



# CONTROL VALVE

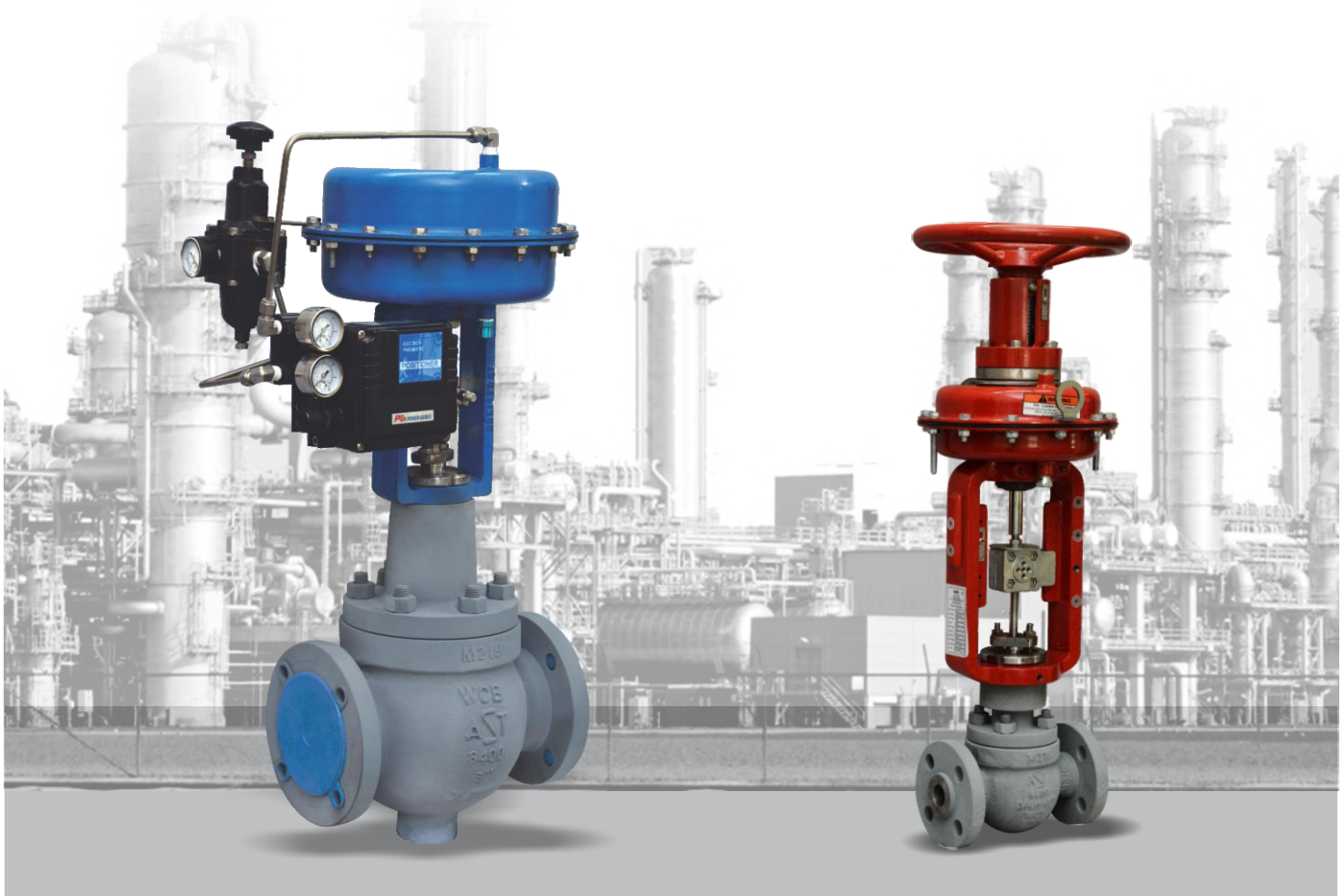
## INTRODUCTION

*AST was founded in Milan back in 1951 and, since then, it has been serving the most important Italian industrial sites, extending its market shares throughout the world. Production of special valves designed to satisfy customer's specific needs developed the most around 1980's, when AST designed its first valves for melamine plants.*

*Our expertise has been increasing thanks to the aid of the most updated design methods and the cooperation with important R&D centers for the execution of tests. AST, thanks to the gained expertise and flexibility, proposes itself as the ideal*

*partner to develop specific products for plants with severe working conditions, granting the long-term reliability of its valves*

*The Company's EDP system is constantly updated in order to secure an adequate monitoring of production, purchasing and logistic activities. AST's EDP system includes an important database for electronic documentation recording, allowing monitoring and immediate availability of documents of origin related to all materials of the valves.*





**Type:-** Globe type

**Series:-** 8407

**Applications:-** Control valve for process and industrial applications

**Size:-** NPS 1/2 to 10 (15 to 250mm)

**Pressure ratings:-** ANSI 150 #, 300 # and 600 #.

Higher ratings are available on request.

Temperature range:- -196°C to 538°C.

**End connection:-**

- Flanged according to ASME B16.5.
- Butt weld / socket weld end connections available on request.

**Design:-** The valves type 8400 have a non invertible globe body single seat and top guide. Valves are designed according to ASME B16.34 standard. The seat is screwed on the body. These valves are suitable for a broad variety of applications. Seat and metal plug are available in stellite facing on request.

**Actuator:-** The valves may be equipped with pneumatic spring diaphragm, Piston single or double effect pneumatic actuators can be supplied for special shutoff pressures and electrical actuators.

**Accessories:** The valve and actuator may be equipped with any accessory, Such as pneumatic to digital Positioner, Air filter regulator, stem flushing, solenoid valve, Limit switch, position transmitter, lock-up valve, booster, top / side mounted hand wheel etc.



**Special features:-**

- Spherical bodies with special internal shaping maintain low fluid velocities for minimizing erosion.
- Appropriate plug profile guaranties the required flow characteristic.
- High quality cast bodies tested under hydrostatic pressure.
- Packing box construction bolted flange type.

**Plug types:-** Unbalanced contoured plug, linear or Equal percentage flow characteristics.

Inherent rangeability up to 80:1 according to valve size and Maximum CV.

0.25 = < Cv < 2 – Rangeability > 20:1

2 = < Cv < 70 – Rangeability > 40:1

70 = > Cv – Rangeability > 80:1



Contoured - Equal

Contoured - Linear



**Bonnet type:-** Bonnets are manufactured from forging or bars. Bonnets can be Standard, with Extension or Finned and Bellow seal type. Valve bonnet with Bellow seal is available for hazardous medium services. Bellow material is 316L or Monel. Below -70°C bonnet extension will be designed according to operating temperatures and insulation needs.

Bonnet	Standard	Extended	Finned
Temp. range °C	-30°C to 250°C	250°C to 350°C	Above 350°C



Fig. Standard Bonnet

Fig. Extended Bonnet

Fig. Finned Bonnet

Fig. Bellow seal Bonnet

STANDARD MATERIAL OF CONSTRUCTION						
COMPONENT	VALVE MATERIAL CODE					
	A1	N1	L1	D1	F1	G1
Body	ASTM A216 WCB	ASTM A217 WC6	ASTM A352 LCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3M
Bonnet & Bottom Flange	ASTM A105	ASTM A182 F11	ASTM A350 LF2	AISI 304	AISI 316	AISI 316L
Body Studs	ASTM A193 Gr. B7	ASTM A193 Gr. B16	ASTM A320 Gr. B8			
Body Nuts	ASTM A194 Gr. 2H	ASTM A194 Gr. 4	ASTM A194 Gr. 8			
Packing Flange	ASTM A105 / AISI 316		AISI 316			
Packing Flange Studs	ASTM A193 Gr. B7		ASTM A320 Gr. B8			
Packing Flange Nuts	ASTM A194 Gr. 2H		ASTM A194 Gr. 8			
Guide Bushing	AISI 410 AISI 630 H900 (17-4 PH)		AISI 316			AISI 316L
Plug & Seat Ring	AISI 316					AISI 316L
Plug Stem	AISI 316					AISI 316L
Packing Follower	AISI 316					AISI 316L
Body Gasket	AISI 316 + Soft Graphite					
Yoke	WCB / SG IRON					
Diaphragm	NBR / EPDM					
Diaphragm Plate	SGI Casting					
Actuator Casing	Carbon Steel					
Actuator Spring	En47/ IS4454 GR.3 / IS 4454 Gr.2D					
Actuator Stem	AISI 431 / AISI 304					



**Codes & Standards:-**

- Valves - Flanged, Threaded and Welding End - ASME B16.34
- Valve flanges - ASME B 16.5
- Valve Seat Leakage - FCI 70-2
- Valve face to face - IEC 60534-3
- Inspection and routine testing - IEC 60534-4, Part 4
- Flow Equations for Sizing Control Valves - ISA 75.01.01
- Control Valve Capacity Test Procedures - ISA 75.02.01
- Hydrostatic Testing of Control Valves - ISA 75.19.01
- IBR Valves Shall be Supplied upon request.

**Valve Coefficients:-** Refer below standard Cv chart for full bore seat.

**8407 Valve coefficient Cv Chart (Equal Percentage & Linear)**

Valve Size	Travel mm	Seatbore (Inch)																			
		1/8	1/32	3/16	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	5	6	7	8	9	10
1/2"	13	0.3	0.5	0.7	0.9	1.9	3.5	6													
3/4"		0.3	0.5	0.7	0.9	1.9	3.5	6													
1"		0.3	0.5	0.7	0.9	1.9	3.5	6	10												
1.5"	20								13	18	28										
2"	25									18	28	50									
3"	40											50	76	110							
4"													76	110	190						
6"	50														190	315	440				
8"	60															315	440	545	650		
10"																	440	545	650	780	970

**Note:-**

- Further port reductions are available on request.
- For low Cv consult factory.



**MOUNTING DIMENSIONS (mm)**

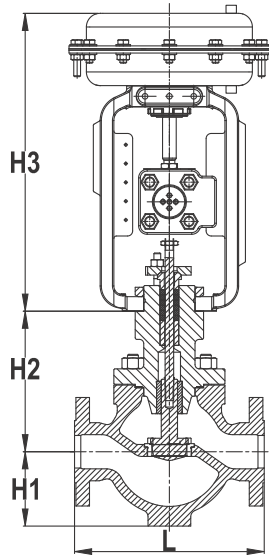


Fig.1

VALVE SIZE	L						H1	H2	
	FLANGED RF			FLANGED RTJ				STD. BONNET	EXT. FINNED BONNET
	150	300	600	150	300	600	150 300 600		
1/2"	184	191	203	195	202	203	60	130	230
3/4"	184	194	206	197	206	206	60	130	230
1"	184	197	210	197	210	210	60	130	230
1-1/2"	222	235	251	235	248	251	83	166	275
2"	254	267	286	267	283	289	93	186	298
3"	298	318	337	311	333	340	115	240	355
4"	352	368	394	365	384	397	135	243	370
6"	450	473	508	464	489	511	185	315	480
8"	543	568	610	556	584	613	250	360	520
10"	673	708	752	686	724	756	362	502	702

NOTE: Refer Fig.1

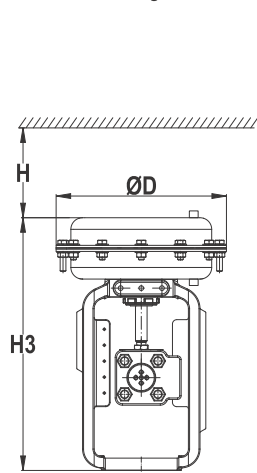


Fig.2

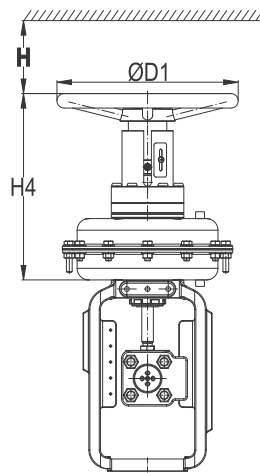


Fig.3

**MOUNTING DIMENSIONS FOR TOP HANDWHEEL (mm)**

ACTUATOR MODEL	DIMENSIONS				
	ØD	ØD1	H3	H4	H
M230	Ø 235	250	360	385	120
M385	Ø 288	250	410	440	140
M700	Ø 392	NA	420	SEE NOTE-1	200
M960	Ø 457	NA	670	SEE NOTE-1	620
M1400	Ø 545	NA	850	SEE NOTE-1	650
M1920	Ø 620	NA	850	SEE NOTE-1	650

NOTE: 1) Side Mounted Handwheel Available on Request.

2) Refer Fig.2 & 3

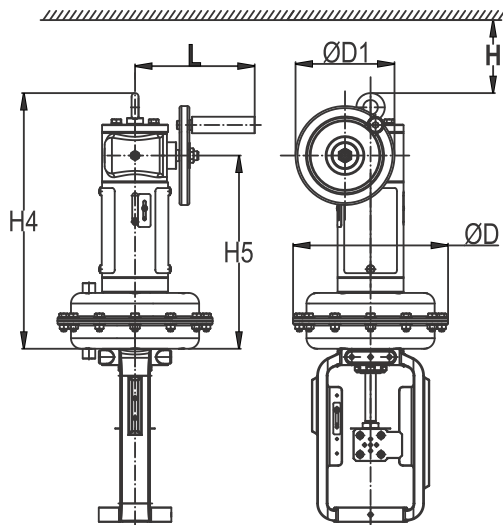


Fig.4

**MOUNTING DIMENSIONS FOR SIDE MOUNTED HANDWHEEL (mm)**

ACTUATOR MODEL	DIMENSIONS				
	ØD	ØD1	H4	H5	H
M230	Ø 235	150	385	295	120
M385	Ø 288	150	440	350	140
M700	Ø 392	320	540	410	200
M960	Ø 457	400	1050	800	620
M1400	Ø 545	on request			
M1920	Ø 620	on request			

Note: Refer Fig.4



**Product Name-** Pilot Operated Safety Valves SVP-7200  
**End Connction-** Flanges as per ASME B16.34, ASME B16.5  
**Inlet Sizes-** NPS 1 to NPS 8  
**Inlet Rating-** Rating: up to ASME 2500.  
**Outlet Sizes-** NPS 2 to NPS 12  
**Outlet Rating** ----  
**Orifice Sizes-** from "D" to "T"; intermediate orifices (K2, P2, Q2, R2)  
**Set Pressure Range from 1 bar to 425 bar@ Back pressure:**  
 up to 80%  
**Tempearure Range -** -252 °C to 288 °C.  
**Material-** carbon steel, alloy steel, hastelloy, monel and other materials upon request.

**Control Valve For UREA & Melamine Application CV-8700U & CV-8700S**  
**Product Name-** Control Valve For UREA & Melamine Application CV-8700U & CV-8700S  
**End Connction -** Special flanges according to Customer standard  
**Sizes-** from NPS 3/4 to NPS 10  
**Inlet Rating-** Rating: up to PN 400 and ASME 2500.  
**Set Pressure Range from 1 bar to 425 bar@ Back pressure:**  
 up to 80%  
**Design Codes & Product Standards:** IEC 60534, FCI 70-2, EN 12516, EN 1092, ASME B16.34, ASME B16.5  
**Material-** ASTM A182 F316L, F316L urea grade, F310 MoLn S31050, Hastelloy C276

In view of technical progress designs and dimensions are subject to change without notice.

Manufactured by:

**UKL® UNI KLINGER LIMITED**  
 - Safety Valve & Control Valve Division



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