CIRCLE SEAL CONTROLS

HYDRAULIC RESTRICTOR VALVES
Over 45 Years Of Solutions To Fluid Flow Control Problems

Circle Seal Controls, a leader in hydraulic and pneumatic controls, offers a variety of custom-tailored restrictor valves. Originally designed and built for America's advanced B-2 and F-22 aircraft, these high quality restrictors are qualified to stringent customer specifications.

Compact and easily installed, Circle Seal restrictors feature an efficient straight-line design to reduce size and weight. Widespread aircraft fluid systems applications include precision flow control, speed control of cylinders and actuators, accurate timing in hydraulic circuits, flow restrictions, and accurate throttling.

With more than forty years design and manufacturing experience, Circle Seal has exceptional qualifications for developing restrictor valves for your unique requirements. Flow and pressure differential values can be tailored to your specific needs by tightly controlled orifice sizes. Call or write today for details.

Contact your Circle Seal representative or applications engineer for assistance with your restrictor valve requirements.

Choice of Three Styles

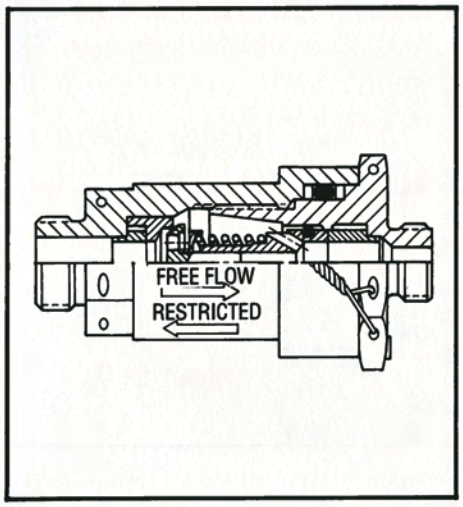
Circle Seal hydraulic restrictor valves can be specified as:

- One Way: Restricted flow in one direction and free flow in the other.
- Two Way: Equally restricted flow in both directions.
- Two Way Differential: Unequally restricted flows.

Dimensions shown are examples of typical sizes. Specific dimensions will vary depending on flow, delta P, orifice size, and connection type.

ONE WAY—RESTRICTED/FREE FLOW

CV99-38/-105 STYLE

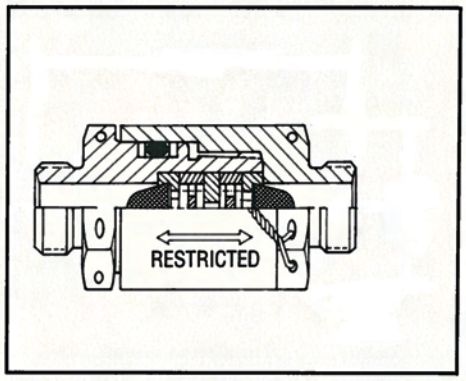


In the restricted flow direction, the spring loaded poppet is closed. The poppet's small orifice restricts fluid to a specific flow/delta P value.

In the free flow direction, the poppet opens and permits flow through the valve in the direction of the large orifice. (Free flow is equivalent to fitting size.)

TWO WAY—EQUALLY RESTRICTED FLOW

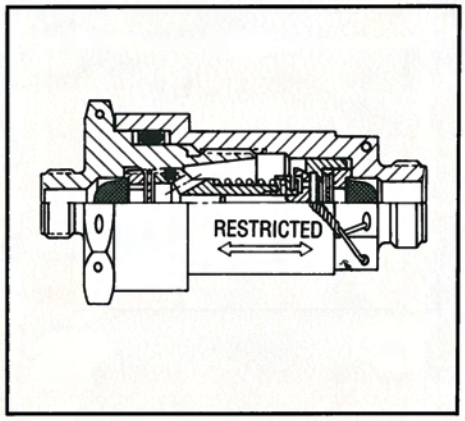
CV99-41/-104 STYLE



Fluid is restricted to the same specific flow/delta P in both directions, through an orifice sized specifically to meet your needs.

TWO WAY DIFFERENTIAL—UNEQUALLY RESTRICTED FLOW

CV99-39/-40 STYLE



Fluid is restricted to a specific but unequal flow/delta P in each direction. In one direction, the spring-loaded poppet opens to permit higher flow. In the opposite direction, flow is controlled through the orifice in the closed poppet, plus an additional orifice plate.

Technical Data

Operating Pressure	0–4,000 PSI
Proof Pressure	Up to 6,000 PSI
Burst Pressure	Up to 10,000 PSI
Operating Temperature	Aerospace Standard
Media	Hydraulic fluid (others on request)
Fitting Size	1/4" to 1"
Fitting Options	MS33656, MS33514, and MS33649 (others on request)
Flow Rates	0.05 to 30 GPM, depending on valve size and pressure drop required
Flow Tolerances	5 to 15% Typical
Weight	Minimum, material-dependent
Reliability	Various models have passed 50,000 life and 50,000 endurance cycles without failure
Other	Orifice sizes smaller than 0.70" diameter are filtered. Baffles prevent flow impingement on filter media. Non-reversible installation features available.

CIRCLE SEAL CONTROLS, INC.

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