

## REBUILD PROCEDURE ON CPS TR21/TRS21 SERIES COMPRESSOR HEADS using kit RKMALC-7

1. Remove the three 3/16" socket head bolts holding handle plate assembly to head, remove the handle/plate assembly.



2. Remove the five #2 Phillips head screws on electrical box, remove e-box cover.
3. Remove the four 3/16" socket head bolts to remove the compressor head.



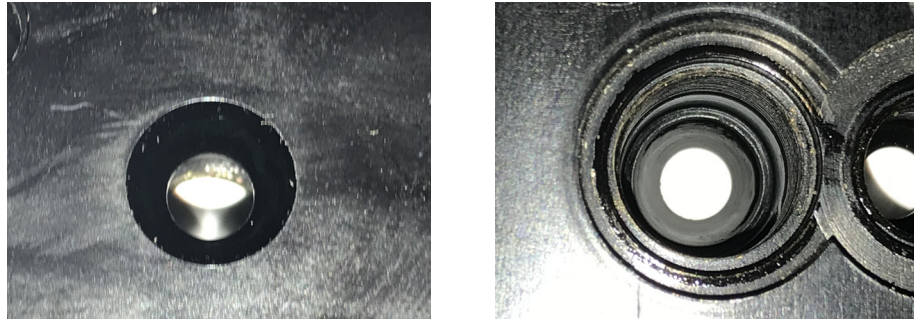
4. Remove and discard the brass IN and OUT ports. Remove the filter in the IN port. Save filter for re-use.
5. Remove and discard the Suction and Discharge brass valve covers using a large flat tip screw driver. Be careful not to strip out the soft brass slot. This will expose the suction and discharge valves.



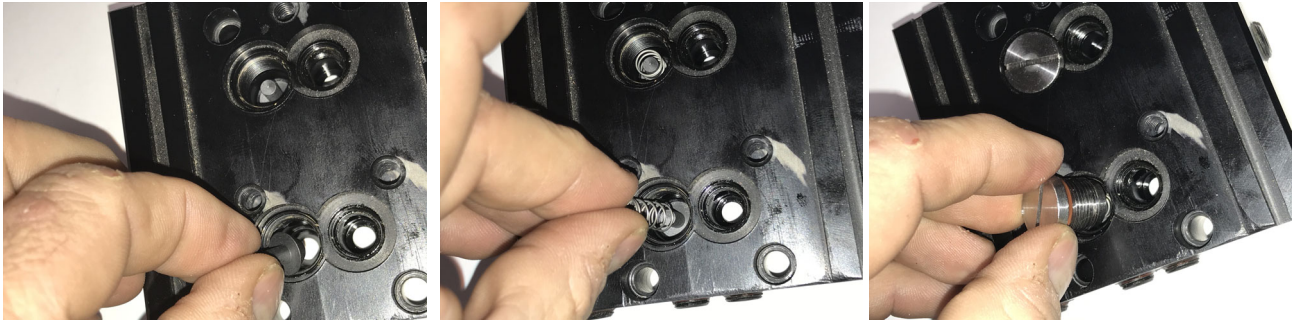
6. Remove the Discharge valves and springs. Discard these.
7. Push on the Suction Valve with a rod so that the valve can be grabbed for the other side. Use a pair of side cutters to cut the valve. Be very careful not to touch the valve seat with the metal tool.



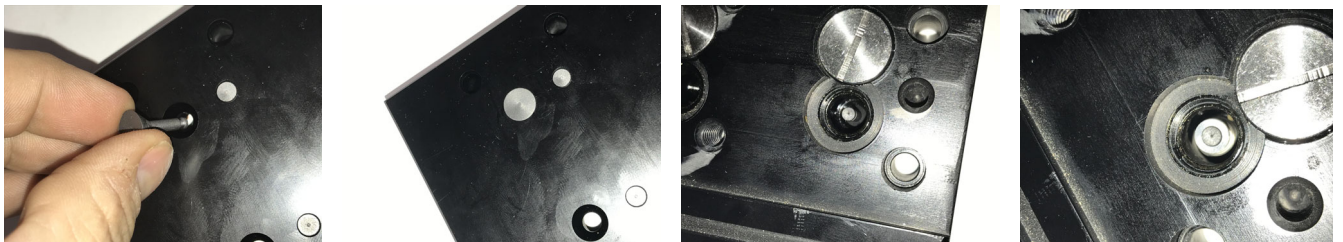
8. Inspect the metal valve seats in the compressor head for both the Suction and Discharge valves. If residue is noticed, use a solvent and Q-tip to remove. This is very important, if the valves fail to seat properly the pressure differential build up on the unit will not be achieved.



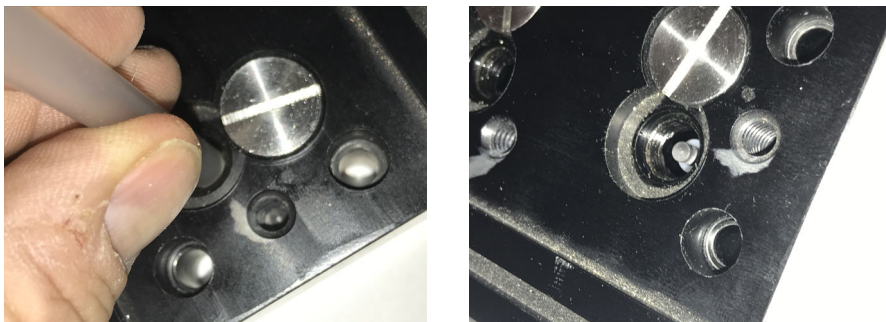
9. Install new discharge valves into the respective cavities. Place Spring onto discharge valve stem. Install the kit provided stainless steel Discharge Valve Covers. Lubricate the O-rings on these covers.



10. Place a suction valve onto its seat. Do one at a time. Once in the seat, flip the head over and place on flat surface to keep the Suction Valve in place. Install Suction Spring onto Suction Valve stem. Install Suction Valve Spring Washer onto Suction Valve stem.



11. Using a plastic tube, push down on the Suction Valve Spring Washer to expose the groove at the top of the Suction Valve Spring.



12. Now for the tough part. Stretching the Suction Valve O-ring retainer over the end of the Suction Valve stem onto the groove. The method used below has the O-ring stretched over a small diameter rod. A tubular plastic rod is used to help push the O-ring onto the Suction Valve stem groove.



*(RKMAC is working on a tool kit for this installation that is expected to be in stock on Jan 31, 2021. RKMAC-TL5 is the p/n.)*

13. Once O-ring is in place, push down on the Suction Valve assembly to reset the Suction Valve Spring.  
14. Install the kit provided stainless steel Suction Valve Covers. Lubricate the O-rings on these covers.



15. Install the kit provided Stainless Steel IN and OUT fittings. Lubricate the O-rings on these fittings. Don't forget to re-install the IN filter screen under the IN fitting.

Compressor Head Rebuild is now complete.

Continue to reassemble the compressor.

1. Make sure cylinder O-rings are in place.
2. Re-install the compressor head onto the top of the cylinders. Hand Tighten the four 3/16" Socket Head bolts. Once snug then use a final diagonal tightening pattern with the torque wrench set at 10 ft.-lbs.
3. Re-attach electrical leads to HP switch.
4. Re-install Electrical box cover.
5. Re-install handle/Top Plate Assembly back onto head.

Test the compressor assembly for operation and performance. With a manifold gauge set up can quickly check the pressure differential or compression ratio of the compressor. Build up a 300 PSIG head pressure then close off the suction port. The suction pressure should drop to at least 15" hg vacuum.

See Piston Seal Diagnostics for additional tests.