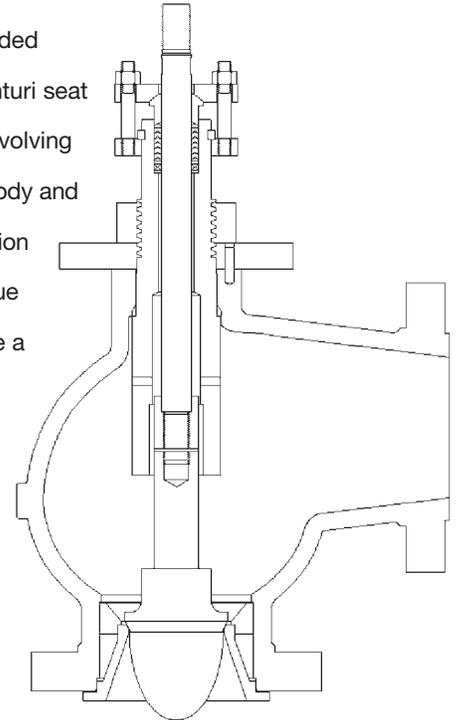


## FEATURES

- Expanded inlet and body reduces fluid velocity by 50% as the fluid turns to enter the valve port. Substantially decreases the erosive effects of turbulence, cavitation and impingement.
- Pressure-sealed bonnet; the higher the pressure, the tighter the seal.
- Large-diameter stem handles high seating forces.
- Heavy duty guiding designed to take full pressure drop without stem vibration or breakage.
- Extra heavy construction exceeds ANSI standards.
- Venturi seat expansion reduces exit velocity. Retained by outlet flange for ease of replacement.
- "Spring-out" action of the seat ring provides tight shut-off, eliminating wire drawing.

## Series V701 Venturi Seat Angle Valves 1" – 16" (DN25 – 400) ANSI Class 150 – 600

The Series V701 is a single-seated post-guided angle valve with a flange-retained outlet venturi seat ring. Designed to handle difficult services involving erosive fluids and slurries, this streamlined body and venturi seat ring construction minimizes erosion in even the toughest applications. The unique seat design and steep seating angle provide a large radial component of force. This, combined with high seat loads, provides tight shut-off capability. Applications include throttling or isolation control of liquids, gases, slurries and steam through a wide range of service applications.



## Specifications

**Body Style:** Venturi angle.

**Body Size:** 1" through 16" (DN 25 through 400).

**Body Rating:** ANSI Class 150, 300 and 600, others available upon request.

**Body Materials:** Carbon steel, Stainless steel, and Chrome Moly steel.

**End Connections:** Flanged, others available upon request.

**Bonnets:** Plain, extension (1" through 8").

**Trim Style:** Unbalanced contoured plug, flange-retained seat ring.

**Trim Characteristic:** Equal percentage.

**Flow Coefficient:**  $C_v$  from 14 to 2620 (refer to Table 2).

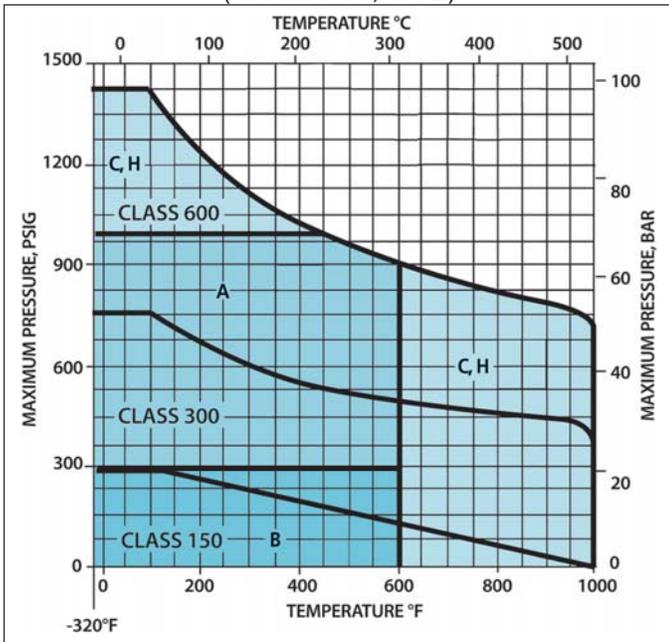
**Leakage Class:** ANSI Class IV.

**Actuators:** Consult the factory.

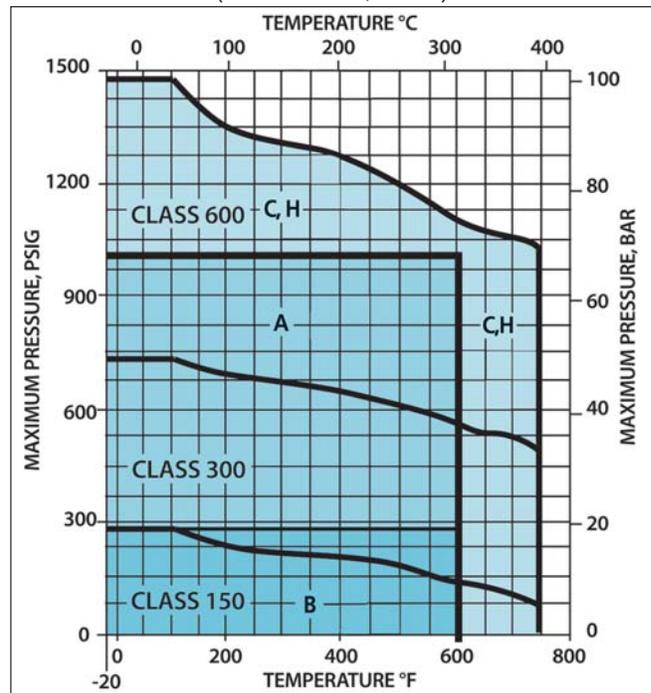
## Material Selection

These charts should be used to select the pressure class and trim material combination. The curves sloping downward to the right are the pressure rating curves for each ANSI pressure class as listed in ANSI B16.34. In each case, the curve designates the maximum pressure and temperature for the class listed directly below the curve. The bold boundaries mark the recommended pressure and temperature limits for trim material combinations listed in the tables below. All recommendations are generalized and may be subject to adjustment based upon hydraulic considerations determined during the valve sizing process.

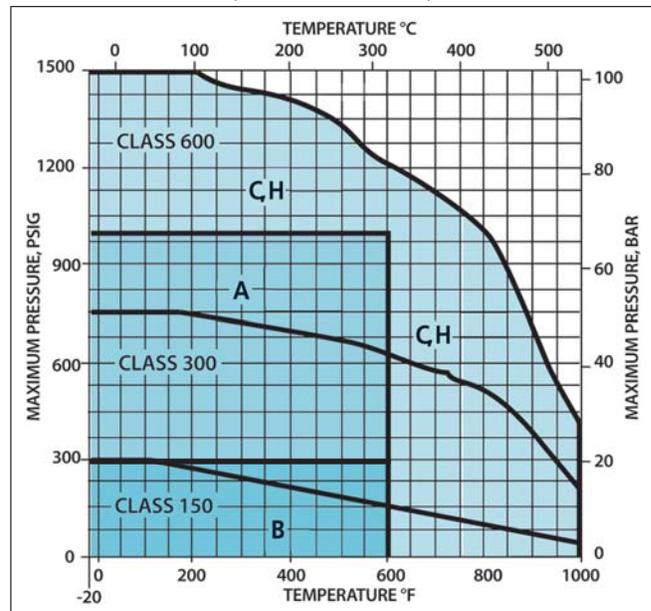
**Figure 1. Trim Chart For Stainless Steel Body (ASTM A351, WCB)**



**Figure 2. Trim Chart For Carbon Steel Body (ASTM A216, WCB)**



**Figure 3. Trim Chart For Chrome-Moly Body (ASTM A217, C5)**



**Table 1. V701 Standard Trim Materials**

Trim Code	Plug	Venturi Seat Ring	Stem	Guide Bushing
A	17-4PH	17-4PH	17-4PH	Alloy 12
B	316 SS	316 SS	316 SS	Alloy 12
C(a)	Chrome-Iron	Chrome-Iron	17-4PH	Alloy 12
H(b)	Chrome-Iron	Chrome-Iron	17-4PH	Alloy 12

NOTES TO TABLE AND TRIM CHART  
 a) Trim code for 4" through 16" valves.  
 b) Trim code for 1" through 3" valves.

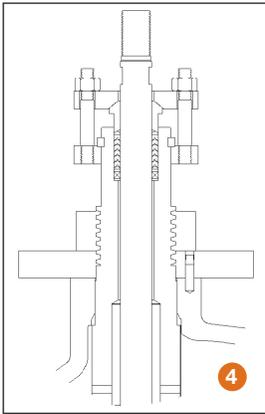
## Flow Capacity

**Table 2. Flow Coefficient (Cv) at Maximum Travel**

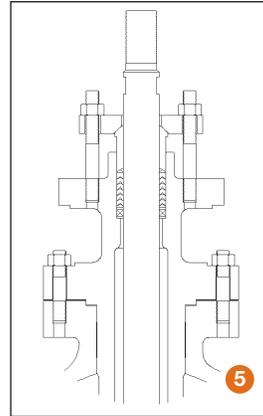
Valve Size — Inches									
1	1.5	2	3	4	6	8	10	12	16
14	25	48	100	180	400	725	1140	1610	2620

NOTES: Cv values are for standard 1 reduction trim size.  
 For information and availability of full area trim, contact factory.

## Bonnet Types



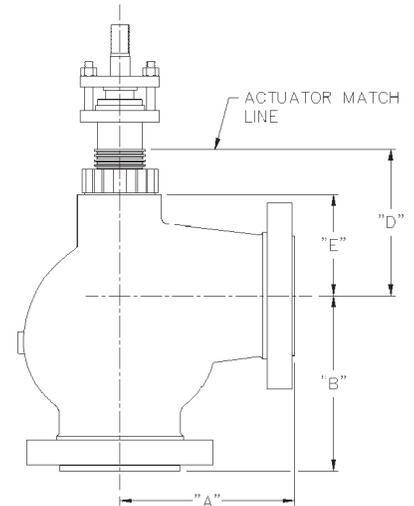
**Figure 4.**  
The bonnet for valves 1" through 8" (DN25 – 200) utilizes a simple union nut construction in conjunction with a pressure seal to ensure zero leakage.



**Figure 5.**  
The bonnet for 10" through 16" (DN250 – 400) valves utilizes a flanged connection and flat metal gasket.

**Table 3. V701 Venturi Angle Body Dimensional Data - inches (mm) ANSI Classes 150–600**

Body Size	Travel	A		B	D		E
		Class 150 -300	Class 600		Plain Bonnet	Ext. Bonnet	
1 (25)	1 (25)	4.00 (102)	4.25 (108)	4.25 (108)	6.69 (170)	9.44 (240)	—
1-1/2 (40)	1 (25)	4.50 (114)	4.75 (121)	4.75 (121)	6.75 (171)	9.50 (241)	—
2 (50)	1.5 (38)	5.50 (140)	5.75 (146)	5.75 (146)	6.75 (171)	10.00 (254)	—
3 (80)	2 (51)	6.75 (171)	7.00 (178)	7.00 (178)	8.38 (213)	11.88 (302)	—
4 (100)	2.5 (64)	8.25 (210)	8.50 (216)	8.50 (216)	9.06 (230)	12.56 (319)	—
6 (150)	4 (102)	12.50 (318)	12.75 (324)	12.75 (324)	—	—	7.13 (181)
8 (200)	5 (127)	15.25 (387)	15.50 (394)	15.50 (394)	—	—	9.00 (229)
10 (250)	5 (127)	13.00 (330)	—	13.50 (343)	17.75 (451)	—	—
12 (300)	6 (152)	17.00 (432)	—	17.50 (445)	21.00 (533)	—	—
16 (400)	8 (203)	24.00 (610)	—	24.50 (622)	28.00 (711)	—	—



**NOTES:**

- a) For 1" through 4", the D dimension is used for cast yoke mount actuators.
- b) For 6" and 8", the E dimension is used for fabricated yoke mount actuators.
- c) For 10" through 16" valves with bolted bonnets, the D dimension is used for all actuators.

## How To Order

To completely specify a control valve, make a selection from each category in the Valve Model Coding System below. The assembled codes create a complete valve model number. The Valve Model Coding System displays the standard product offering for this product line. An extensive number of options and variations exist, which are not listed. For options not shown or to enter an order, contact your local sales representative.

1	Model
V701	Venturi Seat Angle Valve

8	Trim Size
B	1 Reduction

2	Body Size
F	1 (25)
H	1-1/2 (40)
J	2 (50)
L	3 (80)
N	4 (100)
Q	6 (150)
S	8 (200)
T	10 (250)
U	12 (300)
W	16 (400)

9	Trim Materials			
Trim Code	Plug	Seat (Venturi)	Stem	Guide
A	17-4 PH	17-4 PH	17-4 PH	Alloy 12
B	316 SS	316 SS	316 SS	Alloy 12
C(a)	Chrome-Iron	Chrome-Iron	17-4 PH	Alloy 12
H(b)	Chrome-Iron	Chrome-Iron	17-4 PH	Alloy 12

(a) Trim code for 4" through 16" valves.

(b) Trim code for 1" through 3" valves.

3	Body Rating
G	150
H	300
F	600

10	Packing
G	PTFE V-Ring
U	PTFE Braided Ring
9	Laminated Graphite Ring

Refer to Table 3 for availability.

4	Body Material
C	Carbon Steel (ASTM A 216, WCB)
E	Stainless Steel (ASTM A 351, CF8M)
K	Chrome-Moly Steel (ASTM A 217, C5)

11	Variations
—	None
9	Stainless Lubrication and Isolating Valve
C	Flushing Connection

5	End Connections
3	Raised Face Flange

6	Bonnet Type
2	Plain
3	Extension (1"-8")

7	Trim Characteristic
E	Equal Percentage

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