



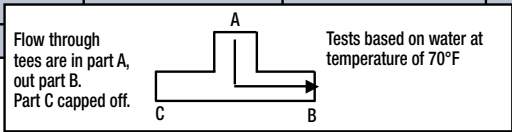
Premier Manufacturer of Sanitary Fittings, Valves, Pumps, & More

How Capacity Affects Friction

The following table was developed to indicate loss of head due to friction – in feet loss per fitting or in feet loss per foot of tubing – through stainless steel tubing and sanitary fittings.

Friction Loss in Sanitary OD Tubing and Fittings

Capacity in U.S. G.P.M.	O.D. Tube Size														
	1 I.D.=.870			1-1/2 I.D.=1.370			2 I.D.=1.870			2-1/2 I.D.=2.370			3 I.D.=2.870		
	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee
2	.01	.01	.1												
4	.025	.02	.2												
5	.035	.025	.25												
10	.12	.06	.4	.02	.01	.15	.005	.015	.1						
15	.25	.1	.8	.04	.02	.25	.013	.02	.15						
20	.43	.22	1.5	.06	.03	.3	.02	.025	.2	.005	.02	.1	.003	.02	.06
25	.66	.4	2.3	.08	.04	.4	.025	.03	.25	.006	.03	.15	.004	.03	.08
30	.93	.7	3.3	.105	.06	.55	.035	.05	.3	.008	.05	.2	.005	.04	.1
35	1.22	1.25	5.2	.135	.09	.8	.04	.06	.4	.011	.06	.25	.006	.05	.13
40				.17	.11	1.0	.05	.08	.5	.015	.07	.3	.007	.06	.15
45				.21	.16	1.3	.063	.1	.6	.02	.09	.35	.008	.065	.18
50				.25	.2	1.6	.073	.12	.7	.022	.1	.4	.01	.07	.2
60				.34	.35	2.2	.1	.18	.9	.03	.12	.45	.015	.08	.25
80				.57	.76	3.7	.16	.3	1.5	.05	.15	.55	.02	.1	.4
100				.85	1.35	5.8	.23	.44	2.3	.075	.18	.6	.03	.11	.5
120				1.18	2.05	9.1	.32	.64	3.3	.105	.21	1.0	.04	.13	.6
140							.42	.85	4.5	.14	.23	1.25	.05	.16	.8
160							.54	1.13	5.8	.17	.28	1.6	.07	.2	1.1
180							.67	1.45	7.4	.205	.31	2.0	.08	.21	1.3
200							.81	1.82	9.0	.245	.35	2.5	.1	.26	1.6
220							.95	2.22	11.0	.29	.41	3.0	.12	.3	1.9
240							1.10	2.63	13.5	.34	.48	3.7	.14	.33	2.2
260										.39	.53	4.5	.165	.39	2.5
280										.45	.61	5.3	.19	.42	2.8
300										.515	.7	6.2	.22	.5	3.1
350										.68	1.05	8.5	.28	.67	4.1
400										.86	1.55	11.0	.36	.88	5.2
450										1.05	2.25	13.5	.44	1.1	6.6
500													.54	1.4	8.0
550													.64	1.7	9.5
600													.75	2.05	10.2
650													.87	2.41	13.0
700													1.0	2.8	15.0
750														.26	.43
800														.3	.5
850														.33	.56
900														.37	.62
950														.41	.7
1000														.45	.8
1100														.53	1.06



Source: National Association of Food and Dairy Equipment Manufacturers.