Actuators

Red Valve actuators are manufactured with lightweight Black Amalga tubing, which is fiberglass-reinforced epoxy. The actuator material is impregnated with an anti-friction additive to reduce the piston and O-ring to cylinder friction. The actuator is self-lubricating, and the inside of the cylinder is honed to a 5-15 micro inch finish. The combination of the surface finish and the self-lubricating feature greatly increase the O-ring life.

The Black Amalga is resistant to chemical attack and corrosion, making it ideal for most environments. It has an impact strength of 40 izod ft-lbs, which makes the actuator much more dent-resistant than aluminum or brass.

Red Valve actuators have a maximum operating pressure of 150 psi and can withstand external operating temperatures of -90°F to 225°F.

Piston rods are made of polished 304 stainless steel, and the piston rod is sealed with a polyurethane lip seal. Both the piston rod and seal are protected by a wiper ring that cleans the piston rod before it passes through the lip seal. The rod seal and wiper ring are held in place by a bronze stem bushing, which prevents galling of the piston rod. The combination of a stainless steel piston rod, wiper ring and lip seal contribute to extended actuator life.

Double-Acting Actuator

ATO/ATC R style actuators are used on Series 5200, 5200 D-Port, 5400 and 5300 Open-Frame Control Valves. These actuators use air to open and close the valve.

Single-Acting Actuator

ATO/FCS and ATC/FOS RS style actuators consist of either a fail-close spring, which is preloaded to provide enough force to close and seal the sleeve upon air loss, or a fail-open spring, which drives the valve open upon air loss. Fail-open spring actuators are used primarily in low pressure or partial vacuum services, where the line pressure is not sufficient to fully open the valve.

Standard tubing is polyethylene; optional tubing includes copper, PVC-coated copper and stainless steel.

Materials of Construction

- Black Amalga cylinder tube
- Neoprene O-ring seal
- 304 stainless steel piston rod
- Polyethylene or Buna-N wiper ring
- SAE grade 5 carbon steel threaded tie rods
- Stainless steel fastening nuts
- T6061 aluminum cylinder heads and piston
- Polypak or Buna-N wiper ring
- SAE grade 5 carbon steel threaded tie rods
- Stainless steel fastening nuts
- T6061 aluminum cylinder heads and piston

Series 9000 High Pressure

- Working pressures up to 720 psi
- High-pressure pinch valve design for on/off applications
- Heavy-duty polyester or Kevlar®-reinforced high-pressure sleeve is the only wetted part
- Extended service life
- Sealed body design

The Series 9000 High-Pressure Control Pinch Valve is Red Valve’s ANSI Class 300 pinch valve product. With Red Valve’s Double-Wall Sleeve, the valve features increased abrasion resistance and can accommodate pressures up to 720 psi. The Series 9000 is also available with Red Valve’s patented Cone Sleeve for control applications and the Standard Sleeve for lower pressure requirements.

A heavy-duty solid steel stroke adjustment unit located on the base of the Series 9000 allows the user to fine-tune control or adjust stroke for sleeve wear due to abrasion, reducing system downtime.

The Series 9000 is available with various actuators: bevel gear actuators for manual operation, hydraulic or electric actuators for automatic operation and pneumatic actuators for small or low-pressure applications.

For applications with low pressure requirements, the Series 9000 is also available in ANSI Class 150 drilling configurations.

Materials of Construction

- Ductile iron, 316 stainless steel bodies
- Sleeves available in Pure Gum Rubber, Neoprene, Hypalon®, Chlorobutyl, Buna-N, EPDM and Viton®
- Bevel Gear 4:1, 8:1, 16:1 actuator, electric actuator or hydraulic actuator
- Drilled and tapped to mate with ANSI B16.5 Class 300 flanges, ANSI B16.1 Class 250 flanges, optional Class 150 flanges

Dimensions Series 9000

<table>
<thead>
<tr>
<th>VALVE SIZE</th>
<th>PORT SIZE</th>
<th>MAX WORKING PRESSURE AT 100°F psi</th>
<th>LENGTH</th>
<th>WIDTH</th>
<th>HEIGHT</th>
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<tr>
<td>1”</td>
<td>1”</td>
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<td>7-1/2”</td>
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<td>83”</td>
<td>29”</td>
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</tr>
</tbody>
</table>

*Higher working pressures available.
**With hydraulic cylinder.

The Series 9000 is available with various actuators: bevel gear actuators for manual operation, hydraulic or electric actuators for automatic operation and pneumatic actuators for small or low-pressure applications.

For applications with low pressure requirements, the Series 9000 is also available in ANSI Class 150 drilling configurations.