

I. Exhausting Pressure

Self-Contained Mode



1. When exhausting pressure, position gas spring horizontally with port up for safety.



2. Remove Port Plug (90.505.110) located at the base of the spring. Retain parts for use during reassembly.



3. Keeping face and hands clear of port, use Valve Bleed Tool (90.360.4) or Port Servicing Tool (90.320.8) to depress Cartridge Valve (90.265). Cover port with a cloth to absorb discharge.



4. After all gas pressure is exhausted, be sure piston rod will freely extend and retract into tube manually. If not, try depressing valve again. If still unsuccessful, **STOP** and contact DADCO.

Linked Mode



1. Exhaust nitrogen gas by opening bleed valve on the control panel.



2. Verify all pressure is relieved by manually retracting piston rod into tube. If rod will not fully retract, release remaining pressure. If still unsuccessful, **STOP** and contact DADCO.



3. Unthread service fitting and wipe with a clean cloth. Proceed to "II. Port Maintenance" Linked Mode, step 1.

CAUTION: Always wear safety goggles when performing maintenance work.

II. Port Maintenance

Self-Contained Mode



1. The valve usually does not need replacing. If it appears damaged, is leaking or sticking, proceed to step 2. If valve does not need replacing, proceed to "III. C-Ring Removal"



2. Remove Cartridge Valve (90.265) using Port Servicing Tool (90.320.8).



3. Replace damaged Cartridge Valve. Use Port Servicing Tool (90.320.8) to thread new Cartridge Valve into the port until it fits snugly on the seat. Avoid over torquing the valve.



1. Check port for deposits or burrs and clean thoroughly. Inspect service fitting and replace if shows signs of damage. Lubricate threads and seals on fitting and thread into gas spring port.

Linked Mode

III. C-Ring Removal



1. Stand gas spring upright. Make sure rod is retracted in tube. Place Removal Sleeve (90.340.x) over rod. Tap sleeve until Dust Cover (90.246.x) is loosened. Remove dust cover and discard.



2. Reposition removal sleeve and continue tapping until rod cartridge assembly is slightly below retaining ring groove. DO NOT force the cartridge down further into the Tube Assembly.



3. Remove C-style Retaining Ring (90.285.x) using C-Ring Removal Tool (90.356). Position correct hooked end of C-Ring Removal Tool below c-ring. For best results locate tool near either end of c-ring.



4. Once hooked end of tool is firmly seated below c-ring, begin pushing it toward outside of gas spring can. The handles will close naturally and c-ring will be extracted as you complete this motion.

IV. Rod & Cartridge Removal



1. To remove cartridge assembly, thread a T-Handle (90.320.2) into the rod end.



2. Pull entire assembly out of tube. Depress cartridge valve to relieve any back pressure.



3. Once cartridge and rod are removed from tube assembly, slide cartridge off of rod and discard. Retain rod for inspection and possible reuse.

V. Cleaning & Inspection



1. Lightly polish rod surface with emery cloth (600 grit). Inspect finish of rod for scratches or gouges. If rod is damaged, it must be replaced. If present, rod safety ring should remain in place.



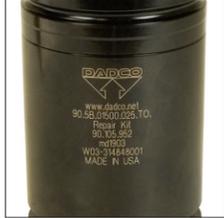
2. Inspect tube assembly for damage, especially around opening. Polish scratches at mouth of tube assembly to avoid damaging seals during reassembly. If damage to tube assembly is severe, it must be replaced.



3. Wash, clean and dry inside of tube assembly thoroughly.

VI. Cartridge Replacement & Reassembly

CAUTION: Before starting reassembly process, be sure repair area is clean. It is imperative that the gas spring be free of all contaminants upon reassembly. If this precaution is not taken, it may lead to premature failure of the gas spring.



1. Choose appropriate repair kit (90.105.95x) for specific model you are repairing. The repair kit number is laser marked on back of tube assembly. **NOTE:** Repair kits are not interchangeable among models.



2. Position cartridge assembly over the rod, making sure wiper end marked "TOP" is facing up. While holding cartridge vertically, slide it down the rod to the rod retainer. Be careful not to force cartridge at an angle as seal could become damaged.



3. Lubricate the inside wall of the tube with entire contents of the bottle of assembly oil.



4. Thread assembly cap onto rod. Place rod and cartridge assembly into spring. To release any back pressure, depress cartridge valve. Position top of cartridge just below retaining ring groove. Tap assembly cap to drive rod and cartridge assembly into tube assembly.



5. Position the top of the cartridge just below the retaining ring groove. The assembly cap is designed to locate the cartridge in this position.



6. Insert C-Style Retaining Ring (90.285.x) into retaining ring groove using C-Ring Installation Tool (90.350.00750 or 90.352) or standard bench tools. Be sure C-Style Retaining Ring is fully seated in retaining ring groove.



7. Thread T-Handle (90.320.2) into end of piston rod. Pull up on t-handle until top of cartridge is past c-ring. The rod must seat cartridge assembly fully (with the housing flush with end of cylinder). Make sure rod is extended to its proper stroke length. (Depress cartridge valve to facilitate full rod extension.)

VII. Charging

NOTE: For best results, use the DADCO Charging Assembly which has a shut off valve and a quick disconnect charging nipple at the end of the hose.



1S. Thread the Quick Disconnect Charging Nipple (90.310.111) into the port. Connect the female end of the Charging Assembly (90.310.040 or 90.310.045) to the charging nipple. The DADCO Pressure Analyzer (90.315.5) may also be used.



1L. Pipe all gas springs back to control panel, making sure that connections are tight and that gas spring rods are extended.



2L. Attach Charging Assembly (90.310.040 or 90.310.045) to quick disconnect filler valve on the control panel.



3. Open main valve on nitrogen tank.



4. Set desired charging pressure on regulator.



5. Slowly open shut-off valve and allow gas spring to reach desired charging pressure. After charging, CLOSE HOSE SHUT-OFF VALVE AND TANK SHUT-OFF VALVE.



6. Disconnect charging assembly from control panel. The small amount of nitrogen trapped between the shut-off valve and filler valve will bleed off as you disconnect fitting.

VIII. Adjusting Gas Spring Pressure

Self-Contained Mode



7. Check for leaks at top of tube around rod and at base around valve compartment using vegetable oil.



8. Verify pressure with a DADCO Load Cell using a DADCO Portable Test Stand (90.305.3) or an arbor press.



9. Make sure Cartridge Valve is in place and thread Port Plug (90.505.110) securely over top.



10. Install new Dust Cover (90.246.5B.x). Tap with a soft mallet until top of Dust Cover rests flush with top of can.



1S. To increase spring pressure, thread the Quick Disconnect Charging Nipple (90.310.111) into the port, set the regulator to the desired pressure and fill. DADCO's Pressure Analyzer (90.315.5) may also be used to adjust pressure.



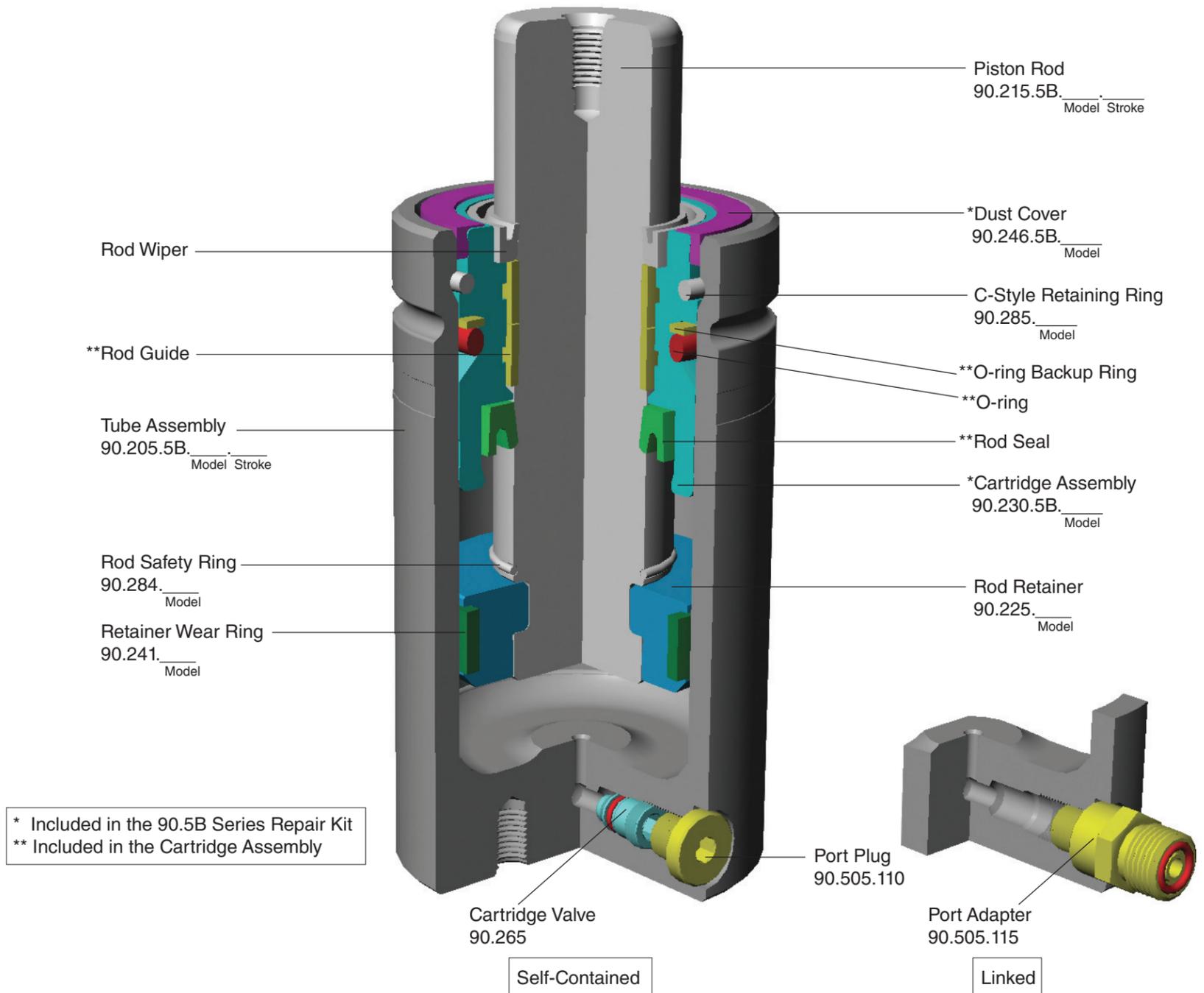
2S. To decrease gas spring pressure, depress valve stem using a DADCO Valve Bleed Tool (90.360.4).



1L. To increase system pressure, set regulator on nitrogen tank to desired level and fill system through control panel. To release pressure, open drain valve on control panel.

Linked Mode

90.5B Series Parts List



Repair Tools

Assembly Cap • 90.330._____
(00750, 01500, 03000, 05000, 07500)

Used to hold the rod and position the cartridge below the C-ring groove when assembling the gas spring.



Removal Sleeve • 90.340._____
(00750, 01500, 03000, 05000, 07500)

To position the cartridge below the C-ring groove when assembling or disassembling a gas spring.



C-Ring Installation Tool
90.350.00750 (00750 Models)

To insert the C-style retaining ring into the retaining ring groove.



C-Ring Installation Tool • 90.352

To insert the C-style retaining ring into the retaining ring groove.



T-Handle • 90.320.2 (M8 thread)

To remove the piston rod when disassembling and position correctly when reassembling.



C-Ring Removal Tool • 90.356

To remove the C-style retaining ring safely in a single controlled motion.



Valve Bleed Tool • 90.360.4

Use the DADCO Valve Bleed Tool to slowly discharge a spring to the desired pressure.



DADCO Pressure Analyzer • 90.315.5

Use the DADCO Pressure Analyzer to easily charge, discharge, and gauge the pressure in DADCO's 90.5B Series Gas Springs.



Port Servicing Tool • 90.320.8

To perform all necessary servicing to the valve compartment.



Quick Disconnect Charging Nipple
90.310.111 (G 1/8)

Use the DADCO Quick Disconnect Charging Nipple to charge 90.5B Series Gas Springs.



Standard Load Cell • 90.300._____
(00750, 01500, 03000, 05000, 07500)

When used with a Portable Test Stand, the Standard Load Cell gives precise measurement of gas spring charging pressure. Request bulletin 97B119G.



Portable Test Stand • 90.305.3

Use the Portable Test Stand in conjunction with a Standard Load Cell for precise measurement of gas spring force. For more information, request bulletin 97B121.



Charging Assembly • 90.310.040

Use the DADCO Quick Disconnect Charging Assembly with the charging nipple or pressure analyzer to charge self-contained gas springs. It can also be used with a DADCO control panel for charging linked systems.



DADCO® Nitrogen Gas Spring Maintenance Instructions 90.5B Series



Bulletin No. B06125C

Comprehensive Guide

This service manual is a simple step-by-step maintenance guide for DADCO 90.5B Series Nitrogen Gas Springs. Proper repair requires careful examination of all component parts and replacement of any that are worn or damaged. All DADCO replacement parts are available from factory stock.

Note: Nitrogen Gas Spring repair varies slightly from model to model and by mode of operation (self-contained or linked). As you proceed through the basic steps outlined in this bulletin, take care to follow the instructions pertaining to your model. All DADCO Gas Springs are permanently marked with model and serial number. Please refer to these numbers when performing repair work and when ordering replacement parts.