I. Exhausting Pressure

Self-Contained Mode

- When exhausting pressure, position gas spring horizontally with port up for safety.
- Remove Port Plug (90.505.110) located at the base of the spring. Retain parts for use during reassembly.

CAUTION: Always wear safety goggles when performing maintenance work.

II. Port Maintenance

Self-Contained Mode

- The valve usually does not need replacing. If it appears damaged, leaking or sticking, proceed to step 2. If valve does not need replacing, proceed to “V. C-Ring Removal”.
- To remove cartridge and rod assembly, thread a T-Handle (90.320.2) into the rod end.
- Pull entire assembly out of tube. Depress cartridge valve to relieve any back pressure.
- Once cartridge and rod are removed from tube assembly, slide cartridge off of rod and discard. Retain rod for inspection and possible reuse.
- Choose appropriate repair kit (90.305.35x) for specific model you are repairing. Repair kits are not made for Self-Contained Models.
- 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 retainer. Be careful not to force cartridge at an angle as seal could become damaged.
- Lubricate the inside wall of the tube with entire contents of the bottle of assembly oil.
- Position the top of the cartridge just below the retaining ring groove. The assembly cap is designed to locate the cartridge in this position.
- 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.
- Insert C-Style Retaining Ring (90.285.x) using C-Ring Removal Tool (90.356). Position correct handed end of C-Ring Removal Tool below c-ring. For best results locate tool near either end of c-ring.
- Lightly polish rod surface with emery cloth (800 grit). Inspect finish of rod for scratch or gouges. If rod is damaged, it must be replaced. If present, rod safety ring should remain in place.
- Lubricate threads and seals on fitting and head into gas spring port.
- Check port for deposits or burrs and clean thoroughly. Inspect service fitting and replace if necessary.

NOTE: 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.

III. C-Ring Removal

Self-Contained Mode

- To decrease gas spring pressure, disconnect charging nipple (90.310.111) into the port, set the regulator to the desired pressure and B. DADCO’s Pressure Analyzer (90.315.5) may also be used to adjust pressure.
- To increase gas spring pressure, thread the Quick Disconnect Charging Nipple (90.210.17) into the port, set the regulator to the desired pressure and B. DADCO’s Pressure Analyzer (90.315.5) may also be used to adjust pressure.
- 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.
- To decrease gas spring pressure, depress valve stem, using a DADCO Valve Bleed Tool (90.360.4).
- Install Dust Cover (90.248.5B.x). Tap with a soft mallet until top of Dust Cover rests flush with top of can.
- Open main valve on nitrogen tank.
- Check valves at top of tube around rod and at base around valve compartment using vegetable oil.
- Verify pressure with a DADCO Load Cell using a DADCO Portable Test Stand (90.305.3) or an air pressure.
- Make sure Cartridge Valve is in place and thread Port Plug (90.505.110) securelyflush with top of can.
- Install new Dust Cover (90.248.5B.x). Tap with a soft mallet until top of Dust Cover rests flush with top of can.
- 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.
- Unthread service fitting and wipe with a clean cloth. Proceed to “II. Port Maintenance” Linked Mode, step 1.
- Disconnect Charging Nipple and wipe with a clean cloth. Proceed to “II. Port Maintenance” Linked Mode, step 1.
- To decrease gas spring pressure, depress valve stem, using a DADCO Valve Bleed Tool (90.360.4).
- Install new Dust Cover (90.248.5B.x). Tap with a soft mallet until top of Dust Cover rests flush with top of can.
- Check for leaks at top of valve does not need replacing or sticking, appears damaged, leaking or sticking, proceed to step 2. If valve does not need replacing, proceed to “V. C-Ring Removal”.
- To decrease gas spring pressure, depress valve stem, using a DADCO Valve Bleed Tool (90.360.4).
- Install new Dust Cover (90.248.5B.x). Tap with a soft mallet until top of Dust Cover rests flush with top of can.
- Check for leaks at top of valve does not need replacing or sticking, appears damaged, leaking or sticking, proceed to step 2. If valve does not need replacing, proceed to “V. C-Ring Removal”.
- To decrease gas spring pressure, depress valve stem, using a DADCO Valve Bleed Tool (90.360.4).
- Install new Dust Cover (90.248.5B.x). Tap with a soft mallet until top of Dust Cover rests flush with top of can.
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- To decrease gas spring pressure, depress valve stem, using a DADCO Valve Bleed Tool (90.360.4).
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- Check for leaks at top of valve does not need replacing or sticking, appears damaged, leaking or sticking, proceed to step 2. If valve does not need replacing, proceed to “V. C-Ring Removal”.
- To decrease gas spring pressure, depress valve stem, using a DADCO Valve Bleed Tool (90.360.4).
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- Check for leaks at top of valve does not need replacing or sticking, appears damaged, leaking or sticking, proceed to step 2. If valve does not need replacing, proceed to “V. C-Ring Removal”.
- To decrease gas spring pressure, depress valve stem, using a DADCO Valve Bleed Tool (90.360.4).
- Install new Dust Cover (90.248.5B.x). Tap with a soft mallet until top of Dust Cover rests flush with top of can.
Use the DADCO Quick Disconnect Charging Nipple to charge 90.5B Series Gas Springs.

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 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 replacement parts are available from factory stock.

### Repair Tools

- **Assembly Cap**
  - 90.330
  - (00750, 01500, 03000, 05000, 07500)

- **Removal Sleeve**
  - 90.340
  - (00750, 01500, 03000, 05000, 07500)

- **C-Ring Installation Tool**
  - 90.350.0750 (00750 Models)

- **C-Ring Removal Tool**
  - 90.356

- **T-Handle**
  - 90.320.2 (M8 thread)

- **Valve Bleed Tool**
  - 90.360.4

- **Port Servicing Tool**
  - 90.320.8

- **Quick Disconnect Charging Nipple**
  - 90.310.111 (G 1/8)

- **DADCO Pressure Analyzer**
  - 90.315.5

- **Charging Assembly**
  - 90.310.040

### 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 force. For more information, request bulletin 97B119.

### 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.

### 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.

### 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.

### 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 replacement parts are available from factory stock. Please refer to these numbers when performing repair work and when ordering replacement parts.