The Closed Loop Purge system is a control option to prevent the intrusion of outside atmosphere into the actuator. Although Rotork Fluid Systems’ actuators are designed with internal anti-corrosion properties, this system is available to enhance our offering and comply with specifications specifically requesting a “clean breath system”. These specifications are sometimes seen in applications such as offshore platforms, coastal areas, chemical plants, paper mills etc., in which the atmosphere may be highly saline, caustic or dust laden.

The system is simple and reliable. Speed control options are easily provided for either or both directions of travel.

Rotork Fluid Systems can engineer a solution to meet virtually any application requirements.

**TYPICAL SCHEMATIC**

![Typical Schematic](image)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solenoid Directional Control Valve</td>
</tr>
<tr>
<td>2</td>
<td>Quick Exhaust Valve</td>
</tr>
<tr>
<td>3</td>
<td>Spring Loaded Check Valve</td>
</tr>
<tr>
<td>4</td>
<td>Spring Return Actuator</td>
</tr>
<tr>
<td>5*</td>
<td>Needle Valve</td>
</tr>
<tr>
<td>6*</td>
<td>Needle Valve</td>
</tr>
</tbody>
</table>

* Items 5 and 6 are optional components that can be added to adjust stroke speeds.

*The schematic is drawn with all components shown in the failed position, CW to close.*

**OPERATION**

**PNEUMATIC STROKE**

Supply pressure is applied through the Directional Control Valve (DCV) (1) to the outboard cylinder port.

The actuator strokes compressing the spring.

Excess volume from the inboard side of the piston is exhausted through the spring loaded check valve (3).

**SPRING STROKE**

The solenoid DCV (1) is shifted, removing supply pressure to the outboard pneumatic cylinder port.

Without the offsetting pressure, spring force will stroke the actuator.

Outboard piston volume exhausts to the inboard side. Excess volume is exhausted through the spring loaded check valve (3).
All Rotork Fluid Systems actuators are manufactured under a third party accredited ISO 9001:2000 quality assurance programme.

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As we are continually developing our products, their design is subject to change without notice. RFSMH0508

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