H0023 Cylinder Repair and Service

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The following is a brief check list for field servicing of Steelbro cylinders. Please do not hesitate to contact STEELBRO New Zealand should there be any need for further clarification.

External visual inspection

- Check ports for damage.
- Check any exposed shaft for damage.
- Take an oil sample from the cylinder to ensure there is no contamination before you start.

Prepare for testing

- Secure cylinder firmly.
- Attach hoses.

Test cylinder

- Check if the cylinder holds pressure in both directions.
- Check for leaks around the head.
- Check for leaks around the shaft.
- Drain the cylinder ready to disassemble.

Disassemble the cylinder

- Extend the shaft 200mm – 300mm but no more. Any more shaft extension than this increases the load on the thread and you run the risk of the thread seizing up.
- Slowly unscrew the head.
- Pull the shaft half way out.
- Pick the shaft up with the overhead crane, making sure that you maintain the correct centre height of the shaft. Carefully pull out the shaft and sit it in a safe place, being careful not to damage the hard chrome surface.

Internal inspection of the tube

- Clean the tube out with rags, then using a good hand held light, have a good look inside the cylinder.
- Check for any signs of rust.
- Check for any scratches, marks, or pick-ups in the tube.
- Minor scratches and marks can sometimes be honed out to restore the surface finish of the tube, but any significant marks will mean the tube will have to be replaced.

Strip the shaft assembly

- Securely mount the rod eye in a solid vice and put a good robust stand under the piston end of the shaft.
- Have a good look at the seals before you remove them as this can sometimes help identify problems within the cylinder. If there has been contamination in the oil you will normally find small shiny particles imbedded in the piston seals which normally means there will be scratches in the bore of the cylinder.
- Remove the piston and place it on a clean bench.
- Slide the head off the shaft and place it on the bench also.
- Wipe the shaft clean and inspect for damage.

Clean components and remove seals

- Remove the seals and clean the components.
- Check the components for damage.

Fit new seals

- Fit the new seals to the clean components.
- It is important that the nyloc ring is replaced in the piston every time the piston is removed from the shaft.

Assemble the shaft assembly – head

- Apply a coating of oil to the head seals.
- Push the head on to the shaft.

Assemble the shaft assembly – piston

- Apply an anti seize compound (Molybond GOG is very good) to the piston thread then slowly screw the piston on.
- The last 3 – 4 threads will be very firm as the shaft thread bites into the nyloc ring.
- It is important that the end of the shaft screws up hard against the internal face of the piston.
- Clean of excess anti seize compound.
- Fit piston seals.

Prepare the cylinder

- Ensure all parts are spotlessly clean and dry.
- Apply a thin film of anti seize compound to the threads of the cylinder.
- Apply a film of oil to the inside of the cylinder.

Assemble cylinder

- Ensure all parts are spotlessly clean.
- Apply a film of oil to all of the seals.
- Assembly will also be made easier if the head has been pushed back to within 200mm of the rod eye.
- Push the piston into the tube, and then slowly push the shaft assembly up the tube until the head spigots into the tube. It is important not to bang the head and the tube together too quickly as this can damage the first thread.
- Apply a thin film of anti seize compound to the threads on the head. It is important not to apply excessive amounts of grease around the head assembly, as the excess will be pumped out around the head to tube interface over a short period of time giving the impression of a leak.
- Then slowly screw the head into the tube.

Test

- Cycle the cylinder three times to remove the air.
- Then test at low pressure (300 psi.) in both directions.
- Then test at high pressure (3,000 psi.) in both directions. At this stage we lock the pressure for five minutes to ensure that the cylinder will hold the pressure.
- Drain the oil.