

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

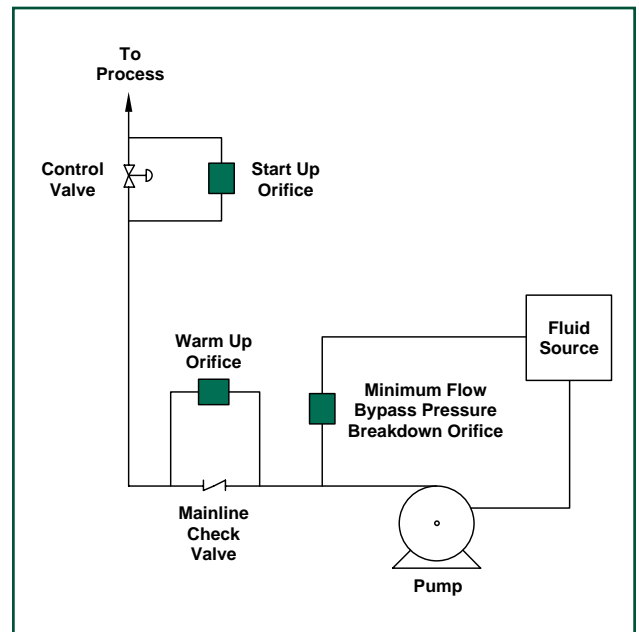
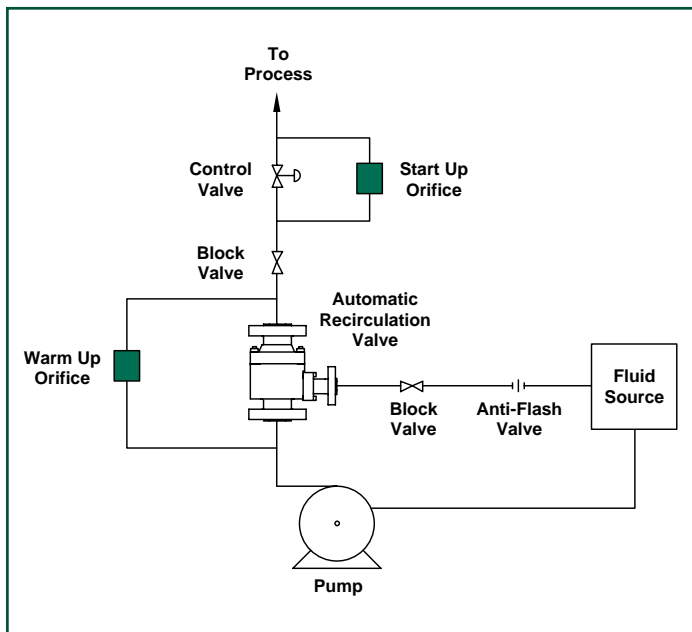
The orifice operates similarly to many high pressure drop control valves except it operates in a fixed open

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

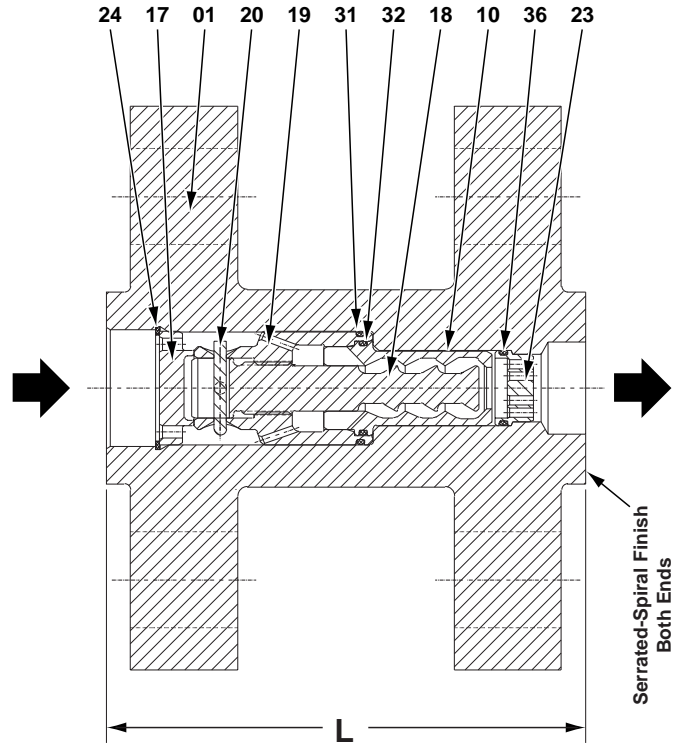


Materials of Construction and Dimensions

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 _____

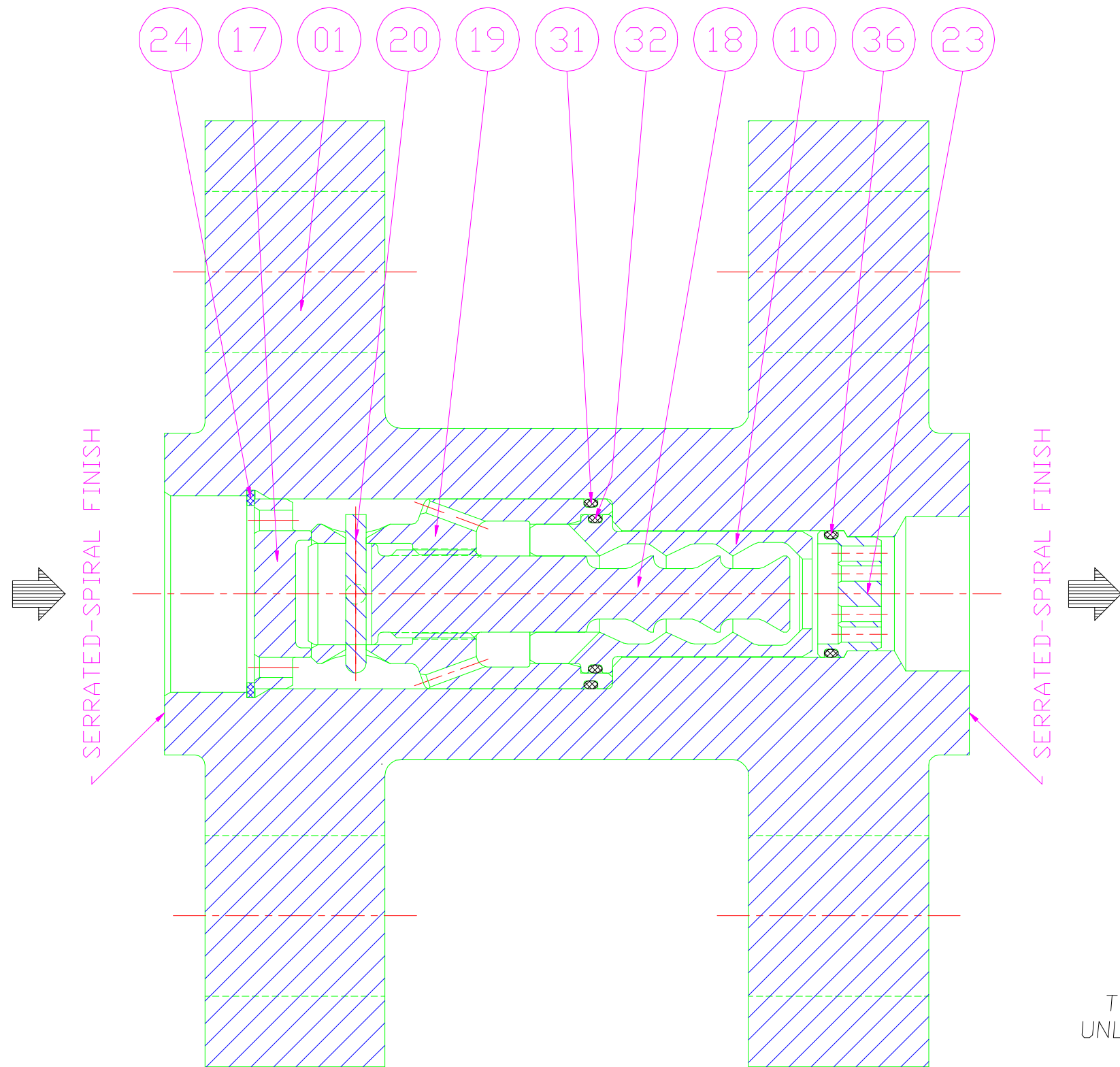
Outlet Pressure _____

Flow Required _____



ENGINEERING Inc.

205 Portage Avenue, Three Rivers, MI 49093 USA
 Phone: 269-279-2035 Fax: 269-278-6745



Pos.	Description
01	Body
10	Vortex Housing
17	Orifice Bushing
18	Vortex Insert
19	Linkage
20	Pin
23	Flow Staightener
24	Snap Ring
31	□-Ring
32	□-Ring
35	□-Ring

NOTES :
ALL RIGHTS RESERVED

TOLERANCE
UNLESS NOTED
 XXX ±1
 XX ±0.5
 X ±0.25
 X.X ±0.1
 ∠ ±1/2°
 √ 125RMS

MSD ASSEMBLY

HBE
INTERNATIONAL Ltd.

207 Portage Avenue, Three Rivers, MI 49083 U.S.A.
 Phone: 269-279-5603 Fax: 269-273-2939

DATE 03/08/04	SCALE	DWG. NO.
DWN. JAP	CHK.	
MATERIAL		SYMBOL NO.