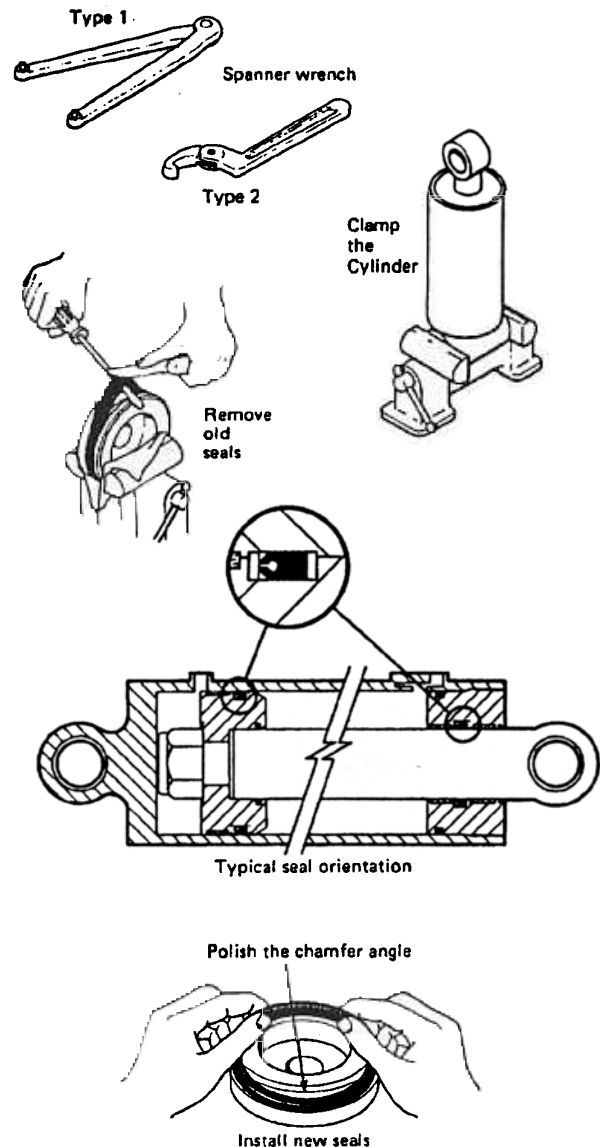


# Installation Instructions

## Cylinder Seal Loader Service Kits

This sheet provides instructions for cylinder piston installation using the seal loader supplied with each cylinder service kit.

1. Use a spanner wrench to remove the cylinder retainer.
2. When servicing a cylinder, clamp it in a soft jawed vise. Never clamp the cylinder shell or the cylinder rod sealing surface in a vise.
3. Place the piston or retainer in a soft jawed vise to remove the seals. Pry the seal up with a blunt screwdriver and cut the seal to remove it. **CAUTION: Do Not scratch the seal grooves.**
4. Inspect the rod, piston, retainer and cylinder bore for nicks and burrs. Minor nicks and burrs can be removed with 400 grit emery cloth. **NOTE: Minors nicks are those that will not bypass oil under pressure. If nicks can be felt with the finger nail after using emery cloth, replace the part.**
5. Lubricate all new seals and rings with petroleum jelly or clean hydraulic oil.
6. Note the direction of the U-Cup seals. If installed backwards, they will not seal properly. See the specific Service Manual for correct seal orientation.
7. Polish the piston chamfer angle with emery cloth. This allows the seal to slide over the chamfer much easier.
8. Install new seals in the piston and retainer. Hook one side of the seal in the groove and push it over the piston or retainer as shown.



Part # 669646 R-2

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9. Reassemble the rod assembly by sliding the retainer on first, then the piston assembly. Install and tighten the piston retaining nut to the specified torque value in the Service Manual.

10. Clamp the cylinder shell in a soft-jawed vise.

11. Place the loader in the cylinder shell. The loader must cover all the threads but not contact the thread relief chamfer. The length of the stop fins can be trimmed with a sharp knife if more engagement is needed. The piston will not enter the shell if the loader contacts the thread relief chamfer.

12. Apply a thick film of petroleum jelly or clean hydraulic oil to the inside of the cylinder shell, piston, loader and piston seals.

13. Insert the rod-piston assembly through the loader into the cylinder shell. If resistance is encountered, tap with a rubber mallet. If more force is required, remove the shell from the vise. Hold the shell about 6 in. above a piece of wood on a table or the floor. Let the shell fall straight down on the wood. The rod-piston should slide down into the shell. Repeat if necessary.

14. Cut the loader down one side with a knife and remove.

15. Screw in the retainer and tighten to the torque specified in the Service Manual. Install the retainer setscrew if equipped and tighten.

