

HEAD LOSS DATA

Flow Calculations for Liquids

The valve flow coefficient (Cv) is defined as the number of gallons per minute of room temperature (60 Deg. F) water which will flow through the valve with a pressure drop of 1 psi across the valve. Tests were conducted with In-Line and Angle Globe Shutoff Valves (MIL-V-24109) and the In-Line Check Valve. The flow constants established by these tests are shown below:

$$C_v = Q / \sqrt{\frac{\Delta P}{S.G.}} \quad \text{OR} \quad \Delta P = \frac{Q^2}{(C_v)^2}$$

Where:

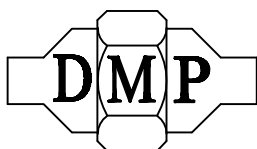
Q = Liquid flow in gallons per minute.

ΔP = Pressure drop $P_1 - P_2$ in psi.

S.G.= Specific gravity of medium where
water is 60°F=1.0

Cv Factors Liquid:

VALVE SIZE	DASH NO.	PORT DIA.	CAT. NO. M2036	CAT. NO. M2136	CAT. NO. M23
1/8	-0	.22	0.53	0.75	—
1/4	-1	.31	1.15	1.61	1.46
3/8	-2	.44	2.36	3.31	2.91
1/2	-3	.50	3.13	4.39	3.91
3/4	-4	.63	5.1	7.1	6.3
1"	-5	.81	8.9	12.5	10.9
1 1/4	-6	1.00	13.8	19.3	17.1
1 1/2	-7	1.25	22.0	30.8	27.2
2"	-8	1.56	36.0	50.3	43.3



"GET THE CONNECTION"

DERBYSHIRE MARINE PRODUCTS, LLC.

HARLEYSVILLE, PA. 19438 U.S.A.

TEL: 267-222-8900, FAX: 267-222-8865

Web: www.derbyshiremp.com

HEAD LOSS DATA

Flow Calculations for Air

Actual Air Tests were conducted with In-Line and Angle Globe Shutoff Valves (MIL-V-24109) and the In-Line Check Valve. The flow constants established by these tests are shown below:

Cv Factors Liquid:

VALVE SIZE	DASH NO.	PORT DIA.	CAT. NO. M2036	CAT. NO. M2136	CAT. NO. M23
1/8	-0	.22	0.30	0.40	—
1/4	-1	.31	0.60	0.90	0.80
3/8	-2	.44	1.30	1.80	1.60
1/2	-3	.50	1.70	2.40	2.10
3/4	-4	.63	2.80	3.90	3.50
1"	-5	.81	4.90	6.90	6.10
1 1/4	-6	1.00	7.60	10.7	9.50
1 1/2	-7	1.25	12.2	17.1	15.1
2"	-8	1.56	20.0	28.0	24.1

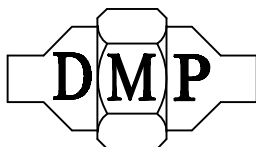
The following relationships apply:

$$\text{Air Flow } \sqrt{(P_u)^2 - (P_d)^2} = .865 \frac{Q}{F} \quad \frac{P_d}{P_u} \text{ Should not be greater than } 0.53$$

P_u = Pressure upstream (PSIA)

P_d = Pressure downstream (PSIA)

Q = SCFM (Standard cubic feet air per minute)



"GET THE CONNECTION"
DERBYSHIRE MARINE PRODUCTS, LLC.
HARLEYSVILLE, PA. 19438 U.S.A.

TEL: 267-222-8900, FAX: 267-222-8865

Web: www.derbyshiremp.com