



Kämmer Actuators Series 2

Pneumatic Actuators



Experience In Motion

Actuators Series 2

Description

Standard linear actuators for control valves:

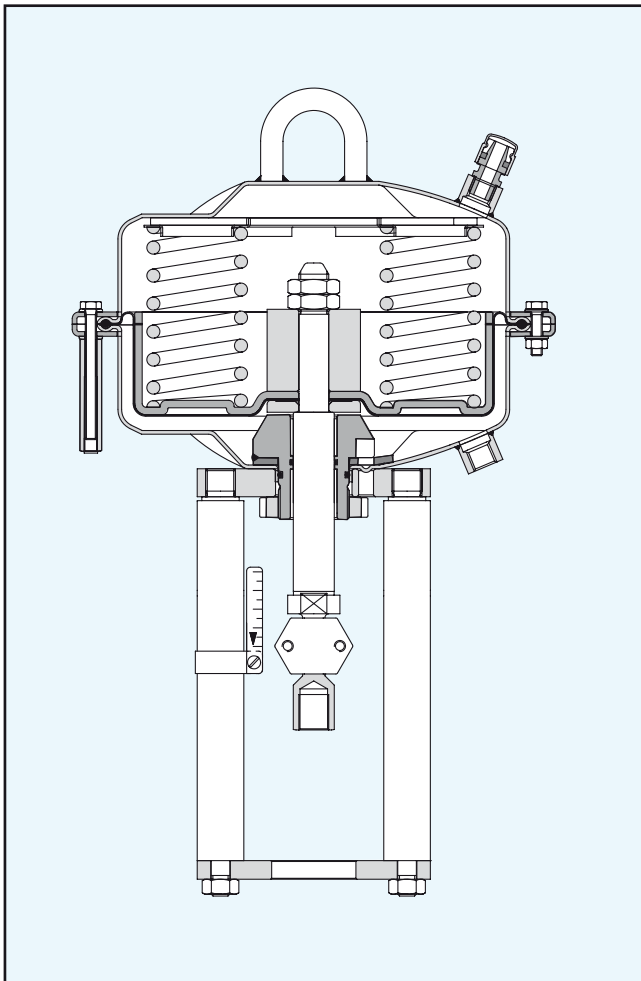
- Standard actuator made from stainless steel
- Air supply up to 6 bar
- Multi-spring design
- Reversible
- Top handwheel possible

Kämmer series 2 actuators types P1, P2, P3, P4 and P5 are powerful and compact. By using stainless steel material the actuators have far reaching resistance to corrosion even without a protective coating. Accessories such as positioners, limit switches or solenoid valves etc. can be fitted according to NAMUR. Compact versions with enclosed accessories are also available.

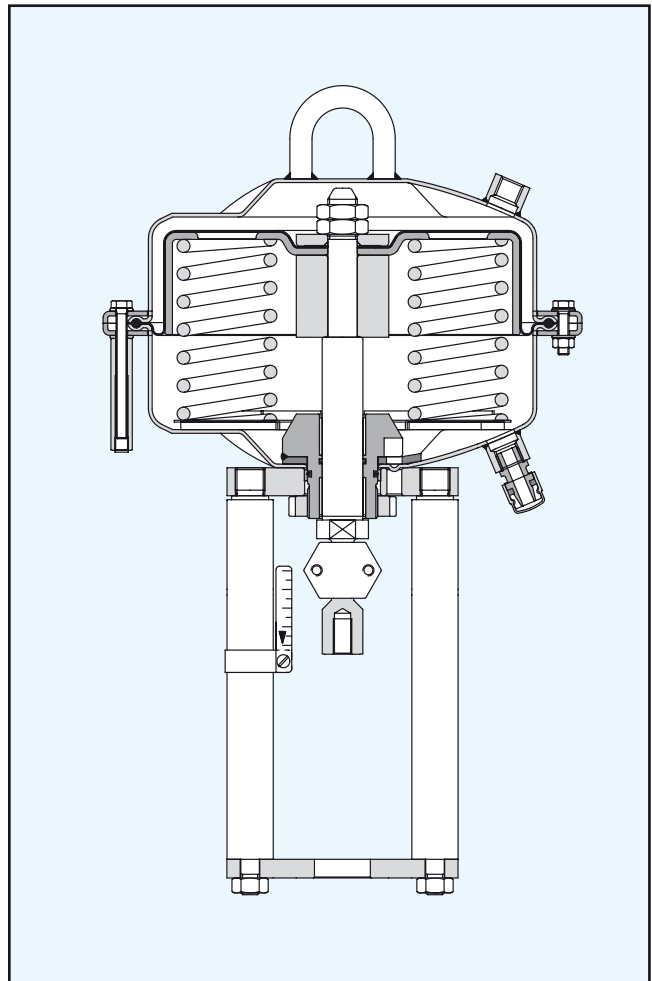
Definition of action

Air-to-open: without air supply the actuator stem extends

Air-to-close: without air supply the actuator stem retracts



Air-to-Open version



Air-to-Close version

Actuators Serie 2

Technical Data

Actuator size	P1	P2	P3	P4	P5
Diaphragm area cm ²	80	120	300	600	1200
Thrust max. daN	220	400	900	2000	3500
Stroke mm	10	10 - 25	10 - 40	10 - 60	20 - 60
Actuator action	air-to-open / air-to-close				
Supply pressure bar	Depends on spring set (max. 6 bar)				
Air connection (Standard)	1/8" NPT	1/4" NPT			
Allowable ambient temp.	-40 to +80 °C (-40 to +176 °F)				
Spring range	See appropriate spare parts list				
Mounting position	Optional (vertical preferred)				
Operating medium (supply)	Instrument air* (dry and oil-free)				
Actuator cases	1.4301	Stainless steel			
Diaphragm	50 NBR / 253	Eco / Polyamide			
Springs	1.4310	Spring steel epoxy resin coated			
Actuator stem	1.4305	Stainless steel			
Screws, nuts	A2	Stainless steel			
Other parts	Stainless steel / Plastic	Stainless steel / Aluminium / Plastic			

*Other operating mediums on request.

Actuators Series 2

Actuator thrust in relationship to spring set and supply pressure

Stroke 10 mm

Actuator type	Stroke (mm)	Spring range (bar)	Spring set no.	Supply min. (bar)	Air-to-open Spring-to-close Closing thrust Spring (daN)	Spring-to-open / Air-to-close Thrust (daN) at supply pressure ¹ (bar)									
						1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
P1 80 cm ²	10	0.50-1.10	8012	1.4	40	33	72	111	155	193	232	272			
		1.00-1.90	8013	2.2	80			47	91	129	168	204	248	288	
		1.00-2.20	8014	2.5	80			23	67	105	144	184	224	264	304
		1.50-2.07	8016	3.0	120					65	104	104	184	224	264
		2.00-3.80	8017	4.1	160										
		2.80-4.00	8018	4.3	224										
P2 120 cm ²	10	0.50-0.70	1011	1.0	60	96	156	216	276	336					
		1.00-1.40	1012	1.7	120		72	132	192	252	312				
		1.59-2.17	1013	2.5	191			39	99	159	219	279			
		2.18-2.95	1014	3.3	261					67	127	187	247		
		3.10-4.10	1015	4.4	372							48	108	168	228
P3 300 cm ²	10	0.52-0.64	3011	1.0	155	259	409	559	709						
		1.03-1.27	3012	1.6	309		218	368	518	668	818				
		1.57-1.94	3013	2.3	470			169	319	469	619	769			
		2.10-2.60	3014	2.9	630				120	270	420	570	720		
		2.40-3.20	3015	3.5	720						240	390	540	690	840
P4 600 cm ²	10	0.50-0.58	6011	0.9	300	550	850	1150	1450	1750					
		1.00-1.17	6012	1.5	600	200	500	800	1100	1400	1700				
		1.63-1.83	6013	2.2	980			400	700	1000	1300	1600			
		2.25-2.55	6014	2.9	1350				272	572	872	1172	1472		
		2.85-3.31	6015	3.7	1710						415	715	1015	1315	1615
P5 1200 cm ²	10	0.50-0.58	1211	0.9	600	1100	1700	2300	2900	3500					
		1.00-1.17	1212	1.5	1200	400	1000	1600	2200	2800					
		1.63-1.83	1213	2.2	1960			800	1400	2000					
		2.25-2.55	1214	2.9	2700				543	1143					

Stroke 40 mm

Actuator type	Stroke (mm)	Spring range (bar)	Spring set no.	Supply min. (bar)	Air-to-open Spring-to-close Closing thrust Spring (daN)	Spring-to-open / Air-to-close Thrust (daN) at supply pressure ¹ (bar)									
						1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
P3 300 cm ²	40	0.52-1.00	3041	1.40	155	150	300	450	600	750					
		1.03-2.00	3042	2.40	309			150	300	450	600	750			
		1.57-3.05	3043	3.40	470					135	285	435	585	735	
		2.10-4.10	3044	4.40	630							120	270	420	570
		2.40-5.60	3045	5.90	720										120
P4 600 cm ²	40	0.50-0.83	6041	1.20	300	400	700	1000	1300	1600					
		1.00-1.67	6042	2.00	600		200	500	800	1100	1400	1700			
		1.63-2.43	6043	2.80	980			340	640	940	1240	1540			
		2.25-3.44	6044	3.80	1350					337	637	937	1237	1537	
		2.85-4.68	6045	5.00	1710							190	490	790	
P5 1200 cm ²	40	0.50-0.83	1241	1.20	600	800	1400	2000	2600	3200					
		1.00-1.67	1242	2.00	1200		400	1000	1600	2200					
		1.63-2.43	1243	2.80	1960				680	1280					

¹ The supply pressures shown in these tables must not be exceeded.

Actuators Serie 2

Actuator thrust in relationship to spring set and supply pressure

Stroke 20 mm

Actuator type	Stroke (mm)	Spring range (bar)	Spring set no.	Supply min. (bar)	Air-to-open Spring-to-close Closing thrust Spring (daN)	Spring-to-open / Air-to-close Thrust (daN) at supply pressure ¹ (bar)									
						1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
P2 120 cm ²	20	0.50-0.90	1021	1.2	60	72	132	192	252	312					
		1.00-1.80	1022	2.1	120			84	144	204	264				
		1.59-2.76	1023	3.1	191					89	149	209	269		
		2.18-3.72	1024	4.1	261							94	154	214	274
		3.10-5.10	1025	5.4	372									48	108
P3 300 cm ²	20	0.52-0.76	3021	1.1	155	223	373	523	673	823					
		1.03-1.52	3022	1.9	309		145	295	445	595	745				
		1.57-2.31	3023	2.7	470				208	358	508	658	808		
		2.10-3.10	3024	3.4	630					120	270	420	570	720	
		2.40-4.00	3025	4.3	720							150	300	450	600
P4 600 cm ²	20	0.50-0.67	6021	1.0	300	500	800	1100	1400	1700					
		1.00-1.33	6022	1.7	600		400	700	1000	1300	1600				
		1.63-2.03	6023	2.4	980			280	580	880	1180	1480			
		2.25-2.84	6024	3.2	1350					393	693	993	1293	1593	
		2.85-3.77	6025	4.1	1710							440	740	1040	1340
P5 1200 cm ²	20	0.50-0.67	1221	1.0	600	1000	1600	2200	2800	3400					
		1.00-1.33	1222	1.7	1200		800	1400	2000	2600					
		1.63-2.03	1223	2.4	1960			560	1160	1760					
		2.25-2.84	1224	3.2	2700					787					

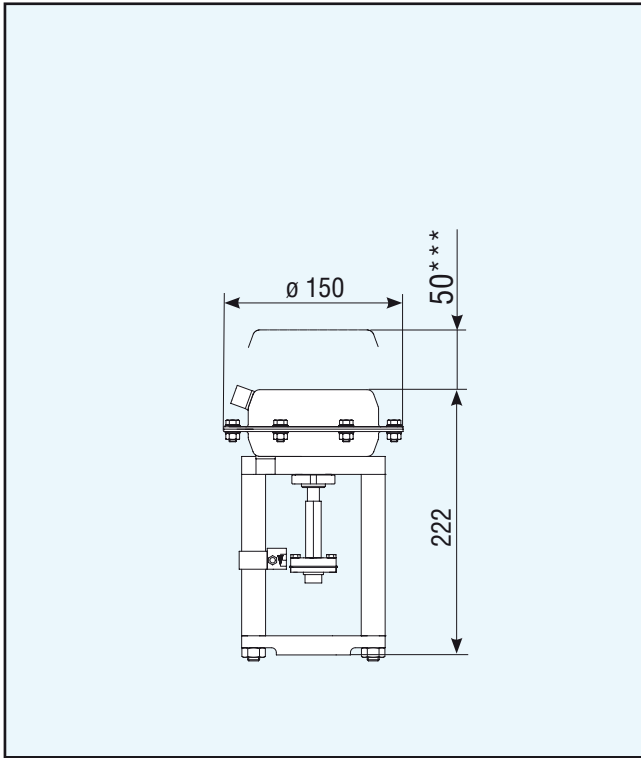
Stroke 60 mm

Actuator type	Stroke (mm)	Spring range (bar)	Spring set no.	Supply min. (bar)	Air-to-open Spring-to-close Closing thrust Spring (daN)	Spring-to-open / Air-to-close Thrust (daN) at supply pressure ¹ (bar)									
						1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
P4 600 cm ²	60	0.50-1.00	6061	1.40	300	300	600	900	1200	1500					
		1.00-2.00	6062	2.40	600			300	600	900	1200	1500			
		1.63-2.83	6063	3.20	980					400	700	1000	1300	1600	
		2.25-4.03	6064	4.40	1350							280	580	880	1180
		2.85-5.60	6065	6.00	1710										240
P5 1200 cm ²	60	0.50-1.00	1261	1.40	600	600	1200	1800	2400	3000					
		1.00-2.00	1262	2.40	1200			600	1200	1800					
		1.63-2.83	1263	3.20	1960					800					

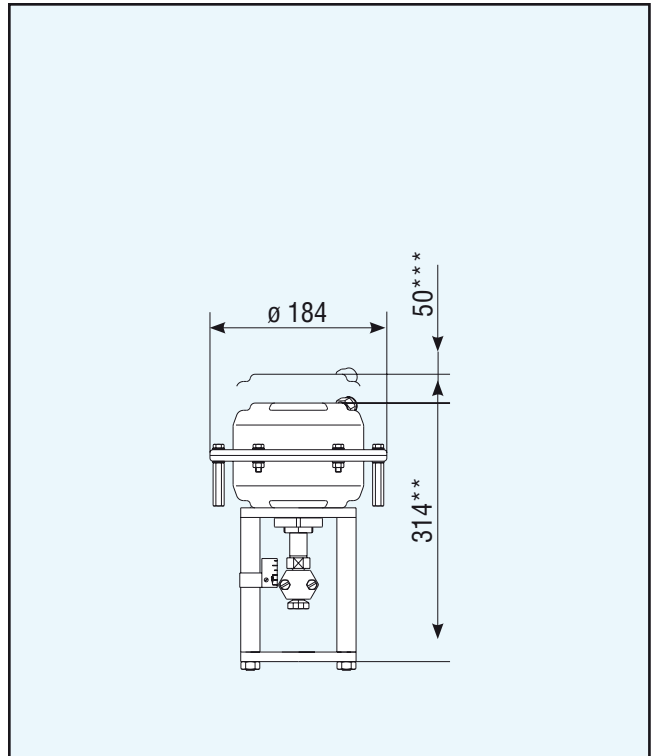
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Actuators Series 2

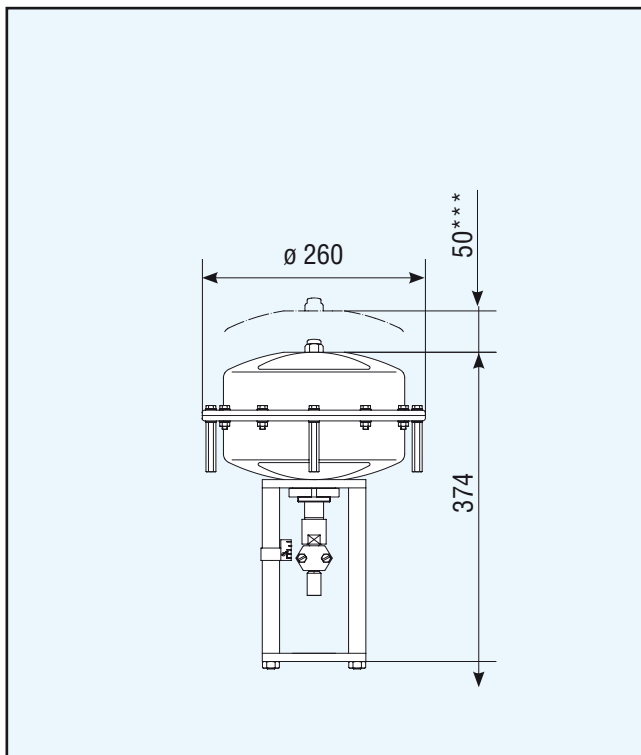
Dimensions [mm]



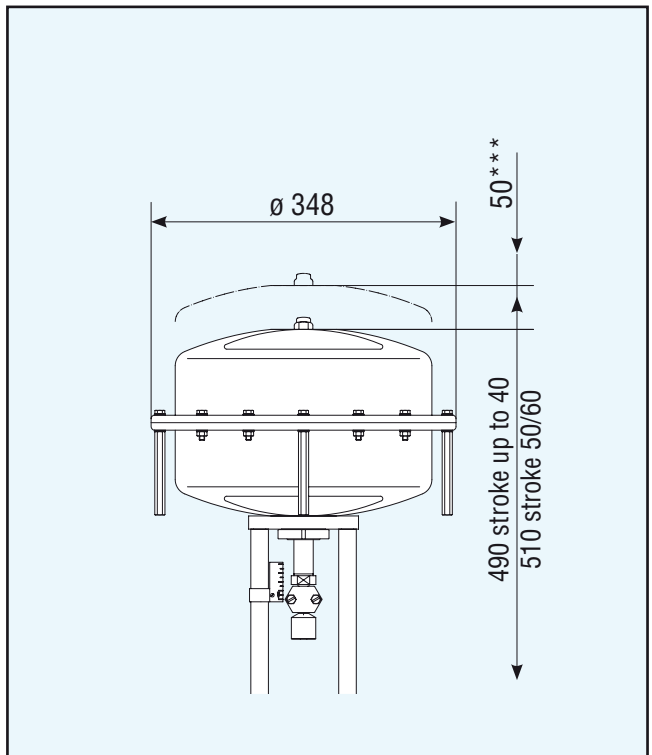
Type P1



Type P2



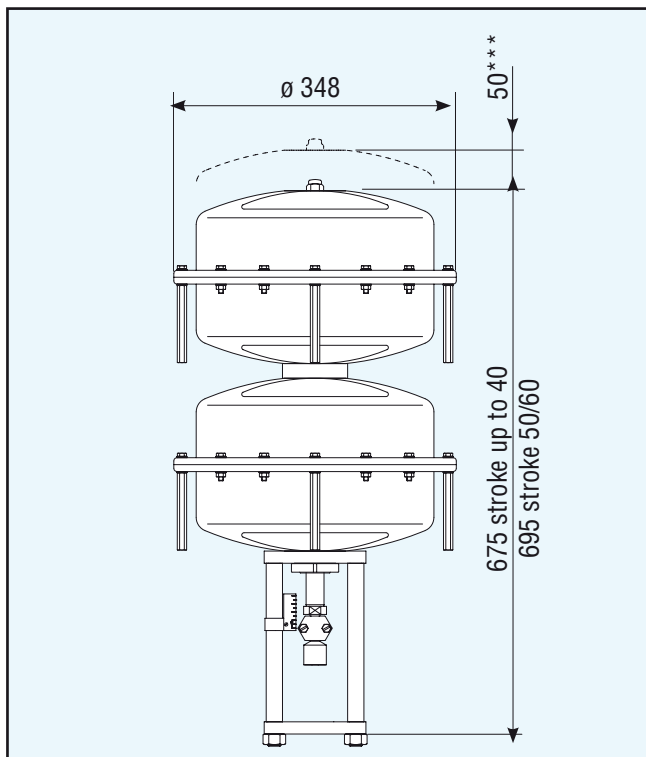
Type P3



Type P4

** Hole diameter in yoke plate 30 or 38 mm
 *** Clearance required to remove actuator

Actuators Serie 2



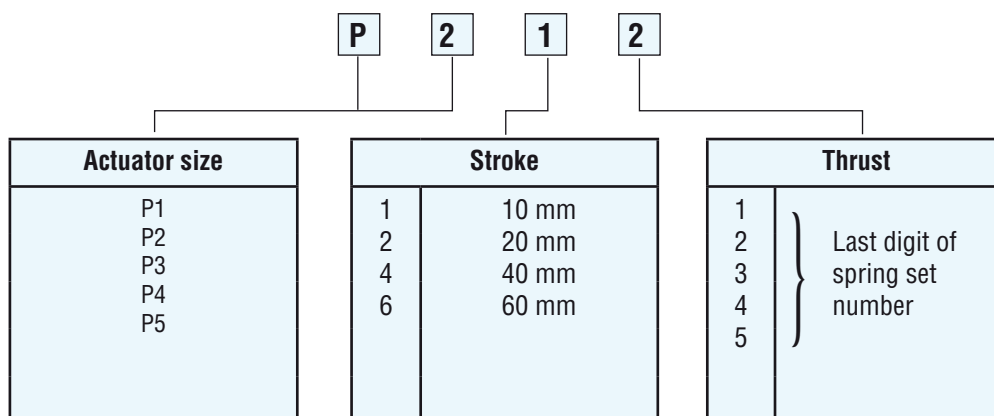
Type P5

Weights (Kg)*

P1	P2	P3	P4	P5
2	5	11,5	30	60

* Can vary according to spring set. Exact weights upon request.

Model Code





Flowserve Essen GmbH

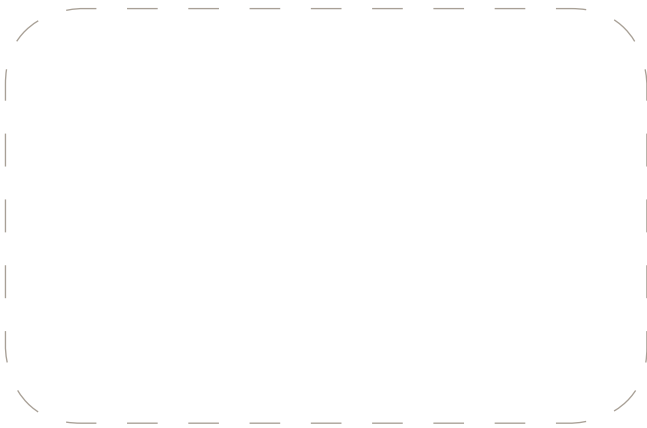
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