



Nitrous Pump Rebuild Instructions

PUMP PART NUMBER: 00-68002

SEAL KIT NUMBERS: AIR 00-68008, HYDRAULIC 00-68009

REBUILD INSTRUCTIONS

CAUTION - REMOVE PUMP FROM AIR SUPPLY BEFORE DISASSEMBLY:

These rebuild instructions are designed specifically for the Nitrous Outlet (HI) Nitrous Pump. If you need any assistance during the rebuild or if you have questions, call our Tech Help Line at (254) 848-4300. The nitrous pump drive side requires routine lubricating maintenance to insure longevity. The spool-type control valve incorporates dynamic O-rings which are lubricated with a light grease from the factory. Improper maintenance and extended use can lead to decreased pump performance or failure. The nitrous pump is designed to be rebuilt with simple hand tools. For these instructions part numbers in parentheses will be replaced in that step.

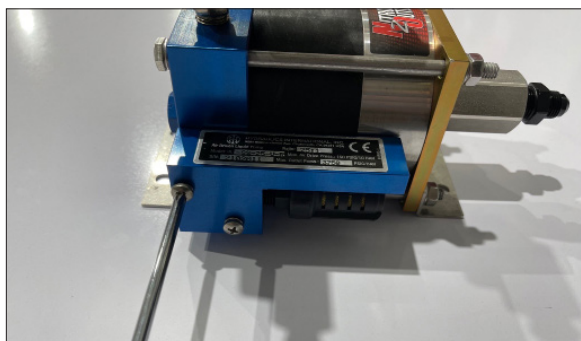
Tools Needed for Installation:

- Pick
- (2) 7/16" Wrenches
- 11/16" Wrench
- 13/16" Socket
- 1-1/8" Socket
- Ratchet
- Phillips Head Screwdriver
- Table Vise



Pre-Installation Tip:

- Be careful not to nick or damage O-rings during assembly.
- Use a lint-free cloth to clean air valves, and O-ring areas.
- Lightly apply a white lithium grease to O-rings during the rebuild process.
- Part numbers 00-68008 & 00-68009 are required.



Air Drive Side

Step 1:

Using a Phillips head screwdriver, remove the two screws from the muffler retainer and pull it off of the pump. Remove and replace the o-ring (80083-014) that sits between muffler retainer and the upper air drive cap.



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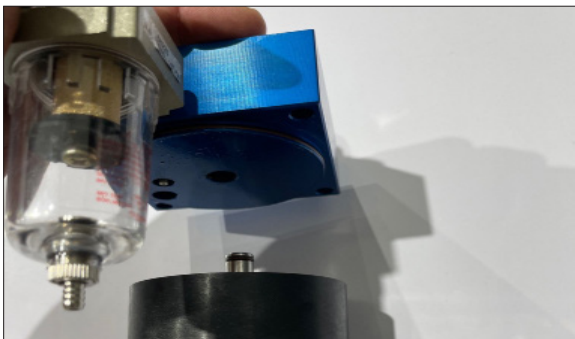
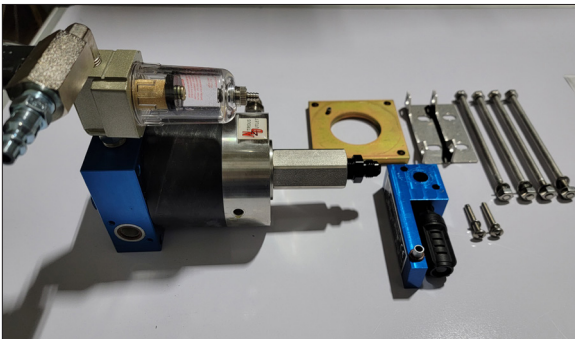
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Step 2:

Using two 7/16" wrenches, remove the four bolts and nuts holding the pump and mounting brackets.



Step 3:

Remove upper air drive cap from the plunger and drive barrel by pulling it upward.

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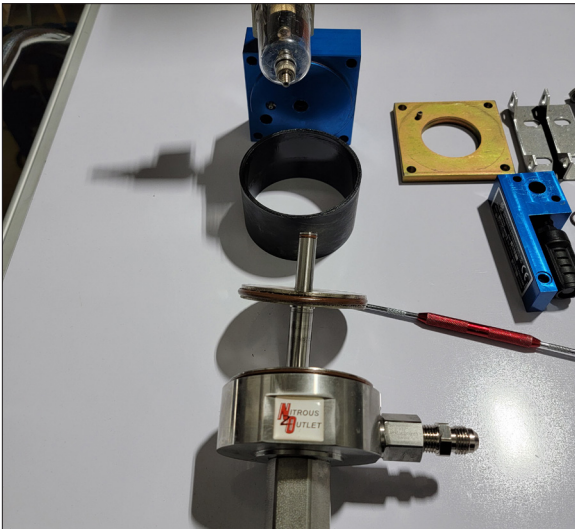


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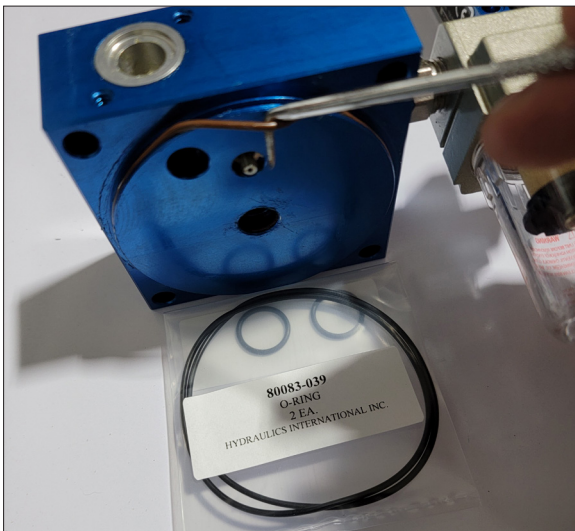
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Step 4:

Separate the black drive barrel and the plunger from the hydraulic body. Set aside for later steps.



Step 5:

Replace the o-ring from the upper air drive cap (80083-039)

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Step 6:

Replace the o-ring from the hydraulic body (80083-039).



Step 7:

Using an 11/16" wrench, remove the plug and cover plate from the upper air drive cap.



Step 8:

Remove the pilot spring, poppet, and o-ring (80084-904).

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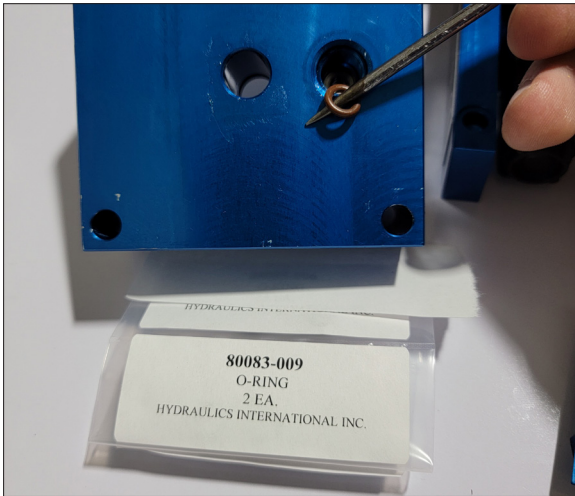


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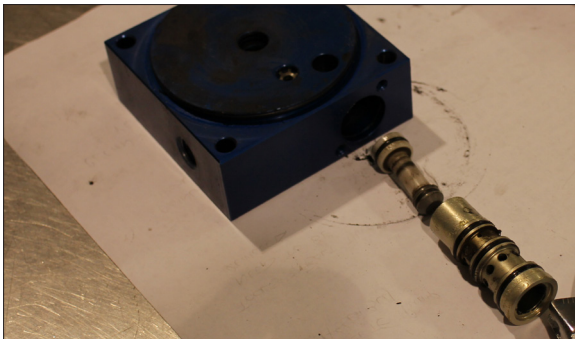
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Step 9:

Once the poppet is removed there will be an o-ring (80083-009) to remove as well. Set aside spring, poppet, spacer, and the plug from the upper air drive cap.



Step 10:

Use a pick to push the sleeve out of the upper air drive cap.

Note: Some force may be required to remove the sleeve.



Step 11:

Remove the spool from the sleeve and replace all 5 orings as follows left to right (80085-013, 80086-011, 80086-015 x2, 80086-016).

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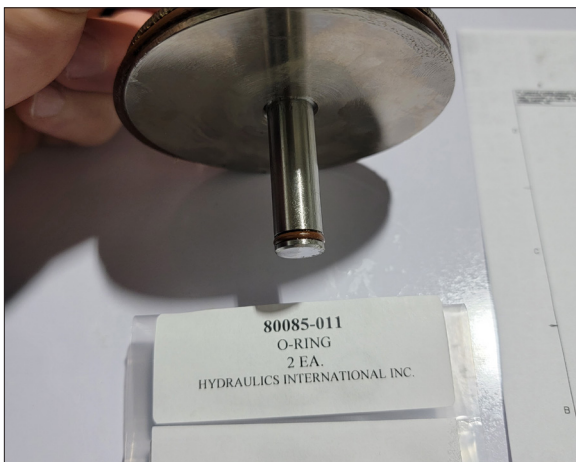
Step 12:

Use a pick to remove and replace the center plunger o-ring (80085-013) that sits just below the rim of the center hole. It is okay if the o-ring is damaged during removal because you are replacing this o-ring.



Step 13: **Unless this part or the o-ring below are damaged it is not necessary to replace them.*

Using a pick, remove the retaining ring from the upper air drive cap. Pry each tooth out from the upper air drive cap, it may take many attempts to remove. Under this is a poppet bearing and oring (80085-006) replace the o-ring, poppet bearing, and then retaining ring (80101-4) making sure to center it as it will not function unless the poppet moves freely.



Step 14:

Replace the small o-ring on the pump piston. (80085-011). Note: This is a high pressure plunger and requires a smooth finish. Make sure you do not scratch it. If the plunger is scratched, it is damaged enough that the pump will not operate properly. If the plunger is discolored, it is likely that the pump has overheated. If either of these conditions are present, you will need to replace this part (80507-25) before pump reassembly.

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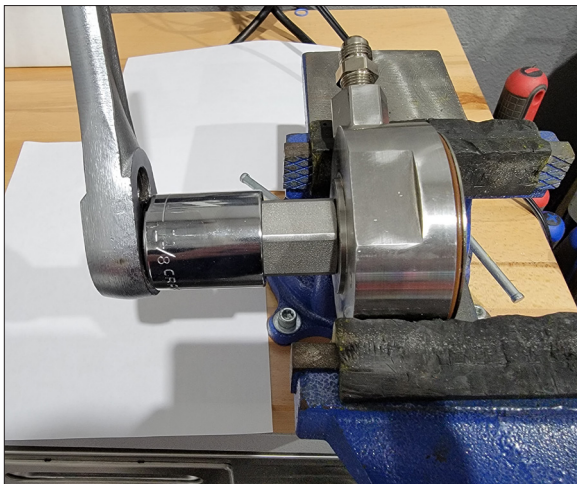
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Step 15:

Apply a small amount of white lithium grease to o-ring (80085-223) and install on the piston. This o-ring is loose on the piston and you will have to work it in to fit the barrel.

Note: This concludes the Air Drive phase of the pump rebuild. If this is all you are replacing, reassemble the pump in reverse order. For the Hydraulic phase of the pump, continue to the next step.

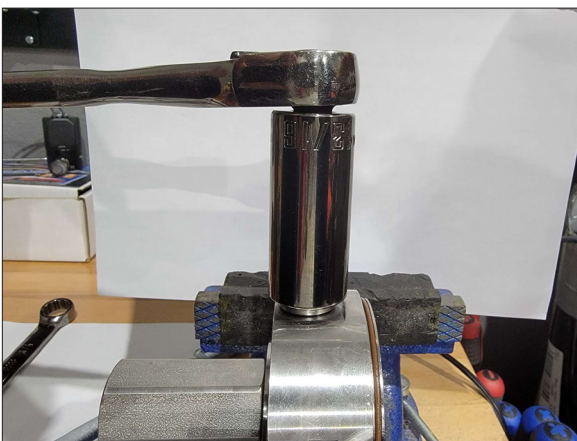


Hydraulic Side

Step 16:

Use a bench vice to hold the hydraulic pump body, then use a socket to loosen the 1-1/8" inlet fitting and 13/16" outlet fitting.

Note: Do not disassemble both at the same time, it is easy to misplace small parts.



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Step 17:

Remove the 1-1/8" hex inlet fitting and carefully separate the hex piece from the hydraulic body, keeping track of the small pieces and springs.



Step 18:

Take the 1/2 check cage, 1/2 check ring, 1/2 check ball spring out of the hydraulic body. Between the 1/2 ball and the hydraulic body you will find the first seal to be replaced - (80049-1) 1/2 check seat.



Step 19:

Remove seals and parts in order and set aside as you separate the parts.

- 1st 1/2 check ring
- 2nd 1/2 check cage
- 3rd Large spring from center of hydraulic body
- 4th Upper loader-seal with the beveled side facing the 1/2 ball and the flat side facing the top.
- **5th Plunger seal (80033-7) flat side up, spring looking side down. (See Step 20 for removal instruction)
- 6th Loader backup-seal (80522-25) direction does not matter
- 7th Bearing doesn't need to be removed but will likely come out when removing the red plunger seal.

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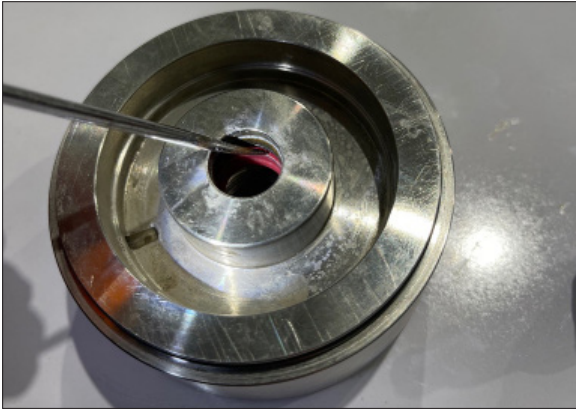


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Step 20:

Use a pick to remove the plunger seal, bearing, loader back-up-seal, and upper loader-seal from the hydraulic body.

*** (p/n 80033-7)*



Step 21:

Replace the parts with the part numbers from Step 19. Re-install in order making sure to keep the small spring and all of the parts aligned. Replace the o-ring below the threads on the inlet fitting (80084-910).



Step 22:

Tighten the 1-1/8" inlet fitting back into the hydraulic body.

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Step 23:

Keeping the outlet fitting vertical so that the loose parts stay balanced, remove it from the hydraulic body. Then remove the 1/4 check cage, 1/4 check ring, 1/4 ball, and 1/4 check spring.



Step 24:

Begin reassembly of the outlet fitting with the new o-ring (80084-906).



Step 25:

Replace the 1/4 check seat (80046-2).

Note: Reassembly instructions in the next step.

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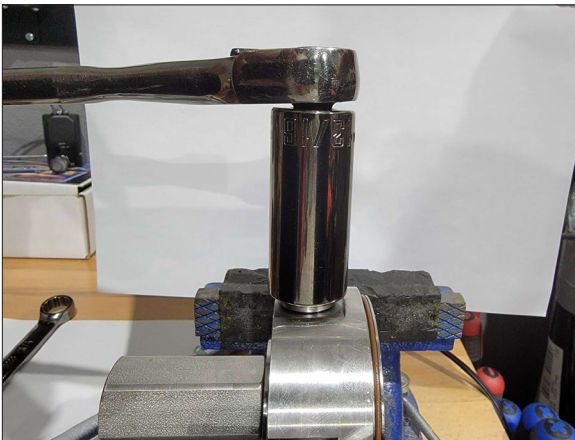
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Step 26:

Carefully install the 1/4 check spring into the 1/4 check cage, then rest the 1/4 ball on it. Balance the new 1/4 check seat on the top of the 1/4 ball. Reinstall in the hydraulic body, making sure to keep everything aligned.



Step 27:

Take the hydraulic body to bench vice and torque the outlet fitting back into the hydraulic body.

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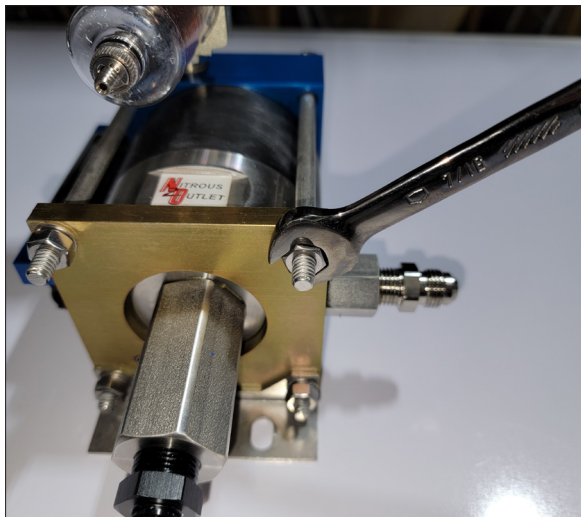


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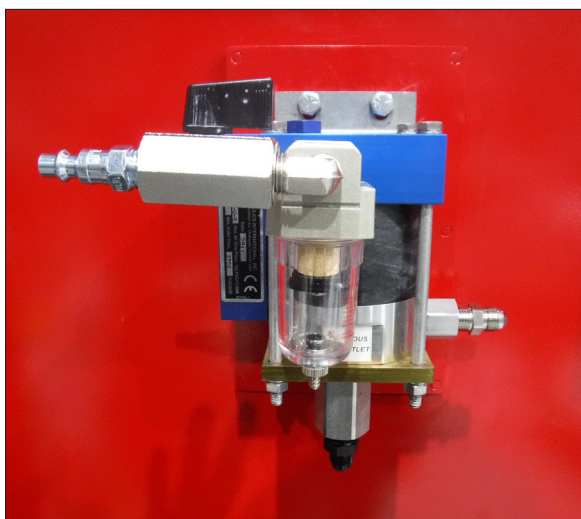
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Step 28:

Reverse the disassembly process and reassemble the pump.



Conclusion:

You have finished the nitrous pump rebuild.

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