

## 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.

This can be used to estimate the pressure drop of other flow rates as shown in the following example:

### EXAMPLE

Accessory rated capacity = 5 gpm

Maximum recommended operating pressure = 500 psi

Estimated pressure drop at 5 gpm = 5% X 500 psi = 25 psi

To estimate pressure drop (psi<sub>2</sub>)

$$\frac{\text{gpm}_1}{\text{gpm}_2} = \frac{(\text{psi}_1)^5}{(\text{psi}_2)^5} \rightarrow \frac{3}{5} = \frac{(\text{psi}_1)^5}{(25)^5} \rightarrow \text{psi}_1 = 9 \text{ psi}$$

For pressure drop information on a specific product, contact your local sales engineer or Spraying Systems Co. for data sheets listing pressure drops at various flow rates are available for selected products.

## Flow of Water Through Schedule 40 Steel Pipe

Flow in gpm	Pressure Drop in psi for Various Pipe Sizes (in 10 ft. length)															
	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
.3	.42															
.4	.70	.16														
.5	1.1	.24														
.6	1.5	.33														
.8	2.5	.54	.13													
1.0	3.7	.83	.19	.06												
1.5	8.0	1.8	.40	.12												
2.0	13.4	3.0	.66	.21	.05											
2.5		4.5	1.0	.32	.08											
3.0		6.4	1.4	.43	.11											
4.0		11.1	2.4	.74	.18	.06										
5.0			3.7	1.1	.28	.08										
6.0			5.2	1.6	.38	.12										
8.0			9.1	2.8	.66	.20	.05									
10				4.2	1.0	.30	.08									
15					2.2	.64	.16	.08								
20					3.8	1.1	.28	.13	.04							
25						1.7	.42	.19	.06							
30						2.4	.59	.27	.08							
35						3.2	.79	.36	.11	.04						
40							1.0	.47	.14	.06						
45							1.3	.59	.17	.07						
50							1.6	.72	.20	.08						
60							2.2	1.0	.29	.12	.04					
70								1.4	.38	.16	.05					
80									1.8	.50	.20	.07				
90									2.2	.62	.25	.09	.04			
100									2.7	.76	.31	.11	.05			
125										1.2	.47	.16	.08	.04		
150										1.7	.67	.22	.11	.06		
200									2.9	1.2	.39	.19	.10			
250											.59	.28	.15	.05		
300											.84	.40	.21	.07		
400												.70	.37	.12	.05	
500													.57	.18	.07	
750														.39	.16	.04
1000														.68	.27	.07
2000															1.0	.26

Recommended capacity range for each size is shown in shaded areas.

## Approximate Friction Loss in Pipe Fittings

In equivalent feet of straight pipe

Pipe Size Std. Wt.	Actual Inside Diam. In.	Gate Valve FULL OPEN	Globe Valve FULL OPEN	45° Elbow	Run of Std. Tee	Std. Elbow or Run of Tee Reduced 1/2	Std. Tee through Side Outlet
1/8"	.269	.15	8.0	.35	.40	.75	1.4
1/4"	.364	.20	11.0	.50	.65	1.1	2.2
1/2"	.622	.35	18.6	.78	1.1	1.7	3.3
3/4"	.824	.44	23.1	.97	1.4	2.1	4.2
1"	1.049	.56	29.4	1.2	1.8	2.6	5.3
1-1/4"	1.380	.74	38.6	1.6	2.3	3.5	7.0
1-1/2"	1.610	.86	45.2	1.9	2.7	4.1	8.1
2"	2.067	1.1	58	2.4	3.5	5.2	10.4
2-1/2"	2.469	1.3	69	2.9	4.2	6.2	12.4
3"	3.068	1.6	86	3.6	5.2	7.7	15.5
4"	4.026	2.1	113	4.7	6.8	10.2	20.3
5"	5.047	2.7	142	5.9	8.5	12.7	25.4
6"	6.065	3.2	170	7.1	10.2	15.3	31

## Air Flow (scfm) Through Schedule 40 Steel Pipe

Applied Pressure PSIG	Nominal Standard Pipe Size										
	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	27	40	80	135	240
10	.8	1.7	3.9	7.7	11.0	21	44	64	125	200	370
20	1.3	3.0	6.6	13.0	18.5	35	75	110	215	350	600
40	2.5	5.5	12.0	23.0	34.0	62	135	200	385	640	1100
60	3.5	8.0	18.0	34.0	50.0	93	195	290	560	900	1600
80	4.7	10.5	23.0	44.0	65.0	120	255	380	720	1200	2100
100	5.8	13.0	29.0	54.0	80.0	150	315	470	900	1450	2600



**Spraying Systems Co.**

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