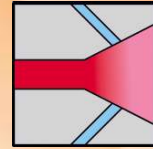
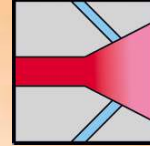


High Pressure Control Valves



EXO





High Pressure Control Valve Single Stage & Multistage, Series EGC

1. APPLICATION AND DESIGN

EXO Industries control valves with technical know-how of 30 years of working with Germany and Swedish Control Valves are single stage/ multi stage high pressure, absolute pressure sealing throttling devices for liquids, steam and gases.

EXO staff continuously and closely work with customer to accommodate their needs and their concern are reflected on the product design. With ultra modern technology in manufacturing, EXO Control Valves have an enviable workshop which provides high quality. EXO have the ultra modern, quality conscious manufacturing facility with state of the art technology-expertise and high-end CNC machines making high precise valves promising to meet the global standards.

Design features

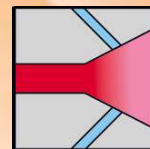
- Globe valve form
- With flanges acc. to ANSI or DIN
- With butt weld ends
- With internals designed for specific applications
- Cage type plug, contour type plugs
- Contour plug for on-off service
- 1-Stage or multi stage upto 4 stages
- Special plug for flashing water. Balance design available for large seat diameters and high pressure
- With removable inlet filter
- For steam application the outlet can be delivered with enlarged size
- Single stage up to 50 bar differential pressure, multi stage above 50 bar differential pressure up to 300 bar



Fig. 1: High Pressure Control Valve with Diaphragm Actuator and electropneumatic positioner

Main Feature available

- Compact design
- Custom Fit
- Light weight
- Easy press fit seat and plug assembly
- No siezing



2. TECHNICAL DATA

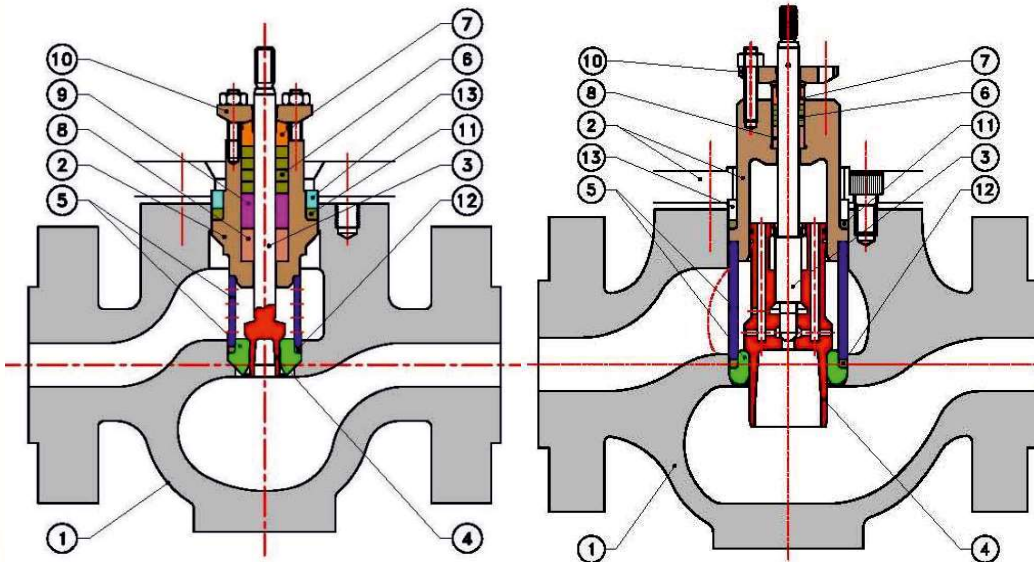
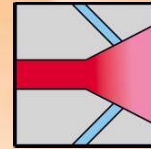
Sizes	: From 1" – 12" (DN 25 – DN 300)
Pressure Class	: ASME 150, 300 Class to 2500 Class
Control Range	: Depends on valve size, up to 200:1
Control Characteristics	: Valves can be supplied in various characteristics as per the requirement of the customer namely linear, modified linear, equal percentage, modified equal percentage and quick opening.
Actuating system	: Depending upon the operating requirement and customer specification, Chemtrols Control Valves can be equipped with pneumatic, electric or electro hydraulic actuating system.
Typical material	: See table 1
Connection	: See table 3
Dimension	: See table 3

3. MATERIALS *

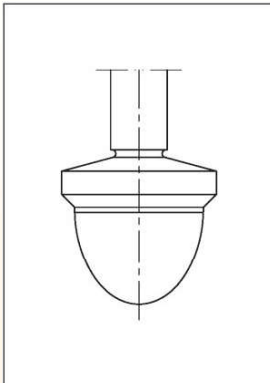
Table 1 – Typical material specification of main components (Customer's requirements and operating conditions may determine the use of different materials)

Sr.No.	Part Name		Grade	Description
1 & 2	Body & Bonnet	≤ 425°C	SA 216 Gr. WCB	Carbon Steel
		≤ 540°C	SA 217 Gr. WC6	Low alloy steel
		≤ 560°C	SA 217 Gr. WC9	Low alloy steel
3	Stem		DIN 1.4122 Plasma Nitrided	Martensitic stainless steel
4	Plug		DIN 1.4122 Plasma Nitrided	Martensitic stainless steel
5	Seat Cage / Seat		DIN 1.4122 Plasma Nitrided / A182 F11 / F22 Stellite	Martensitic stainless steel / Low alloy steel
6	Gland Packing		Grafoil	
7	Gland bush		DIN 1.4122 Plasma Nitrided	Martensitic stainless steel
8	Bottom guide		DIN 1.4122 Plasma Nitrided	Martensitic stainless steel
9	Top guide		DIN 1.4122 Plasma Nitrided	Martensitic stainless steel
10	Gland follower		DIN 1.4122 Plasma Nitrided	Martensitic stainless steel
11	Bonnet Seal		Grafoil	
12	Seat rings		Grafoil	
13	Bonnet Ring		SA182 F11 / SA182 F22	Low alloy steel

* Materials are for standard delivery, other material on request

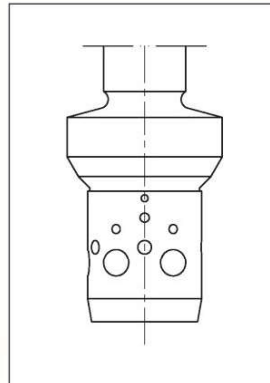


Possible Plug configurations



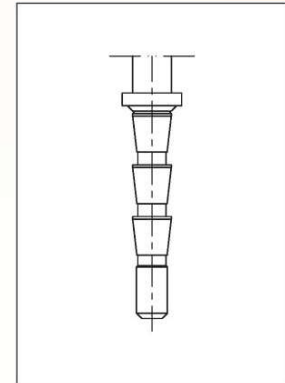
Plug for any characteristic
EGC Series Parabolic plug

1. Higher flow
2. Higher pressure difference over plug



Perforated cage for any characteristic
EGC Series cage plug

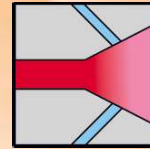
1. less vibration
2. less noise
3. uniform flow over cage outlet



Plug for multistage valve for any characteristic
EGC series, multi stage plug

1. High pressure drop up to 300 bar.
2. Low Kv

Fig. 2



4. Capacity *

Table 2

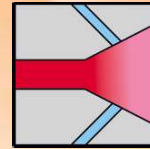
A. Micro Kv valves

Kv m³/h	0.03	0.036	0.04	0.048	0.059	0.071	0.1	0.123	0.13	0.16	0.163	0.18	0.2	0.3	0.49	0.6
Cv USG/min	0.035	0.042	0.046	0.056	0.069	0.083	0.11	0.143	0.15	0.18	0.19	0.21	0.23	0.35	0.57	0.70
Seat Dia. mm	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Size Inches, mm								12	12	12	12	12	12	12	12	12
1" 25	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1.5" 40	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Kv m³/h	0.8	1.00	1.20	1.30	1.40											
Cv USG/min	0.93	1.17	1.4	1.52	1.63											
Seat Dia. mm	9	12	12	12	12											
Size Inches, mm	12	18	18	18	18											
1" 25	•	•	•	•	•											
1.5" 40	•	•	•	•	•											

B. High Kv Valves

Kv m³/h	1.27	1.30	1.60	2.00	2.20	2.50	3.00	3.30	3.60	4.00	4.60	5.00	6.00	7.50	8.50
Cv USG/min	1.48	1.52	1.87	2.34	2.57	2.92	3.51	3.80	4.20	4.68	5.38	5.85	7.02	8.77	9.90
Seat Dia. mm	18	18	18	18	18	18	18	18	18	18	25	25	25	25	25
Size Inches, mm		25	25	25	25	25	25	25	25	25	36	36	36	36	36
1" 25	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
1.5" 40				•	•	•	•	•	•	•	•	•	•	•	•
2" 50													•	•	•
Kv m³/h	9.00	12.00	13.00	14.00	18.00	19.30	20.00	22.50	30.00	35.00	36.00	40.00	43.00		
Cv USG/min	10.53	14.00	15.20	60.38	21.00	22.50	23.40	26.30	35.10	40.95	42.12	46.80	50.31		
Seat Dia. mm	36	36	36	36	36	36	36	50	50	50	50	50	50		
Size Inches, mm	50	50	50	50	50	50	50								
1" 25															
1.5" 40	•	•	•	•	•	•	•	•							
2" 50	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Kv m³/h	15.00	18.00	20.00	23.00	33.00	36.00	43.00	60.00	62.30	63.00	75.00	75.60	80.00		
Cv USG/min	17.55	21.00	23.40	26.90	38.61	42.12	50.31	70.20	72.90	73.70	87.87	88.45	93.60		
Seat Dia. mm	36	36	36	50	50	50	50	50	72	72	72	72	72		
Size Inches, mm	50	50	50					72	72	90	90	90	90		
3" 80	•	•	•	•	•	•	•	•	•	•	•	•	•		
4" 100				•	•	•	•	•	•	•	•	•	•	•	•
6" 150										•	•	•	•	•	•
8" 200															
10" 250															
12" 300															
Kv m³/h	94.00	100.0	120.0	150.0	170.0	180.0	215.0	275.0	340.0	430.0	535.0	690.0	860.0		
Cv USG/min	110.0	117.0	140.4	175.5	198.9	210.6	251.5	321.0	397.0	503.0	625.9	807.0	1006.0		
Seat Dia. mm	72	90	90	90	90	90	100	112	125	140	160	180	200		
Size Inches, mm	90			100	100	100	112	125	140	160	180	200	225		
3" 80	•														
4" 100	•	•	•	•	•	•	•	•	•	•	•	•	•		
6" 150	•	•	•	•	•	•	•	•	•	•	•	•	•		
8" 200				•	•	•	•	•	•	•	•	•	•		
10" 250								•	•	•	•	•	•	•	•
12" 300									•	•	•	•	•	•	•

* For standard delivery, other Kv on request.

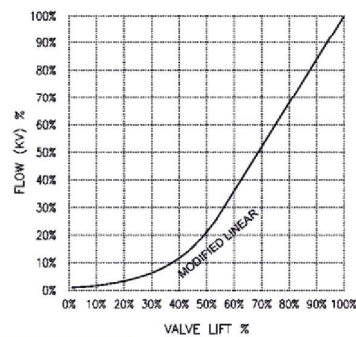
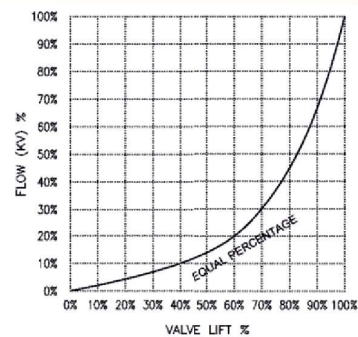
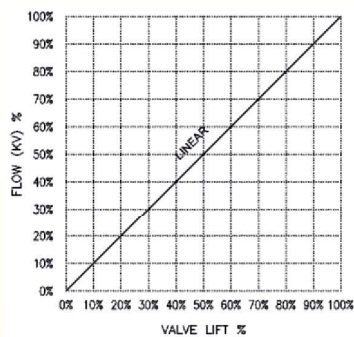


REMARK: OTHER SIZES UP ON REQUEST

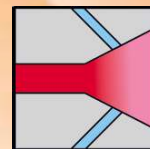
5. Model

Model codification for EGC Valves

EGC		25		2		600		RF	
SERIES		EGC							
SEAT DIAMETER				(25)					
STAGE						(2)			
ASME CLASS								(600)	
ENDS								(RF)	

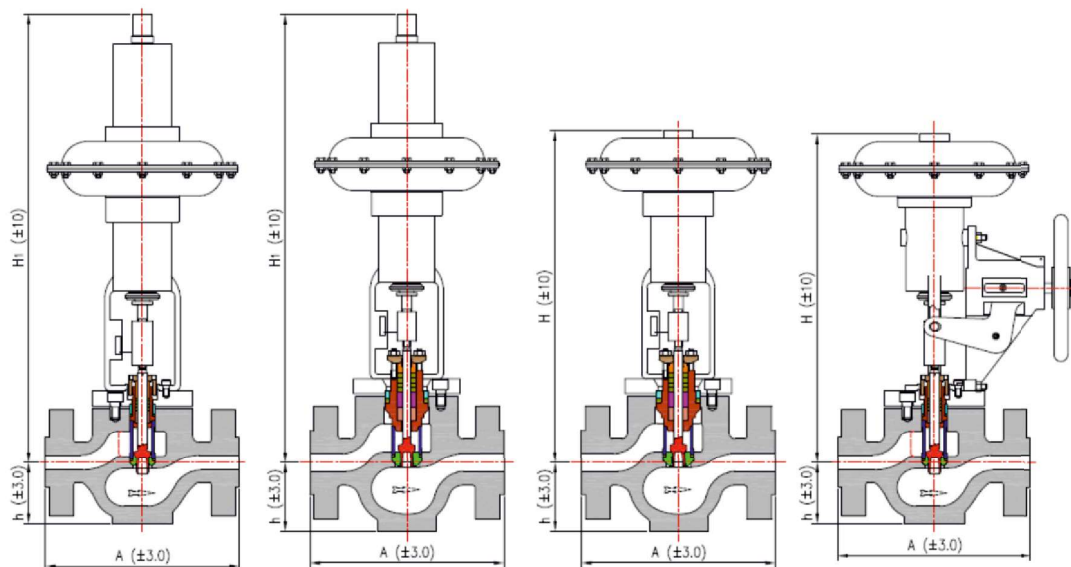


Remark: Any Reasonable characteristic can be provided on request.



6. Dimensions

Table 3 (Dimensions are in mm.)



Air to Open (A)

Air to Close (B)

Flanged ends *

A.

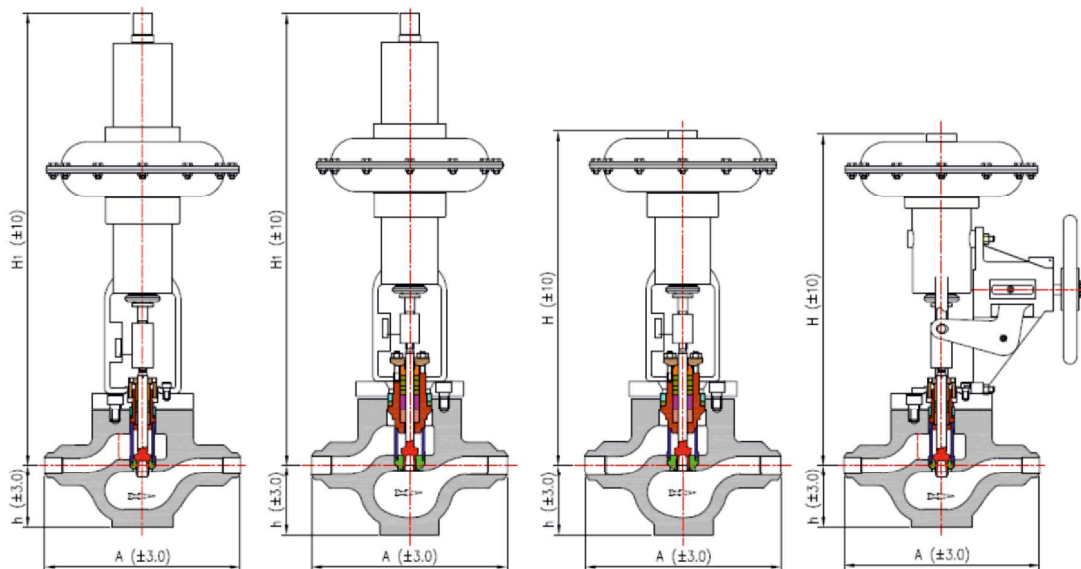
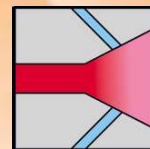
SIZE		150#			300#			600#			900#			1500#			2500#		
mm	Inches	A	H1	h	A	H1	h	A	H1	h	A	H1	h	A	H1	h	A	H1	h
25	1	184	736	65	197	736	65	210	736	65	292	736	97	292	736	97	318	736	97
40	1.5	222	896	73	235	896	93	251	896	93	333	896	122	333	896	122	381	896	122
50	2	254	925	110	267	925	110	286	925	110	375	925	135	375	925	135	400	925	142
80	3	298	908	113	318	908	120	337	908	120	441	933	172	460	933	172	660	936	190

B.

SIZE		150#			300#			600#			900#			1500#			2500#		
Mm	Inches	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h
25	1	184	709	65	197	709	65	210	709	65	292	709	97	292	709	97	318	709	97
40	1.5	222	729	73	235	729	93	251	729	93	333	729	122	333	729	122	381	729	122
50	2	254	758	110	267	758	110	286	758	110	375	758	135	375	758	135	400	758	142
80	3	298	741	113	318	741	120	337	741	120	441	766	172	460	766	172	660	769	190

*REMARK: OTHER SIZES UP ON REQUEST

NOTE: H1 and H are based on standard Actuators.



Air to Open (A)

Air to Close (B)

Buttweld ends *

A.

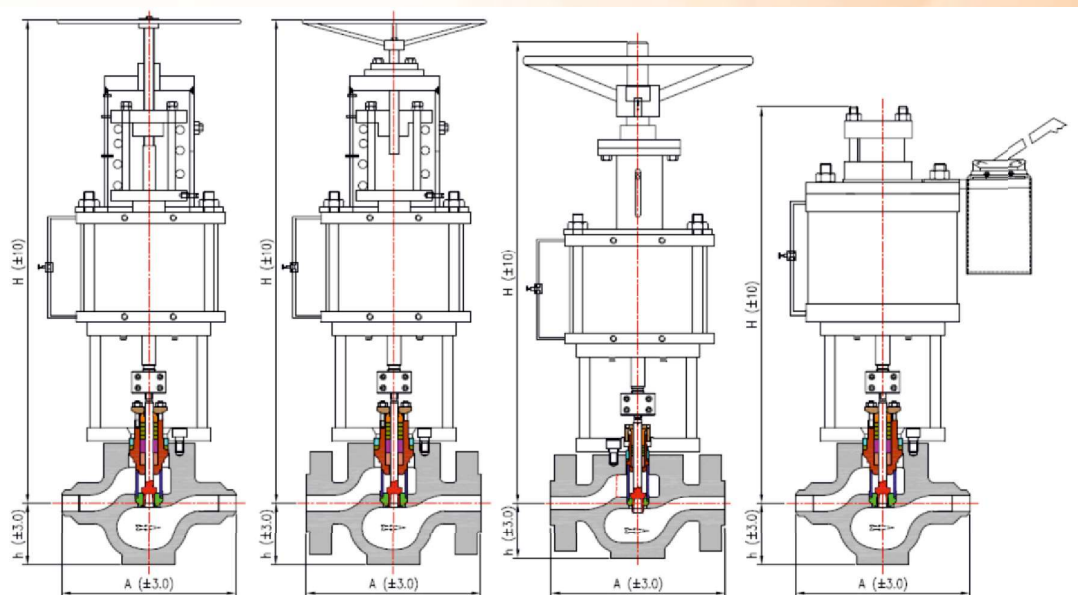
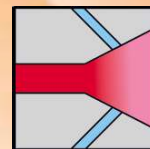
SIZE		150#			300#			600#			900#			1500#			2500#		
Mm	Inches	A	H1	h	A	H1	h	A	H1	h	A	H1	h	A	H1	h	A	H1	h
25	1	184	736	65	197	736	65	210	736	65	292	736	97	292	736	97	318	736	97
40	1.5	222	896	73	235	896	93	251	896	93	333	896	122	333	896	122	381	896	122
50	2	254	925	110	267	925	110	286	925	110	375	925	135	375	925	135	400	925	142
80	3	298	908	113	318	908	120	337	908	120	441	933	172	460	933	172	660	936	190

B.

SIZE		150#			300#			600#			900#			1500#			2500#		
Mm	Inches	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h
25	1	184	709	65	197	709	65	210	709	65	292	709	97	292	709	97	318	709	97
40	1.5	222	729	73	235	729	93	251	729	93	333	729	122	333	729	122	381	729	122
50	2	254	758	110	267	758	110	286	758	110	375	758	135	375	758	135	400	758	142
80	3	298	741	113	318	741	120	337	741	120	441	766	172	460	766	172	660	769	190

***REMARK: OTHER SIZES UP ON REQUEST**

NOTE: H1 and H are based on standard Actuators.



Flanged ends *

SIZE		150#			300#			600#			900#			1500#			2500#		
Mm	Inches	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h
25	1	184	667	65	197	667	65	210	667	65	292	667	97	292	667	97	318	667	97
40	1.5	222	731	73	235	731	93	251	731	93	333	731	122	333	731	122	381	731	122
50	2	254	759	110	267	759	110	286	759	110	375	759	135	375	759	135	400	759	142
80	3	298	764	113	318	764	120	337	764	120	441	764	172	460	764	172	660	764	190
100	4	352	1238	207	368	1238	207	394	1238	207	511	1238	170	530	1238	217	575	1238	231
150	6	451	1380	275	473	1380	275	508	1380	275	714	1380	296	768	1380	295			
200	8	543	1450	311	568	1450	311	610	1450	311	914	1450	400	972	1450	400			
250	10	673	1550	363	708	1550	278	752	1550	340	991	1550	400	1067	1550	400			
300	12	737	1645	375	775	1645	375	819	1645	375									

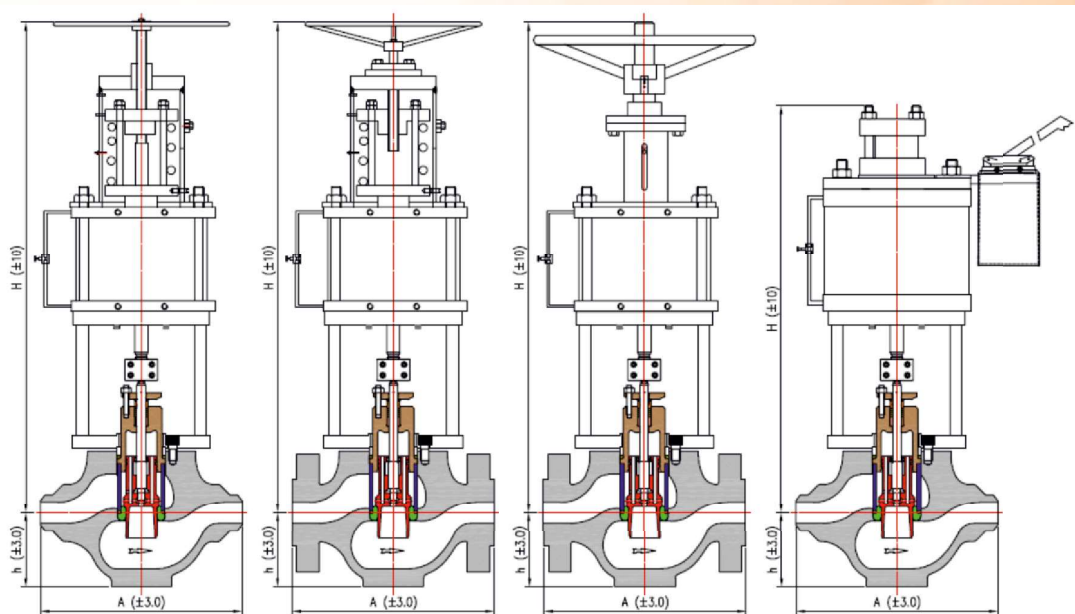
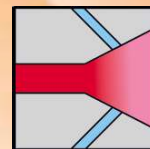
Buttweld ends *

SIZE		150#			300#			600#			900#			1500#			2500#		
Mm	Inches	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h
25	1	184	667	65	197	667	65	210	667	65	292	667	97	292	667	97	318	667	97
40	1.5	222	731	73	235	731	93	251	731	93	333	731	122	333	731	122	381	731	122
50	2	254	759	110	267	759	110	286	759	110	375	759	135	375	759	135	400	759	142
80	3	298	764	113	318	764	120	337	764	120	441	764	172	460	764	172	660	764	190
100	4	352	1238	207	368	1238	207	394	1238	207	511	1238	170	530	1238	217	575	1238	231
150	6	451	1380	275	473	1380	275	508	1380	275	714	1380	296	768	1380	295			
200	8	543	1450	311	568	1450	311	610	1450	311	914	1450	400	972	1450	400			
250	10	673	1550	363	708	1550	278	752	1550	340	991	1550	400	1067	1550	400			
300	12	737	1645	375	775	1645	375	819	1645	375									

*REMARK: OTHER SIZES UP ON REQUEST

NOTE: 1) H is based on standard Actuators.

2) Hand wheels on actuator up on request.



Flanged ends *

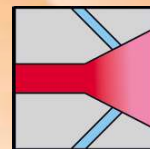
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mm	Inches	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h
80	3	298	764	113	318	764	120	337	764	120	441	764	172	460	764	172	660	764	190
100	4	352	1238	207	368	1238	207	394	1238	207	511	1238	170	530	1238	217	575	1238	231
150	6	451	1380	275	473	1380	275	508	1380	275	714	1380	296	768	1380	295			
200	8	543	1450	311	568	1450	311	610	1450	311	914	1450	400	972	1450	400			
250	10	673	1550	363	708	1550	278	752	1550	340	991	1550	400	1067	1550	400			
300	12	737	1645	375	775	1645	375	819	1645	375									

Buttweld ends *

SIZE		150#			300#			600#			900#			1500#			2500#		
mm	Inches	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h	A	H	h
50	2	254	759	110	267	759	110	286	759	110	375	759	135	375	759	135	400	759	142
80	3	298	764	113	318	764	120	337	764	120	441	764	172	460	764	172	660	764	190
100	4	352	1238	207	368	1238	207	394	1238	207	511	1238	170	530	1238	217	575	1238	231
150	6	451	1380	275	473	1380	275	508	1380	275	714	1380	296	768	1380	295			
200	8	543	1450	311	568	1450	311	610	1450	311	914	1450	400	972	1450	400			
250	10	673	1550	363	708	1550	278	752	1550	340	991	1550	400	1067	1550	400			
300	12	737	1645	375	775	1645	375	819	1645	375									

*REMARK: OTHER SIZES UP ON REQUEST

NOTE: H is based on standard Actuators.



7. APPROXIMATE WEIGHT in Kg. *

FLANGED ENDS

SIZE		150#	300#	600#	900#	1500#	2500#
mm	Inches						
25	1	63	64	65	96	96	96
40	1.5	76	79	81	116	116	129
50	2	84	87	91	147	147	178
80	3	135	140	146	232	232	462
100	4	245	257	270	360	447	555
150	6	353	375	488	663	747	
200	8	568	585	651	720		
250	10	766	794	852			
300	12	1028	1070	1113			

BUTT WELD END

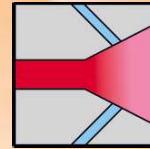
SIZE		150#	300#	600#	900#	1500#	2500#
mm	Inches						
25	1	58	58	58	79	79	74
40	1.5	69	69	69	93	93	98
50	2	77	77	77	117	117	133
80	3	122	122	122	181	181	371
100	4	233	223	223	281	368	412
150	6	364	315	402	557	577	
200	8	518	518	503	640		
250	10	685	685	650			
300	12	875	875	1113			



WITH DIAPHRAGM ACTUATOR

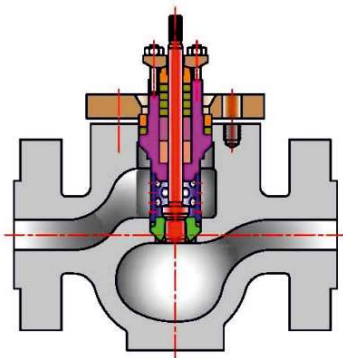
WITH PISTON ACTUATOR

* WEIGHTS ARE WITH STANDARD SIZE ACTUATOR

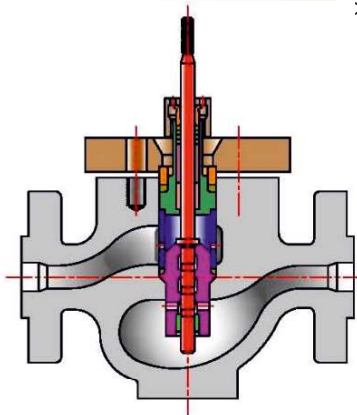


8. CONSTRUCTION

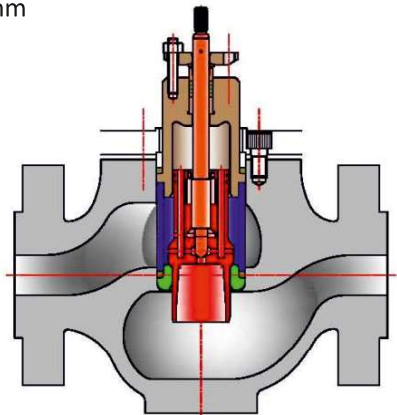
Bolted Bonnet
Single seat



Bolted Bonnet
Multistage Valve



Bolted Bonnet
Balance tight
design size
>72mm



Pressure seal bonnets
sizes > 80 mm

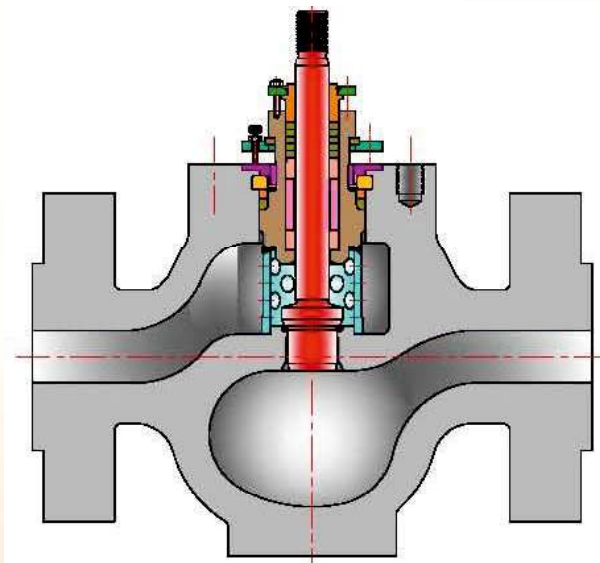


Fig. 3 Control valve schematic cross section view

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