

FLOW PARAMETERS FOR BUTTERFLY VALVES SERIES 756 / PLATE DISC

Flow parameters at fully open valve

Size [mm]	Kvs [m ³ /h@1bar]	Cv [USG/min@1psi]	Zeta, ζ
DN150	1385	1620	0.42
DN200	2460	2878	0.42
DN250	4360	5101	0.33
DN300	6120	7160	0.33
DN350	10195	11928	0.23
DN400	13335	15602	0.23
DN450	17320	20264	0.22
DN500	22460	26278	0.20
DN600	34330	40166	0.18
DN700	37845	44279	0.27
DN800	57665	67468	0.20
DN900	69930	81818	0.21
DN1000	90720	106142	0.19
DN1200	133345	156014	0.19
DN1400	196585	230004	0.16
DN1500	207335	242582	0.19
DN1600	247675	289780	0.17
DN1800	332095	388551	0.15
DN2000	432320	505814	0.14
DN2200	524915	614151	0.14
DN2400	533425	624107	0.19
DN2600	688575	805633	0.15
DN2800	798585	934344	0.15
DN3000	916740	1072586	0.15
DN3200	1043046	1220364	0.15
DN3600	1320105	1544523	0.15

Formulas and definitions:

Zeta, ζ, is the pressure loss coefficient defined as:

$$\zeta = \Delta P / 500 V^2$$

where ΔP is measured in Pa and V is the flow speed measured in m/s.

Kv is the flow in m³/h that creates a 1 bar pressure difference across the valve.

Cv is the same, but in units of US gallons/min and pounds per square inch.

In general the head loss will be:

$$\Delta P = (Q/Kv)^2 \text{ [bar]}$$

where Q is the flow in m³/h and ΔP is measured in bar.

Flow, speed-to-volume conversion table

Below table shows the flow volume, Q [m³/h], passing through a pipe with diameter DN [mm] at flow speed V [m/s].

Q [m³/h]	1 m/s	1.5 m/s	2 m/s	2.5 m/s	3 m/s	3.5 m/s	4 m/s	4.5 m/s	5 m/s
DN150	64	95	127	159	191	223	254	286	318
DN200	113	170	226	283	339	396	452	509	565
DN250	177	265	353	442	530	619	707	795	884
DN300	254	382	509	636	763	891	1018	1145	1272
DN350	346	520	693	866	1039	1212	1385	1559	1732
DN400	452	679	905	1131	1357	1583	1810	2036	2262
DN450	573	859	1145	1431	1718	2004	2290	2576	2863
DN500	707	1060	1414	1767	2121	2474	2827	3181	3534
DN600	1018	1527	2036	2545	3054	3563	4072	4580	5089
DN700	1385	2078	2771	3464	4156	4849	5542	6234	6927
DN800	1810	2714	3619	4524	5429	6333	7238	8143	9048
DN900	2290	3435	4580	5726	6871	8016	9161	10306	11451
DN1000	2827	4241	5655	7069	8482	9896	11310	12723	14137
DN1200	4072	6107	8143	10179	12215	14250	16286	18322	20358
DN1400	5542	8313	11084	13854	16625	19396	22167	24938	27709
DN1500	6362	9543	12723	15904	19085	22266	25447	28628	31809
DN1600	7238	10857	14476	18096	21715	25334	28953	32572	36191
DN1800	9161	13741	18322	22902	27483	32063	36644	41224	45804
DN2000	11310	16965	22619	28274	33929	39584	45239	50894	56549
DN2200	13685	20527	27370	34212	41054	47897	54739	61581	68424
DN2400	16286	24429	32572	40715	48858	57001	65144	73287	81430
DN2600	19113	28670	38227	47784	57340	66897	76454	86011	95567
DN2800	22167	33251	44334	55418	66501	77585	88668	99752	110835
DN3000	25447	38170	50894	63617	76341	89064	101788	114511	127234
DN3200	28953	43429	57906	72382	86859	101335	115812	130288	144765
DN3600	36644	54965	73287	91609	109931	128252	146574	164896	183218

Intermediate valve positions

The AVK series 756 double eccentric butterfly valves are to be used only for ON/OFF isolating purpose and should be left only in either fully open or fully closed position.

However, in case it is necessary to know the flow coefficient in the intermediate positions, i.e. while operating the valve, below graf can be consulted.

