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PNEUMATIC VALVES SERIES SBS

WITH BELLOWS

FAMILY 04 CONTROL VALVES – GROUPS 122#129

Valves series SBS are modulating globe valves, with 2 or 3 ways.

They mount a multi-spring pneumatic diaphragm actuator. Their plug is available with linear or equipercentual characteristic, with soft, metallic or stellated seal.

They are available with flanged connections in accordance with standards EN 1092-2 PN16, EN 1092-1 PN40.



TECHNICAL DATA

Model	Globe Valve – Unidirectional - 2 / 3 ways (in standard version 3 ways, Angled way N.C.)		
Material	EN 1563 GJS-500-7	ASTM A216 WCB	CF8M
DN	15 # 150	15 # 80	
Max Allowed P	16 BAR	20 BAR	
End	Flanged PN 16 - EN 1092-2	Flanged PN 40 - EN 1092-1	
Seal	PEEK – Metallic – Stellited		
Seal Class (EN12266-1)	Grade A with PEEK seal Grado B with metallic and stellited seal ,(stellited plug is advisable with $\Delta p > 10$ bar) In accordance UNI EN 12266-1		
Plug Characteristic	Linear - Equipercental		
Stroke 15 mm	2/3 ways DN 15#80		
Stroke 30 mm	2/3 ways DN 100#150		
Max T	+250°C with PEEK seal +300°C with metallic seal and/or stellite		
Min T (liquid phase)	-10 °C	-28 °C	-40 °C
Air Connection	1/8" GAS (actuator Ø 200) 1/4" GAS (actuator Ø 275, Ø 360, Ø 430).		
Feeding Fluid	Instrument Air		
Feeding Pressure	3÷15 psi, 6÷18 psi, 6÷30 psi, 9÷32 psi, 3÷9 psi, 9÷15 psi.		
Versions / Optionals	Normally Closed – Normally Open – Manual Override – Pneumatic Positioner – Electropneumatic Positioner – I/P Converter - FR Group		

MATERIALS

Body	EN 1563 GJS-500-7	ASTM A216 WCB	CF8M
Bonnet	S30400		S31600
Plug	T.PK.	CF8 + S30400 + PEEK	CF8M + S31600 + PEEK
	T.M.	CF8 + S30400	CF8M + S31600
Packing	PTFE + PTFE caricato GRAFITE		
Body Seals	FASIT 400 - GRAPHITE + AISI 316 SPIRAL WOUND (THIRD WAY)		
Actuator	Fe P04	Fe P04	S30400
Nuts and Bolts	Zinc-Plated Steel		S30400

Max Differential Pressure Δp for SBS Valves - DN 15÷150 2 Ways

TAB: SBS Δp Rev. 00 del 23/07/2015			Δp Valve						Valve definition N°
Control signal in PSI ⁽¹⁾			3÷15	6÷18	6÷30	9÷32	3÷9	9÷15	
Control signal in BAR			0,2÷1	0,42÷1,26	0,4÷2,1	0,6÷2,24	0,2÷0,6	0,6÷1,0	
Max control pressure BAR			1	1,26	2,21	2,4	0,8	1,2	
ND	$\varnothing_{\text{seat}}$ [mm]	$\varnothing_{\text{e.SERV.}}$ [mm]	Valve definition letters						
			A	B	C	D	R	S	
15	3	200	4,5	8,5	8,5	11	4,5	11	1
		275	10,5	20	20	20	10,5	20	2
	6	200	4,5	8,5	8,5	11	4,5	11	3
		275	10,5	20	20	20	10,5	20	4
	15	200	4,5	8,5	8,5	11	4,5	11	5
		275	10,5	20	20	20	10,5	20	6
	20	200	4	8,5	8,5	11	4	11	101
		275	10	20	20	20	10	20	102
		360	20	20	20	20	20	20	103
20	8	200	4,5	8,5	8,5	11	4,5	11	7
		275	10,5	20	20	20	10,5	20	8
	15	200	4,5	8,5	8,5	11	4,5	11	9
		275	10,5	20	20	20	10,5	20	10
		360	20	20	20	20	20	20	11
	20	200	4	8,5	8,5	11	4	11	13
		275	10	20	20	20	10	20	14
		360	20	20	20	20	20	20	15
	25	15	200	4,5	8,5	8,5	11	4,5	11
275			10,5	20	20	20	10,5	20	18
360			20	20	20	20	20	20	19
20		200	4	8,5	8,5	11	4	11	21
		275	10	20	20	20	10	20	22
		360	20	20	20	20	20	20	23
26		200	4	8	8	11	4	11	25
		275	10	20	20	20	10	20	26
		360	16	20	20	20	16	20	27
32	20	200	4	8,5	8,5	11	4	11	29
		275	10	20	20	20	10	20	30
		360	20	20	20	20	20	20	31
	26	200	4	8	8	11	4	11	33
		275	10	20	20	20	10	20	34
		360	16	20	20	20	16	20	35
	31	430	20	20	20	20	20	20	36
		200	3,5	7,5	7,5	10,5	3,5	10,5	37
		275	9,5	18	18	20	9,5	20	38
40	26	360	18	20	20	20	18	20	39
		430	20	20	20	20	20	20	40
		200	4	8	8	11	4	11	41
	31	275	10	20	20	20	10	20	42
		360	16	20	20	20	16	20	43
		430	20	20	20	20	20	20	44
		200	3,5	7,5	7,5	10,5	3,5	10,5	45
		275	9,5	18	18	20	9,5	20	46
		360	18	20	20	20	18	20	47
38	430	20	20	20	20	20	20	48	
	200	2,8	5,5	5,5	8	2,8	8	49	
	275	7	14	14	20	7	20	50	
	360	14	20	20	20	14	20	51	
50	31	430	15	20	20	20	15	20	52
		200	3,5	7,5	7,5	10,5	3,5	10,5	53
		275	9,5	18	18	20	9,5	20	54
	38	360	18	20	20	20	18	20	55
		430	20	20	20	20	20	20	56
		200	2,8	5,5	5,5	8	2,8	8	57
		275	7	14	14	20	7	20	58
	48	360	14	20	20	20	14	20	59
		430	15	20	20	20	15	20	60
200		1,6	3,2	3,2	4,5	1,6	4,5	61	
48	275	4	8	8	10,5	4	10,5	62	
	360	8	16	16	20	8	20	63	
	430	9,3	18	18	20	9,3	20	64	

TAB: SBSΔp Rev. 00 del 23/07/2015			Δp Valve						Valve definition N°
Control signal in PSI ⁽¹⁾			3÷15	6÷18	6÷30	9÷32	3÷9	9÷15	
Control signal in BAR			0,2÷1	0,42÷1,26	0,4÷2,1	0,6÷2,24	0,2÷0,6	0,6÷1,0	
Max control pressure BAR			1	1,26	2,21	2,4	0,8	1,2	
ND	Øseat [mm]	ØeSERV. [mm]	Valve definition letters						
			A	B	C	D	R	S	
65	38	200	2,8	5,5	5,5	8	2,8	8	65
		275	7	14	14	20	7	20	66
		360	14	20	20	20	14	20	67
		430	15	20	20	20	15	20	68
	48	200	1,6	3,2	3,2	4,5	1,6	4,5	70
		275	4	8	8	10,5	4	10,5	71
		360	8	16	16	20	8	20	72
		430	9,3	18	18	20	9,3	20	73
	63	200	1	2	2	2,5	1	2,5	75
		275	2,5	5	5	6,5	2,5	6,5	76
		360	5	10	10	13	5	13	77
		430	5,5	10,5	10,5	16	5,5	16	78
80	48	200	1,6	3,2	3,2	4,5	1,6	4,5	80
		275	4	8	8	10,5	4	10,5	81
		360	8	16	16	20	8	20	82
		430	9,3	18	18	20	9,3	20	83
	63	200	1	2	2	2,5	1	2,5	85
		275	2,5	5	5	6,5	2,5	6,5	86
		360	5	10	10	13	5	13	87
		430	5,5	10,5	10,5	16	5,5	16	88
	78	275	1,5	3	3	4	1,5	4	91
		360	3	6	6	8,5	3	8,5	92
		430	3,5	7	7	10,5	3,5	10,5	93
		100	92	430 S ⁽²⁾	2,5	5	5	7,5	
		430 D ⁽³⁾	5	10	10	15		6	
125	115	430 S ⁽²⁾	1,5	3	3	4,5		11	
		430 D ⁽³⁾	3	6	6	9,5		12	
150	135	430 S ⁽²⁾	1	2	2	3,5		17	
		430 D ⁽³⁾	2	4	4	7		18	

Note: Δp Max symbol has been obtained with no air in head (only for N.C. valves).

⁽¹⁾ In NO valves, to obtain the same Δp as NC valves, maximum control signal must consist of the addition of two signals; for example, in a NO valve with 3÷15 PSI signal, the maximum control signal must be taken to 18 PSI (3+15) to obtain Δp of similar NC valve.
In 3-way valves, Δp refers to the way closing when air lacks; to obtain the same Δp on the other way follow the same procedure as applied to obtain Δp in NO valve.

Δp max for Cast iron versions =16 bar

⁽²⁾ "S" means single actuator

⁽³⁾ "D" means double actuator

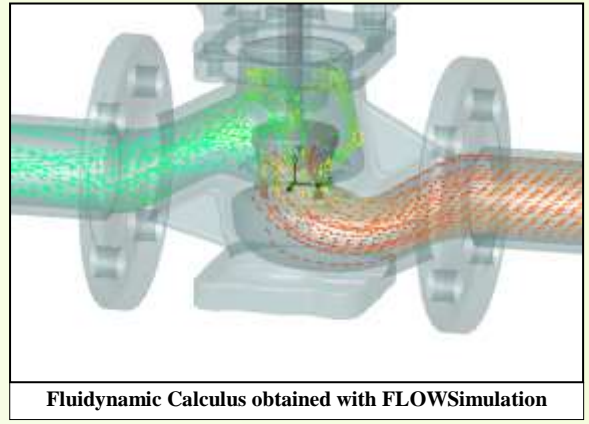
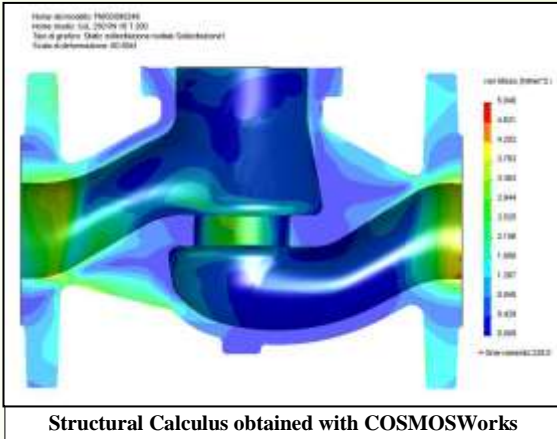
kv SBS/10 2-ways Valve

ND	Φ Seat [mm]	Stroke [mm]	Kvs		CV		ND	Φ Seat [mm]	Stroke [mm]	Kvs		CV	
			Linear	Equiperc.	Linear	Equiperc.				Linear	Equiperc.		
15	3	15	UT	UT	UT	UT	40	26	15	16,5	15,6	19,2	18,4
	6	15	UT	UT	UT	UT		31	15	21,9	19	25,5	22,1
	15	15	4,3	4,5	5	5,2		38	15	26	22,3	30,2	25,9
	20	15	5	5	5,8	5,8	50	31	15	22,1	19,1	25,7	22,2
20	8	15	UT	UT	UT	UT		38	15	27,6	23	32,1	26,7
	15	15	6	4,8	7	5,6		48	15	38,4	34,6	44,7	40,2
	20	15	8	7,5	9,3	8,7	65	38	15	27,9	24	32,4	27,9
25	15	15	5,4	5,3	6,3	6,2		48	15	45,5	42	53,5	49,4
	20	15	9,3	9,1	10,8	10,6		63	15	61	36,3	71,0	42,3
	26	15	11,8	11,3	13,7	13,1	80	48	15	43,2	41,6	50,3	48,4
32	20	15	9,6	9,5	11,2	11		63	15	62,2	37	72,4	43,1
	26	15	14,5	13,5	16,9	15,7		78	15	61,9	43,16	72,1	50,3
	31	15	20	15,2	23,3	17,7	100	92	30	UT	115	UT	134
							125	115	30	UT	190	UT	222
							150	135	30	UT	250	UT	292

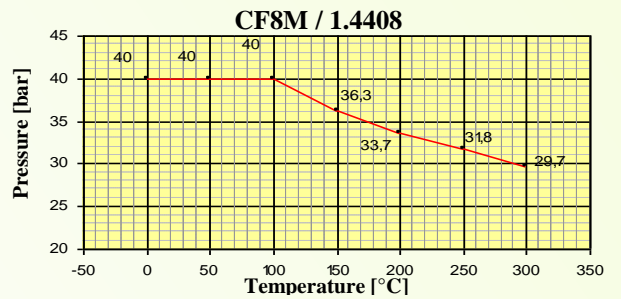
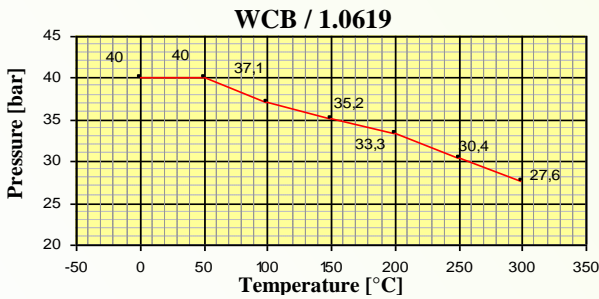
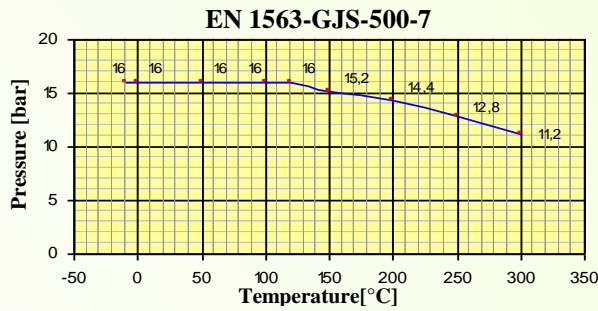
UT – please contact our technical department

Kv has been calculated with fluidynamics software FLOWSimulation in accordance with standard EN 1267:2001 and refers to a 2-way valve.

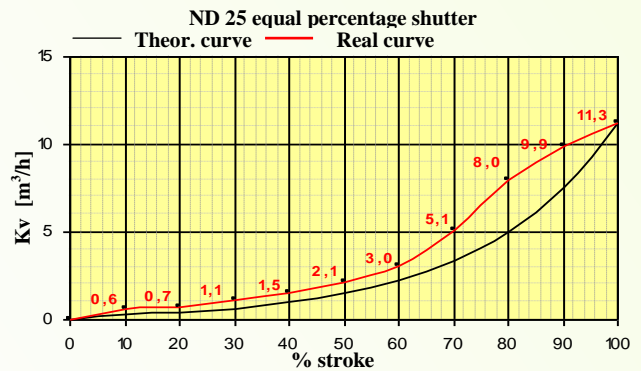
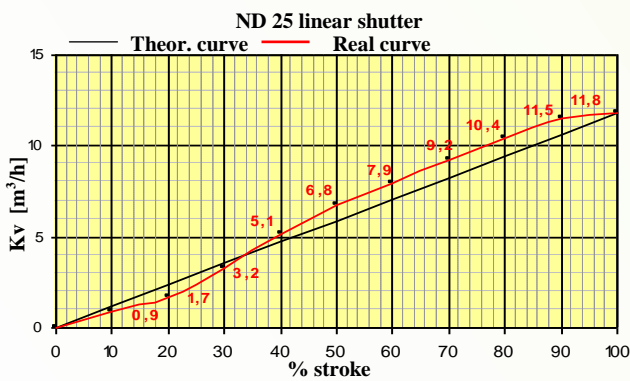
Project Calcula Samples



Pressure/Temperature Relationship for Cast-Iron GJS-500-7 – WCB – CF8M Bodies

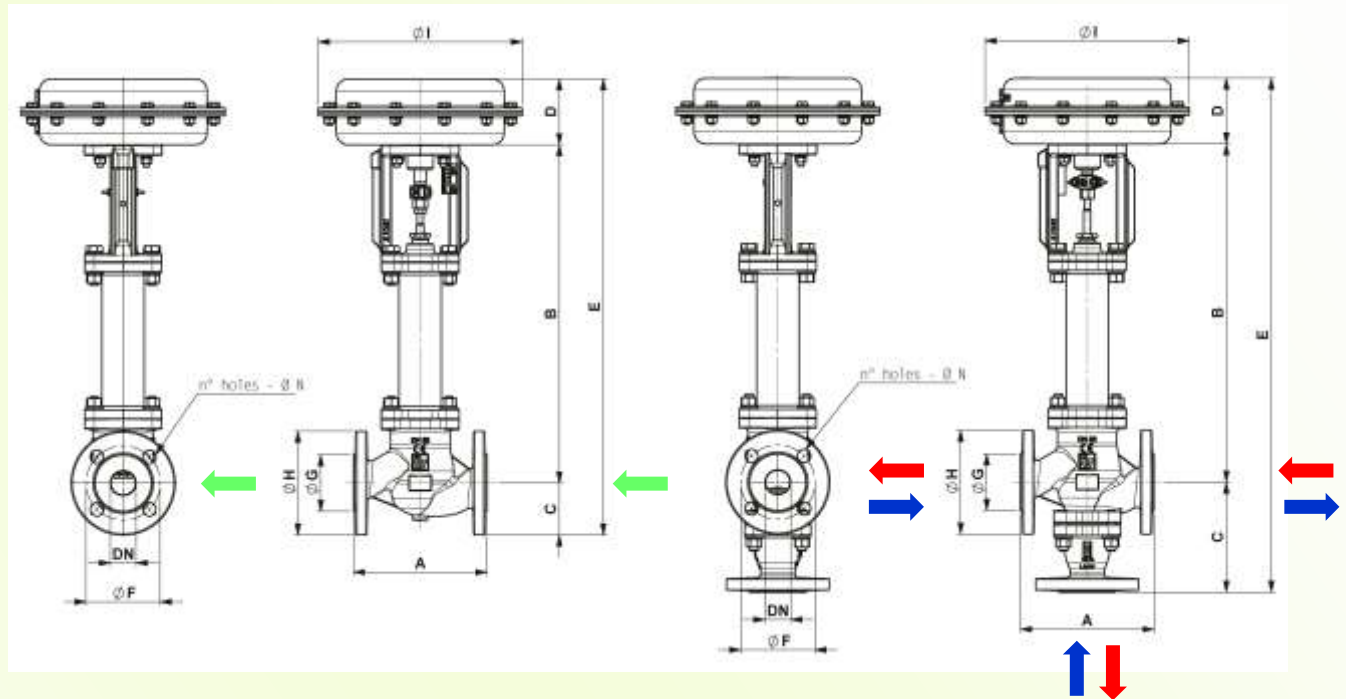


Example of linear and equal percentage shutters features of SBS valves stroke 15



For all graphs refer to the curves and flow of the shutters Linear and equal percentage, see the Guide to selection, use and maintenance (website and / or CD)

Dimensions



→ Flow direction for 2-way valve

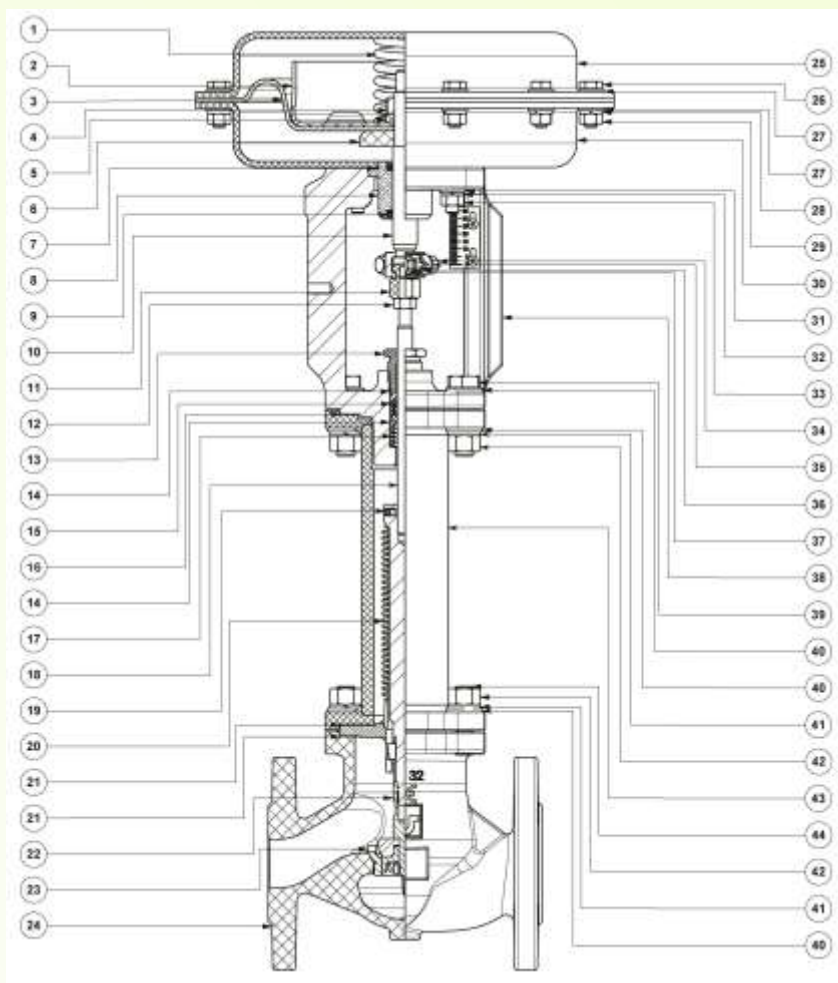
→ Flow direction for 3-way deviator valve
 → Flow direction for 3-way mixing valve

ND	A	B	C		D			E (2 ways)			E (3 ways)			Ø F	Ø G	Ø H	Ø I	Ø N		N° Holes	
			2 way	3 way	Actuator			Actuator			Actuator							PN 16	PN 40	PN 16	PN 40
					200	275	360	430	200	275	360	430	200					275	360	430	
15	130	438	48	117	77	89	123	563	575	609	632	644	678	65	45	95	A seconda del Δp di tenuta (200-275-360-430)	14		4	
20	150	438	53	117	77	89	123	568	580	614	632	644	678	75	58	105		14		4	
25	160	438	58	130	77	89	123	573	595	629	645	657	691	85	65	115		14		4	
32	180	459	70	150	77	89	123	606	618	652	686	698	732	100	76	140		19	18	4	
40	200	457	75	150	77	89	123	609	621	655	684	696	730	110	84	150		19	18	4	
50	230	455	83	166	77	89	123	615	627	661	698	710	744	125	99	165		19	18	4	
65	290	487	93	242	77	89	123	657	669	703	806	818	852	145	118	185		19	18	4	8
80	310	486	100	244	77	89	123	663	675	709	807	819	853	160	132	200		19	18	8	
100	350	615	193	265	/	/	123	/	/	931	/	/	1003	180	158	220		18	/	8	/
125	400	638	216	318	/	/	123	/	/	977	/	/	1079	210	188	250		18	/	8	/
150	480	663	245	382	/	/	123	/	/	1031	/	/	1143	240	212	285		22	/	8	/

Dimensions are express in mm.

Parts SBS 2 Ways

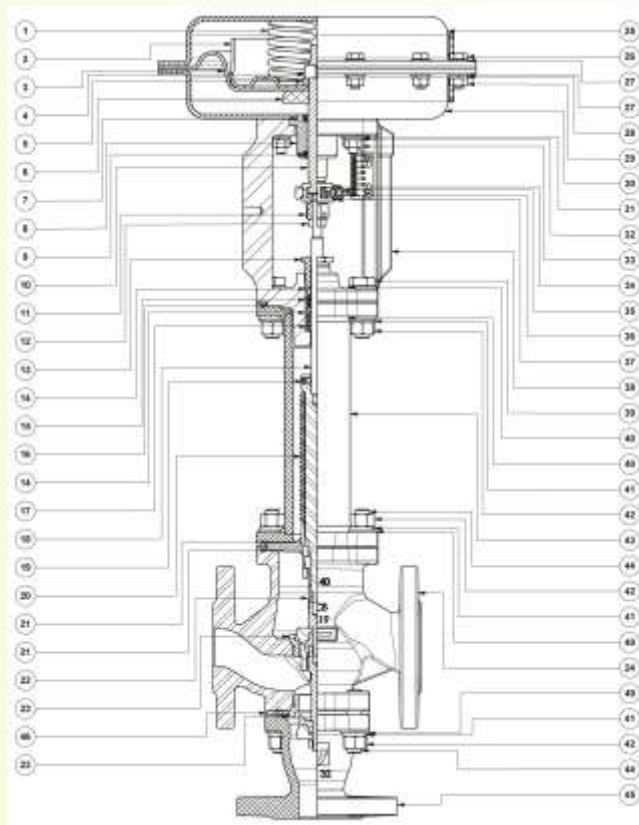
N°	DESCRIPTION
1	Actuator Spring
2	Spring-bearer Disc
3	Membrane
4	Hexagonal Nut
5	Spacer Washer
6	Counter-Disc diaphragm
7	OR
8	Guide Bushing
9	BA Gasket
10	Actuator Stem
11	Adjusting Nut
12	Hexagonal Nut
13	Packing Screw
14	Spacer Washer
15	Packing
16	Body Gasket
17	Packing Spring
18	Superior plug Stem
19	Socket set screw
20	Bellow
21	Body Gasket
22	Plug
23	Seat
24	Body
25	Upper Head
26	Hexagonal-Head Screw
27	Plan Washer
28	Elastic Washer
29	Hexagonal Nut
30	Lower Head
31	Plan Washer
32	Elastic Washer
33	Hexagonal Nut
34	Hexagonal-Head Screw
35	Disc with indicator
36	Elastic Washer
37	Hexagonal Nut
38	Bonnet/Intermediate Body
39	Hexagonal-Head Screw
40	Plan Washer
41	Elastic Washer
42	Hexagonal Nut
43	Extension
44	Prisoner



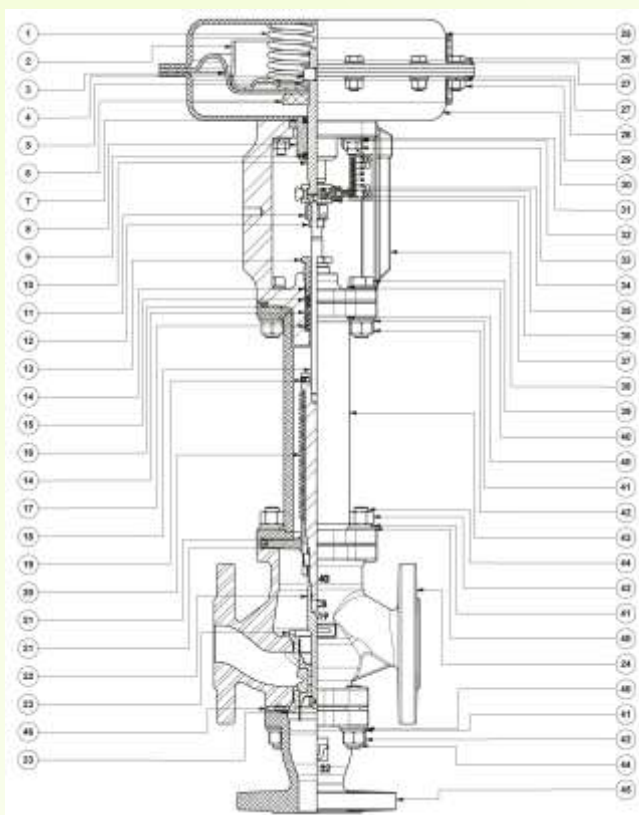
Parts - SBS 3 Ways - Deviator/Mixing

N°	DESCRIPTION
1	Actuator Spring
2	Spring-bearer Disc
3	Membrane
4	Hexagonal Nut
5	Spacer Washer
6	Counter-Disc diaphragm
7	OR
8	Guide Bushing
9	BA Gasket
10	Actuator Stem
11	Adjusting Nut
12	Hexagonal Nut
13	Packing Screw
14	Spacer Washer
15	Packing
16	Body Gasket
17	Packing Spring
18	Stem Superior plug
19	Socket set screw
20	Bellow
21	Body Gasket
22	Plug
23	Seat
24	Body
25	Upper Head
26	Hexagonal-Head Screw
27	Plan Washer
28	Elastic Washer
29	Hexagonal Nut
30	Lower Head
31	Plan Washer
32	Elastic Washer
33	Hexagonal Nut
34	Hexagonal-Head Screw
35	Disc with indicator
36	Elastic Washer
37	Hexagonal Nut
38	Bonnet/Intermediate Body
39	Hexagonal-Head Screw
40	Plan Washer
41	Elastic Washer
42	Hexagonal Nut
43	Extension
44	Prisoner
45	Bottom
46	Spiral wound Gasket

Deviator



Mixer



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