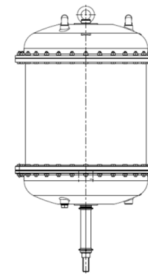


# Technical Data Sheet

## pneum. Diaphragm Actuator



TD\_MA60

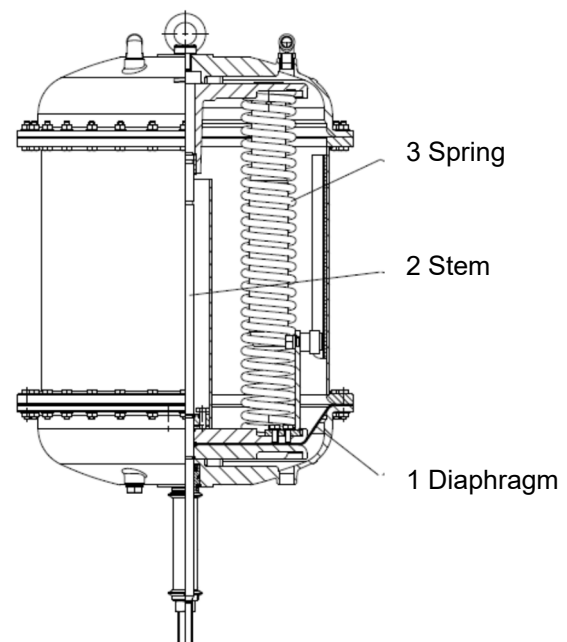
### Technical data

<b>Series</b>	MA60
<b>Diaphragm effective area</b>	1510 – 2185 cm <sup>2</sup> (depending on actual stroke)
<b>Stroke</b>	60 - 136 mm
<b>Air supply</b>	6 bar max.
<b>Materials</b>	Actuator housing and diaphragm plate: 0.7040/0.7033
	Stem: 1.4122 (option: 1.4462)
	Diaphragm: NBR, fabric-reinforced (moulded) Sealing element: high quality special Polyurethane
<b>Operating temperature</b>	-20 to +80°C (option: -40 to + 80°C)
<b>Stem bushing</b>	Straight-through actuator stem with roller burnished surface, top and bottom guided in Polymer slide bearings.
<b>Control force</b>	6 - 86 kN

### Functional description

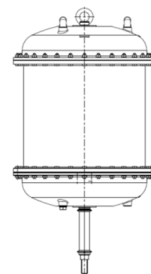
The actuator series MA60 is a pneumatic diaphragm actuator with spring return (fail safe) and is used to actuate reciprocating valves. The actuator positions the valve plug in the valve body depending on the control pressure acting upon the actuator diaphragm, which in turn is controlled by a pneumatic or electro-pneumatic positioner. These actuators can be operated in the "air to open" function or with the reverse action "air to close".

- This actuator is a compact design with a low overall height in relation to the achievable stroke. Different strokes as well as spring sets with different ranges allow a good adaption possibility to the respective valve.
- A fabric-reinforced diaphragm ensures smooth conversion of the pneumatic application of pressure into the linear motion of the actuator stem. The diaphragm (1), supported by the diaphragm disc, is connected to the actuator stem (2) and divides the actuator housing into pressure and spring chambers. If the force of the compressed air control signal exceeds the opposing spring force, the actuator stem (2) moves and actuates the valve.



# Technical Data Sheet

## pneum. Diaphragm Actuator



**TD\_MA60**

### Control forces and control ranges – Opening function (air to open – spring to close)

Actuator size	Stroke (mm)	Spring-No.	0% Stroke Control pressure (bar)	0% Stroke Control force (KN)	100% Stroke Control pressure (bar)	100% Stroke Control force (KN)	0% Stroke Diaphragm surface (cm <sup>2</sup> )	100% Stroke Diaphragm surface (cm <sup>2</sup> )
MA 60 G6	60	4B	0,55	12,18	1,42	24,13	2150	1700
		6B	0,83	18,28	2,13	35,32		
		8B	1,13	24,37	2,84	48,27		
		12B	1,38	28,47	3,54	58,37		
		16B	1,56	32,33	4,26	68,72		
MA 60 A6	83	2G	0,37	7,79	0,93	15,34	2185	1715
		4G	0,74	15,57	1,86	30,67		
		6G	1,11	23,36	2,79	46,02		
		8G	1,48	31,15	3,72	61,37		
MA 60 D6	125	2S	0,30	6,03	1,31	19,45	2060	1500
		4S	0,60	12,08	2,62	38,92		
		6S	0,90	18,11	3,93	58,38		
		8S	1,20	24,15	5,34	77,83		
MA 60 C6	136	2R	0,51	10,6	1,06	16,00	2070	1510
		4R	1,02	21,2	2,12	32,00		
		6R	1,54	31,88	3,18	48,00		
		8R	2,05	42,4	4,24	64,00		

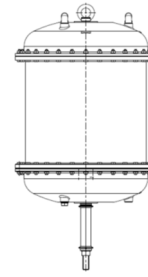
### Control forces – Closing function (air to close – spring to open)

Actuator size	Stroke (mm)	Spring-No.	Control pressure min (bar)	Control force (kN) at control pressure				
				2,0 bar	3,0 bar	4,0 bar	5,0 bar	6,0 bar
MA 60 G6	60	4B	1,5	9,19	25,03	40,88	56,72	72,56
		6B	2,2	-	13,78	29,63	45,47	61,31
		8B	2,9	-	2,53	18,38	34,22	50,06
		12B	3,6	-	-	7,29	23,13	38,97
		16B	4,3	-	-	-	11,72	27,57
MA 60 A6	83	2G	1,0	17,10	33,08	49,07	65,05	81,03
		4G	1,9	2,24	18,22	34,20	50,19	66,17
		6G	2,8	-	3,36	19,34	35,32	51,31
		8G	3,8	-	-	4,48	20,46	36,44
MA 60 D6	125	2S	1,4	9,65	23,62	37,60	51,58	65,56
		4S	2,7	-	5,31	19,29	33,27	47,25
		6S	4,0	-	-	0,98	14,96	28,94
		8S	5,4	-	-	-	-	9,23
MA 60 C6	136	2R	1,1	13,23	27,30	41,37	55,45	69,52
		4R	2,2	-	12,38	26,46	40,53	54,60
		6R	3,2	-	-	11,54	25,61	39,68
		8R	4,3	-	-	-	10,70	24,77

Caution: The actuator forces and spring ranges listed above are for actuator without valve at nominal stroke only

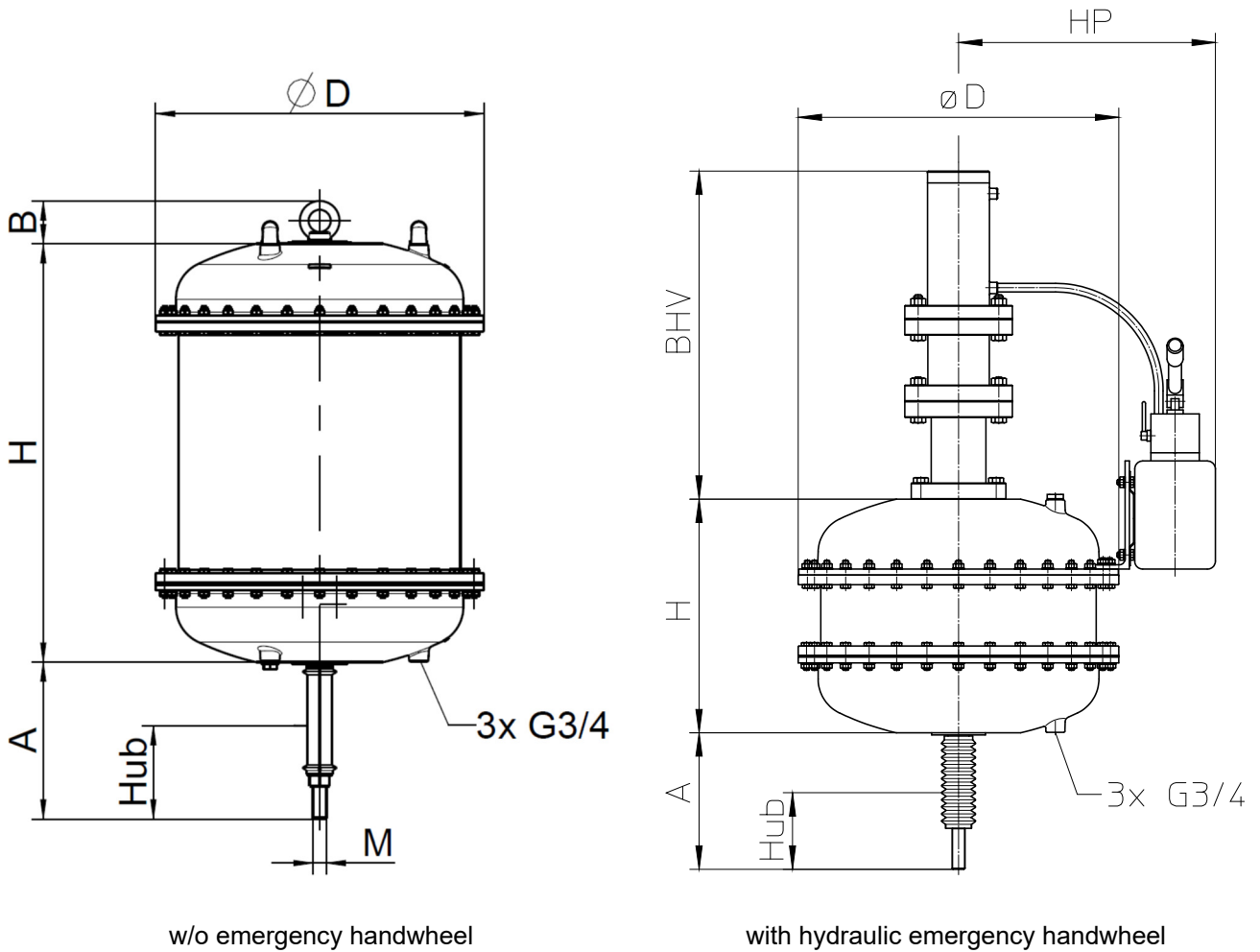


# Technical Data Sheet pneum. Diaphragm Actuator



TD\_MA60

## Dimensions and weights

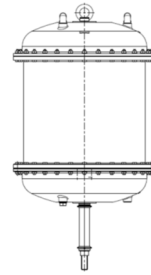


Actuator size	Stroke (mm)	M	ØD (mm)	H (mm)	A (mm)	B (mm)	BHV (mm)	HP (mm)	Weight* (kg)
MA 60 G6	60	M24x2	596	284	184	80	610	480	160
MA 60 A6	83			434	212				190
MA 60 D6	125			434	254				190
MA 60 C6	136			757	284				270

\*) Weight w/o handwheel

# Technical Data Sheet

## pneum. Diaphragm Actuator



**TD\_MA60**

### Type code

	MA	60	A6	6G	Ö	HVH S0 T
<b>Series</b>						
<b>Actuator size</b> 60 Diaphragm surface 1500 – 2185 cm <sup>2</sup>						
<b>Actuator type (stroke)</b> G6 = stroke 60 mm A6 = stroke 83 mm D6 = stroke 125 mm C6 = stroke 136 mm						
<b>Spring set</b> 4B 6B 8B 12B 16B = 4, 6, 8, 12, 16 blue springs (G6) 2G 4G 6G 8G = 2, 4, 6, 8 green springs (A6) 2S 4S 6S 8S = 2, 4, 6, 8 silver springs (D6) 2R 4R 6R 8R = 2, 4, 6, 8 red springs (C6)						
<b>Function</b> Ö = springs move the stem downwards (air to open) S = springs move the stem upwards (air to close)						
<b>Extra equipment</b> EX = explosion proof design HB = stroke limitation HVH= emergency handwheel hydraulic HVS= prepared for emergency handwheel S0 = w/o yoke ring, w/o pillars S6 = with yoke ring, w/o pillars S7 = with yoke ring, with pillar (length of pillar shall be specified) SD = actuator stem Duplex (1.4462) T = low temperature design (-40°C) VA = outside screws stainless steel						