

## Multiple Stage Orifice

### Usage

The multiple stage orifice Model MSO is provided for high pressure reduction applications which require accurate flow volume with quiet operation without flashing or cavitation.

### How It Works

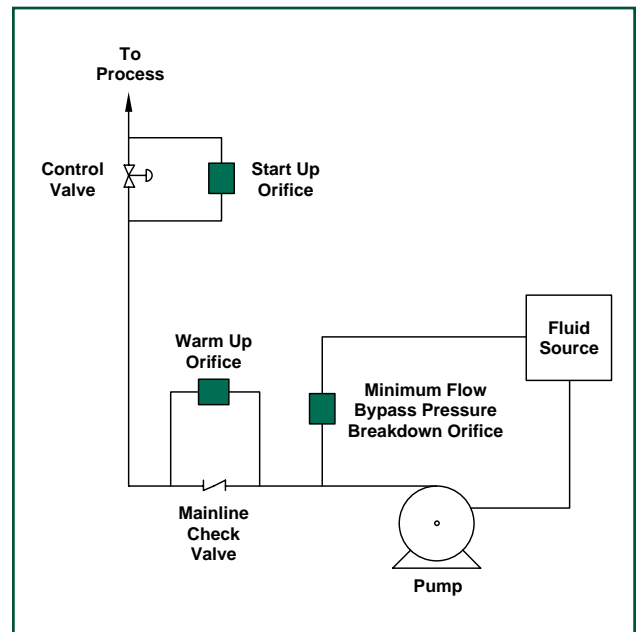
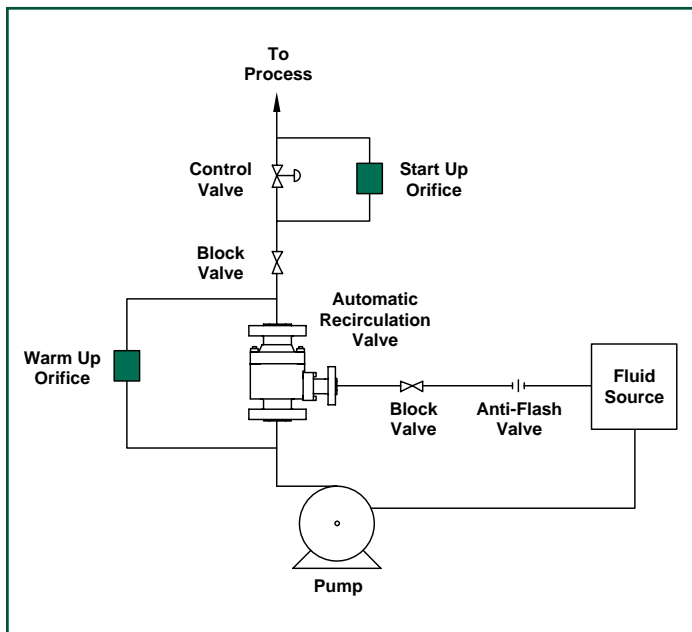
The orifice operates similarly to many high pressure drop control valves except it operates in a fixed open

position. The fluid is directed into a vortex flow across multiple stages which progressively reduces the pressure. The multiple stages result in the fluid not falling below vapor pressure. The outlet of the orifice is a multi hole flow straightener, which directs the fluid as a laminar spray, preventing damage to downstream piping.

### Applications

In general, any high pressure fixed flow requirement. Specific examples include: centrifugal pump minimum flow protection, warm up lines, strainer blow off and control valve bypass.

## Typical Installations

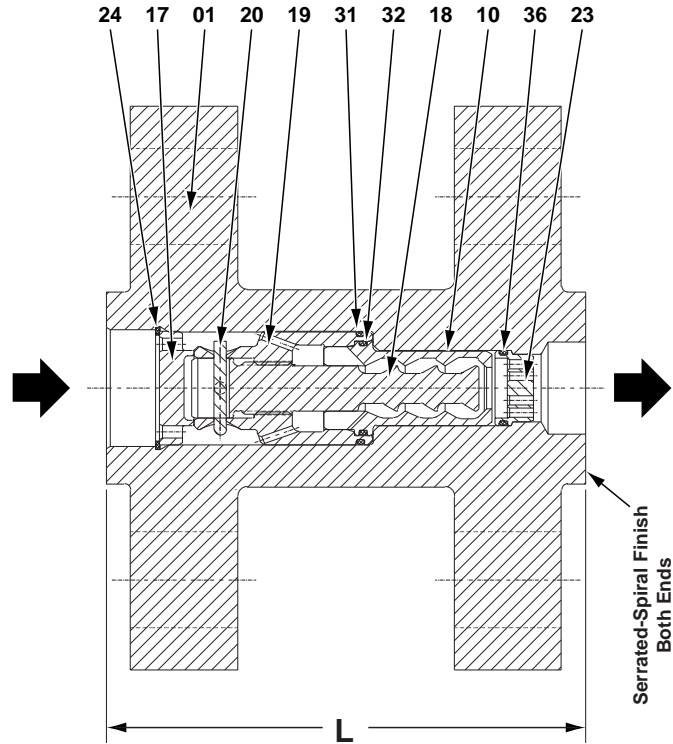


# Materials of Construction and Dimensions

Pos.	Qty.	Description	Material
01	1	Body	A105 Carbon Steel
10	1	Vortex Housing	416 Stainless Steel
17	1	Orifice Bushing	416 Stainless Steel
18	1	Vortex Insert	431 Stainless Steel
19	1	Linkage	416 Stainless Steel
20	1	Pin	316 Stainless Steel
23	1	Flow Straightener	431 Stainless Steel
24	1	Snap Ring	316 Stainless Steel
31	1	O-Ring	(Application Dependent)
32	1	O-Ring	(Application Dependent)
36	1	O-Ring	(Application Dependent)

Size	L
1"	5"
1-1/2"	6-1/2"
2"	7-1/2"
2-1/2"	8-1/2"
3"	10-1/2"
4"	12-1/2"
6"	18-1/8"

Contact HBE for larger sizes.



**HBE Multiple Stage Orifice**

## Required Application Data

Fluid \_\_\_\_\_

Temperature \_\_\_\_\_

Inlet Pressure \_\_\_\_\_

Piping Size & Rating \_\_\_\_\_

Outlet Pressure \_\_\_\_\_

Flow Required \_\_\_\_\_



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