

#### To Protect Your Warranty, Use Only ENERPAC Hydraulic Oil.

Enerpac recommends that all kit components be installed to insure optimum performance of the repaired product.

**SERVICE INSTRUCTIONS:** These Service Instructions are intended to be used by qualified personnel at Authorized Enerpac Service Centers. Users of Enerpac equipment should see the cylinder Instruction Sheet for installation, operation, and maintenance information.

#### YOU MAY NEED:

- cylinder repair kit
- drill
- spanner wrench
- press capable of withstanding cylinder tonnage
- hand pump with hose
- solvent
- Enerpac hydraulic oil

#### DISASSEMBLY

Use the complete model number and date code when ordering repair parts.

1. Make sure the plunger is fully retracted.
2. Remove the coupler, inspect for damage to the threads and seals.
3. Detach the saddle from the plunger.

**IMPORTANT:** If stake marks are present, drill out the stake mark between the stop-ring threads and the cylinder internal threads. Use an appropriate sized drill. Drill only deep enough to remove stake mark. If stake marks are not present, Loctite may have been applied during production. A light application of heat to the Loctite coating may be required to loosen the stop-ring.



#### WARNING

Use extreme caution when removing the stop-ring from the cylinder base. The return spring is compressed under the stop-ring and will push the stop-ring out rapidly unless held down during disassembly.

5. Provide a downward force on top of the stop-ring to prevent the spring from forcing the stop-ring out of the cylinder base. For 60 and 100 ton cylinders, use a press to contain return spring force. While downward force is holding stop-ring, slowly unscrew the stop-ring until the threads disengage.
6. Remove the spring and plunger from the cylinder base.

**NOTE:** it may be necessary to use a hand pump to hydraulically push the plunger out of the base, especially if there is any corrosion present.

7. On recent models the tube assembly or plunger guide is removable. Remove the retaining ring and slide the tube assembly/plunger guide away from the base.
8. Remove all seals from the plunger and base. Use caution to avoid scratching any sealing surfaces.
9. Inspect the cylinder bore and plunger surfaces for deep gouges or nicks and replace if necessary.  
**NOTE:** Honing of the cylinder is not recommended because removing metal from the bore will destroy sealing capabilities. It is permissible to polish slight gouges by hand in the local area only.
10. Inspect the saddle for damage or cracks. Replace all damaged saddles.

#### ASSEMBLY

1. Use a suitable solvent to clean all parts prior to assembly.
2. Compare the new parts from the repair kit with the old parts to make sure they match.
3. Install new seals and parts provided in the repair parts kit. Refer to the repair parts sheet for the correct location of each part.
4. Lubricate the seals and the sealing surfaces with Enerpac hydraulic oil.
5. Slide the tube assembly/plunger guide into place and install the retaining ring.
6. Insert the plunger into the base.
7. Insert the spring into the base, placing it over the outside of the plunger.  
**NOTE:** If Loctite is to be used on the stop-ring apply 1 or 2 drops of a mild 200 series Loctite to the upper 3 to 4 threads.
8. Place the stop-ring on the spring while exerting a downward force on top of the stop-ring to compress the spring into the

base. Use a press for 60 and 100 ton cylinders Thread the stop-ring completely into place.

9. Install the saddle and coupler.
10. Perform the test procedure as described below before proceeding to steps 11 and 12.
11. After testing is complete, and the cylinder is determined to be in proper working order, stake the cylinder between the stop-ring and the base internal threads, if Loctite was not used.
12. Remove any illegible or damaged decals and replace.

## TEST PROCEDURE

1. Place the cylinder in a press capable of withstanding the tonnage of the cylinder being tested.
2. Advance the cylinder to 80% of its stroke and pressurize to 10,000 psi.
3. Maintain pressure and inspect for leakage.
4. Retract the cylinder, making sure the plunger retracts completely.
5. See steps 11 and 12 in ASSEMBLY section.

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For your nearest authorized Enerpac Service Center, visit us at [www.enerpac.com](http://www.enerpac.com)