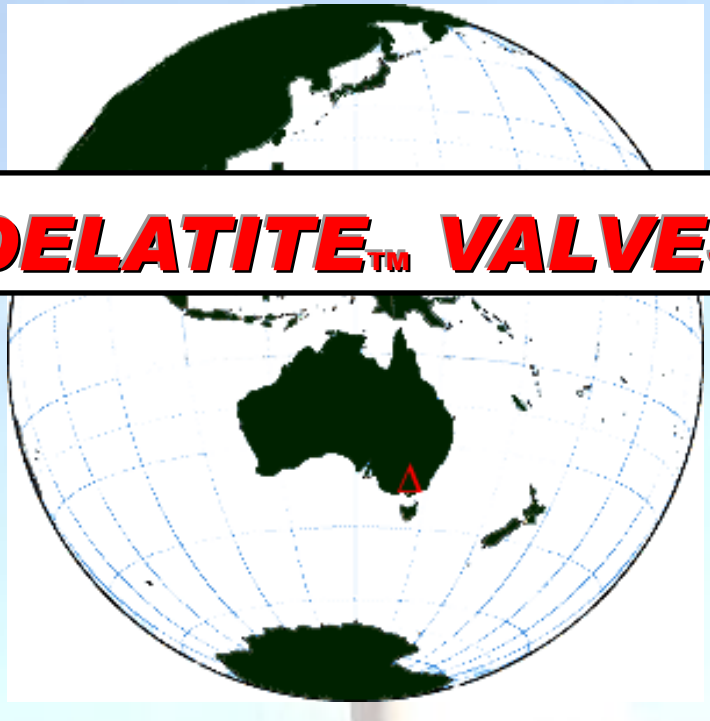
AGCV



DELATITE™ VALVES

The Latest Technology in Globe Style Control Valves

- Standard Trims
- Reduced trims
- Hard Coated Trims
- Cavitation Control
- Noise Reduction
- Velocity Control
- Erosion Control
- Corrosion Control
- High Performance Actuators
- Ease of Maintenance

Model AGCV

Globe Style Control Valve

Delatite have designed the AGCV globe style control valve to give very high levels of performance whilst being easy to maintain.

The actuator is a double acting spring cylinder.
This actuator provides a stiffness of the piston, quick and accurate response while maintaining accurate repeatability and high speed positioner accuracy.

The actuator can operate on up to 10 Bar g air supply which enables high thrust to be obtained which assists the valve to obtain shut off against high line pressures.

Delatite have designed so that the spring. air pressure and line pressure all assist to ensure the valve has a very tight shut off.

The AGCV body has been designed to be maintenance friendly.
The valve stem and plug are one piece and are bonnet guided by large stem guides supporting the oversize valve stem at the extreme end points of the valve bonnet.

There are no guides in the fluid flow path.

The valve has no cage guide as there is potential for galling sticking and increased wear of the cage in fluids that contain even small amounts of solids or abrasive materials. This can lead to premature valve failure or poor control.

The AGCV has a generous amount of clearance between the seat retainer and the plug head. This allows alike and the best materials to be used without the potential for galling

The valve is of top entry design with the seat ring being clamped into position by the seat retainer. The trim of the valve is very easy to remove and replace even if the valve has been working in corrosive fluids.
The seat is self centring which helps to maintain a good shut off with a metal seat.

The Latest Technology in Globe Style Control Valves.

The Delatite AGCV has very few parts
Top entry allows for easy inspection and access to the valve trim.
The valve is more compact and easier to handle.
The plug and stem are of one piece.

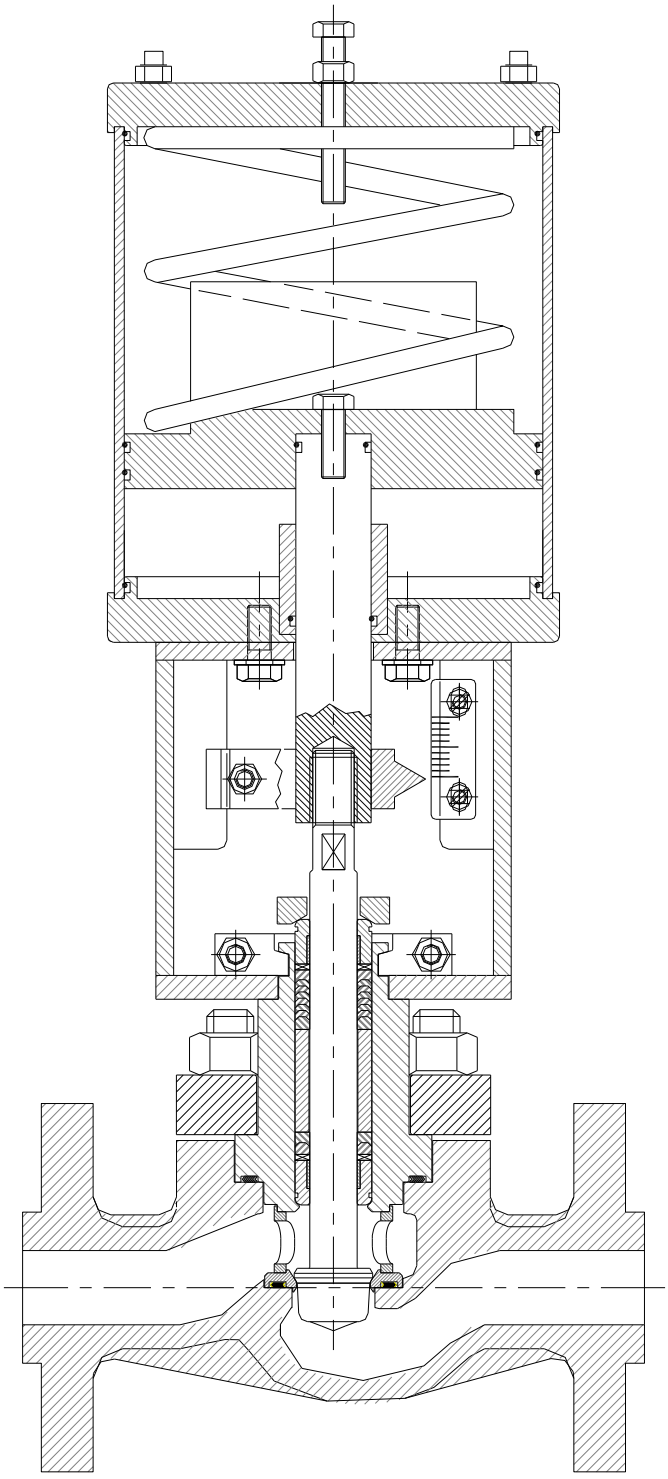
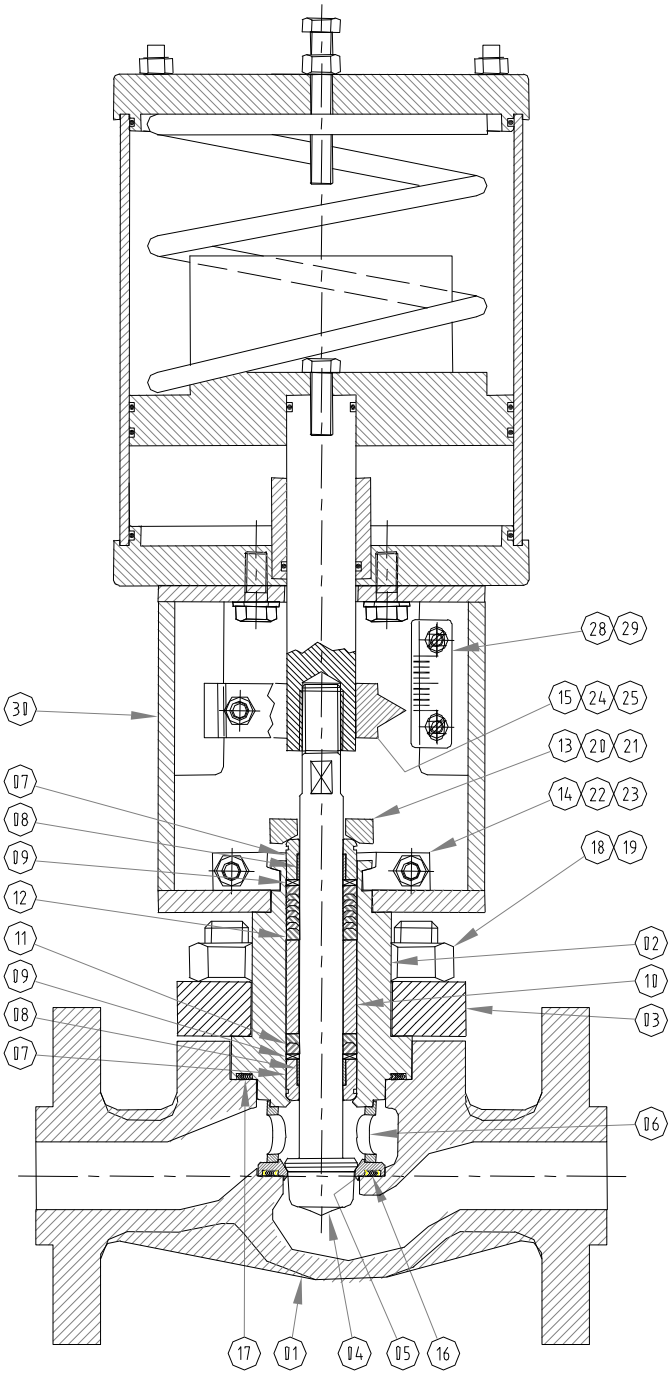


Fig. 1

The Latest Technology in Globe Style Control Valves.

The Delatite AGCV has very few parts
Top entry allows for easy inspection and access to the valve trim.
The valve is more compact and easier to handle.
The plug and stem are of one piece.
The seat is clamped in and very easy to remove or maintain.
The standard valve has only 2 gaskets.



PART IDENTIFICATION LIST	
ITEM	DESCRIPTION
01	VALVE BODY
02	BONNET
03	BONNET FLANGE
04	PLUG
05	SEAT RING
06	SEAT RETAINER
07	STEM GUIDE
08	STEM GUIDE LINER
09	ANTI-EXTRUSION SPACER
10	PACKING SPACER
11	LOWER WIPER PACKING
12	UPPER WIPER PACKING
13	GLAND FLANGE
14	YOKE CLAMP
15	STEM CLAMP
16	SEAT RING GASKET
17	BONNET GASKET
18	BONNET FLANGE STUD
19	BONNET FLANGE NUT
20	GLAND FLANGE BOLT
21	GLAND FLANGE NUT
22	YOKE CLAMP BOLT
23	YOKE CLAMP NUT
24	STEM CLAMP BOLT
25	STEM CLAMP NUT
26	POSITIONER LINKAGE ARM
27	POSITIONER LINKAGE ARM BOLT
28	STROKE INDICATION PLATE
29	STROKE INDICATION PLATE SCREW
30	YOKE
31	IDENTIFICATION PLATE
32	FLOW INDICATION ARROW

Fig. 2

Design Features

- Smooth flow profile cast globe body design
- Top entry servicing
- Clamped in seat
- Bonnet and seat gasket can not be over compressed
- Compact design
- Robust parts for reliable service and low cost of ownership
- Double stem guides out of the flow path
- Self centring seat
- Hard trims available
- Cavitation control trims
- Noise reduction trims
- Large choice of valve body materials
- Large choice of trim materials
- Characterized trims Equal percentage, Linear and Special
- Large choice of trim sizes available
- High thrust spring cylinder actuator
- Interchangeable parts

Benefits

- Top entry with immediate access to valve plug and seat
- Reduced inspection and maintenance time
- Clamped in seat easily removed and replaced
- Guides out of fluid flow path reduce chance of galling or sticking
- Large clearance between plug head and seat retainer
- Easy and quick to maintain
- Compact design
- High thrust actuator
- Accurate positioning and high repeatability
- Controlled quick response to signal change
- The actuator and valve do exactly what the signal command is.
- Low cost of ownership
- Severe service trims to control cavitation and reduce noise.
- Built for heavy duty service and to solve your control valve problems

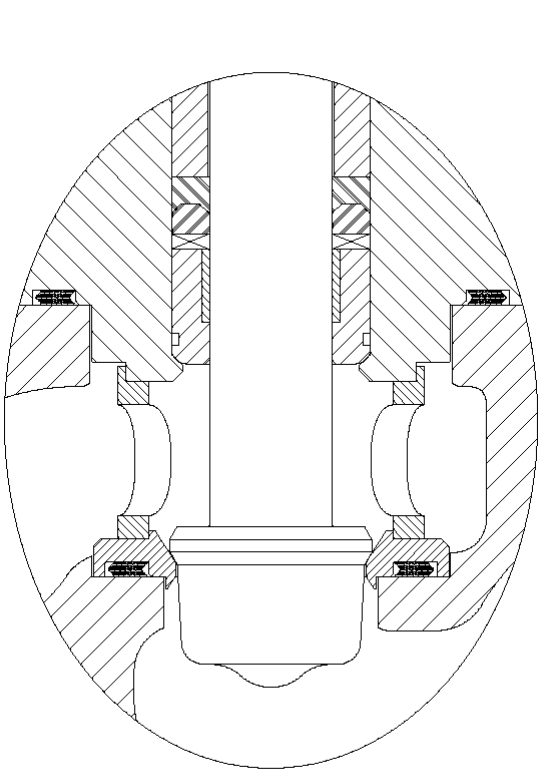


Fig. 3

Standard Trim

The AGCV trim has been designed to overcome the inherent difficulties with cage guiding screwed in and integral seats.

The problem with screwed in seats is that they will often seize in place making it very difficult to remove and replace them. They can also loosen while the valve is in service which can cause poor control jamming of the plug as well as a leak path between the thread of the seat and the body which if left long enough can damage the valve body.

The problem with the integral seat is if you damage the seat you are damaging the valve body. (This can prove to be very expensive)

The AGCV has a clamped in seat ring which is held in place by the seat retainer which is clamped between the bottom of the bonnet and the top of the seat ring.

Removal of the seat is very easy even when the valve has been working with corrosive fluids

Trim Reductions

The AGCV has a major advantage over a number of other similar style control valves.

The full area trim is in fact a full area trim.
The maximum trim size for each valve size is the same as the nominated valve size. With this option the customer can save as more flow can be passed through a smaller valve

A large number of trim reductions are available for every valve size.
This enables Delatite to select the trim that offer the customer the best control.

Guides

Cage guides have a tendency to easily becoming galled or sticking. This situation is increased dramatically when there is foreign material or solids in the fluid being controlled.

The AGCV plug has a very heavy stem which is double stem guided at the extreme ends of the bonnet. There is no contact between the plug head and the seat retainer.
This allow Delatite to manufacture the Plug, Seat and Seat Retainer out of the same material that best suits the flow conditions without the chance of galling.
The flow characteristic is determined by the contour machined on the plug head and not by openings machined into the cage.

Metal Seats

Metal seats have a shut off that meets or is better the ANSI Class IV
All Delatite valves are seat tested prior to dispatch and test certificates are supplied with each valve.
ANSI Class V can be supplied as an option if required

Soft Seats

Soft seated valves are available for customer that require a control valve to have a tight shut off
An elastomer (Normally PTFE) is fitted between a 2 piece seat ring.
This style of Seat achieves ANSI Class VI
The soft seat option is interchangeable with any AGCV of the same size and rating
Care must be taken as the maximum temperature of the fluid must be below 150 degree C @ 20 Bar g pressure drop.

American National Standard
Control valve seat leakage ANSI/FCI 70-2-1991

Leakage Class	Valve Type	Maximum Seat Leakage
Class I	A modification of any Class II, III, IV Valve where design intent is the same as the basic class, but by agreement between user and supplier, no test is required.	
Class II	Balance single port control valve with piston ring seal with metal to metal seats.	0.5% of rated Valve capacity
Class III	As per Class II but with resilient piston seal with metal to metal seats	0.1% of rated Valve capacity
Class IV	Single seat control valve with metal to metal seats	0.01% of rated Valve capacity
Class V	Single seat control valve with metal to metal seats having exceptional seat tightness or resilient seat dependent on application.	0.0005 ml/min. Inch of orifice diameter/psi differential
Class VI	Single seat control valve with resilient seating	Bubble ‘Tight’

Table. 1

Bonnet

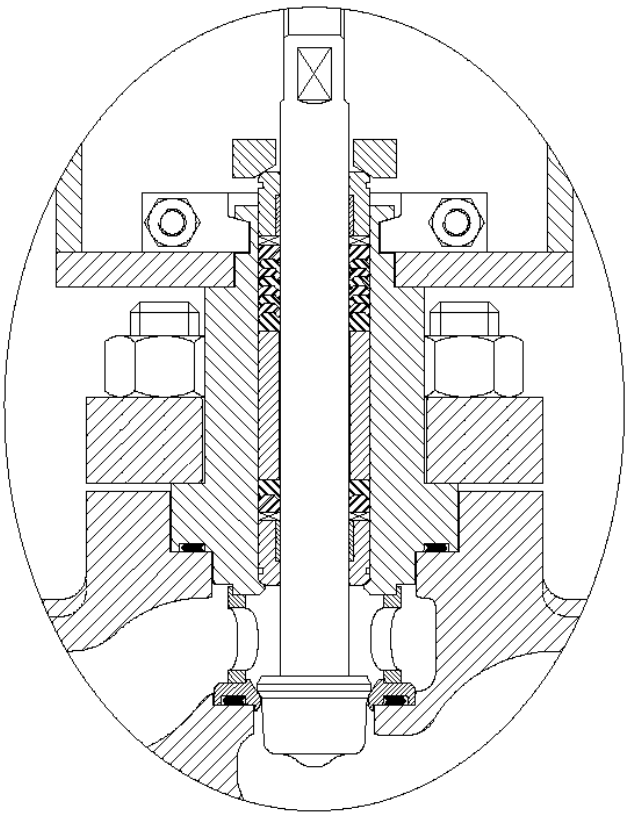


Fig. 4

Standard Bonnet

The standard bonnet contains a deep packing box as well as long spacing between stem guides
The stem guides provide a robust stem assembly.
The bonnet is normally manufactured from the same material as the valve body and can handle a temperature range of -20 C - +400 C

Extended Bonnet

The extended bonnet protects the packing from excessive temperatures both hot and cold.
It also protects the valves positioner and any other accessories from high temperature

Note:
The temperature limit for extended use of carbon steel is 427 Degree C

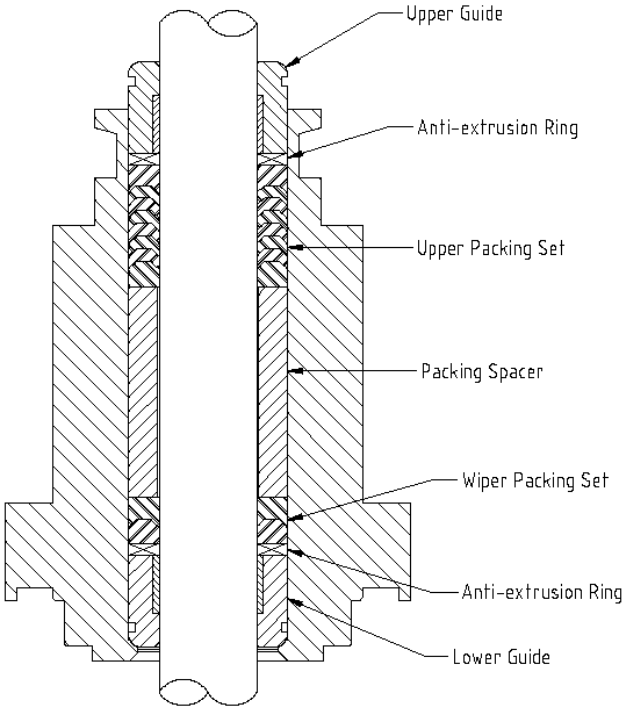


Fig. 5

Contains Upper and Lower Stem Guides
Upper and Lower Stem Guide Liners
Upper and Lower Anti Extrusion Rings
Lower Packing
Upper Packing
Packing Spacer

The main purpose for the lower packing is to reduce the chance of contaminants from reaching the upper packing
This is achieved by the lower packing wiping the stem of the valve as the valve is operated.

The 2 large guides are located at the extreme ends of the bonnet to guide the large diameter valve stem with solid and robust support.

Packing
The bonnet has a large and deep stuffing box which permits a large number of packing configurations including double packing.
Standard Packing for lower temperatures
PTFE Vee Rings
Standard High Temperature Packing
Graphite Combination of Woven and Solid

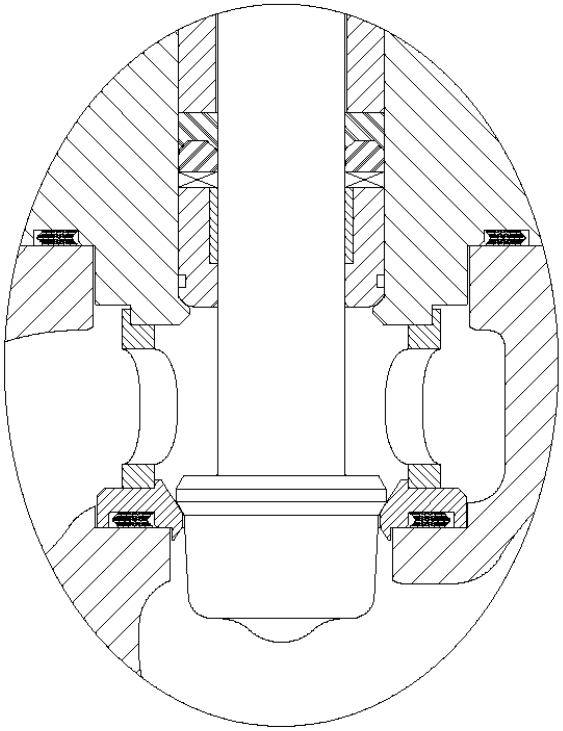


Fig. 6

Standard Trim Option

1: Characterized Trim
- Linear
- Equal Percentage
- Quick Opening

2: Multiple Trim Reductions per Valve Size

3: Seats
- Metal
- Soft Seat

4: Hard Trim Options

Coatings
- Seat Area
- Full Contour

4a: Hard Trim Materials

- Alloy 6
- Ceramic
- Tungsten Carbide

5: Flow Direction

Either Depending on Application and Fail Action

6: Severe Service Trims
- Noise Reduction
- Cavitation Control
- Velocity Control
- Erosion Control

Noise and Cavitation

When fluid passes through the seat of a control valve the pressure of the fluid decreases and the velocity of the fluid increases.
Immediately after the seat the pressure is at its lowest and the velocity is at its highest. This point is known as the Vena Contracta (Pvc)
Down stream from the vena contracta the fluid pressure begins to increase and the fluid velocity begins to reduce.
The rate at which the fluid pressure recovers has a large influence on the control valve trim design which is used.

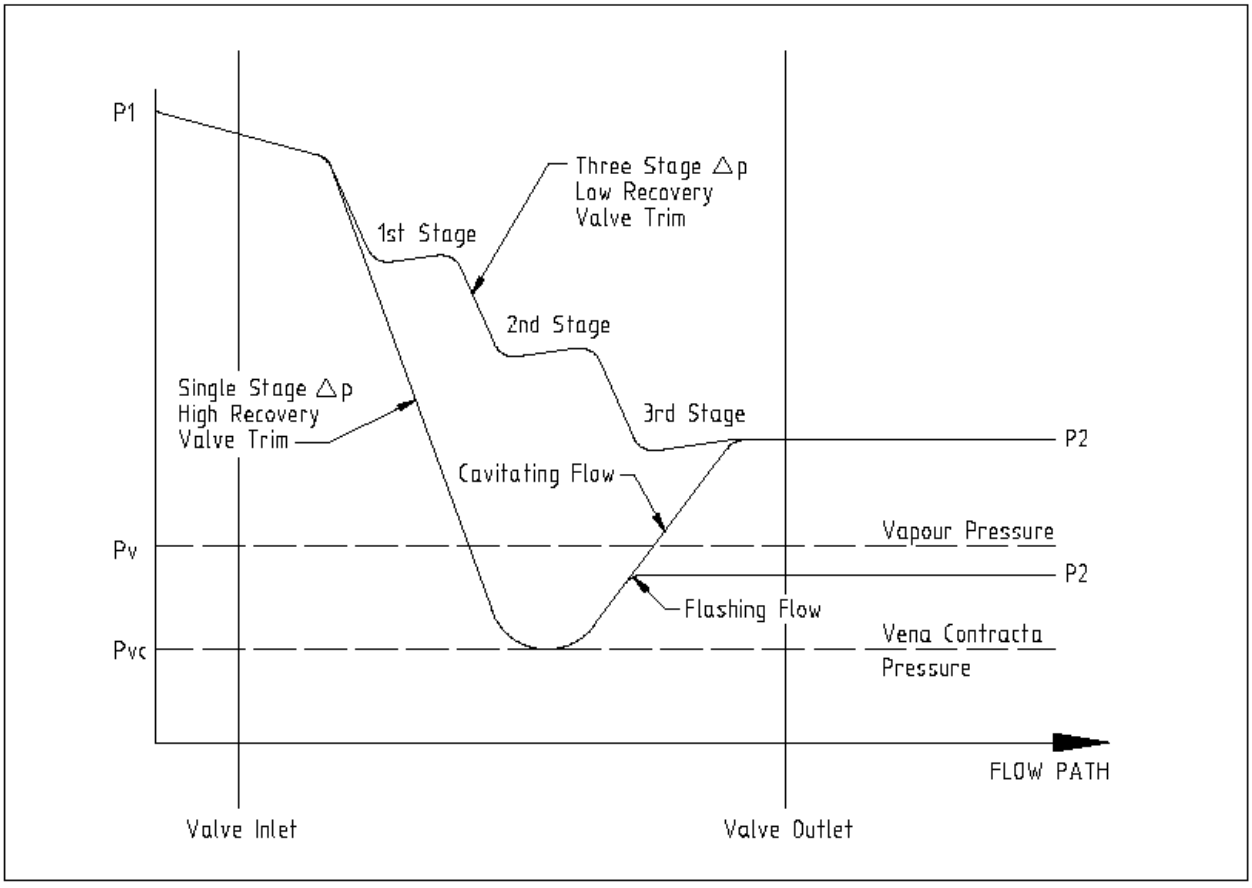


Fig. 7

For Control Valves in Liquid Service

If the pressure at the vena contracta drops below the vapour pressure of the liquid bubbles are formed.
If the pressure increases to P2 (Downstream pressure) and P2 exceeds the liquid vapour pressure the bubbles will collapse or implode. This is known as cavitation. The bubbles can implode within the valve discharge or in the downstream pipe work. This implosion (energy dissipation) can cause major damage to the valve trim, valve body downstream piping or all areas mentioned.

If the pressure increase at P2 stays below the fluid vapour pressure this is then known as Flashing. (Flashing is also associated with high velocity and need to be dealt with)
Cavitation Control Trim are designed to take the pressure drop over a number of stages to keep the fluid pressure above the fluid vapour pressure at all times as the fluid passes through the valve.
This style of trim is also known as a low recovery valve trim.
Velocity of a fluid through a control valve has a major affect on the erosion of the valve body and trim.
It is important that the correct trim (Velocity Control) and valve materials are selected to ensure satisfactory valve performance and service life.
High velocity is of particular concern in gas control applications, as high velocity can generate high noise levels and vibration in the valve and down stream piping.
Velocity control is a major component in reducing noise and vibration to acceptable levels for control valves in gaseous service.

Severe Service Trims

Multi Stage Pressure Reduction Trims
Step Trims
Velocity Control Trims
Torturous Path Trims

Delatite Valves are dedicated to providing High Quality Products of Superior Design which are all supported by excellent customer service.
Delatite are Committed to solving Severe Service Valve problems in today's industries.
Total Quality Management is our Commitment to our Customers.
We go out of our way to understand the Customers needs and to provide solutions
which meet or exceed our customers' needs.
This commitment is carried across all departments of the company. Including

- Sales
- Engineering
- Product Development

This Commits Delatite to ongoing quality and performance improvements to meet our customers needs.

We aim to meet our Customers Needs First Time and on Time.
Valves have been designed to Conform with ANSI/ASME B16.34 Standard for Control Valves.
Valve are Tested to conform with MSS SP.61

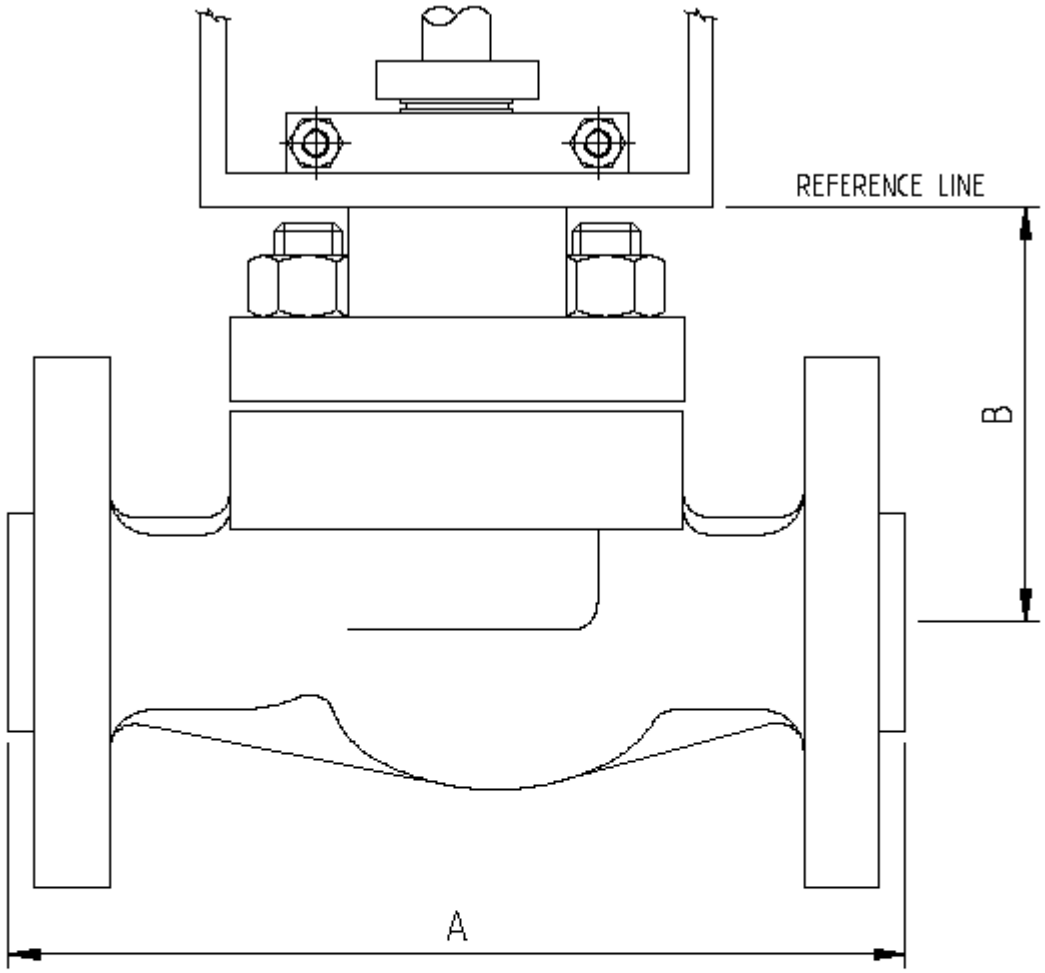
All machining, hard coating, assembly, and repair facilities are accredited to ISO 9001 : 2000

Repair facilities are ISO 9001 : 2000

Certificate No QEC 2420

Pressure test equipment traceable to NATA.

Dimensional Data



Body Size		A						B		Space Required Above Actuator For Disassembly	
		Class 150		Class 300		Class 600					
	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)
25	1	184	7.3	197	7.8	210	8.3	97	3.8	45	1.8
40	1.5	222	8.8	235	9.3	251	9.9	132	5.2	TBA	TBA
50	2	254	10	267	10.5	286	11.3	138	5.4	TBA	TBA
80	3	298	11.8	318	12.5	337	13.3	172	6.8	TBA	TBA
100	4	353	13.9	368	14.5	394	15.5	214	8.4	TBA	TBA
150	6	451	17.8	473	18.6	508	20	311	12.3	TBA	TBA
200	8	543	21.4	568	22.4	610	24	365	14.4	TBA	TBA
250	10	673	26.5	708	27.9	752	29.6	359	14.1	TBA	TBA
300	12	737	29	775	30.5	819	32.3	413	16.3	TBA	TBA

Integral Flanges in accordance with ANSI/ISA S75.03 1985

Flow Capacity Cv

Size	Trim Numbers & CV Value's									
25mm	Trim No.	4	6	8	10	12	16	18	20	25
1"	CV	1.2	2	3	4	7	10	12	14	18
40mm	Trim No.	10	12	16	18	20	25	32	40	
1.5"	CV	4	7	10	12	14	19	27	32	
50mm	Trim No.	10	16	20	25	32	40	50		
CV	CV	4	10	14	20	28	34	58		
80mm	Trim No.	32	40	50	65	80				
3"	CV	30	36	60	88	120				
100mm	Trim No.	40	50	65	80	100				
4"	CV	38	78	119	156	188				
150mm	Trim No.	65	80	100	125	150				
6"	CV	125	190	235	350	420				
200mm	Trim No.	80	100	125	150	200				
8"	CV	228	282	460	526	684				
250mm	Trim No.	125	150	200	250					
10"	CV	495	594	890	1165					
300mm	Trim No.	150	200	250	300					
12"	CV	675	1068	1398	1677					

The information and specification in this publication are presented for information purposes only. While every effort has been made to ensure accuracy they should not be considered as certified information.
Delatite Valves are continually improving the performance of their range of valves.
Information in this brochure is subject to change without notice.

For further information or verification please contact your Delatite Valve Representative

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Authorised Distributor

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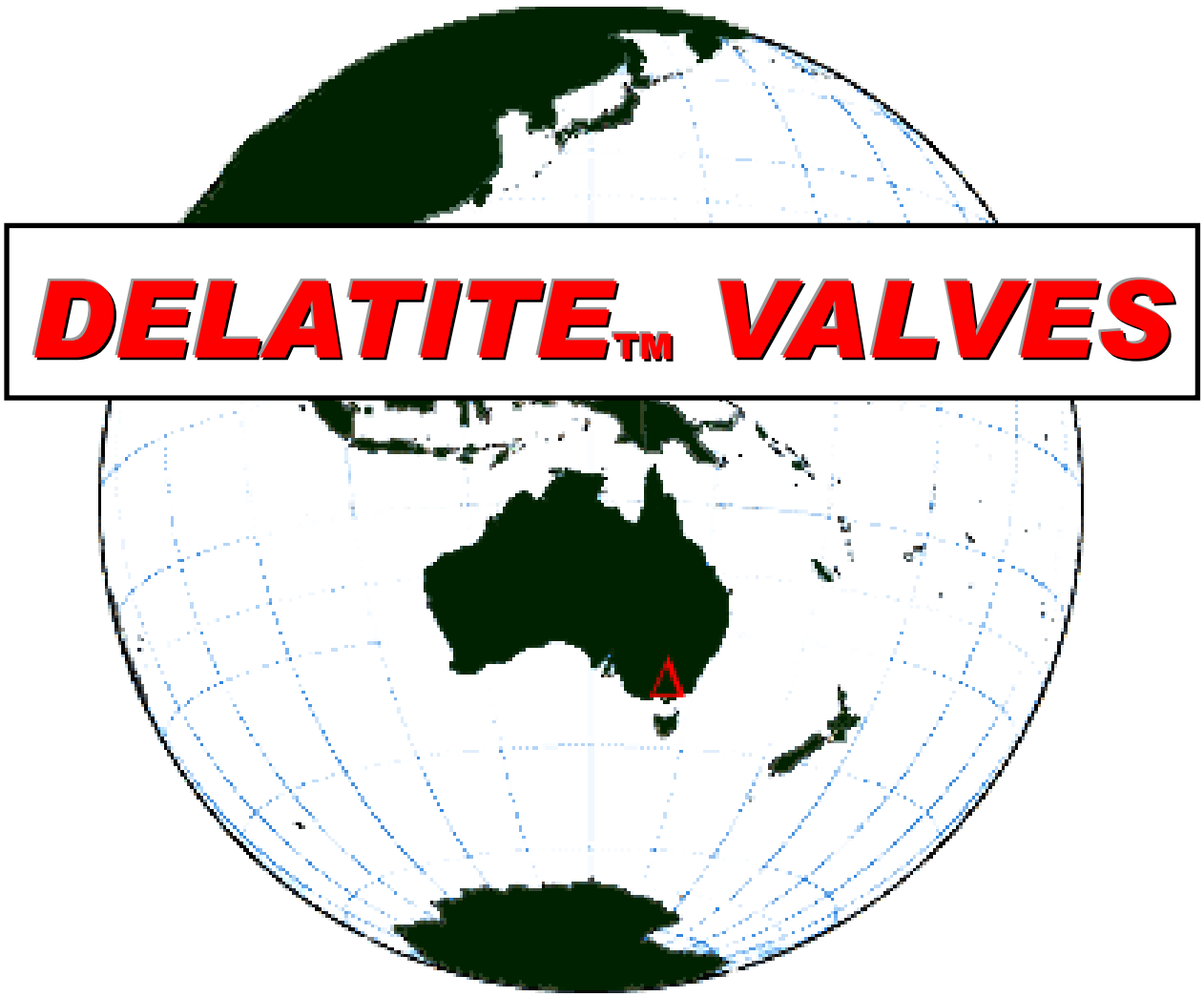
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