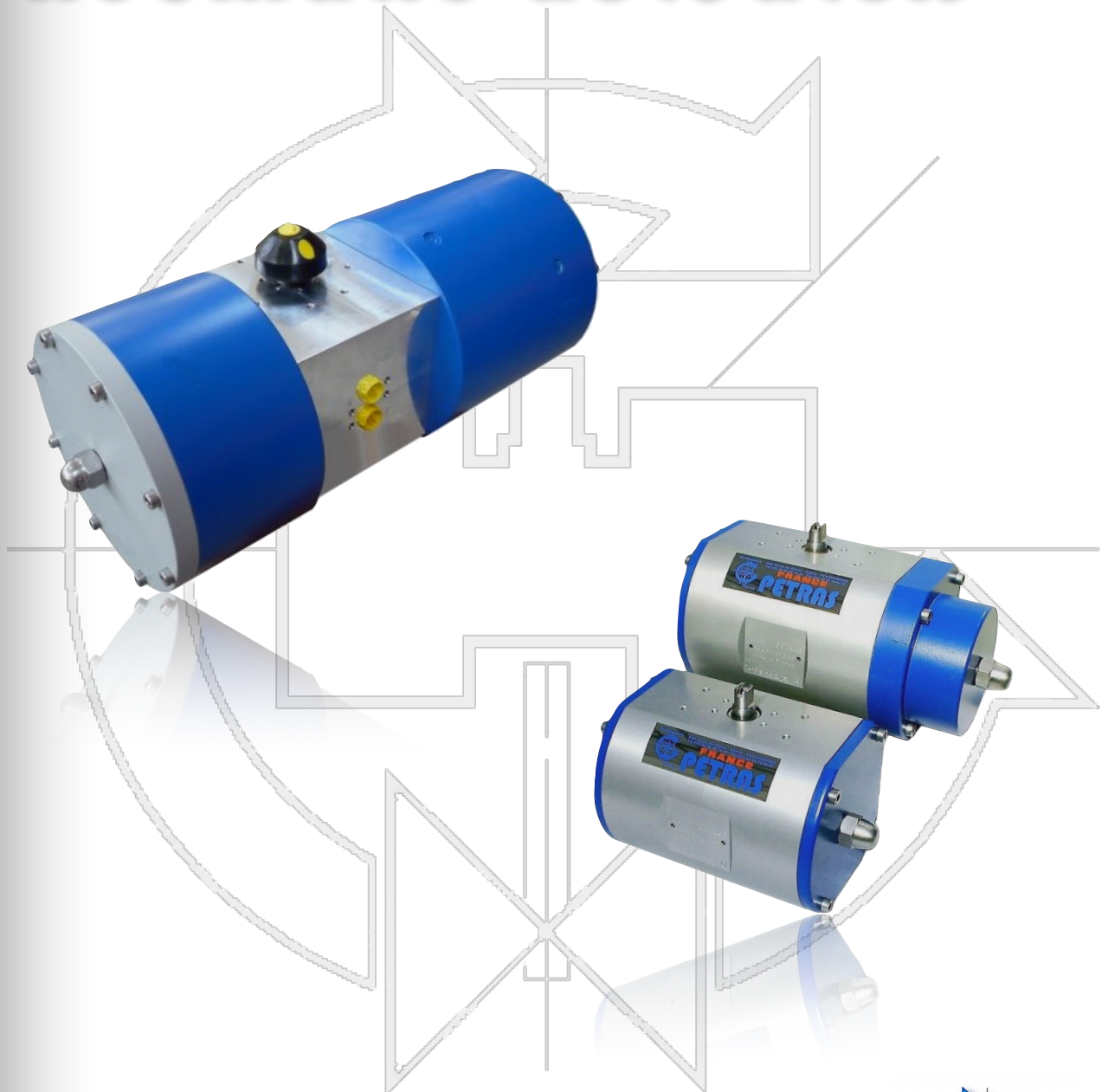


# PETRAS

## Pneumatic actuators



# Pneumatic actuators

PETRAS makes a wide range of high performance rotating actuators since 1966. The engineering, machining, assembly and testing operations are fully integrated in our plant located in Pourrières - France.

The original Petras actuators rack and pinion mechanism transforms the linear thrust produced by two lateral cylinders in an alternative rotating movement. For single acting actuator, the thrust produced by the two lateral cylinders is opposed to a return spring system.

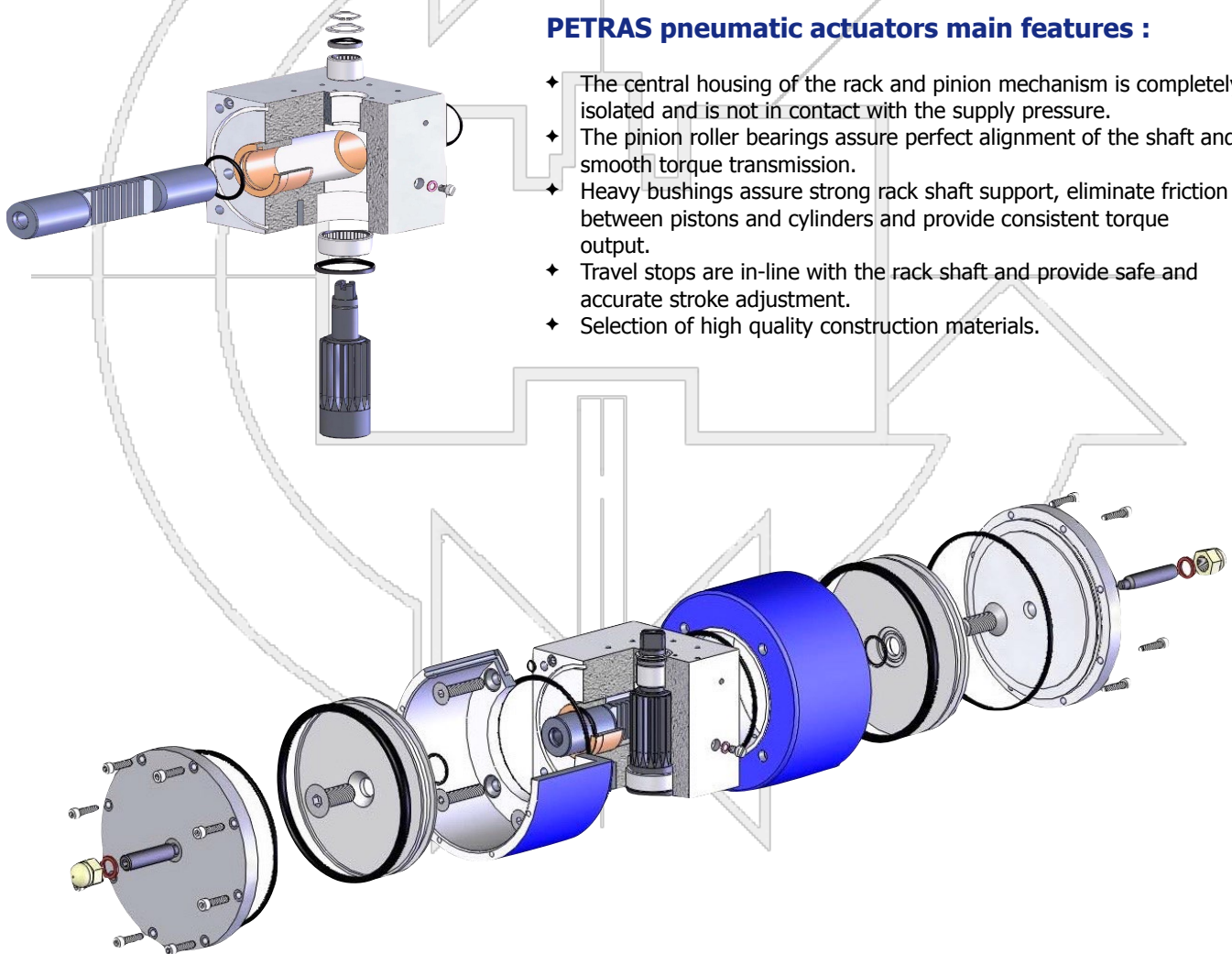
The rack and pinion mechanism is located in the actuator central housing. The central housing of the rack and pinion mechanism is completely isolated from the cylinders and is not in contact with the supply pressure.

Petras actuators strength and reliability are recognized by the most demanding users worldwide. The exclusive rack and pinion system combined with a selection of high quality construction materials ensure outstanding performances and lifetime even in the most severe environments.

Petras pneumatic actuators are available in double acting and single acting version not only for quarter turn valves but also for any kind of rotating devices up to 240° rotation.

## PETRAS pneumatic actuators main features :

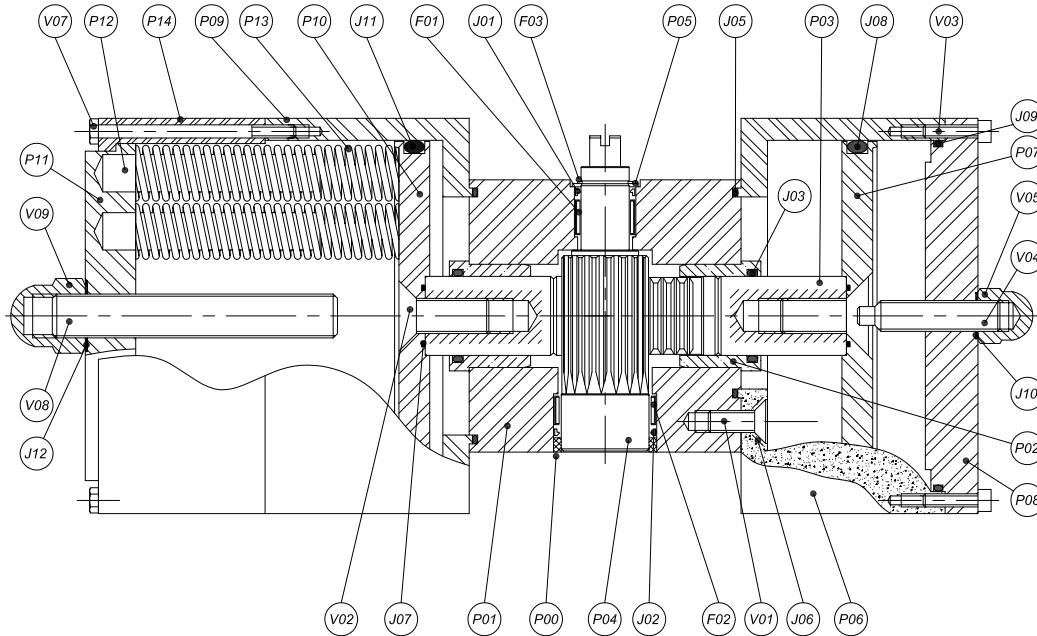
- ◆ The central housing of the rack and pinion mechanism is completely isolated and is not in contact with the supply pressure.
- ◆ The pinion roller bearings assure perfect alignment of the shaft and smooth torque transmission.
- ◆ Heavy bushings assure strong rack shaft support, eliminate friction between pistons and cylinders and provide consistent torque output.
- ◆ Travel stops are in-line with the rack shaft and provide safe and accurate stroke adjustment.
- ◆ Selection of high quality construction materials.



# Pneumatic actuators

## Classic Range

### Single acting pneumatic actuators



### Technical specifications

Technical data	
Supply pressure	8 barg max (12 barg on request)
Spring torque output (*)	Up to 8.600 Nm starting torque Up to 5.400 Nm ending torque
Operating media	Instrument air or inert and non corrosive gas (fluid group 2)
Stroke angle	110° standard - 90° +/- 10° adjustable Up to 240° on request
Rotating direction	Closing clockwise
Ambient temperature	-20°C à +70°C standard -60°C à +200°C on special request

Available materials	
Housing	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Cylinder - flanges	Aluminum 6082 T6 (standard) Aluminum AS7 G06 Y33 (standard) Carbon steel Stainless steel
Piston	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Standard painting	Polyurethane
Rack and pinion shaft	Stainless steel DIN 1.4057 QT900 Stainless steel DIN 1.4408
Screws	Stainless steel

Part list	
F03	Circlip
F01 - F02	Needle or roller bearing
J10	Travel stop seal
J08	Piston o-ring
J03	Bearing seal
J01 - J02	Protection seal
V05 - V09	Blind nut
V04 - V08	Travel stop
V02	Piston screw
P14	Spring housing
P08	Flange
P07 - P10	Piston
P06 - P09	Cylinder
P04	Pinion
P03	Rack bar
P02	Bronze bushing
P01	Body

Construction	
Type	Pneumatic - single acting - spring return
Conception	Unpressurized housing
Gear mechanism	Rack and pinion
Bearing system	Roller bearings and friction bearings
Lubrication	Permanent lubrication
Travel stops	2 adjustable travel stops at +/- 10°

(\*) please contact our technical dpmt for detailed informations



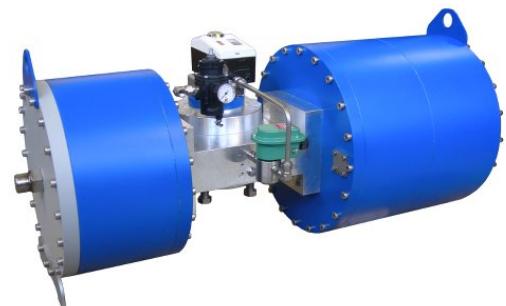
# Pneumatic actuators

## Classic Range

### Single acting pneumatic actuators - Torque information

Single acting actuator - Torque output - Nm																			
Model	Spring		Supply pressure - barg																
			3,5		4		4,5		5		5,5		6		6,5		7		
	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	
0224N	28,5	23,5	28,5	21,3	35,9	28,4	43,3	35,5	50,7	42,6	58,1	49,7	65,6	56,8	73,0	63,9	80,4	71,0	
0226N	28,5	23,5							23,3	17,3	28,0	21,9	32,7	26,5	37,4	31,1	42,0	35,6	
0334N	47,5	39,2	46,6	34,6	58,8	46,4	71,1	58,8	83,3	69,9	95,6	81,6	107,8	93,3	120,1	105,1	132,3	116,8	
0336N	47,5	39,2					49,5	39,2	59,3	48,9	69,2	58,5	79,0	68,2	88,9	77,8	98,7	87,4	
0554N	95	70	94	65	117	88	141	111	164	134	186	157	211	180	234	203	258	226	
0556N	95	70							76	48	91	63	106	77	120	91	135	105	
1014N	183	135	155	101	197	141	238	182	280	223	321	263	363	304	404	345	446	385	
1016N	183	135							189	132	219	163	251	195	283	226	316	258	
2024N	290	185	276	162	342	226	408	291	474	355	540	420	606	484	672	549	738	613	
2026N	290	185							316	211	366	261	416	311	466	361	516	411	
3034N	490	290			532	314	634	415	737	515	840	616	942	716	1045	817	1148	917	
3036N	490	290							516	300	597	379	678	457	759	536	839	615	
5554N	760	450			746	397	895	542	1045	687	1194	831	1349	976	1493	1121	1643	1265	
5556N	760	450							771	422	893	540	1015	658	1137	776	1259	894	
80104N	1330	800	1305	730	1606	1024	1907	1318	2208	1613	2509	1908	2809	2202	3110	2496	3411	2790	
80106N	1330	800					1484	905	1738	1154	1992	1402	2246	1651	2500	1899	2754	2147	
90104N	1504	948			1458	851	1759	1145	2060	1439	2361	1734	2661	2028	2962	2322	3263	2616	
90106N	1504	948					1337	707	1590	953	1844	1198	2098	1444	2352	1689	2606	1935	
120104N	1940	1250	1728	974	2153	1390	2579	1807	3005	2223	3430	2639	2855	3056	4281	3472	4706	3888	
140106N	1940	1250							1758	1003	2059	1298	2359	1592	2660	1886	2961	2180	
160104N	3400	1470			3134	1105	3709	1668	4285	2231	4860	2794	5436	3357	6011	3920	6587	4483	
160106N	3400	1470							3355	1321	3838	1793	4320	2266	4803	2738	5285	3210	
200104N	4000	1700	4583	2148	5480	3026	6378	3904	7275	4782	8173	5660	9070	6539	9968	7417	10865	8295	
200106N	4000	1700			4564	2129	5347	2865	6130	3661	6913	4428	7696	5194	8479	5960	9262	6726	
220104N	5100	2180			5000	1926	5898	2804	6795	3682	7693	4560	8590	5439	9488	6317	10385	7195	
220106N	5100	2180							5650	2561	6433	3328	7216	4094	7999	4860	8782	5626	
300104N	6000	2600	6798	3196	8140	4510	9483	5823	10826	7137	12168	8451	13511	9764	14853	11078	16196	12392	
300106N	6000	2600							6375	2782	7273	3661	8170	4539	9068	5417	9965	6295	
200104NA	2969	1943	2602	1575	3251	2225	3901	2874	4550	3523	2199	4172	5848	4822	6498	5471	7147	6120	
200106NA	2969	1943							2991	1964	3484	2457	3977	2950	4471	3444	4964	3937	
300104NA	4951	2970	4625	3005	5711	4090	6796	5175	7881	6260	8966	7346	10051	8431	11136	9516	12221	10601	
300106NA	4951	2970							4142	2522	4853	3233	5565	3944	6276	4656	6987	5367	
360104NA	5689	3451	5644	3405	6943	4705	8242	6004	9541	7303	10841	8602	12140	9901	13439	11201	14738	12500	
360106NA	5689	3451							5221	2983	6088	3850	6956	4717	7823	5584	8690	6452	
440104NA	7560	4913			7193	4546	8706	6059	10220	7573	11733	9086	13246	10599	14760	12112	16273	13626	
440106NA	7560	4913									7023	4376	8108	5461	9194	6546	10279	7632	
520104NA	8658	5393			9251	5986	11081	7816	12912	9647	14743	11477	16573	13308	18404	15138	20234	16969	
520106NA	8658	5393									8898	5633	10197	6932	11496	8231	12796	9530	

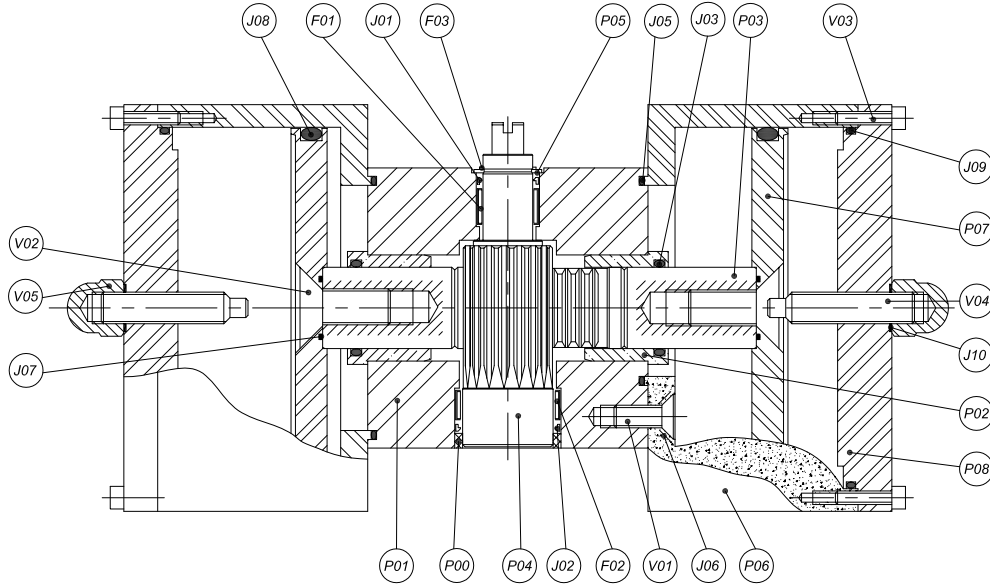
Actuators for minimum air supply pressure below 3,5 barg are available (product code xxxxx3xx) - Please consult factory or your representative



# Pneumatic actuators

## Classic Range

### Double acting pneumatic actuators



### Technical specifications

Technical data	
Supply pressure	8 barg max (12 barg on request)
Torque output (*)	Up to 10.000 Nm
Operating media	Instrument air or inert and non corrosive gas (fluid group 2)
Stroke angle	110° standard - 90° +/- 10° adjustable Up to 240° on request
Rotating direction	Closing clockwise
Ambient temperature	-20°C à +70°C standard -60°C à +200°C on special request

Available materials	
Housing	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Cylinder - flanges	Aluminum 6082 T6 (standard) Aluminum AS7 G06 Y33 (standard) Carbon steel Stainless steel
Piston	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Standard painting	Polyurethane
Rack and pinion shaft	Stainless steel DIN 1.4057 QT900 Stainless steel DIN 1.4408
Screws	Stainless steel

Part list	
F03	Circlip
F01 - F02	Needle or roller bearing
J10	Travel stop seal
J08	Piston o-ring
J03	Bearing seal
J01 - J02	Protection seal
V05	Blind nut
V04	Travel stop
V02	Piston screw
P08	Flange
P07	Piston
P06	Cylinder
P04	Pinion
P03	Rack bar
P02	Bronze bushing
P01	Body

Construction	
Type	Double acting pneumatic actuator
Conception	Unpressurized housing
Gear mechanism	Rack and pinion
Bearing system	Roller bearings and friction bearings
Lubrication	Permanent lubrication
Travel stops	2 adjustable travel stops at +/- 10°

(\*) please contact our technical dpmt for detailed informations



# Pneumatic actuators

## Classic Range

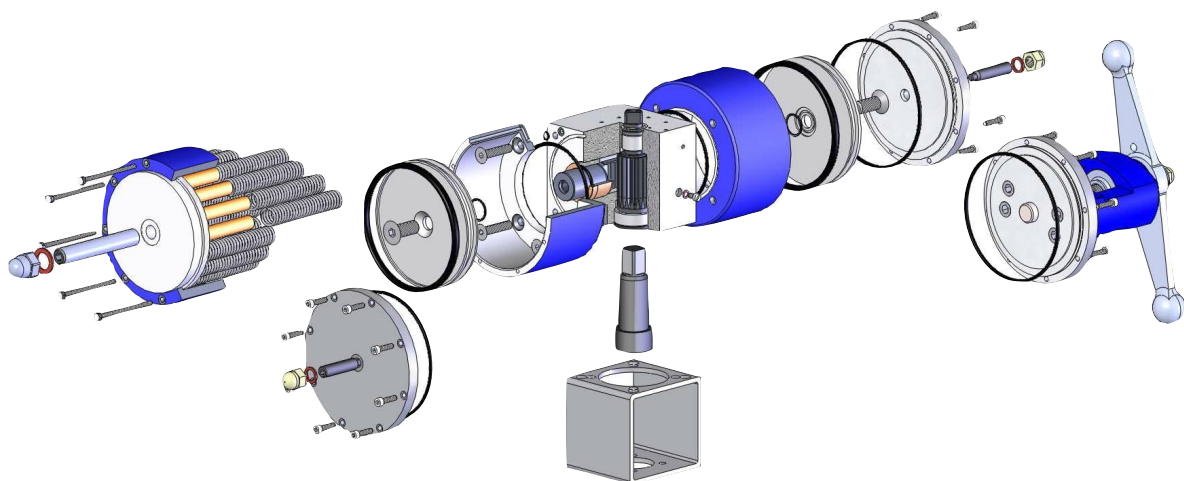
### Double acting pneumatic actuators - Torque information

Double acting actuator - Torque output - Nm									
Model	Supply pressure - barg								
	3	3,5	4	4,5	5	5,5	6	6,5	7
0005N	28	33	37	42	47	51	56	61	66
0010N	59	69	79	89	99	108	118	128	138
0015N	88	102	117	132	146	161	176	190	205
0030N	193	225	257	290	322	354	386	418	451
0060N	300	350	400	451	501	551	601	651	701
0090N	479	559	638	718	798	878	958	1037	1117
0150N	806	940	1075	1209	1344	1478	1612	1747	1881
0200N	1255	1464	1673	1882	2091	2300	2509	2718	2928
0300N	1824	2128	2432	2736	3040	3344	3648	3952	4256
0400N	2013	2348	2684	3019	3355	3690	4025	4361	4696
0600N	2926	3414	3902	4389	4877	5365	5852	6340	6828
0800N	4054	4729	5405	6080	6756	7432	8107	8783	9459
1000N	5443	6350	7257	8165	9072	9979	10886	11793	12701



### Options and accessories

- ✦ Limit switch box
- ✦ Positioner
- ✦ Solenoid valve and control panel
- ✦ Quick action actuator
- ✦ High cycling version
- ✦ Special version for low or high ambient temperatures
- ✦ Manual override : jack screw with hand wheel, declutchable gear or hydraulic hand pump
  
- ✦ Special stroke angle: 120°, 180°, 240°
- ✦ 3 positions actuators up to 240° stroke angle with adjustable intermediate position - single and double acting
- ✦ 3 positions actuators spring return to mid travel position - 180° stroke (-90°/0°/+90°)



# Pneumatic actuators

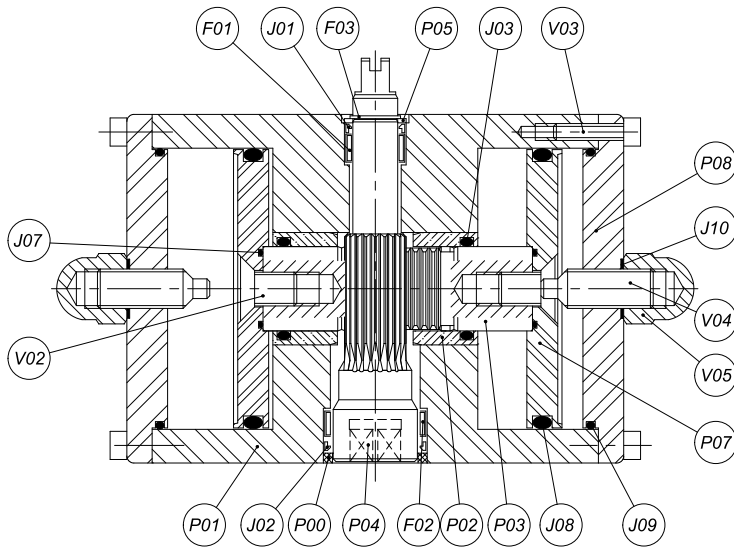
## Compact Range

The Petras actuators Compact range is based on the same construction principles like the Classic range but with reduced dimensions. The compact monobloc housing is containing the cylinders and the rack and pinion system. Although, the original Petras actuators rack and pinion mechanism is maintained and the central part of the body including the rack and pinion mechanism is completely isolated from the cylinders and is not in contact with the supply pressure.

Design and materials of construction are identical to the Classic range.

*The best compact actuator ever made!*

### Double acting Compact actuators



Part list	
F03	Circlip
F01 - F02	Needle bearing
J10-J12	Travel stop seal
J08	Piston o-ring
J03	Bearing seal
J01 - J02	Protection seal
V05 - V09	Blind nut
V04 - V08	Travel stop
V02	Piston screw
P14	Spring housing
P08	Flange
P07	Piston
P04	Pinion
P03	Rack bar
P02	Bronze bushing
P01	Body

### Double acting Compact actuators - Torque information

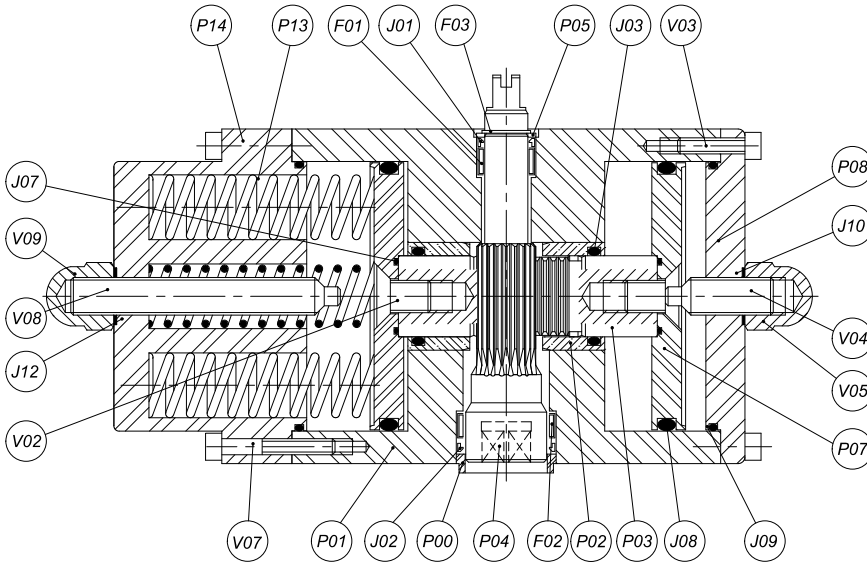
Double acting actuator - Torque output - Nm									
Model	Supply pressure - barg								
	3	3,5	4	4,5	5	5,5	6	6,5	7
D.001	12,8	15,0	17,1	19,2	21,4	23,5	25,6	27,8	29,9
D.004	24,9	29,0	33,2	37,3	41,5	45,6	49,8	53,9	58,1
D.009	41,3	48,2	55,0	61,9	68,8	75,7	82,6	89,4	96,3
D.011	78,7	91,8	104,9	118,0	131,1	144,3	157,4	170,5	183,6



# Pneumatic actuators

## Compact Range

### Single acting Compact actuators



Part list	
F03	Circlip
F01 - F02	Needle bearing
J10-J12	Travel stop seal
J08	Piston o-ring
J03	Bearing seal
J01 - J02	Protection seal
V05 - V09	Blind nut
V04 - V08	Travel stop
V02	Piston screw
P14	Spring housing
P08	Flange
P07	Piston
P04	Pinion
P03	Rack bar
P02	Bronze bushing
P01	Body

### Single acting Compact actuators - Torque information

Single acting actuator - Torque output - Nm														
Model	Spring		Supply pressure - barg											
			4,5		5		5,5		6		6,5		7	
	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
S.001-5	11,7	9,1	10,1	7,5	12,3	9,7	14,4	11,8	16,5	13,9	18,7	16,1	20,8	18,2
S.004-5	23,6	18,3	19,0	13,7	23,2	17,9	27,3	22,0	31,5	26,2	35,6	30,3	39,8	34,5
S.004-6	27,4	21,0					24,6	18,2	28,8	22,4	32,9	26,5	37,1	30,7
S.009-5	40,0	31,0	30,9	21,9	37,8	28,8	44,7	35,7	51,6	42,6	58,4	49,4	65,3	56,3
S.009-6	47,0	36,5					39,2	28,7	46,1	35,6	52,9	42,4	59,8	49,3
S.011-5	77,0	56,0	64,5	40,9	77,8	54,0	91,2	67,1	104,6	80,2	118,0	93,3	131,4	106,3
S.011-6	90,0	63,0					84,2	54,1	97,6	67,2	111,0	80,3	124,4	93,3

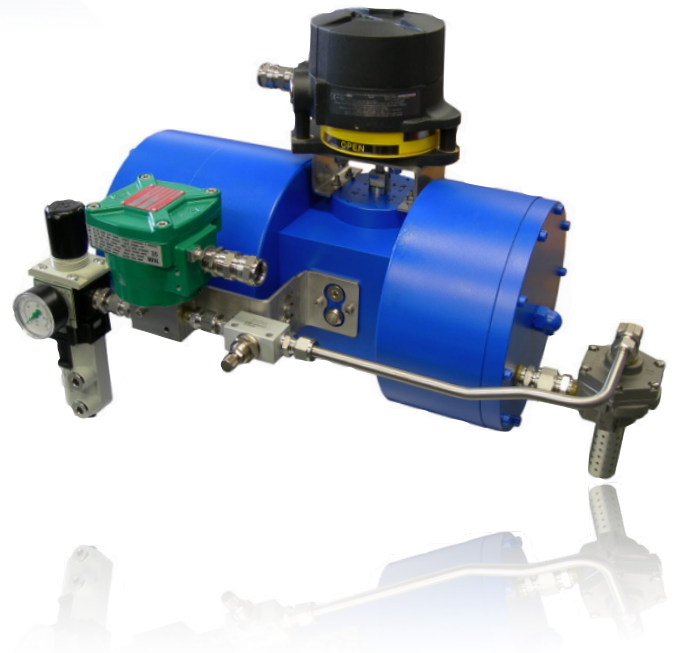
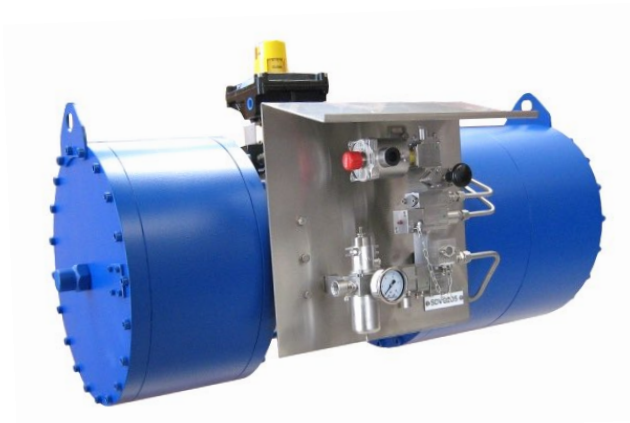
### Options and accessories

- ✦ Limit switch box
- ✦ Positioner
- ✦ Solenoid valve and control panel
- ✦ High cycling version
- ✦ Special version for low or high ambient temperatures
- ✦ Manual override
  
- ✦ 3 positions actuators 90° stroke angle with adjustable intermediate position - single and double acting





# Pneumatic actuators



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