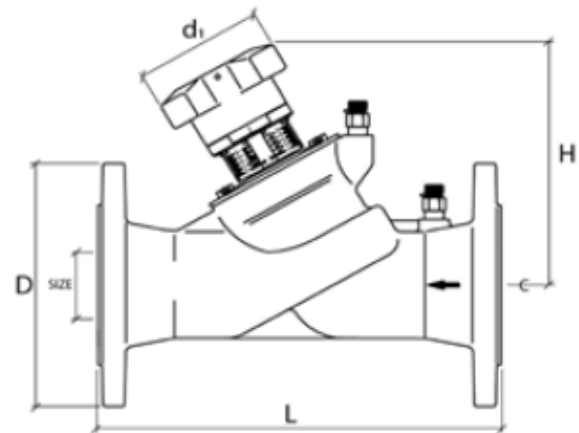


**FEATURES**

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



| SPECIFICATIONS       |                                |
|----------------------|--------------------------------|
| Pressure Ratings:    | 235 psi / 16 bar (PN16)        |
| Temperature Ratings: | 15°F to 300°F (-10°C to 120°C) |
| Body:                | Cast Iron                      |
| End Connections:     | ANSI 125# Flanged              |
| Gaskets:             | EPDM                           |
| Seat Seal            | PTFE                           |

| NOMINAL DIMENSIONS & WEIGHTS |       |     |    |             |             |        |     | Valve Selection Guide |     |                 |                          |                 |
|------------------------------|-------|-----|----|-------------|-------------|--------|-----|-----------------------|-----|-----------------|--------------------------|-----------------|
| MODEL                        | SIZE  |     |    | L<br>Length | H<br>Height | WEIGHT |     | Handwheel<br>Turns    |     | Minimum<br>Flow | Nominal<br>Range of Flow | Maximum<br>Flow |
|                              | in    | mm  |    |             |             | lbs    | kg  |                       |     |                 |                          |                 |
| STVE-1400                    | 14.0" | 350 | in | 38.6        | 22.1        | 770    | 350 | 18                    | GPM | 221             | 729 - 2428               | 7680            |
|                              |       |     | mm | 980.44      | 561.34      |        |     |                       | LPM | 836             | 2759 - 9190              | 29072           |
| STVE-1600                    | 16.0" | 400 | in | 43.3        | 25.8        | 1063   | 482 | 22                    | GPM | 258             | 885 - 4047               | 12800           |
|                              |       |     | mm | 1099.82     | 655.32      |        |     |                       | LPM | 976             | 3350 - 15319             | 48453           |

| FLOW CALCULATIONS   |  |
|---|--|
| The Minimum Flow is calculated from the minimum recommended pressure drop,<br>1 ft WG (=3.0 kPa)                                      |  |
| The Nominal Flow is calculated from the maximum setting of the valve and the minimum recommended pressure drop,<br>2 ft WG (=6.0 kPa) |  |
| The Maximum Flow is calculated from the maximum setting of the valve and the maximum pressure drop,<br>20 ft WG (=60.0 kPa)           |  |

# Pressure Drop Tables - Model STVE—Sizes 14.00" to 16.00"

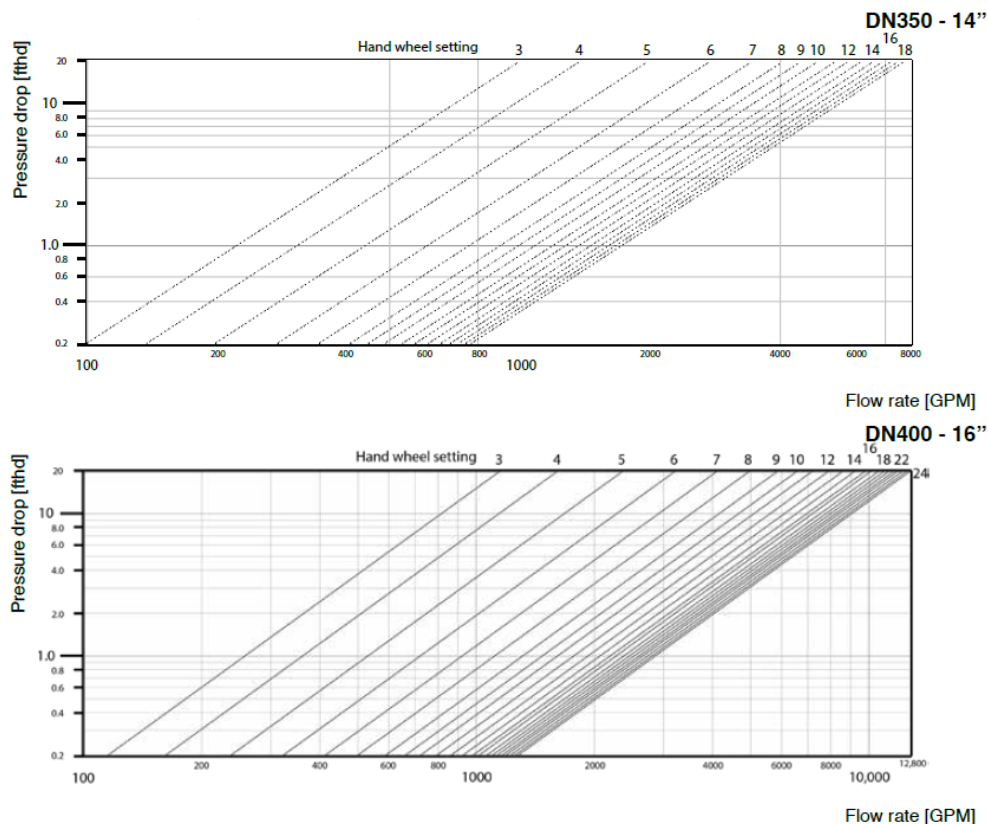
## Series STVE - 14.00" - 16.00"

The diagrams 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 hand-wheel 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.



## Installation Recommendations

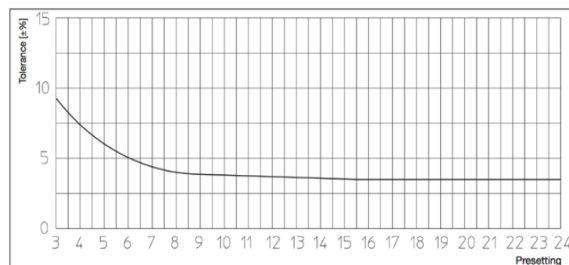
Install the valve in the correct flow direction according to the arrow on the valve body and the distance parameters detailed in Figure 1 (Note: D = pipe diameter).

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 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. See Figure 4

## Sizing a Balancing Valve

When the differential pressure and design flow are known, use this formula to calculate Cv value. See Figure 5

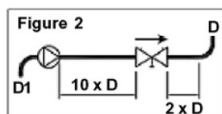
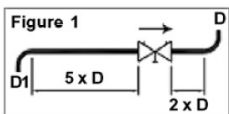


Figure 4

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

Figure 5

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

q in GPM,  $\Delta p$  in Ft. of H2O

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

q in GPM,  $\sqrt{p}$  in PSI

Optional features and accessories available for this Macon product are an extra charge, and not included in the standard model price.

[www.maconbalancing.com](http://www.maconbalancing.com)



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