Specification

Design Code	ASME B16-34
Valve Size	5 to 300 mm (1" to 12")
Rating	ANSI 150 to 2500 or equivalents to BS10, DIN, JIS etc
End Connection	Flanged, Hubbed, Butt Weld
Body Material	Carbon steel, Chrome moly steel, Stainless steel, Monel, Alloy 20, Hastelloy B/C, Duplex stainless steel, Aluminium bronze
Bonnet	Standard up to 400°C, Normalising between 250°C to 500°C, Extended cold service -20°C to -100°C, Cryogenic -100°C to -250°C, Bellowseal
Gland Packing	PTFE Chevrons, Graphite, Low emission
Trim Forms	Top guided contoured, Spline Micro Flow Ported cage (balanced / unbalanced) Low Noise (LR1, LR2, LR3, LR4)
Trim Material	Stainless steel, Duplex stainless steel, 13% Chrome steel, Monel, Hastelloy B/C, Stellite

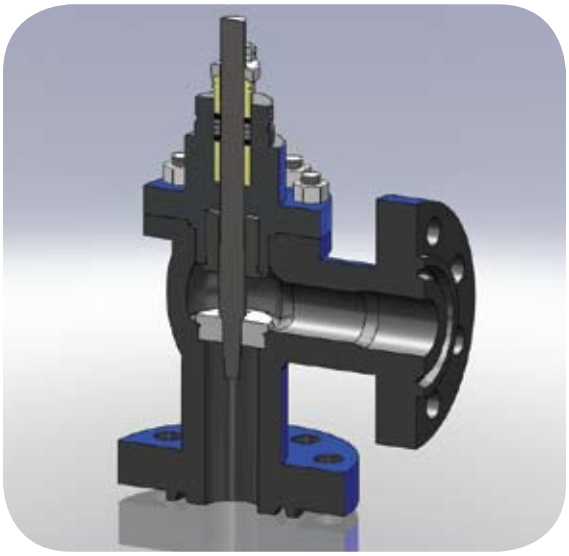
Flow Characteristic	Equal percentage, Linear, Quick opening
Seat Leakage	As per ANSI/ FCI 70.02-2006 Class III, IV, V and VI
Actuator Form	Diaphragm, Cylinder, Electric
Actuator Type	Direct / Reverse Acting Direct acting air failure "Close" top port. Reverse acting air failure "Opens" top port
Diaphragm	Nitrile / Neoprene (nylon reinforced)
Spring Range	3-15 PSIG (0.2 - 1.0 Bar) 6-30 PSIG (0.4 - 2.0 Bar)
Air Supply	20-60 PSIG (1.4 - 4.0 Bar)
Air Connection	1/4" or 1/2" NPT
Accessories	Valve Positioners - Pneumatic, Electro-Pneumatic, Smart Instruments - Airset, Solenoid Valve, Volume Booster, Airlock, Limit Switches Features - Top or Side Mounted handwheel, Limit Stops Steam Jacketing etc

Design Features

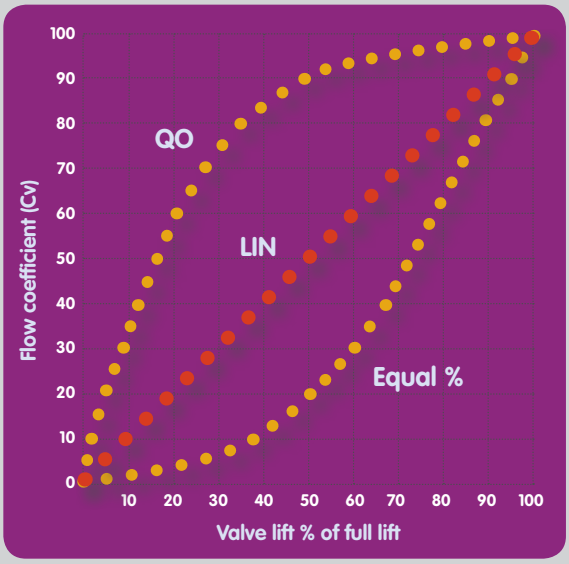
- High flow capacity and rangeability.
- Large variety of trim designs.
- Top entry for ease of inspection and maintenance.
- Designed with clamped seat and trim configuration.
- Unbalanced or balanced plug design options to achieve specified leakage requirements.
- Bolts located outside of the piping stress area to eliminate gasket crush problems.
- Wide selection of actuators to meet most system requirements.
- Rigorous proven on-site performance.

Quality and Performance Guarantee

- Produced with Quality Systems accredited to ISO 9001:2008
- CE marked in accordance with European Pressure Equipment Directive 97/23/EC and ATEX compliant with European directive 94/9/EC.
- Full material certification available for all major component parts.
- Full guarantee on design and performance.
- All testing performed to the requirements of ANSI B16.34.



Characteristic Curves



The Inherent flow characteristic of a control valve is the relationship between the flow and the lift of the plug at a constant pressure drop.

The characteristic normally available, are shown.

Linear - Flow is directly proportional to valve lift.

Equal % - Flow changes by a constant percentage of its instantaneous value for each unit of valve lift.

Quick opening - Flow increases rapidly with initial travel reaching near its maximum at a low lift.

Rangeability

Trim size		Standard rangeability	
		Contoured	Cage trim
ins	mm		
1/2" and 3/4"	15 and 20	40 : 1	35 : 1
1 to 3	25 to 80	50 : 1	45 : 1
4 to 12	100 to 300	60 : 1	55 : 1
Spline Micro	All sizes	Up to 100:1	

Maximum Recommended Valve Body Velocity for Liquid Flows

Trim style	Valve size		Valve body material		
			Carbon steel	Alloy steel	Aluminium bronze
	ins	mm	m/s	m/s	m/s
Contoured	1/2 to 2	15 to 50	12.5	14.0	8.0
	3 to 8	80 to 200	10.5	11.0	6.5
Cage guided	1 to 12	25 to 300	13.1	15.8	8.0

Maximum Recommended Valve Body Velocity for Gas/Vapour Flows

Trim style	Valve size		Maximum Inlet velocity	Maximum Outlet velocity	Maximum outlet mach No. for predicted noise level		
	ins	mm	m/s	m/s	>95dBA	<95dBA	<85dBA
Contoured	1/2 to 2	15 to 50	105	253	0.65	0.5	0.3
	3 and 4	80 and 100	90	253	0.65	0.5	0.3
	6 and 8	150 to 200	85	253	0.65	0.5	0.3
Cage guided	1 to 12	25 to 300	68	253	0.65	0.5	0.3

Specification

Design Code	ASME B16-34
Valve Size	25 to 300 mm (1" to 12")
Rating	ANSI 150 to 2500, API 3000 to 10000
End Connection	Flanged, Hubbed
Body Material	Carbon steel, Chrome moly steel, Stainless steel, Duplex stainless steel,
Bonnet	Standard
Gland Packing	PTFE Chevrons, Graphite, Low emission
Trim Forms	Ported cage (balanced / unbalanced) Low Noise (LR1, LR2, LR3, LR4)
Trim Material	Stainless steel, Duplex stainless steel, 13% Chrome steel, Stellite, Tungsten Carbide, Ceramics
Flow Characteristic	Equal percentage, Linear,
Seat Leakage	As per ANSI/FCI 70.02-2006 Class III, IV, V and VI

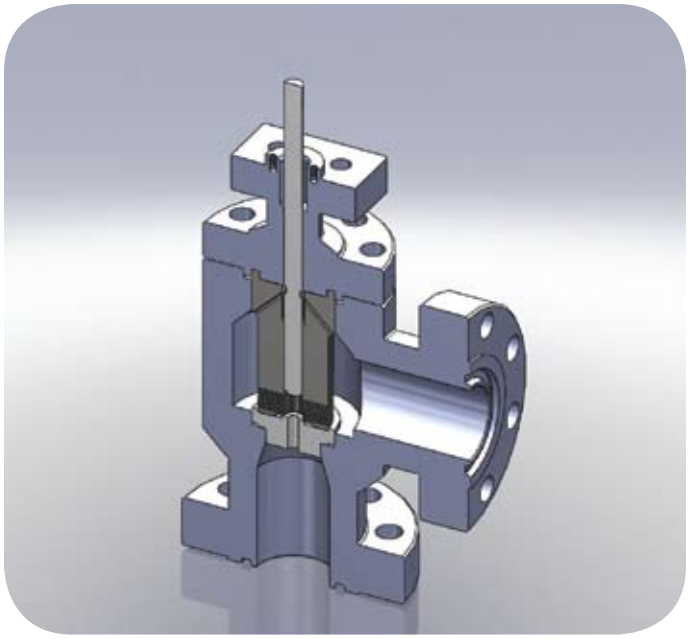
Actuator Form	Diaphragm, Piston, Electric, Stepping
Actuator Type	Direct / Reverse Acting Direct acting air failure "Close" top port. Reverse acting air failure "Opens" top port
Diaphragm	Nitrile / Neoprene (nylon reinforced)
Spring Range	3-15 PSIG (0.2 - 1.0 Bar) 6-30 PSIG (0.4 - 2.0 Bar) Further range available for piston actuator
Air Supply	20-60 PSIG (1.4 - 4.0 Bar)
Air Connection	1/4" or 1/2" NPT
Accessories	Valve Positioners - Pneumatic, Electro-Pneumatic, Smart Instruments - Airset, Solenoid Valve, Volume Booster, Airlock, Limit Switches Features - Top or Side Mounted handwheel, Limit Stops Steam Jacketing etc

Design Features

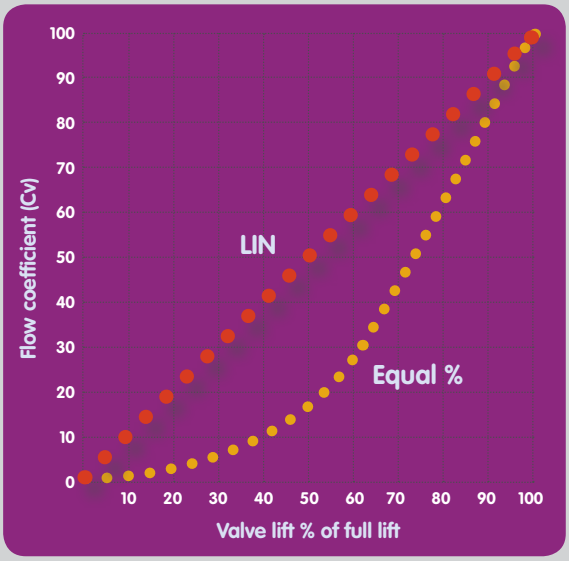
- High flow capacity and rangeability.
- Large variety of trim designs.
- Top entry for ease of inspection and maintenance.
- Designed with clamped seat and trim configuration.
- Hard metal trim materials available.
- Unbalanced or balanced plug design options to achieve specified leakage requirements.
- Bolts located outside of the piping stress area to eliminate gasket crush problems.
- Wide selection of actuators to meet most system requirements.
- Rigorous proven on-site performance.

Quality and Performance Guarantee

- Quality Systems accredited to ISO 9001 : 2008.
- Full material certification available for all major component parts.
- Full guarantee on design and performance.
- All testing performed to the requirements of ANSI B16.34.



Characteristic Curves



The Inherent flow characteristic of a control valve is the relationship between the flow and the lift of the plug at a constant pressure drop.

The characteristic normally available, are shown.

Linear - Flow is directly proportional to valve lift.

Equal % - Flow changes by a constant percentage of its instantaneous value for each unit of valve lift.

Rangeability

Trim size		Standard Rangeability	
		Cage Trim	Multi Stage Trim
ins	mm		
1 to 3	25 to 80	50 : 1	45 : 1
4 to 12	100 to 300	60 : 1	55 : 1
Spline Micro	All sizes	Up to 100:1	

Maximum Recommended Valve Body Velocity for Liquid Flows

Trim style	Valve size		Valve body material	
			Carbon steel	Alloy steel
	ins	mm	m/s	m/s
Cage guided	1 to 12	25 to 300	13.1	15.8

Maximum Recommended Valve Body Velocity for Gas/Vapour Flows

Trim style	Valve size		Maximum Inlet velocity	Maximum Outlet velocity	Maximum outlet mach No. for predicted noise level		
	BA	mm	m/s	m/s	95dBA	<95dBA	<85dB
Cage guided	1 to 12	25 to 300	68	253	0.65	0.5	0.3