

## 816 Series Flow Data

### Definitions / formulas:

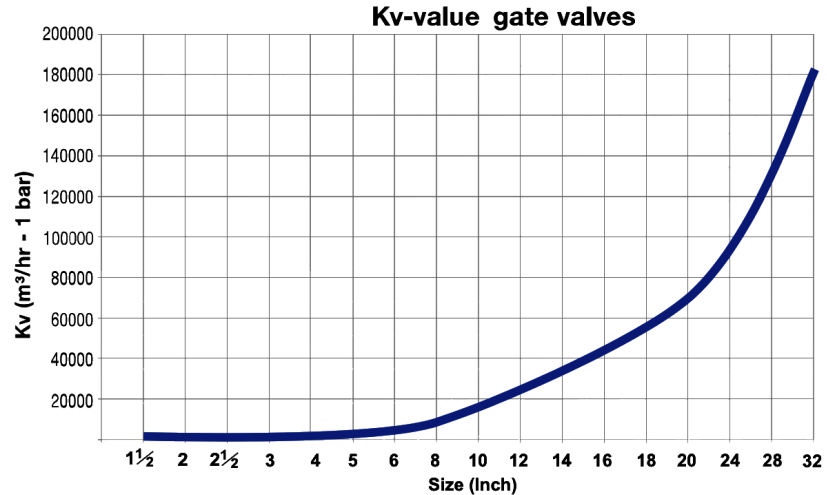
**Kv-value:** Actual flow of water (m<sup>3</sup>/hr) creating pressure loss of 1 bar.

Pressure loss coefficient **Zeta (K) value:** Ratio of static and dynamic pressure loss.

Pressure loss coefficient,  
**Zeta (K-value) = Diff pressure / (500 X V<sup>2</sup>)**  
 Diff pressure (Pa)  
 V: Water flow velocity (m/sec)  
 Actual diff pressure (bar) = (Q / Kv)<sup>2</sup>  
 Q: Actual water flow (m<sup>3</sup>/hr)

### Zeta values:

**1½" - 5": 0.06**  
**6" - 10": 0.04**  
**12" - 32": 0.02**



Flow velocity (m/sec)	Q m <sup>3</sup> /h							
	1½	2	2½	3	4	5	6	8
1.0	4.5	7.1	11.9	18.1	28.3	44.2	63.6	113.1
1.5	6.8	10.6	17.9	27.1	42.4	66.3	95.4	169.6
2.0	9.0	14.1	23.9	36.2	56.5	88.4	127.2	226.2
2.5	11.3	17.7	29.9	45.2	70.7	110.4	159.0	282.7
3.0	13.6	21.2	35.8	54.3	84.8	132.5	190.9	339.3
3.5	15.8	24.7	41.8	63.3	99.0	154.6	222.7	395.8
4.0	18.1	28.3	47.8	72.4	113.1	176.7	254.5	452.4
4.5	20.4	31.8	53.8	81.4	127.2	198.8	286.3	508.9
5.0	22.6	35.3	59.7	90.5	141.4	220.9	318.1	565.5

Flow velocity (m/sec)	Q m <sup>3</sup> /h								
	10	12	14	16	18	20	24	28	32
1.0	176.7	254.5	346.4	452.4	572.6	706.9	1,017.9	6,267.6	12,791.0
1.5	265.1	381.7	519.5	678.6	858.8	1,060.3	1,526.8	9,401.4	19,186.5
2.0	353.4	508.9	692.7	904.8	1,145.1	1,413.7	2,035.8	12,535.2	25,582.0
2.5	441.8	636.2	865.9	1,131.0	1,431.4	1,767.1	2,544.7	15,669.0	31,977.5
3.0	530.1	763.4	1,039.1	1,357.2	1,717.7	2,120.6	3,053.6	18,802.8	38,373.0
3.5	618.5	890.6	1,212.3	1,583.4	2,003.9	2,474.0	3,562.6	21,936.6	44,768.5
4.0	706.9	1,017.9	1,385.4	1,809.6	2,290.2	2,827.4	4,071.5	25,070.4	51,164.0
4.5	795.2	1,145.1	1,558.6	2,035.8	2,576.5	3,180.9	4,580.4	28,204.2	57,559.5
5.0	883.6	1,272.3	1,731.8	2,261.9	2,862.8	3,534.3	5,089.4	31,338.0	63,955.0

Calculated flow (m<sup>3</sup>/hr) going through a nominal valve size at different flow velocities

Opening %	CV/KV															
	1½		2		2½		3		4		5		6		8	
	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV
10%	23	20	18	15	26	22	42	36	75	64	143	122	158	135	343	293
20%	48	41	47	40	62	53	112	96	186	159	278	238	319	273	642	549
30%	74	63	70	60	97	83	173	148	289	247	428	366	539	461	994.5	850
40%	101	86	100	85	151	129	256	219	420	359	620	530	805	688	1455.5	1244
50%	138	118	156	133	239	204	410	351	642	549	867	741	1198	1024	2023	1729
75%	281	240	367	314	504	431	845	722	1280	1094	1787	1527	2732	2335	4719	4033
100%	340	291	608	520	709	606	1151	984	2128	1819	3028	2588	6247	5339	8478	7246

Opening %	CV/KV																	
	10		12		14		16		18		20		24		28		32	
	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV	CV	KV
10%	448	383	583	498	793	678	1037	886	1312	1121	1619	1384	2333	1994	3174	2713	4146.5	3544
20%	904	773	1290.5	1103	1757	1502	2295.5	1962	2905	2483	3586	3065	5163	4413	7028	6007	9180	7846
30%	1459	1247	2015	1722.2	2742	2344	3581	3061	4533	3874	5596	4783	8059	6888	10969	9375	14327	12245
40%	2187	1869	2952	2523	4017	3433	5247.5	4485	6641	5676	8198	7007	11805	10090	16069	13734	20987	17938
50%	3195	2731	4006	3424	5452	4660	7121	6086	9013	7703	11127	9510	16022	13694	21808	18639	28484	24345
75%	6230	5325	8286	7082	11279	9640	14731	12591	18644	15935	23017	19673	33145	28329	45114	38559	58925	50363
100%	16842	14395	29844	25508	40621	34719	53057	45348	67150	57393	82902	70856	119377	102032	162486	138877	212226	181390

1½" - 12" are all measured values. 14" - 32" are all calculated, based on results from measured values.