C$_V$ value coefficients may be helpful in determining pressure losses, or in sizing valves where flow rates are known. A liquid sizing equation for calculating flow rate for known or theoretical pressure differential is:

$$Q = C_V \sqrt{\frac{\Delta P}{G}}$$

Where:

Q = Flow rate, gallons per minute

C$_V$ = Valve sizing coefficients (no. Of U.S. gallons per minute of water at 60°F that will flow through a valve in one minute at a pressure differential of one pound per square inch)

ΔP = Pressure differential, psi

G = Specific gravity of fluids (water at 60°F = 1.0)

Or, to solve for pressure loss where the other variables are known, the formula can be written as follows:

$$\Delta P = G \left(\frac{Q}{C_V} \right)^2$$

C$_V$ Values for TT Valves are:

Size	Gate Valves C$_V$	Globe Valves C$_V$	Swing Check Valves C$_V$
2	247	49	123
3	610	113	300
4	1170	205	545
6	2850	482	1284
8	5250	880	2339
10	8260	1382	3680
12	12230	-	5445
14	15720	-	6983
16	20950	-	9292
18	27420	-	12220
20	34220	-	15290
24	50450	-	22755

Drilling Points as per MSS SP-45

Valve Size	By-Pass and Drain Size
in	in
2 - 4	½
6 - 8	¾
10 - 12	1
14 - 16	1
18 - 24	1
30 - 36	1¼
42 on	1½

Gate Valve

Globe Valve

Swing Check Valve