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GRS SERIES PNEUMATIC VALVES

FAMILY 01, ON/OFF GLOBE VALVES, GROUPS 130#137

GRS valves are 2- or 3-way on/off globe valves. They are equipped with a shutter with linear characteristic curve and a soft or metal seal. They are flanged in accordance with standards EN 1092-2 – PN 16, EN 1092-1– PN 40.



TECHNICAL DATA

Valve type	2- or 3-way globe valve, unidirectional (N.C. angle way in the 3-way STD version).			
Material	EN 1561 GJL-250	EN 1563 GJS-500-7	ASTM A216 WCB	CF8M
DN	15 # 80	15 # 150	15 # 80	
Max. allowed P	16 bar		40 bar	
Connections	Flanged PN 16 according to EN 1092-2		Flanged PN 40 according to EN 1092-1	
Seal	PEEK – metal – stellited			
Seal class	Grade A for PEEK seal Grade B for metal and stellited seal (the stellited seal is recommended for $\Delta p > 10$ bar) In accordance with the standard UNI EN 12266-1			
Shutter features	linear			
Shutter stroke	See table pag. 2			
Max temperature	+200°C all seal			
Min. temperature	-10°C (in liquid phase)			
Air couplings	RILSAN quick coupling Ø 6-4 mm.			
Feeding fluid	Instrument air			
Feeding pressure	6 bar (2 or 4 bar with reduced Δp available upon request. Max allowable pressure 8 bar)			
Optional	Bellows for high/low temperatures (see specific sheet); emergency handwheel; inductive or magnetic sensors; pneumatic or electromechanical limit switches; stroke limit switches; solenoid valves.			

MATERIALS

Body material	EN 1561 GJL-250	EN 1563 GJS-500-7	ASTM A216 WCB	CF8M
Middle section	EN 1561 GJL-250 DN 15#50 ASTM A216 WCB + Fe 430 B DN 65#80 EN 1563 GJL-500-7 DN 100#150		ASTM A216 WCB + Fe 430 B	CF8M + S30400
Shutter	T.P.K.	CF8 + S30400 + PEEK		CF8M + S31600 + PEEK
	T.M.	CF8 + S30400		CF8M + S31600
Packing gland	PTFE+GRAPHITE-LOADED PTFE			
Body gaskets	FASIT 400			
Servo Control	S30400			
Connecting screws	Galvanized steel + S30400			S30400

Δp and Kv of 2-way GRS DN 15÷150 valves

					Δp Valve						Valve definition no.		
					N.C. valve			N.A. Valve					
Minimum Control pressure [bar]					2	4	6	2	4	6			
ND	Φ seat [mm]	stroke [mm]	Kvs		Φi Servoc. [mm]	Valve definition Letter							
			Linear shutter	CV		A	B	C	M	N	O		
15	3	15	UT	UT	70	40	40	40	40	40	40	1	
	6	15	UT	UT		40	40	40	40	40	40	40	2
	15	15	4,3	5		28	30	30	23	40	40	40	3
	20	15	5	5,8		11	17	17	13	26,5	40	40	30
20	8	15	UT	UT	70	40	40	40	40	40	40	4	
	15	15	6	7		28	30	30	23	40	40	40	5
	20	15	8	9,3		11	17	17	13	26,5	40	40	6
25	15	15	5,4	6,3	70	28	30	30	30	40	40	7	
	20	15	9,3	10,8		11	17	17	13	33,5	40	40	8
	26	15	11,8	13,7		7	11	11	8	20	30	30	9
32	20	15	9,6	11,2	80	14	33,5	40	30	40	40	10	
	26	15	14,5	16,9		12	19,5	35,5	14	26,5	40	40	11
	31	15	20	23,3		7,5	15	25	8	19	28,5	28,5	12
40	26	15	16,5	19,2	80	12	19,5	35,5	14	26,5	40	13	
	31	15	21,9	25,5		7,5	15	25	8	19	28,5	28,5	14
	38	15	26	30,2		5	10	14	5,5	14	19	19	15
50	31	15	22,1	25,7	80	7,5	15	25	8	19	28,5	16	
	38	15	27,6	32,1		5	10	14	5,5	14	19	19	17
	48	15	38,4	44,7		3	6	8,1	2	7	11,5	11,5	18
65	38	15	27,9	32,4	125	/	14	40	/	14	40	19	
	48	15	45,5	53,5		/	9	25,5	/	11	26,5	26,5	20
	63	20	69	80,3		/	3,8	11,5	/	6,7	12,8	12,8	21
80	48	15	43,2	50,3	125	/	9	25,5	/	11	26	22	
	63	20	76,6	89,2		/	3,8	11,5	/	6,7	12,8	12,8	23
	78	20	85,8	99,9		/	2,2	7,3	/	4,1	8,1	8,1	24
100	92	30	UT	UT	160	/	/	9	/	/	13,5	27	
125	115	30	UT	UT		/	/	6	/	/	8,5	30	
150	135	30	UT	UT		/	/	4	/	/	7	33	

Δp e Kv GRS ND 15÷150 2-ways Oversize Valve

					Δp Valve		Valve definition no.	
					N.C. Valve	N.A. Valve		
Minimum Control pressure [bar]					6	6		
ND	Φ seat [mm]	stroke [mm]	Kvs		Φi Servoc. [mm]	Valve definition Letter		
			Linear shutter	CV		C	O	
15	3	15	UT	UT	80	40	40	1M
	6	15	UT	UT		40	40	2M
	15	15	4,3	5		40	40	3M
	20	15	5	5,8		40	40	30M
20	8	15	UT	UT	80	40	40	4M
	15	15	6	7		40	40	5M
	20	15	8	9,3		40	40	6M
25	15	15	5,4	6,3	80	40	40	7M
	20	15	9,3	10,8		40	40	8M
	26	15	11,8	13,7		35,5	40	9M
32	20	15	9,6	11,2	125	40	40	10M
	26	15	14,5	16,9		40	40	11M
	31	15	20	23,3		40	40	12M
40	26	15	16,5	19,2	125	40	40	13M
	31	15	21,9	25,5		40	40	14M
	38	15	26	30,2		40	40	15M
50	31	15	22,1	25,7	125	40	40	16M
	38	15	27,6	32,1		40	40	17M
	48	15	38,4	44,7		25,5	26,5	18M
65	38	15	27,9	32,4	160	40	40	19M
	48	15	45,5	53,5		39	40	20M
	63	20	69	80,3		23	28,5	21M
80	48	15	43,2	50,3	160	39	40	22M
	63	20	76,6	89,2		23	28,5	23M
	78	20	85,8	99,9		13	18,5	24M

UT – please contact our technical department.

DN 100-125-150 : Available with Δp oversize

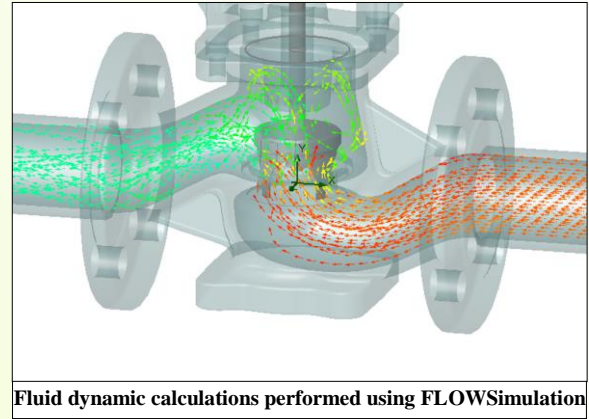
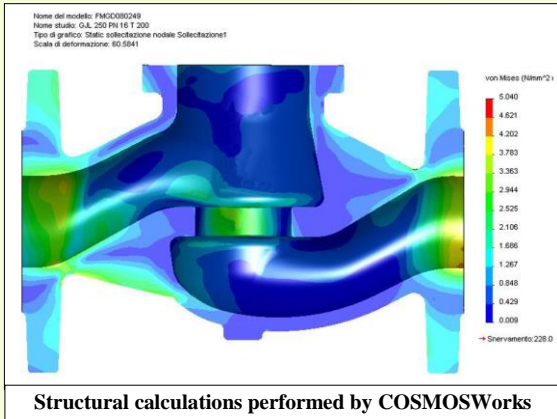
The “M” letter indicates enhanced servo control.

Max Δp is obtained with no feeding pressure (for NC valves only).

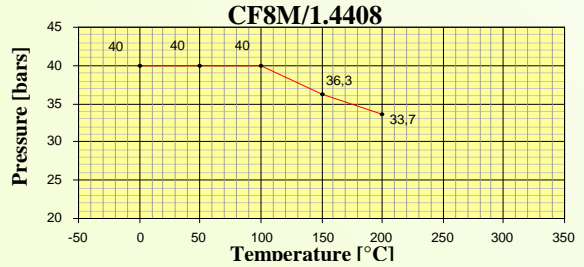
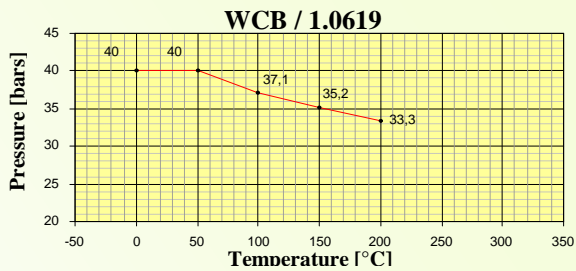
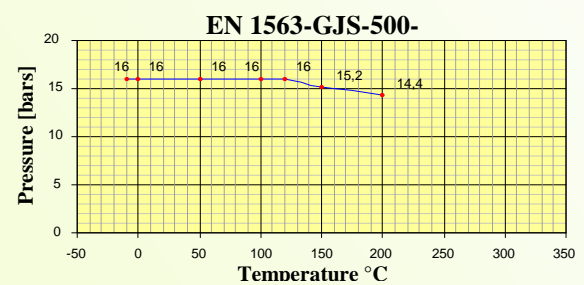
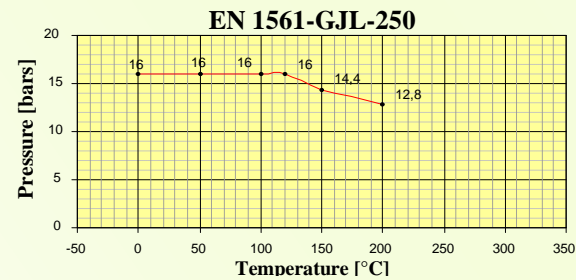
Δp max for Cast iron versions =16 bar

Kv has been calculated using the FLOWSimulation fluid dynamics program in accordance with the UNI EN 1267:2001 standard and refers to 2-way valve

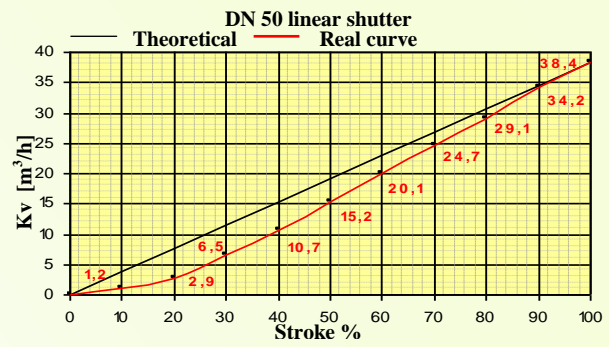
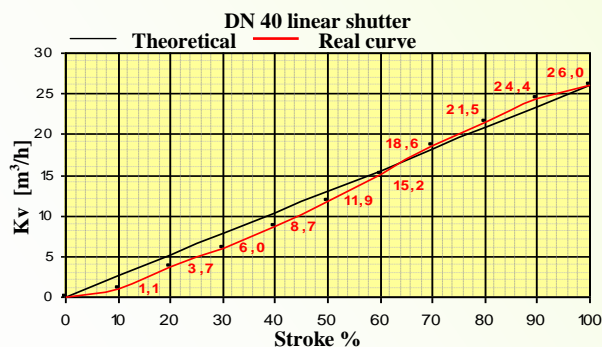
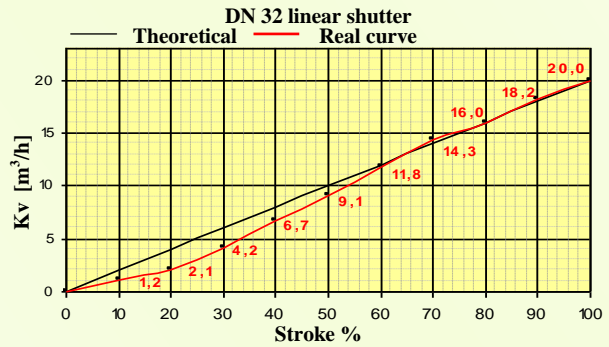
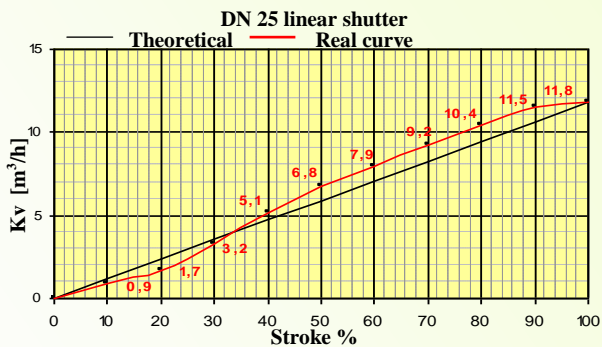
Examples of design calculations



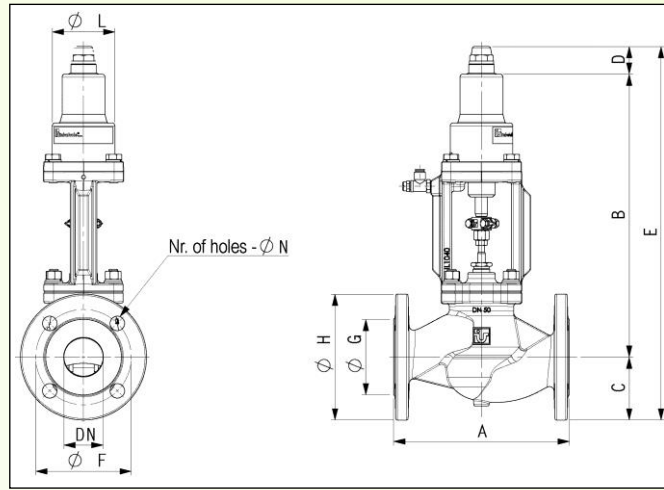
Pressure/temperature diagrams for GRS, Cast iron – WCB – CF8M bodies



Example of linear shutters features of SBS/10 valves stroke 15



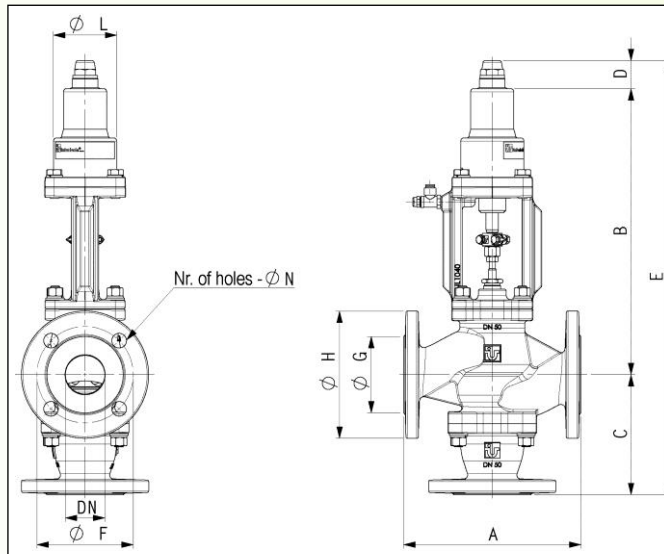
2-way GRS valve NC - dimensions



DN	A	B				C	D				E				Ø F	Ø G	Ø H	Ø N		No. of holes	
		Ø L					Ø L				Ø L							PN 16	PN 40	PN 16	PN 40
		70	80	125	160		70	80	125	160	70	80	125	160							
15	130	327	370	/	/	48	36	36	/	/	411	454	/	/	65	45	95	14	4		
20	150	327	370	/	/	53	36	36	/	/	416	459	/	/	75	58	105	14	4		
25	160	327	370	/	/	58	36	36	/	/	421	464	/	/	85	65	115	14	4		
32	180	/	375	435	/	70	/	36	61	/	/	481	566	100	76	140	19	18	4		
40	200	/	372	432	/	75	/	36	61	/	/	483	568	110	84	150	19	18	4		
50	230	/	372	432	/	83	/	36	61	/	/	491	576	125	99	165	19	18	4		
65	290	/	/	486	516	93	/	/	61	61	/	/	640	670	145	118	185	19	18	4	8
80	310	/	/	485	515	100	/	/	61	61	/	/	646	676	160	132	200	19	18	8	
100	350	/	/	/	600	193	/	/	/	61	/	/	/	854	180	158	220	18	/	8	/
125	400	/	/	/	623	216	/	/	/	61	/	/	/	900	210	188	250	18	/	8	/
150	480	/	/	/	648	245	/	/	/	61	/	/	/	954	240	212	285	22	/	8	/

Dimensions are in mm

3-way GRS valve NC - dimension

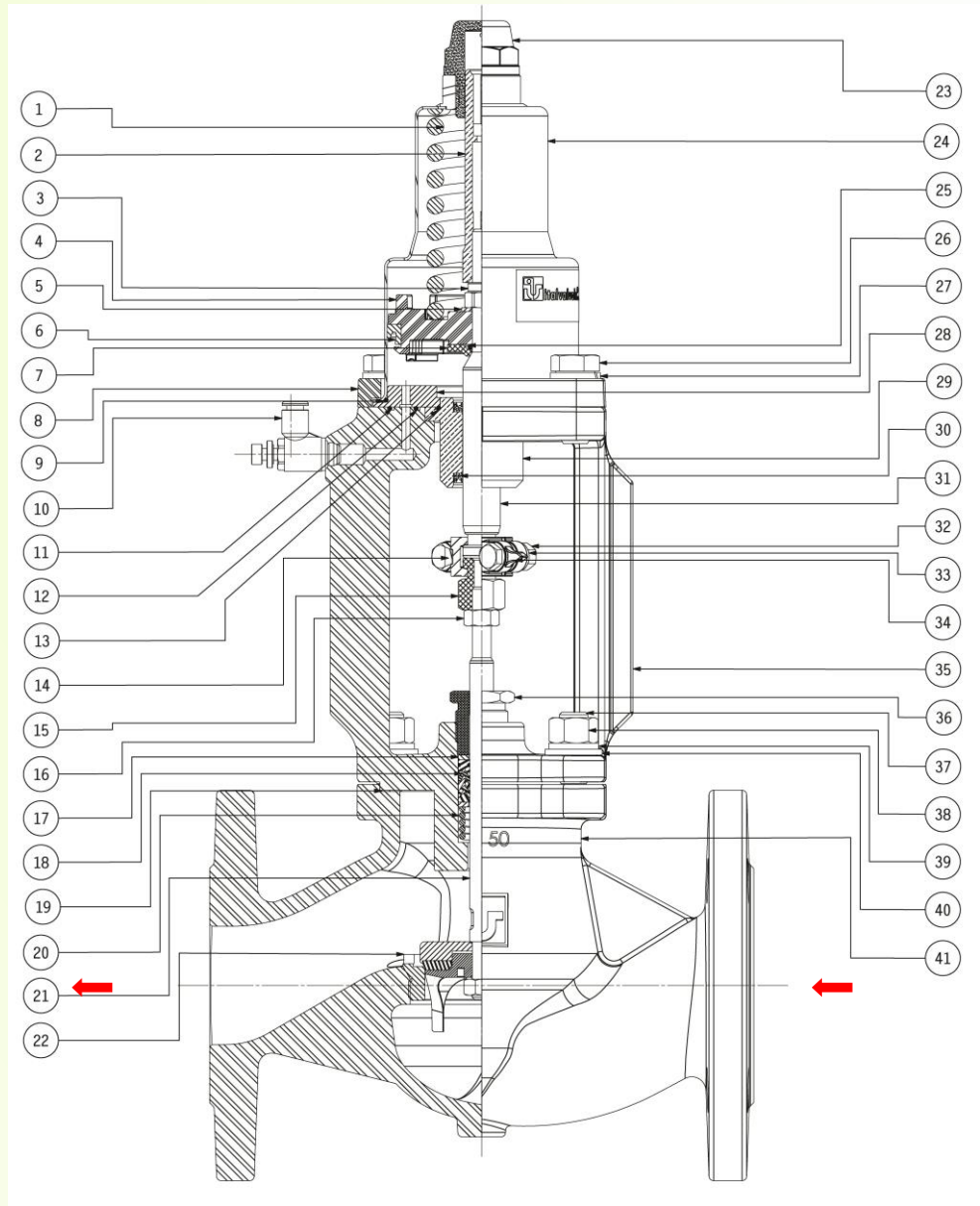


DN	A	B				C	D				E				Ø F	Ø G	Ø H	Ø N		No. of holes	
		Ø L					Ø L				Ø L							PN 16	PN 40	PN 16	PN 40
		70	80	125	160		70	80	125	160	70	80	125	160							
15	130	327	370	/	/	111	36	36	/	/	474	517	/	/	65	45	95	14	4		
20	150	327	370	/	/	111	36	36	/	/	474	517	/	/	75	58	105	14	4		
25	160	327	370	/	/	124	36	36	/	/	487	530	/	/	85	65	115	14	4		
32	180	/	375	435	/	144	/	36	61	/	/	555	640	100	76	140	19	18	4		
40	200	/	372	432	/	144	/	36	61	/	/	552	637	110	84	150	19	18	4		
50	230	/	372	432	/	160	/	36	61	/	/	568	653	125	99	165	19	18	4		
65	290	/	/	486	516	236	/	/	61	61	/	/	783	813	145	118	185	19	18	4	8
80	310	/	/	485	515	238	/	/	61	61	/	/	784	814	160	132	200	19	18	8	
100	350	/	/	/	600	265	/	/	/	61	/	/	/	925	180	158	220	18	/	8	/
125	400	/	/	/	623	318	/	/	/	61	/	/	/	1001	210	188	250	18	/	8	/
150	480	/	/	/	648	382	/	/	/	61	/	/	/	1091	240	212	285	22	/	8	/

Dimensions are in mm

Table of Ø 70 – 80 servo control GRS components - 2-way NC

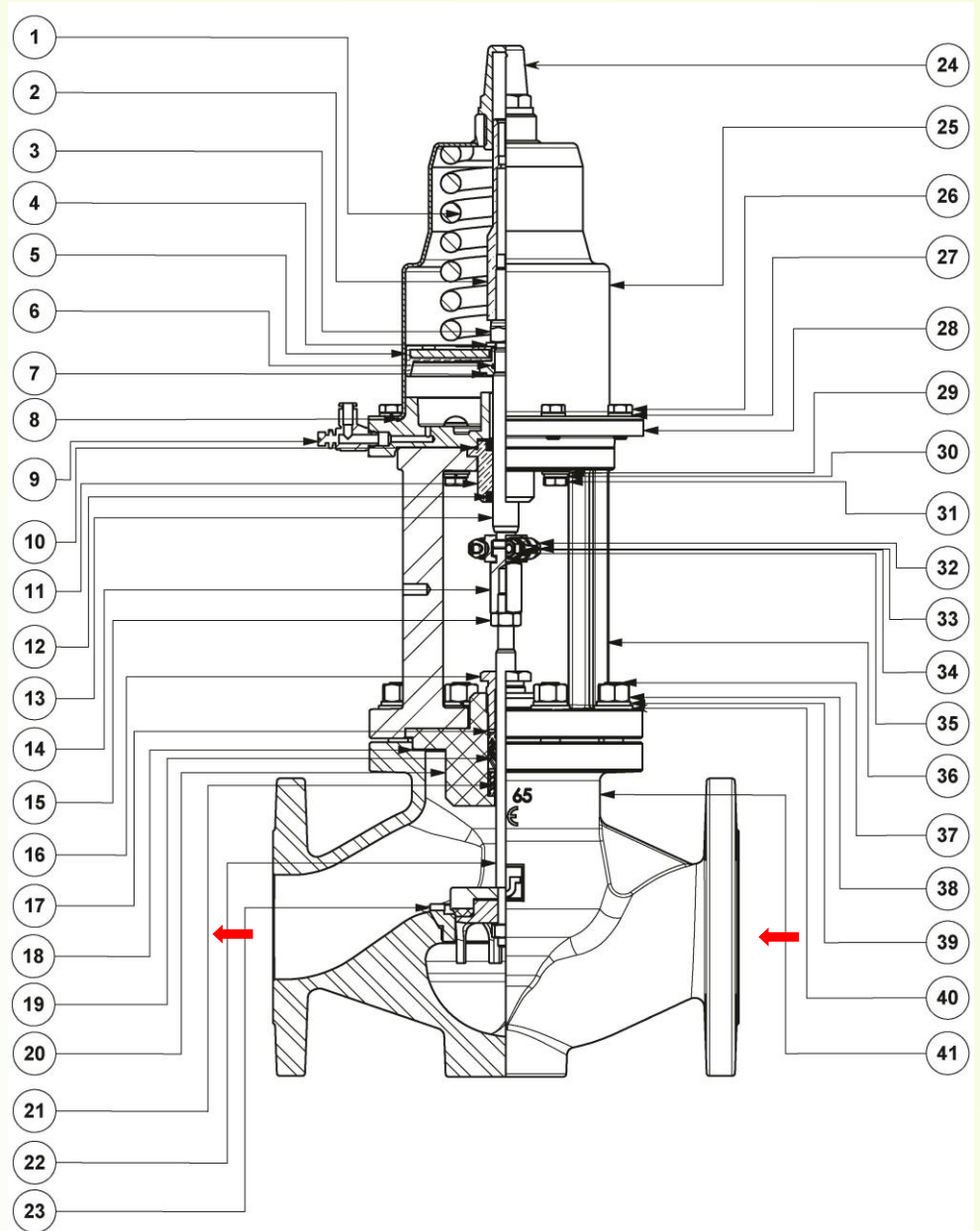
No.	DESCRIPTION
1	Servo control spring
2	Stroke indicator
3	Self- locking nut
4	Piston
5	Flat washer
6	DE gasket
7	Piston bearing washer
8	Fastening plate
9	O-Ring gasket
10	Flow rate adjuster
11	O-Ring gasket
12	O-Ring gasket
13	O-Ring gasket
14	Hexagonal-head screw
15	Adjustment nut
16	Hexagon nut
17	Distance ring washer
18	Packing gland
19	Body gasket
20	Packing gland spring
21	Shutter
22	Seat
23	Transparent cap
24	Spring housing piston
25	O-Ring gasket
26	Hexagonal-head screw
27	Spring washer
28	GRS valve adapter
29	Jig bushing
30	BA gasket
31	Servo control shaft
32	Spring washer
33	Clamp with indicator
34	Hexagon nut
35	Frame with intermediate body
36	Packing gland screw
37	Stud-bolt
38	Hexagon nut
39	Spring washer
40	Flat washer
41	Valve body



→ Flow direction

Table of Ø 125 – 160 servo control GRS components - 2-way NC

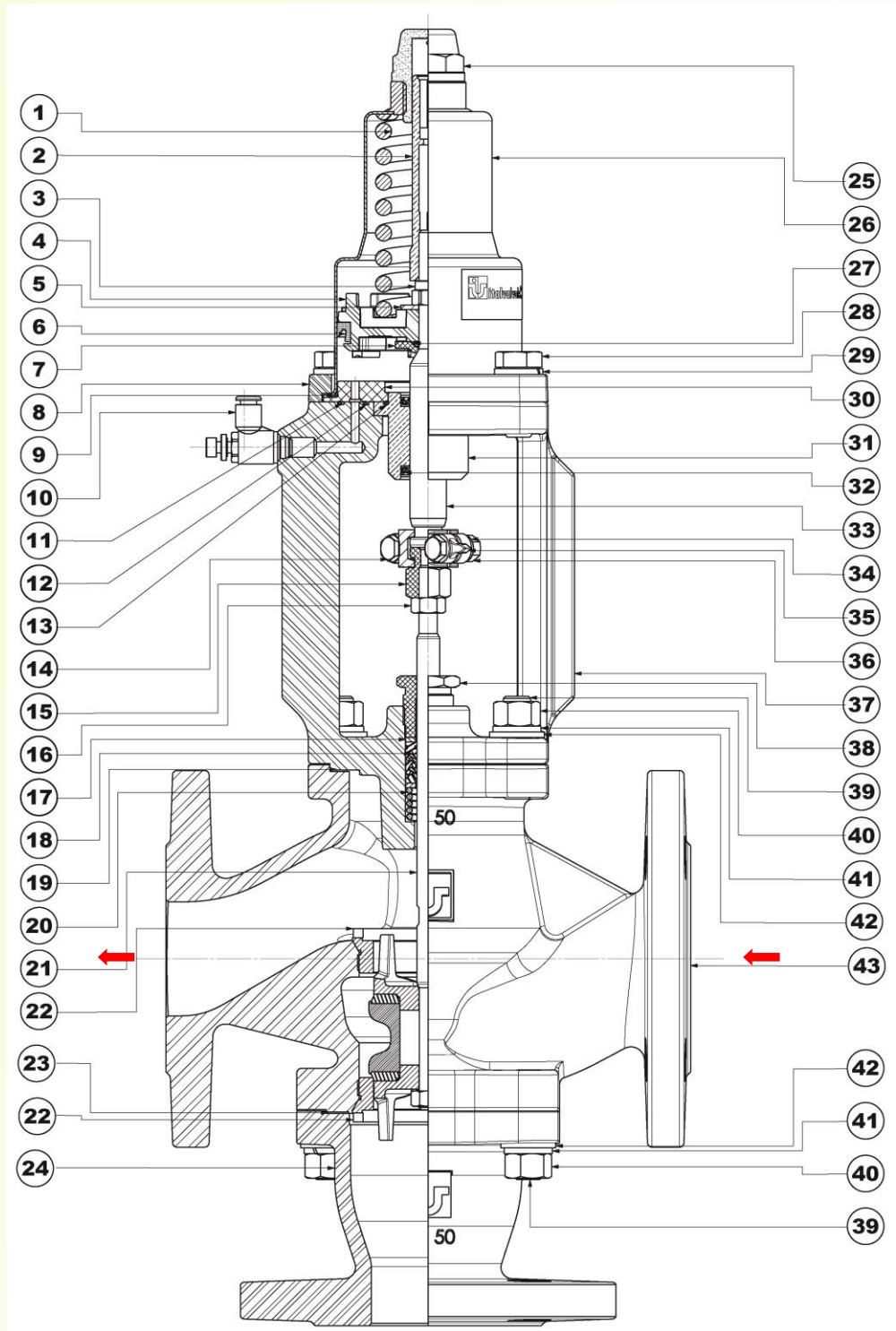
No.	DESCRIPTION
1	Servo control spring
2	Stroke indicator
3	Self- locking nut
4	Flat washer
5	TDUOP piston
6	O-Ring gasket
7	Piston bearing washer
8	O-Ring gasket
9	Flow rate adjuster
10	O-Ring gasket
11	Jig bushing
12	BA gasket
13	Servo control shaft
14	Adjustment nut
15	Hexagon nut
16	Packing gland screw
17	Distance ring washer
18	Body gasket
19	Packing gland
20	Intermediate body
21	Packing gland spring
22	Shutter
23	Seat
24	Transparent cap
25	Spring housing piston
26	Hexagonal-head screw
27	Spring washer
28	GRS plate
29	Flat washer
30	Spring washer
31	Hexagonal-head screw
32	Hexagonal-head screw
33	Clamp with indicator
34	Spring washer
35	Hexagon nut
36	Frame
37	Stud-bolt
38	Hexagon nut
39	Spring washer
40	Flat washer
41	Valve body



→ Flow direction

Table of GRS components - 3-way NC

No.	DESCRIPTION
1	Servo control spring
2	Stroke indicator
3	Self- locking nut
4	Piston
5	Flat washer
6	DE gasket
7	Piston bearing washer
8	Fastening plate
9	O-Ring gasket
10	Flow rate adjuster
11	O-Ring gasket
12	O-Ring gasket
13	O-Ring gasket
14	Hexagonal-head screw
15	Adjustment nut
16	Hexagon nut
17	Distance ring washer
18	Packing gland
19	Body gasket
20	Packing gland spring
21	Shutter
22	Seat
23	Bottom base gasket
24	Bottom base
25	Transparent cap
26	Spring housing piston
27	O-Ring gasket
28	Hexagonal-head screw
29	Spring washer
30	GRS valve adapter
31	Jig bushing
32	BA gasket
33	Servo control shaft
34	Spring washer
35	Clamp with indicator
36	Hexagon nut
37	Frame with intermediate body
38	Packing gland screw
39	Stud-bolt
40	Hexagon nut
41	Spring washer
42	Flat washer
43	Valve body



→ Flow direction

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