

Valtek FlowAct

High Performance Actuator

250 - 3000 cm², 0,25 - 60 kN

FCD SAENTBFACT 09/15



FlowAct - Features

Application

For installation on control valves, direct or reverse action, for throttling or on/off operation.

Product features

- Multi-spring compact design
- Radial spring arrangement permits a low mounting height
- Low volume between diaphragm and case gives fast response times
- Strong operating force by permissible pressure supply up to 6 bar / 87 psig
- Permissible ambient temperature -40 up to 80°C / -40 up to 176°F, operating in the limits temporarily allowed otherwise lifetime will be reduced
- Stable guided stem
- Fabric-reinforces roll-type diaphragm with minimum area variation which the stem position on loss in operating force for various stroke positions - linearity is retained.
- Stem bushing requires no maintenance
- Stable yoke in spheroidal cast-iron
- Positioner direct mounting without tubing (spring to close)
- Central mounting on the control valve
- Yoke and stem coupling with mounting surfaces according to NAMUR (DIN IEC 65 B CO)
- Top resp. side mounted hand wheel

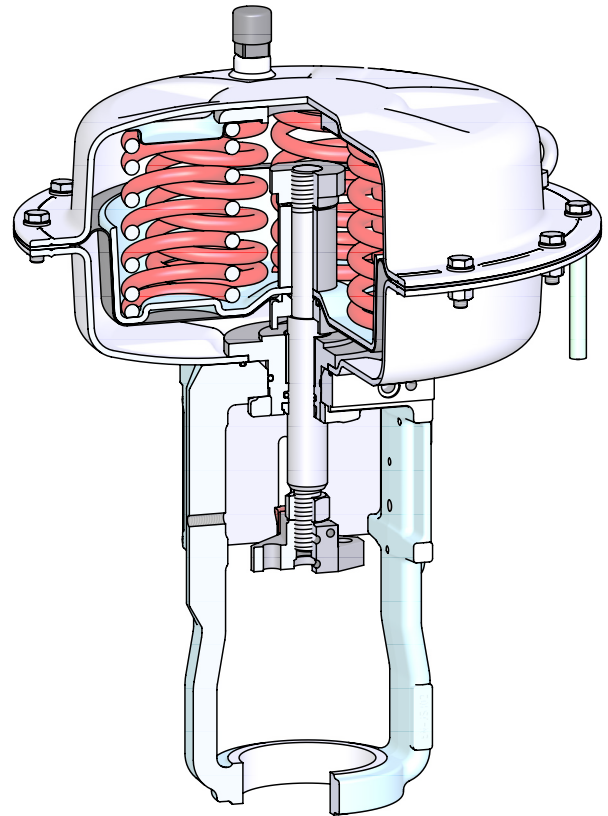
Operation

The diaphragm is actuated by the air supply 0,2 - 1,0 bar with a pneumatic positioner. The actuator stem moves as soon as the diaphragm force exceeds the counterforce of the springs. There are two operational modes depending on the arrangement of the spring package:

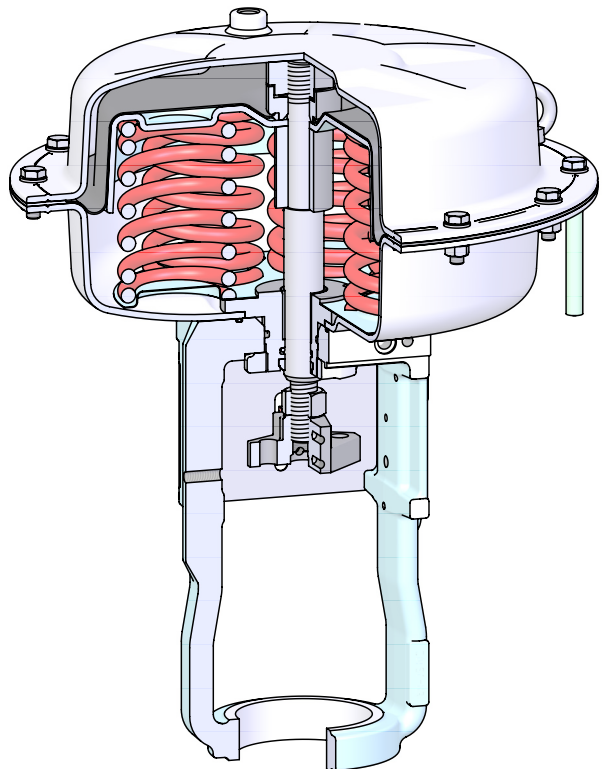
1. Stem extends by air failure
2. Stem retracts by air failure

The control valve can be opened or closed with a rising signal. On air failure, the actuator is set back to the zero position by spring force (fail-safe-position).

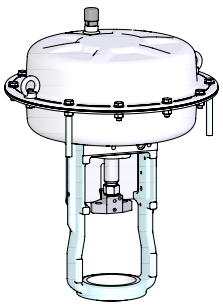
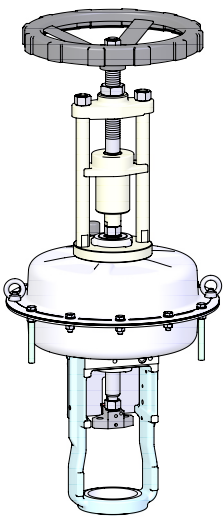
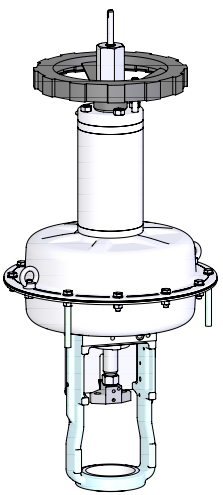
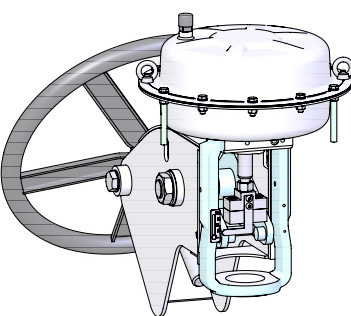
Quality assurance system certificated acc. EN ISO 9001 : 2000 including product development.

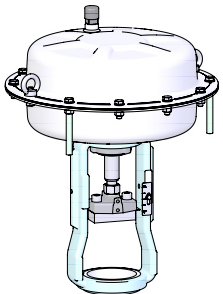
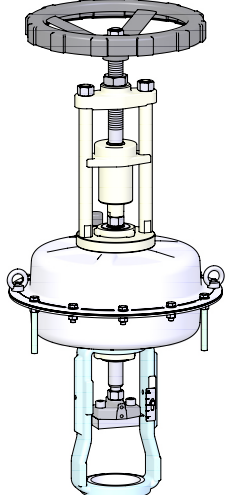
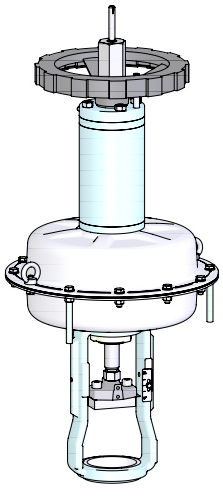


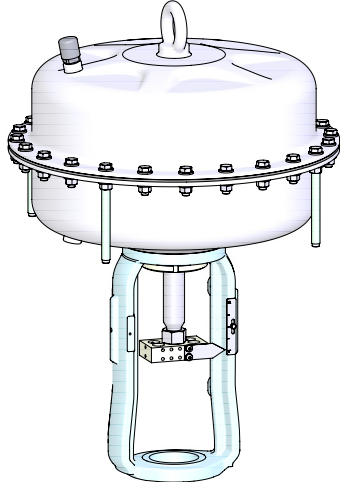
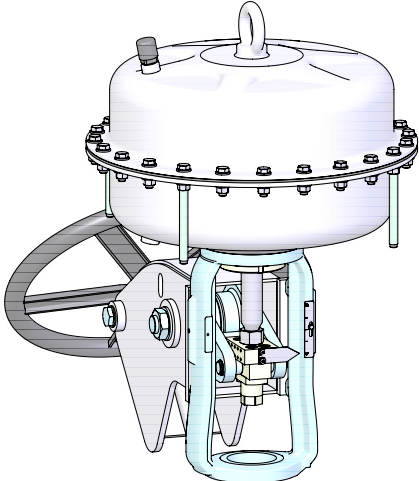
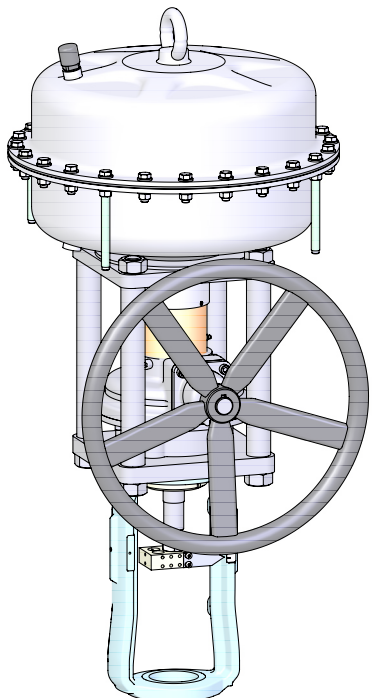
Stem extends by air failure



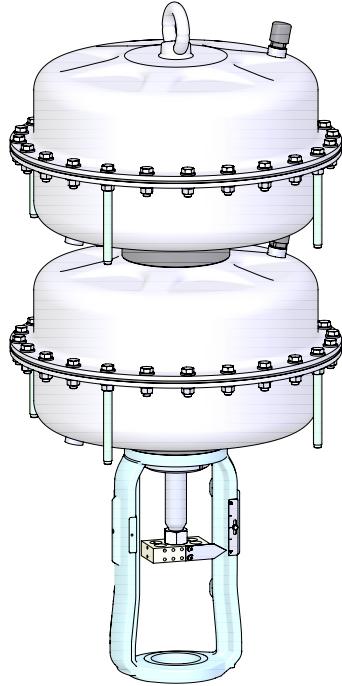
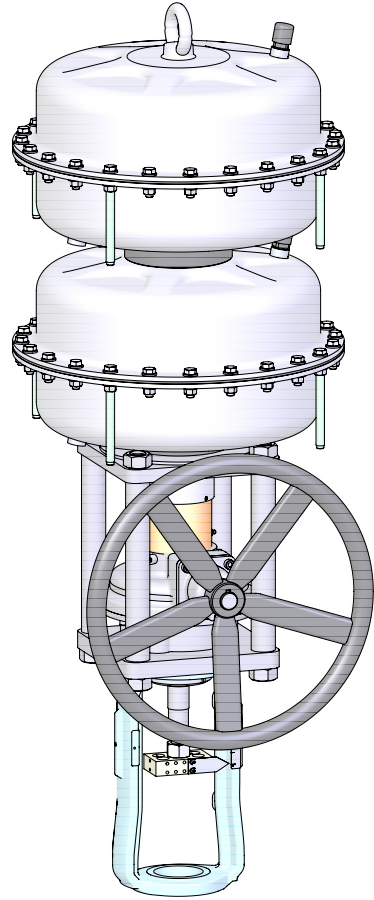
Stem retracts by air failure

Design / Code	Yoke Code	Size / Code		Hand wheel	Model	
Actuator with MULTI function yoke for integrated mounting of the positioner and solenoid valve	I D I	T T G	250 500 700	253 503 701	without Code O	
	I D I	T T G	250 500	253 503	light Code L	
	I D I	T T G	250 500 700	253 503 701	heavy Code H	
	I	G	250 500 700	253 503 701	side Code S	

Design / Code		Yoke Code	Size / Code		Hand wheel	Model
Actuator with NAMUR yoke	P P C	B D B	250 500 700	253 503 701	without Code O	
	P P C	B D B	250 500	253 503	light Code L	
	P P C	B D B	250 500 700	253 503 701	heavy Code H	

Design / Code		Yoke Code	Size / Code		Hand wheel	Model
Actuator with NAMUR yoke	P P C	B D B	1500	1502	without Code O	
	P P C	B D B	1500	1502	side ¹⁾ Code S	
	P P C	B D B	1500	1502	central Code Z	

¹⁾ The side mounted handwheel is designed for 39 kN, however, the hand forces will be clearly exceeded the hand forces for manually operated valves !

Design / Code		Yoke Code	Size / Code		Hand wheel	Model
Actuator with NAMUR yoke	P P	B D	3000	3002	without Code O	
	P P	B D	3000	3002	central Code Z	

Positioning Force for Actuator Size - 250 to 700 (DIN)

Effective Area		Stroke		Spring Range		Yoke Type Code			Stem extends by Air failure			Stem retracts by Air failure	
cm ²	Code	mm	Code	bar	Code				nec. Air Supply (bar)	max. Air Supply (bar)	max. Force (N)	max. Air Supply (bar)	max. Force (N)
250	253	10	M	0,8 - 1,6	MU	G	T	B	2,0	2,5	2 000	6,0	11 000
				1,4 - 2,4	IY				2,8	3,0	3 500	6,0	9 000
				2,7 - 4,1	CW				4,5	5,0	6 750	6,0	4 750
		20	A	0,2 - 1,0	AD				1,4	2,0	500	6,0	12 500
				0,5 - 1,9	BL				2,3	2,5	1 250	6,0	10 250
				1,0 - 2,4	DY				2,8	3,0	2 500	6,0	9 000
				1,5 - 2,7	VC				3,1	3,5	3 750	6,0	8 250
				1,5 - 3,8	VI				4,2	4,5	3 750	6,0	5 500
				2,0 - 4,8	FY				5,2	5,5	5 000	6,0	3 000
				2,0 - 4,8	FY				1,4	2,0	1 000	6,0	25 000
500	503	20	A	0,2 - 1,0	AD	G	T	B	2,3	2,5	2 500	6,0	20 500
				0,5 - 1,9	BL				2,8	3,0	5 000	6,0	18 000
				1,0 - 2,4	DY				3,1	3,5	7 500	6,0	16 500
				1,5 - 2,7	VC				4,2	4,5	7 500	6,0	11 000
				1,5 - 3,8	VI				5,2	5,5	10 000	6,0	6 000
				2,0 - 4,8	FY				1,4	2,0	1 000	6,0	25 000
		40	B	0,2 - 1,0	AD				2,3	2,5	2 500	6,0	20 500
				0,5 - 1,9	BL				2,8	3,0	5 000	6,0	18 000
				1,0 - 2,4	DY				3,1	3,5	7 500	6,0	16 500
				1,5 - 2,7	VC				4,2	4,5	7 500	6,0	11 000
700	701	20	A	1,8 - 2,7	JC	G	T	B	5,2	5,5	10 000	6,0	6 000
				2,3 - 3,4	TD				3,1	3,5	12 600	6,0	23 100
				3,0 - 4,2	RJ				3,8	4,0	16 100	6,0	18 200
		40	B	0,2 - 1,0	AD				4,6	5,0	21 000	6,0	12 600
				0,5 - 1,9	BL				1,4	2,0	1 400	6,0	35 000
				1,0 - 2,4	DY				2,3	2,5	3 500	6,0	28 700
				1,5 - 2,7	VC				2,8	3,0	7 000	6,0	25 200
				1,5 - 3,8	VI				3,1	3,5	10 500	6,0	23 100
				2,0 - 4,8	FY				4,2	4,5	10 500	6,0	15 400
				2,0 - 4,8	FY				5,2	5,5	14 000	6,0	8 400
60	C	0,2 - 1,0	AD	1,4	2,0	1 400	6,0	35 000					
		0,5 - 1,9	BL	2,3	2,5	3 500	6,0	28 700					
		1,0 - 2,4	DY	2,8	3,0	7 000	6,0	25 200					
		1,5 - 3,8	VI	4,2	4,5	10 500	6,0	15 400					
		2,0 - 4,8	FY	5,2	5,5	14 000	6,0	8 400					

8

Attention:

- The max. air supply has picked out for a long operating life !
- Max. allowable stem-force for type V726, V738, V740, V724, V760, C726 and V701
Stem Ø = 12 mm → 13 500 N, Ø = 16 mm → 23 000 N, Ø = 20 mm → 39 000 N
- Max. design pressure for the actuators → 6 bar!

Stem retracts by Air failure (bar / N)										
1,6	1,8	2,0	2,2	2,5	2,8	3,2	3,6	4,0	4,5	5,0
	500	1 000	1 500	2 250	3 000	4 000	5 000	6 000	7 250	8 500
1 500	2 000	2 500	3 000	3 750	4 500	5 500	6 500	7 500	8 750	10 000
		250	750	1 500	2 250	3 250	4 250	5 250	6 500	7 750
3 000	4 000	5 000	6 000	7 500	9 000	11 000	13 000	15 000	17 500	20 000
		500	1 500	3 000	4 500	6 500	8 500	10 500	13 000	15 500
3 000	4 000	5 000	6 000	7 500	9 000	11 000	13 000	15 000	17 500	20 000
		500	1 500	3 000	4 500	6 500	8 500	10 500	13 000	15 500
					700	3 500	6 300	9 100	12 600	16 100
4 200	5 600	7 000	8 400	10 500	12 600	15 400	18 200	21 000	24 500	28 000
		700	2 100	4 200	6 300	9 100	11 900	14 700	18 200	21 700
4 200	5 600	7 000	8 400	10 500	12 600	15 400	18 200	21 000	24 500	28 000
		700	2 100	4 200	6 300	9 100	11 900	14 700	18 200	21 700

Force in both home positions - for Three Way Valves only	
nec. Air (bar)	max. Force (N)
1,2	500
2,4	1 250
3,4	2 500
4,2	3 750
5,3	3 750
1,2	1 000
2,4	2 500
3,4	5 000
4,2	7 500
5,3	7 500
1,2	1 000
2,4	2 500
3,4	5 000
4,2	7 500
5,3	7 500
4,5	12 600
5,7	16 100
1,2	1 400
2,4	3 500
3,4	7 000
4,2	10 500
5,3	10 500
1,2	1 400
2,4	3 500
3,4	7 000
5,3	10 500

Positioning Force for Actuator Size - 1500 (DIN)

Effective Area		Stroke		Spring Range		Yoke Type Code		Stem extends by Air failure			Stem retracts by Air failure			
cm ²	Code	mm	Code	bar	Code			nec. Air Supply (bar)	max. Air Supply (bar)	max. Force (N)	max. Air Supply (bar)	max. Force (N)		
1500	1502	20	A	0,8 - 1,6	MU	B	D	2,0	2,5	12 000	5,6	60 000		
				1,5 - 2,1	VP			2,5	3,0	22 500	6,0	58 500		
		40	B	0,2 - 1,0	AD			1,4	2,0	3 000	5,0	60 000		
				0,4 - 2,0	GF			2,4	3,0	6 000	6,0	60 000		
				0,75 - 1,4	KI			1,8	2,0	11 250	5,4	60 000		
				1,2 - 2,5	NZ			2,9	3,5	18 000	6,0	53 000		
				1,5 - 2,7	VC			3,1	3,5	22 500	6,0	49 500		
				2,0 - 3,5	FS			3,9	4,5	30 000	6,0	37 500		
				2,6 - 4,2	AJ			4,6	5,0	39 000	6,0	27 000		
				60	C			0,2 - 1,0	AD	1,4	2,0	3 000	5,0	60 000
		0,4 - 2,0	GF					2,4	3,0	6 000	6,0	60 000		
		0,8 - 1,4	KI					1,8	2,0	11 250	5,4	60 000		
		1,5 - 2,7	VC					3,1	3,5	22 500	6,0	49 500		
		1,9 - 3,2	LM					3,6	4,0	28 500	6,0	42 000		
		2,0 - 3,5	FS					3,9	4,5	30 000	6,0	37 500		
		2,6 - 4,2	AJ					4,6	5,0	39 000	6,0	27 000		
		80	D					0,2 - 1,0	AD	1,4	2,0	3 000	5,0	60 000
				0,4 - 2,0	GF			2,4	3,0	6 000	6,0	60 000		
				0,8 - 1,4	KI			1,8	2,0	11 250	5,4	60 000		
				1,5 - 2,7	VC			3,1	3,5	22 500	6,0	49 500		
				2,0 - 3,5	FS			3,9	4,5	30 000	6,0	37 500		
				2,6 - 4,2	AJ			4,6	5,0	39 000	6,0	27 000		
				100	E			0,9 - 1,9	HL	2,3	2,5	13 500	5,9	60 000
								1,2 - 2,6	NA	3,0	3,5	18 000	6,0	51 000
		1,8 - 3,8	JI					4,2	4,5	27 000	6,0	33 000		
		2,0 - 4,3	FL					4,7	5,0	30 000	6,0	25 500		

Stem retracts by Air failure										
1,6	1,8	2,0	2,2	2,5	2,8	3,2	3,6	4,0	4,5	5,0
	3 000	6 000	9 000	13 500	18 000	24 000	30 000	36 000	43 500	51 000
9 000	12 000	15 000	18 000	22 500	27 000	33 000	39 000	45 000	52 500	60 000
			3 000	7 500	12 000	18 000	24 000	30 000	37 500	45 000
9 000	12 000	15 000	18 000	22 500	27 000	33 000	39 000	45 000	52 500	60 000
			3 000	7 500	12 000	18 000	24 000	30 000	37 500	45 000
9 000	12 000	15 000	18 000	22 500	27 000	33 000	39 000	45 000	52 500	60 000
			3 000	7 500	12 000	18 000	24 000	30 000	37 500	45 000
		1 500	4 500	9 000	13 500	19 500	25 500	31 500	39 000	46 500

Force in both home positions - for Three Way Valves only	
nec. Air (bar)	max. Force (N)
2,4	12 000
3,6	22 500
1,2	3 000
2,4	6 000
2,2	11 250
3,7	18 000
4,2	22 500
5,5	30 000
1,2	3 000
2,4	6 000
2,2	11 250
4,2	22 500
5,1	28 500
5,5	30 000
1,2	3 000
2,4	6 000
2,2	11 250
4,2	22 500
5,5	30 000
2,8	13 500
3,8	18 000
5,6	27 000

Positioning Force for Actuator Size - 3000 (DIN)

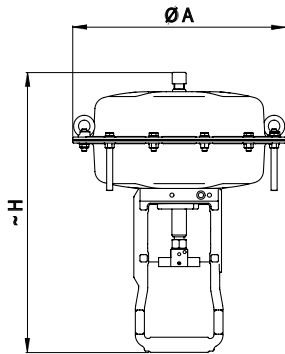
Effective Area		Stroke		Spring Range		Yoke Type Code			Stem extends by Air failure			Stem retracts by Air failure	
cm ²	Code	mm	Code	bar	Code				nec. Air Supply (bar)	max. Air Supply (bar)	max. Force (N)	max. Air Supply (bar)	max. Force (N)
3000	3002	40	B	0,2 - 1,0	AD		B	D	1,4	2,0	6 000	3,0	60 000
				0,4 - 2,0	GF				2,4	3,0	12 000	4,0	60 000
				0,75 - 1,4	KI				1,8	2,0	22 500	3,4	60 000
				1,0 - 2,4	DY				2,8	3,0	30 000	4,4	60 000
				1,3 - 2,1	EP				2,5	3,0	39 000	4,1	60 000
				2,0 - 3,5	FS				3,9	4,5	60 000	5,5	60 000
		60	C	0,2 - 1,0	AD		B	1,4	2,0	6 000	3,0	60 000	
				0,4 - 2,0	GF			2,4	3,0	12 000	4,0	60 000	
				0,75 - 1,4	KI			1,8	2,0	22 500	3,4	60 000	
				1,0 - 2,4	DY			2,8	3,0	30 000	4,4	60 000	
				1,3 - 2,1	EP			2,5	3,0	39 000	4,1	60 000	
				2,0 - 3,5	FS			3,9	4,5	60 000	5,5	60 000	
		80	D	0,2 - 1,0	AD		B	D	1,4	2,0	6 000	3,0	60 000
				0,4 - 2,0	GF				2,4	3,0	12 000	4,0	60 000
				0,75 - 1,4	KI				1,8	2,0	22 500	3,4	60 000
				1,0 - 2,4	DY				2,8	3,0	30 000	4,4	60 000
				1,3 - 2,1	EP				2,5	3,0	39 000	4,1	60 000
				2,0 - 3,5	FS				3,9	4,5	60 000	5,5	60 000
		100	E	0,9 - 1,9	HL		B	2,3	2,5	27 000	3,9	60 000	
				1,2 - 2,6	NA			3,0	3,5	36 000	4,6	60 000	
				1,8 - 3,8	JI			4,2	4,5	54 000	5,8	60 000	
				2,0 - 4,3	FL			4,7	5,0	60 000	6,0	51 000	

Stem retracts by Air failure (bar / N)										
1,6	1,8	2,0	2,2	2,5	2,8	3,2	3,6	4,0	4,5	5,0
18 000	24 000	30 000	36 000	45 000	54 000					
			6 000	15 000	24 000	36 000	48 000	60 000		
18 000	24 000	30 000	36 000	45 000	54 000					
			6 000	15 000	24 000	36 000	48 000	60 000		
18 000	24 000	30 000	36 000	45 000	54 000					
			6 000	15 000	24 000	36 000	48 000	60 000		
		3 000	9 000	18 000	27 000	39 000	51 000			

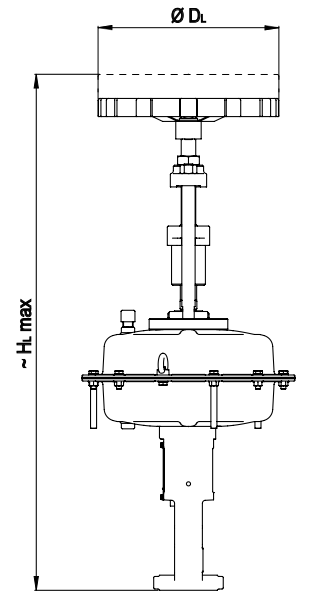
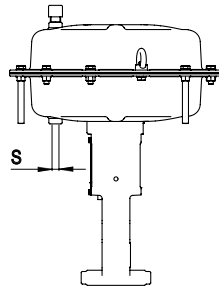
Force in both home positions - for Three Way Valves only	
nec. Air (bar)	max. Force (N)
1,2	6 000
2,4	12 000
2,2	22 500
3,4	30 000
3,4	39 000
5,5	60 000
1,2	6 000
2,4	12 000
2,2	22 500
3,4	30 000
3,4	39 000
5,5	60 000
1,2	6 000
2,4	12 000
2,2	22 500
3,4	30 000
3,4	39 000
5,5	60 000
2,8	27 000
3,8	36 000
5,6	54 000

Dimensions - DIN-Units

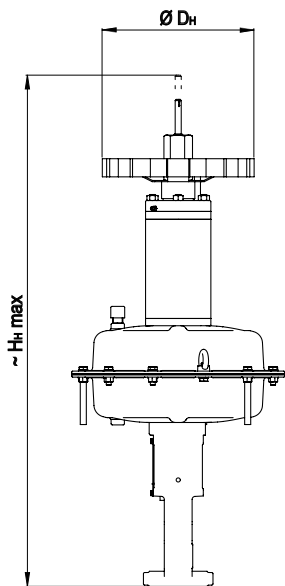
MULTI - Yoke design, Type IT, DT, IG



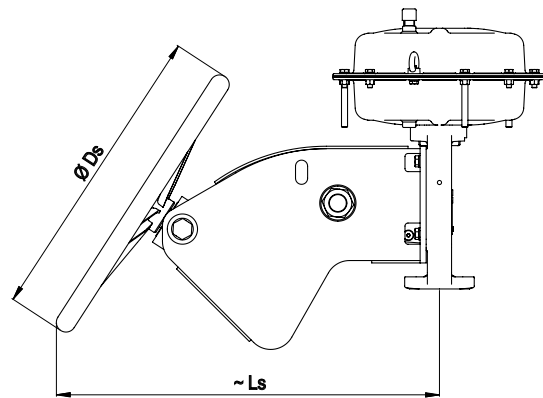
Standard MULTI yoke actuator - Type IT



IT - Actuator with hand wheel "light"



IT - Actuator with hand wheel "heavy"

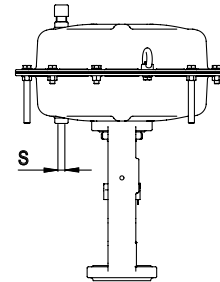
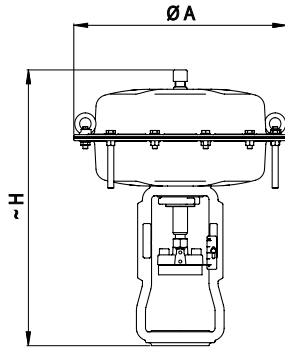


IG - Actuator with hand wheel "side"

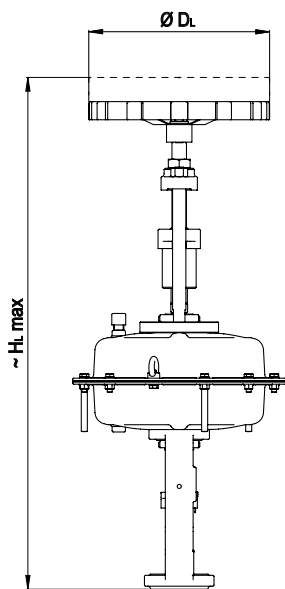
Designation	Actuator Size	250		500		700		
		Stroke mm	10	20	20	40	20	40
Ø A	mm	260		355		390		
~ H	mm	340		425	465	500	505	535
S = air connection	in.	G 1/4 for Type IT, IG / G 1/2 for Type DT						
Ø DL	mm	200		300		-		
~ HL max	mm	580	590	845	855	-		
Ø DH	mm	200		250		350		
~ HH max	mm	565	575	835	850	970	980	1 000
Ø Ds	mm	200		500				
~ Ls	mm	210		655				
~ Weight	kg	11		23		33		39
~ Weight with hand wheel "light"	kg	16		31		-		
~ Weight with hand wheel "heavy"	kg	19		31		55	61	
~ Weight with hand wheel "side"	kg	16		53		63		69

Dimensions - DIN-Units

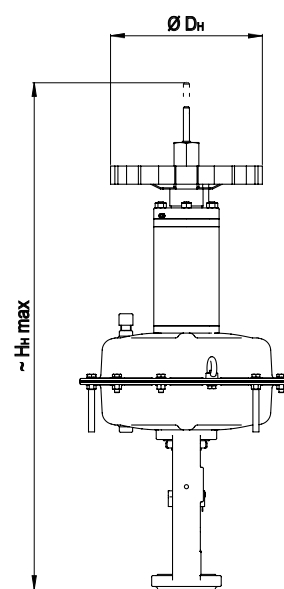
NAMUR - Yoke design, Type PB, CB, PD



Standard NAMUR yoke actuator - Type PB



PB - Actuator with hand wheel "light"

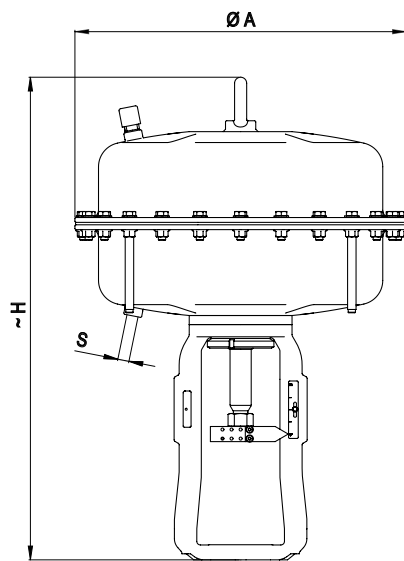


PB - Actuator with hand wheel "heavy"

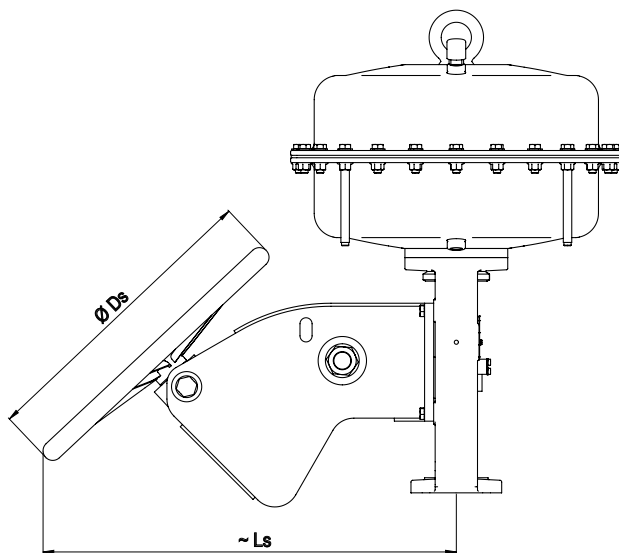
Designation	Actuator Size	250		500		700		
		Stroke mm		10	20	20	40	20
Ø A	mm	260		355		390		
~ H	mm	335		420	460	465	500	560
S = air connection	in.	G 1/4 for Type PB, PD / G 1/2 for Type CB						
Ø DL	mm	200		300		-		
~ HL max	mm	610	620	810	795			
Ø DH	mm	200		250		350		
~ HH max	mm	590	600	800	845	935	975	1 055
~ Weight	kg	10		21	22	31		44
~ Weight with hand wheel "light"	kg	15		29	30	-		-
~ Weight with hand wheel "heavy"	kg	17		30	31	52	53	59

Dimensions - DIN-Units

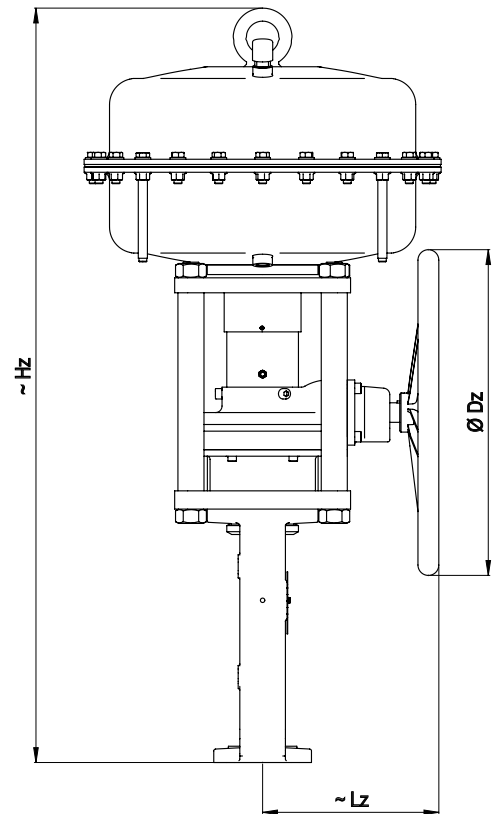
NAMUR - Yoke design, Type PB, PD



Standard NAMUR yoke actuator - Type PB



PB - Actuator with hand wheel "side"

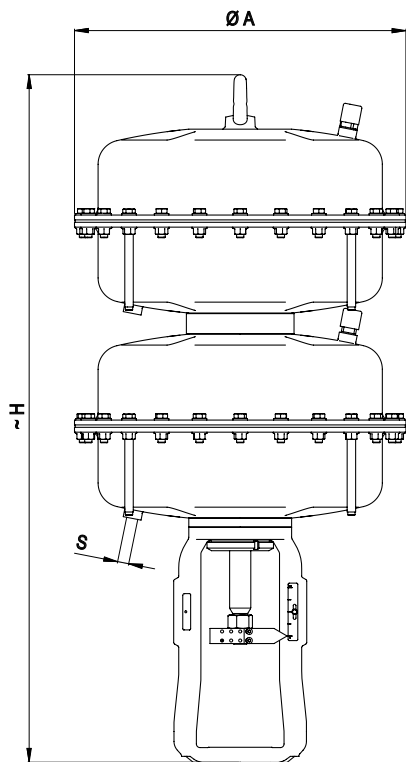


PB - Actuator with hand wheel "centric"

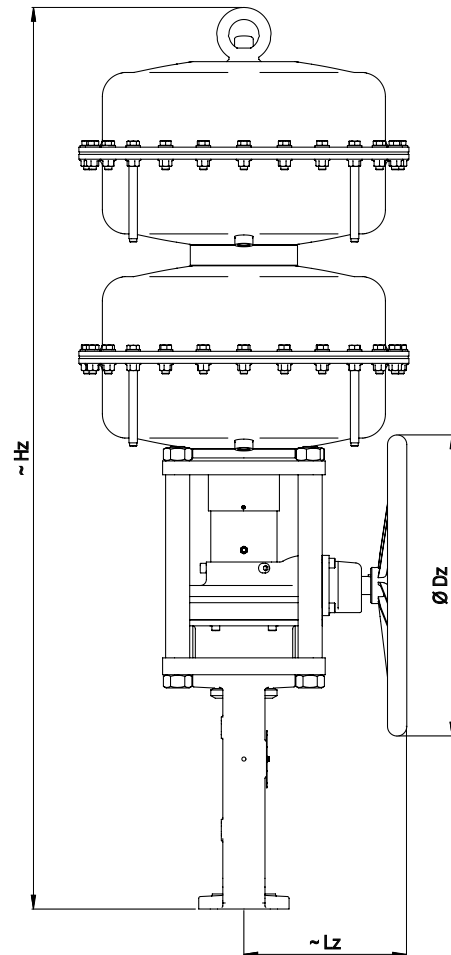
Designation	Actuator Size	1500					
		Stroke mm	20	40	60	80	100
Ø A	mm				548		
~ H	mm				800		
S = air connection	in.				G 1/2		
Ø Ds	mm			500			
~ Ls	mm			685			
~ Hz	mm				1160		
Ø Dz	mm				500		
~ LZ	mm				270		
~ Weight	kg				125		
~ Weight with hand wheel "side"	kg			170			
~ Weight with hand wheel "centric"	kg				210		

Dimensions - DIN-Units

NAMUR - Yoke design, Type PB, PD



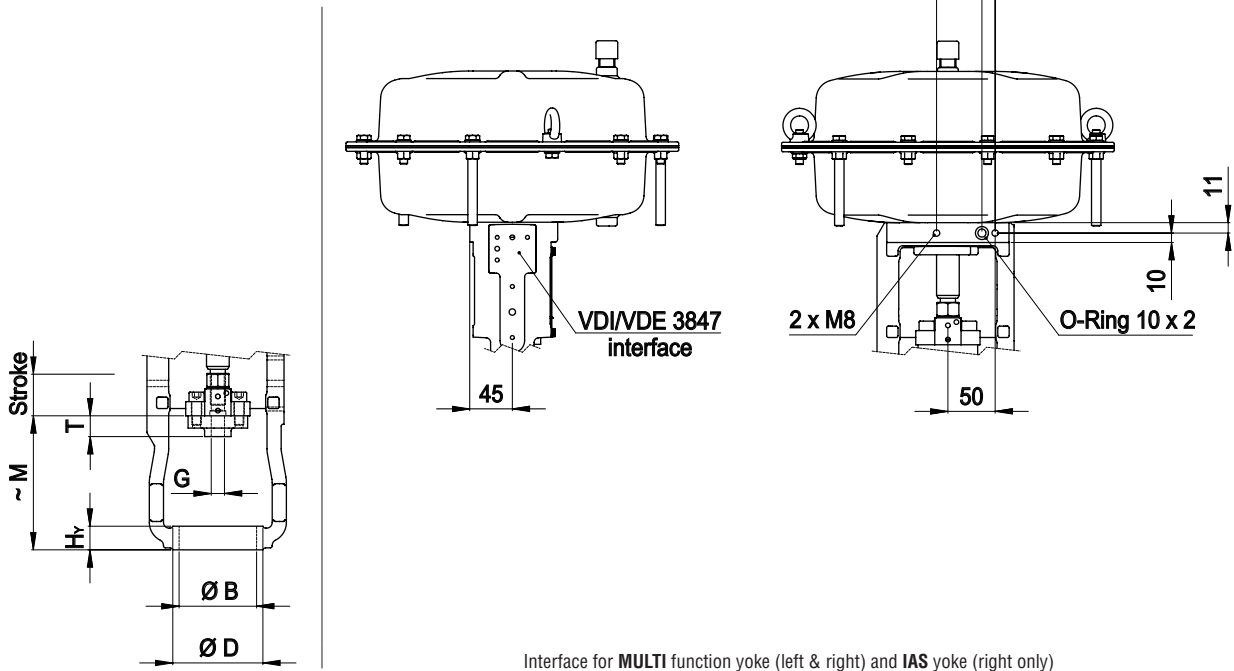
Standard NAMUR yoke actuator - Type PB



PB - Actuator with hand wheel "centric"

Designation	Actuator Size Stroke mm	3000			
		40	60	80	100
Ø A	mm	548			
~ H	mm	1140			
S = air connection	in.	2 x G 1/2			
~ Hz	mm	1500			
Ø Dz	mm	500			
~ Lz	mm	270			
~ Weight	kg	230			
~ Weight with hand wheel "centric"	kg	315			

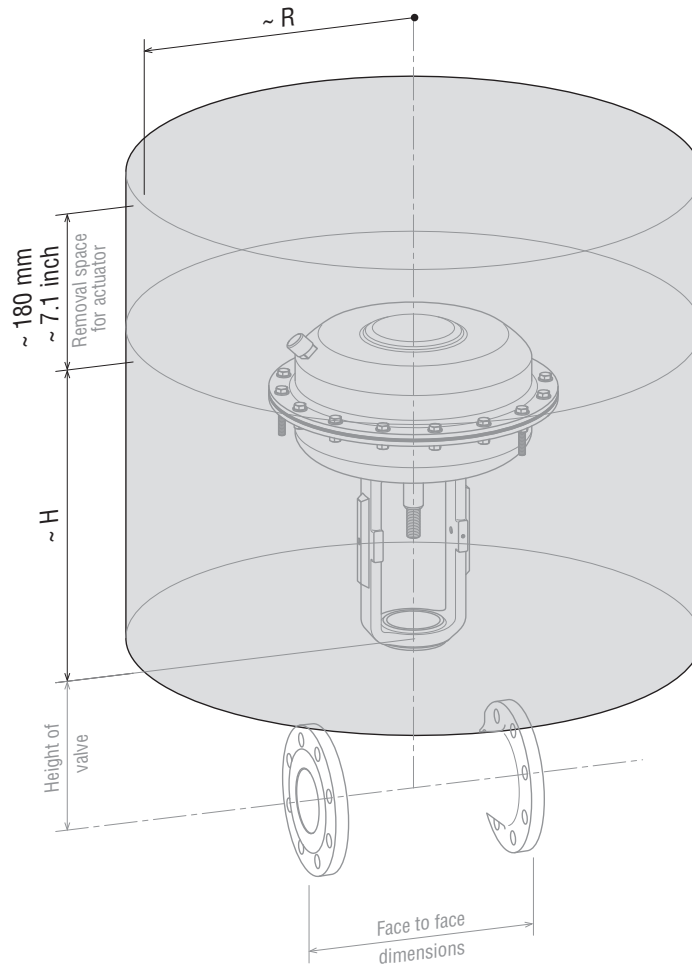
Yoke - connection dimensions (mm)



Yoke dimensions		MULTI-Yoke for						NAMUR-Yoke for											
		FlowTop, FlowPro						FlowTop					FlowPro ¹⁾ , VariCool						
Actuator Size	Stroke	Ø B	~ M	G	T	Ø D	H _v	Ø B	~ M	G	T	Ø D	H _v	Ø B	~ M	G	T	Ø D	H _v
250	10	65	110	M12	23	95	20	-					-						
	20	65	105	M12	23	95	20	65	105	M12	12	95	20	82	150	M16	16	115	25
500	20	65	105	M12	23	115	20	65	105	M12	16	95	20	82	150	M16	16	115	25
	40	82	140	M16	25	115	25	82	140	M16	16	115	25	82	140	M20	20	115	25
700	20	65	105	M12	23	115	20	65	105	M12	16	95	20	82	150	M16	16	115	25
	40	82	140	M16	25	115	25	82	140	M16	16	115	25	82	140	M20	20	115	25
	60							82	150	M20	20	125	25	-					
1500	20							65	105	M12	29	110	20	82	150	M16	20	110	20
	40							82	140	M16	29	105	25	82	140	M20	29	105	25
	60							82	150	M20	29	105	25	-					
	80							82	140	M20	29	105	25	82	140	M20	29	105	25
	100							82	140	M20	29	105	25	-					
3000	40							82	140	M16	29	105	25	82	140	M20	29	105	25
	60							82	150	M20	29	105	25	-					
	80							82	140	M20	29	105	25	82	140	M20	29	105	25
	100							82	140	M20	29	105	25	-					

¹⁾ ATTENTION: FlowPro with Nominal Size DN 25 or 1", Stroke 20 mm:
 Packing Design -> adjustable -> Ø B = 65 mm, M = 105 mm, G = M12, Ø D = 95 mm and H_v = 20 mm only !
 Packing Design -> spring loadet -> Ø B = 82 mm, M = 170 mm, G = M12 only !

Minimum Clearance Zone



Actuator Size		~ R				~ H _{max}	
		without accessories	accessories direct mounted	accessories NAMUR - mounted	with side mounted hand wheel	without hand wheel	with top mounted hand wheel
250	mm	135	195	290	-	335	595
500	mm	180	195	330	-	460	870
700	mm	205	205	345	-	600	925
1500	mm	275	-	415	685	800	-
3000	mm	275	-	415	685	1140	-

Positioning Force for Actuator Size - 250 to 700 (ASME)

Effective Area		Stroke		Spring range		Yoke Type Code		Stem extends by Air failure			Stem retracts by Air failure	
inch ²	Code	inch	Code	psig	Code			nec. Air Supply (psig)	max. Air Supply (psig)	max. Force (lbs)	max. Air Supply (psig)	max. Force (lbs)
38.8	253	0.4	M	12 - 23	MU	G	T	29	36	450	87	2 473
				20 - 35	IY			41	44	787	87	2 023
				39 - 59	CW			65	73	1 517	87	1 068
		0.8	A	3 - 15	AD			20	29	112	87	2 810
				7 - 28	BL			33	36	281	87	2 304
				15 - 35	DY			41	44	562	87	2 023
				22 - 39	VC			45	51	843	87	1 855
				22 - 55	VI			61	65	843	87	1 236
				29 - 70	FY			75	80	1 124	87	674
				20	29			225	87	5 620		
77.5	503	0.8	A	3 - 15	AD	G	T	33	36	562	87	4 609
				7 - 28	BL			41	44	1 124	87	4 047
				15 - 35	DY			45	51	1 686	87	3 709
				22 - 39	VC			61	65	1 686	87	2 473
				22 - 55	VI			75	80	2 248	87	1 349
		1.6	B	3 - 15	AD			20	29	225	87	5 620
				7 - 28	BL			33	36	562	87	4 609
				15 - 35	DY			41	44	1 124	87	4 047
				22 - 39	VC			45	51	1 686	87	3 709
				22 - 55	VI			61	65	1 686	87	2 473
29 - 70	FY	75	80	2 248	87	1 349						
109	701	0.8	A	26 - 39	JC	G	T	45	51	2 833	87	5 193
				33 - 49	TD			55	58	3 619	87	4 092
				44 - 61	RJ			67	73	4 721	87	2 833
		1.6	B	3 - 15	AD			20	29	315	87	7 868
				7 - 28	BL			33	36	787	87	6 452
				15 - 35	DY			41	44	1 574	87	5 665
				22 - 39	VC			45	51	2 360	87	5 193
				22 - 55	VI			61	65	2 360	87	3 462
		2.4	C	29 - 70	FY			75	80	3 147	87	1 888
				3 - 15	AD			20	29	315	87	7 868
7 - 28	BL			33	36	787	87	6 452				
15 - 35	DY			41	44	1 574	87	5 665				
22 - 55	VI			61	65	2 360	87	3 462				
29 - 70	FY			75	80	3 147	87	1 888				
20	29			225	87	5 620						

Attention:

- The max. air supply has picked out for a long operating life !
- Max. allowable stem-force for type V726, V738, V740, V724, V760, C726 and V701
Stem $\varnothing = 12$ mm \rightarrow 3 035 lbs, $\varnothing = 16$ mm \rightarrow 5 170 lbs, $\varnothing = 20$ mm \rightarrow 8 767 lbs
- Max. design pressure for the actuators \rightarrow 87 psig !

Stem retracts by Air failure (psig / lbs)										
23	26	29	32	36	41	46	52	58	65	73
	112	225	337	506	674	899	1 124	1 349	1 630	1 911
337	450	562	674	843	1 012	1 236	1 461	1 686	1 967	2 248
		56	169	337	506	731	955	1 180	1 461	1 742
674	899	1 124	1 349	1 686	2 023	2 473	2 923	3 372	3 934	4 496
		112	337	674	1 012	1 461	1 911	2 360	2 923	3 485
674	899	1 124	1 349	1 686	2 023	2 473	2 923	3 372	3 934	4 496
		112	337	674	1 012	1 461	1 911	2 360	2 923	3 485
					157	787	1 416	2 046	2 833	3 619
944	1 259	1 574	1 888	2 360	2 833	3 462	4 092	4 721	5 508	6 295
		157	472	944	1 416	2 046	2 675	3 305	4 092	4 878
944	1 259	1 574	1 888	2 360	2 833	3 462	4 092	4 721	5 508	6 295
		157	472	944	1 416	2 046	2 675	3 305	4 092	4 878

Force in both home positions - for Three Way Valves only	
nec. Air (psig)	max. Force (lbs)
17	112
35	281
49	562
61	843
77	843
17	225
35	562
49	1 124
61	1 686
77	1 686
17	225
35	562
49	1 124
61	1 686
77	1 686
65	2 833
83	3 619
17	315
35	787
49	1 574
61	2 360
77	2 360
17	315
35	787
49	1 574
77	2 360

Positioning Force for Actuator Size - 1500 (ASME)

Effective Area		Stroke		Spring Range		Yoke Type Code			Stem extends by Air failure			Stem retracts by Air failure	
inch ²	Code	inch	Code	psig	Code				nec. Air Supply (psig)	max. Air Supply (psig)	max. Force (lbs)	max. Air Supply (psig)	max. Force (lbs)
233	1502	0.8	A	12 - 23	MU	B	D		29	36	2 698	81	13 489
				22 - 30	VP				36	44	5 058	87	13 151
		1.6	B	3 - 15	AD				20	29	674	73	13 489
				6 - 29	GF				35	44	1 349	87	13 489
				11 - 20	KI				26	29	2 529	78	13 489
				17 - 36	NZ				42	51	4 047	88	11 915
				22 - 39	VC				45	51	5 058	87	11 128
				29 - 51	FS				57	65	6 744	87	8 430
				38 - 61	AJ				67	73	8 768	87	6 070
				2.4	C				3 - 15	AD	20	29	674
		6 - 29	GF						35	44	1 349	87	13 489
		11 - 20	KI						26	29	2 529	78	13 489
		22 - 39	VC						45	51	5 058	87	11 128
		28 - 46	LM						52	58	6 407	87	9 442
		29 - 51	FS						57	65	6 744	87	8 430
		3.1	D	38 - 61	AJ				67	73	8 768	87	6 070
				3 - 15	AD				20	29	674	73	13 489
				6 - 29	GF				35	44	1 349	87	13 489
				11 - 20	KI				26	29	2 529	78	13 489
				22 - 39	VC				45	51	5 058	87	11 128
				29 - 51	FS				57	65	6 744	87	8 430
		3.9	E	38 - 61	AJ				67	73	8 768	87	6 070
				13 - 28	HL				33	36	3 035	86	13 489
				17 - 38	NA				44	51	4 047	87	11 465
				26 - 55	JI				61	65	6 070	87	7 419
				29 - 62	FL				68	73	6 744	87	5 733

Stem retracts by Air failure (psig / lbs)										
23	26	29	32	36	41	46	52	58	65	73
	674	1 349	2 023	3 035	4 047	5 395	6 744	8 093	9 779	11 465
			337	1 349	2 360	3 709	5 058	6 407	8 093	9 779
2 023	2 698	3 372	4 047	5 058	6 070	7 419	8 768	10 116	11 802	13 489
			674	1 686	2 698	4 047	5 395	6 744	8 430	10 116
2 023	2 698	3 372	4 047	5 058	6 070	7 419	8 768	10 116	11 802	13 489
			674	1 686	2 698	4 047	5 395	6 744	8 430	10 116
2 023	2 698	3 372	4 047	5 058	6 070	7 419	8 768	10 116	11 802	13 489
			674	1 686	2 698	4 047	5 395	6 744	8 430	10 116
		337	1 012	2 023	3 035	4 384	5 733	7 081	8 768	10 454

Force in both home positions - for Three Way Valves only	
nec. Air (psig)	max. Force (lbs)
35	2 698
52	5 058
17	674
35	1 349
31	2 529
54	4 047
61	5 058
80	6 744
17	674
35	1 349
31	2 529
61	5 058
74	6 407
80	6 744
17	674
35	1 349
31	2 529
61	5 058
80	6 744
41	3 035
55	4 047
81	6 070

Positioning Force for Actuator Size - 3000 (ASME)

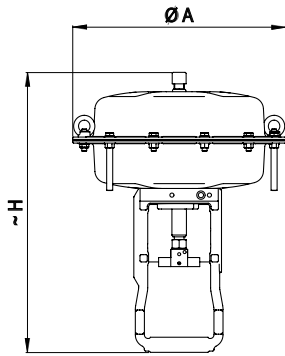
Effective Area		Stroke		Spring Range		Yoke Type Code		Stem extends by Air failure			Stem retracts by Air failure			
inch ²	Code	inch	Code	psig	Code			nec. Air Supply (psig)	max. Air Supply (psig)	max. Force (lbs)	max. Air Supply (psig)	max. Force (lbs)		
465	3002	1.6	B	3 - 15	AD	B	D	20	29	1 349	44	13 489		
				6 - 29	GF			35	44	2 698	58	13 489		
				11 - 20	KI			26	29	5 058	49	13 489		
				15 - 35	DY			41	44	6 744	64	13 489		
				19 - 30	EP			36	44	8 768	59	13 489		
				29 - 51	FS			57	65	13 489	80	13 489		
		2.4	C	3 - 15	AD	B		20	29	1 349	44	13 489	44	13 489
				6 - 29	GF			35	44	2 698	58	13 489		
				11 - 20	KI			26	29	5 058	49	13 489		
				15 - 35	DY			41	44	6 744	64	13 489		
				19 - 30	EP			36	44	8 768	59	13 489		
				29 - 51	FS			57	65	13 489	80	13 489		
		3.1	D	3 - 15	AD	B	D	20	29	1 349	44	13 489	44	13 489
				6 - 29	GF			35	44	2 698	58	13 489		
				11 - 20	KI			26	29	5 058	49	13 489		
				15 - 35	DY			41	44	6 744	64	13 489		
				19 - 30	EP			36	44	8 768	59	13 489		
				29 - 51	FS			57	65	13 489	80	13 489		
		3.9	E	13 - 28	HL	B		33	36	6 070	57	13 489	57	13 489
				17 - 38	NA			44	51	8 093	67	13 489		
26 - 55	JI			61	65			12 140	84	13 489				
29 - 62	FL			68	73			13 489	87	11 465				

Stem retracts by Air failure (psig / lbs)										
23	26	29	32	36	41	46	52	58	65	73
4 047	5 395	6 744	8 093	10 116	12 140					
			1 349	3 372	5 395	8 093	10 791	13 489		
4 047	5 395	6 744	8 093	10 116	12 140					
			1 349	3 372	5 395	8 093	10 791	13 489		
4 047	5 395	6 744	8 093	10 116	12 140					
			1 349	3 372	5 395	8 093	10 791	13 489		
4 047	5 395	6 744	8 093	10 116	12 140					
			1 349	3 372	5 395	8 093	10 791	13 489		
		674	2 023	4 047	6 070	8 768	11 465			

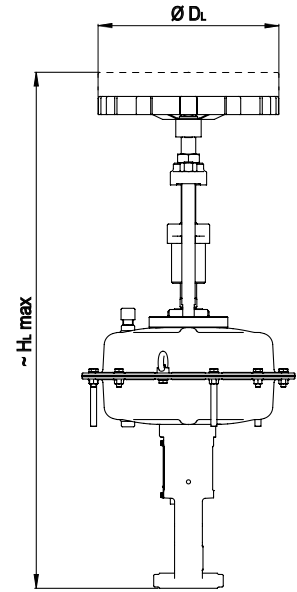
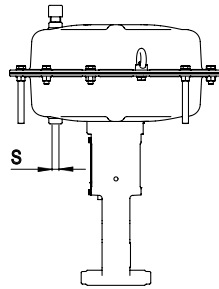
Force in both home positions - for Three Way Valves only	
nec. Air (psig)	max. Force (lbs)
17	1 349
35	2 698
31	5 058
49	6 744
49	8 768
80	13 489
17	1 349
35	2 698
31	5 058
49	6 744
49	8 768
80	13 489
17	1 349
35	2 698
31	5 058
49	6 744
49	8 768
80	13 489
41	6 070
55	8 093
81	12 140

Dimensions - ASME-Units

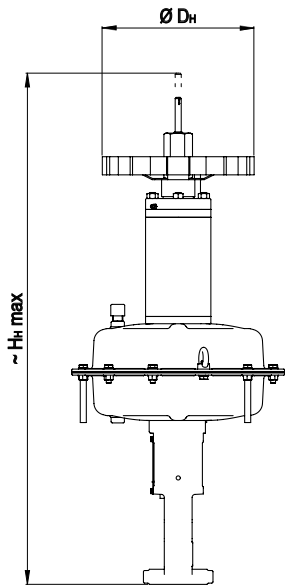
MULTI - Yoke design, Type IT, DT, IG



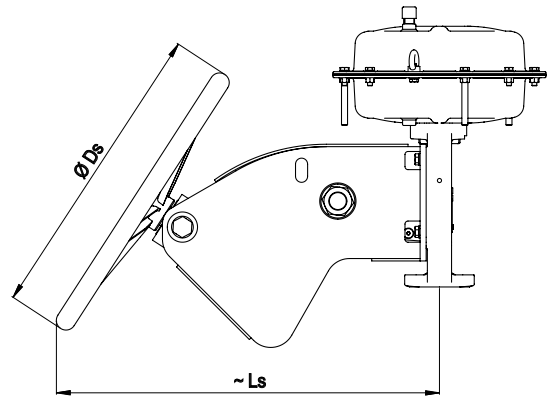
Standard MULTI yoke actuator - Type IT



IT - Actuator with hand wheel "light"



IT - Actuator with hand wheel "heavy"

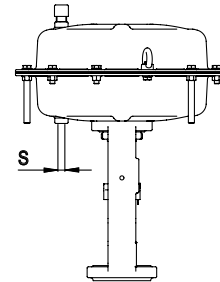
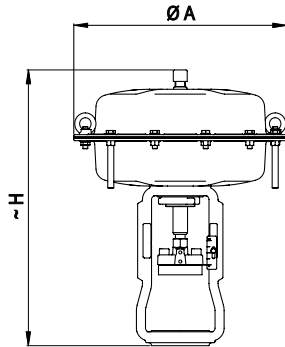


IG - Actuator with hand wheel "side"

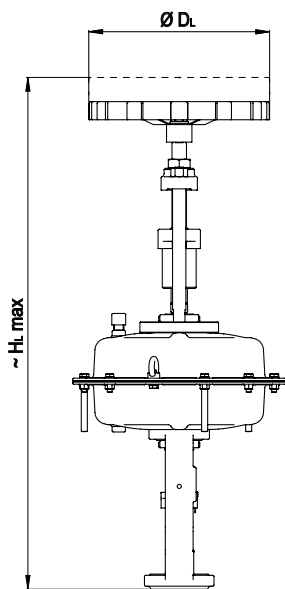
Designation	Actuator Size	250		500		700		
		Stroke inch	0.39	0.79	0.79	1.57	0.79	1.57
Ø A	inch	10.2		14.0		15.4		
~ H	inch	13.4		16.7	18.3	19.7	19.9	21.1
S = air connection	inch	G 1/4 for Type IT, IG / G 1/2 for Type DT						
Ø DL	inch	7.9		11.8		-		
~ HL max	inch	22.8	23.2	33.3	33.7	-		
Ø DH	inch	7.9		9.9		13.8		
~ HH max	inch	22.3	22.7	32.9	33.5	38.2	38.6	39.4
Ø Ds	inch	7.9		19.7				
~ Ls	inch	8.3		25.8				
~ Weight	lbs	24		50		72		85
~ Weight with hand wheel "light"	lbs	35		68		-		
~ Weight with hand wheel "heavy"	lbs	41		68		121	134	
~ Weight with hand wheel "side"	lbs	35		116		138		152

Dimensions - ASME-Units

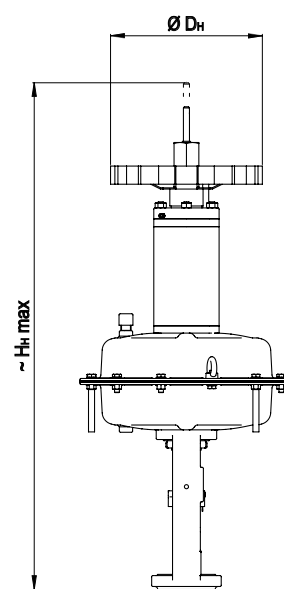
NAMUR - Yoke design, Type PB, CB, PD



Standard NAMUR yoke actuator - Type PB



PB - Actuator with hand wheel "light"

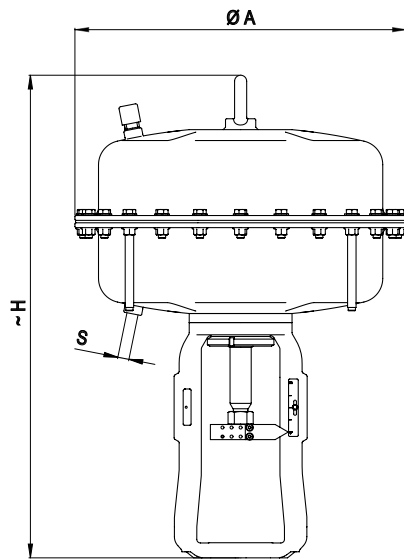


PB - Actuator with hand wheel "heavy"

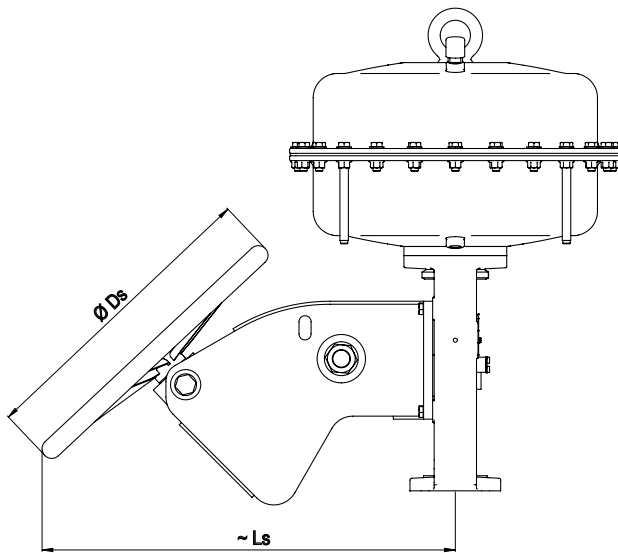
Designation	Actuator Size	250		500		700		
		Stroke inch	0.39	0.79	0.79	1.57	0.79	1.57
Ø A	inch	10.2		14.0		15.4		
~ H	inch	13.2		16.5	18.1	18.3	19.7	22.0
S = air connection	inch	G 1/4 for Type PB, PD / G 1/2 for Type CB						
Ø DL	inch	7.9		11.8		-		
~ HL max	inch	24.0	24.4	31.9	31.3	-		
Ø DH	inch	7.9		9.8		13.8		
~ HH max	inch	23.2	23.6	31.5	33.3	36.8	38.4	41.5
~ Weight	lbs	22		46	48	68		97
~ Weight with hand wheel "light"	lbs	33		63	66	-		
~ Weight with hand wheel "heavy"	lbs	37		66	68	114	116	130

Dimensions - ASME-Units

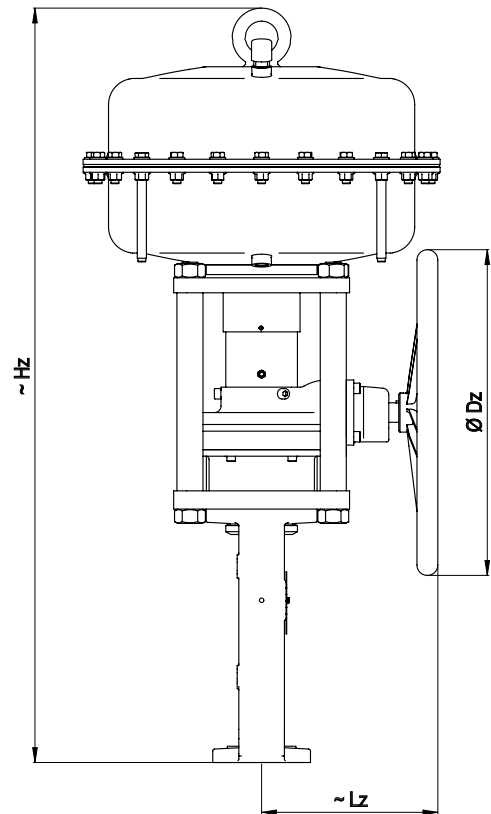
NAMUR - Yoke design, Type PB, PD



Standard NAMUR yoke actuator - Type PB



PB - Actuator with hand wheel "side"

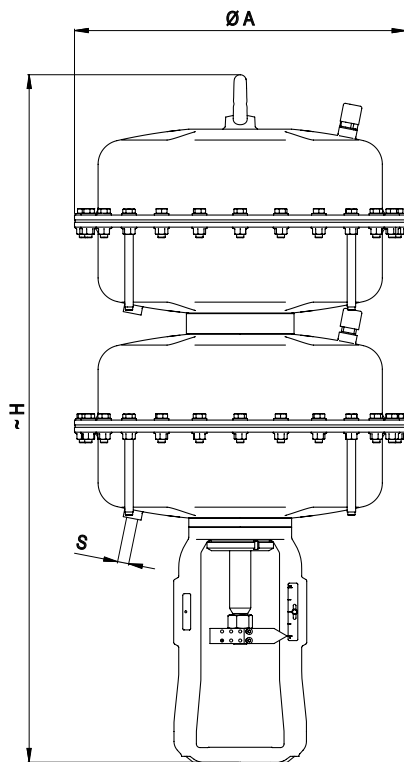


PB - Actuator with hand wheel "centric"

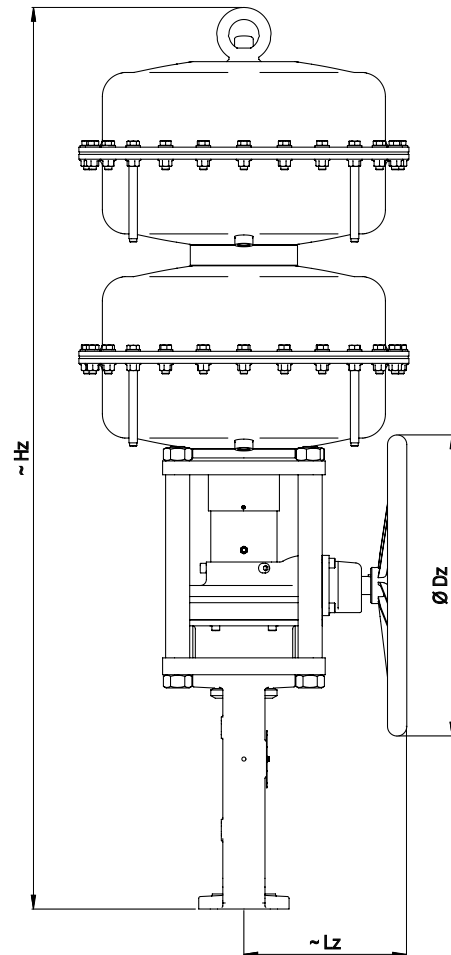
Designation	Actuator Size	1500				
		Stroke inch	0.79	1.57	2.36	3.15
Ø A	inch	21.6				
~ H	inch	31.5				
S = air connection	inch	G 1/2				
Ø Ds	inch	19.7				-
~ Ls	inch	27.0				
~ Hz	inch	45.7				
Ø Dz	inch	19.7				
~ LZ	inch	10.6				
~ Weight	lbs	275				
~ Weight with hand wheel "side"	lbs	374				-
~ Weight with hand wheel "centric"	lbs	462				

Dimensions - ASME-Units

NAMUR - Yoke design, Type PB, PD



Standard NAMUR yoke actuator - Type PB

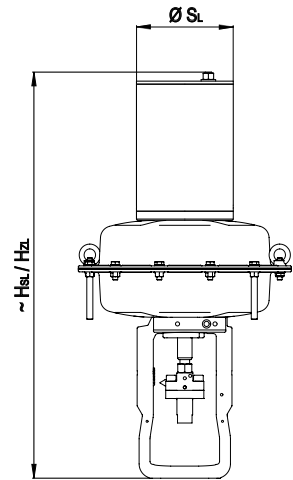


PB - Actuator with hand wheel "centric"

Designation	Actuator Size	3000			
		Stroke inch	1.57	2.36	3.15
Ø A	inch	21.6			
~ H	inch	44.9			
S = air connection	inch	2 x G 1/2			
~ Hz	inch	59.0			
Ø Dz	inch	19.7			
~ Lz	inch	10.6			
~ Weight	lbs	506			
~ Weight with hand wheel "centric"	lbs	693			

Dimensions - Adjustable Stroke Limitation

Designation		Actuator Size					
		250	500	700	1500	3000	
DIN-Units	Ø SL	mm	108	160	160	180	180
	~ HSL	mm	460	675	715	1090	1430
	~ HZL	mm	-	-	-	1450	1790
	~ Weight without hand wheel	kg	15	36	46	152	257
	~ Weight with hand wheel "side"	kg	25	66	76	197	-
	~ Weight with hand wheel "centric"	kg	-	-	-	237	342
ASME-Units	Ø SL	inch	4.3	6.3	6.3	7.1	7.1
	~ HSL	inch	18.1	26.6	28.2	42.9	56.3
	~ HZL	inch	-	-	-	57.1	70.5
	~ Weight without hand wheel	lbs	33	79	101	335	567
	~ Weight with hand wheel "side"	lbs	55	145	168	434	-
	~ Weight with hand wheel "centric"	lbs	-	-	-	523	754



Allowable installation position of the FlowAct

Actuator Size	Bonnet Type / Code	Installation Position with deviation from the perpendicular						upright only
		without support 0 - 30 ° angle		without support 0 - 90 ° angle ¹⁾		with support 0 - 90 ° angle ¹⁾		
		without	with	without	with	without	with	
		Handwheel		Handwheel		Handwheel		
250	Standard / N	•	•	•	•			
	Extended / R, K	•	•	•	•			
	Bellows Seal / B, F	•	•	•	•			
	Cryogenic / I	•	•			•	•	
500	Standard / N	•	•	•	•			
	Extended / R, K	•	•	•	•			
	Bellows Seal / B, F	•	•	•	•		•	
	Cryogenic / I	•	•			•	•	
700	Standard / N	•	•	•	•		•	
	Extended / R, K	•	•	•	•		•	
	Bellows Seal / B, F	•	•			•	•	
	Cryogenic / I							•
1500	Standard / N	•	•			•	•	
	Extended / R, K	•	•			•	•	
	Bellows Seal / B, F	•					•	
	Cryogenic / I							•
3000	Standard / N	•					•	
	Extended / R, K	•					•	
	Bellows Seal / B, F					•	•	
	Cryogenic / I							•

¹⁾ ATTENTION: Strong yoke center line has to be mounted in a vertically direction !
 Check the accurate installation position of the accessory !
 The support should be designed to relieve the weight of the actuator and should not be rigid or anchor it !

Pneumatic multi spring actuator - FlowAct order code

FlowAct				Order code														
				I	T	503	B	FY	O	Z	B	S						
Actuator design	Internal Air Supply for Yoke Code G, T and F			I														
	Internal Air Supply, DVGW application and for Yoke Code T			D														
	External Air Supply for Yoke Code B, D			P														
	External Air Supply, DVGW application and for Yoke Code B			C														
Yoke design	Without yoke				O													
	IAS - yoke for Valve-Series V701 only				G													
	MULTI - yoke for Valve-Series V726, V738, V740 only				T													
	MULTI - yoke for Valve-Series 132 000 only				F													
	NAMUR - yoke for Valve-Series V726, V738, V740 only				B													
	NAMUR - yoke for Valve-Series V724, V760, V901 only				D													
Actuator size (cm ² /inch ²)	250	38.75	Stroke	10, 20	0.39, 0.79													
	500	77.50	(mm/inch)	20, 40	0.79, 1.57													
	700	108.50		20, 40, 60	0.79, 1.57, 2.36													
	1500	232.50		20, 40, 60, 80, 100	0.79, 1.57, 2.36, 3.15, 3.94													
	3000	465.00		40, 60, 80, 100	1.57, 2.36, 3.15, 3.94													
Color	white, powder coated															B		
	blue, powder coated																A	
	yellow, powder coated																C	
Spring range (bar/psi)	Stroke (mm) ¹⁾			Actuator	253	503	701	1502	3002									
	Actuator force (N)				500	1 000	1 400	3 000	6 000								AD	
	0,2 - 1,0	3 - 15	20, 40, 60, 80															
	0,4 - 2,0	6 - 29	40, 60, 80														GF	
	0,5 - 1,9	7 - 28	20, 40, 60														BL	
	0,75 - 1,4	11 - 20	40, 60, 80														KI	
	0,8 - 1,6	12 - 23	10, 20														MU	
	0,9 - 1,9	13 - 28	100														HL	
	1,0 - 2,4	15 - 35	20, 40, 60, 80														DY	
	1,2 - 2,5	17 - 36	40 ²⁾														NZ	
	1,2 - 2,6	17 - 38	100														NA	
	1,3 - 2,1	19 - 30	40, 60, 80														EP	
	1,4 - 2,4	20 - 35	10														IY	
	1,5 - 2,1	22 - 30	20														VP	
	1,5 - 2,7	22 - 39	20, 40, 60, 80														VC	
	1,5 - 3,8	22 - 55	20, 40, 60														VI	
	1,8 - 2,7	26 - 39	20														JC	
	1,8 - 3,8	26 - 55	100														JI	
	1,9 - 3,2	28 - 46	60 ²⁾														LM	
	2,0 - 3,5	29 - 51	40, 60, 80														FS	
	2,0 - 4,3	29 - 62	100														FL	
	2,0 - 4,8	29 - 70	20, 40, 60														FY	
	2,3 - 3,4	33 - 49	20														TD	
2,6 - 4,2	38 - 61	40, 60, 80														AJ		
2,7 - 4,1	39 - 59	10														CW		
3,0 - 4,2	44 - 61	20														RJ		
Handwheel	without																O	
	top mounted "light design"																	L
	top mounted "heavy design"																	H
	side mounted "light design"																	S
	central mounted "heavy design"																	Z
Stroke Limitation	not adjustable - "bottom"																	E
	not adjustable - "top"																	F
	"adjustable"																	U
Handwheel and Stroke Limitation	side mounted "light design" HW and "adjustable" SL for IG type only																	A
	central mounted "heavy design" HW and "adjustable" SL for 1502 and 3002 only																	D
Safety position at air failure	spring to close																	Z
	spring to open																	A
	fail in place by spring to close																	S
	fail in place by spring to open																	T
Stroke (mm/inch)	10	0.39																M
	20	0.79																A
	40	1.57																B
	60	2.36																C
	80	3.15																D
Temperatur Range	Standard	- 40 °C to + 80 °C																S
	Low	- 60 °C to + 80 °C																L

¹⁾ Not every spring range / stroke combination are possible for each actuator size !
²⁾ For series D726, D738, D740 only !



Valtek Flowtop FCD SAENTBFACT 09/15 Printed in Europe.

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