

Service Instructions for Nitro-Dyne® Manifold Cylinders BCQ Models

Hyson™ Products
Associated Spring

Service Tools

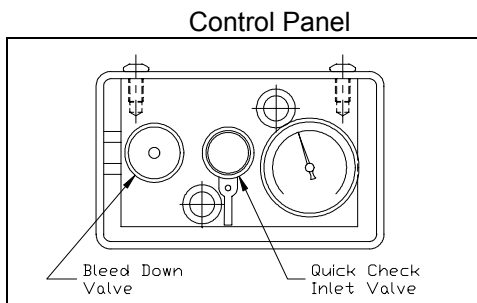
Model	Seal Kit P/N	Socket Wrench	Torque Spec. (ft-lb)
BCQ	11-075-7000	1 1/4"	80 +/-8

Warnings

- Put on safety glasses and hearing protection before servicing any nitrogen gas spring system.
- Failure to exhaust all gas pressure prior to disassembly could result in serious injury.
- Do not depress piston rods with your hand directly. Place a block of wood between the rod and your hand. The piston rod may pop up after being manually depressed.
- The maximum charging pressure for a standard manifold is 103 bar (1500 psi). Higher pressure manifold systems do exist. Refer to the information tag attached to the manifold plate for maximum charge pressure information.
- Prior to pressurizing any manifold, inspect for proper assembly of cylinders and components. Cylinders and plugs are available in both English and metric thread types and may appear to be very similar in size. **Never mix thread types!** Intermixing English and metric thread types could result in serious injury. If there is any doubt about thread type, contact Hyson Products' Customer Service at 1-800-876-4976.

Discharging manifold systems

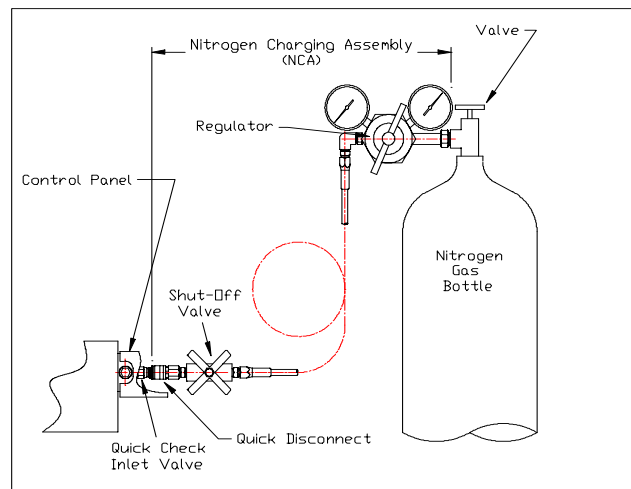
1. Slowly open bleed down valve on control panel.
2. When gauge reaches zero and the gas flow stops, depress piston rods.
3. Close bleed down valve on control panel.



Charging manifold systems

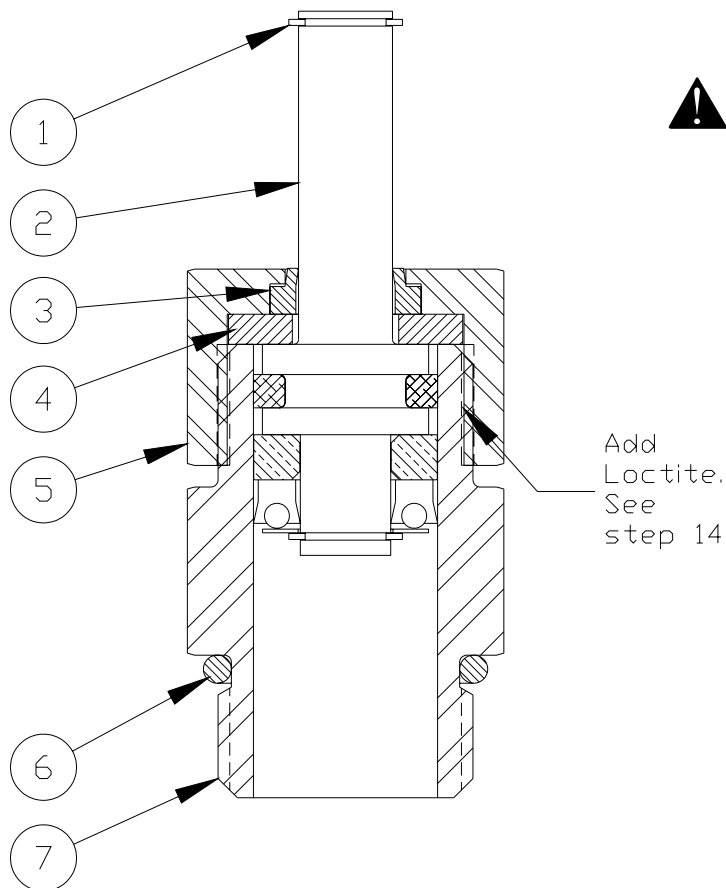
1. Attach Nitrogen Charging Assembly (NCA) to nitrogen gas bottle.
2. Set NCA regulator to zero pressure.
3. Close the shut-off valve on NCA hose.
4. Close bleed down valve on control panel.
5. Attach NCA quick disconnect to quick check inlet valve on control panel.

6. Open valve on nitrogen gas bottle.
7. Set desired pressure on NCA regulator.
8. Slowly open shut-off valve on NCA hose.
9. When correct pressure is obtained, close valve on NCA hose.
10. Disconnect NCA from control panel.
11. Replace protective cap on quick check inlet valve.
12. Close valve on nitrogen bottle.
13. Open shut-off valve on NCA hose to vent charging assembly.
14. When gas flow stops, close NCA shut-off valve.



Verification of assembly (Leak test)

1. Charge the manifold to at least 69 bar (1000 psi). Refer to charging instructions.
2. Pour lightweight oil on the rod scraper (3). If bubbles appear, nitrogen is leaking past the piston seal. **Note:** It may take several minutes for a small leak to be seen. If a leak is found, the cylinder would need to be discharged, disassembled, and inspected. A scratch on the cylinder body bore, rod or seal could be the cause.
3. Pour lightweight oil around the base of the cylinder body (7). If bubbles appear, nitrogen is leaking past the o-ring (6). **Note:** It may take several minutes for a small leak to be seen. If a leak is found, the cylinder would need to be discharged, removed and inspected. A scratch on the cylinder body could be the cause.



7. Save the cylinder body (7), rod cap (5) and bumper ring (4). All other parts are included in the seal kit and used parts can be discarded.



WARNING!

YOU MUST REPLACE THE ENTIRE ROD. A NEW ROD WITH ALL NECESSARY COMPONENTS IS INCLUDED IN THE SERVICE KIT. **DO NOT RE-USE THE OLD ROD!**

Inspection

8. Clean the cylinder body (7), rod cap (5) and bumper ring (4).
9. Visually inspect all components. The inner diameter of the cylinder body and the surface of the piston rod where the seal rests are critical. Any scratches or dents will lead to premature leakage. If defects exist, replace the parts.

Assembly

10. Unpack the seal kit.
11. The seal kit contains Nitro-Dyne[®] Lube XP-206. This is used as assembly oil. The remaining oil is poured into the manifold.
12. Install the rod scraper (3) into the rod cap (5).
13. With the rod cap inverted, place the bumper ring (4) into the top cap.
14. Place 1 drop of Loctite 271 in 2 places, on opposite sides of the body in the rod cap thread area. Install the cylinder body (7) into the rod cap (5). Torque the assembly to 80 +/-8 ft-lb.

Disassembly

1. Verify all pressure has been exhausted from the system by following the discharging instructions.
2. Remove the manifold cylinder from the plate by unthreading the cylinder body (7). Once the cylinder is removed from the plate, cover the port to prevent dirt from falling into the manifold plate.
3. Remove the retaining ring (1) from the piston rod (2).
4. Remove the piston rod (2) from the cylinder body (7).
5. Untorque the rod cap (5) from the cylinder body (7). The scraper (3) and bumper ring (4) can now be removed.
6. Remove the body o-ring (6) from the cylinder body (7).

NOTE: The gap between the rod cap (5) and cylinder body (7) should be approx. 3/32" (0.090") when fully torqued. If the rod cap screws all the way down against the cylinder body, disassemble rod cap and install bumper ring (4).

15. Liberally lubricate the inner diameter of the cylinder body (7). Push the piston rod assembly (2) into the cylinder body (7).
16. Install the retaining ring (1).
17. Liberally lubricate the o-ring (6) and install onto cylinder body (7).
18. Push the rod down.

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