

STVC Series

Submittal Data

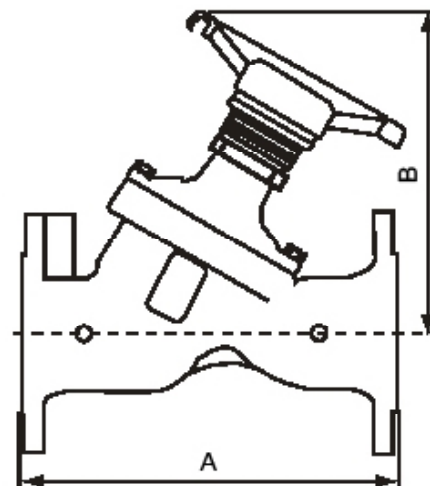
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STVC SERIES - Specifications

Connection	ANSI 125# Flanged	
Maximum Working Pressure	250 psi/16 Bar (PN 16)	
Operating Temperature Range	-14° F to 250° F (-10° C to 120° C)	
Materials of Construction	Body, Bonnet	Cast Iron
	Gaskets	EPDM
	Seat Seal	PTFE



STVC					
Valve Size		Dimensions		Approx. Weight	Handwheel Turns
Nominal Dimensions		Inches/mm			
Inches	mm	A - Length	B - Height	lbs./kg	
8	DN 200	23.6 / 600	20.1 / 510	275 / 125	12
10	DN 250	28.7 / 730	20.9 / 530	490 / 222	12
12	DN 300	33.5 / 850	24.0 / 610	573 / 260	18

Product Features

Accurate and precise flow measurement	"Y" Pattern, Globe style design
Accurate and precise flow balancing	Multi-turn, 360° handwheel with vernier scale and digital readout
Positive Shut-off	Built in memory stop
Offsetting Pressure/Temperature ports, Self sealing with optional Drain Kits	Wide variety of accessories available

Valve Selection Guide				
Valve Size		Minimum Flow	Nominal Range of Flow	Maximum Flow
Nominal Dimensions				
Inches	mm	GPM/LPM	GPM/LPM	GPM/LPM
8	DN 200	30.3 / 114	440 - 650 / 1663 - 2460	2100 / 7940
10	DN 250	76.3 / 289	650 - 1300 / 2460 - 4915	4050 / 15300
12	DN 300	76.3 / 289	1300 - 1600 / 4915 - 6050	4750 / 17590

The Minimum Flow is calculated from the minimum recommended pressure drop 1 ft. WG (=3.0 kPa)

The Nominal Flow is from the maximum setting of the valve and the minimum recommended pressure drop, 2 ft WG (=6.0 kPa)

The Max Flow is calculated from the maximum setting of the valve and the max pressure drop, 20 ft WG (=60.0 kPa)

PRESSURE DROP TABLES



Series STVC, 8" - 12"

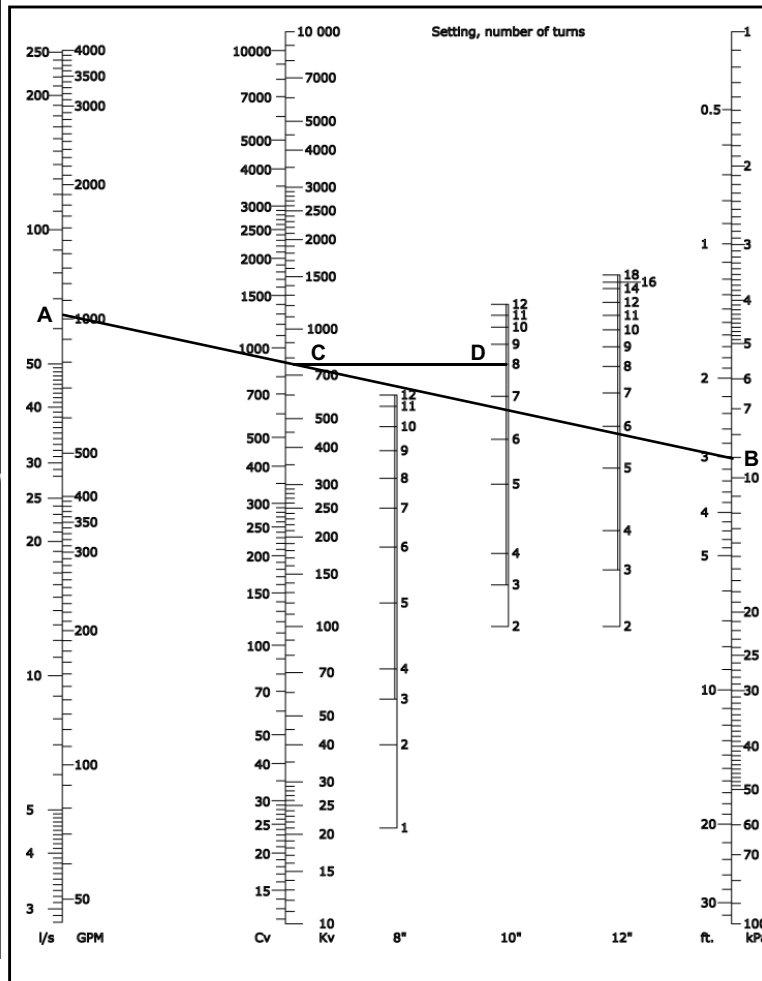
This diagram details the relationship between flow, pressure drop and valve preset points. Use the diagram to select the correct valve size and corresponding handwheel setting to fulfill the application requirements.

Determine the required flow in the circuit (A) and the pressure drop (B). Draw a line between these two values. Read off the corresponding Cv value on the Cv scale (C).

Determine the valve setting, in handwheel turns, by drawing a horizontal line (D) from the intersection point on the Cv scale to the corresponding valve setting position.

For the highest level of accuracy, it is recommended to choose a valve that has at least 3 open turns.

Example: a 10" valve is required to be open 8 turns for a Cv value of 890 at a flow rate of 1000 gpm and a pressure drop of 3 ft.



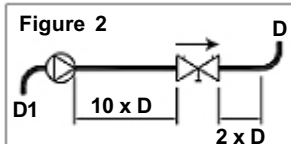
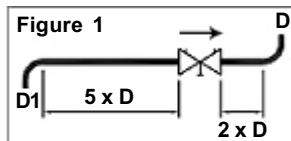
Cv Values for Valve Series STVC

Flow coefficient values (Cv's) at various handwheel settings			
Handwheel Setting	8" DN 200	10" DN 250	12" DN 300
2	46	116	116
3	66	160	180
4	84	204	244
5	139	349	396
6	215	494	546
7	290	689	708
8	365	884	869
9	452	1031	1012
10	545	1177	1153
11	638	1291	1290
12	696*	1405*	1427
14	-	-	1588
16	-	-	1668
18	-	-	1764*

* Valve is fully open

Installation Recommendations

Install the valve in the correct flow direction according to the arrow on the valve body and the distance parameters detailed in Figure 1 (Note: D = pipe diameter).



For Series STVL, cover the valve body with a wet cloth when soldering to prevent premature deterioration of valve components.

When used with a pump, it is recommended to use a straight length of pipe totaling 10 x D (instead of 5 x D) upstream or downstream to avoid turbulence that will affect the measuring accuracy. See Figure 2.

Turbulence can influence the measurements by up to 20% if this recommendation is not followed.

Flow Measurement & Accuracy

The measuring instrument connects to the test ports of the valve and is pre-programmed with Macon Balancing characteristics. The pressure drop and flow readings can be read off the display. If access to a Macon Balancing instrument is unavailable, other industry standard models are compatible. In addition, the flow can be determined using the pressure drop diagram that is included in the operating instructions with each Macon Balancing valve.

The accuracy is highest when the valve is fully open. Therefore, it is recommended to choose a valve that can be opened at least three turns at the calculated pre-setting value. Figure 3 represents the flow measurement deviation in relation to handwheel turns.

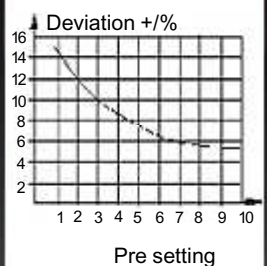
Correction For Liquids

Applies to liquids other than water. Correct the measured flow (q) by the density (Y) according to this formula.

Sizing a Balancing Valve

When the differential pressure and design flow are known, use this formula to calculate Cv value.

Figure 3



$$\text{Actual Flow} = \frac{q_{CBI}}{\sqrt{Y}}$$

$$C_v = 1.52 \frac{q}{\sqrt{\Delta p}}$$

q in GPM, Δp in Ft. of H₂O

$$C_v = \frac{q}{\sqrt{\Delta p}}$$

q in GPM, \sqrt{p} in PSI