

CALCULATION OF CV

DATA FOR CALCULATION OF FLOW AND / OR PRESSURE DROP

$$Kv = Cv \times 0.85$$

$$\frac{m^3/h}{\sqrt{Kg/cm^2}}$$

A Valve coefficient Cv is used to calculate pressure drop through a particular Valve for a given flow rate. The coefficient of flow Cv expresses the rate of flow in gallons Per minute at 60°F water with a pressure drop of 1 psig Across the valve. The Cv coefficients for the various types of sizes, shown in the tables, have been determined from calculations and actual flow test.

NOTE: Kv is the metric equivalent of Cv.

FOR LIQUIDS :

$$(1.) \quad QL = Cv \sqrt{\frac{\Delta P}{GL}} \quad (2.) \quad \Delta P = GL \left[\frac{QL}{Cv} \right]^2$$

Where QL = Flow in U.S. Gallons per minute

$\Delta P = (P_1 - P_2)$ Pressure drop in psi
 GL = Specific gravity of liquid (water = 1 at 60°F)

FOR GASES :

$$(3.) \quad Qg = 1360 Cv$$

CV FLOW COEFFICIENT TABLE

Valve Size Inches	Gate or Bellow Seal Gate Vavles Standard Port		Full Port Gate Valves	Globe Valves		Bellow Seal Globe Valves	
	150 - 800	900 - 1500	150 - 1500	150 - 800	150 - 1500	150 - 800	1500 - 2500
1/4"	2.6	2.6	2.6	2	2	1.5	-
1/2"	7	14	14	3	3	2.5	5
3/4"	14	14	22	4	4	3.5	7
1"	30	30	34	6	8	6	9
1.1/4"	85	85	92	14	19	12	30
1.1/2"	100	100	110	14	19	12	34
2"	160	160	200	33	29	28	38