



**AV2000 SERIES**

**GLOBE CONTROL VALVE**

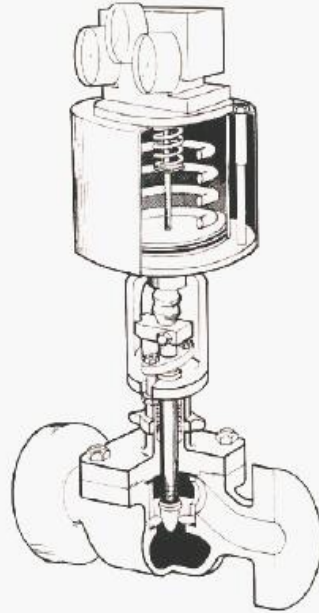
**150-300 ANSI**

The AV 2000 Series Globe Control Valve has been designed to offer the Process Industries a valve to suit practically every application within a single basic design concept.

The simplicity of design, using a minimum number of parts, has created a valve that is reliable in operation, giving the best performance whilst being the easiest to maintain.

**Features include:—**

- Integral Positioner for direct feedback (now with sidemount positioner)
- Piston Actuator for High Performance and High Thrust
- Filament Wound Actuator Barrel for totally non-corrosive maintenance free operation
- Single Seat for precise throttling and tight shut off
- Top entry for easy in or out of line servicing
- Clamped in Seat Ring for easy removal
- Powerful Spring for positive Air fail action
- Heavy duty stem guiding, out of flow stream



### **CAGE RETAINED - SINGLE SEAT - TOP ENTRY DESIGN GLOBE VALVE**

Long trouble free operation is obtained from the S-Flow Path, which minimises turbulence so reducing the effects of erosion and noise.

The single seat design guarantees better sealing and the high lift contoured one piece plug provides more accurate control characteristics through precise machining. Higher rangeabilities are achieved.

The single seat is retained by the investment cast cage and top entry bonnet, allowing ease of maintenance through elimination of welding or screwing in seats.

The trim is designed using a one piece plug, with large stem diameter, providing rigidity and the stuffing box is deep to allow sufficient packing to ensure safety at maximum conditions.

### **GASKETS**

The valve is designed so that when assembled, force is transmitted through the cage to secure the seat ring. The body, bonnet, cage and seat are machined to provide exactly the required compression per gasket. The seat ring gasket is retained by the seat ring and bottoms in the body, metal to metal. The bonnet gasket is spiral wound and retained by the bonnet which also bottoms into the body metal to metal. The gasket extends over the body and cage to provide correct sealing, sufficient compression onto the cage, and compensation for manufacturing tolerances.

### **PACKING**

The extra deep stuffing box has several advantages over conventional types. Packing sets have 12 chevrons to ensure good sealing and longer guides are utilized to provide better stability.

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**150 - 300 - ANSI**

**SPECIFICATION**

Size Range	25 40 50 80 100 150
Connections	Flanged 300 ANSI-Drilled as required
Body and Bonnet	W316 ASTM A 743 grade CF8M Stainless Steel Other Materials available on request
Plug and Stem	316 St. Steel (1 Piece Design), Stellite Faced
Cage	Investment Cast 316 St. Steel
Seat	316 St. Steel, Stellite Faced, PTFE Insert option
Seat Gasket	Asbestos, PTFE
Bonnet Gasket	Spiral Wound Asbestos / Stainless Steel
Stem Guide	Glass Filled PTFE, Al/Bronze and St. Steel
Packing	PTFE, Graph Asb and PTFE/Asb
Gland Follower	316 St. Steel
Gland Flange	316 St. Steel
Yoke, Studs, Nuts & Bolts	316 St. Steel

**VALVE CAPACITY**

Valve Size	Standard Cv												
	1,0	1,5	2,5	4,0	7,0	15							
25													
40					7,0	15	20	30					
50						15	20	30	50				
80							30	50	75	110			
100								50	75	110	195		
150									110	195	275	400	

Cv for 25mm below 1,0 Cv Linear only = 0,600/0,400/0,250/0,100/0,063/0,040/0,016/0,010/0,004/0,0025/0,001

Autovalue work according to a policy of continuous product improvement. The Company therefore reserves the right to amend any specification without prior notice.

## 2000 SERIES

### TRIM CHARACTERISTICS

#### EQUAL PERCENTAGE

This is a fully contoured plug whereby equal increments of lift produce a constant rate of change of flow.

The contour is a 50 : 1 ratio.

This trim is usually employed:

- Where the pressure drop across the valve is a small portion of the total, e.g. generally less than 40%.
- Where the pressure drop across the valve varies widely, e.g. storage vessel run down, or varying set point conditions.
- Where the required valve capacity is uncertain as it is more difficult to oversize a valve of this characteristic.
- Where a given condition may require a greater corrective action than a smaller condition change, i.e. temperature control.
- Where a considerable lag exists in the system and for reasons when the rate (derivative) term is present in the controller.

#### LINEAR

This is a fully contoured plug in which equal increments of lift produce equal increments of flow. Reasons for its application depend on plant conditions and the following indications can be used as a guide.

A linear trim is usually desirable:-

- Where the pressure drop across the valve is always more than 40% of the total process drop.
- Whenever corrective action requires to be linear and at the same rate throughout the range of opening, e.g., the level control of a constant cross-sectional area capacity.
- Where the process lag is small and the proportional band is less than 10%.

#### TRICKLE

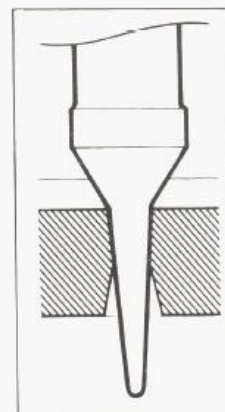
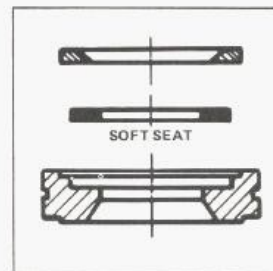
Trims of this style are less than 1-0CV and a linear contour only is achieved in this design. The long taper is engineered to reduce the velocity of flow by allowing only a gradual expansion. Velocity is further reduced by the high frictional resistance of the design which is primarily meant for use on high pressure drop applications.

#### SOFT SEAT ELEMENTS

For all CVs 1. and above soft seat elements are available providing GUARANTEED 100% TIGHT SHUT OFF. The sandwich design incorporates a controlled compression feature with full seating area support so retaining simple replacement characteristics whilst allowing application on severest pressure drops.

PTFE soft elements available for application up to 450°F, 232°C with alternative elements such as PTFCE, copper, aluminium, etc., also available, dependent on service condition requirements.

For tight shut off conditions, above 450°F, 232°C, assembly lapped metal to metal seats are available where service conditions permit and against specific quotations only. No guarantee of lapped seat leakage can be given after valves are despatched.



## 2000 SERIES PERFORMANCE

### RANGEABILITY

This is defined as the ratio between the maximum and minimum controllable flows which follow the required control characteristics.

The normal rangeability figures are to be used only as a guide and any distortion of the ideal curve reduces the ratio.

The maximum mathematically possible ratio for a 50 : 1 percentage curve is 50 : 1. However, with a soft seat plug the leakage flow is nil and the smallest controllable flow is very small, hence the figures shown may be used in practice.

### LIFT % MAXIMUM

#### Equal percentage characteristics

Soft seat, up to 50 CV	75 : 1
Soft seat, 50 – 195 CV	50 : 1
Metal to Metal up to 50 CV	50 : 1
Metal to Metal 50 – 195 CV	40 : 1

#### Linear characteristics

Trickle trim, up to 0.6 CV	up to 250 : 1
Soft seat, up to 50 CV	50 : 1
Soft seat, 50 – 195 CV	40 : 1
Metal to Metal up to 50 CV	40 : 1
Metal to Metal 50 – 195 CV	35 : 1

*(Figures are based on the full stroke of the plug)*

### IDEAL CHARACTERISTICS

