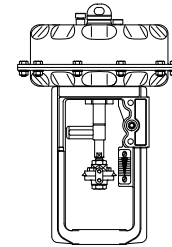


Technical Data Sheet

pneum. Multi-Spring-Actuator



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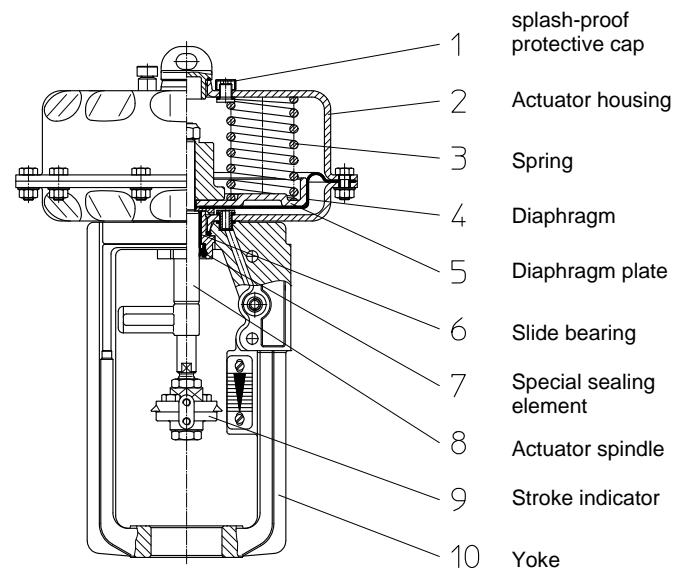
Technical Data

Series	812
Diaphragm effective area	320 / 720 cm ²
Stroke	20-60 mm
Control signal	6 bar max.
Materials	Diaphragm- and spring chamber: Steel ST W 22, 1.0332 (Optional: stainless steel 1.4301) Diaphragm plate: St W 22 chromitized Yoke: GGG-40, 0.7040 Spindle: 1.4122 Springs: 1.1230 plastic-covered Diaphragm: NBR, fabric-reinforced (moulded) Gasket: high-quality, special polyurethane
Spring chamber	Optionally with air scavenging
Operating temperature	-20 to +80°C (Option -40 to + 80°C)
No. of springs	6-12
Control force spring max.	6,3 - 14 kN
Control force air max.	14,4 - 32,4 kN

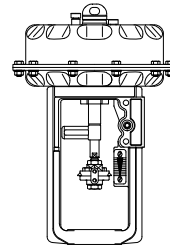
Functional description

The ARCAPAQ® is a pneumatic multi-spring diaphragm actuator with spring return (fail safe) and is used to actuate linear valves. The actuator positions the valve plug, which in turn is controlled by a pneumatic or electropneumatic positioner. These actuators can be operated in the "Air to open" function or with the reverse action "Air to close".

- The actuator has a compact design with a low installed height. Various spring sets with different ranges ensure good adaptation to the relevant operating conditions.
- A fabric-reinforced diaphragm ensures smooth conversion of the pneumatic application of pressure into the linear motion of the actuator spindle. The power diaphragm (4), supported by the diaphragm disc (5), is connected to the actuator spindle (8) and separates the actuator housing (2) into pressure and spring chambers. If the force of the compressed air control signal exceeds the opposing spring force (3), the actuator spindle (8) moves and actuates the linear valve.
- The control signal is carried to the diaphragm chamber via internal channels in the yoke (10). The air supply and venting (ventilation) of the spring chamber is carried out by means of the protective cap (1), which is impermeable to splash water, or the chamber is purged through internal channels with the air from the positioner.
- The yoke (10) connects the actuator to the control valve, while the actuator spindle (8) is connected to the valve spindle via the coupling shown as a stroke indicator (9), securely guided in the slide bearing (6) and sealed with a special sealing element (7) with wiper.



Technical Data Sheet pneum. Multi-Spring Actuator



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Control forces and control ranges

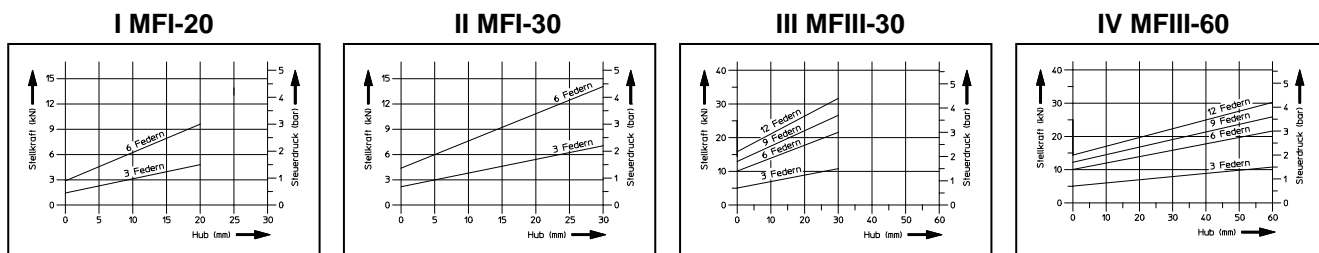
Opening function (air to open - spring to close)

Size	Diaphragm surface (cm ²)	Type	No. of springs	Stroke (mm)	Control range		Control force (kN)	see force diagram
					from (bar)	to (bar)		
MFI-20	320	812-21(2)..	3	20	0,75	1,5	2,4	I
			6		1,5	3,0	4,8	
MFI-30	320	812-23..	3	30	0,75	1,5	2,4	II
			6		1,5	3,0	4,8	
MFIII-30	720	812-33..	3	30	0,7	1,5	5	III
			6		1,5	3,0	10	
			9		1,8	3,7	13	
			12		2,2	4,4	16	
MFIII-60	720	812-34..	3	60	0,7	1,5	5	IV
			6		1,4	3,0	10	
			9		1,7	3,6	12	
			12		2,0	4,3	14	

Closing function (air to close - spring to open)

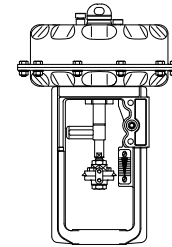
Size	Diaphragm area (cm ²)	Type	No. of springs	Stroke (mm)	Control pressure min. bar	Control force (kN) depending on control pressure				
						2,0 bar	3,0 bar	4,0 bar	5,0 bar	6,0 bar
MFI-20	320	812-21(2)..	3	20	1,5	1,6	4,8	8,0	11,2	14,4
			6		3,0	-	-	3,2	6,4	9,6
MFI-30	320	812-23..	3	30	1,5	1,6	4,8	8,0	11,2	14,4
			6		3,0	-	-	3,2	6,4	9,6
MFIII-30	720	812-33..	3	30	1,5	3,6	10,8	18	25,2	32,4
			6		3,0	-	-	7,2	14,4	21,6
			9		3,7	-	-	2,2	9,4	16,6
			12		4,4	-	-	-	4,3	11,5
MFIII-60	720	812-34..	3	60	1,5	3,6	10,8	18	25,2	32,4
			6		3,0	-	-	7,2	14,4	21,6
			9		3,6	-	-	2,9	10,1	17,3
			12		4,3	-	-	-	5,0	12,2

Force diagram



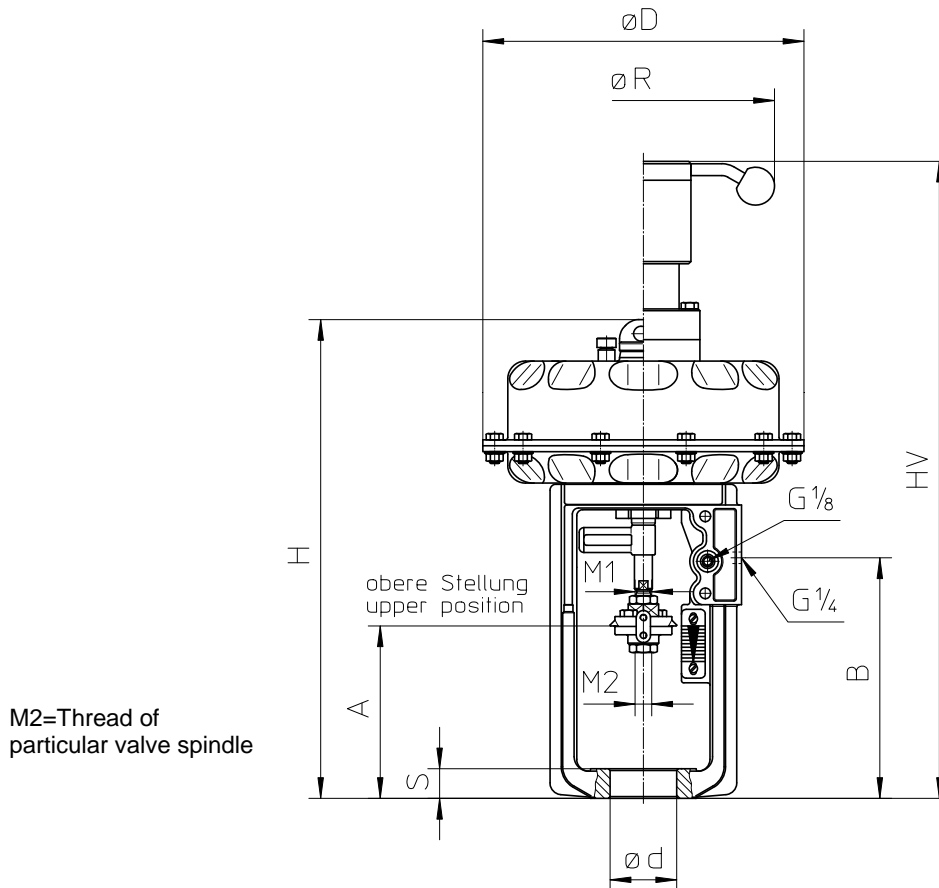
Technical Data Sheet

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Dimensions and weights



Size	Diaphragm surf. (cm ²)	Type	Weight	No of springs	Stroke (mm)	$\varnothing D$ (mm)	M1 actuator	$\varnothing d$ (mm)	S (mm)	A (mm)	B (mm)	H (mm)	HV (mm)	$\varnothing R$ (mm)
MFI-20	320	812-21..	14	3	20	270	10	40	20	120	180	361	508	220
				6										
		812-22..	3	14			48							
			6											
MFI-30	812-23..	16	3	30	400	20x1,5	56	25	142	203	404	551	220	
	6													
MFIII-30	720	812-33..	40	3	30	400	20x1,5	56	25	142	251	489	651	335
				6										
				9										
MFIII-60	720	812-34..	45	3	60	400	20x1,5	72	30	192	309	625	888	335
				6										
				9										
				12										
			47	3										

