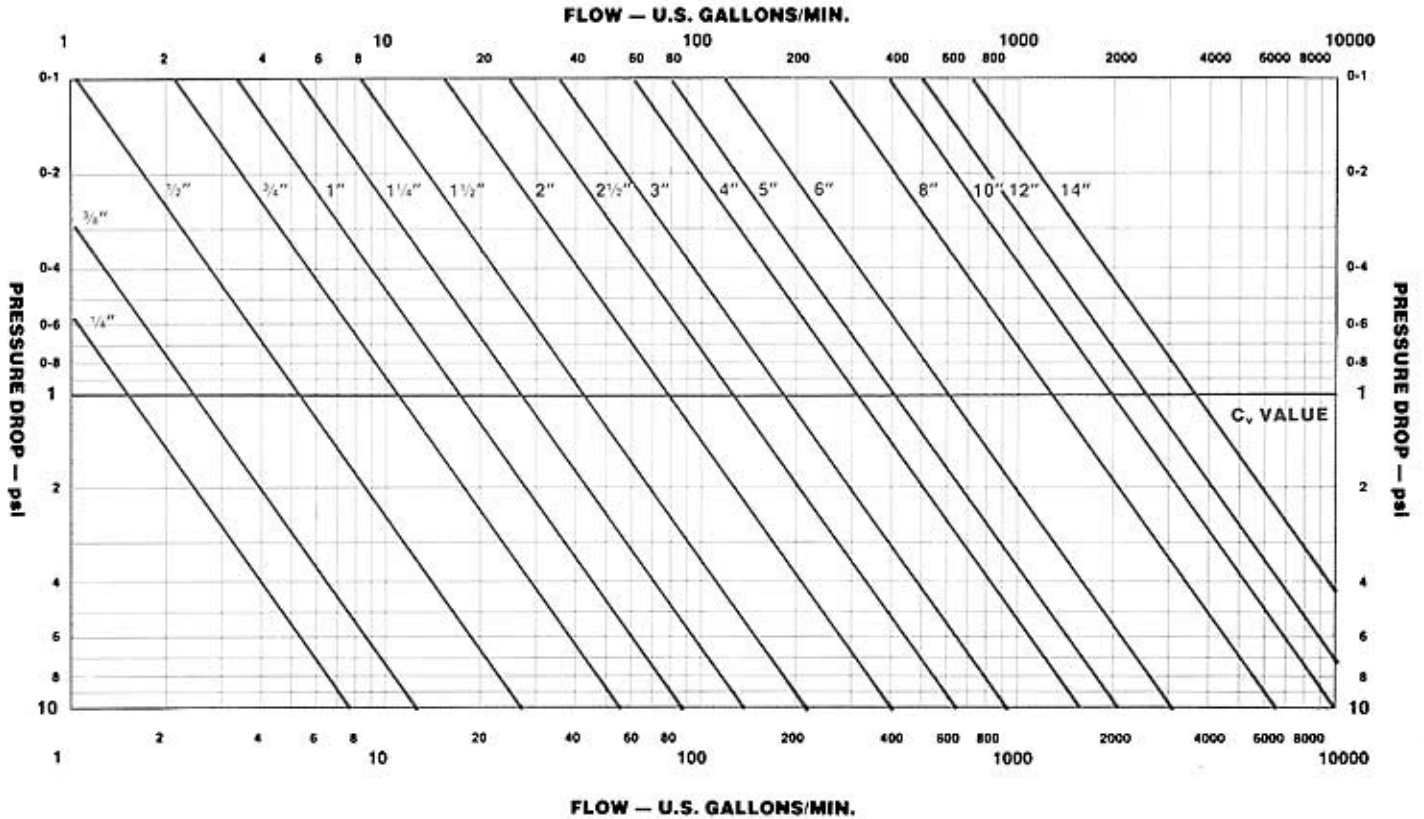


WEIR TYPE PERFORMANCE DATA

FLOW COEFFICIENT — C_v — OF WEIR TYPE DIAPHRAGM VALVE

By definition the valve flow coefficient C_v is "the number of gallons per minute of water which will pass through a given flow restriction with a pressure drop of 1 psi".



This graph applies to water and to unlined valves. Liquid Flow Formula $Q = C_v \sqrt{\frac{\Delta P}{G}}$

Where Q = Flow (US gallons/minute)
 C_v = Flow coefficient from graph.

ΔP = Pressure drop.
G = Specific Gravity

Gas Flow Formula $Q = 1360 C_v \sqrt{\frac{\Delta P}{GT} \frac{P_1 + P_2}{2}}$

$\Delta P = (P_1 - P_2)$ Pressure Drop — psi.
 C_v = Flow in GPM (water) at 1 psi Pressure Drop.
Q = Volumetric Flow (SCFH).

G = Specific Gravity of Gas (Air @ 14.7 and 60°F = 1.0)
T = Absolute Temperature of Flowing Medium (°F + 460).

P_1 = Inlet pressure — psia.
 P_2 = Outlet pressure — psia.

Screwed/Socket Metal/PVC											
% Open	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
10	0.1	0.3	0.5	1.1	1.7	2.8	4	8.8	10	18	
20	0.3	0.6	1.2	2.7	4.1	6.8	10	22	26	45	
30	0.5	1	2	4.5	6.8	11.3	17	36	43	75	
40	0.7	1.4	2.6	6.0	9	15	22	48	57	100	
50	0.8	1.7	3.2	7.3	11	18.3	27	58	69	122	
60	0.9	1.9	3.7	8.3	12.5	20.8	31	66	79	139	
70	1	2.1	4	9.1	13.7	22.8	34	73	86	152	
80	1.1	2.2	4.2	9.6	14.4	24	35.5	77	91	160	
90	1.1	2.3	4.3	9.8	14.7	24.5	36.3	78	93	164	
100	1.1	2.3	4.4	10	15	25	37	80	95	167	

Flanged End—Rubber Lined												
% Open	1/2"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	14"
10	1	1.5	2.4	3.9	7	11	16	28	53	114	174	326
20	2.5	3.8	5.9	9.5	17	26	40	68	131	281	428	799
30	4.1	6.3	9.9	16	29	46	67	113	218	468	713	1332
40	5.5	8.4	13.2	21	38	61	89	151	290	624	950	1776
50	6.7	10.2	16.1	26	47	74	108	184	353	759	1156	2161
60	7.7	11.6	18.3	29	53	85	123	209	402	863	1315	2457
70	8.4	12.7	20	32	58	93	135	229	440	946	1441	2694
80	8.8	13.4	21	33.6	61	98	142	242	465	998	1521	2842
90	9	13.7	21.6	34	63	100	145	247	474	1019	1552	2901
100	9.2	14	22	35	64	102	148	252	484	1040	1584	2960

Flanged End—Plastic Lined										
% Open	1/2"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
10	0.9	1.4	2.4	4.2	7.8	11	19.8	34	78	112
20	2.1	3.5	5.9	10.3	19.2	27	49	82	193	275
30	3.5	5.8	9.9	17.1	32	45	81	137	321	459
40	4.7	7.8	13.2	22.8	43	60	106	183	428	612
50	5.7	9.5	16.1	27.7	52	73	131	223	520	745
60	6.5	10.8	18.3	31.5	59	83	149	253	592	847
70	7.1	11.8	20	34.6	65	91	164	275	649	928
80	7.5	12.5	21.1	36.5	68	96	173	293	684	979
90	7.6	12.7	21.6	37	70	98	176	299	699	1000
100	7.8	13	22	38	71	100	180	305	713	1020

Flanged End—Unlined													
% Open	1/2"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"
10	0.6	1.3	1.9	3	4.8	9	14	20	35	67	143	218	407
20	1.5	3.1	4.7	7.4	12	22	34	50	85	163	351	535	999
30	2.5	5.2	7.9	12.4	19	36	57	83	142	272	585	891	1665
40	3.3	6.9	10.5	16.5	26	48	76	111	189	363	780	1188	2220
50	4	8.4	12.8	20	32	58	93	135	230	442	949	1445	2701
60	4.6	9.5	14.5	22.8	36	66	105	154	261	502	1079	1643	3071
70	5	10.5	16	25	39	73	116	168	287	551	1183	1802	3367
80	5.3	11	16.9	26.4	41	77	122	178	302	581	1248	1901	3552
90	5.4	11.3	17.2	26.9	42	78	124	181	309	593	1274	1940	3626
100	5.5	11.5	17.5	27.5	43.2	80	127	185	315	605	1300	1980	3700

Flanged End—Glass/Halar-Lined													
% Open	1/2"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"
10	0.6	1.3	2	3.2	5	9.2	14.6	21	36	70	150	229	427
20	1.6	3.2	5	7.8	12.3	22.7	36	52	89	171	367	561	1049
30	2.6	5.4	8.3	13.1	20.4	38	60	87	149	286	612	936	1748
40	3.5	7.2	11.1	17.4	27.2	50	80	116	199	381	816	1247	2331
50	4.2	8.8	13.5	21.2	33.1	61	97	142	242	464	993	1518	2836
60	4.8	10	15.4	24.1	37.7	70	110	161	275	527	1129	1726	3225
70	5.3	10.9	16.8	26.4	41.3	76	121	177	301	578	1238	1892	3535
80	5.6	11.5	17.8	27.8	43.6	81	128	186	318	610	1306	1996	3730
90	5.7	11.8	18.1	28.4	44.5	82	130	190	324	622	1333	2037	3807
100	5.8	12	18.5	29	45.4	84	133	194	331	635	1360	2079	3885