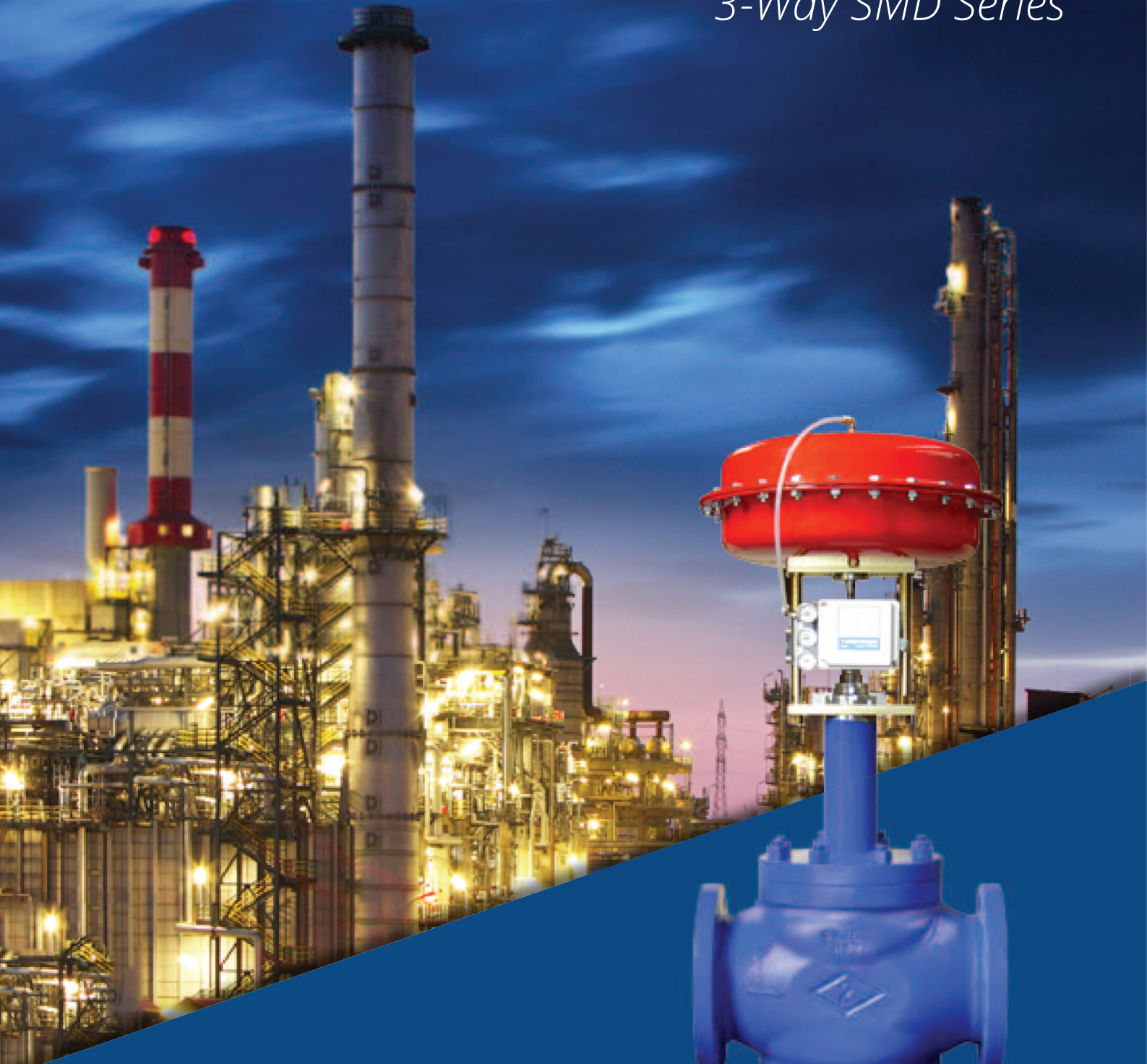




# SMD

## 3-Way SMD Series



# *Control Valve*

## *Technical Bulletin*

### ARMSTRONG INTERNATIONAL DELTA 2

[www.delta2.it](http://www.delta2.it)

**Armstrong International Delta 2 - SMD SERIES** is a 3-way globe 2-seats **Control Valve** with a robust construction designed with many options for a wide range of process applications and easy maintenance.

- ✓ *Available Size From DN.15 To DN.200 And From 1/2" To 8"*
- ✓ *Available Pressure Rating DIN From PN10 To PN100*
- ✓ *Available Pressure Rating Ansi From 150lbs To 600lbs*

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**MATERIALS :** Full range of materials and special alloys are available for valve body and trim including hardening treatment.  
Special NACE design and material construction for Sour Service with a Compliance Declaration in accordance to NACE regulations.

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**GUIDING :** Valve guiding is top and seats for standard LV plug and is made on plug shaft and profile to guarantee a larger guiding and plug stability for accurate control application.

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**TRIM :** Standard construction includes LV plug and threaded replaceable seat. Small sizes adopt parabolic plug instead of LV style.

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**PACKING :** Standard packing offers an internal self-adjusting spring system that provide Low Emissions according to latest environmental regulations. In case of Emission Free request a bellows seal bonnet with different pressure ratings and materials is available.

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**SEVERE SERVICE :** Single stage Low-Noise cage for the most of valve design and trim size is available.  
Single stage Cavitation Control cage for the most of valve design and trim size is available.



**CHRYSAFIDIS**

*Very High Temperature  
Special Design*

*Cryogenic Temperature  
Special Design*

*High Cycle ON/OFF  
Application with  
Special*

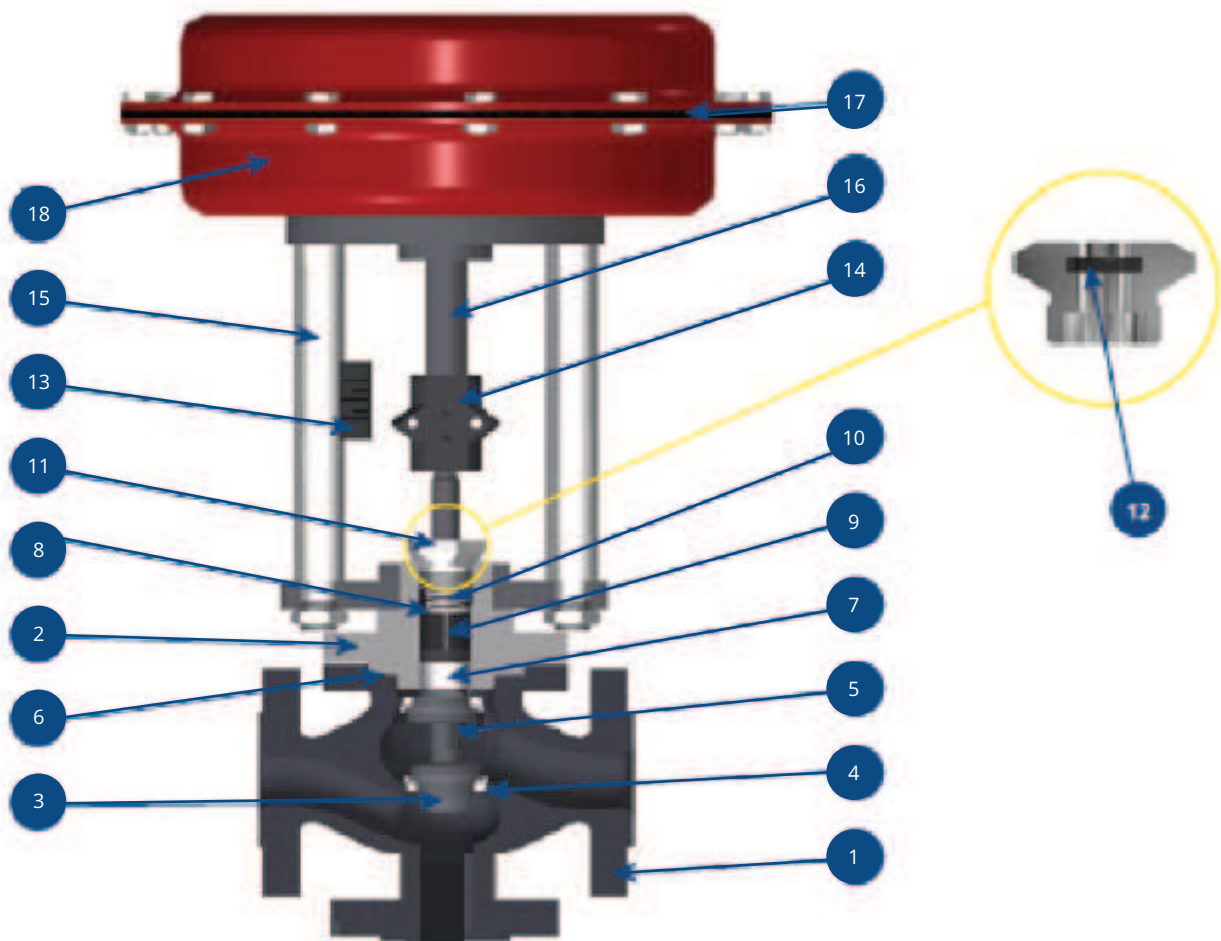
**SPECIAL  
DESIGN**

*Dangerous, Toxic  
and Lethal Fluid  
Service Design and Cleaning*

*Partial and Full Heating Jacket  
for Slurry and Fluid  
Polymerization Service*

*Full Tungsten Carbide  
Overlaying on Trim Parts for  
High Abrasive*





1	BODY	7	STEM GUIDE	13	STROKE INDICATOR
2	STD BONNET <b>(1)</b>	8	ANTI EXTRUSION RING	14	STEM COUPLING
3	STD PLUG <b>(2)</b>	9	PACKING RINGS	15	PILLAR YOKE
4	SEAT	10	PACKING SPRING	16	ACTUATOR STEM
5	STEM	11	PACKING GLAND	17	DIAPHRAGM
6	BODY GASKET	12	GLAND O-RING	18	ACTUATOR

**(1)** = Available in standard, High Temp. Extension, Cryogenic, Bellow Seal and eventually with special diaphragm gauge leak-off system for toxic/lethal classified fluid or gases.

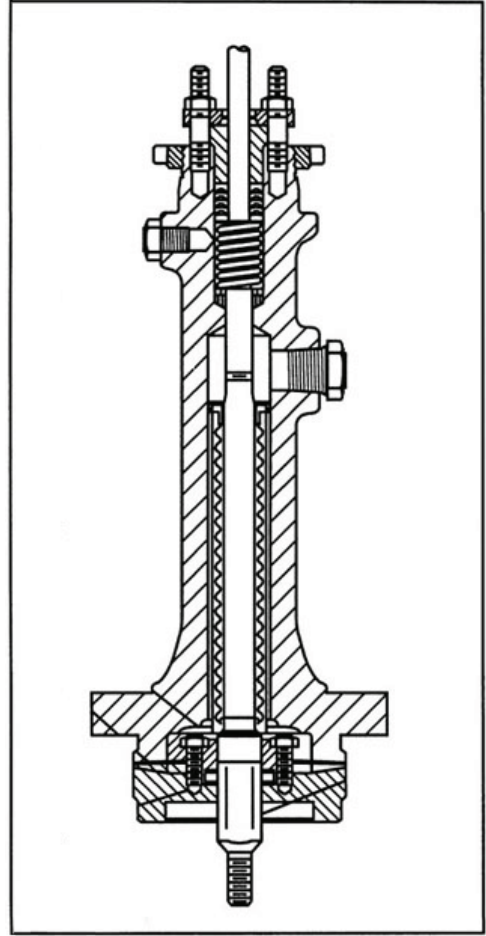
**(2)** = Available in soft, metal or hardened version and several materials options aswell.



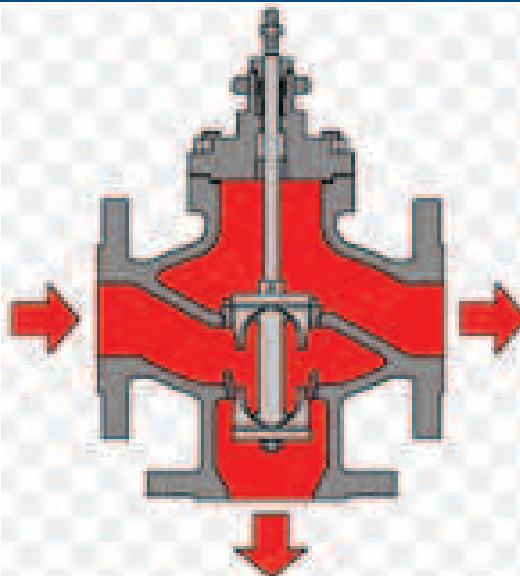
SINGLE STAGE PERFORATED PLUG



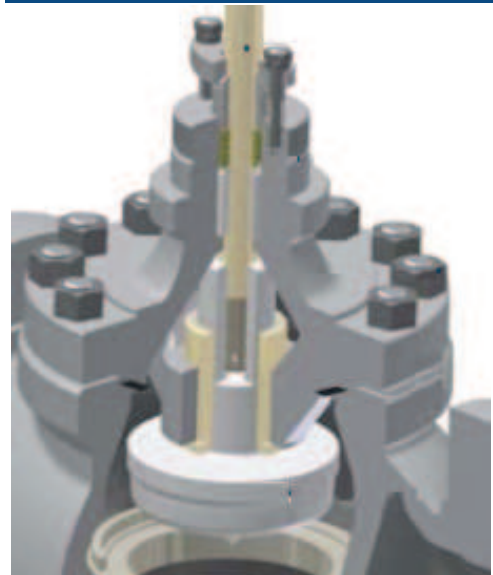
BELLOW SEAL BONNET



LV DIVERTING PLUG



PLUG GUIDE



SPECIFICATIONS	EN / DIN	ASME
<i>Valve Body Size</i>	DN 15, 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200	NPS 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8
<i>Pressure Rating</i>	PN 6 ÷ PN 100 as per EN 1092-1	CL150 ÷ CL600 as per ASME B16.34
<i>End Connections</i> <i>(See table on page N°7 for connections detail)</i>	Flanged raised face per EN 1092-1 (Standard) Flanged Ring Joint / Threaded Ends / Welded Ends (Optional)	Flanged raised face per ASME B16.5 (Standard) Flanged Ring Joint / Threaded Ends / Welded Ends (Optional)
<i>Face-to-Face Dimensions</i>	EN 558-1 Series 1	EN 558-1 Series 1 <b>(1)</b>
<i>Shutoff per IEC 60534-4 and ANSI/FCI 70-2</i>	Metal seat - Class IV (standard) Metal seat - Class V (optional) PTFE seat - Class VI (optional) (For 4.8 to 14 mm ports, Class VI shutoff is achieved without PTFE seat)	
<i>Flow Direction</i>	Flow-up (Cavitation Control trim, Flow down)	
<i>Flow Control Characteristics</i>	Modified Equal Percentage, Equal Percentage, Linear and Quick Open	

**(1)** = ANSI/ISA 75.08.01 or ISA S75.03 on request

TRIM STYLE	PORT DIAMETERS	TRIM STYLE DESCRIPTION
<i>Microflow</i>	From 3 to 6 mm <b>(3)</b>	Low-Flow and Micro-Flow trim (unbalanced) Top Shaft Guided
<i>Standard Parabolic Plug</i>	From 8 to 200 mm <b>(1) (2)</b>	Parabolic Plug with Top shaft Guided
<i>Severe Service Trim (Option)</i>	From 25 to 200 mm <b>(1) (2)</b>	Low-Noise Trim and Cavitation Control Trim with Top and cage Guided
<i>Balanced Plug (Option)</i>	From 50 to 200 mm <b>(1)</b>	Parabolic, Low-Noise and Cavitation Control trim with Top Balancing Design

**(1)** = Special high capacity trim are available on request.

**(2)** = Standard rangeability 50:1. Optional higher rangeabilities can be provided.

**(3)** = Standard rangeability for Microflow trim 30:1. Optional higher rangeabilities and special flow coefficient can be designed and supplied.



## BASIC MATERIALS

## NACE MATERIALS

<b>Valve Body</b>	Ductile Iron ASTM A395 / Carbon Steel ASTM A216 WCB / Stainless Steel ASTM A351 CF8M / Specials <b>(1)</b>	Carbon Steel ASTM A216 WCB / Stainless Steel ASTM A351 CF8M / Specials <b>(1)</b> <b>(suitable for NACE MR 01.75 or MR 01.03 Service)</b>
<b>Plug</b>	316L SS 316L SS + Partial/Full Alloy 6 Overlaying 316L SS + PTFE/RPTFE Soft Insert 440C SS, 17-4PH SS and other Special Materials <b>(1)</b> with Thermal or Chemical Treatment to meet any customer request	316L SS 316L SS + Partial/Full Alloy 6 Overlaying 17-4PH SS and other Special Materials <b>(1)</b> with Thermal or Chemical Treatment to meet any customer request <b>According to NACE Standards</b>
<b>Special Lower Seal &amp; Guide</b>	316L SS 316L SS + Partial Alloy 6 Overlaying 440C SS, 17-4PH SS and other Special Materials <b>(1)</b> with Thermal or Chemical Treatment to meet any customer request	316L SS 316L SS + Partial Alloy 6 Overlaying 17-4PH SS, Nitronic 50 and other Special Materials <b>(1)</b> with Thermal Treatment to meet any customer request <b>According to NACE Standards</b>
<b>Seat</b>	316L SS 316L SS + Partial/Full Alloy 6 Overlaying 440C SS, 17-4PH SS and other Special Materials <b>(1)</b> with Thermal or Chemical Treatment to meet any customer request	316L SS 316L SS + Partial/Full Alloy 6 Overlaying 17-4PH SS, Nitronic 50 and other Special Materials <b>(1)</b> with Thermal or Chemical Treatment to meet any customer request <b>According to NACE Standards</b>
<b>Stem</b>	316L SS strain hardened 316L SS + Alloy 6 overlaying 440C SS Treated, 17-4PH SS Treated	316L SS strain hardened 316L SS + Alloy 6 overlaying Nitronic 50, 17-4PH SS Treated <b>According to NACE Standards</b>

**(1)** = Special materials available on request



	BASIC MATERIALS	NACE MATERIALS
<b>Packing Gland</b>	Chrome plated Brass Special version with 316 SS available	
<b>Body/Bonnet Bolting and Nuts</b>	SA193-B7 studs / SA194-2H nuts for Ductile Iron and Carbon Steel constructions.	B7M stud and 2HM nuts for Carbon Steel constructions. <b>According to NACE Standards</b>
	SA193-B8 studs / SA194-8 nuts for Stainless Steel and Alloy Steel constructions.	SA193-B8M studs / SA194-8M nuts for Stainless Steel and Alloy Steel constructions. <b>According to NACE Standards</b>
<b>Packing</b>	Internal Fix-loaded RPTFE V-rings + Graphite Ring with 316 SS spring. <b>(1) (2)</b> Internal Live-loaded RPTFE V-rings + Graphite Ring with 316 SS spring. <b>(1) (2)</b> "EURO" packing Internal Fix-loaded RPTFE V-rings + Triple Reinforced Graphite Rings with 316 SS spring. <b>(1) (2)</b> "EURO" packing Internal Live-loaded RPTFE V-rings + Triple Reinforced Graphite Rings with 316 SS spring. <b>(1) (2)</b> Internal Live-loaded Triple Reinforced Graphite Rings with 316 SS spring. <b>(2)</b> Special packing set available on request.	
<b>Bonnet Gasket</b>	Laminated Graphite or Virgin PTFE Spyrometallic SS/graphite or Inconel/graphite Special gaskets set on request.	

**(1)** = 15% Glass or 25% Graphite PTFE reinforced rings.

**(2)** = Low Emission packing available on request.

## MULTI-SPRING DIAPHRAGM ACTUATOR MATERIALS

<i>Actuator Housing</i>	Carbon Steel (Standard)	Stainless Steel - rough finish	Stainless Steel - satinated finish	Stainless Steel - polished finish
<i>Yoke Type</i>	Ductile Iron (Standard)	Low Temperature Carbon Steel	Carbon Steel Pillar Yoke	Stainless Steel Pillar Yoke
<i>Diaphragm</i>	Reinforced NBR (Standard)		Reinforced Silicon or FKM as Special on request	
<i>Bolting</i>	Carbon Steel B7/2H (Standard)	Stainless Steel B8/8	Carbon Steel NACE B7M/2HM	Stainless Steel NACE B8M/8M
<i>Exhaust Screw Cap</i>	Synterized Brass (Standard)		Stainless Steel	
<i>Coating</i>	Epoxy powder RAL 5000 (Standard)	Surface preparation with sandblasting and Inorganic zinc primer		Several Corrosion resistant coatings

## MULTI-SPRING PISTON ACTUATOR MATERIALS

<i>Actuator Housing</i>	Carbon Steel (Standard)		Stainless Steel - rough finish	
<i>Yoke Type</i>	Carbon Steel Pillar Yoke		Stainless Steel Pillar Yoke	
<i>Piston Seal Rings</i>	Energized NBR (Standard)		Energized Fluoro-silicon or FKM as Special on request	
<i>Bolting</i>	Carbon Steel B7/2H (Standard)	Stainless Steel B8/8	Carbon Steel NACE B7M/2HM	Stainless Steel NACE B8M/8M
<i>Exhaust Screw Cap</i>	Synterized Brass (Standard)		Stainless Steel	
<i>Coating</i>	Epoxy powder RAL 5000 (Standard)	Surface preparation with sandblasting and Inorganic zinc primer		Several Corrosion resistant coatings



**CHRYSSAFIDIS**

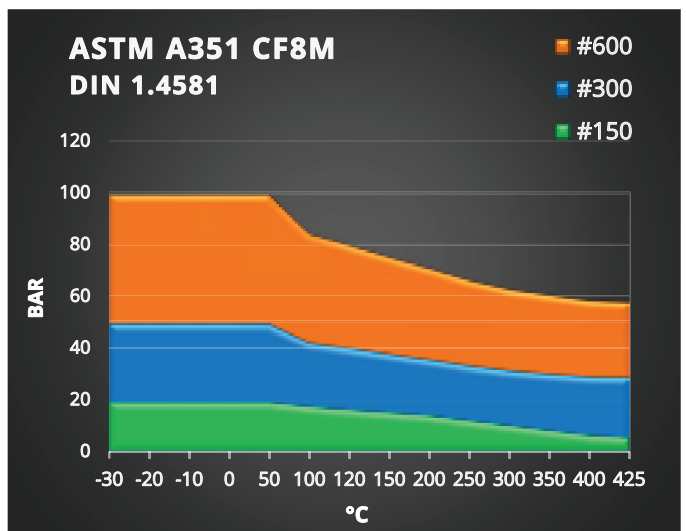
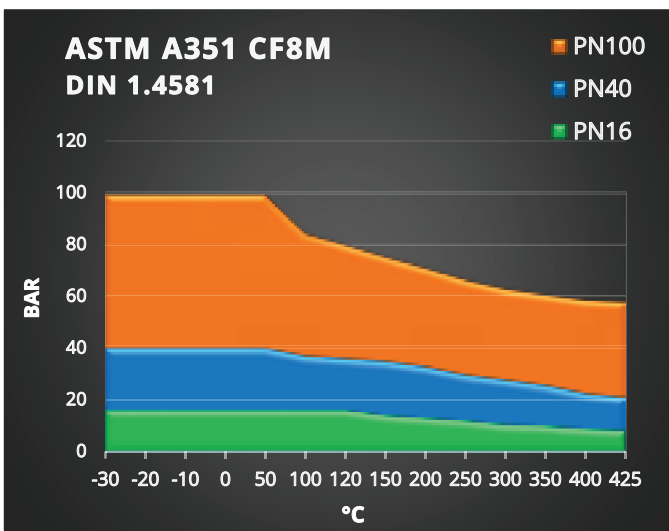
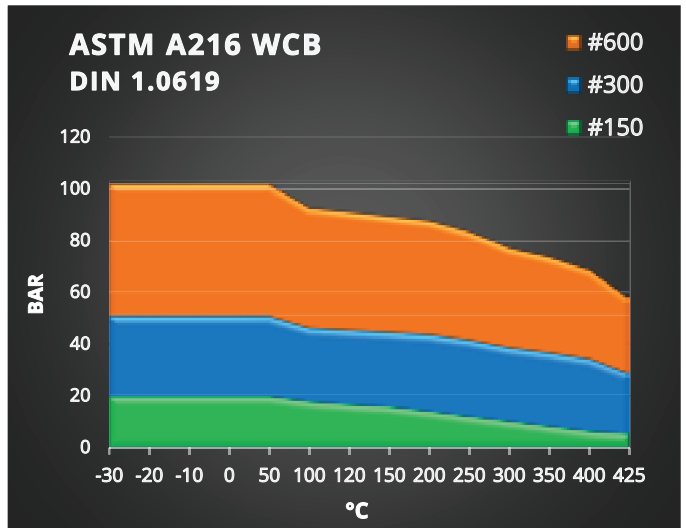
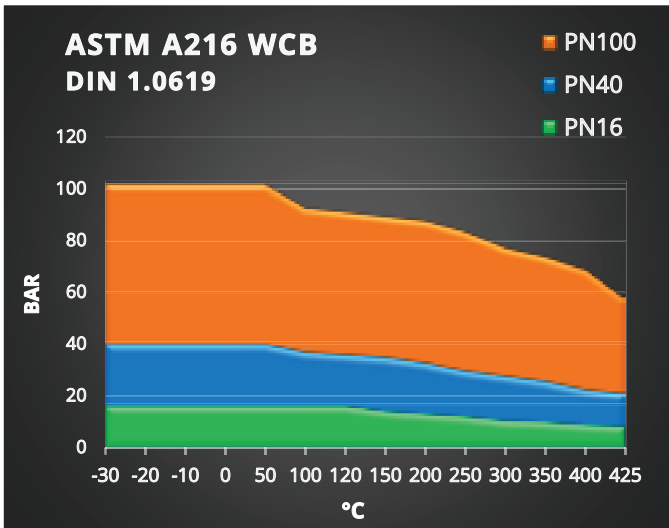
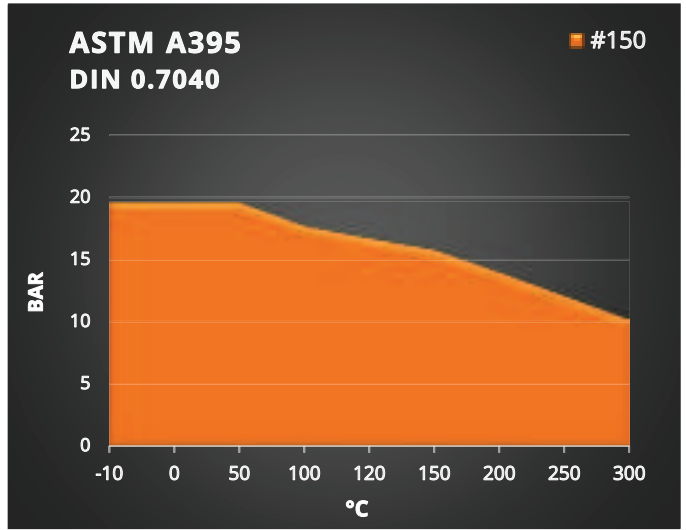
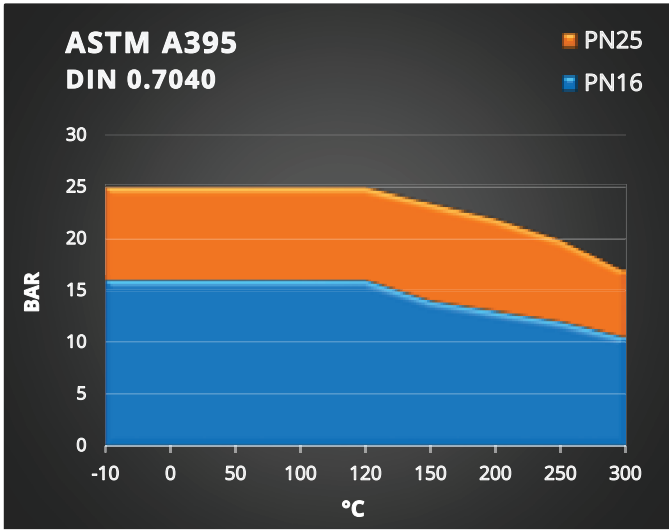


# Pressure and Temperature Ratings



BODY & BONNET MATERIAL	BONNET STYLE	PACKING	BODY GASKET	TRIM STYLE	TEMPERATURE UNIT °C	
					MIN	MAX
<i>DIN 0.7040 ASTM A395 (GJS400-18) Ductile Iron</i>	Standard	RPTFE or Graphite	Graphite laminate or PTFE	Metal & Soft (All Severe Service Trim)	-10	210
	HT Extension	Graphite	Graphite laminate	Metal (All Severe Service Trim)	-10	300
	Bellow Seal	RPTFE	Graphite laminate or PTFE	Metal & Soft (All Severe Service Trim)	-10	210
		Graphite	Graphite laminate	Metal (All Severe Service Trim)	-10	300
<i>DIN 1.0619 ASTM A216 WCB Carbon Steel</i>	Standard	RPTFE or Graphite	Graphite laminate or PTFE (Spyrometallic)	Metal & Soft (All Severe Service Trim)	-29	210
	HT Extension	Graphite	Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-29	427
	Bellow Seal	RPTFE	Graphite laminate or PTFE (Spyrometallic)	Metal & Soft (All Severe Service Trim)	-29	210
		Graphite	Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-29	427
<i>DIN 1.4581 ASTM A351 CF8M Stainless Steel</i>	Standard	RPTFE or Graphite	Graphite laminate or PTFE (Spyrometallic)	Metal & Soft (All Severe Service Trim)	-60	210
	HT Extension	Graphite	Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-60	600+
	Cryo Design	RPTFE or Graphite	Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-196	210
	Bellow Seal	RPTFE	Graphite laminate or PTFE (Spyrometallic)	Metal & Soft (All Severe Service Trim)	-60	210
Graphite		Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-60	600+	
<i>DIN 1.6220 ASTM A352 LCB Low Temp Alloy Steel</i>	Standard	RPTFE or Graphite	Graphite laminate or PTFE (Spyrometallic)	Metal & Soft (All Severe Service Trim)	-46	210
	HT Extension	Graphite	Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-46	250
	Bellow Seal	RPTFE	Graphite laminate or PTFE (Spyrometallic)	Metal & Soft (All Severe Service Trim)	-46	210
		Graphite	Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-46	250
<i>DIN 1.5419 ASTM A217 WC6 High Temp Alloy Steel</i>	Standard	RPTFE or Graphite	Graphite laminate or PTFE (Spyrometallic)	Metal & Soft (All Severe Service Trim)	-29	210
	HT Extension	Graphite	Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-29	538+
	Bellow Seal	RPTFE	Graphite laminate or PTFE (Spyrometallic)	Metal & Soft (All Severe Service Trim)	-29	210
		Graphite	Graphite laminate (Spyrometallic)	Metal (All Severe Service Trim)	-29	538+

# Pressure and Temperature Curves





# Flow Coefficient Table

KV (CV)	Seat Diameter mm (inch)	Stroke mm (inch)	Nominal Diameter											
			15 1/2"	20 3/4"	25 1"	32 1.1/4"	40 1.1/2"	50 2"	65 2.1/2"	80 3"	100 4"	125 5"	150 6"	200 8"
3,8 (4,5)	15 (3/5)	16 (5/8)	Standard	Available	Available	Available	Available	Available						
5,4 (6,3)	19 (3/4)	16 (5/8)		Standard	Available	Available	Available	Available						
9,5 (11)	25 (1.0)	16 (5/8)			Standard	Available	Available	Available	Available					
15,4 (18)	32 (1.1/4)	19 (3/4)				Standard	Available	Available	Available	Available				
22,2 (27)	40 (1.1/2)	19 (3/4)					Standard	Available	Available	Available	Available			
40 (46,6)	50 (2.0)	19 (3/4)						Standard	Available	Available	Available	Available		
62,4 (72,7)	64 (2.1/2)	25 (1.0)							Standard	Available	Available	Available	Available	
89,2 (104)	76 (3.0)	25 (1.0)								Standard	Available	Available	Available	
137 (160)	100 (4.0)	28 (1.1/9)									Standard	Available	Available	
226 (263)	126 (5.0)	45 (1.7/9)										Standard	Available	
316 (368)	151 (6.0)	50 (2.0)											Standard	
555 (647)	201 (8.0)	50 (2.0)											Standard	

**KV** = flowrate in m<sup>3</sup>/h with 1 bar of differential Pressure  
**CV** = flowrate in USGPM with 1 psi of differential Pressure



## Options:

- Special Trim Styles for different flow directions and severe service on request
- Partial Hard Facing through Overlaying or Treatments available for all Port Size
- Full Hard Facing through Overlaying or Treatments available for all Port Size
- Special Soft Seating for Port Size ≥ 40mm available on request

# Pneumatic Actuators Specifications

Actuator type	Ambient Temperature Limits with Standard Materials	Ambient Temperature Limits with Special Materials	Rating	Maximum Allowable Stem Thrust (1)			
				Stem size 12 mm	Stem size 16 mm	Stem size 20 mm	Stem size 24 mm
<i>S.200</i>	-20°C to +70°C	-40°C to +70°C or -20°C to +100°C	PN 6	10,8 KN (Max port 32mm)	18,4 KN (Max port 32mm)		
<i>S.275</i>	-20°C to +70°C	-50°C to +70°C or -20°C to +120°C	PN 6	10,8 KN (Max port 50mm)	18,4 KN (Max port 50mm)	31,2 KN (Max port 50mm)	
<i>S.335</i>	-20°C to +70°C	-50°C to +70°C or -20°C to +120°C	PN 6	10,8 KN (Max port 80mm)	18,4 KN (Max port 100mm)	31,2 KN (Max port 100mm)	44,8 KN (Max port 100mm)
<i>S.430</i>	-20°C to +70°C	-50°C to +70°C or -20°C to +120°C	PN 6	10,8 KN (Max port 80mm)	18,4 KN (Max port 100mm)	31,2 KN (Max port 100mm)	44,8 KN (Max port 100mm)
<i>S.430s</i>	-20°C to +70°C	-50°C to +70°C or -20°C to +120°C	PN 6		18,4 KN (Max port 200mm)	31,2 KN (Max port 200mm)	44,8 KN (Max port 200mm)
<i>S.500</i>	-20°C to +70°C	-50°C to +70°C or -20°C to +120°C	PN 6		18,4 KN (Max port 200mm)	31,2 KN (Max port 300mm)	44,8 KN (Max port 300mm)
<i>P.250</i>	-30°C to +80°C	-50°C to +80°C or -30°C to +150°C	PN 16			31,2 KN (Max port 300mm)	44,8 KN (Max port 300mm)
<i>P.390</i>	-30°C to +80°C	-50°C to +80°C or -30°C to +150°C	PN 16			31,2 KN (Max port 300mm)	44,8 KN (Max port 300mm)

(1) = Data calculated with standard construction and 316L SS Stem material.  
Special Materials will be considered where the application requires.

## Notes:

Minimum **Air supply** pressure necessary depends on spring range case by case.  
Delta 2 suggests to consider minimum 0,2 Bar of over-pressure as safety factor to ensure the full stroke of the valve.

Top **Handwheel** and fixed or adjustable stroke limit stop devices are available for all actuators size.  
Heavy Duty Side Handwheel available on request.



**CHRYSSAFIDIS**



# Electric and Hydraulic Actuators Specifications

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Armstrong International Delta 2 offers a wide range of **Electric Actuators** can be mounted on **FLY SERIES** Globe Valves for **Control** and **On-Off** applications

## DUTY CYCLE FROM S2-25% UP TO S9-100% FOR CONTINUOUS SERVICE

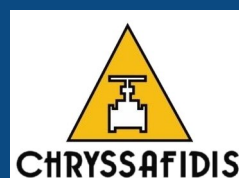
Full Accessory Range Like:

- ✓ *Limit Switches*
- ✓ *Analog Positioner*
- ✓ *Smart Positioner (Hart, Profibus, Foundation Fieldbus)*
- ✓ *Spring Return With Limited Thrust Range*
- ✓ *Super Capacitor Battery For Fail Position*
- ✓ *Emergency Shut Down Spring Return*

## HYDRAULIC ACTUATOR



- ✓ *Heavy Duty*
- ✓ *Extra Compact Design*
- ✓ *Reliable And Safe*
- ✓ *High Performances*
- ✓ *Tailor Made Solutions*



# Pneumatic Actuators Pressure Drop Table



CHRYSAFIDIS

**Pressure Drop Table According to ANSI FCI 70.2 Class IV  
Flow to Open - Metal to Metal - Air to Open - Unbalanced Trim**

Type	Eff. Area cm <sup>2</sup> (in <sup>2</sup> )	Spring Range Barg (PSIG)	Valve Nominal Size												
			15	20	25	32	40	50	65	80	100	125	150	200	
S.200	130 (20)	0,2-1,0 (3-15)	12	10	9	3									
		0,4-2,0 (6-30)	24	20	16	4									
		0,7-3,0 (10-45)	37	29	21	8									
		1,0-4,0 (15-60)	50	38	26	12									
S.275	300 (47)	0,2-1,0 (3-15)	28	25	16	8	6	4							
		0,4-1,2 (6-18)	39	36	21	13	9	5							
		0,4-2,0 (6-30)	52	47	25	16	12	6							
		0,7-3,0 (10-45)	78	72	52	29	20	11							
		1,0-4,0 (15-60)	101	101	76	42	28	16							
S.335	470 (73)	0,2-1,0 (3-15)	58	58	49	19	16	10	4	3	1				
		0,4-1,2 (6-18)	79	76	61	29	21	13	5	3	1				
		0,4-2,0 (6-30)	101	101	82	38	26	18	6	4	2				
		0,7-3,0 (10-45)	101	101	91	54	32	22	8	6	4				
		1,0-4,0 (15-60)	101	101	101	66	39	26	11	9	6				
S.430	740 (115)	0,2-1,0 (3-15)	91	89	57	48	37	26	8	5	4	1			
		0,4-1,2 (6-18)	101	101	78	56	43	34	11	7	5	1			
		0,4-2,0 (6-30)	101	101	101	63	48	37	15	9	6	2			
		0,7-3,0 (10-45)	101	101	101	81	58	44	19	13	8	2			
		1,0-4,0 (15-60)	101	101	101	91	68	52	27	18	12	4			





## Pressure Drop Table According to ANSI FCI 70.2 Class IV Flow to Open - Metal to Metal - Air to Open - Unbalanced Trim

Type	Eff. Area cm <sup>2</sup> (in <sup>2</sup> )	Spring Range Barg (PSIG)	Valve Nominal Size											
			15	20	25	32	40	50	65	80	100	125	150	200
S.430s	740 (115)	0,4-1,4 (6-20)						52	13	8	4	2		
		0,8-2,0 (12-30)						68	21	14	10	5	3	1
		1,2-2,7 (18-40)						54	25	20	14	8	6	3
		1,0-4,0 (15-60)						50	23	17	12	7	5	2
S.500	1250 (195)	0,4-1,4 (6-20)							26	12	9	5	2	1
		0,8-2,0 (12-30)							36	21	18	11	5	3
		1,2-2,7 (18-40)							45	28	24	17	13	7
		1,0-4,0 (15-60)							41	24	20	14	10	5
P.250	490 (76)	1,5-2,3 (22-34)									7	5	3	2
		2,2-3,4 (44-68)									10	7	5	3
		3,0-4,6 (44-68)									14	9	6	4
P.390	120 (186)	1,8-2,8 (28-42)									28	18	12	7
		2,5-3,8 (38-56)									39	25	18	10
		3,1-4,9 (46-72)									49	32	22	13

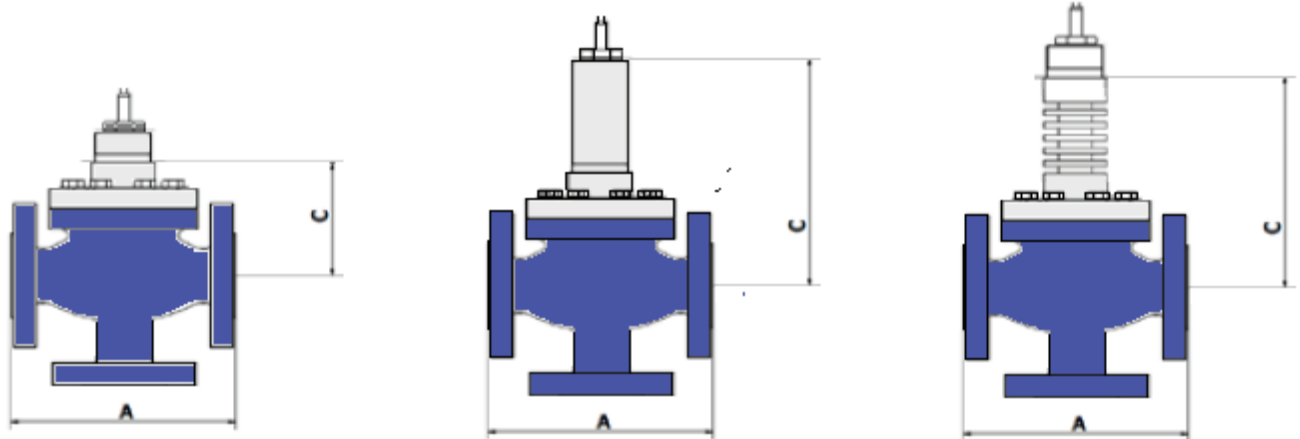
### Notes:

Values indicated in the above tables are calculated and tested with valve standard construction.

Pressure Drop shall be always verified with Delta 2 factory.

Maximum shutoff pressure indicated is limited to 101 Barg to cover PN100/600# at Full Rating.

For "Air to Close" Pressure Drops Consult Factory.



**STANDARD BONNET**

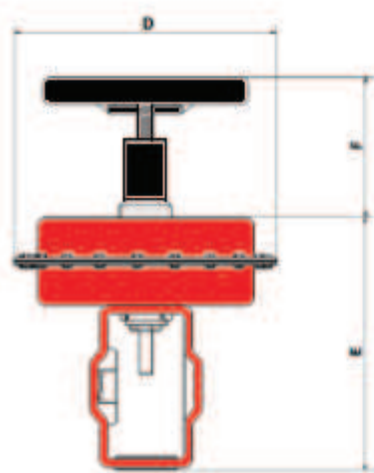
**HIGH TEMPERATURE BONNET**

**BELLOW SEAL OR CRYOGENIC BONNET**

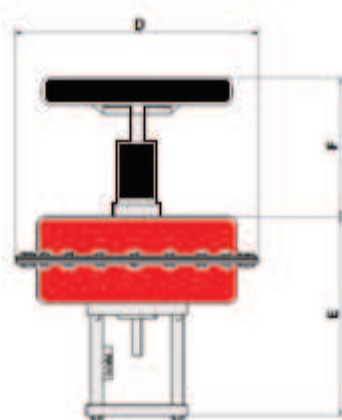
Valve DN (inch)	A = Face to face length (mm)					C = Bonnet Height (mm)				
	DIN PN10 to PN40	DIN PN64 to PN100	ANSI 150	ANSI 300	ANSI 600	Std Bonnet	High Temp	Bellow Seal	Cryo Design	Special Leak Off
15 (1/2")	130	210	108	152.5	165	80	165	225	580	305
20 (3/4")	150	230	118	178	190.5	80	165	225	580	305
25 (1")	160	230	127	203	216	85	155	220	585	300
32 (1.1/4")	180	260	180 (*)	180 (*)	260 (*)	85	160	225	590	310
40 (1.1/2")	200	260	165	229	241.5	105	180	235	605	320
50 (2")	230	300	203	267	292	110	185	240	610	325
65 (2.1/2")	290	340	290 (*)	290 (*)	340 (*)	160	240	260	660	360
80 (3")	310	380	241	318	356	170	250	270	670	370
100 (4")	350	430	292	356	432	185	275	285	690	385
125 (5")	400	500	400 (*)	400 (*)	500 (*)	230	335	415	730	515
150 (6")	480	550	406	444	559	250	370	450	750	570
200 (8")	600	650	495	559	660	280	410	490	780	610

(\*) = Available valve size with DIN Face to Face length.

- 1) DIN PN10 to PN40 Face to Face length according to EN 558-1 serie 1, DIN 3202 F1
- 2) DIN PN64 to PN100 Face to Face length according to EN 558-1 serie 2, DIN 3202 F2
- 3) ANSI 150 , 300 , 600 Face to Face length according to ANSI B16.10.  
(ANSI/ISA 75.08.01 on request)
- 4) Cryogenic design bonnet according to BS 6364.
- 5) Special Leak Off Design for Toxic and Lethal service.



**DIAPHRAGM ACTUATOR  
CAST YOKE**



**DIAPHRAGM ACTUATOR  
PILLAR YOKE**

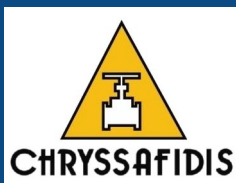


**PISTON ACTUATOR  
PILLAR YOKE**

Actuator Type	D = Actuator Diameter (mm)	E = Actuator Height		F = Top Handwheel Maximum Height with Reverse Action (mm)	F = Top Handwheel Maximum Height with Direct Action (mm)
		Cast Yoke (mm)	Pillar Yoke (mm)		
<i>S.200</i>	205	235	285	120	150
<i>S.275</i>	280	265	315	120	150
<i>S.335</i>	340	275	325	150	180
<i>S.430</i>	435	355	405	150	180
<i>S.430s</i>	435	380	465	200	240
<i>S.500</i>	510	390	430	200	240
<i>P.250</i>	310	-	557	300	350
<i>P.390</i>	450	-	557	300	350

1) ED = Envelope Diameter is the minimum horizontal space necessary for valve maintenance.

2) EH = Envelope Height is the minimum vertical space necessary for valve maintenance.



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## ARMSTRONG INTERNATIONAL DELTA 2

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