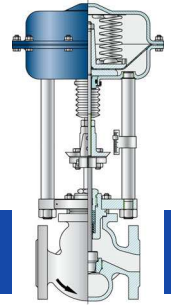


## Technical data sheet; Control and On / Off valve series 8B

### General data

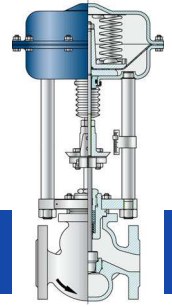
<b>Series</b>	<b>8B</b>
<b>Nominal bore DN / NPS</b>	<b>15 – 100 / ½“ – 4“</b>
<b>Nominal pressure PN / ANSI</b>	<b>16 – 40 / Class 150 – 300</b>
<b>Characteristics</b>	equal percentage, linear, On / Off
<b>Rangeability</b>	50:1 (kvs- values > 4 to ≤ 63), 30:1 (kvs- values ≤ 4 and > 63)
<b>Plug guide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

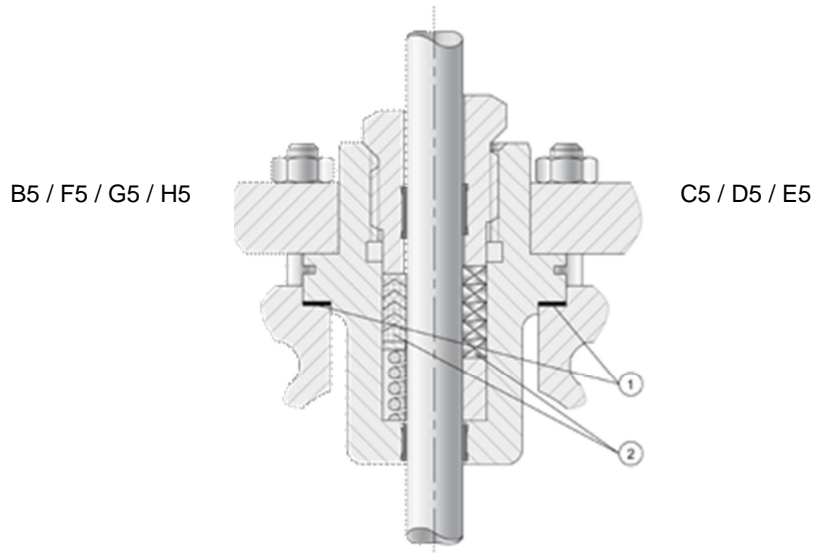


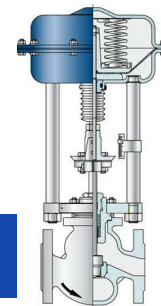
## Technical data sheet; Control and On / Off valve series 8B

### 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.





## 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	-	-	-	-

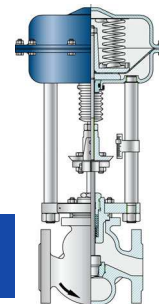
Cast steel, 1.0619, GPH240GH												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
PN 16	-	-	16	16	15	14	13	11	10	9	-	-
PN 25	-	-	25	25	23	22	20	17	16	14	-	-
PN 40	-	-	40	40	38	35	32	28	24	22	-	-

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
-	-	-	-	-	-	-	-	-	-	-	-	-

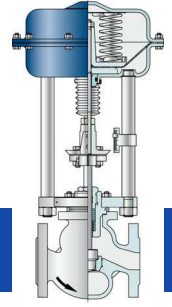
Cast steel, 1.0619, A 216 WCB												
T °C	-200	-100	-10	100	150	200	250	300	350	400	450	500
Class 150	-	-	19	17	15	13	12	10	8	6	-	-
Class 300	-	-	51	51	51	50	46	42	40	34	-	-

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.



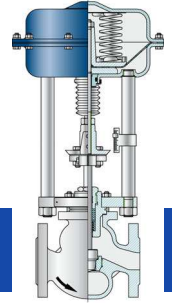
## Technical data sheet; Control and On / Off valve series 8B

### Actuator allocation and admissible differential pressures $\Delta p$

#### 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													
		Air pressure setting range (bar)		0.3 - 1.1	0.8 - 1.35	-	-	-	-	-													
Spring closes		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	31 A6 7S	31 A6 12S												
				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																					
		Nominal bores		Actuator		metallic and soft seat (PTFE)		stellite		metallic and soft seat (PTFE)		stellite											
15	20	25	32	40	50	65	80	100	kvs	cv	Seat	Stroke	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
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	m³/h	gpm	mm	mm											
									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						
													16 A6	1	-	4	-	40	40				
													21 A6	40	40	27	17						
													16 A6	-	-	2	-	30	22	40	40		
													21 A6	40	40	18	9	40	40				
													16 A6	-	-	-	-	19	13	40	40		
													21 A6	20	15	10	5	40	40				
													31 B6	40	40	25	18						
													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				
													16 A6	-	-	-	-	5	1	11	7	25	21
													21 A6	8	3	3	-	20	15	40	40		
													31 B6	20	15	10	5	35	30				
													16 A6	-	-	-	-	3	1	7	3	15	10
													21 A6	5	-	-	-	9	5	28	24	35	31
													31 B6	15	10	5	-	25	20				
													16 A6	-	-	-	-	-	-	3	-	10	8
													21 A6	3	-	-	-	9	6	15	10	25	25
													31 B6	10	5	1	-	15	12	28	25		
													16 A6	-	-	-	-	-	-	1	-	5	2
													21 A6	1	-	-	-	5	3	10	7	15	15
													31 B6	5	2	-	-	10	8	15	13	29	25
													16 A6	-	-	-	-	-	-	5	3	8	6
													21 A6	1	-	-	-	4	2	7	5	15	10
													31 B6	3	1	-	-	5	3	12	10	22	19
													31 A6	3	1	1	-	10	8	17	15	30	28
													41 A6	13	11	17	15	40	38				
													31 A6	2	-	-	-	10	8	15	13	27	24
													41 A6	10	7	12	10	30	28				
													31 A6	1	-	-	-	2	1	5	4	8	6
													41 A6	2	1	3	2	10	9	17	15	25	23
													31 A6	-	-	-	-	1	-	2	1	5	4
													41 A6	1	-	2	1	5	4	10	9	14	13
													31 A6	1	-	-	-	2	1	5	4	8	6
													41 A6	2	1	3	2	10	9	17	15	25	23
													31 A6	-	-	-	-	1	-	2	1	5	4
													41 A6	1	-	2	1	5	4	10	9	14	13
													31 A6	1	-	-	-	2	1	5	4	8	6
													41 A6	2	1	3	2	10	9	17	15	25	23
													31 A6	-	-	-	-	1	-	2	1	5	4
													41 A6	1	-	2	1	5	4	10	9	14	13
													31 A6	1	-	-	-	2	1	5	4	8	6
													41 A6	2	1	3	2	10	9	17	15	25	23
													31 A6	-	-	-	-	1	-	2	1	5	4
													41 A6	1	-	2	1	5	4	10	9	14	13
													31 A6	1	-	-	-	2	1	5	4	8	6
													41 A6	2	1	3	2	10	9	17	15	25	23
													31 A6	-	-	-	-	1	-	2	1	5	4
													41 A6	1	-	2	1	5	4	10	9	14	13
													31 A6	1	-	-	-	2	1	5	4	8	6
													41 A6	2	1	3	2	10	9	17	15	25	23
													31 A6	-	-	-	-	1	-	2	1	5	4
													41 A6	1	-	2	1	5	4	10	9	14	13
													31 A6	1	-	-	-	2	1	5	4	8	6
													41 A6	2	1	3	2	10	9	17	15	25	23
													31 A6	-	-	-	-	1	-	2	1	5	4
													41 A6	1	-	2	1	5	4	10	9	14	13
													31 A6	1	-	-	-	2	1	5	4	8	6
													41 A6	2	1	3	2	10	9	17	15	25	23
													31 A6	-	-	-	-	1	-	2	1	5	4



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

### Actuator allocation and admissible differential pressures $\Delta p$

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

Flow against closing direction, spring closes.

To calculate the admissible  $\Delta p$  values for bellows sealed valves, use the formula below  
(also applies for control valves):

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

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

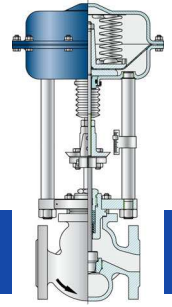
$p_2$  (bar): pressure downstream of the valve  
 $d$  (mm) seat  $\varnothing$  (see table)

Actuator Po														Minimum air pressure setting (bar)		1.4		2		3		4		5		5.5				
Spring closes														Actuator size MA9...		16 A6 1S		16 A6 2S		16 A6 4S		16 A6 5S		16 A6 7S		31 A6 7S				
														No. of springs		21 A6 1S		21 A6 2S		21 A6 4S		21 A6 5S		21 A6 7S		31 A6 6S				
														Spring type		31 B6 1S		31 B6 2S		31 B6 3S		31 B6 5S		41 A6 6S		41 A6 12S				
Valve														Permissible differential pressures (in bar) for each type of seal																
Nominal bores										kvs	cv	Seat $\varnothing$	Stroke $\uparrow$	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	
15	20	25	32	40	50	65	80	100																						
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"		m <sup>3</sup> /h	gpm	mm	mm																	
														16 A6	3	-	25	18	40	40										
														21 A6	16	10	40	40												
														31 B6	36	29														
														16 A6	-	-	13	8	38	32										
														21 A6	8	3	33	28	40	40										
														31 B6	20	15														
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														21 A6	5	2	20	16	40	40										
														31 B6	13	9														
														16 A6	-	-	6	2	18	14	23	19	36	33						
														21 A6	2	-	15	10	40	40										
														31 B6	8	6														
														16 A6	-	-	1	-	8	5	11	8	18	15						
														21 A6	1	-	6	3	21	18	28	25	40	38						
														31 B6	3	-	20	16	30	27										
														16 A6	-	-	-	-	4	1	6	3	9	6						
														21 A6	-	-	3	1	10	8	14	12	24	22						
														31 B6	-	-	10	8	18	16	30	27								
														41 A6	20	18	40	40												
														16 A6	-	-	-	-	3	-	4	2	8	5						
														21 A6	-	-	2	-	8	5	12	10	20	18						
														31 B6	-	-	8	6	15	13	27	25								
														41 A6	16	14	40	39												
														21 A6	-	-	-	-	1	-	2	-	4	3						
														31 A6	-	-	3	1	4	3	11	10	15	14	17	16				
														41 A6	4	3	11	10	20	19	28	27	38	36						
														31 A6	-	-	2	1	3	2	5	4	8	7	7	6				
														41 A6	1	-	5	4	11	10	16	15	22	21	28	27				







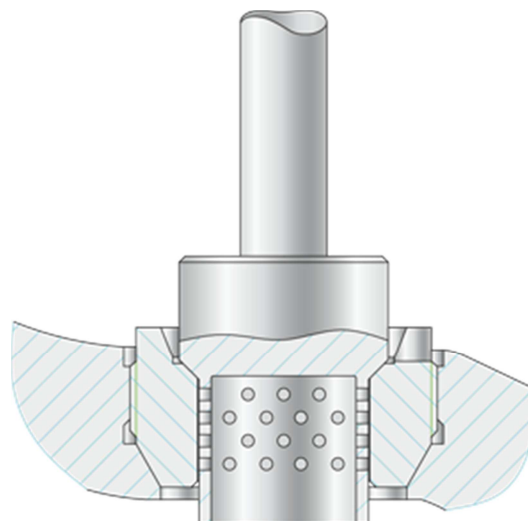


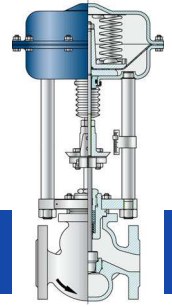
Technical data sheet; Control and On / Off valve series 8B

**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  $\Delta p$ , 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.



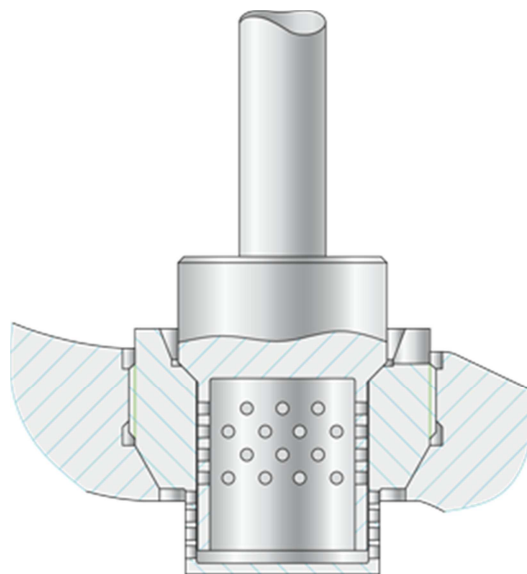


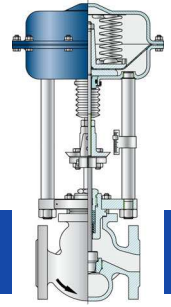
Technical data sheet; Control and On / Off valve series 8B

**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  $\Delta p$ , 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.

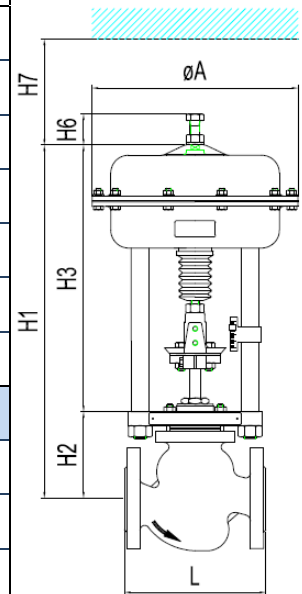




## Technical data sheet; Control and On / Off valve series 8B

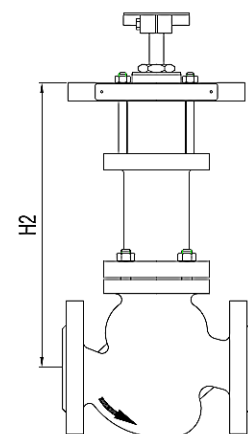
### Dimensions and weights (in mm and kg)

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"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"				
L	PN 16 ... PN 40	130	150	160	180	200	230	290	310	350				
L	Class 150 RF	178	---	184	---	222	254	---	298	352				
L	Class 150 RTJ	---	---	197	---	235	267	---	311	365				
L	Class 300 RF	190	---	197	---	235	267	---	317	368				
L	Class 300 RTJ	201	---	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

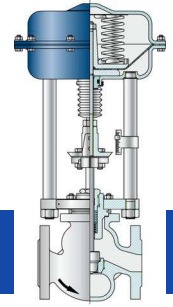


ANSI 1/2", Class 150 RF also available with face to face dimension 184 mm according to ISA75.08.01

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	



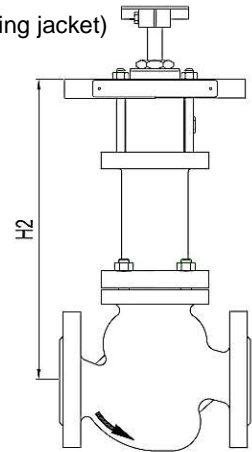
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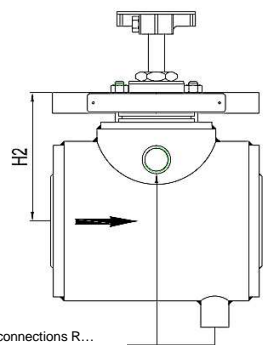
**Technical data sheet; Control and On / Off valve series 8B**

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

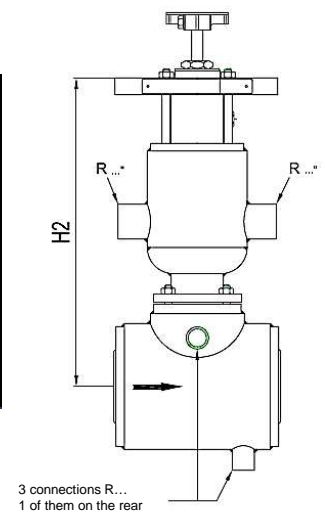
Bellows version without actuator										
DN (mm)		15	20	25	32	40	50	65	80	100
ANSI NPS (Inch)		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
<b>H2</b>	Insulating part (mm)	284	284	284	284	284	284	284	383	383
<b>G</b>	Weight (kg)	10	12	13	14	22	23	32	56	84



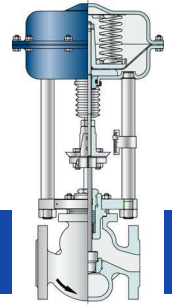
Heating jacket version without actuator, heating jacket on valve body										
DN (mm)		15	20	25	32	40	50	65	80	100
ANSI NPS (Inch)		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
<b>H2</b>	(mm)	97	97	97	97	127	127	127	208	233
<b>R</b>	(Inch)	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
<b>G</b>	Weight (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"
<b>H2</b>	(mm)	284	284	284	284	284	284	284	383	383
<b>R</b>	(Inch)	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
<b>G</b>	Weight (kg)	12	15	16	17	25	28	36	60	89

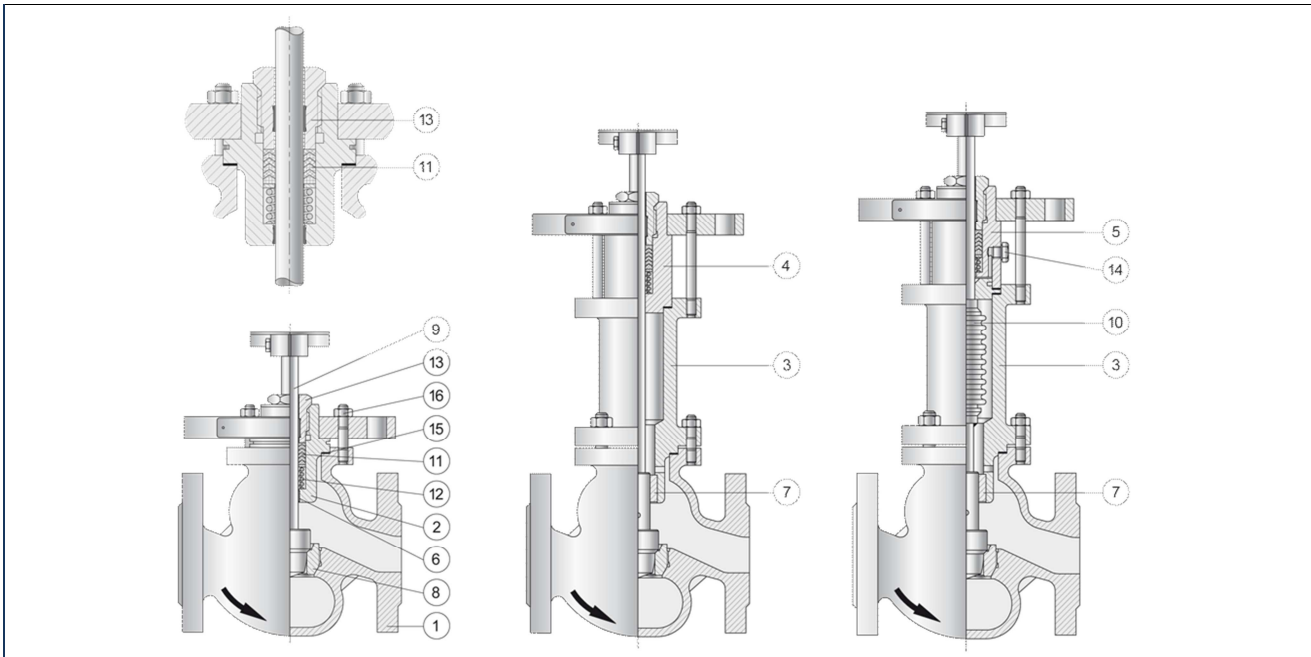


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**Technical data sheet; Control and On / Off valve series 8B**

**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	