‘V’ Notch Segmented Ball Valve
with **Pneumatic** Rotary Spring Return Actuator
Dilusion Valve

1560SERIES

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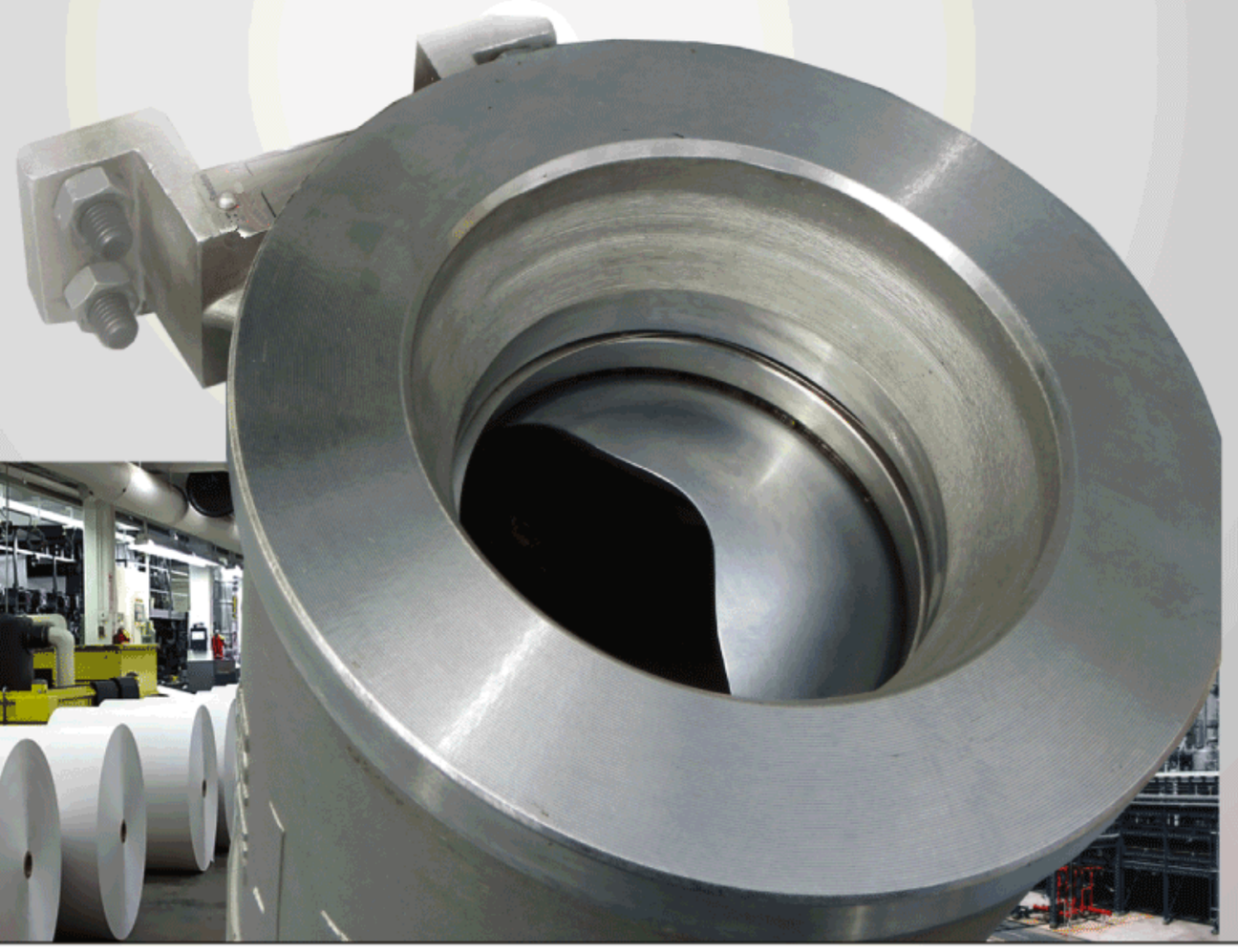
SUDE Offers 'V' **Notch Segmented Ball Valve** With **Pneumatic** Rotary Spring Return Actuator

Dilusion Valve

Segmented Ball valve is a ball sector valve with metal to metal or metal to PTFE seating. The segmented ball valve combines the best control characteristic of the ball valve and the butterfly valve. It can be used both as a control valve and as a shut off valve. It is available as standard in Stainless steel. It is also available in other materials based on the application.

V-Notch Ball Valve Features

- A one piece, leak proof stainless steel body, with face to face lengths in acc. with IEC standards
- A ball sector with top and bottom bearings for low operating torque so that low torque actuators can be used
- A 'V' shaped sector that provides accurate control over a wide range, even at low flow rates and if used for viscous media with high concentrations of solid particles.
- A spherical area of the ball sector which, with PTFE seat gives tight closing. The stellite seat ring ensures excellent tightness at all differential pressures. The maximum leakage in the direction of flow is less than 5×10^{-6} of the Kv value in this case.
- Metaloplast bearings
- O ring or graphite packing for the stem gland
- The standard stellite seat can easily be converted to PTFE after turning the ball sector by 180 degrees, without the need to dismantle the valve.
- Are designed to over come the problems of harsh, particle entrained processes.



Index

Application

Segmented Ball valve can be used both as a control valve and as a shut off valve in a wide variety of applications and in different operating modes. The valve represents a concrete result of our product philosophy which is focused on functionality, high quality and low life cycle costs and is based on concentrating our range to a limited number for valve types, but all of them suitable for a wide variety of applications. One of the most successful area for this valves is Paper Industries where they are used in dilusion line.

Segmented Ball valve addresses and solves many long standing challenges faced by traditional ball valves such as:

- Piping forces that unevenly load the seal
- Low range ability due to limited orifice characterization
- Unsatisfactory shutoff capabilities
- Achieves Class IV shut off with a metal seal and Class VI with the special soft seal.

The excellent control characteristics of segmented Ball valve are particularly beneficial under severe control conditions, in difficult media and under demanding pressure conditions in the process industry such as

- if the media contains solid particles
- if a wide control range is required
- if control applications involving high pressure drops
- if cavitations occurs
- or for corrosive applications

Features & Advantages of Segmented Ball Valve

Features	Advantages
One piece body	High performance ensured regardless of flange torque Loads, seal tightness not altered by piping forces, as in Two-piece bodies, one leak path eliminated
Segmented 'V' notch ball	Clogging reduced, 'V' shaped orifice exceeds 300:1 Range ability, excellent shearing action in fibrous fluid Mediums
Pressure assisted / bi-Directional special seal	Metal seal provides greater than ANSI Class IV shutoff soft seals achieve ANSI Class VI shutoff
Thick walled retainer	Valves normal service life extended in erosive environments
Flangeless design standard	Reduced cost
Separable flange option	Bolt length reduced, avoiding bolt stretch and leakage in event of fire
Integral flange option	Bolt length reduced, avoiding bolt stretch and leakage in event of fire
Interchangeability	Standard face to face dimensions allow for easy field Retrofitting of other manufacturers product lines.
Seal replaceable without removing ball and shaft	Maintenance is fast and easy
Shaft serviceable from Outboard end of ball	The need for actuator removal to replace ball and shaft is eliminated, shaft protected from blow out.
Full, uninterrupted Gasket surface	Gasket alignment problems reduced, wider range of gasketing possible including spiral wound

Specifications of Segmented Ball Valve

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SIZE	:	Ranging from 1" to 20"
TYPE OF CONSTRUCTION	:	'V' Notch shear stream
DESIGN	:	Ball type control valve
END CONNECTION	:	Flangeless, also available in Flanged connection
END SEAL	:	Graphite
MATERIAL OF CONSTRUCTION	:	S.S.316
BALL MATERIAL	:	Chrome plated SS317
SHAFT MATERIAL	:	17-5 PH
SEAT MATERIAL	:	Filled PTFE
RETAINER MATERIAL	:	Chrome plated SS316
PACKING MATERIAL	:	PTFE 'V' ring
LEAKAGE CLASS	:	Tight shut off Class VI
WORKING PRESSURE	:	4 Bar
BALL PRESSURE CLASS	:	150 – 300 Class
TEMPERATURE	:	Ambient
CHARACTERISTIC	:	Linear or modified equal percentage.
FITTED WITH	:	Prisma make Pneumatic Rotary Spring Return Actuator.

Specifications - Actuator

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The piston incorporates racks and end covers are die casted in Aluminum alloy. Barrel is extruded, Aluminum alloy hardened and treated, further finished with deep anodized process to form a protective layer to resist atmospheric corrosion.

The Actuators are also available in Stainless steel 316 & Nylon plastic construction.

The internal materials of the Aluminum, SS316 & Nylon plastic actuator are having pinion which is made up of steel, precision cut, heat treated and ground & also has a high grade of synthetic seals. The Actuators before assembly is lubricated with high temperature resistant smooth grease. The Actuators are with compact design operates through 90 degree angle of actuation.

Air Pressure Requirement - 4.0 kg/cm^2 [Minimum] & 8.5 kg/cm^2 [Maximum]

However Air Pressure Requirement is much dependent on size of the valve, working pressure, quality of Segmented Ball valve and many other factors.

ACCESSORIES:

Electropneumatic positioner

Flow Capacities & Characteristics

Valve Size DN	Cv at Degrees Open								
	10	20	30	40	50	60	70	80	90
25	0.1	0.72	1.8	3.5	5.7	8.6	12.4	17.6	25
40	0.21	1.4	3.7	7.4	12.3	18.9	28	40	57
50	0.5	3.2	7.2	13.2	21	32	47	70	110
75	7	19	34	56	85	124	185	239	280
100	13	33	59	94	140	195	271	361	462
150	19	54	110	176	260	371	519	716	945
200	45	104	185	291	425	589	825	1172	1675
250	92	220	354	572	835	1150	1620	2250	3180
300	120	287	461	746	1090	1500	2120	2940	4150
350	145	292	660	1105	1670	2380	3250	4340	6675
400	200	397	895	1503	2280	3240	4428	5908	9085
500	240	508	1158	2000	3042	4317	5902	7874	12109

Part List - 'V' Notch Ball Valve

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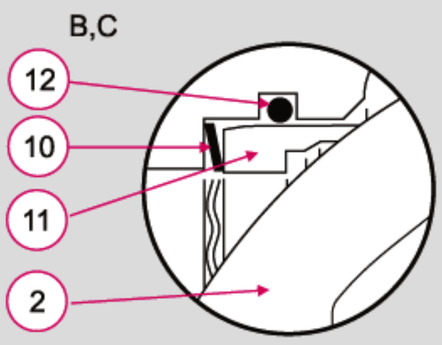
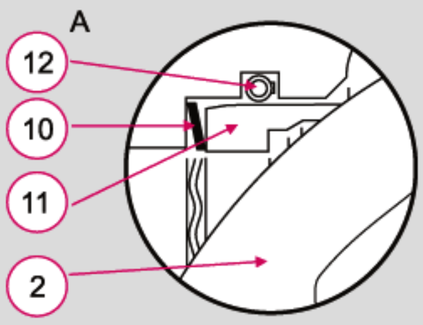
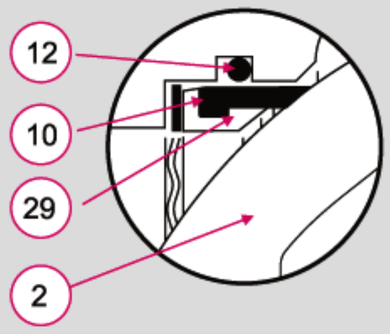
Seat Ring



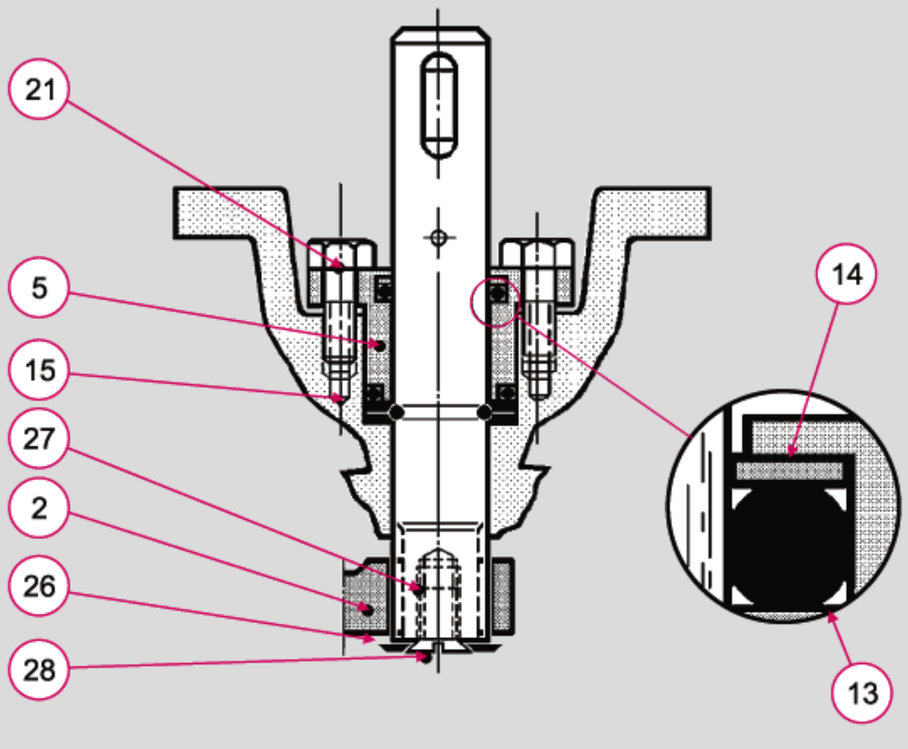
Type -02, -06



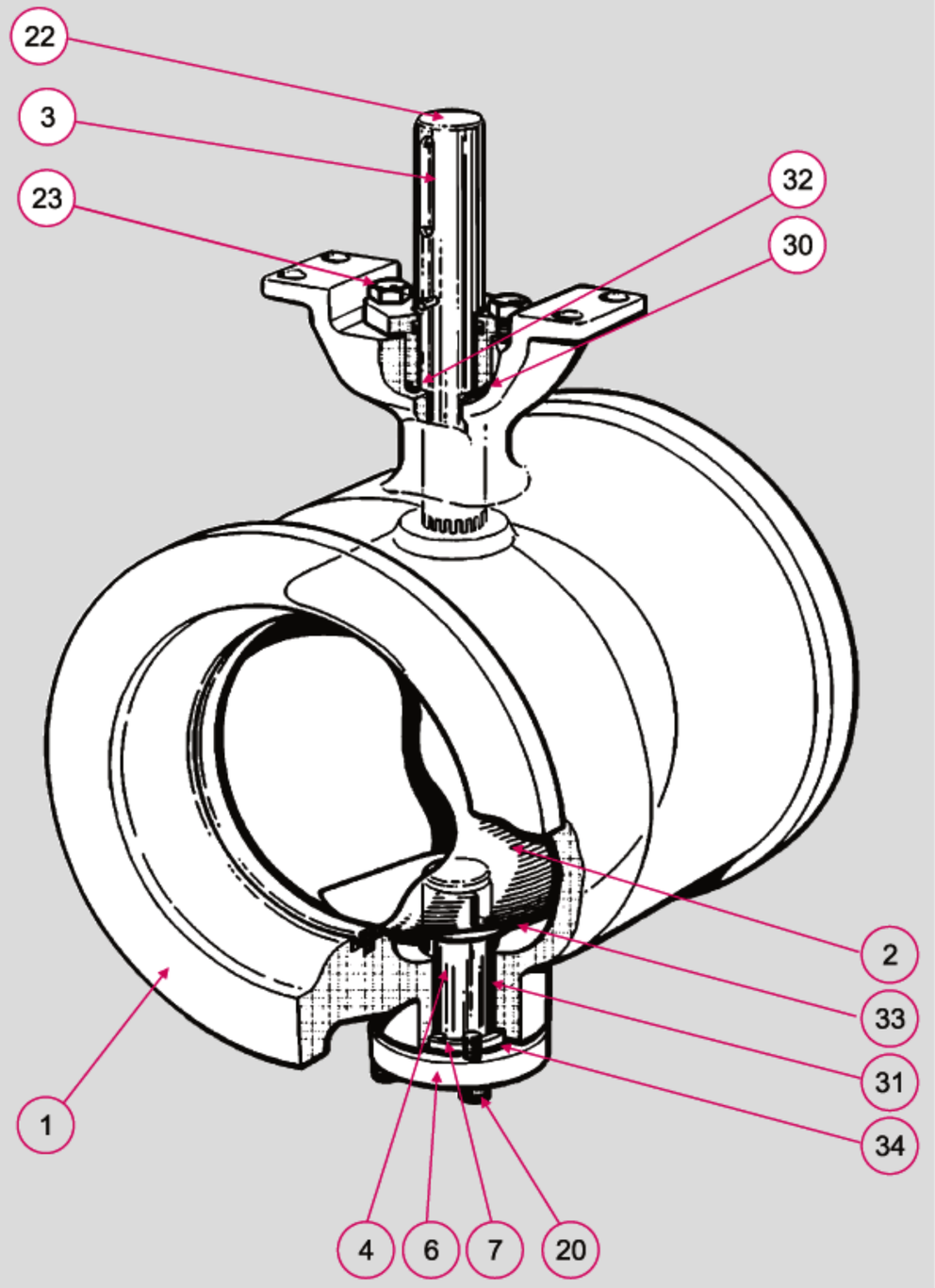
Type -01, -05, -07

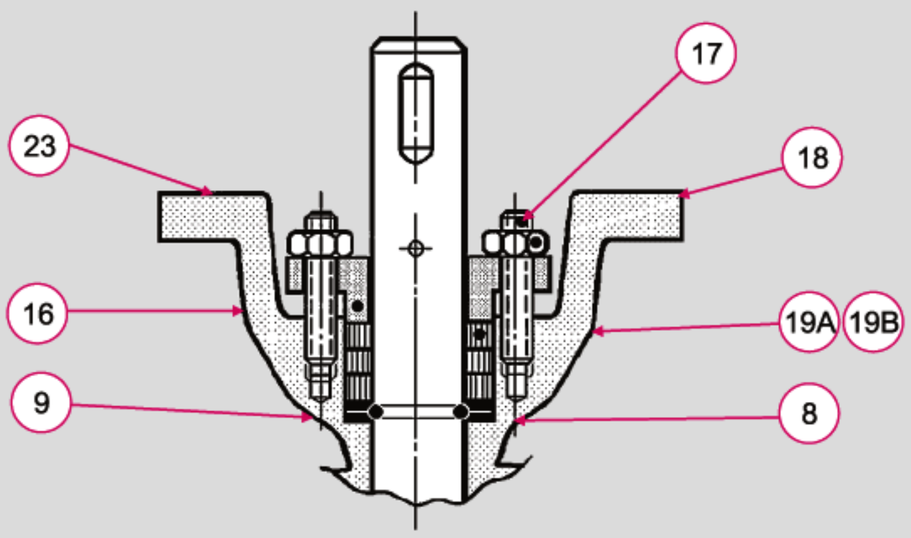


Type -11, -12, -15, -16, -17



0-ring Sealings : Type -01, -02, -05, -06, -11, -12, -15, -16





Stuffing box : Type -04, -07, -14, -17

Item	Qty	Part	Material
1	1	Body	EN1.4408/CF8M
2	1	Ball sector	EN1.4408/CF8M hard chrome plated
2	1	Ball sector	EN1.4408/CF8M
3	1	Stem, upper	EN1.4460
4	1	Stem, lower	EN1.4460
5	1	Gland cover	EN1.4408/CF8M
6	1	Bottom cover	EN1.4408/CF8M
7	1	Gasket	Graphite
8	1	Locking segment	EN1.4436
9	1	Bearing seat	EN1.4460
10	1	Compr ring	EN1.4436
11	1	Seat ring	Alloy 6
12A	1	Seat seal	PTFE

Item	Qty	Part	Material
12B	1	Seat seal	EPDM
12C	1	Seat seal	FPM
13A	1	0-ring	EPDM
13B	1	0-ring	FPM
14	1	Backing ring	PTFE
15A	1	0-ring	EPDM
15B	1	0-ring	FPM
16	1	Gland cover	EN1.4408/CF8M
17	2	Bolt	A4
18	2	Nut	A4
19A	1	Boxpacking	Graphite
19B	1	Boxpacking	PTFE
20	4	Bolt	A4
21	2	Bolt	A4

Item	Qty	Part	Material
22	1	Key	Steel
23	1	Indicating pin	SS
26	1	Washer	A4
27	1	Thread insert	Stainless
28	1	Bolt	A4
29	1	Seat ring / Backup ring	PTFE/SS
30	1	Stem bearing	Metaloplast
31	1	Stem bearing	Metaloplast
32	1	Washer	A4
33	1	Cylindrical pin	EN1.4460
34	1	Washer	Metaloplast

Exploded View 'V' Notch Ball Valve

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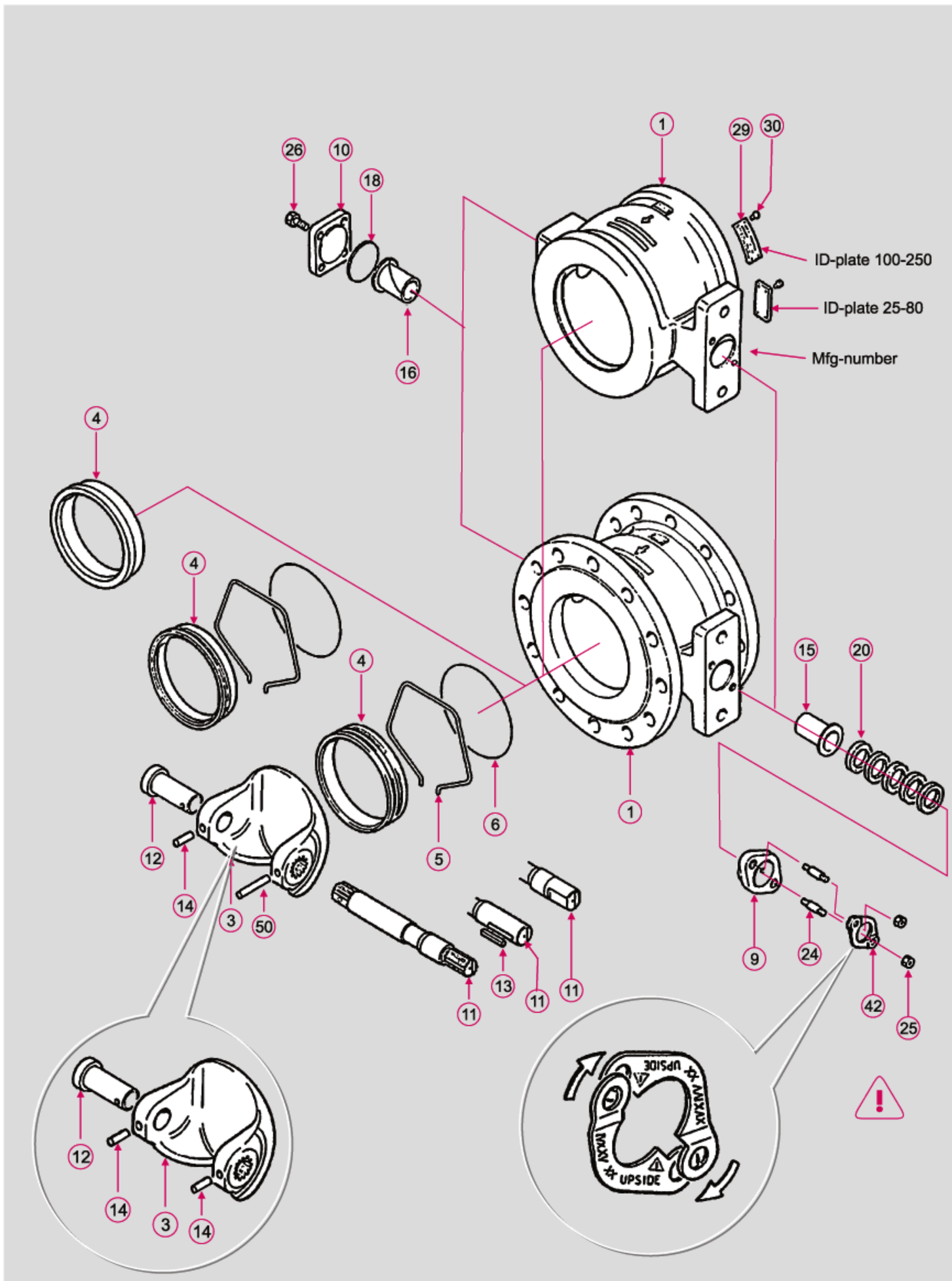

Item	Qty.	Description
1	1	Body
3	1	Segment
4	1	Seat
5	1	Lock spring
6	1	Back seal
9	1	Gland follower
10	1	Blind flange
11	1	Drive shaft
12	1	Shaft
13	1	Key
14	1	Pin
15	1	Bearing
16	1	Bearing
18	1-2	Gasket
20	5	Gland packing
24	2	Stud
25	2	Hexagon nut
26	2-4	Hexagon bolt
29	1	Identification plate
30	2	Screw
42	2	Retainer plate
50	1	Tapered pin
Parts 4, 5 and 6 are supplied as a set.		

Pressure - Temperature **Ratings**

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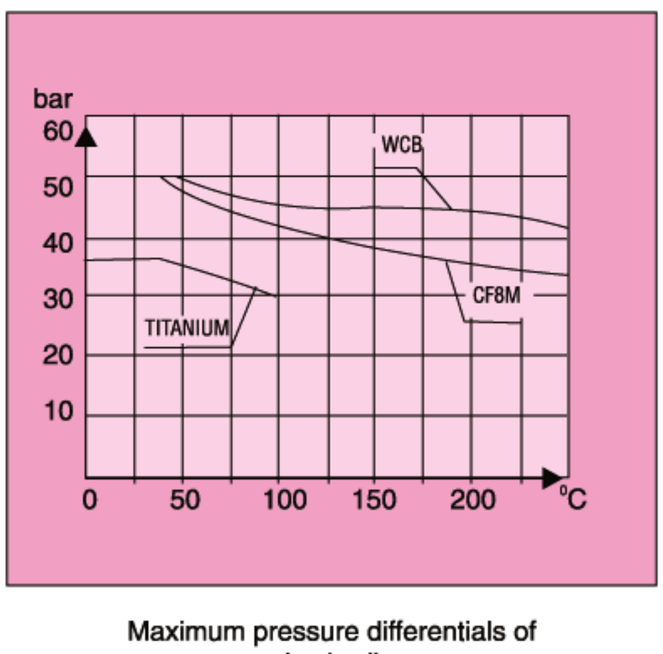
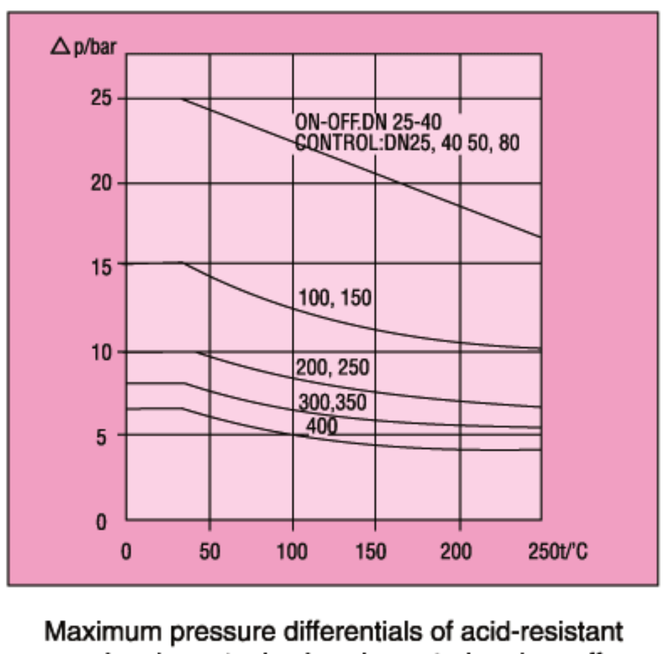
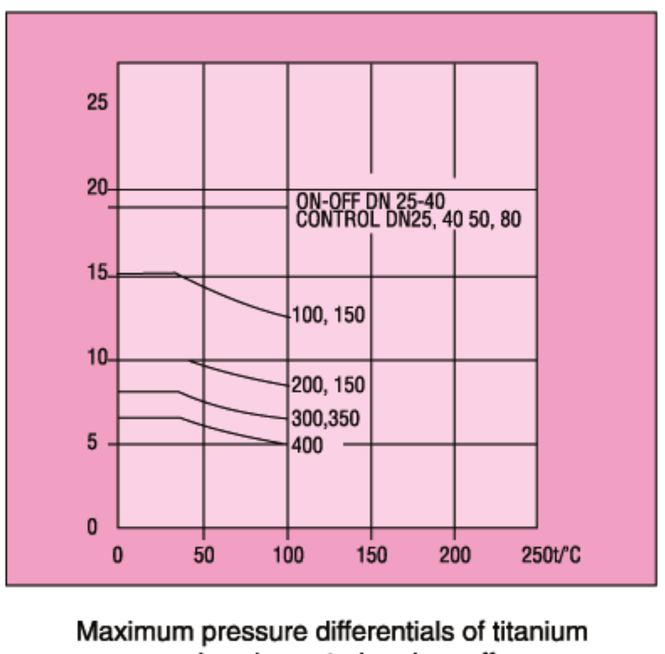


Maximum pressure differentials of valve bodies



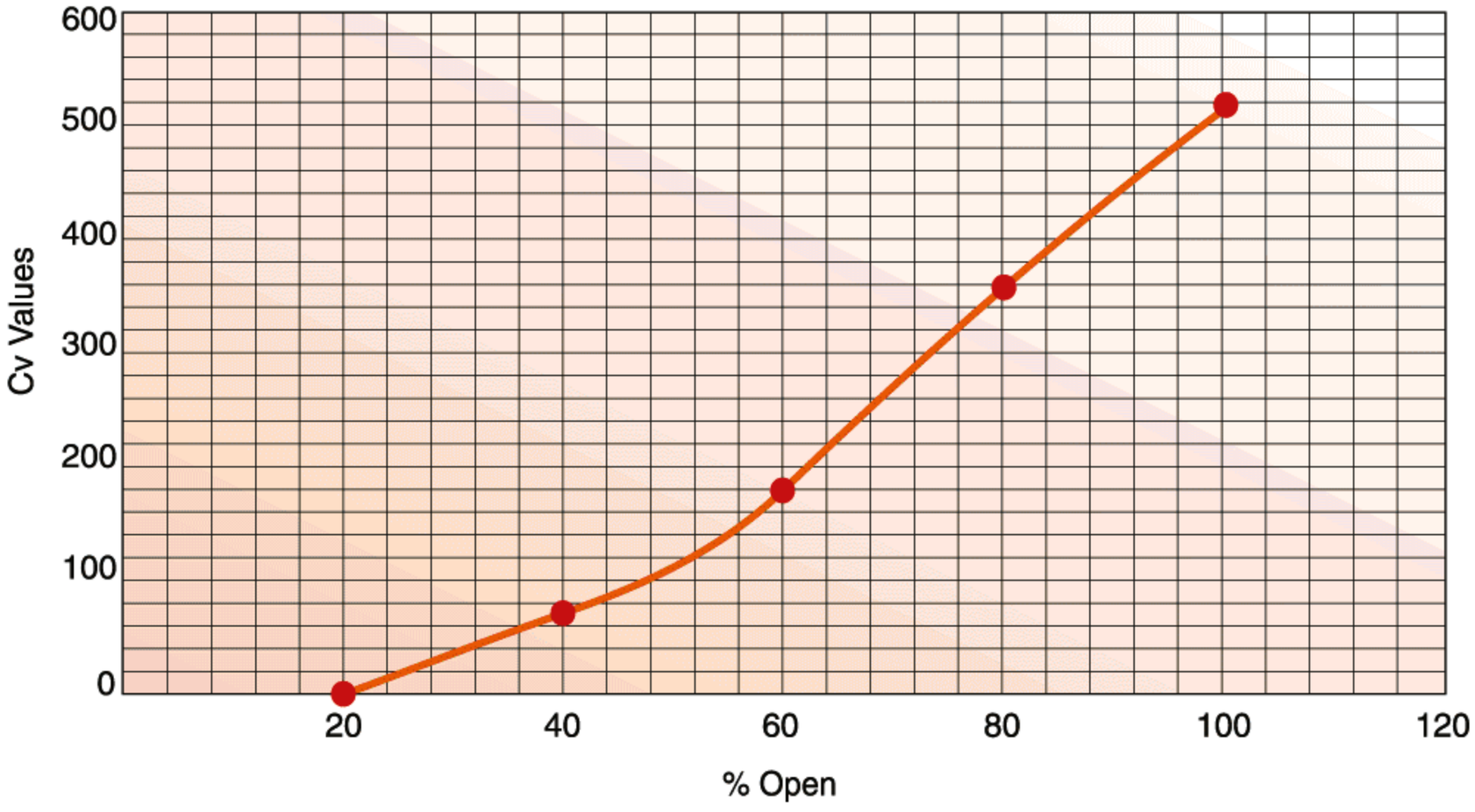
Maximum pressure differentials of acid-resistant and carbon-steel valves in control and on-off



Maximum pressure differentials of titanium valves in control and on-off

Flow Characteristic of 'V' Notch **Segmented Ball Valve** - Shaft Downstream

SUDE



V Notch Ball - 100mm 150#, Shaft Downstream

Electropneumatic **Positioner**

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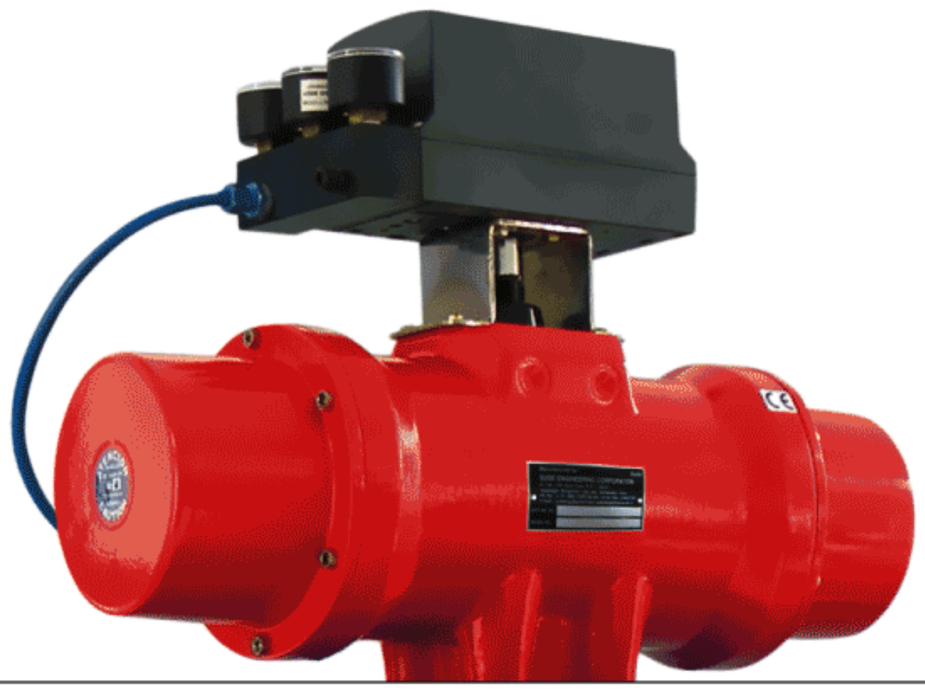
The SIPART PS2 electropneumatic positioner is used to control the final control element of pneumatic linear or part-turn actuators. The electropneumatic positioner moves the actuator to a valve position corresponding to the setpoint. Additional function inputs can be used to block the valve or to set a safety position. A binary input is present as standard in the basic device for this purpose.

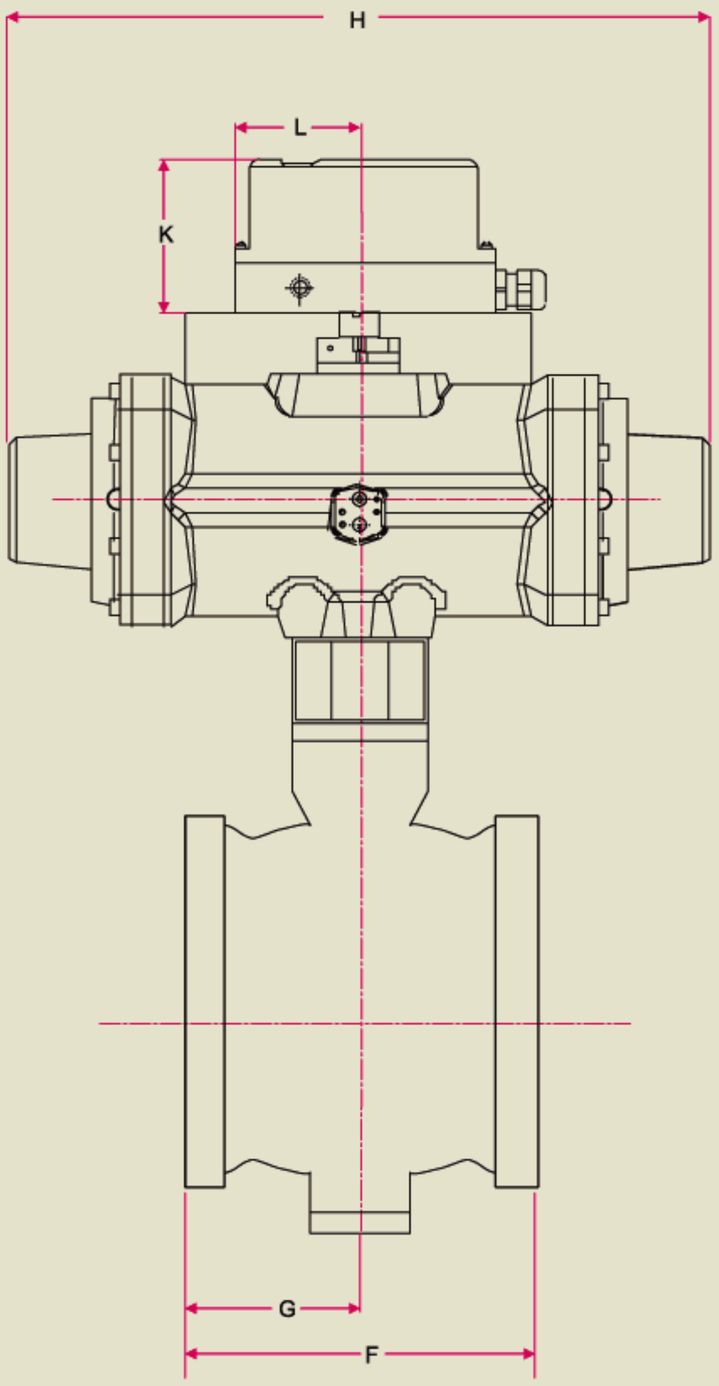
The SIPART PS2 positioner is characterized by significant advantages compared to conventional devices, such as :

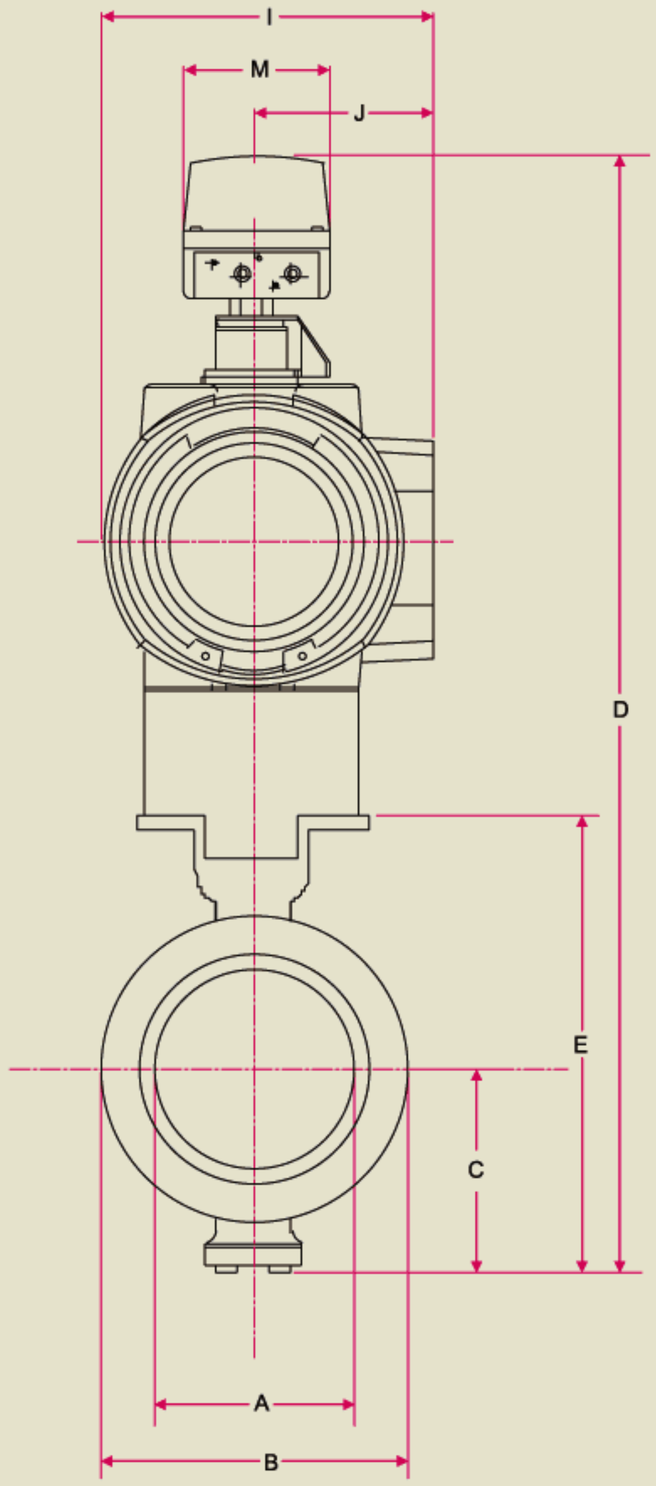
- Only one device version for linear and part-turn actuators.
- Simple operation and programming using three keys and a two-line LCD
- Automatic startup function with self-adjustment of zero and span.
- Manual operation without additional equipment
- Selectable or freely-progammable characteristics
- Diagnostic functions for valve or actuator
- Minimum air consumption
- Selectable setpoint and manipulated variable limiting



Overall Dimensions Of

'V' Notch Dilution Valve With Pneumatic Actuator SUDE 1560





DN	Model Number	Actuator Model	A	B	C	D	E	F	G	H	I	J	K	L	M	MASS, KG	
																WAFER	FLANGED
40	1500/40/WAF/EP	SA00	32	86	75	517	245	114	57	160	80	44	97	88.5	84	9.25	---
50	1500/50/WAF/EP	SA00	40	105	90	537	265	124	62	160	80	44	97	88.5	84	10.25	---
65	1500/65/WAF/EP	SA05	50	122	101	567	283	135	68	194	98	53	97	88.5	84	13.8	---
80	1500/80/WAF/EP 1500/80/FLG/EP	SA05	70	132	110	584	300	165	83	194	98	53	97	88.5	84	16.3	22.8
100	1500/100/WAF/EP 1500/100/FLG/EP	SA10	85	162	120	621	332	194	97	236	102	55	97	88.5	84	20.58	30.08
150	1500/150/WAF/EP 1500/150/FLG/EP	SA20	130	218	155	758	400	229	115	312	127	67	97	88.5	84	34.76	49.76
200	1500/200/WAF/EP 1500/200/FLG/EP	SA25	170	273	185	868	480	243	130	362	152	75	97	88.5	84	54.2	76.2
250	1500/250/FLG/EP	SA30	208	---	230	998	590	297	155	479	177	94	97	88.5	84	---	119.4
300	1500/300/FLG/EP	SA40	258	---	260	1129	660	338	183	598	226	120	97	88.5	84	---	184.9
350	1500/350/FLG/EP	SA40	282	---	290	1261	742	400	200	598	226	120	97	88.5	84	---	213.9
400	1500/400/FLG/EP	SA50	316	---	308	1344	784	400	224	694	257.5	135	97	88.5	84	---	273.4
500	1500/500/FLG/EP	SA50	400	---	371	1502	942	508	288	694	257.5	135	97	88.5	84	---	410.4

CAT/1560/09-10

NOTE : TECHNICAL SPECIFICATIONS, DETAILS & DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.
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