Nitrogen Gas Spring Repair Instructions

I. Exhausting Pressure

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. Exhausting Pressure

- Use a vacuum device to exhaust the pressure from the spring. Make sure the vacuum is connected to the spring.
- Place the spring on a flat surface and make sure it is secure.
- Use a wrench to loosen the retaining ring.

3. Remove the Retaining Ring

- Use a wrench to remove the retaining ring from the spring.
- Make sure the spring is clear of the retaining ring.

- Replace the retaining ring with a new one.

4. Cartridge Assembly

- Check the cartridge assembly for any signs of wear or damage.
- If necessary, replace the cartridge assembly.

- Install the new cartridge assembly into the spring.

II. Port Maintenance

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. Port Servicing Tool

- Use a port servicing tool to clean the port.
- Make sure the tool is the correct size for the port.

- Use the tool to clean the port of any debris or residue.

3. Port Plug

- Check the port plug for any signs of wear or damage.
- If necessary, replace the port plug.

- Install the new port plug into the spring.

III. C-Ring Removal

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. C-Ring Removal

- Use a C-ring removal tool to remove the C-ring from the spring.
- Make sure the tool is the correct size for the C-ring.

- Use the tool to remove the C-ring from the spring.

- Replace the C-ring with a new one.

IV. Rod & Cartridge Replacement

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. Removal Sleeve

- Use the removal sleeve to remove the rod from the spring.
- Make sure the sleeve is the correct size for the rod.

- Use the sleeve to remove the rod from the spring.

- Replace the rod with a new one.

3. Cartridge Assembly

- Check the cartridge assembly for any signs of wear or damage.
- If necessary, replace the cartridge assembly.

- Install the new cartridge assembly into the spring.

V. Inspection & Cleaning

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. Removal Sleeve

- Use the removal sleeve to remove the rod from the spring.
- Make sure the sleeve is the correct size for the rod.

- Use the sleeve to remove the rod from the spring.

- Replace the rod with a new one.

3. Cartridge Assembly

- Check the cartridge assembly for any signs of wear or damage.
- If necessary, replace the cartridge assembly.

- Install the new cartridge assembly into the spring.

VI. Cartridge Replacement and Assembly

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. Replacement Cartridge

- Check the cartridge replacement for any signs of wear or damage.
- If necessary, replace the cartridge replacement.

- Install the new cartridge replacement into the spring.

3. Spring Assembly

- Check the spring assembly for any signs of wear or damage.
- If necessary, replace the spring assembly.

- Install the new spring assembly into the spring.

VII. Charging

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. Charging Method

- Check the charging method for any signs of wear or damage.
- If necessary, replace the charging method.

- Install the new charging method into the spring.

VIII. Adjusting Gas Spring Pressure

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. Adjusting Pressure

- Check the adjusting pressure for any signs of wear or damage.
- If necessary, replace the adjusting pressure.

- Install the new adjusting pressure into the spring.

V. Linked Systems

1. Preparatory Work

- Check the spring height before starting the repair. Make sure the spring is the correct model.
- Check for any signs of wear or damage to the spring.
- Make sure the spring is clean and free of debris.

2. Linked System

- Check the linked system for any signs of wear or damage.
- If necessary, replace the linked system.

- Install the new linked system into the spring.

Repair Kits

Select your repair kit from the list below. Please note, repair kits are not interchangeable. Verify you have the proper repair kit to removing the front mark on the cylinder you are repairing.

Comprehensive Guide

This service manual is a step-by-step comprehensive guide to DADCO® Linked and UltraForce® Nitrogen Gas Springs. Known as U, US, UT and USL.

Typically, DADCO Nitrogen Gas Springs can be replaced in less than 10 minutes by replacing only one piece, the factory pre-assembled cartridge assembly. After replacing the cartridge assembly, if you have any further questions please contact DADCO for assistance.

Service Tools

Refer to the appendix of this bulletin for a comprehensive list of tools used to repair these Nitrogen Gas Springs.
Nitrogen Gas Spring Repair Instructions

I. Exhausting Pressure

Before proceeding with any maintenance work on a DADCO Nitrogen Gas Spring, it is essential to first exhaust the pressure. This process involves releasing the trapped gas from the spring, allowing it to be serviced safely.

II. C-Ring Removal

1. Drain the gas spring of any residual pressure by opening the shut-off valve at the end of the charging nipple. This allows the gas within the spring to escape, reducing the risk of high pressure accidents.

2. The DADCO Nitrogen Gas Spring is equipped with a C-style retaining ring, which serves as a safety feature to prevent accidental disassembly. To remove this ring, use a C-Ring Removal Tool or a similar device.

III. C-Ring Installation

1. Once the C-ring is removed, it must be replaced with a new one. Choose the correct size based on the model of your gas spring. The table below lists the available sizes:

<table>
<thead>
<tr>
<th>Model</th>
<th>C-Ring Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.0400</td>
<td>90.300.1200</td>
</tr>
<tr>
<td>U.0400</td>
<td>90.300.0300</td>
</tr>
<tr>
<td>U.0400</td>
<td>90.340.01600</td>
</tr>
<tr>
<td>U.0400</td>
<td>90.340.07500</td>
</tr>
</tbody>
</table>

2. Use the C-Ring Installation Tool to drive the new ring into the gas spring. Ensure that it is seated correctly to maintain the integrity of the spring.

IV. Rod & Cartridge Removal

1. The cartridge is a critical component of the gas spring. To replace it, first consult the Service Tools table for the appropriate tool.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Disconnect Charging Nipple: Self-Contained</td>
<td>Disconnects the gas spring from the system</td>
<td>90.340.00600</td>
</tr>
<tr>
<td>Quick Disconnect Charging Nipple: Universal</td>
<td>Disconnects the gas spring from the system</td>
<td>90.340.03000</td>
</tr>
<tr>
<td>Cartridge Starter Kit</td>
<td>Includes a Cartridge and Cartridge Adapter</td>
<td>90.340.07500</td>
</tr>
</tbody>
</table>

2. Use the appropriate tool to remove the cartridge. It may be necessary to disassemble the gas spring further to gain access to the cartridge.

V. Cleaning & Inspection

Before reassembly, it is crucial to clean and inspect all components. This involves:

1. Inspecting the rod for any wear or damage. If necessary, replace it with a new one.

2. Verifying that the gas spring is free of contaminants. If not, clean it thoroughly before proceeding.

VI. Cartridge Replacement and Reassembly

1. Replace the cartridge with a new one from the Service Tools table. Ensure it is fitted correctly to prevent leaks.

2. Securely re-install the T-Handle, ensuring it is snug enough to drive the cartridge down the rod end. This is particularly important for maximum performance.

VII. Charging

After reassembling, it is essential to charge the gas spring. Use the chart below to guide you:

<table>
<thead>
<tr>
<th>Pressure Level</th>
<th>Recommended C-Ring Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>90.340.01600</td>
</tr>
<tr>
<td>Medium</td>
<td>90.340.07500</td>
</tr>
<tr>
<td>High</td>
<td>90.340.1200</td>
</tr>
</tbody>
</table>

VIII. Adjusting Gas Spring Pressure

1. To adjust the pressure of the gas spring, follow the instructions in the chart provided.

IX. Linked Systems

1. When dealing with linked systems, refer to the diagram provided for guidance on servicing the gas spring.

X. Summary

1. Review the entire reassembly process to ensure all components are correctly installed and the gas spring is ready for use.

Appendix:

- **Flushing Tools**: Depending on your specific needs, you may require tools such as a Compression Tester or a Pressure Gauge to test the integrity and performance of the gas spring.

- **Digital Load Cells**: For more precise measurements, digital load cells are available. The table below outlines the different models:

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>90.305.LC.05A</td>
<td>Digital Load Cell (0-500 lbs)</td>
</tr>
<tr>
<td>90.305.LC.50A</td>
<td>Digital Load Cell (0-5000 lbs)</td>
</tr>
</tbody>
</table>

For more detailed instructions and parts lists, consult the DADCO product manual. Please ensure you have a DADCO nitrogen gas spring repair kit on hand when servicing your gas springs.