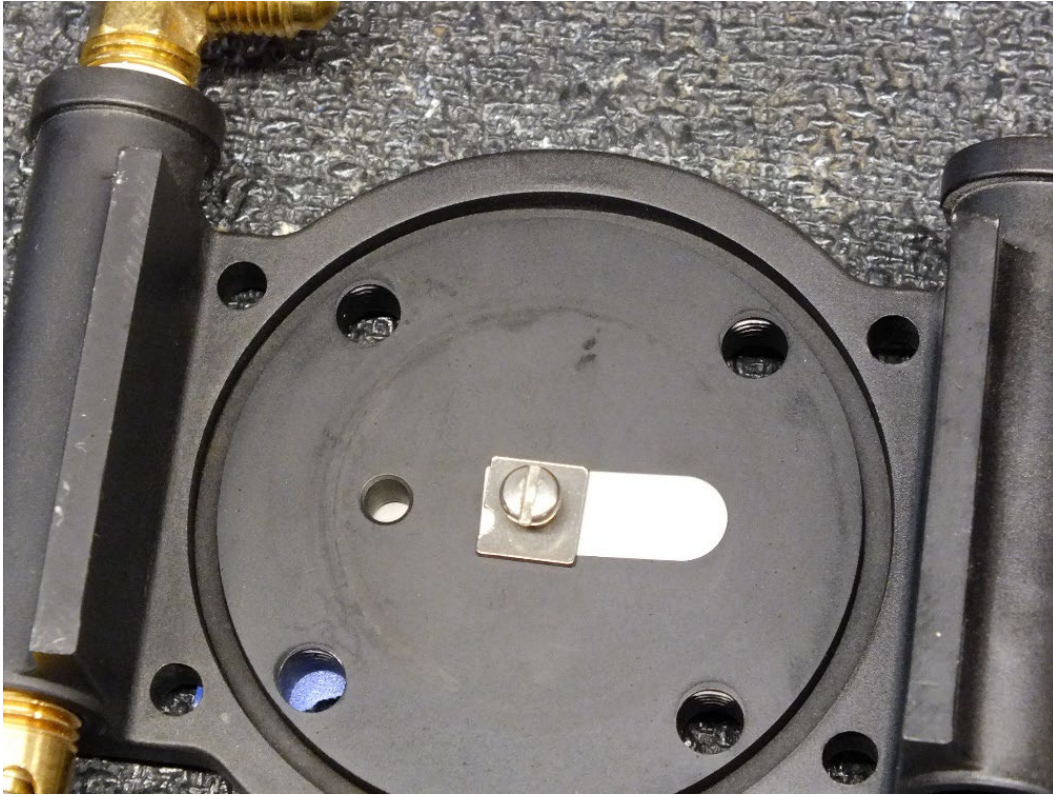
27. Remove the o-ring from the high pressure valve plate.

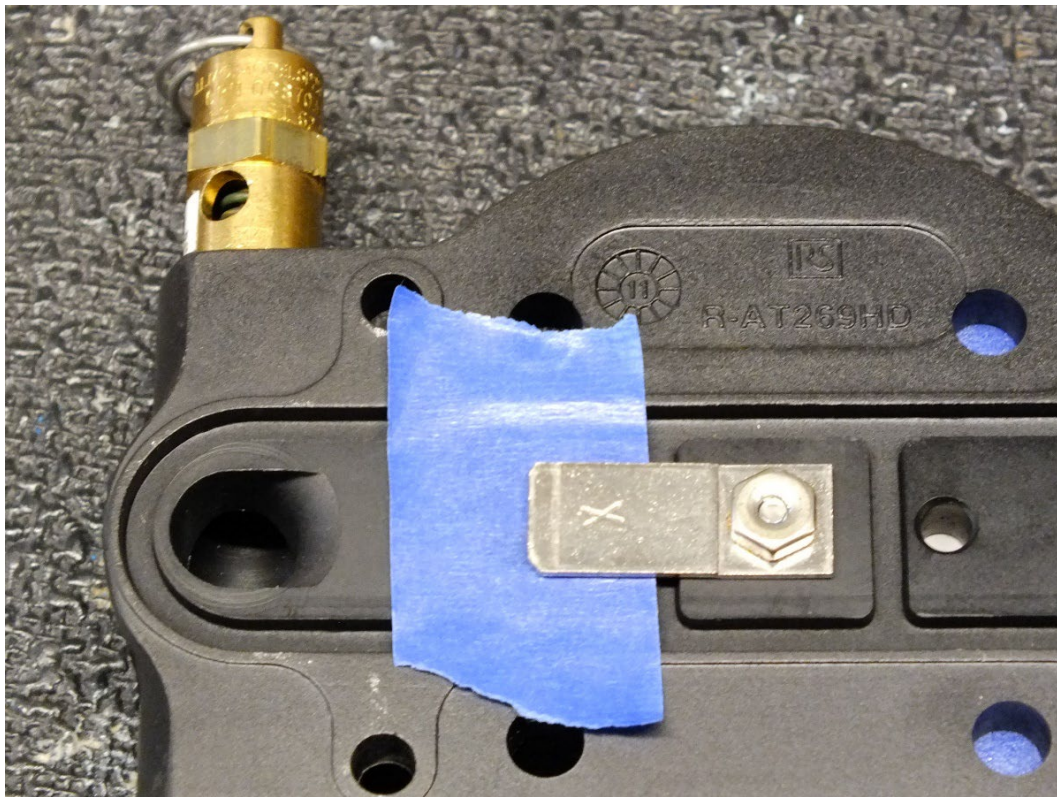
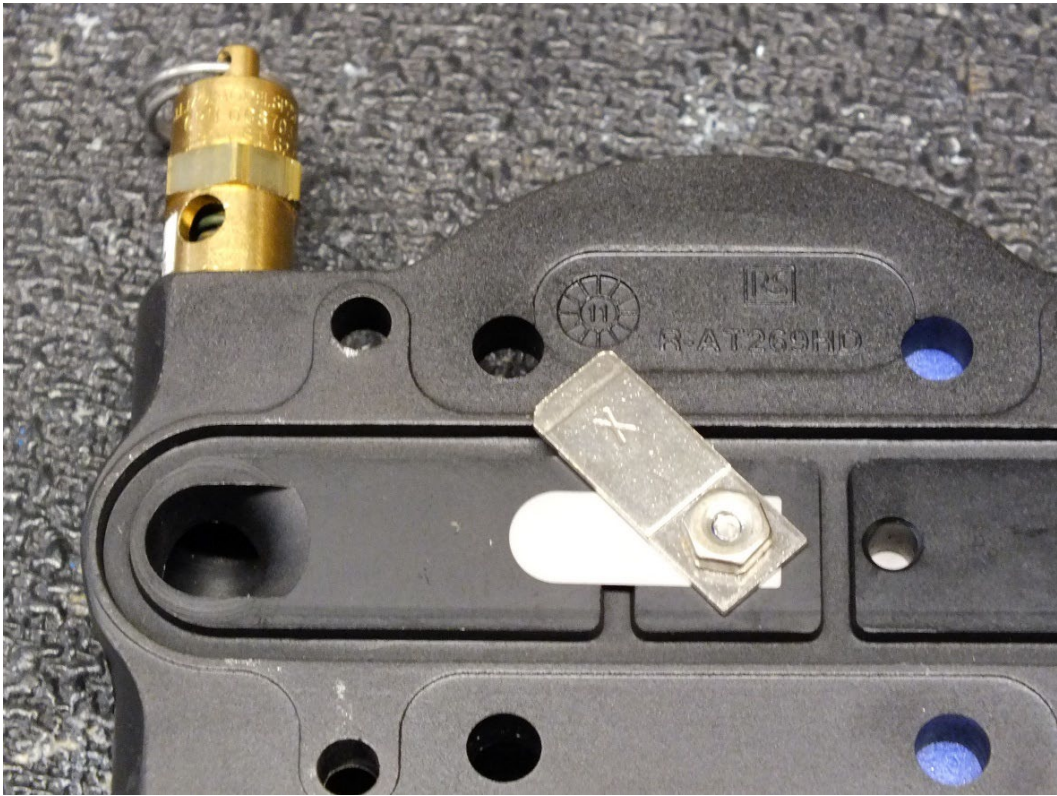


28. Clamp the high-pressure valve plate in a vise and remove the valves as you did on the low-pressure valve plate.

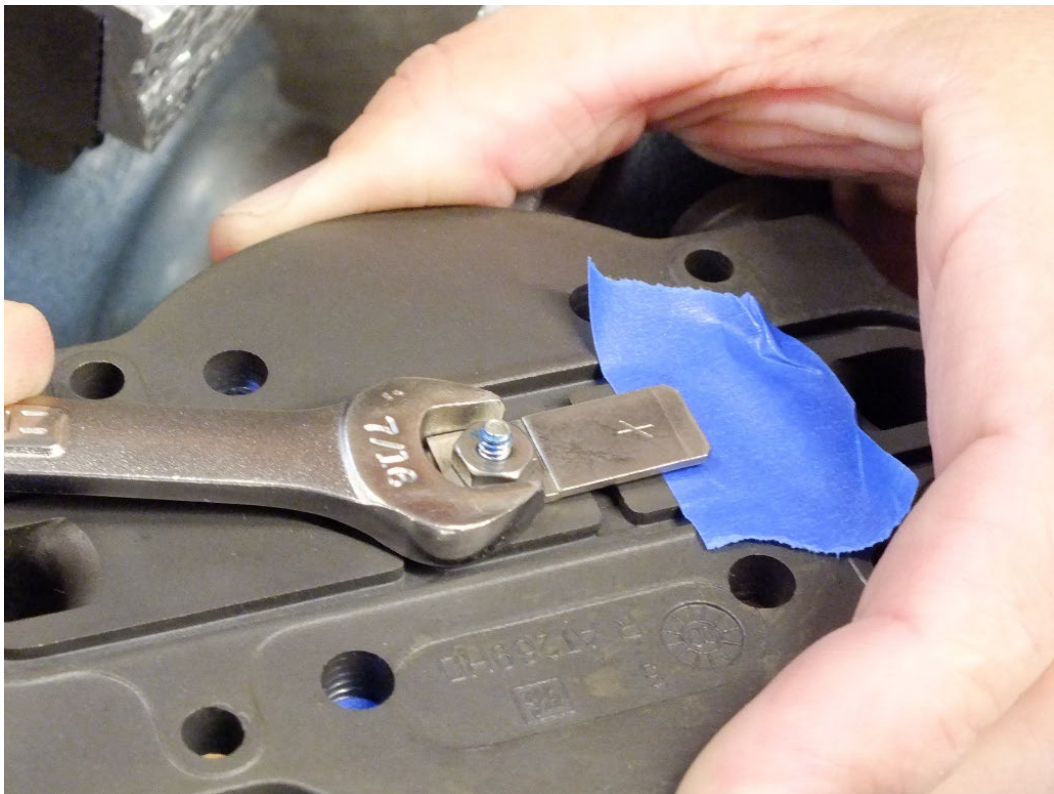
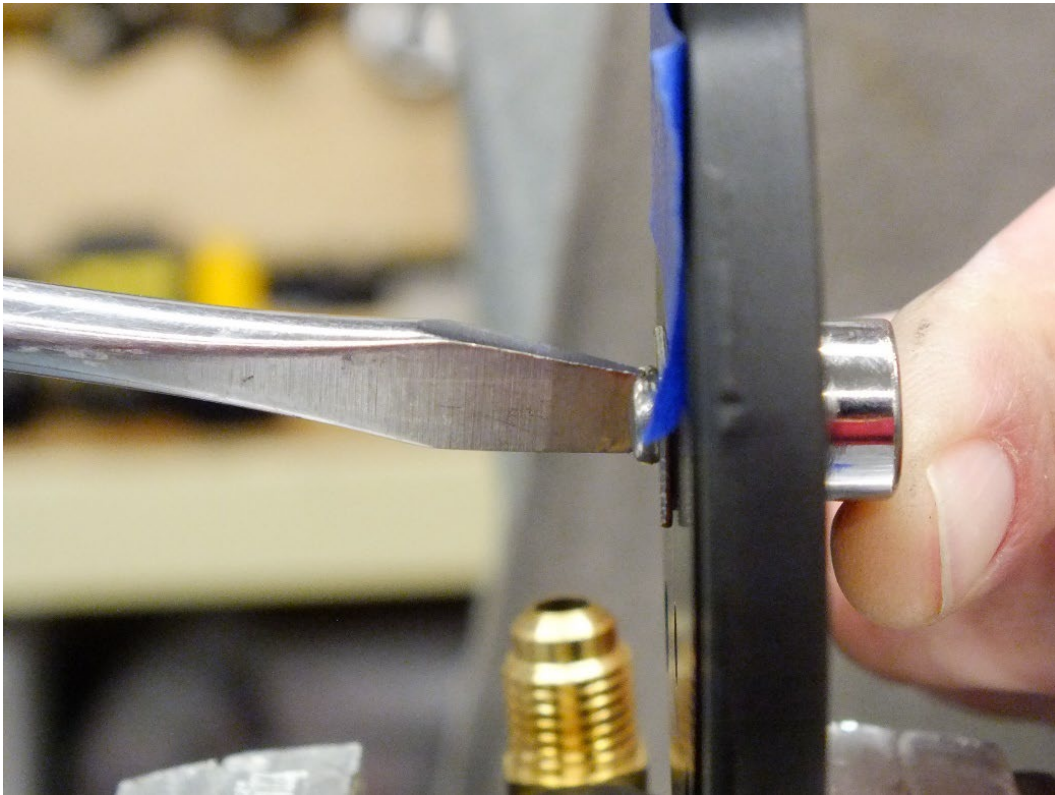


29. Note that the high-pressure valves are round on the end and the valve on the top has a valve limiter instead of a valve retainer which will be reused. Install valves as pictured and tape the valves in place.

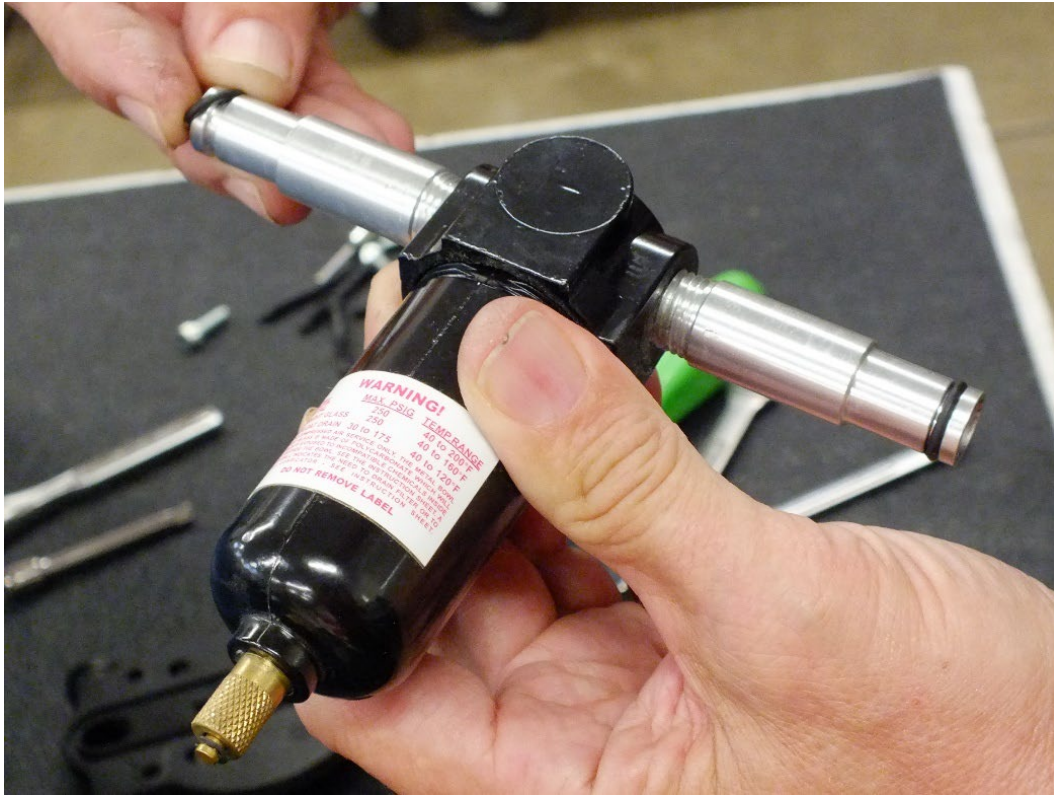




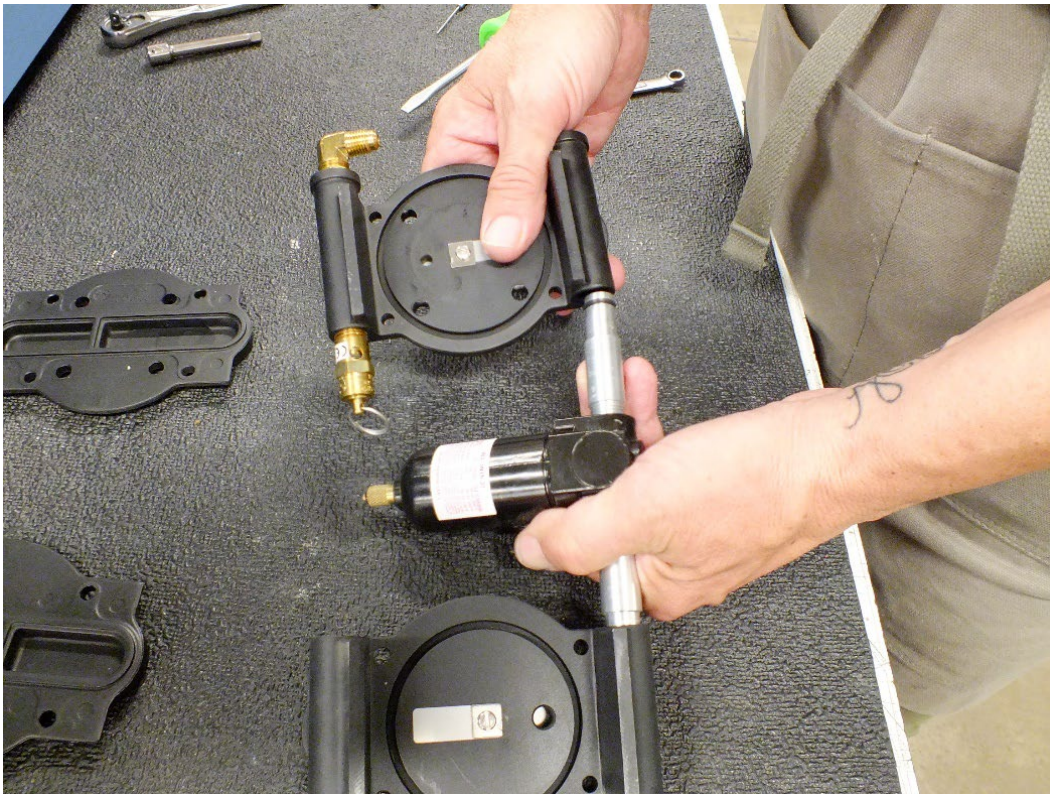
30. Tighten the screw and adjust the valve retainer and valve limiter if necessary.



31. Replace the O-Ring seals on the filter assembly with the ones provided in the kit.

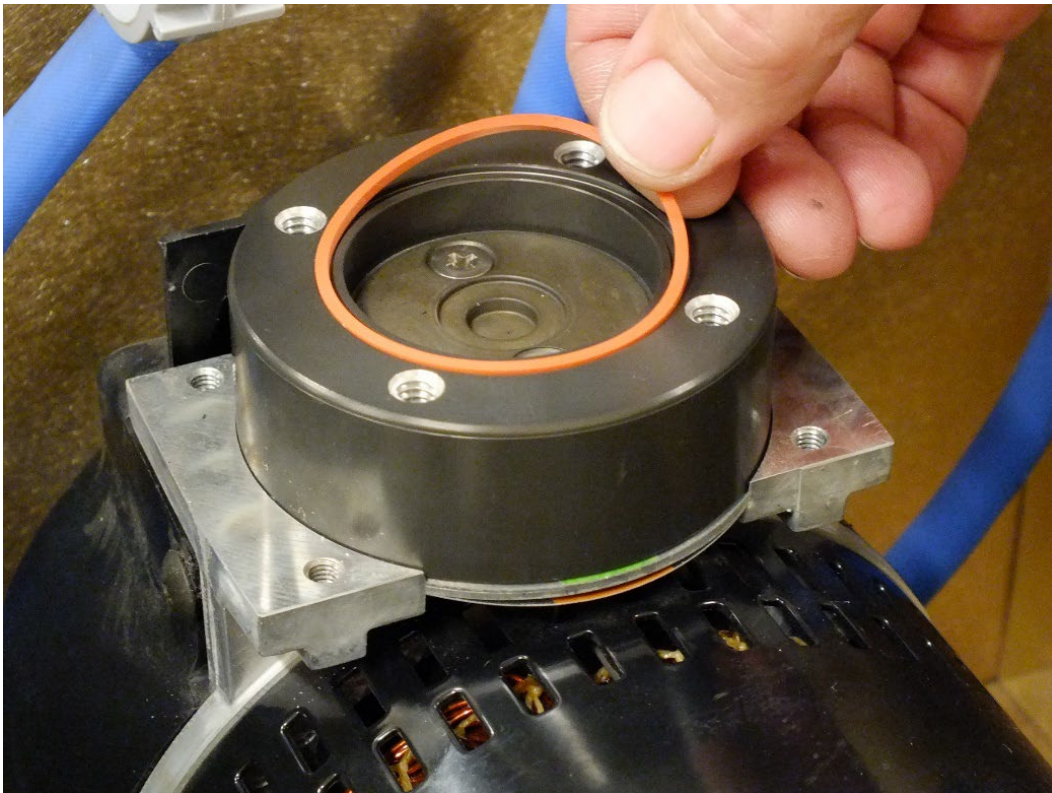


32. Slide the valve plates onto the filter assembly.

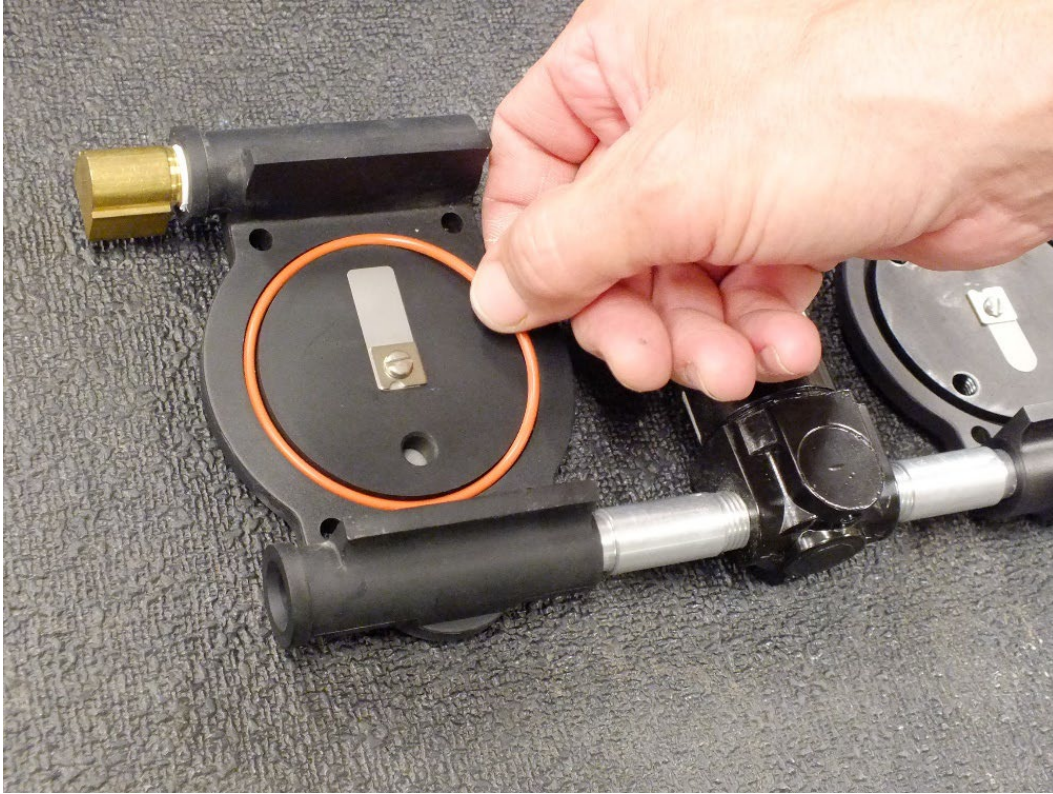




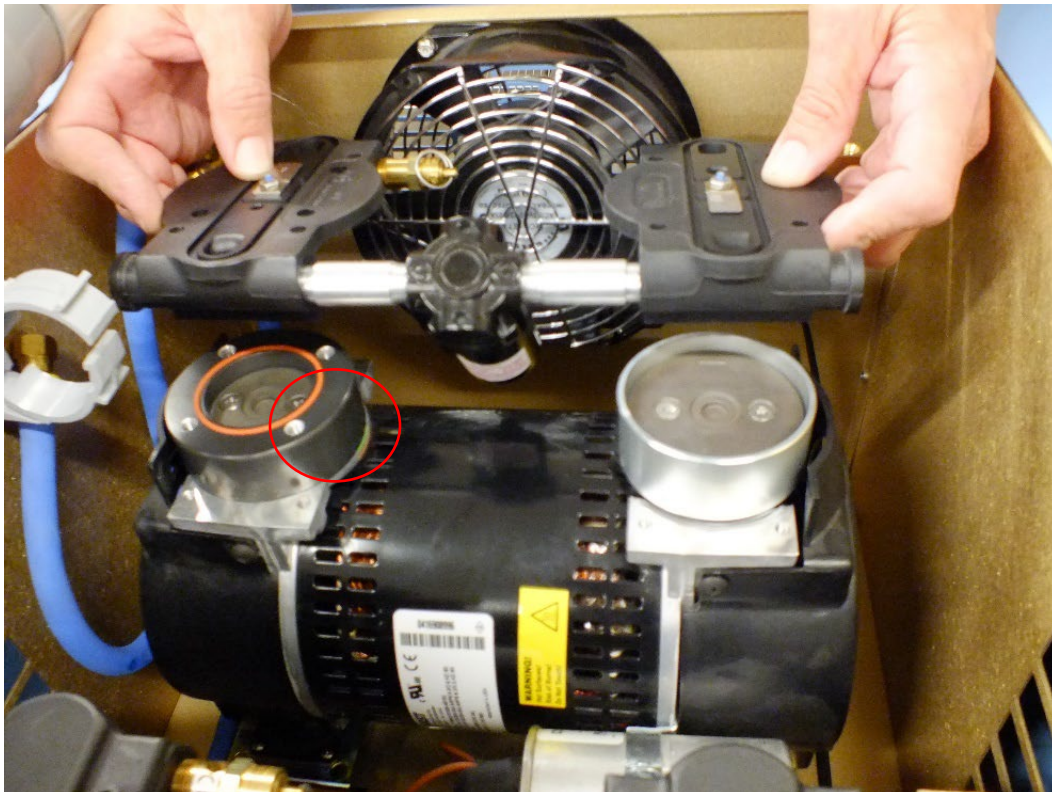
33. Install the replacement O-ring on the high-pressure cylinder.

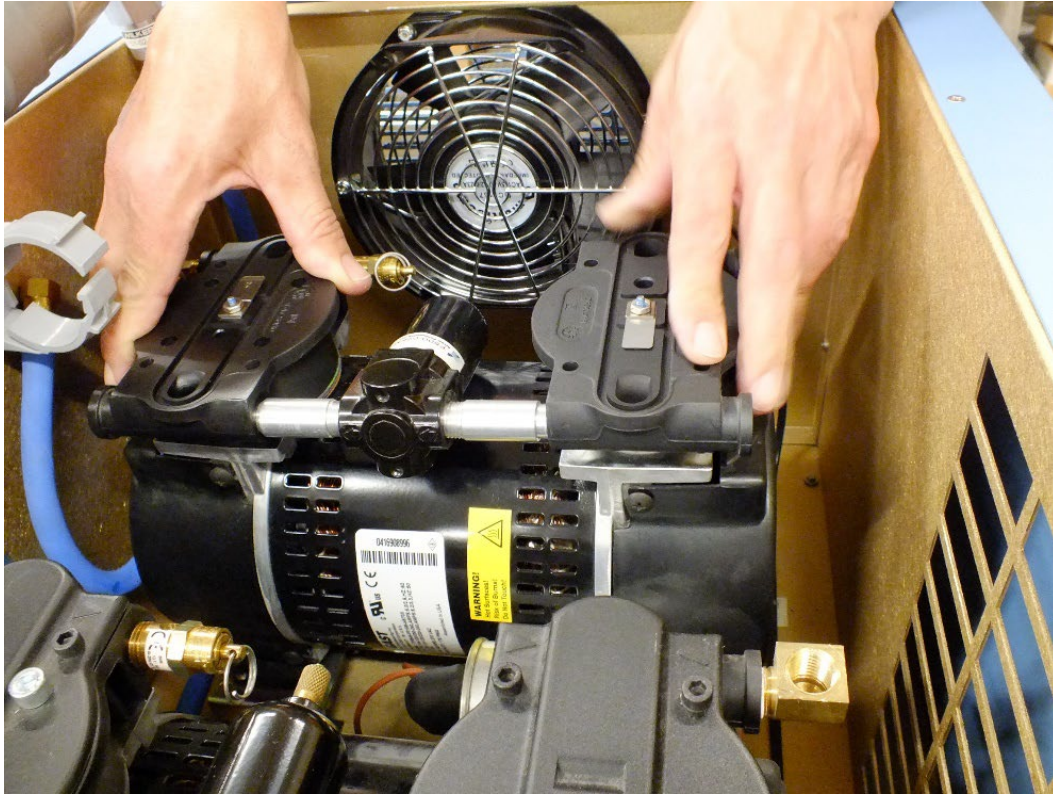


34. Install the replacement o-ring on the low-pressure valve plate

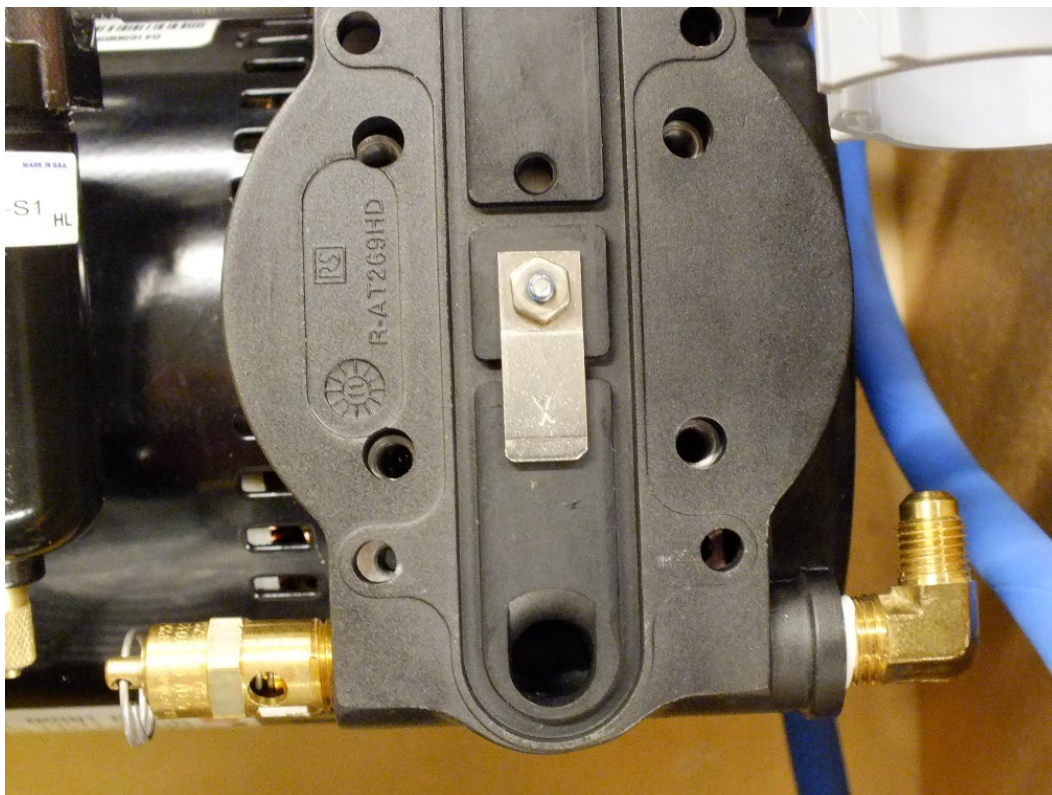


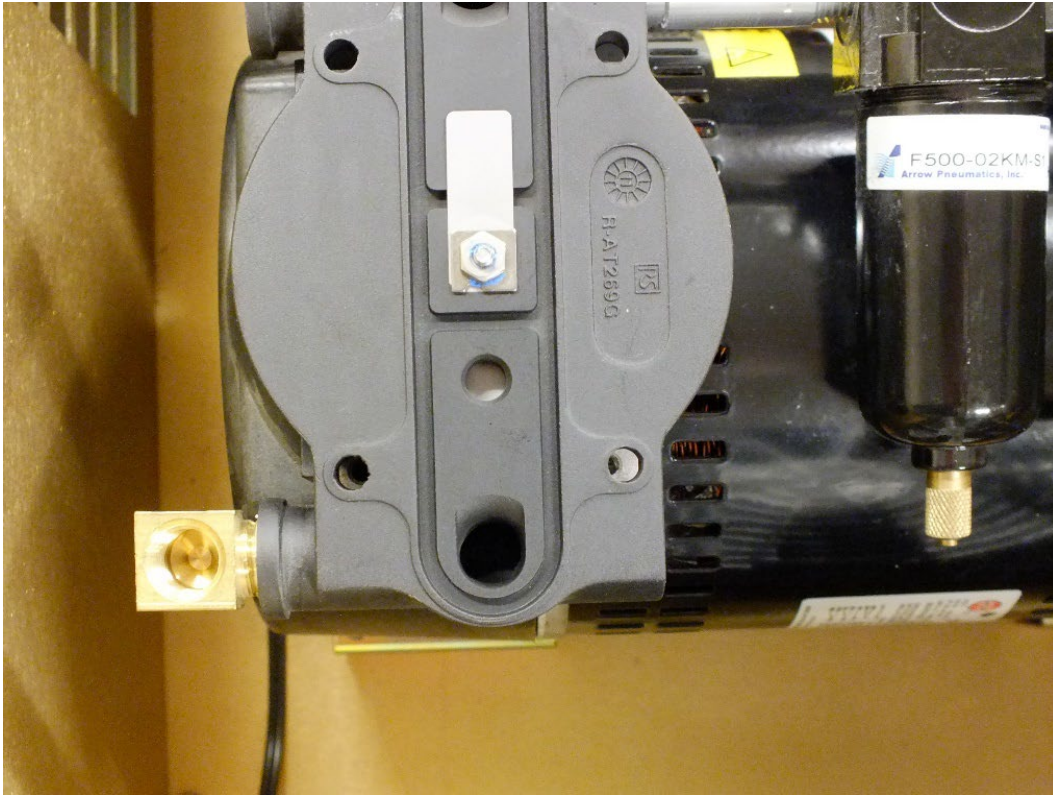
35. Carefully place the valve plates/filter assembly atop the cylinders.



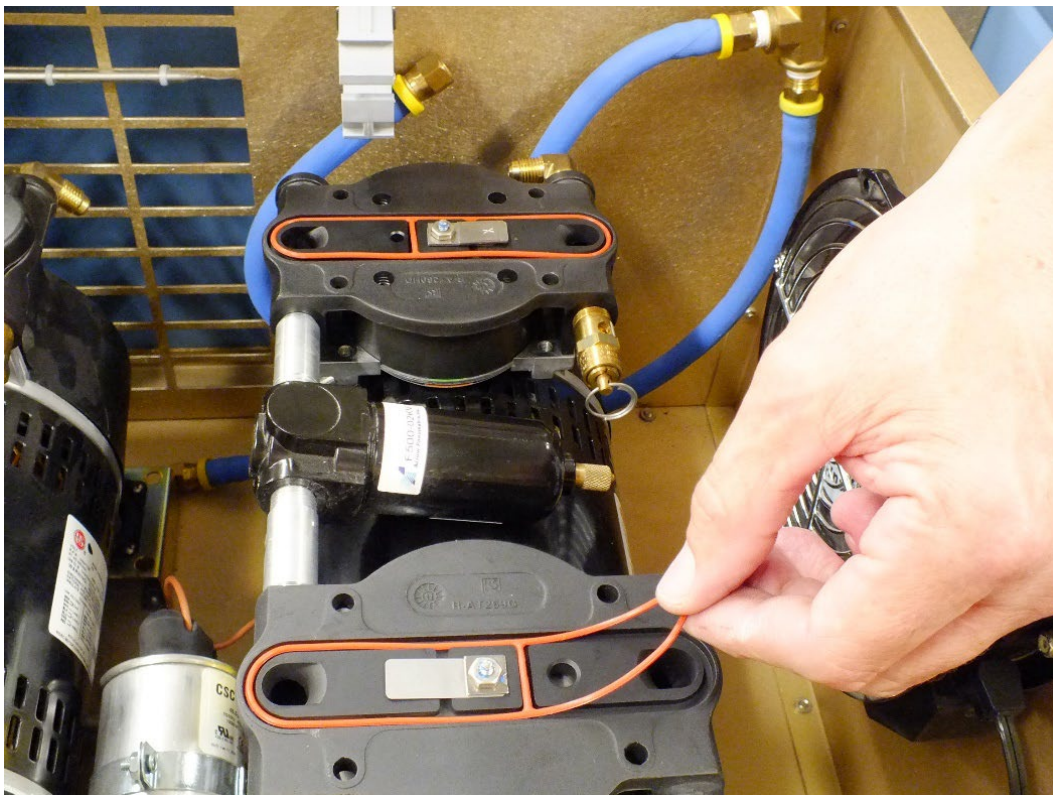


36. Ensure that the bolt holes line up. It may be necessary to rotate the high-pressure cylinder.

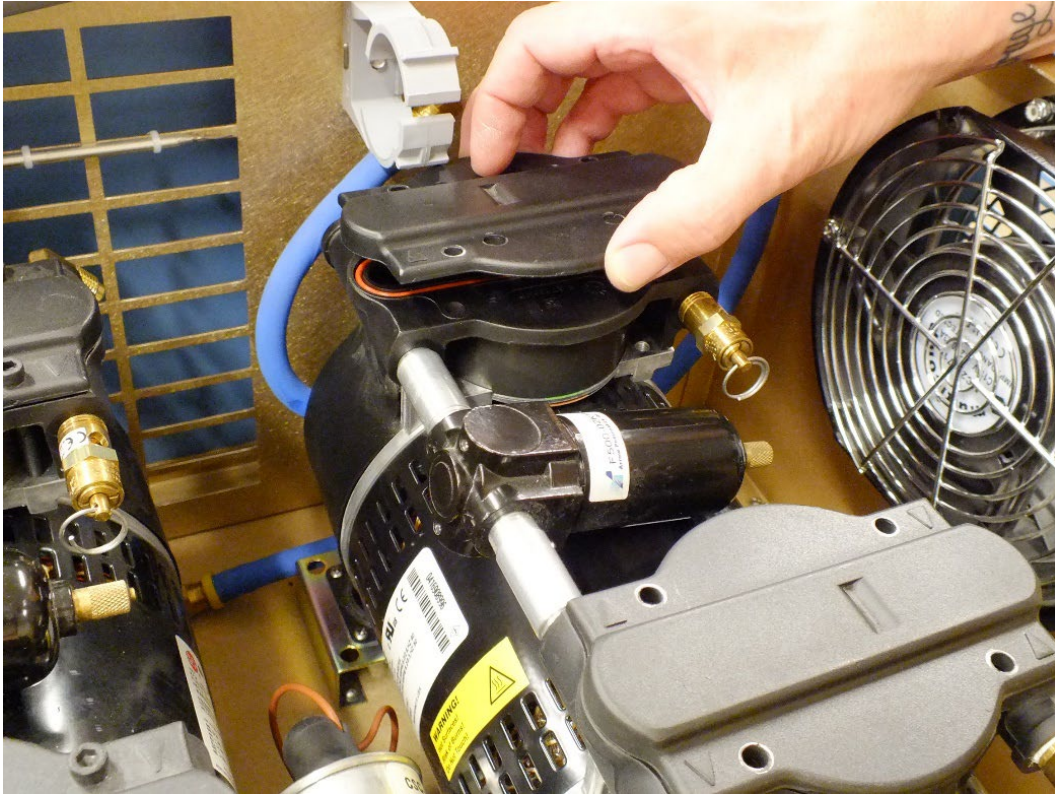




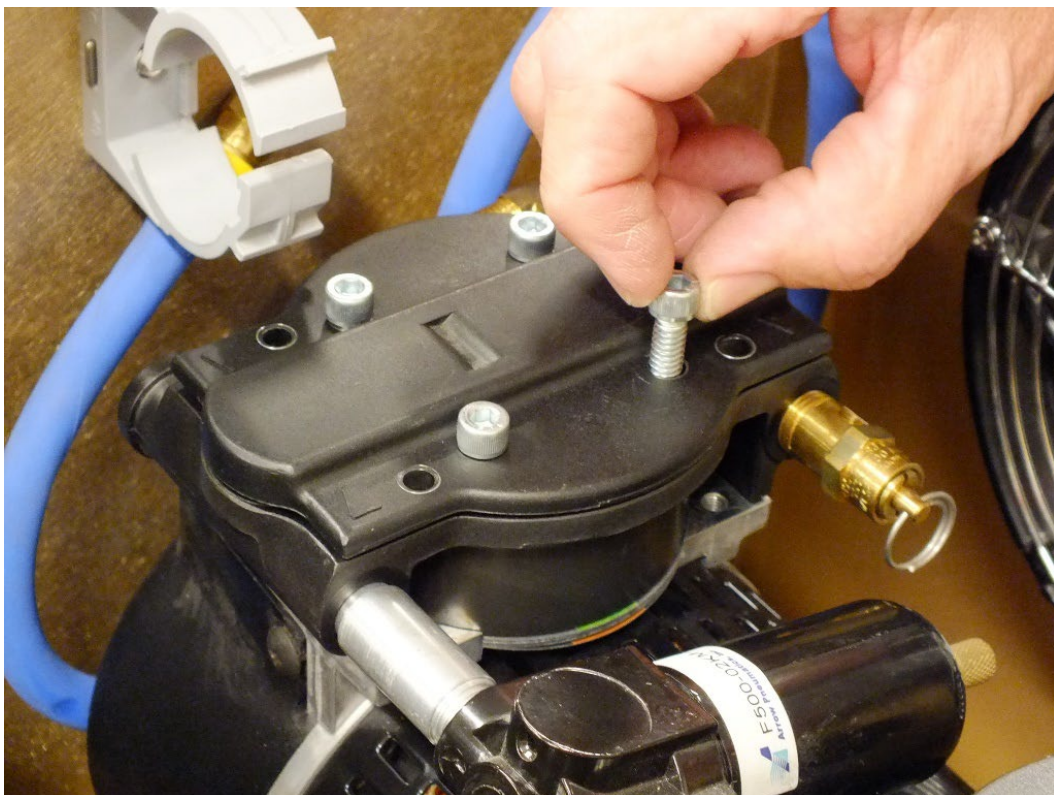
37. Install replacement o-rings atop the valve plates.

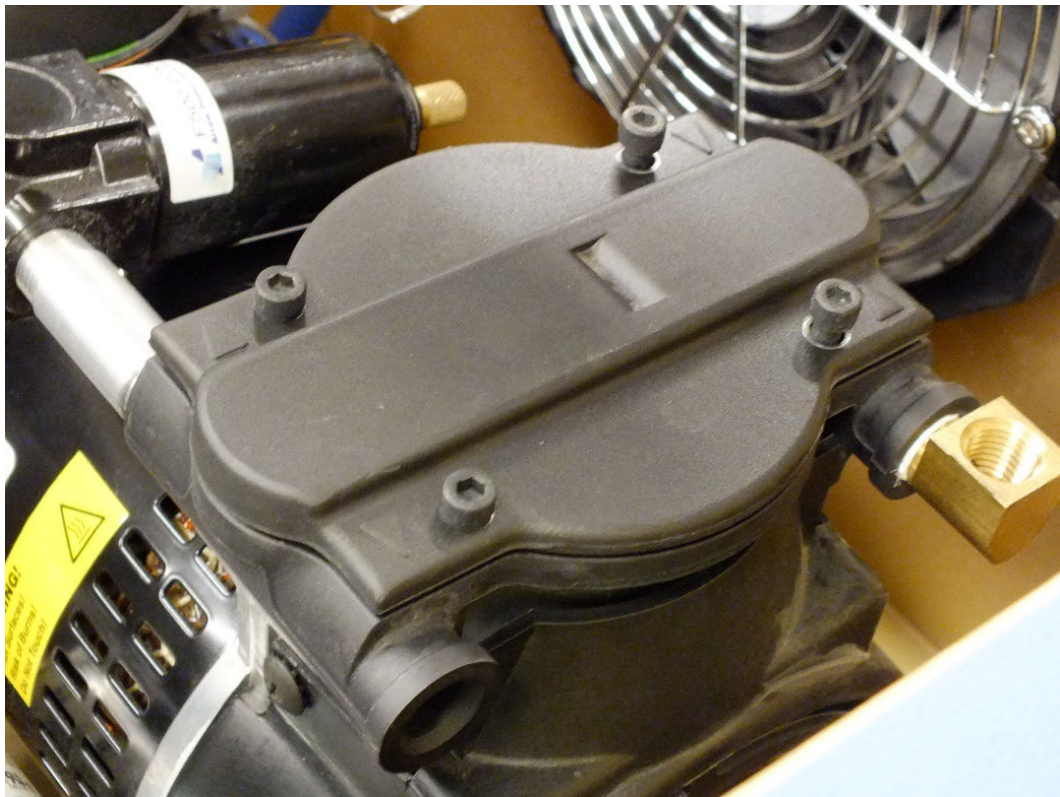
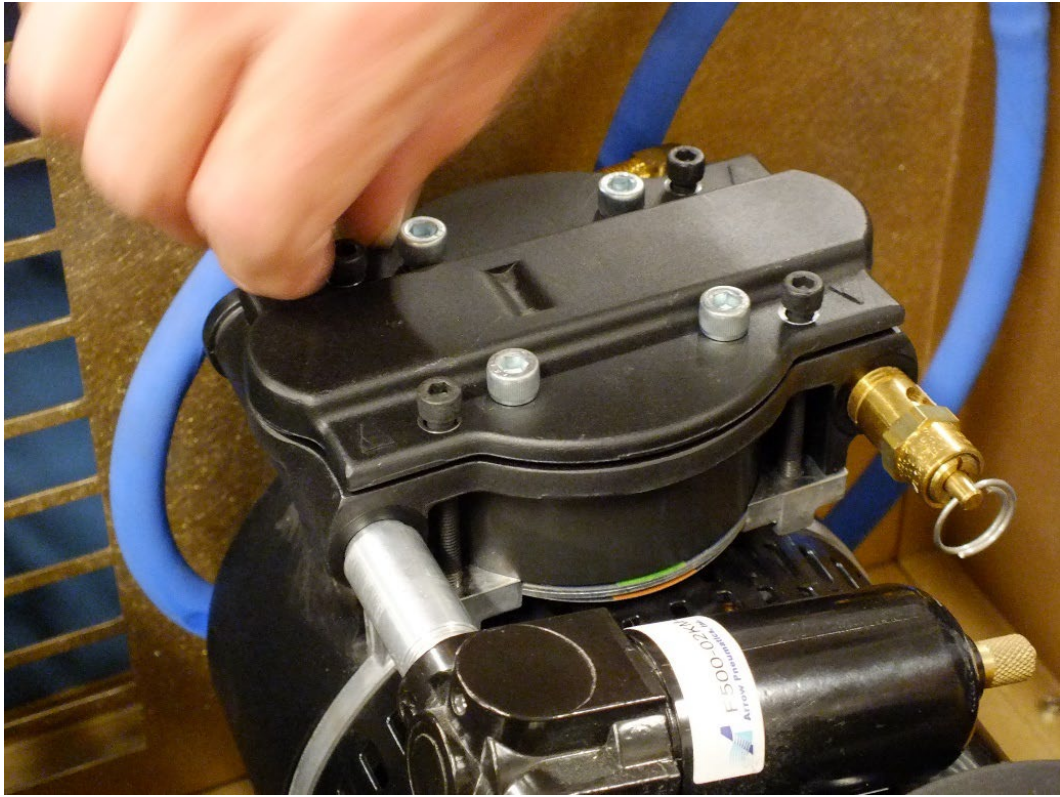


38. Install the valve covers, ensuring that they are oriented correctly.

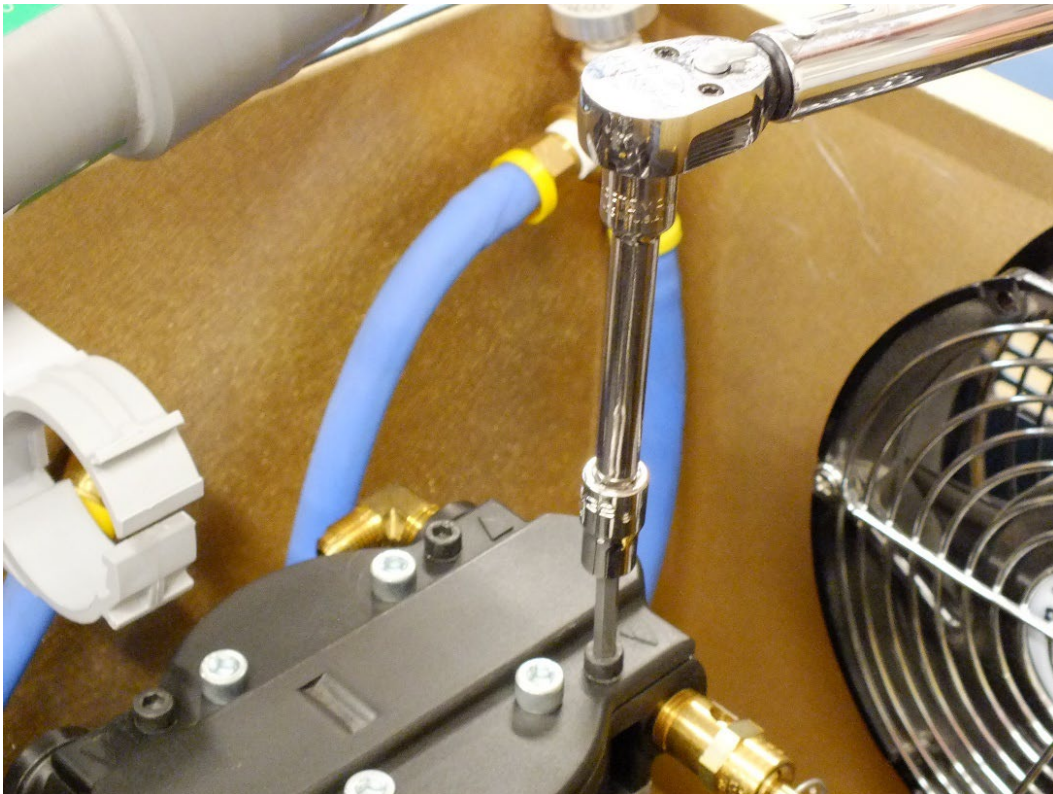


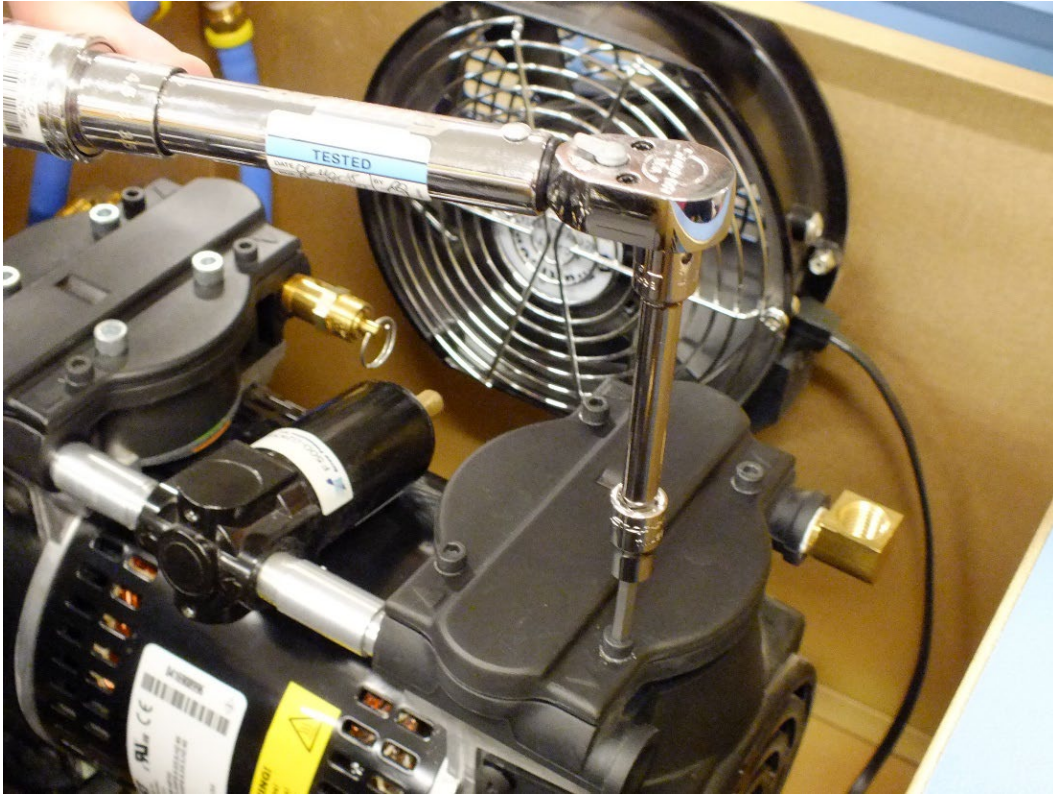
39. Re-install head bolts.





40. Torque all bolts to 50 in.-lbs. Re-install air dryer, hoses and filter.





41. You are finished with this rebuild, and the system should be tested before operation.

Please Call 1-800-872-7728, Fax 1-505-266-6203, or E-mail support@thunderscientific.com should you have any questions.