

ESTIMATING PRESSURE DROPS THROUGH FLUIDLINE ACCESSORIES

The rated capacities listed in this catalog for valves, strainers and fittings typically correspond to pressure drops of approximately 5% of their maximum operating pressure. Use the following formula to estimate the pressure drop of other flow rates.

$$\frac{Q_1}{Q_2} = \frac{(P_1)^{-5}}{(P_2)^{-5}} \quad \begin{matrix} Q: \text{Flow rate (in gpm or l/min)} \\ P: \text{Liquid pressure (in psi or bar)} \end{matrix}$$

For pressure drop information on a specific product, contact your local sales engineer for data sheets listing pressure drops at various flow rates.

EXAMPLE:

$$\frac{3 \text{ GPM}}{5 \text{ GPM}} = \frac{(P_1)^{-5}}{(25 \text{ PSI})^{-5}} \quad P_1 = 9 \text{ PSI}$$

$$\frac{11 \text{ L/MIN}}{19 \text{ L/MIN}} = \frac{(P_1)^{-5}}{(1.8 \text{ BAR})^{-5}} \quad P_1 = 0.6 \text{ BAR}$$

Accessory rated capacity 5 gpm (19 l/min)

Maximum recommended operating pressure 500 psi (35 bar)

Estimated pressure drop at 5 gpm (19 l/min) = 5% x 500 psi (35 bar) = 25 psi (1.8 bar)

APPROXIMATE FRICTION LOSS IN PIPE FITTINGS

in Equivalent Feet (meters) of Straight Pipe

Pipe Size Std. Wt. (in.)	Actual Inside Dia. in. (mm)	Gate Valve FULL OPEN ft. (m)	Globe Valve FULL OPEN ft. (m)	45° Elbow ft. (m)	Run of Std. Tee ft. (m)	Std. Elbow or Run of Tee Reduced 1/2 ft. (m)	Std. Tee Through Side Outlet ft. (m)
1/8	.269 (6.8)	.15 (.05)	8.0 (2.4)	.35 (.11)	.40 (.12)	.75 (.23)	1.4 (.43)
1/4	.364 (9.2)	.20 (.06)	11.0 (3.4)	.50 (.15)	.65 (.20)	1.1 (.34)	2.2 (.67)
1/2	.622 (15.8)	.35 (.11)	18.6 (5.7)	.78 (.24)	1.1 (.34)	1.7 (.52)	3.3 (1.0)
3/4	.824 (21)	.44 (.13)	23.1 (7.0)	.97 (.30)	1.4 (.43)	2.1 (.64)	4.2 (1.3)
1	1.049 (27)	.56 (.17)	29.4 (9.0)	1.2 (.37)	1.8 (.55)	2.6 (.79)	5.3 (1.6)
1-1/4	1.380 (35)	.74 (.23)	38.6 (11.8)	1.6 (.49)	2.3 (.70)	3.5 (1.1)	7.0 (2.1)
1-1/2	1.610 (41)	.86 (.26)	45.2 (13.8)	1.9 (.58)	2.7 (.82)	4.1 (1.2)	8.1 (2.5)
2	2.067 (53)	1.1 (.34)	58 (17.7)	2.4 (.73)	3.5 (1.1)	5.2 (1.6)	10.4 (3.2)
2-1/2	2.469 (63)	1.3 (.40)	69 (21)	2.9 (.88)	4.2 (1.3)	6.2 (1.9)	12.4 (3.8)
3	3.068 (78)	1.6 (.49)	86 (26)	3.6 (1.1)	5.2 (1.6)	7.7 (2.3)	15.5 (4.7)
4	4.026 (102)	2.1 (.64)	113 (34)	4.7 (1.4)	6.8 (2.1)	10.2 (3.1)	20.3 (6.2)
5	5.047 (128)	2.7 (.82)	142 (43)	5.9 (1.8)	8.5 (2.6)	12.7 (3.9)	25.4 (7.7)
6	6.065 (154)	3.2 (.98)	170 (52)	7.1 (2.2)	10.2 (3.1)	15.3 (4.7)	31 (9.4)

AIR FLOW (SCFM AND NL/MIN) THROUGH SCHEDULE 40 STEEL PIPE

Applied Pressure psig	Nominal Standard Pipe Size (scfm)											Applied Pressure bar	Nominal Standard Pipe Size (NL/min)										
	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"		1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
5	.5	1.2	2.7	4.9	6.6	13.0	27	40	80	135	240	0.3	14.2	34.0	76.5	139	187	370	765	1130	2265	3820	6796
10	.8	1.7	3.9	7.7	11.0	21	44	64	125	200	370	0.7	22.7	48.1	110	218	310	595	1245	1810	3540	5665	10480
20	1.3	3.0	6.6	13.0	18.5	35	75	110	215	350	600	1.4	36.8	85.0	187	370	525	990	2125	3115	6090	9910	16990
40	2.5	5.5	12.0	23	34	62	135	200	385	640	1100	2.8	70.8	155	340	650	960	1755	3820	5665	10900	18120	31150
60	3.5	8.0	18.0	34	50	93	195	290	560	900	1600	4.1	99.1	227	510	965	1415	2630	5520	8210	15860	25485	45305
80	4.7	10.5	23	44	65	120	255	380	720	1200	2100	5.5	133	297	650	1245	1840	3400	7220	10760	20390	33980	59465
100	5.8	13.0	29	54	80	150	315	470	900	1450	2600	6.9	164	370	820	1530	2265	4250	8920	13310	25485	41060	73625

