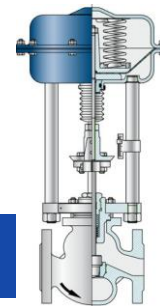


Technical data sheet; Control and On / Off valve series 8B

General data

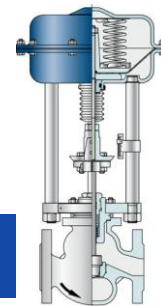
Series	8B
Nominal bore DN / NPS	15 – 100 / ½“ – 4“
Nominal pressure PN / ANSI	16 – 40 / Class 150 – 300
Characteristics	equal percentage, linear, On / Off
Rangeability	50:1 (kvs- values > 4 to ≤ 63), 30:1 (kvs- values ≤ 4 and > 63)
Plug guide	stem guided, optional: seat guided (grooved plug, perforated plug)
Leakage rate	metallic sealing: IEC 60534-4 leakage rate class IV (0,01% kvs-value); soft sealing: IEC 60534-4 leakage rate class VI, others on request
Flanges	according to DIN EN 1092-1 (2), form A-H, ANSI
Extension bonnet	up to + 450°C
Bellows seal bonnet	seamless, double walled, made of 1.4571 or equivalent optional Hastelloy and other materials
Heating jacket	inside thread and flange connections on request possible
Low temperature execution	up to – 196°C
Minimal kvs-values	0.04 – 0.0016 with LK plug, linear characteristic
Perforated plug	single (S) or 2 step perforated plug (SS)



Technical data sheet; Control and On / Off valve series 8B

Materials

Body material		EN		Temperatures		ASTM		Temperatures	
		0.7043 EN-GJS-400-18-LT		- 10 to 300°C		---		---	
		1.0619 GP240GH		- 10 to 400°C		A216WCB		- 29 to 400°C	
		1.4408 G-X5CrNiMo 19-11-2		- 196 to 400°C		A351CF8M		- 196 to 400°C	
		1.4581 GX5CrNiMoNb 19-11-2		- 10 to 500°C		---		---	
		1.7357 G17CrMo5-5 (BR 8C)		- 10 to 500°C		A217WC6		- 29 to 500°C	
Bonnet material		≤ DN 65 made of 1.4305/1.4404 ≥ DN 80 to 100 made of the same material as the body but with a stuffing box bush made of 1.4404							
Trim materials									
Var.	Contoured plug	Perforated plug (S/SS)		LK- plug	Seat	Seat seal		Max. permissible medium temperature ° C	
1	1.4404	---		---	1.4404	metallic		acc. stem sealing	
2	1.4404	---		---	1.4404	Soft		- 196 to 200°C	
3	1.4404 nitr.	---		---	1.4404 nitr.	metallic		acc. stem sealing	
4	1.4404 hard.	---			1.4404 hard.	metallic		acc. stem sealing	
5	---	1.4404		---	1.4404 nitr.	metallic		acc. stem sealing	
6	---	---		1.4404	1.4404 nitr.	metallic		acc. stem sealing	
Hastelloy and other materials possible on request									



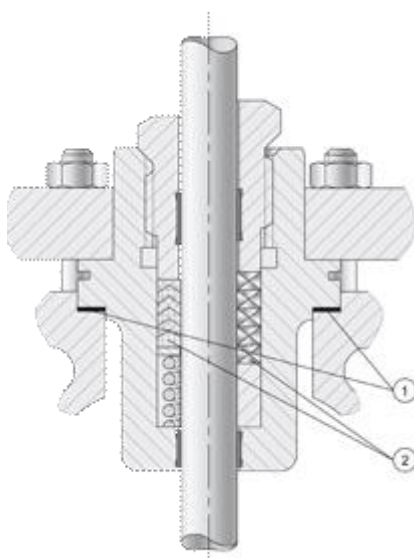
Technical data sheet; Control and On / Off valve series 8B

Admissible temperature range for stem sealing

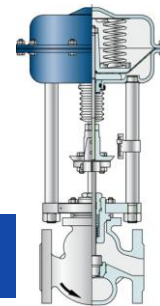
Type	Maintenance	Gasket (1)	Packing (2)	Medium T °C
B5	maintenance-free	Rivatherm super	PTFE – V-ring	- 200 to 200°C
C5	adjustable	Rivatherm super	Hamar 626	- 200 to 280°C
D5	adjustable	Rivatherm super	Grafiflex 6501	- 200 to 450°C
E5	adjustable	PTFE, 25% glass fiber	Hamar 617	- 190 to 220°C
F5	maintenance-free	Rivatherm super	PTFE/ PTFE carbon - V-ring	- 200 to 200°C
G5	maintenance-free	PTFE, 25% glass fiber	PTFE - V-ring	- 190 to 200°C
H5	maintenance-free	Gylon (FDA)	PTFE - V-ring	- 200 to 200°C
K5	adjustable	Rivatherm super	Special PTFE - V-ring	- 50 to 250°C

The bonnet must suit the temperature limits.

B5 / F5 / G5 / H5



C5 / D5 / E5



Technical data sheet; Control and On / Off valve series 8B

Pressure- temperature table according to DIN EN, pressures in bar

Ductile iron, 0.7043, EN-GJS-400-18-LT												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
PN 16	-	-	16	16	13	13	11	10	-	-	-	-

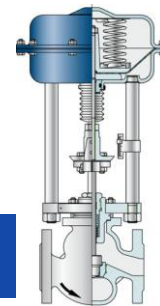
Cast steel, 1.0619, GPH240GH												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
PN 16	-	-	16	16	15	14	13	11	10	9	-	-
PN 25	-	-	25	25	23	22	20	17	16	14	-	-
PN 40	-	-	40	40	38	35	32	28	24	22	-	-

Corrosion resistant steel casting, 1.4408, G-X 5 CrNiMo 19-11-2												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
PN 16	16	16	16	16	14	13	12	11	11	10	-	-
PN 25	25	25	25	25	22	21	19	18	17	17	-	-
PN 40	40	40	40	40	36	33	31	29	28	27	-	-

Corrosion resistant steel casting, 1.4581, GX5CrNiMoNb 19-11-2												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
PN 16	-	-	16	16	15	14	14	13	12	12	12	12
PN 25	-	-	25	25	24	23	22	20	20	19	19	18
PN 40	-	-	40	40	39	37	35	33	32	31	30	29

Heat resisting cast steel, 1.7357, G17CrMo5-5 (Series 8C)												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
PN 40	-	-	40	40	40	40	40	40	38	36	33	26

Packing and gasket type as well as the bonnet must suit the temperature limits.



Technical data sheet; Control and On / Off valve series 8B

Pressure- temperature table according to ANSI, pressures in bar

Ductile iron												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
-	-	-	-	-	-	-	-	-	-	-	-	-

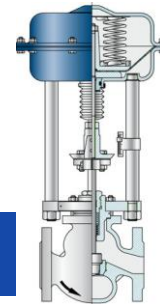
Cast steel, 1.0619, A 216 WCB												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
Class 150	-	-	19	17	15	13	12	10	8	6	-	-
Class 300	-	-	51	51	51	50	46	42	40	34	-	-

Corrosion resistant steel casting, 1.4408, A 351 CF8M												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
Class 150	19	19	19	16	14	13	12	10	8	6	-	-
Class 300	49	49	49	42	38	35	33	31	30	29	-	-

Corrosion resistant steel casting, 1.4581, A 351 CF8												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
Class 150	-	-	19	15	14	13	12	10	8	6	4	2
Class 300	-	-	49	40	37	34	32	30	29	28	27	26

Heat resisting cast steel, 1.7357, A 217 WC6												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
Class 300	-	-	51	51	49	48	46	42	40	36	33	25

Packing and gasket type as well as the bonnet must suit the temperature limits.



Technical data sheet; Control and On / Off valve series 8B

Actuator allocation and admissible differential pressures Δp

Control valves with contoured plug, PTFE V-ring and Po actuator

Flow against closing direction, spring closes (for bellows sealed valves see formula on the next page).

Actuator Po														Minimum air pressure setting (bar)		1.4		1.4		2		3		4		5		5.5	
Spring closes														Air pressure setting range (bar)		0.3 - 1.1		0.8 - 1.35		-		-		-		-		-	
Actuator size MA9...														16 A6 3R		16 A6 1S		16 A6 2S		16 A6 3S		16 A6 5S		16 A6 7S					
No. of springs														21 A6 3R		21 A6 1S		21 A6 2S		21 A6 4S		21 A6 5S		21 A6 7S					
Spring type														31 B6 3B		31 B6 1S		31 B6 2S		31 B6 3S		31 B6 5S		31 B6 7S					
														31 A6 3R		31 A6 1S		31 A6 2S		31 A6 3S		31 A6 5S		31 A6 6S		31A6 7S			
														41 A6 4R		41 A6 2S		41 A6 4S		41 A6 6S		41 A6 8S		41 A6 10S		41 A6 12S			
Valve														Permissible differential pressures (in bar) for each type of seal															
														metallic and soft seat (PTFE)		stellite		metallic and soft seat (PTFE)		stellite		metallic and soft seat (PTFE)		stellite		metallic and soft seat (PTFE)		stellite	
15	20	25	32	40	50	65	80	100	kvs	cv	ø	Stroke	Actuator size	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite				
½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	m³/h	gpm	mm	mm	MA9.																
									0.06	0.07	3	16	16 A6	25	10	40	30												
									0.1	0.12	4	16	16 A6	15	4	30	15												
									0.16	0.19			16 A6	15	4	30	15												
									0.25	0.29			16 A6	15	-	20	10												
									0.4	0.46	5	16	16 A6	15	-	20	10												
									0.63	0.73			16 A6	15	-	20	10												
									0.25	0.29			21 A6	40	40	40	40												
									0.4	0.46	5	16	21 A6	40	40	40	40												
									0.63	0.73			21 A6	40	40	40	40												
									1	1.2	8	16	16 A6	3	-	5	-	40	40										
													21 A6	40	40	40	28												
									1.6	1.9	10	16	16 A6	1	-	4	-	40	40										
													21 A6	40	40	27	17												
									2.5	2.9	12	16	16 A6	-	-	2	-	30	22	40	40								
													21 A6	40	40	18	9	40	40										
									4	4.7	15	16	16 A6	-	-	-	19	13	40	40									
													21 A6	20	15	10	5	40	40										
													31 B6	40	40	25	18												
									6.3	7.3	20	16	16 A6	-	-	-	-	9	3	20	14	38	33						
													21 A6	10	5	5	1	27	22	40	40								
													31 B6	35	30	15	9	40	40										
									10	11.5	25	16	16 A6	-	-	-	-	5	1	11	7	25	21	36	31				
													21 A6	8	3	3	-	20	15	40	40								
													31 B6	20	15	10	5	35	30										
									16	19	28/30	16	16 A6	-	-	-	-	3	1	7	3	15	10	23	20				
													21 A6	5	-	-	-	9	5	28	24	35	31	40	40				
													31 B6	15	10	5	-	25	20										
									25	29	36	16	16 A6	-	-	-	-	-	3	-	10	8	13	10					
													21 A6	3	-	-	-	9	6	15	10	25	25	40	40				
													31 B6	10	5	1	-	15	12	28	25								
									40	46	46	16	16 A6	-	-	-	-	-	1	-	5	2	7	5					
													21 A6	1	-	-	-	5	3	10	7	15	15	25	20				
													31 B6	5	2	-	-	10	8	15	13	29	25						
									63	73	50	16	16 A6	-	-	-	-	-	-	-	5	3	8	6					
													21 A6	1	-	-	-	4	2	7	5	15	10	22	20				
													31 B6	3	1	-	-	5	3	12	10	22	19						
									40	46	46	30	31 A6	3	1	1	-	10	8	17	15	30	28	40	40				
													41 A6	13	11	17	15	40	38										
									63	73	50	30	31 A6	2	-	-	-	10	8	15	13	27	24						
													41 A6	10	7	12	10	30	28										
									100	116	80	30	31 A6	1	-	-	-	2	1	5	4	8	6	10	8	12	11		
													41 A6	2	1	3	2	10	9	17	15	25	23	32	30	40	38		
									160	186	100	30	31 A6	-	-	-	-	1	-	2	1	5	4	6	5	8	6		
													41 A6	1	-	2	1	5	4	10	9	14	13	19	18	23	22		

Other minimal kvs- values from 0.04 - 0.0016m³/h, on request with stroke 16mm and linear characteristic possible

Actuator allocation and admissible differential pressures Δp

Flow against closing direction, spring closes.

$$\text{DN} > 65: \Delta p_{\text{bellows}} = \Delta p_{\text{Table}} - 530 (p_2 / d^2)$$

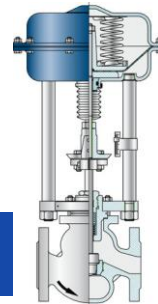
p2 (bar): pressure downstream of the valve
d (mm) seat ø (see table)

[illegible]

Actuator allocation and admissible differential pressures Δp

Flow against closing direction, spring opens (for bellows sealed valves see formula on the next page).

Other minimal kvs- values from 0.04 - 0.0016m³/h, on request with stroke 16mm and linear characteristic possible



Technical data sheet; Control and On / Off valve series 8B

Actuator allocation and admissible differential pressures Δp

On / Off valves with flat plug, PTFE V-ring and Ps actuator

Flow against closing direction, spring opens.

To calculate the admissible Δp values for bellows sealed valves, use the formula below
(also applies for control valves):

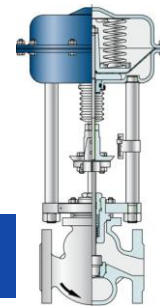
$$DN \leq 65: \Delta p_{\text{bellows}} = \Delta p_{\text{Table}} - 250 (p_2 / d^2)$$

$$DN > 65: \Delta p_{\text{bellows}} = \Delta p_{\text{Table}} - 530 (p_2 / d^2)$$

p_2 (bar): pressure downstream of the valve

d (mm) seat $\varnothing$ (see table)

Actuator Ps										Minimum air pressure setting (bar) Actuator size MA9... No. of springs Spring type				1.4		2		3		4		5		5.5		
Spring opens														16 A6 3R 21 A6 3R 31 B6 3B 31 A6 3R 41 A6 4R												
Valve														Permissible differential pressures (in bar) for each type of seal												
Nominal bores										kvs m³/h	cv gpm	Seat ø mm	Stroke ↓ mm	Actuator size MA9.	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite
15 ½"	20 ¾"	25 1"	32 1¼"	40 1½"	50 2"	65 2½"	80 3"	100 4"	metallic and soft seat (PTFE)						stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)	stellite	metallic and soft seat (PTFE)
									4.3	5	15	8	16 A6	8	1	28	21	40	40							
													21 A6	40	40	40	40									
													31 B6	40	40											
									6.6	7.7	20	8	16 A6	3	-	14	10	38	32	40	40					
													21 A6	39	34	40	40	40	40							
													31 B6	40	40	40	40									
									10.4	12.1	25	8	16 A6	1	-	7	3	23	19	38	34					
													21 A6	24	20	40	40	40	40							
													31 B6	40	40	40	40									
									19	22	28	8	16 A6	-	-	5	1	18	14	30	26	40	36			
													21 A6	18	15	34	30	40	40							
													31 B6	40	40	40	40									
									27	31	36	12	16 A6	-	-	3	-	10	7	16	13	23	20	28	25	
													21 A6	10	7	15	13	37	34	40	40					
													31 B6	27	24	39	36	40	40							
									45	52	46	12	16 A6	-	-	1	-	5	3	8	6	12	10	15	12	
													21 A6	5	2	7	5	20	18	26	23	36	34	40	38	
													31 B6	10	8	23	20	40	40							
									80	93	50	12	16 A6	-	-	-	-	4	2	7	5	10	8	12	10	
													21 A6	4	1	5	3	15	13	22	20	30	28	35	33	
													31 B6	8	6	19	17	40	40							
									115	133	80	20	21 A6	-	-	1	-	2	1	5	4	9	7	11	10	
													31 A6	2	1	1	-	11	10	19	18	26	25	30	29	
													41 A6	8	6	13	12	27	26	40	40					
									160	186	100	25	31 A6	1	-	3	2	5	4	10	9	14	13	16	15	
													41 A6	2	1	6	5	15	14	25	24	34	33	39	38	

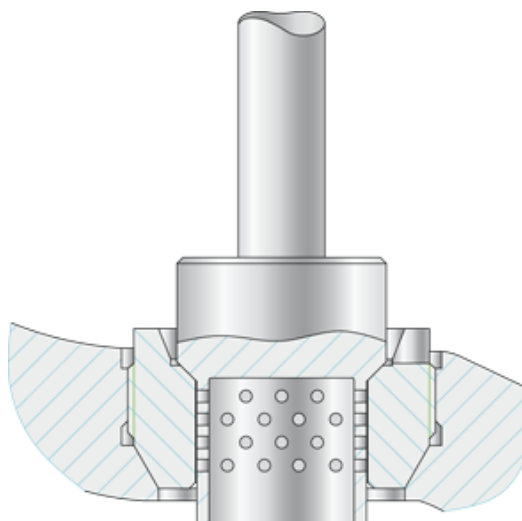


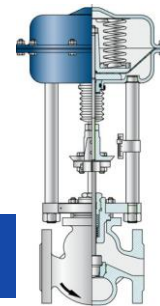
Technical data sheet; Control and On / Off valve series 8B

Single step perforated plug (S) Kvs- values (linear and equal percentage characteristic)

Kvs (m³/h)	2.5	4.0	5.1	6.3	10	16	20	25	40	55	63	70	75	115
DN 20														
DN 25														
DN 32														
DN 40														
DN 50														
DN 65														
DN 80														
DN100														

For actuator allocation and admissible differential pressures Δp , see the table, admissible differential pressures for **control valves**, spring closes (Po) or spring opens (Ps) (depending on safety position) select the corresponding DN with largest seat diameter.



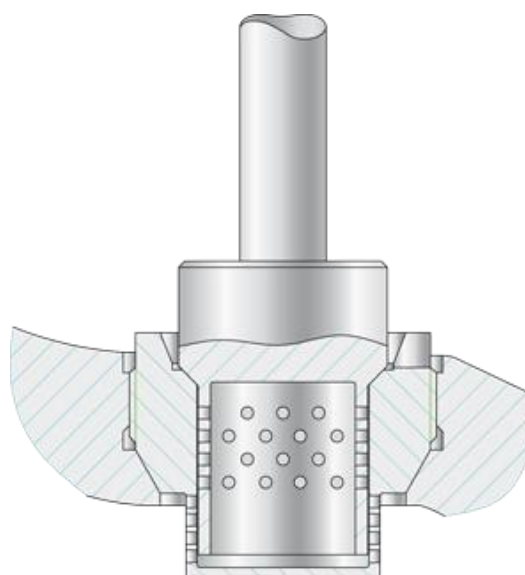


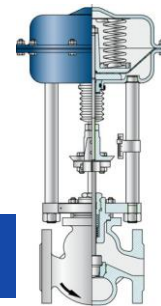
Technical data sheet; Control and On / Off valve series 8B

Double step perforated plug (SS) Kvs- values (linear and equal percentage characteristic)

Kvs (m³/h)	3.1	4.0	6.3	10	14.2	15	18	23	25	26	29	36	64	91
DN 20														
DN 25														
DN 32														
DN 40														
DN 50														
DN 65														
DN 80														
DN100														

For actuator allocation and admissible differential pressures Δp , see the table, admissible differential pressures for **control valves**, spring closes (Po) or spring opens (Ps) (depending on safety position) select the corresponding DN with largest seat diameter.

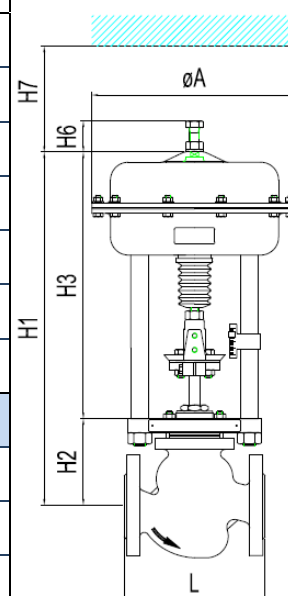




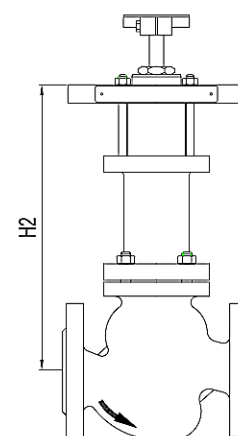
Technical data sheet; Control and On / Off valve series 8B

Dimensions and weights (in mm and kg)

Valve 8B (dimensions with flanges according to DIN EN 1092-1 resp. ANSI Class 150/300 RF/RTJ)															
DN (mm)						15	20	25	32	40	50	65	80	100	
ANSI NPS (Inch)						1/2"	3/4"	1"	1¼"	1½"	2"	2½"	3"	4"	
L	PN 16 ... PN 40					130	150	160	180	200	230	290	310	350	
L	Class 150 RF					178	181	184	---	222	254	---	311	365	
L	Class 150 RTJ					---	---	197	---	235	267	---	311	365	
L	Class 300 RF					190	194	197	---	235	267	---	317	368	
L	Class 300 RTJ					202	206	210	---	248	282	---	333	384	
H2	(mm)					97	97	97	97	127	127	127	208	233	
G	Weight (kg)					6.5	8.5	9	10	17	19	28	54	77	
Actuator															
Typ		G	ØA	H3	H6	H7	H1								
9.16 A6...		4	162	244	30	40	341	341	341	341	371	371	371	---	---
9.21 A6...		6.5	210	305	42	40	402	402	402	402	432	432	432	---	---
9.31 B6...		18	310	315	42	40	412	412	412	412	442	442	442	---	---
9.31 A6...		19	310	335	42	40	---	---	---	---	---	---	---	543	568
9.41 A6...		48	415	397	38	40	---	---	---	---	---	---	---	605	630

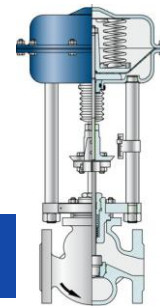


Extension version without actuator										
DN (mm)		15	20	25	32	40	50	65	80	100
ANSI NPS (Inch)		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
H2	Insulating part (mm)	284	284	284	284	284	284	284	379	379
G	Weight (kg)	10	12	13	14	22	24	32	56	84



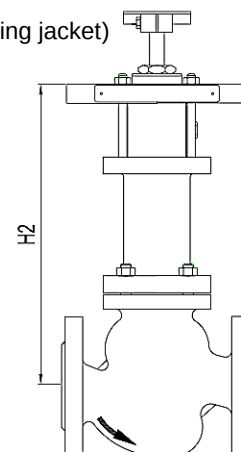
8B_TD_E_07/17_Technical changes reserved

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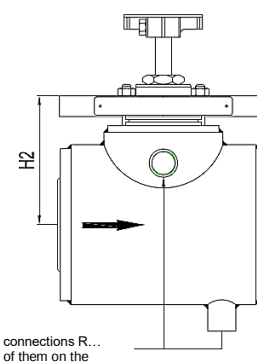


Dimensions and weights (in mm and kg, Versions with extension, bellows and heating jacket)

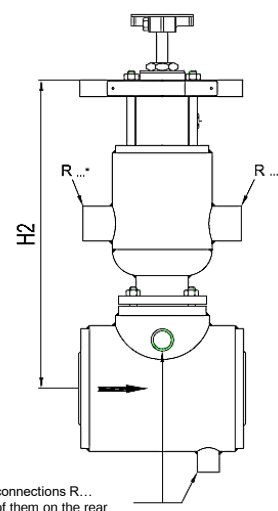
Bellows version without actuator										
DN (mm)		15	20	25	32	40	50	65	80	100
ANSI NPS (Inch)		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
H2	Insulating part (mm)	284	284	284	284	284	284	284	383	383
G	Weight (kg)	10	12	13	14	22	23	32	56	84

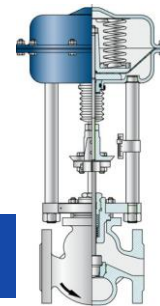


Heating jacket version without actuator, heating jacket on valve body										
DN (mm)		15	20	25	32	40	50	65	80	100
ANSI NPS (Inch)		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
H2	(mm)	97	97	97	97	127	127	127	208	233
R	(Inch)	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
G	Weight (kg)	9	11	12	13	20	23	32	58	82



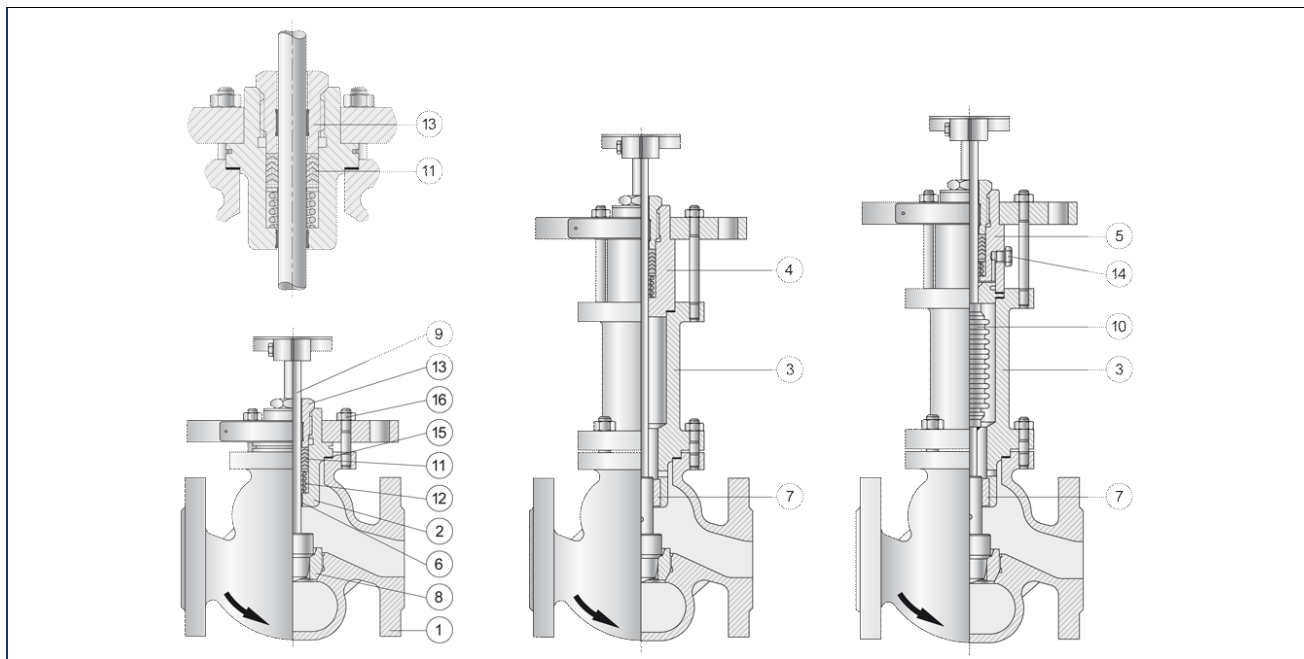
Heating jacket version without actuator, heating jacket on valve body and bellows bonnet										
DN (mm)		15	20	25	32	40	50	65	80	100
ANSI NPS (Inch)		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
H2	(mm)	284	284	284	284	284	284	284	383	383
R	(Inch)	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
G	Weight (kg)	12	15	16	17	25	28	36	60	89





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Spare parts



Pos		Image			Carbon steel GS-C25 (GP240GH)	Stainless Steel GX5CrNiMoNb
		1	2	3		
1	Body				1.0619	1.4581 / 1.4408
2	Bonnet				1.4305 (DN15-65), 1.0619 (DN80-100)	1.4435
3	Extension				1.0619	1.4435 / 1.4408
4	Bonnet				1.4404	
5	Bonnet				1.4404	
6	Guide bush				PTFE / 1.4435	
7	Guide bush				1.4404 nitrided	
8	Seat				1.4404	
9	Stem with plug				1.4404	
10	Bellows				1.4571	
11	Packing (kit)				PTFE- V-rings / Hamar / Graphite / PTFE / PTFE- Graphite	
12	Spring				1.4571	
13	stuffing box screw				1.4404	
14	Control connection screw				1.4435	
15	Body gasket				Graphite	
16	Studs and nuts				A 2 70	