



Actuators

Cylinder bore mm	Serie		Stroke	Bore mm	Piston rod mm	Area cm ²	Max theoretical force in N									
							1.0 bar	2.0 bar	3.0 bar	4.0 bar	5.0 bar	6.0 bar	7.0 bar	8.0 bar	9.0 bar	10.0 bar
10/4	P1A P1S	Double acting	+	10	4	0.8	8	15	23	31	39	46	54	62	69	77
			-	10	4	0.7	6	13	19	26	32	39	45	52	58	65
12/5	C05	Double acting	+	12	5	1.1	11	22	33	44	55	67	78	89	100	111
			-	12	5	0.9	9	18	28	37	46	55	64	73	83	92
12/6	P1A P1J P1M P1S	Double acting	+	12	6	1.1	11	22	33	44	55	67	78	89	100	111
			-	12	6	0.8	8	17	25	33	42	50	58	67	75	83
16	P1T	Double acting	+/-	16	-	2.0	20	39	59	79	99	118	138	158	178	197
16/6	P1A P1S	Double acting	+	16	6	2.0	20	39	59	79	99	118	138	158	178	197
			-	16	6	1.7	17	34	51	68	85	102	119	136	153	170
16/8	P1M	Double acting	+	16	8	2.0	20	39	59	79	99	118	138	158	178	197
			-	16	8	1.5	15	30	44	59	74	89	104	118	133	148
20/8	P1A P1S	Double acting	+	20	8	3.1	31	62	92	123	154	185	216	247	277	308
			-	20	8	2.6	26	52	78	104	129	155	181	207	233	259
20/10	C05 P1J P1M P5T	Double acting	+	20	10	3.1	31	62	92	123	154	185	216	247	277	308
			-	20	10	2.4	23	46	69	92	116	139	162	185	208	231
25	P1T	Double acting Rodless	+/-	25	-	4.9	48	96	144	193	241	289	337	385	433	482
25/10	P1A P1J P1M P1S P5T	Double acting	+	25	10	4.9	48	96	144	193	241	289	337	385	433	482
			-	25	10	4.1	40	81	121	162	202	243	283	324	364	405
32	P1T	Double acting	+/-	32	-	8.0	79	158	237	316	394	473	552	631	710	789
32/12	C05 P1D P1J P1M P1S	Double acting	+	32	12	8.0	79	158	237	316	394	473	552	631	710	789
			-	32	12	6.9	68	136	203	271	339	407	475	542	610	678
32/16	P5T	Double acting	+	32	16	8.0	79	158	237	316	394	473	552	631	710	789
			-	32	16	6.0	59	118	178	237	296	355	414	473	533	592
40	P1T	Double acting Rodless	+/-	40	-	12.6	123	247	370	493	616	740	863	986	1109	1233

Cylinder bore mm	Serie		Stroke	Bore mm	Piston rod mm	Area cm ²	Max theoretical force in N									
							1.0 bar	2.0 bar	3.0 bar	4.0 bar	5.0 bar	6.0 bar	7.0 bar	8.0 bar	9.0 bar	10.0 bar
40/16	P1D	Dubbelverkande	+	40	16	12.6	126	251	377	503	628	754	880	1005	1131	1257
			-	40	16	10.6	106	212	318	424	530	636	742	848	954	1060
40/12	P1J	Double acting	+	40	12	12.6	123	247	370	493	616	740	863	986	1109	1233
			-	40	12	11.4	112	224	337	449	561	673	785	897	1010	1122
40/16	P1M	Double acting	+	40	16	12.6	123	247	370	493	616	740	863	986	1109	1233
			-	40	16	10.6	104	207	311	414	518	621	725	828	932	1036
50	P1T	Double acting Rodless	+/-	50	-	19.6	193	385	578	770	963	1156	1348	1541	1734	1926
50/16	C05 P1J	Double acting	+	50	16	19.6	193	385	578	770	963	1156	1348	1541	1734	1926
			-	50	16	17.6	173	346	519	692	865	1037	1210	1383	1556	1729
50/20	P1D P1M P1S P5T	Double acting	+	50	20	19.6	193	385	578	770	963	1156	1348	1541	1734	1926
			-	50	20	16.5	162	324	485	647	809	971	1133	1295	1456	1618
63	P1T	Double acting Rodless	+/-	63	-	31.2	306	612	917	1223	1529	1835	2141	2446	2752	3058
63/16	C05 P1J	Double acting	+	63	16	31.2	306	612	917	1223	1529	1835	2141	2446	2752	3058
			-	63	16	29.2	286	572	858	1144	1430	1717	2003	2289	2575	2861
63/20	P1D P1M P1S P5T	Double acting	+	63	20	31.2	306	612	917	1223	1529	1835	2141	2446	2752	3058
			-	63	20	28.0	275	550	825	1100	1375	1650	1925	2200	2475	2750
80/25	P1D P1M P1S P5T	Double acting	+	80	25	50.3	493	986	1479	1972	2466	2959	3452	3945	4438	4931
			-	80	25	45.4	445	890	1335	1780	2225	2670	3115	3560	4005	4450
84/20	C0D300	Double acting	+	84	20	55.4	544	1087	1631	2175	2718	3262	3806	4349	4893	5436
			-	84	20	52.3	513	1026	1539	2051	2564	3077	3590	4103	4616	5128
100/25	P1D P1M P1S P5T	Double acting	+	100	25	78.5	770	1541	2311	3082	3852	4623	5393	6164	6934	7705
			-	100	25	73.6	722	1445	2167	2889	3612	4334	5056	5779	6501	7223
114/20	C0D600	Double acting	+	114	20	101.9	1000	2000	3000	4000	5000	6000	7001	8001	9001	10001
			-	114	20	98.8	969	1939	2908	3877	4846	5816	6785	7754	8724	9693
125/32	P1D P1S	Double acting	+	125	32	122.7	1204	2408	3612	4815	6019	7223	8427	9631	10835	12039
			-	125	32	114.7	1125	2250	3375	4500	5625	6750	7875	9000	10125	11250
161/25	C0D1200	Double acting	+	161	25	203.9	2000	4000	6000	8000	10000	12000	14000	16000	18000	20000
			-	161	25	199.0	1952	3904	5856	7808	9759	11711	13663	15615	17567	19519
160/40	P1E	Double acting	+	160	40	201.1	1972	3945	5917	7890	9862	11835	13807	15779	17752	19724
200/40	P1E	Double acting	+	200	40	314.2	3082	6164	9246	12328	15410	18491	21573	24655	27737	30819
250/28	C0P2500	Double acting	+	250	28	490.9	4815	9631	14446	19262	24077	28893	33708	38524	43339	48155
			-	250	28	484.7	4755	9510	14265	19020	23776	28531	33286	38041	42796	47551

+ = Outward stroke
- = Return stroke

Note!

Select a theoretical force 50-100% larger than the force required

The Force Guide is only for double acting cylinders, please look into the technical catalogue for every individual single acting cylinder to see the forces.

Note! For all single acting cylinders you have to reduce the force in the table with the spring force to get the theoretical force.
The spring force is not calculated to create any work, it is only to take the piston rod into the cylinder

The P1A range of cylinders is intended for use in a wide range of applications. The cylinders are particularly suitable for lighter duties in the packaging, food and textile industries. Careful design and high quality manufacture throughout ensure long service life and optimum economy.

Mounting dimensions fully in accordance with ISO 6432 and CETOP RP52P greatly simplifies installation and world-wide interchangeability.



- Mini cylinder according to ISO 6432
- Available in 10 to 25 mm bores
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- End stroke buffers for long service life

Operating information

Working pressure: Max 10 bar
Temperature range: -20°C to +80°C Ø10-25mm

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For technical information see CD

Double acting buffer cushioning

Ø10mm - (M5)

Stroke mm	Order code
10	P1A-S010DS-0010
15	P1A-S010DS-0015
25	P1A-S010DS-0025
30	P1A-S010DS-0030
40	P1A-S010DS-0040
50	P1A-S010DS-0050
80	P1A-S010DS-0080
100	P1A-S010DS-0100
125	P1A-S010DS-0125

Ø12mm - (M5)

Stroke mm	Order code
10	P1A-S012DS-0010
15	P1A-S012DS-0015
25	P1A-S012DS-0025
30	P1A-S012DS-0030
40	P1A-S012DS-0040
50	P1A-S012DS-0050
80	P1A-S012DS-0080
100	P1A-S012DS-0100
125	P1A-S012DS-0125
160	P1A-S012DS-0160
200	P1A-S012DS-0200

Ø16mm - (M5)

Stroke mm	Order code
10	P1A-S016DS-0010
15	P1A-S016DS-0015
25	P1A-S016DS-0025
30	P1A-S016DS-0030
40	P1A-S016DS-0040
50	P1A-S016DS-0050
80	P1A-S016DS-0080
100	P1A-S016DS-0100
125	P1A-S016DS-0125
160	P1A-S016DS-0160
200	P1A-S016DS-0200

Ø20mm - (G1/8)

Stroke mm	Order code
10	P1A-S020DS-0010
15	P1A-S020DS-0015
25	P1A-S020DS-0025
30	P1A-S020DS-0030
40	P1A-S020DS-0040
50	P1A-S020DS-0050
80	P1A-S020DS-0080
100	P1A-S020DS-0100
125	P1A-S020DS-0125
160	P1A-S020DS-0160
200	P1A-S020DS-0200
250	P1A-S020DS-0250
320	P1A-S020DS-0320

Ø25mm - (G1/8)

Stroke mm	Order code
10	P1A-S025DS-0010
15	P1A-S025DS-0015
25	P1A-S025DS-0025
30	P1A-S025DS-0030
40	P1A-S025DS-0040
50	P1A-S025DS-0050
80	P1A-S025DS-0080
100	P1A-S025DS-0100
125	P1A-S025DS-0125
160	P1A-S025DS-0160
200	P1A-S025DS-0200
250	P1A-S025DS-0250
320	P1A-S025DS-0320

Cylinders are supplied complete with neck mounting and piston rod nuts.

Cylinders with Through piston rods are supplied with two piston rod nuts and one neck mounting nut.

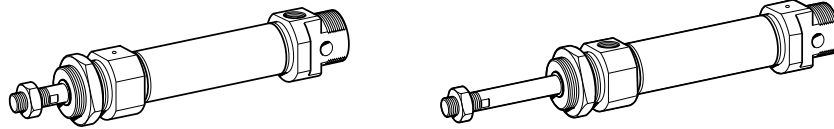
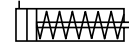
Sensors



For sensors see page 42.

 Indicates stocked product.

Single acting push type (Spring return for retract stroke)



Ø10mm - (M5)

Stroke mm	Order code
10	P1A-S010SS-0010
15	P1A-S010SS-0015
25	P1A-S010SS-0025
40	P1A-S010SS-0040
50	P1A-S010SS-0050
80	P1A-S010SS-0080

Ø16mm - (M5)

Stroke mm	Order code
10	P1A-S016SS-0010
15	P1A-S016SS-0015
25	P1A-S016SS-0025
40	P1A-S016SS-0040
50	P1A-S016SS-0050
80	P1A-S016SS-0080

Ø25mm - (G1/8)

Stroke mm	Order code
10	P1A-S025SS-0010
15	P1A-S025SS-0015
25	P1A-S025SS-0025
40	P1A-S025SS-0040
50	P1A-S025SS-0050
80	P1A-S025SS-0080

Ø12mm - (M5)

Stroke mm	Order code
10	P1A-S012SS-0010
15	P1A-S012SS-0015
25	P1A-S012SS-0025
40	P1A-S012SS-0040
50	P1A-S012SS-0050
80	P1A-S012SS-0080

Ø20mm - (G1/8)

Stroke mm	Order code
10	P1A-S020SS-0010
15	P1A-S020SS-0015
25	P1A-S020SS-0025
40	P1A-S020SS-0040
50	P1A-S020SS-0050
80	P1A-S020SS-0080

Single acting pull type (Spring return for advance stroke)



Ø16mm - (M5)

Stroke mm	Order code
10	P1A-S016TS-0010
15	P1A-S016TS-0015
25	P1A-S016TS-0025
40	P1A-S016TS-0040
50	P1A-S016TS-0050

Ø20mm - (G1/8)

Stroke mm	Order code
10	P1A-S020TS-0010
15	P1A-S020TS-0015
25	P1A-S020TS-0025
40	P1A-S020TS-0040
50	P1A-S020TS-0050
80	P1A-S020TS-0080

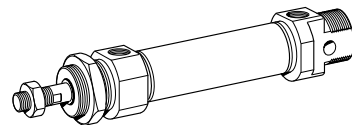
Ø25mm - (G1/8)

Stroke mm	Order code
10	P1A-S025TS-0010
15	P1A-S025TS-0015
25	P1A-S025TS-0025
40	P1A-S025TS-0040
50	P1A-S025TS-0050
80	P1A-S025TS-0080

Double acting adjustable cushioning

Effective cushioning

The Mini ISO range is available with fixed end cushioning or with adjustable pneumatic cushioning, controlled by simple bleed screws for fine adjustment. The adjustable cushioned cylinders can be operated with higher mass loads and at higher speeds than those with fixed end cushioning, reducing overall cycle times.



Ø16mm - (M5)

Stroke mm	Order code
20	P1A-S016MS-0020
25	P1A-S016MS-0025
30	P1A-S016MS-0030
40	P1A-S016MS-0040
50	P1A-S016MS-0050
80	P1A-S016MS-0080
100	P1A-S016MS-0100
125	P1A-S016MS-0125
160	P1A-S016MS-0160
200	P1A-S016MS-0200

Ø20mm - (G1/8)

Stroke mm	Order code
20	P1A-S020MS-0020
25	P1A-S020MS-0025
30	P1A-S020MS-0030
40	P1A-S020MS-0040
50	P1A-S020MS-0050
80	P1A-S020MS-0080
100	P1A-S020MS-0100
125	P1A-S020MS-0125
160	P1A-S020MS-0160
200	P1A-S020MS-0200
250	P1A-S020MS-0250
320	P1A-S020MS-0320

Ø25mm - (G1/8)

Stroke mm	Order code
20	P1A-S025MS-0020
25	P1A-S025MS-0025
30	P1A-S025MS-0030
40	P1A-S025MS-0040
50	P1A-S025MS-0050
80	P1A-S025MS-0080
100	P1A-S025MS-0100
125	P1A-S025MS-0125
160	P1A-S025MS-0160
200	P1A-S025MS-0200
250	P1A-S025MS-0250
320	P1A-S025MS-0320



Indicates stocked product.

Design Variants

Working temperatures

High temperature

Ø10, 12 and 16mm	-10°C to +120°C Non-magnetic piston
Ø20 and 25mm	-10°C to +150°C Non-magnetic piston

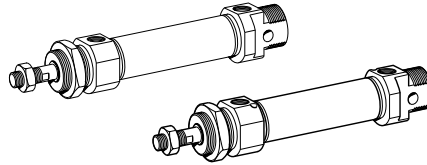
External seals

fluorinated rubber	-20°C to +80°C Magnetic piston
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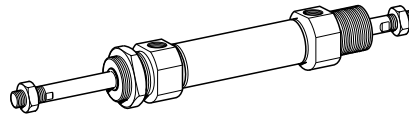


Double acting options

Double-acting adjustable cushioning	Ø16 - Ø25 (not for seal material type F)
Double-acting non-adjustable cushioning	Ø10 - Ø25

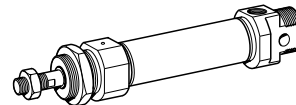


Double-acting, adjustable cushioning through rod	Ø16 - Ø25 (not for seal material type F)
Double-acting, non-adjustable cushioning through rod	Ø10 - Ø25
Double-acting, adjustable cushioning through rod, hollow	Ø16 - Ø25 (not for seal material type F)
Double-acting, non-adjustable cushioning through rod, hollow	Ø10 - Ø25



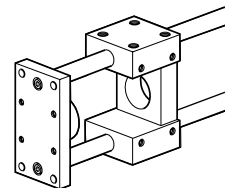
Single acting options

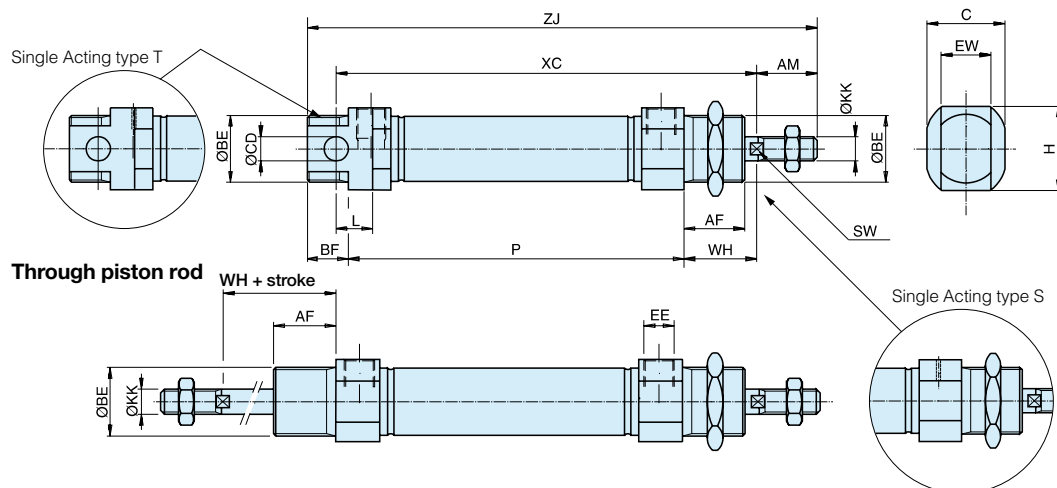
Single-acting, non-adjustable cushioning, spring return for retract stroke	Ø16 - Ø25
Single-acting, push type	Ø10 - Ø25



"U" style rod guidance modules, plain bearings

The P1A series cylinders can be equipped with an external guiding device to prevent the piston rod from turning. When fitted the guide provides a guided piston movement enabling the cylinder to resist turning moments on the piston rod, as well as greater transverse forces.



Dimensions**Double and single acting cylinders**

Cylinder bore mm	AM 0/-2 mm	BE	AF mm	BF mm	C mm	CDH ⁹ mm	EE mm	EW mm	H mm	KK mm	L mm	SW mm	WH $\pm$ 1,2 mm
10	12	M12x1,25	12	10	13,0	4	M5	8	13,0	M4	6	–	16
12	16	M16x1,5	18	13	17,8	6	M5	12	17,8	M6	9	5	22
16 ¹⁾	16	M16x1,5	18	13	17,8	6	M5	12	17,8	M6	9	5	22
16 ²⁾	16	M16x1,5	18	13	23,8	6	M5	12	23,8	M6	9	5	22
20	20	M22x1,5	20	14	23,8	8	G1/8	16	23,8	M8	12	7	24
25	22	M22x1,5	22	14	26,8	8	G1/8	16	26,8	M10x1,25	12	9	28

1) P1A-S016DS/SS/TS

2) P1A-S016MS

Double acting cylinders

Cylinder bore mm	XC mm	ZJ mm	P mm
10	64 + stroke	84 + stroke	46 + stroke
12	75 + stroke	99 + stroke	48 + stroke
16	82 + stroke	104 + stroke	53 + stroke
20	95 + stroke	125 + stroke	67 + stroke
25	104 + stroke	132 + stroke	68 + stroke

Single-acting, spring return, type SS

Stroke/ Cylinder bore mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm
	XC	XC	XC	XC	XC	XC	ZJ	ZJ	ZJ	ZJ	ZJ	ZJ	P	P	P	P	P	P
10	74	79	89	126	136	174	94	99	109	146	156	194	56	61	71	108	118	156
12	85	90	100	132	142	185	109	114	124	156	166	209	58	63	73	105	115	158
16	92	97	107	122	132	184	114	119	129	144	154	206	63	68	78	103	103	155
20	105	110	120	135	145	191	135	140	150	165	175	221	77	82	92	107	117	163
25	114	119	129	144	154	201	142	147	157	172	182	229	78	83	93	108	118	165

Single-acting, spring-extended, type TS

Stroke/ Cylinder bore mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm
	XC ³⁾	XC ³⁾	XC ³⁾	XC ³⁾	XC ³⁾	XC ³⁾	ZJ ³⁾	ZJ ³⁾	ZJ ³⁾	ZJ ³⁾	ZJ ³⁾	ZJ ³⁾	P	P	P	P	P	P
16	107	112	122	137	147	–	129	134	144	159	169	–	78	83	93	108	118	–
20	120	125	135	150	160	195	150	155	165	180	190	225	92	97	107	122	132	167
25	129	134	144	159	169	205	157	162	172	187	197	233	93	98	108	123	133	169

3) With piston rod retracted, as shown in the dimension drawing

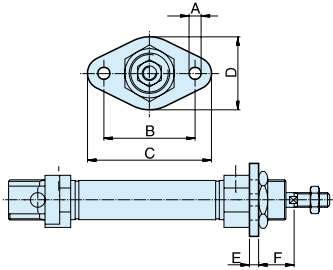
Length tolerances

 ± 1 mm

Stroke length tolerances

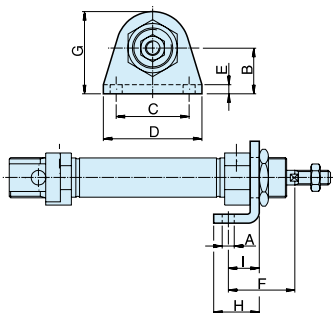
+1,5/0 mm

Cylinder Mountings



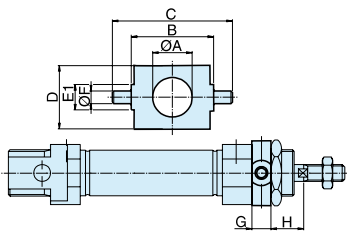
Flange-MF8

Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	Order code
10	4,5	30	40	22	3	13	P1A-4CMB
12-16	5,5	40	52	30	4	18	P1A-4DMB
20	6,6	50	66	40	5	19	P1A-4HMB
25	6,6	50	66	40	5	23	P1A-4HMB



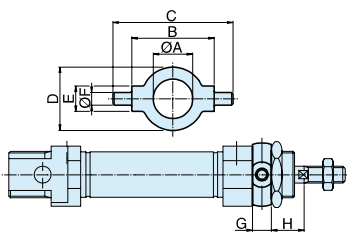
Foot-MS3

Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	Order code
10	4,5	16	25	35	3	24	26,0	16	11	P1A-4CMF
12-16	5,5	20	32	42	4	32	32,5	20	14	P1A-4DMF
20	6,5	25	40	54	5	36	45,0	25	17	P1A-4HMF
25	6,5	25	40	54	5	40	45,0	25	17	P1A-4HMF

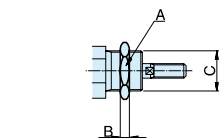


Cover trunnion

Cylinder Ø mm	A mm	B h14 mm	C mm	D mm	E1 mm	F e9 mm	G mm	H mm	Order code
10	12,5	26	38	20	9	4	6	10	P1A-4CMJZ
12-16	16,5	38	58	25	13	6	8	14	P1A-4DMJZ
20	22,5	46	66	30	13	6	8	16	P1A-4HMJZ
25	22,5	46	66	30	13	6	8	20	P1A-4HMJZ

Cover trunnion
Stainless steel

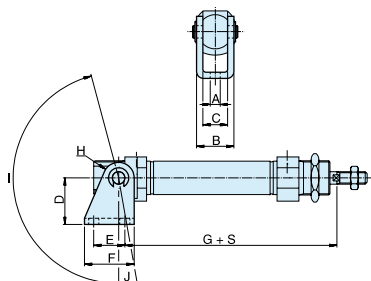
Cylinder Ø mm	A mm	B h14 mm	C mm	D mm	E mm	F e9 mm	G mm	H mm	Order code
10	12,5	26	38	20	8	4	6	10	P1A-4CMJ
12-16	16,5	38	58	25	10	6	8	14	P1A-4DMJ
20	22,5	46	66	30	10	6	8	16	P1A-4HMJ
25	22,5	46	66	30	10	6	8	20	P1A-4HMJ



Stainless Mounting nut

Cylinder Ø mm	A mm	B mm	C	Order code
10	17	5	M12x1,25	9126725405
12-16	24	8	M16x1,50	9126725406
20-25	27	5	M22x1,50	9126725407

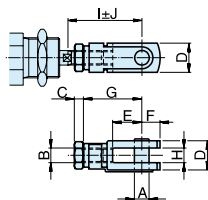
Cylinder Mountings



Clevis bracket

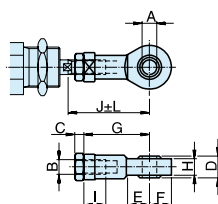
Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I °	J °	Order code
10	4,5	13	8	24	12,5	20	65,3	5	160	17	P1A-4CMT
12	5,5	18	12	27	15,0	25	73,0	7	170	15	P1A-4DMT
16	5,5	18	12	27	15,0	25	80,0	7	170	15	P1A-4DMT
20	6,5	24	16	30	20,0	32	91,0	10	165	10	P1A-4HMT
25	6,5	24	16	30	20,0	32	100,0	10	165	10	P1A-4HMT

S=stroke



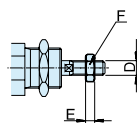
Clevis

Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	Order code
10	4	M4	2,2	8	8	5	16	4	22,0	2,0	P1A-4CRC
12-16	6	M6	3,2	12	12	7	24	6	31,0	3,0	P1A-4DRC
20	8	M8	4,0	16	16	10	32	8	40,5	3,5	P1A-4HRC
25	10	M10x1,25	5,0	20	20	12	40	10	49,0	3,0	P1A-4JRC



Swivel rod eye

Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	Order code
10	5	M4	2,2	8	10	9	27	6,0	8	33,0	9	2,0	P1A-4CRS
12-16	6	M6	3,2	9	10	10	30	6,8	9	38,5	11	1,5	P1A-4DRS
20	8	M8	4,0	12	12	12	36	9,0	12	46,0	14	2,0	P1A-4HRS
25	10	M10x1,25	5,0	14	14	14	43	10,5	15	52,5	17	2,5	P1A-4JRS



Stainless Rod nut

Cylinder Ø mm	D	F mm	E mm	Order code
10	M4	7	2,2	9127385121
12-16	M6	10	3,2	9127385122
20	M8	13	4,0	9127385123
25	M10x1,25	17	5,0	9126725404



P1D Pneumatic Cylinders

ISO, VDMA and AFNOR

*The innovative P1D, a **future-proof** generation of **ISO/VDMA** cylinders.*



ISO cylinder family, P1D

A completely new cylinder range from the ground up, with major investment in research, material and technology, demands long experience and major resources. When we developed our P1D cylinder range, we started from scratch, but not really. Decades of research and learning about what our customers really need world-wide has given us a very stable foundation to start from.

P1D is a cylinder design of the highest possible quality, every detail has been thought through, without making any compromises. It has a large number of innovations which could only be achieved by using the best possible materials and methods. The result is a complete family of ISO/VDMA cylinders, of which we are very proud.

P1D is a high technology cylinder design for just about every conceivable application, both simple and highly complex.

The innovative P1D is a future-proof generation of ISO/VDMA cylinders. The cylinders are double-acting, with a new design of air cushioning.

The P1D complies with the current ISO 6431, VDMA 24562 and AFNOR installation dimension standards.



- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

Operating information

Working pressure:	Max 10 bar
Seals / Temperature options	
Standard:	-20°C to +80°C
High temperature:	-10°C to +150°C
Low temperature:	-40°C to +80°C
Cylinders for low pressure	
hydraulic operation:	Ø32-125mm
ATEX approval:	CE Ex II GD c T4 120°C

For ATEX specific products contact Sales Office

For technical information see CD

P1D Standard - Double acting

Ø32mm - (G¹/₈)

Stroke mm	Order code
25	P1D-S032MS-0025
40	P1D-S032MS-0040
50	P1D-S032MS-0050
80	P1D-S032MS-0080
100	P1D-S032MS-0100
125	P1D-S032MS-0125
160	P1D-S032MS-0160
200	P1D-S032MS-0200
250	P1D-S032MS-0250
320	P1D-S032MS-0320
400	P1D-S032MS-0400
500	P1D-S032MS-0500

Ø63mm - (G³/₈)

Stroke mm	Order code
25	P1D-S063MS-0025
40	P1D-S063MS-0040
50	P1D-S063MS-0050
80	P1D-S063MS-0080
100	P1D-S063MS-0100
125	P1D-S063MS-0125
160	P1D-S063MS-0160
200	P1D-S063MS-0200
250	P1D-S063MS-0250
320	P1D-S063MS-0320
400	P1D-S063MS-0400
500	P1D-S063MS-0500

Ø100mm - (G¹/₂)

Stroke mm	Order code
25	P1D-S100MS-0025
40	P1D-S100MS-0040
50	P1D-S100MS-0050
80	P1D-S100MS-0080
100	P1D-S100MS-0100
125	P1D-S100MS-0125
160	P1D-S100MS-0160
200	P1D-S100MS-0200
250	P1D-S100MS-0250
320	P1D-S100MS-0320
400	P1D-S100MS-0400
500	P1D-S100MS-0500

Ø40mm - (G¹/₄)

Stroke mm	Order code
25	P1D-S040MS-0025
40	P1D-S040MS-0040
50	P1D-S040MS-0050
80	P1D-S040MS-0080
100	P1D-S040MS-0100
125	P1D-S040MS-0125
160	P1D-S040MS-0160
200	P1D-S040MS-0200
250	P1D-S040MS-0250
320	P1D-S040MS-0320
400	P1D-S040MS-0400
500	P1D-S040MS-0500

Ø80mm - (G³/₄)

Stroke mm	Order code
25	P1D-S080MS-0025
40	P1D-S080MS-0040
50	P1D-S080MS-0050
80	P1D-S080MS-0080
100	P1D-S080MS-0100
125	P1D-S080MS-0125
160	P1D-S080MS-0160
200	P1D-S080MS-0200
250	P1D-S080MS-0250
320	P1D-S080MS-0320
400	P1D-S080MS-0400
500	P1D-S080MS-0500

Ø125mm - (G¹/₂)

Stroke mm	Order code
25	P1D-S125MS-0025
40	P1D-S125MS-0040
50	P1D-S125MS-0050
80	P1D-S125MS-0080
100	P1D-S125MS-0100
125	P1D-S125MS-0125
160	P1D-S125MS-0160
200	P1D-S125MS-0200
250	P1D-S125MS-0250
320	P1D-S125MS-0320
400	P1D-S125MS-0400
500	P1D-S125MS-0500

Ø50mm - (G¹/₄)

Stroke mm	Order code
25	P1D-S050MS-0025
40	P1D-S050MS-0040
50	P1D-S050MS-0050
80	P1D-S050MS-0080
100	P1D-S050MS-0100
125	P1D-S050MS-0125
160	P1D-S050MS-0160
200	P1D-S050MS-0200
250	P1D-S050MS-0250
320	P1D-S050MS-0320
400	P1D-S050MS-0400
500	P1D-S050MS-0500



Indicates stocked product.

The cylinders are supplied complete with a zinc plated steel piston rod nut.

Sensors



For sensors see page 42.

Design Variants

P1D Tie-Rod

The P1D is available in a tie-rod version, based on the same high level technology. This future-proof cylinder is the perfect choice wherever a tie-rod cylinder is needed.

The P1D Tie-Rod uses "drop-in" P1D sensors. An ingenious multi-jointed adapter fixes the sensors in any chosen position along the stroke.



P1D Clean

P1D Clean is a new version in our ISO cylinder system, completely designed for the foodstuffs industry. Many years' experience of the stringent requirements for hygiene, choice of material and corrosion resistance, from a wide spectrum of foodstuffs applications have guided the development of this cylinder version. Great emphasis has been put on the external design of the cylinder, choice of materials and corrosion protection.



P1D Clean without sensor function

Special order code for P1D Clean without sensor function.

This version is a permanently sealed. The cylinder has a very clean design and is intended for applications where no sensors are used.



Alternative piston rod materials

All P1D cylinders in all bores, Ø32-125 mm, can be ordered with the following piston rod materials:

- Steel, hard chromed
- Stainless steel, roller polished (standard)
- Acid-proof steel, roller polished
- Stainless steel, hard chromed



Through piston rod

All P1D cylinders in all bores, Ø32-125 mm, are available with a through rod. Cylinders with a through rod can take higher side forces thanks to the double support for the piston rod. In addition, this design makes it easier to install external position sensors.



3 and 4 position cylinders

By installing two cylinders with the same or different stroke, it is possible to build a working unit with three or four positions. This type of unit is available as factory-fitted P1D tie-rod cylinders (P1D-T) in all bores, Ø32-125 mm. Other P1D cylinders can be flange mounted back-to-back with a special mounting



Tandem version

The P1D is also available as a tandem cylinder, i.e. two cylinders connected in series. This cylinder unit has almost twice the force, which is a great advantage in restricted spaces. Tandem cylinders are available as tie-rod cylinders, P1D-T, in all bores Ø32-125 mm.



Design Variants

Low and high ambient temperature

For all bores, Ø32-125 mm, the P1D can be supplied in special high ambient temperature and low ambient temperature versions. The cylinders have seal systems, materials and grease for their particular temperature ranges. The high temperature version does not have magnetic piston (no function at high temperatures). The low temperature cylinders do have magnetic piston, but remember that most sensors are specified to – 25 °C (no function below this temperature). Ambient temperature ranges:

- Low temperature: -40 °C to +40 °C
- High temperature: -10 °C to +150 °C, peaks up to +200 °C



Low pressure hydraulics

The P1D in bores Ø32 - 125 mm can be supplied with special seals for operation with low pressure hydraulics up to 10 bar. Temperature range -20 °C to +80°C.

P1D complete working unit

P1D Standard can be ordered with a factory-fitted valve and piping.

The valve series is the robust and compact Viking series, with product code P2L-A (for cylinder bores 32-63), P2L-B (for cylinder bores 80-100) and P2L-D (for cylinder bore 125).



P1D cylinder with piston rod locking

The P1D cylinder is available in a version with piston rod locking, allowing the piston rod to be locked in any position. The lock unit, of the air/spring actuated type, is integrated in the front end piece of the cylinder.



P1D Standard with piston rod locking



P1D Clean with piston rod locking

Cylinders complete with mountings, sensors, speed regulation, fittings etc.

Order a complete working unit on a single order code instead of a lot of separate numbers. Save time in all phases, such as purchasing, goods reception and installation. A factory installed complete cylinder makes your work more efficient!

For complete ordering information see Technical Catalogue CD.

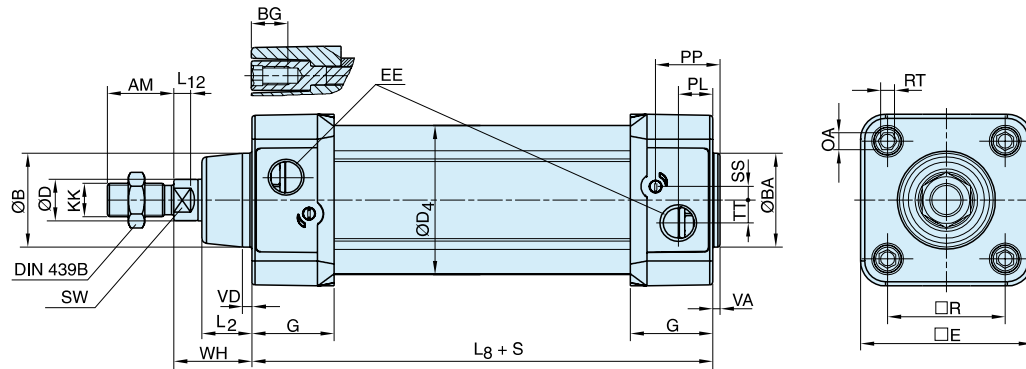


Operation with dry piston rod

In many applications, primarily in the foodstuffs industry, the cylinders are cleaned frequently. This means that the film of grease on the piston rod is washed off, which puts special demands on the materials and the design of the piston rod seal system (scraper ring and piston rod seal). A piston rod seal system specially designed for dry rod operation is available as options for this type of application, for all bores of P1D cylinders. The system has a specially designed L-shaped seal and the material is self-lubricating, high molecular weight plastics (HDPE) – the same system as in our previous P1C cylinders, with proven function.



P1D Standard



Dimensions

Cylinder bore mm	AM mm	B mm	BA mm	BG mm	D mm	D4 mm	E mm	EE mm	G mm	KK mm	L2 mm	L8 mm	L12 mm
32	22	30	30	16	12	45,0	50,0	G1/8	28,5	M10x1,25	16,0	94	6,0
40	24	35	35	16	16	52,0	57,4	G1/4	33,0	M12x1,25	19,0	105	6,5
50	32	40	40	16	20	60,7	69,4	G1/4	33,5	M16x1,5	24,0	106	8,0
63	32	45	45	16	20	71,5	82,4	G3/8	39,5	M16x1,5	24,0	121	8,0
80	40	45	45	17	25	86,7	99,4	G3/8	39,5	M20x1,5	30,0	128	10,0
100	40	55	55	17	25	106,7	116,0	G1/2	44,5	M20x1,5	32,4	138	14,0
125	54	60	60	20	32	134,0	139,0	G1/2	51,0	M27x2	45,0	160	18,0

Cylinder bore mm	OA mm	PL mm	PP mm	R mm	RT mm	SS mm	SW mm	TT mm	VA mm	VD mm	WH mm
32	6,0	13,0	21,8	32,5	M6	4,0	10	4,5	3,5	4,5	26
40	6,0	14,0	21,9	38,0	M6	8,0	13	5,5	3,5	4,5	30
50	8,0	14,0	23,0	46,5	M8	4,0	17	7,5	3,5	5,0	37
63	8,0	16,4	27,4	56,5	M8	6,5	17	11,0	3,5	5,0	37
80	6,0	16,0	30,5	72,0	M10	0	22	15,0	3,5	4,0	46
100	6,0	18,0	35,8	89,0	M10	0	22	20,0	3,5	4,0	51
125	8,0	28,0	40,5	110,0	M12	0	27	17,5	5,5	6,0	65

S=Stroke

Tolerances

Cylinder bore mm	B	BA	L ₃ mm	L ₉ mm	R mm	Stroke tolerance up to stroke 500 mm	Stroke tolerance for stroke over 500 mm
32	d11	d11	±0,4	±2	±0,5	+0,3/+2,0	+0,3/+3,0
40	d11	d11	±0,7	±2	±0,5	+0,3/+2,0	+0,3/+3,0
50	d11	d11	±0,7	±2	±0,6	+0,3/+2,0	+0,3/+3,0
63	d11	d11	±0,8	±2	±0,7	+0,3/+2,0	+0,3/+3,0
80	d11	d11	±0,8	±3	±0,7	+0,3/+2,0	+0,3/+3,0
100	d11	d11	±1,0	±3	±0,7	+0,3/+2,0	+0,3/+3,0
125	d11	d11	±1,0	±3	±1,1	+0,3/+2,0	+0,3/+3,0

Cylinder mountings

Flange MF1/MF2



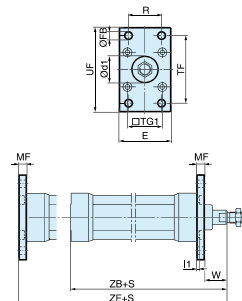
Intended for fixed mounting of cylinder. Flange can be fitted to front or rear end cover of cylinder.

Materials

Flange: Surface-treated steel, black

Mounting screws acc. to DIN 6912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to ISO MF1/MF2, VDMA 24 562, AFNOR

Cyl. bore mm	d1 H11 mm	FB H13 mm	TG1 mm	E mm	R JS14	MF JS14	TF JS14	UF mm	I1 -0,5 mm	W* mm	ZF* mm	ZB* mm	Weight Kg	Order code
32	30	7	32,5	45	32	10	64	80	5,0	16	130	123,5	0,23	P1C-4KMB
40	35	9	38,0	52	36	10	72	90	5,0	20	145	138,5	0,28	P1C-4LMB
50	40	9	46,5	65	45	12	90	110	6,5	25	155	146,5	0,53	P1C-4MMB
63	45	9	56,5	75	50	12	100	120	6,5	25	170	161,5	0,71	P1C-4NMB
80	45	12	72,0	95	63	16	126	150	8,0	30	190	177,5	1,59	P1C-4PMB
100	55	14	89,0	115	75	16	150	170	8,0	35	205	192,5	2,19	P1C-4QMB
125	60	16	110,0	140	90	20	180	205	10,5	45	245	230,5	3,78	P1C-4RMB

S = Stroke length

Foot bracket MS1



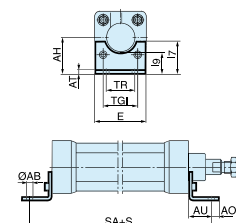
Intended for fixed mounting of cylinder. Foot bracket can be fitted to front and rear end covers of cylinder.

Materials

Foot bracket: Surface-treated steel, black

Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied in pairs with mounting screws for attachment to cylinder.



According to ISO MS1, VDMA 24 562, AFNOR

Cyl. bore mm	AB H14 mm	TG1 mm	E mm	TR JS14	AO mm	AU mm	AH JS15	I7 mm	AT mm	I9 JS14	SA* mm	Weight Kg	Order code
32	7	32,5	45	32	10	24	32	30	4,5	17,0	142	0,06	P1C-4KMF
40	9	38,0	52	36	8	28	36	30	4,5	18,5	161	0,08	P1C-4LMF
50	9	46,5	65	45	13	32	45	36	5,5	25,0	170	0,16	P1C-4MMF
63	9	56,5	75	50	13	32	50	35	5,5	27,5	185	0,25	P1C-4NMF
80	12	72,0	95	63	14	41	63	49	6,5	40,5	210	0,50	P1C-4PMF
100	14	89,0	115	75	15	41	71	54	6,5	43,5	220	0,85	P1C-4QMF
125	16	110,0	140	90	22	45	90	71	8,0	60,0	250	1,48	P1C-4RMF

S = Stroke length

Pivot bracket with rigid bearing

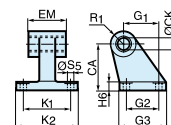


Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

Materials

Pivot bracket: Surface-treated aluminium, black

Bearing: Sintered oil-bronze bushing



According to CETOP RP 107 P, VDMA 24 562, AFNOR

Cyl. bore mm	CK H9 mm	S5 H13 mm	K1 JS14	K2 mm	G1 JS14	G2 JS14	EM mm	G3 mm	CA JS15	H6 mm	R1 mm	Weight Kg	Order code
32	10	6,6	38	51	21	18	25,5	31	32	8	10,0	0,06	P1C-4KMD
40	12	6,6	41	54	24	22	27,0	35	36	10	11,0	0,08	P1C-4LMD
50	12	9,0	50	65	33	30	31,0	45	45	12	13,0	0,15	P1C-4MMD
63	16	9,0	52	67	37	35	39,0	50	50	12	15,0	0,20	P1C-4NMD
80	16	11,0	66	86	47	40	49,0	60	63	14	15,0	0,33	P1C-4PMD
100	20	11,0	76	96	55	50	59,0	70	71	15	19,0	0,49	P1C-4QMD
125	25	14,0	94	124	70	60	69,0	90	90	20	22,5	1,02	P1C-4RMD

Cylinder mountings

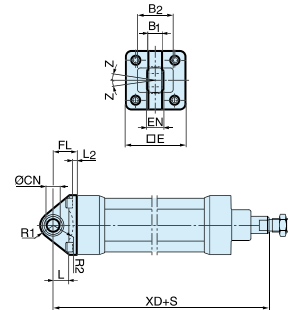
Swivel eye bracket



Intended for use together with clevis bracket GA

Material
Bracket: Surface-treated aluminium, black
Swivel bearing acc. to DIN 648K: Hardened steel

Supplied complete with mounting screws for attachment to cylinder.



According to VDMA 24 562, AFNOR

Cyl. bore mm	E mm	B1 mm	B2 mm	EN mm	R1 mm	R2 mm	FL mm	I2 mm	L mm	CN H7 mm	XD* mm	Z °	Weight Kg	Order code
32	45	10,5	-	14	16	-	22	5,5	12	10	142	4°	0,08	P1C-4KMSA
40	52	12,0	-	16	18	-	25	5,5	15	12	160	4°	0,11	P1C-4LMSA
50	65	15,0	51	21	21	19	27	6,5	15	16	170	4°	0,20	P1C-4MMSA
63	75	15,0	-	21	23	-	32	6,5	20	16	190	4°	0,27	P1C-4NMSA
80	95	18,0	-	25	29	-	36	10,0	20	20	210	4°	0,52	P1C-4PMSA
100	115	18,0	-	25	31	-	41	10,0	25	20	230	4°	0,72	P1C-4QMSA
125	140	25,0	-	37	40	-	50	10,0	30	30	275	4°	1,53	P1C-4RMSA

S = Stroke length * Does not apply to cylinders with lock unit.

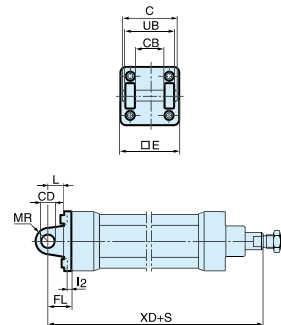
Clevis bracket MP2



Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.

Materials
Clevis bracket: Surface-treated aluminium, black
Pin: Surface hardened steel
Circlips according to DIN 471: Spring steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to ISO MP2, VDMA 24 562, AFNOR

Cyl. bore mm	C mm	E mm	UB h14 mm	CB H14 mm	FL ±0,2 mm	L mm	I2 mm	CD H9 mm	MR mm	XD* mm	Weight Kg	Order code
32	53	45	45	26	22	13	5,5	10	10	142	0,08	P1C-4KMT
40	60	52	52	28	25	16	5,5	12	12	160	0,11	P1C-4LMT
50	68	65	60	32	27	16	6,5	12	12	170	0,14	P1C-4MMT
63	78	75	70	40	32	21	6,5	16	16	190	0,29	P1C-4NMT
80	98	95	90	50	36	22	10,0	16	16	210	0,36	P1C-4PMT
100	118	115	110	60	41	27	10,0	20	20	230	0,64	P1C-4QMT
125	139	140	130	70	50	30	10,0	25	25	275	1,17	P1C-4RMT

S = Stroke length * Does not apply to cylinders with lock unit

Cylinder mountings

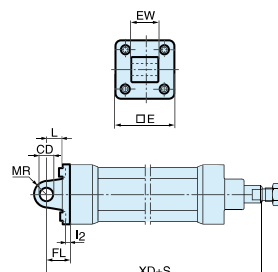
Clevis bracket MP4



Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.

Materials
Clevis bracket: Surface-treated aluminium, black
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to ISO MP4, VDMA 24 562, AFNOR

Cyl. bore mm	E mm	EW mm	FL mm	L ±0,2 mm	I2 mm	CD mm	MR H9 mm	XD* mm	Weight Kg	Order code
32	45	26	22	13	5,5	10	10	142	0,09	P1C-4KME
40	52	28	25	16	5,5	12	12	160	0,13	P1C-4LME
50	65	32	27	16	6,5	12	12	170	0,17	P1C-4MME
63	75	40	32	21	6,5	16	16	190	0,36	P1C-4NME
80	95	50	36	22	10,0	16	16	210	0,46	P1C-4PME
100	115	60	41	27	10,0	20	20	230	0,83	P1C-4QME
125	140	70	50	30	10,0	25	25	275	1,53	P1C-4RME

S = Stroke length * Does not apply to cylinders with lock unit.

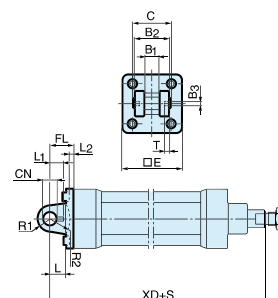
Clevis bracket GA



Intended for flexible mounting of cylinder. Clevis bracket GA can be combined with pivot bracket with swivel bearing, swivel eye bracket and swivel rod eye.

Materials
Clevis bracket: Surface-treated aluminium
Pin: Surface hardened steel
Locking pin: Spring steel
Circlips according to DIN 471: Spring steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to VDMA 24 562, AFNOR

Cyl. bore mm	C mm	E mm	B2 d12 mm	B1 H14 mm	T mm	B3 mm	R2 mm	L1 mm	FL ±0,2 mm	I2 mm	L mm	CN F7 mm	R1 mm	XD* mm	Weight Kg	Order code
32	41	45	34	14	3	3,3	17	11,5	22	5,5	12	10	11	142	0,09	P1C-4KMCA
40	48	52	40	16	4	4,3	20	12,0	25	5,5	15	12	13	160	0,13	P1C-4LMCA
50	54	65	45	21	4	4,3	22	14,0	27	6,5	17	16	18	170	0,17	P1C-4MMCA
63	60	75	51	21	4	4,3	25	14,0	32	6,5	20	16	18	190	0,36	P1C-4NMCA
80	75	95	65	25	4	4,3	30	16,0	36	10,0	20	20	22	210	0,58	P1C-4PMCA
100	85	115	75	25	4	4,3	32	16,0	41	10,0	25	20	22	230	0,89	P1C-4QMCA
125	110	140	97	37	6	6,3	42	24,0	50	10,0	30	30	30	275	1,75	P1C-4RMCA

S = Stroke length * Does not apply to cylinders with lock unit.

Stainless steel Pin Set GA

Cyl. bore mm	Weight Kg	Order code
32	0,05	9301054311
40	0,06	9301054312
50	0,07	9301054313
63	0,07	9301054314
80	0,17	9301054315
100	0,31	9301054316
125	0,54	9301054317

Materials
Pin: Stainless steel
Locking pin: Stainless steel
Circlips according to DIN 471: Stainless steel

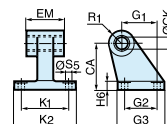
Cylinder mountings

Pivot bracket with swivel bearing



Intended for use together with clevis bracket GA.

Material
Pivot bracket: Surface-treated steel, black
Swivel bearing acc. to DIN 648K: Hardened steel



According to VDMA 24 562, AFNOR

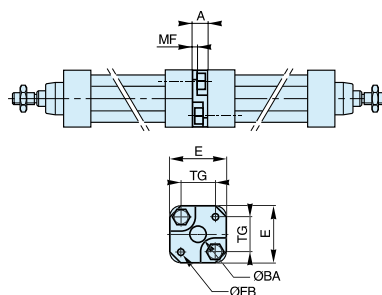
Cyl. bore	CN H7	S5 H13	K1 JS14	K2	EU	G1 JS14	G2 JS14	EN	G3	CH JS15	H6	ER	Z	Weight Kg	Order code
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
32	10	6,6	38	51	10,5	21	18	14	31	32	10	16	4°	0,18	P1C-4KMA
40	12	6,6	41	54	12,0	24	22	16	35	36	10	18	4°	0,25	P1C-4LMA
50	16	9,0	50	65	15,0	33	30	21	45	45	12	21	4°	0,47	P1C-4MMA
63	16	9,0	52	67	15,0	37	35	21	50	50	12	23	4°	0,57	P1C-4NMA
80	20	11,0	66	86	18,0	47	40	25	60	63	14	28	4°	1,05	P1C-4PMA
100	20	11,0	76	96	18,0	55	50	25	70	71	15	30	4°	1,42	P1C-4QMA
125	30	14,0	94	124	25,0	70	60	37	90	90	20	40	4°	3,10	P1C-4RMA

Mounting kit



Mounting kit for back to back mounted cylinders, 3 and 4 position cylinders.

Material:
Mounting: Aluminium
Mounting screws: Zinc-plated steel 8.8



Cyl. bore	E	TG	ØFB	MF	A	ØBA	Weight Kg	Order code
mm	mm	mm	mm	mm	mm	mm		
32	50	32,5	6,5	5	16	30	0,060	P1E-6KB0
40	60	38,0	6,5	5	16	35	0,078	P1E-6LB0
50	66	46,5	8,5	6	20	40	0,162	P1E-6MB0
63	80	56,5	8,5	6	20	45	0,194	P1E-6NB0
80	100	72,0	10,5	8	25	45	0,450	P1E-6PB0
100	118	89,0	10,5	8	25	55	0,672	P1E-6QB0

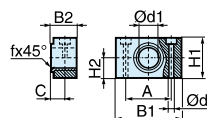
Pivot bracket for MT4



Intended for use together with central trunnion MT4.

Material
Pivot bracket: Surface-treated aluminium
Bearing acc. to DIN 1850 C: Sintered oil-bronze bushing

Supplied in pairs.



According to ISO, VDMA 24 562, AFNOR

Cyl. bore	B1	B2	A	C	d1	d2 H13	H1	H2	fx45° min	Weight Kg	Order code
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
32	46	18,0	32	10,5	12	6,6	30	15	1,0	0,04*	9301054261
40	55	21,0	36	12,0	16	9,0	36	18	1,6	0,07*	9301054262
50	55	21,0	36	12,0	16	9,0	36	18	1,6	0,07*	9301054262
63	65	23,0	42	13,0	20	11,0	40	20	1,6	0,12*	9301054264
80	65	23,0	42	13,0	20	11,0	40	20	1,6	0,12*	9301054264
100	75	28,5	50	16,0	25	14,0	50	25	2,0	0,21*	9301054266
125	75	28,5	50	16,0	25	14,0	50	25	2,0	0,21*	9301054266

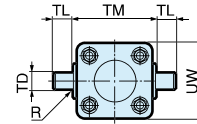
Cylinder mountings

Centre trunnion MT4 for P1D-S



Intended for articulated mounting of cylinder. This mounting is available for the P1D Standard and for the tie-rod design of P1D. The trunnion is factory-fitted in the centre of the cylinder or at an optional location specified by the XV-measure – Combined with pivot bracket for MT4.

Material:
Trunnion: zinc plated steel



Centre trunnion MT4 for P1D-T



Trunnion centred

The central trunnion for the P1D-S and P1D-T is ordered with letter D in position 17 (no dimension specified in positions 18-20).

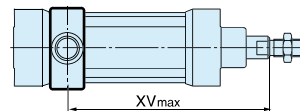
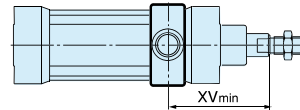
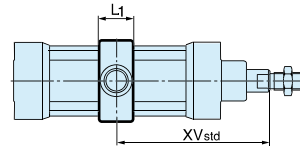
Trunnion with optional location

The central trunnion for the P1D-S and P1D-T is ordered with letter G in position 17 and desired XV-measure (3-digit measure in mm) in positions 18-20.

Trunnion loose

P1D-S can also be ordered with the central trunnion loosely fitted to the cylinder (not fixed in position). This allows the position to be established at the time of installation.

Ordered with letter G in position 17 and 000 in positions 18-20.



According to ISO MT4, VDMA 24 562, AFNOR

Cyl. bore	TM	TL	TD	R	UW	UW	L1	L1	X1*	XV _{min}	XV _{min}	X2*	X2*
mm	h14	h14	e9	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
32	50	12	12	1,0	52	46	18	15	73,0	89	62	57	84
40	63	16	16	1,6	59	59	20	20	82,5	95	73	70	92
50	75	16	16	1,6	71	69	20	20	90,0	113	81	67	99
63	90	20	20	1,6	84	84	26	25	97,5	118	90	78	106
80	110	20	20	1,6	105	102	26	25	110,0	132	98	88	122
100	132	25	25	2,0	129	125	32	30	120,0	140	111	100	129
125	160	25	25	2,0	159	155	33	32	145,0	168	132	122	158

XVstd = X1 + Stroke length/2, XVmax = X2 + Stroke length

* Does not apply to cylinders with lock unit.

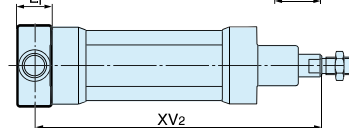
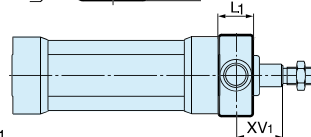
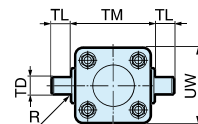
Flange mounted trunnion



Intended for articulated mounting of cylinder. This trunnion can be flange mounted on the front or rear end cover of all P1D cylinders. At your choice, you can order a complete cylinder with factory-fitted flange mounted trunnion. Individual trunnions have order code as shown to the right.

Material:
Trunnion: zinc plated steel
Screws: zinc plated steel, 8.8

Delivered complete with mounting screws for attachment to the cylinder



According to ISO MT4, VDMA 24 562, AFNOR

Cyl. bore	TM	TL	TD	R	UW	L1	XV ₁ *	X*	Y	Weight	Order code
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Kg	
32	50	12	12	1,0	46	14	19,5	126,5	11	0,17	P1D-4KMYF
40	63	16	16	1,6	59	19	21,0	144,0	14	0,43	P1D-4LMYF
50	75	16	16	1,6	69	19	28,0	152,0	20	0,55	P1D-4MMYF
63	90	20	20	1,6	84	24	25,5	169,5	20	1,10	P1D-4NMYF
80	110	20	20	1,6	102	24	34,5	185,5	26	1,66	P1D-4PMYF
100	132	25	25	2,0	125	29	37,0	203,0	31	3,00	P1D-4QMYF

XV₂ = X + Stroke length * Does not apply to cylinders with lock unit.

To fit a flange mounted trunnion at the front end cover of a P1D cylinder with lock unit, the piston rod must be extended. This is in order to provide the same WH dimensions as for the P1D base cylinder with dimension Y.

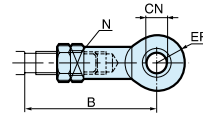
Piston rod mountings

Swivel rod eye



Intended for articulated mounting of the cylinder.
Maintenance-free PTFE.

Material:
Swivel rod eye, nut: galvanized steel.
Swivel bearing according to DIN 648K: Hardened steel.

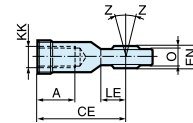


Stainless steel swivel rod eye

Stainless-steel swivel rod eye for articulated mounting of cylinder.
Maintenance-free.



Materials
Swivel rod eye: Stainless steel
Swivel bearing according to DIN 648K: Stainless steel
Use stainless steel nut with stainless steel swivel rod eye.



ISO 8139

Cyl.- dia. mm	A mm	B min mm	B max mm	CE mm	CN H9 mm	EN h12 mm	ER mm	KK	LE	N* min mm	O mm	Z	Weight kg	Order code Galvanised Steel	Order code Stainless Steel
32	20	48,0	55	43	10	14	14	M10x1,25	15	17	10,5	12°	0,08	P1C-4KRS	P1S-4JRT
40	22	56,0	62	50	12	16	16	M12x1,25	17	19	12,0	12°	0,12	P1C-4LRS	P1S-4LRT
50	28	72,0	80	64	16	21	21	M16x1,5	22	22	15,0	15°	0,25	P1C-4MRS	P1S-4MRT
63	28	72,0	80	64	16	21	21	M16x1,5	22	22	15,0	15°	0,25	P1C-4MRS	P1S-4MRT
80	33	87,0	97	77	20	25	25	M20x1,5	26	32	18,0	15°	0,46	P1C-4PRS	P1S-4PRT
100	33	87,0	97	77	20	25	25	M20x1,5	26	32	18,0	15°	0,46	P1C-4PRS	P1S-4PRT
125	51	123,5	137	110	30	37	35	M27x2	36	41	25,0	15°	1,28	P1C-4RRS	P1S-4RRT

*key grip

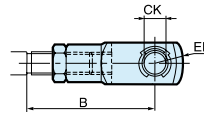
Clevis



Intended for articulated mounting of the cylinder.

Material:
Clevis and clip galvanized steel.
Pin: Hardened steel

Supplied complete with axle.

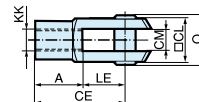


Stainless steel clevis



Stainless-steel clevis for articulated mounting of cylinder.

Material
Clevis: Stainless steel
Pin: Stainless steel
Circlips according to DIN 471: Stainless steel
Use stainless steel nut with stainless steel swivel rod eye.



ISO 8140

Cyl.- dia. mm	A mm	B min mm	B max mm	CE mm	CK h11/E9 mm	CL mm	CM mm	ER mm	KK	LE mm	O mm	Weight kg	Order code Galvanised Steel	Order code Stainless Steel
32	20	45,0	52	40	10	20	10	16	M10x1,25	20	28,0	0,09	P1C-4KRC	P1S-4JRD
40	24	54,0	60	48	12	24	12	19	M12x1,25	24	32,0	0,15	P1C-4LRC	P1S-4LRD
50	32	72,0	80	64	16	32	16	25	M16x1,5	32	41,5	0,35	P1C-4MRC	P1S-4MRD
63	32	72,0	80	64	16	32	16	25	M16x1,5	32	41,5	0,35	P1C-4MRC	P1S-4MRD
80	40	90,0	100	80	20	40	20	32	M20x1,5	40	50,0	0,75	P1C-4PRC	P1S-4PRD
100	40	90,0	100	80	20	40	20	32	M20x1,5	40	50,0	0,75	P1C-4PRC	P1S-4PRD
125	56	123,5	137	110	30	55	30	45	M27x254	72,0		2,10	P1C-4RRC	P1S-4RRD

Piston rod mountings

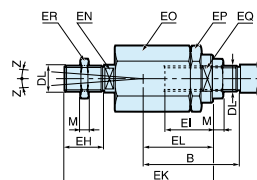
Flexo coupling



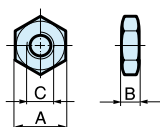
Flexo coupling for articulated mounting of piston rod.
Flexo fitting is intended to take up axial angle errors within a range of $\pm 4^\circ$.

Material
Flexo coupling, nut: Zinc-plated steel
Socket: Hardened steel

Supplied complete with galvanized adjustment nut.



Cyl. bore mm	B min mm	B max mm	DL	EH mm	EI mm	EK mm	EL mm	EN mm	EO mm	EP mm	EQ mm	ER mm	M mm	Z °	Weight mm	Order code
32	36,0	43	M10x1,25	20	23	70	31	12	30	30	19	30	5,0	4°	0,21	P1C-4KRF
40	37,0	43	M12x1,25	23	23	67	31	12	30	30	19	30	6,0	4°	0,22	P1C-4LRF
50	53,0	61	M16x1,5	40	32	112	45	19	41	41	30	41	8,0	4°	0,67	P1C-4MRF
63	53,0	61	M16x1,5	40	32	112	45	19	41	41	30	41	8,0	4°	0,67	P1C-4MRF
80	57,0	67	M20x1,5	39	42	122	56	19	41	41	30	41	10,0	4°	0,72	P1C-4PRF
100	57,0	67	M20x1,5	39	42	122	56	19	41	41	30	41	10,0	4°	0,72	P1C-4PRF
125	75,5	89	M27x2	48	48	145	60	24	55	55	32	55	13,5	4°	0,72	P1C-4RRF



According to DIN 439 B

Nut



Intended for fixed mounting of accessories to the piston rod.
Material: Zinc-plated steel

All P1D cylinders are delivered with a zinc-plated steel piston rod nut, except P1D Clean, which is delivered with a stainless steel piston rod nut instead.

Cyl. bore mm	A mm	B mm	C	Weight Kg	Order code
32	17	5,0	M10x1,25	0,007	9128985601
40	19	6,0	M12x1,25	0,010	0261109910
50	24	8,0	M16x1,5	0,021	9128985603
63	24	8,0	M16x1,5	0,021	9128985603
80	30	10,0	M20x1,5	0,040	0261109911
100	30	10,0	M20x1,5	0,040	0261109911
125	30	10,0	M20x1,5	0,100	0261109912

Stainless steel nut



Intended for fixed mounting of accessories to the piston rod.

Material: Stainless steel A2

All P1D cylinders are delivered with a zinc-plated steel piston rod nut, except P1D Clean, which is delivered with a stainless steel piston rod nut instead.

32	17	5,0	M10x1,25	0,007	9126725404
40	19	6,0	M12x1,25	0,010	9126725405
50	24	8,0	M16x1,5	0,021	9126725406
63	24	8,0	M16x1,5	0,021	9126725406
80	30	10,0	M20x1,5	0,040	0261109921
100	30	10,0	M20x1,5	0,040	0261109921
125	30	10,0	M20x1,5	0,100	0261109922

Acid-proof nut



Intended for fixed mounting of accessories to the piston rod.

Material: Acid-proof steel A4

Cylinders with acid-proof piston rod are supplied with nut of acid-proof steel

32	17	5,0	M10x1,25	0,007	0261109919
40	19	6,0	M12x1,25	0,010	0261109920
50	24	8,0	M16x1,5	0,021	0261109917
63	24	8,0	M16x1,5	0,021	0261109917
80	30	10,0	M20x1,5	0,040	0261109916
100	30	10,0	M20x1,5	0,040	0261109916
125	30	10,0	M20x1,5	0,100	0261109918

Sealing plugs

Four plastic sealing plugs are supplied with every P1D Clean cylinder. These are installed in the end cover screws which are not used for the cylinder installation. To ensure the sealing function, the plugs can be used only once i.e. they cannot be re-used. When installed in the end cover screws, they should be tapped lightly with a hammer to securely fix.



Cyl.	Order code
32	9121742201
40	9121742201
50	9121742202
63	9121742202
80	9121742203
100	9121742203
125	9121742204

New drop-in sensors

The completely new "drop-in" P1D sensors can easily be installed from the side in the sensor groove, at any position along the piston stroke. The sensors are completely recessed and thus mechanically protected. Choose between electronic or reed sensors and several cable lengths and 8 mm and M12 connectors. The same standard sensors are used for all P1D versions, i.e. even for P1D Clean with the patent applied system of integrated sensors. Please note that the sensors with 8 mm and M12 connector should have cable lengths 1 m for P1D Clean to allow flexible positioning of the sensors, including longer stroke lengths. There is a double jointed adapter for the tie-rod version, which offers simple and flexible use of standard sensors.



Electronic sensors

The new electronic sensors are "Solid State", i.e. they have no moving parts at all. They are provided with short-circuit protection and transient protection as standard. The built-in electronics make the sensors suitable for applications with high on and off switching frequency, and where very long service life is required.

Technical data

Design	GMR (Giant Magnetic Resistance) magneto-resistive function
Installation	From side, down into the sensor groove, so-called drop-in
Outputs	PNP, normally open (also available in NPN design, normally closed, on request)
Voltage range	10-30 VDC 10-18 V DC, ATEX sensor
Ripple	max 10%
Voltage drop	max 2,5 V
Load current	max 100 mA
Internal consumption	max 10 mA
Actuating distance	min 9 mm
Hysteresis	max 1,5 mm
Repeatability accuracy	max 0,2 mm
On/off switching frequency	max 5 kHz
On switching time	max 2 ms
Off switching time	max 2 ms
Encapsulation	IP 67 (EN 60529)
Temperature range	-25 °C to +75 °C -20 °C to +45 °C, ATEX sensor
Indication	LED, yellow
Material housing	PA 12
Material screw	Stainless steel
Cable	PVC or PUR 3x0.25 mm² see order code respectively

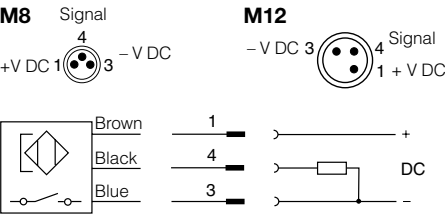
Reed sensors

The sensors are based on proven reed switches, which offer reliable function in many applications. Simple installation, a protected position on the cylinder and clear LED indication are important advantages of this range of sensors.

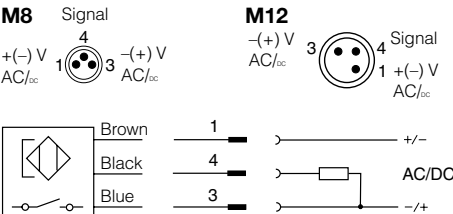
Technical data

Design	Reed element
Mounting	From side, down into the sensor groove, so-called drop-in
Output	Normally open, or normally closed
Voltage range	10-30 V AC/DC or 10-120 V AC/DC 24-230 V AC/DC
Load current	max 500 mA for 10-30 V or max 100 mA for 10-120 V max 30 mA for 24-230 V
Breaking power (resistive)	max 6 W/VA
Actuating distance	min 9 mm
Hysteresis	max 1,5 mm
Repeatability accuracy	0,2 mm
On/off switching frequency	max 400 Hz
On switching time	max 1,5 ms
Off switching time	max 0,5 ms
Encapsulation	IP 67 (EN 60529)
Temperature range	-25 °C to +75 °C
Indication	LED, yellow
Material housing	PA12
Material screw	Stainless steel
Cable	PVC or PUR 3x0.14 mm² see order code respectively

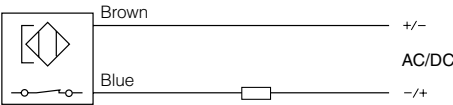
Electronic sensors



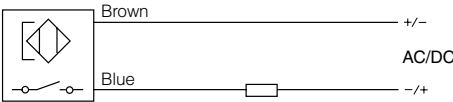
Reed sensors



P8S-GCFPX

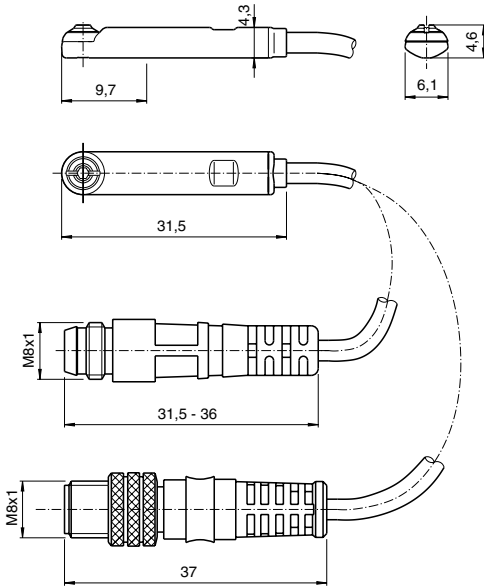


P8S-GRFLX / P8S-GRFLX2

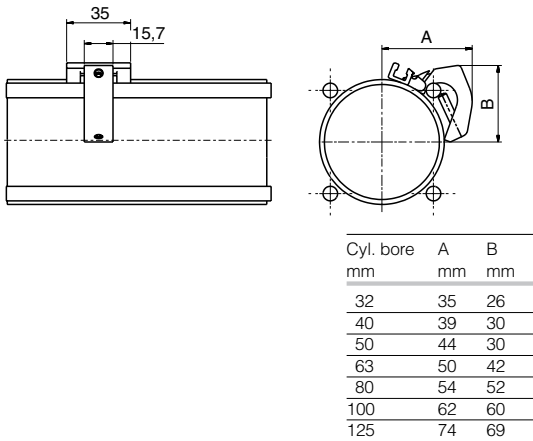


Dimensions

Sensors



Adapter for P1D-T



Ordering data

Output/function	Cable/connector	Weight kg	Order code
Electronic sensors , 10-30 V DC			
PNP type, normally open	0,27 m PUR-cable and 8 mm snap-in male connector ¹⁾	0,007	P8S-GPSHX
PNP type, normally open	1,0 m PUR-cable and 8 mm snap-in male connector	0,013	P8S-GPSCX
PNP type, normally open	1,0 m PUR-cable and M8 screw male connector	0,013	P8S-GPCCX
PNP type, normally open	0,27 m PUR-cable and M12 screw male connector ¹⁾	0,015	P8S-GPMHX
PNP type, normally open	3 m PVC-cable without connector	0,030	P8S-GPFLX
PNP type, normally open	10 m PVC-cable without connector	0,110	P8S-GPFTX
Electronic sensor 18-30 V DC			
ATEX-certified			
CE II3G EEx nA II T4X II3D 135 °C IP67 See ATEX information pages 22 - 25.			
Type PNP , normally open	3 m PVC-cable without connector	0,030	P8S-GPFLX/EX
Reed sensors , 10-30 V AC/DC			
Normally open	0,27 m PUR-cable and 8 mm snap-in male connector ¹⁾	0,007	P8S-GSSHX
Normally open	1,0 m PUR-cable and 8 mm snap-in male connector	0,013	P8S-GSSCX
Normally open	1,0 m PUR-cable and M8 male connector	0,013	P8S-GSCCX
Normally open	0,27 m PUR-cable and M12 screw male connector ¹⁾	0,015	P8S-GSMHX
Normally open	1,0 m PUR-cable and M12 screw male connector	0,023	P8S-GSMCX
Normally open	3 m PVC-cable without connector	0,030	P8S-GSFLX
Normally open	10 m PVC-cable without connector	0,110	P8S-GSFTX
Normally closed	5m PVC-cable without connector ²⁾	0,050	P8S-GCFPX
Reed sensors, 10-120 V AC/DC			
Normally open	3 m PVC-cable without connector	0,030	P8S-GRFLX
Reed sensorer, 24-230 V AC/DC			
Normalt öppen	3 m PVC-kabel utan kontakt	0,030	P8S-GRFLX2

1) Not in combination with P1D Clean (too short cable)
2) Without LED

Adapter for tie-rod design

Description	Weight kg	Order code
Double jointed adapter for cylinder P1D-T cylinder bore Ø32 to Ø125 mm	0,07	P8S-TMA0X
		

Sensor mounting

Description	Weight kg	Order code
Suitable for P1A and P1S diameter 10 - 25 mm	0,07	P8S-TMC01
Suitable for P1S diameter 32 - 63 mm	0,07	P8S-TMC02
Suitable for P1S diameter 80 - 125 mm	0,07	P8S-TMC03

Connecting cables with one connector

The cables have an integral snap-in female connector.



Type of cable	Cable/connector kg	Weight	Order code
Cables for sensors, complete with one female connector			
Cable, Flex PVC	3 m, 8 mm Snap-in connector	0,07	9126344341
Cable, Flex PVC	10 m, 8 mm Snap-in connector	0,21	9126344342
Cable, Super Flex PVC	3 m, 8 mm Snap-in connector	0,07	9126344343
Cable, Super Flex PVC	10 m, 8 mm Snap-in connector	0,21	9126344344
Cable, Polyurethane	3 m, 8 mm Snap-in connector	0,01	9126344345
Cable, Polyurethane	10 m, 8 mm Snap-in connector	0,20	9126344346
Cable, Polyurethane	5 m, M12 screw connector	0,07	9126344348
Cable, Polyurethane	10 m, M12 screw connector	0,20	9126344349

Male connectors for connecting cables

Cable connectors for producing your own connecting cables. The connectors can be quickly attached to the cable without special tools. Only the outer sheath of the cable is removed. The connectors are available for M8 and M12 screw connectors and meet protection class IP 65.



Connector	Weight kg	Order code
M8 screw connector	0,017	P8CS0803J
M12 screw connector	0,022	P8CS1204J

P1E Cylinders are equipped as standard with magnetic pistons for proximity position sensing. A full range of sensors enables the cylinders to be integrated into the most advanced automation systems. The sensors can be fitted at any position along the cylinder stroke. In development of P1E cylinders, great emphasis was placed on the importance of long service life and operation with unlubricated air characteristics essential for applications in demanding environments.



- Cylinder for heavy duty operation to VDMA 24562
- Bore sizes Ø160 - Ø200mm
- Tie rod design
- Hard anodised cylinder tube as standard
- Stainless steel piston rod
- Non-lube operation

Operating information

Working pressure: Max 10 bar

Seal / Temperature options:

Standard: -20°C to +70°C

High temperature: -10°C to +180°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

Piston rod type

Male threaded

Stainless steel as standard

Chrome plated steel

Rod gaiter versions

For technical information see CD

Tie rod cylinders - Double acting, magnetic piston, male piston rod thread

Ø160mm - (G^{3/4})

Stroke mm	Order code
25	P1E-T160MS-0025
50	P1E-T160MS-0050
80	P1E-T160MS-0080
100	P1E-T160MS-0100
125	P1E-T160MS-0125
160	P1E-T160MS-0160
200	P1E-T160MS-0200
250	P1E-T160MS-0250
320	P1E-T160MS-0320

Ø200mm - (G^{3/4})

Stroke mm	Order code
25	P1E-T200MS-0025
50	P1E-T200MS-0050
80	P1E-T200MS-0080
100	P1E-T200MS-0100
125	P1E-T200MS-0125
160	P1E-T200MS-0160
200	P1E-T200MS-0200
250	P1E-T200MS-0250
320	P1E-T200MS-0320

Cylinder mountings

Swivel rod eye Zinc plated steel

Cyl.Ø	Order code
160	P1C--4SRS
200	P1C--4SRS

Clevis Galvanised steel

Cyl.Ø	Order code
160	P1C-4SRC
200	P1C-4SRC

Clevis bracket MP2 Aluminium/Cast iron

Cyl.Ø	Order code
160	P1C-4SMT
200	P1C-4TMT

Clevis bracket MP4 Aluminium/Cast iron

Cyl.Ø	Order code
160	P1C-4SME
200	P1C-4TME

Flange MF1 and MF2 Surface treated steel

Cyl.Ø	Order code
160	P1C-4SMB
200	P1C-4TMB

Foot bracket Surface treated steel

Cyl.Ø	Order code
160	P1C-4SMF
200	P1C-4TMF

Piston rod nut Zinc plated steel

Cyl.Ø	Order code
160	9128985606
200	9128985606

Pivot bracket for MT4

Cyl.Ø	Order code
160	9301054268
200	9301054268

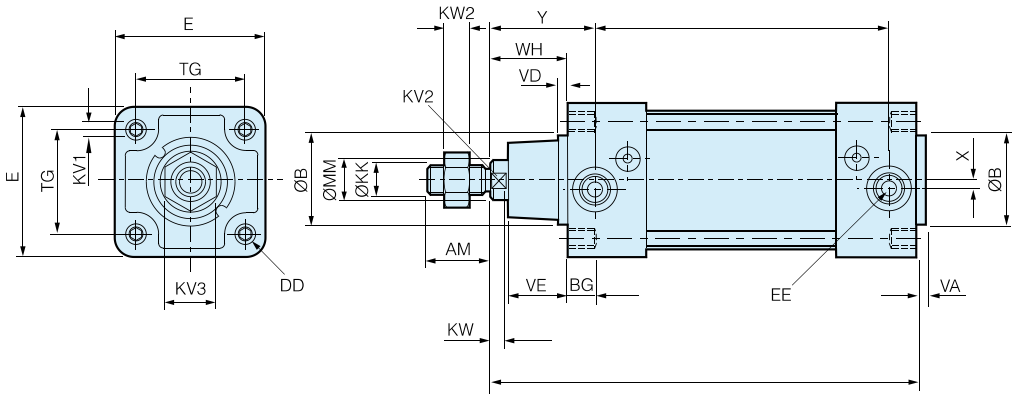
Sensors



For sensors see page 42.

 Indicates stocked product.

Basic Tie Rod and Profile cylinders



Dimensions (mm)

Bore Size	MM Ø	KK*	AM* +0/-2	ØB e11	WH	VD	VE	ZJ	VA	PJ	X	Y	KV3 A/F	KW2
160	40	M36x2	72	65	80	7	52	260	5	132	0	104	55	14
200	40	M36x2	72	75	95	7	60	275	5	132	0	119	55	14

Bore Size	EE	DD	KV1 A/F	BG min	KV2 A/F	KW	E	TG
160	G ³ / ₄	M16	30	24	36	16	179	140
200	G ³ / ₄	M16	30	24	36	16	216	175

Bore Size	Weight (kg)	
	0mm stroke	5mm stroke
160	11,71	0,114
200	15,45	0,126

* To ISO 6431

The P1J cylinder is ideal for applications where you need compact dimensions and high overall performance. The versatile P1J cylinder range provides a long trouble-free operation in a variety of applications.

- Compact and versatile
- Magnetic piston for direct fit with electronic controls
- Fit flush sensor range with many functions
- Patent press fit end cover for short axial length
- Choose from our wide range of double-acting, single-acting and double-acting with guide rod



Operating information

Working pressure: Max 10 bar
 Permissible fluid: Air, with or without lubrication
 Standard working temperature: -20°C to +80°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For technical information see CD

Double acting - Standard seals - Female threaded piston rod

Ø12mm - (M5)

Stroke mm	Order code
10	P1J-S012DS-0010
15	P1J-S012DS-0015
20	P1J-S012DS-0020
25	P1J-S012DS-0025

Ø20mm - (M5)

Stroke mm	Order code
10	P1J-S020DS-0010
15	P1J-S020DS-0015
20	P1J-S020DS-0020
25	P1J-S020DS-0025
30	P1J-S020DS-0030
40	P1J-S020DS-0040
50	P1J-S020DS-0050

Ø25mm - (M5)

Stroke mm	Order code
10	P1J-S025DS-0010
15	P1J-S025DS-0015
20	P1J-S025DS-0020
25	P1J-S025DS-0025
30	P1J-S025DS-0030
40	P1J-S025DS-0040
50	P1J-S025DS-0050

Ø32mm - (G1/8)

Stroke mm	Order code
10	P1J-S032DS-0010
15	P1J-S032DS-0015
20	P1J-S032DS-0020
25	P1J-S032DS-0025
30	P1J-S032DS-0030
40	P1J-S032DS-0040
50	P1J-S032DS-0050
80	P1J-S032DS-0080

Ø40mm - (G1/8)

Stroke mm	Order code
10	P1J-S040DS-0010
15	P1J-S040DS-0015
20	P1J-S040DS-0020
25	P1J-S040DS-0025
30	P1J-S040DS-0030
40	P1J-S040DS-0040
50	P1J-S040DS-0050
80	P1J-S040DS-0080

Ø50mm - (G1/8)

Stroke mm	Order code
10	P1J-S050DS-0010
15	P1J-S050DS-0015
20	P1J-S050DS-0020
25	P1J-S050DS-0025
30	P1J-S050DS-0030
40	P1J-S050DS-0040
50	P1J-S050DS-0050
80	P1J-S050DS-0080

Ø63mm - (G1/8)

Stroke mm	Order code
10	P1J-S063DS-0010
15	P1J-S063DS-0015
20	P1J-S063DS-0020
25	P1J-S063DS-0025
30	P1J-S063DS-0030
40	P1J-S063DS-0040
50	P1J-S063DS-0050
80	P1J-S063DS-0080
100	P1J-S063DS-0100

 Indicates stocked product.

Single acting - Standard seals - Female threaded piston rod

Ø12mm - (M5)

Stroke mm	Order code
10	P1J-S012SS-0010
15	P1J-S012SS-0015

Ø20mm - (M5)

Stroke mm	Order code
5	P1J-S020SS-0005
10	P1J-S020SS-0010
15	P1J-S020SS-0015
20	P1J-S020SS-0020
25	P1J-S020SS-0025
30	P1J-S020SS-0030

Ø25mm - (M5)

Stroke mm	Order code
5	P1J-S025SS-0005
10	P1J-S025SS-0010
15	P1J-S025SS-0015
20	P1J-S025SS-0020
25	P1J-S025SS-0025
30	P1J-S025SS-0030
40	P1J-S025SS-0040
50	P1J-S025SS-0050

Ø32mm - (G1/8)

Stroke mm	Order code
5	P1J-S032SS-0005
10	P1J-S032SS-0010
15	P1J-S032SS-0015
20	P1J-S032SS-0020
25	P1J-S032SS-0025
30	P1J-S032SS-0030
40	P1J-S032SS-0040
50	P1J-S032SS-0050

Ø40mm - (G1/8)

Stroke mm	Order code
5	P1J-S040SS-0005
10	P1J-S040SS-0010
15	P1J-S040SS-0015
20	P1J-S040SS-0020
25	P1J-S040SS-0025
30	P1J-S040SS-0030
40	P1J-S040SS-0040
50	P1J-S040SS-0050

Ø50mm - (G1/8)

Stroke mm	Order code
5	P1J-S050SS-0005
10	P1J-S050SS-0010
15	P1J-S050SS-0015
20	P1J-S050SS-0020
25	P1J-S050SS-0025
30	P1J-S050SS-0030
40	P1J-S050SS-0040
50	P1J-S050SS-0050

Ø63mm - (G1/8)

Stroke mm	Order code
5	P1J-S063SS-0005
10	P1J-S063SS-0010
15	P1J-S063SS-0015
20	P1J-S063SS-0020
25	P1J-S063SS-0025
30	P1J-S063SS-0030
40	P1J-S063SS-0040
50	P1J-S063SS-0050

The spring forces in single acting cylinders are sufficient to return the piston without load.

Double acting - Guided

These cylinders feature twin guide rods connected to the piston rod by a flange plate. These are ideal for clamping and moving applications where turning of the piston rod must be avoided or side load is present.



Double Acting - Guided

Ø20mm - (M5)

Stroke mm	Order code
5	P1J-G020DS-0005
10	P1J-G020DS-0010
15	P1J-G020DS-0015
20	P1J-G020DS-0020
25	P1J-G020DS-0025
30	P1J-G020DS-0030
40	P1J-G020DS-0040
50	P1J-G020DS-0050

Ø25mm - (M5)

Stroke mm	Order code
5	P1J-G025DS-0005
10	P1J-G025DS-0010
15	P1J-G025DS-0015
20	P1J-G025DS-0020
25	P1J-G025DS-0025
30	P1J-G025DS-0030
40	P1J-G025DS-0040
50	P1J-G025DS-0050

Ø32mm - (G1/8)

Stroke mm	Order code
5	P1J-G032DS-0005
10	P1J-G032DS-0010
15	P1J-G032DS-0015
20	P1J-G032DS-0020
25	P1J-G032DS-0025
30	P1J-G032DS-0030
40	P1J-G032DS-0040
50	P1J-G032DS-0050
80	P1J-G032DS-0080

Ø40mm - (G1/8)

Stroke mm	Order code
5	P1J-G040DS-0005
10	P1J-G040DS-0010
15	P1J-G040DS-0015
20	P1J-G040DS-0020
25	P1J-G040DS-0025
30	P1J-G040DS-0030
40	P1J-G040DS-0040
50	P1J-G040DS-0050
80	P1J-G040DS-0080

Ø50mm - (G1/8)

Stroke mm	Order code
5	P1J-G050DS-0005
10	P1J-G050DS-0010
15	P1J-G050DS-0015
20	P1J-G050DS-0020
25	P1J-G050DS-0025
30	P1J-G050DS-0030
40	P1J-G050DS-0040
50	P1J-G050DS-0050
80	P1J-G050DS-0080

Ø63mm - (G1/8)

Stroke mm	Order code
5	P1J-G063DS-0005
10	P1J-G063DS-0010
15	P1J-G063DS-0015
20	P1J-G063DS-0020
25	P1J-G063DS-0025
30	P1J-G063DS-0030
40	P1J-G063DS-0040
50	P1J-G063DS-0050
80	P1J-G063DS-0080
100	P1J-G063DS-0100

 Indicates stocked product.

Cylinder mountings

Flange MF1

Anodised aluminium

	Cyl. dia.	Order code
	12	P1J-4DMB
	20	P1J-4HMB
	25	P1J-4JMB
	32	P1J-4KMB
	40	P1J-4LMB
	50	P1J-4MMB
	63	P1J-4NMB

Foot bracket

Anodised aluminium

	Cyl. dia.	Order code
	12	P1J-4DMF
	20	P1J-4HMF
	25	P1J-4JMF
	32	P1J-4KMF
	40	P1J-4LMF
	50	P1J-4MMF
	63	P1J-4NMF

Piston rod mountings

Clevis *

Galvanised steel

	Cyl. dia.	Order code
	20	P1J-4HRC
	25	P1J-4HRC
	32	P1A-4DRC
	40	P1A-4DRC
	50	P1A-4HRC
	63	P1A-4HRC

Swivel rod eye *

Galvanised steel

	Cyl. dia.	Order code
	12	P1J-4DRS
	20	P1J-4HRS
	25	P1J-4HRS
	32	P1A-4DRS
	40	P1A-4DRS
	50	P1A-4HRS
	63	P1A-4HRS

Male stud kit

Surface treated steel

	Cyl. dia.	Order code
	12	P1J-6DS0
	20	P1J-6HS0
	25	P1J-6HS0
	32	P1J-6KS0
	40	P1J-6KS0
	50	P1J-6MS0
	63	P1J-6MS0

* Used in connection with Male Stud Kit

Sensors

	Reed switch sensor	Solid state sensor
3m cable	P8S-DRFLX	P8S-DPFLX
8mm snap-on connector	P8S-DRSHX	P8S-DPSHX

Connecting cables with one connector

The cables have an integral snap-in female connector.



Type of cable	Cable length/connector	Weight kg	Order code
Cables for sensors, complete with female connector			
Cable, Flex PVC	3 m, 8 mm round connector	0,07	9126344341
Cable, Flex PVC	10 m, 8 mm round connector	0,21	9126344342
Cable, Super Flex PVC	3 m, 8 mm round connector	0,07	9126344343
Cable, Super Flex PVC	10 m, 8 mm round connector	0,21	9126344344
Cable, Polyuretan	3 m, 8 mm round connector	0,01	9126344345
Cable, Polyuretan	10 m, 8 mm round connector	0,20	9126344346
Cable, Polyuretan	3 m, M12 connector	0,07	9126344348
Cable, Polyuretan	10 m, M12 connector	0,20	9126344349

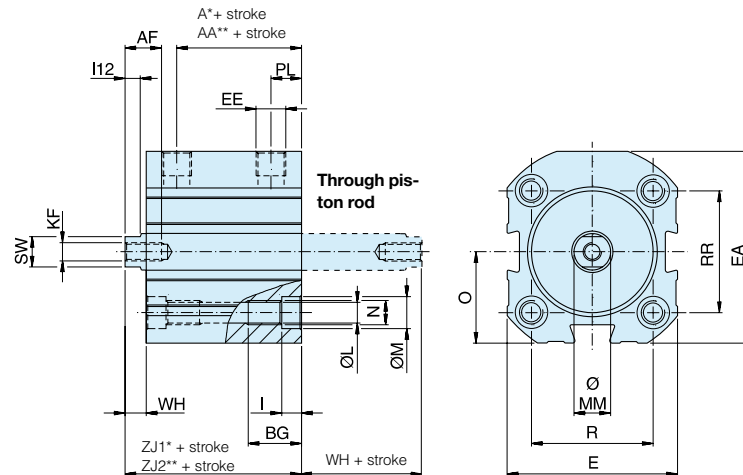


Indicates stocked product.

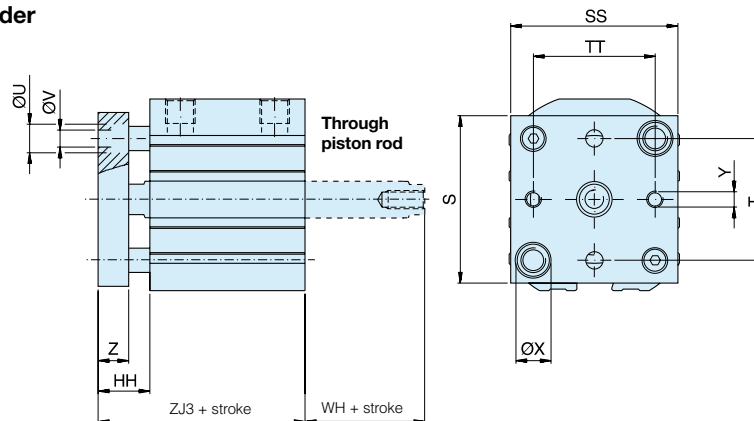


Dimensions (mm),

Double and single acting cylinders



Guided cylinder



Cylinder bore	A*	AA**	AF	BG	E	EA	EE	HH	I	KF	L	I12	M	MM	N	O	PL
12	25,0	-	5	9	26	30,0	M5	-	3,5	M3	3,4	3,0	6,1	6	M4	15,0	6,5
20	31,5	-	10	15	33	43,0	M5	14,8	5,5	M5	5,3	4,5	9,2	10	M6	21,5	6,5
25	32,5	47,5	10	15	40	44,5	M5	16,0	5,5	M5	5,3	4,5	9,2	10	M6	22,5	6,5
32	32,6	50,6	12	15	46	54,0	G1/8	15,7	5,5	M6	5,3	5,0	9,2	12	M6	25,5	10,0
40	34,0	52,0	12	18	56	63,0	G1/8	17,0	6,5	M6	6,9	5,0	10,5	12	M8	30,0	10,0
50	38,5	56,5	12	18	66	73,0	G1/8	19,0	6,5	M8	6,9	5,5	10,5	16	M8	35,0	10,0
63	40,0	60,0	12	25	83	87,5	G1/8	20,0	9,0	M8	9,3	5,5	15,0	16	M10	41,5	10,0

Cylinder bore	R	RR	S	SS	SW	T	TT	U	V	WH	X	Y	Z	ZJ1*	ZJ2**	ZJ3
12	13	18	-	-	5	-	-	-	-	4,0	-	-	-	38,0	-	-
20	20	30	42	32	8	22	22	8,0	4,5	4,8	9,4	M4	10	42,8	-	52,8
25	27	27	40	39	8	28	26	8,0	4,5	6,0	9,4	M4	10	45,0	60,0	45,5
32	32	36	48	45	10	36	32	9,4	5,5	5,7	9,4	M4	10	45,5	63,5	55,5
40	40	40	55	55	10	40	40	9,4	5,5	7,0	11,5	M5	10	47,0	65,0	57,0
50	50	50	65	65	13	50	50	11,5	6,5	7,0	11,5	M6	12	53,0	71,0	65,0
63	62	62	80	80	13	62	62	14,5	9,0	8,0	14,5	M6	12	57,0	77,0	69,0

* A and ZJ1 = Double acting cylinders and single acting cylinders up to stroke length 30 mm

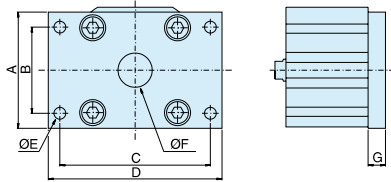
** AA and ZJ2 = Single acting cylinders, stroke length 31 to 50 mm

Length tolerances ± 1 mm

Stroke length tolerances +1.5/0 mm

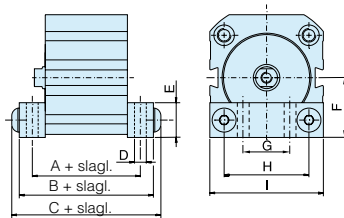
Dimensions (mm),

Flange, MF1



Cyl. Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm
12	25,4	18	38	46,0	3,6	10	4,8
20	38,0	24	50	58,0	3,6	15	6,0
25	40,0	28	54	63,5	4,6	15	6,0
32	48,0	36	66	76,0	4,6	15	6,0
40	63,5	42	78	92,0	6,6	20	9,5
50	70,0	50	90	102,0	6,6	25	9,5
63	85,0	63	110	127,0	8,6	25	12,7

Foot bracket

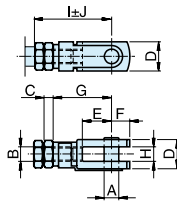


Cyl. Ø mm	A1* mm	A2** mm	B1* mm	B2** mm	C1* mm	C2** mm	D mm	E mm	F mm	G mm	H mm	I mm
12	42,0	-	50,0	-	54,4	-	3,5	12,7	17,0	25	13	33
20	44,5	-	51,0	-	57,5	-	3,5	12,7	22,0	35	20	43
25	48,5	63,5	58,0	73,0	64,5	79,5	4,5	16,0	23,0	41	27	51
32	49,3	67,3	58,7	76,7	65,3	83,3	4,5	16,0	27,0	19	32	46
40	53,7	71,7	66,5	84,5	75,2	93,2	6,5	19,0	31,5	21	40	56
50	58,7	76,7	71,5	89,5	80,3	98,3	6,5	19,0	37,0	27	50	66
63	69,0	89,0	88,0	108,0	99,0	119,0	8,5	25,4	43,0	34	62	83

* Double acting cylinders and single acting cylinders up to stroke length 30 mm

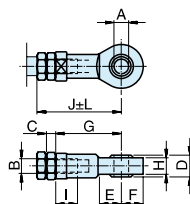
** Single acting cylinders, stroke length 31 to 50 mm

Clevis



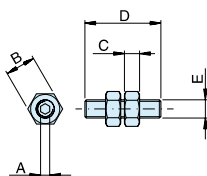
Cyl. Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm
20	5	M5	2,5	10	10	6	20	5	25	2,0
25	5	M5	2,5	10	10	6	20	5	25	2,0
32	6	M6	3,0	12	12	7	24	6	30	3,0
40	6	M6	3,0	12	12	7	24	6	30	3,0
50	8	M8	5,0	16	16	10	32	8	42	3,5
63	8	M8	5,0	16	16	10	32	8	42	3,5

Swivel rod eye



Cyl. Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	L mm
12	3	M3	1,6	6	10	7	21	4,5	4,5	24,2	1,0
20	5	M5	2,5	8	10	9	27	6,0	7,5	34,5	1,0
25	5	M5	2,5	8	10	9	27	6,0	7,5	34,5	1,0
32	6	M6	3,0	9	10	10	30	6,8	9,0	38,5	1,5
40	6	M6	3,0	9	10	10	30	6,8	9,0	38,5	1,5
50	8	M8	5,0	12	12	12	36	9,0	12,0	49,0	2,0
63	8	M8	5,0	12	12	12	36	9,0	12,0	49,0	2,0

Pin bolt



Cyl. Ø mm	A mm	B mm	C mm	D mm	E mm
12	1,5	5,5	1,6	10	M3
20	2,5	8,0	2,5	20	M5
25	2,5	8,0	2,5	20	M5
32	3,0	10,0	3,0	25	M6
40	3,0	10,0	3,0	25	M6
50	4,0	13,0	5,0	25	M8
63	4,0	13,0	5,0	25	M8

The versatile range of Short Build Cylinders, with unique porting options, integral sensor grooves and one of the shortest overall lengths on the market is suitable for a wide range of applications.



- 4 ported design - optional port configuration
- VDMA mounting centres 32mm to 100mm bore size
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- End of stroke buffers for long service life
- Lubricated with food grade grease

Operating information

Working pressure:	Max 10 bar
Permissible fluid:	Air, with or without lubrication
Standard working temperature:	-20°C to +80°C
High temperature:	-10°C to +150°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For technical information see CD

Double acting - female threaded piston rod

Ø20mm - (M5)

Stroke mm	Order code
5	P1M020VDMAG005
10	P1M020VDMAG010
25	P1M020VDMAG025
40	P1M020VDMAG040
50	P1M020VDMAG050
80	P1M020VDMAG080
100	P1M020VDMAG100
125	P1M020VDMAG125
160	P1M020VDMAG160
200	P1M020VDMAG200

Ø25mm - (M5)

Stroke mm	Order code
5	P1M025VDMAG005
10	P1M025VDMAG010
25	P1M025VDMAG025
40	P1M025VDMAG040
50	P1M025VDMAG050
80	P1M025VDMAG080
100	P1M025VDMAG100
125	P1M025VDMAG125
160	P1M025VDMAG160
200	P1M025VDMAG200

Ø32mm - (G1/8)

Stroke mm	Order code
5	P1M032VDMAG005
10	P1M032VDMAG010
25	P1M032VDMAG025
40	P1M032VDMAG040
50	P1M032VDMAG050
80	P1M032VDMAG080
100	P1M032VDMAG100
125	P1M032VDMAG125
160	P1M032VDMAG160
200	P1M032VDMAG200
250	P1M032VDMAG250
320	P1M032VDMAG320

Ø40mm - (G1/8)

Stroke mm	Order code
5	P1M040VDMAG005
10	P1M040VDMAG010
25	P1M040VDMAG025
40	P1M040VDMAG040
50	P1M040VDMAG050
80	P1M040VDMAG080
100	P1M040VDMAG100
125	P1M040VDMAG125
160	P1M040VDMAG160
200	P1M040VDMAG200
250	P1M040VDMAG250
320	P1M040VDMAG320

Ø50mm - (G1/8)

Stroke mm	Order code
5	P1M050VDMAG005
10	P1M050VDMAG010
25	P1M050VDMAG025
40	P1M050VDMAG040
50	P1M050VDMAG050
80	P1M050VDMAG080
100	P1M050VDMAG100
125	P1M050VDMAG125
160	P1M050VDMAG160
200	P1M050VDMAG200
250	P1M050VDMAG250
320	P1M050VDMAG320

Ø63mm - (G1/8)

Stroke mm	Order code
5	P1M063VDMAG005
10	P1M063VDMAG010
25	P1M063VDMAG025
40	P1M063VDMAG040
50	P1M063VDMAG050
80	P1M063VDMAG080
100	P1M063VDMAG100
125	P1M063VDMAG125
160	P1M063VDMAG160
200	P1M063VDMAG200
250	P1M063VDMAG250
320	P1M063VDMAG320
400	P1M063VDMAG400
500	P1M063VDMAG500

Ø80mm - (G1/4)

Stroke mm	Order code
5	P1M080VDMAG005
10	P1M080VDMAG010
25	P1M080VDMAG025
40	P1M080VDMAG040
50	P1M080VDMAG050
80	P1M080VDMAG080
100	P1M080VDMAG100
125	P1M080VDMAG125
160	P1M080VDMAG160
200	P1M080VDMAG200
250	P1M080VDMAG250
320	P1M080VDMAG320
400	P1M080VDMAG400
500	P1M080VDMAG500

Ø100mm - (G1/4)

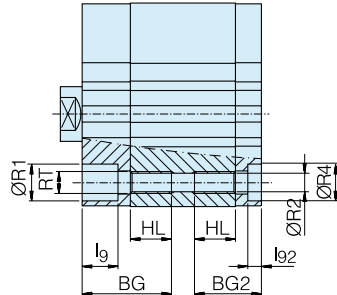
Stroke mm	Order code
5	P1M100VDMAG005
10	P1M100VDMAG010
25	P1M100VDMAG025
40	P1M100VDMAG040
50	P1M100VDMAG050
80	P1M100VDMAG080
100	P1M100VDMAG100
125	P1M100VDMAG125
160	P1M100VDMAG160
200	P1M100VDMAG200
250	P1M100VDMAG250
320	P1M100VDMAG320
400	P1M100VDMAG400
500	P1M100VDMAG500

 Indicates stocked product.

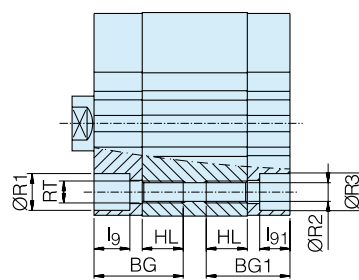
Dimensions (mm),

Double acting
standard cylinders

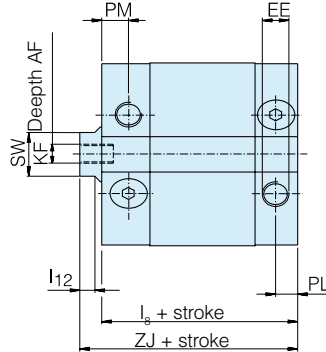
Port Position G, J



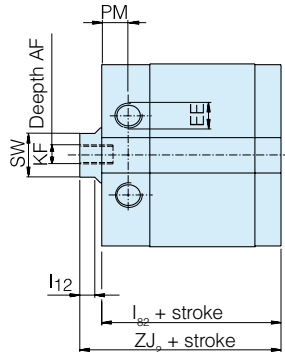
Port Position H



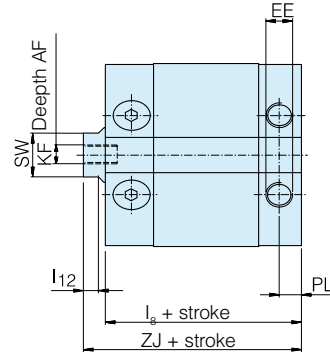
Port Position G



Port Position H



Port Position J



Cylinder designation	AF mm	BG mm	BG1 mm	BG2 mm	EE mm	HL mm	l8 mm	l9* mm	l12 mm	l82 mm	l91* mm	l92* mm	KF
P1M012	6	25,5	20,5	15,5	M5	12	40,0	3,5	3,0	35,0	3,5	3,5	M3
P1M016	8	26,0	21,0	15,5	M5	12	41,5	5,5	3,0	36,5	3,0	4,0	M4
P1M020	10	32,5	27,0	22,0	M5	18	42,5	10,5	4,0	37,5	5,0	4,5	M5
P1M025	12	32,5	29,0	23,0	M5	18	44,5	4,1	4,0	38,5	4,1	5,0	M6
P1M032	12	41,5	39,0	31,0	G1/8	24	49,0	4,5	5,0	41,0	4,5	4,0	M6
P1M040	12	41,5	39,5	31,0	G1/8	24	50,5	7,2	5,5	42,5	5,2	3,5	M6
P1M050	12	42,5	40,5	34,5	G1/8	25	51,0	5,2	5,5	44,5	5,2	5,0	M8
P1M063	12	43,5	40,5	35,0	G1/8	25	55,5	6,5	5,5	50,0	6,5	4,0	M8
P1M080	14	51,0	51,0	42,0	G1/4	30	63,5	9,5	6,0	54,5	9,5	8,5	M10
P1M100	16	52,0	52,0	43,5	G1/4	30	72,5	9,5	6,0	64,0	9,5	8,5	M12

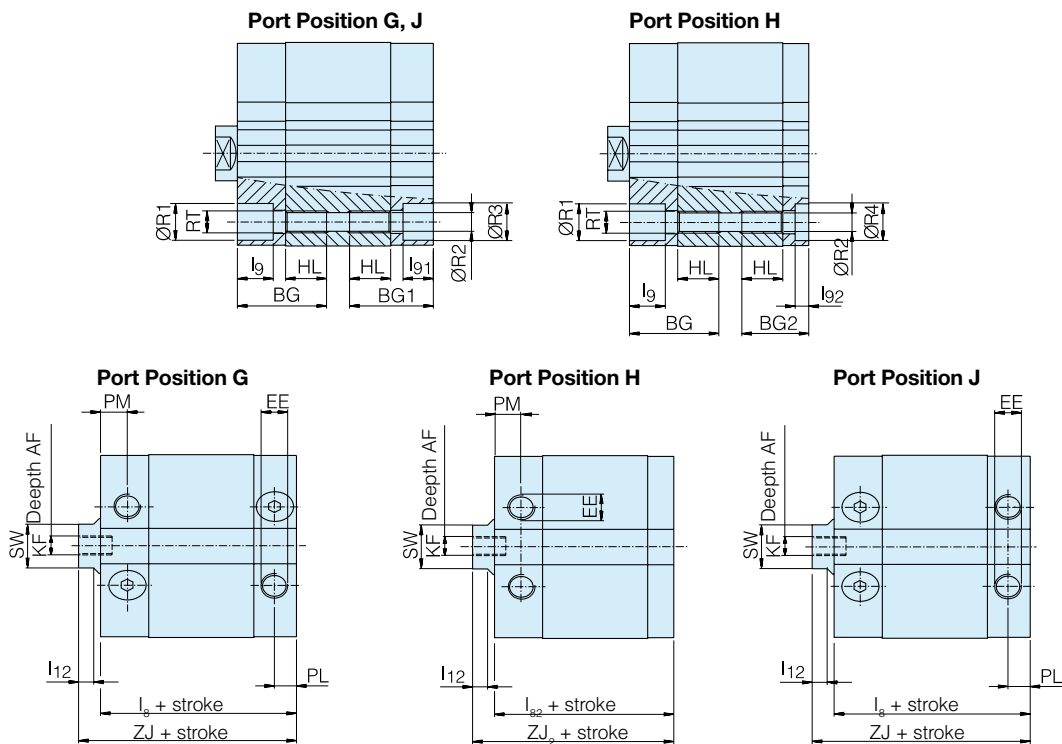
Cylinder designation	PL mm	PM mm	R1* mm	R2 mm	R3* mm	R4* mm	RT mm	SW mm	ZJ mm	ZJ2 mm
P1M012	5,0	8,0	6,0	3,5	6,0	6,0	M4	5	43,5	38,5
P1M016	5,0	9,0	7,5	3,5	6,0	6,0	M4	7	45,0	40,0
P1M020	5,0	9,0	10,5	5,0	9,0	9,0	M6	9	47,0	42,0
P1M025	7,0	9,0	10,5	5,0	9,0	9,0	M6	9	49,5	43,5
P1M032	8,0	10,5	10,5	5,0	9,5	9,5	M6	10	57,0	48,5
P1M040	7,5	9,5	10,5	5,0	10,5	10,5	M6	13	58,5	50,5
P1M050	8,0	10,0	14,5	7,0	14,5	11,0	M8	16	59,0	52,5
P1M063	8,0	11,0	10,5	7,0	10,5	10,5	M8	16	63,5	58,0
P1M080	11,5	11,5	14,0	8,5	14,0	14,0	M10	21	73,5	64,5
P1M100	12,0	12,0	14,0	8,5	14,0	14,0	M10	21	84,5	76,0

Length tolerances ± 1 mm Stroke length tolerances $+1,5/0$ mm

Dimensions (mm),

Single acting and

High temperature variants



Cylinder designation	AF mm	BG mm	BG1 mm	BG2 mm	EE	HL mm	l ₈ mm	l ₉ * mm	l ₁₂ mm	l ₈₂ mm	l ₉₁ * mm	l ₉₂ * mm	KF
P1M012	6	25,5	20,5	15,5	M5	12	40,0	3,5	3,0	35,0	3,5	3,5	M3
P1M016	8	26,0	21,0	15,5	M5	12	41,5	5,5	3,0	36,5	3,0	4,0	M4
P1M020	10	32,5	27,0	22,0	M5	18	42,5	10,5	4,0	37,5	5,0	4,5	M5
P1M025	12	32,5	29,0	23,0	M5	18	44,5	10,5	4,0	38,5	7,0	5,0	M6
P1M032	12	41,5	39,0	31,0	G1/8	24	49,0	14,5	5,0	41,0	12,5	4,0	M6
P1M040	12	41,5	39,5	31,0	G1/8	24	50,5	14,0	5,5	42,5	12,0	4,0	M6
P1M050	12	42,5	40,5	34,5	G1/8	25	51,0	13,0	5,5	44,5	11,0	5,0	M8
P1M063	12	43,5	40,5	35,0	G1/8	25	55,5	6,5	5,5	50,0	6,5	6,5	M8
P1M080	14	51,0	51,0	42,0	G1/4	30	63,5	9,5	6,0	54,5	9,5	8,5	M10
P1M100	16	52,0	52,0	43,5	G1/4	30	72,5	9,5	6,0	64,0	9,5	8,5	M12

Cylinder designation	PL mm	PM mm	R1* mm	R2 mm	R3* mm	R4* mm	RT mm	SW	ZJ mm	ZJ2 mm
P1M012	5,0	8,0	6,0	3,5	6,0	6,0	M4	5	43,5	38,5
P1M016	5,0	9,0	7,5	3,5	6,0	6,0	M4	7	45,0	40,0
P1M020	5,0	9,0	10,5	5,0	9,0	9,0	M6	9	47,0	42,0
P1M025	7,0	9,0	10,5	5,0	9,0	9,0	M6	9	49,5	43,5
P1M032	8,0	10,5	10,5	5,0	10,5	10,5	M6	10	57,0	48,5
P1M040	7,5	9,5	10,5	5,0	10,5	10,5	M6	13	58,5	50,5
P1M050	8,0	10,0	13,5	7,0	13,5	13,5	M8	16	59,0	52,5
P1M063	8,0	11,0	10,5	7,0	10,5	10,5	M8	16	63,5	58,0
P1M080	11,5	11,5	14,0	8,5	14,0	14,0	M10	21	73,5	64,5
P1M100	12,0	12,0	14,0	8,5	14,0	14,0	M10	21	84,5	76,0

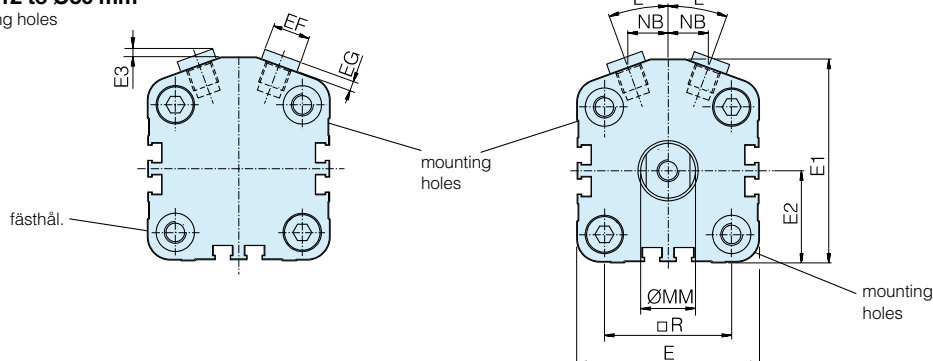
Length tolerances ±1 mm Stroke length tolerances +1,5/0 mm

Dimensions (mm),

Port Position G, H, J

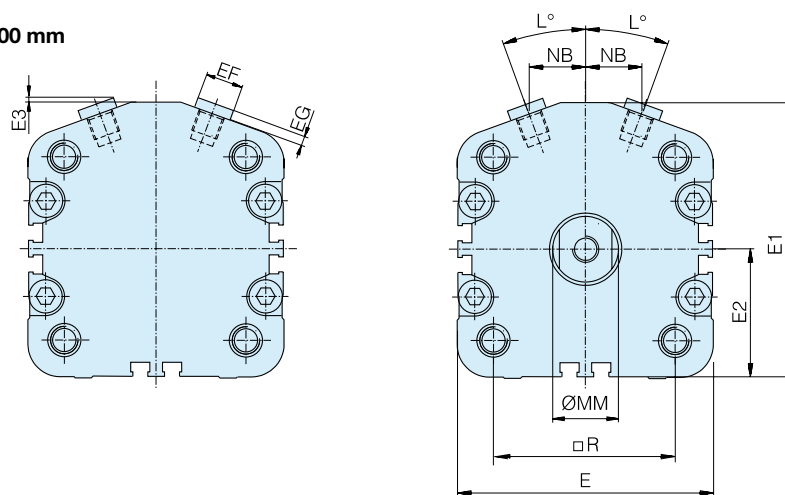
Bore Ø12 to Ø50 mm

2 mounting holes



Bore Ø63 to Ø100 mm

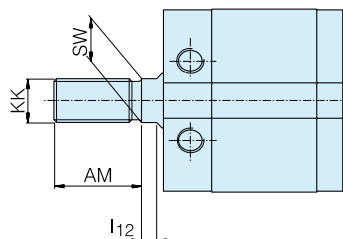
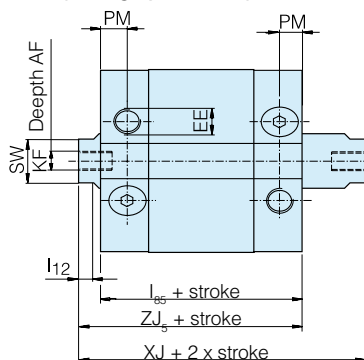
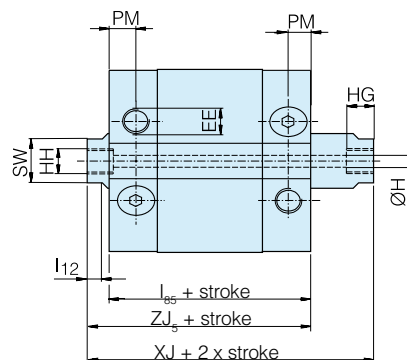
4 mounting holes



Cylinder designation	E mm	E1 mm	E2 mm	E3 mm	EE mm	EF mm	EG mm	L °	MM mm	NB mm	R mm
P1M 012	27,0	31,0	14,0	-	M5	-	-	26°	6	5,5	15,5
P1M 016	31,5	35,0	16,0	-	M5	-	-	20°	8	6,5	20,0
P1M 020	38,5	42,5	19,5	3,5	M5	7*	4,5	20°	10	7,5	25,5
P1M 025	41,5	45,5	21,0	3,5	M5	7*	4,5	20°	10	8,5	28,0
P1M 032	48,0	56,0	24,0	3,0	G1/8	14	2,5	20°	12	9,5	32,5
P1M 040	56,0	62,5	28,0	3,0	G1/8	14	2,5	20°	16	11,5	38,0
P1M 050	67,0	74,5	33,5	3,0	G1/8	14	2,5	20°	20	14,5	46,5
P1M 063	82,0	86,0	40,5	2,5	G1/8	14	2,5	20°	20	17,5	56,5
P1M 080	98,0	106,5	48,5	2,5	G1/4	17	3,0	20°	25	25,5	72,0
P1M 100	119,0	126,5	59,5	2,5	G1/4	17	3,0	20°	25	31,5	89,0

** Hexagon head screw

Dimensions (mm),

Piston rod thread 8
(external)Cylinder type K
(through piston rod)Cylinder type H
(hollow, through piston rod)

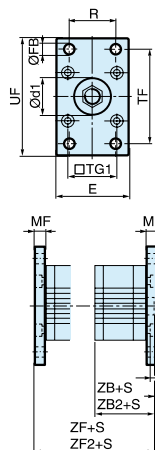
Cylinder designation	AF mm	AM mm	H* mm	HG mm	HH mm	I12 mm	I85 mm	KF	KK	PM mm	SW mm	XJ mm	ZJ5 mm
P1M 012	6	16	-	-	-	3,0	46,0	M3	M6	8,0	5	54,0	50,0
P1M 016	8	20	-	-	-	3,0	47,5	M4	M6	9,0	7	54,5	51,5
P1M 020	10	22	3	7	M5	4,0	49,5	M5	M8	9,0	9	58,5	54,0
P1M 025	12	22	3	7	M5	4,0	49,5	M6	M10X1,25	9,0	9	60,0	55,0
P1M 032	12	22	3	7	G1/8	5,0	51,5	M6	M10X1,25	10,5	10	67,5	59,5
P1M 040	12	24	4	8	G1/8	5,5	52,5	M6	M12X1,25	9,5	13	69,0	60,5
P1M 050	12	32	5	8	G1/8	5,5	53,0	M8	M16X1,5	10,0	16	69,0	61,0
P1M 063	12	32	5	8	G1/8	5,5	58,5	M8	M16X1,5	11,0	16	75,0	66,5
P1M 080	14	40	6	11	G1/4	6,0	63,5	M10	M20X1,5	11,5	21	84,0	73,5
P1M 100	16	40	6	11	G1/4	6,0	72,5	M12	M20X1,5	12,0	21	97,0	84,5

* Dimension H only for cylinder H

Length tolerances ± 1 mmStroke length tolerances $+1,5/0$ mm

Dimensions (mm),

Flange MF1/MF2



Cyl. bore mm	d1 H11 mm	FB H13 mm	TG1 JS14 mm	E JS14 mm	R JS14 mm	MF JS14 mm	TF JS14 mm	UF -0,5 mm	I1 mm	W mm	ZF* mm	ZB* mm	ZF2* mm	ZB2* mm	Order code
12	9,0	4,5	15,5	25	-	5,5	45,0	55	3,0	2,0	44,0	38,5	49,0	43,5	P1M-4DMB
16	11,5	4,5	20,0	30	-	5,5	45,0	55	3,0	2,0	45,5	40,0	50,5	45,0	P1M-4FMB
20	14,0	6,6	25,5	39	-	8,0	50,5	62	4,2	4,5	49,0	41,0	54,0	46,0	P1M-4HMB
25	14,0	6,6	28,0	42	-	8,0	53,0	65	4,2	3,0	51,5	43,5	56,5	49,5	P1M-4JMB
32	30,0	7,0	32,5	45	32	10,0	64,0	80	5,0	2,0	58,5	48,5	67,0	57,0	P1C-4KMB
40	35,0	9,0	38,0	52	36	10,0	72,0	90	5,0	2,0	60,5	50,5	68,5	58,5	P1C-4LMB
50	40,0	9,0	46,5	65	45	12,0	90,0	110	6,5	4,0	64,5	52,5	71,0	59,0	P1C-4MMB
63	45,0	9,0	56,5	75	50	12,0	100,0	120	6,5	4,0	70,0	58,0	75,5	63,5	P1C-4NMB
80	45,0	12,0	72,0	95	63	16,0	126,0	150	8,0	6,0	80,5	64,5	89,5	73,5	P1C-4PMB
100	55,0	14,0	89,0	115	75	16,0	150,0	170	8,0	4,0	92,0	76,0	100,5	84,5	P1C-4QMB

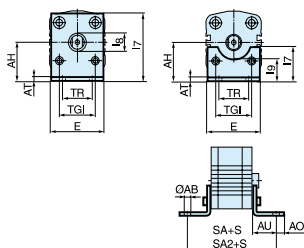
S = Stroke length

* ZF, ZB for cylinders with both ports in front end (type H)
ZF2, ZB2 for all other cylinders (type G, J, K)

Angle bracket MS1

Bore 12-50 mm

Bore 63-100 mm

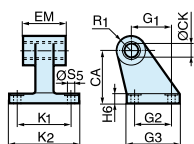


Cyl. bore mm	AB H14 mm	TG1 mm	E mm	TR JS14 mm	AO JS15 mm	AU JS15 mm	AH mm	I7 mm	AT JS14 mm	I9 mm	I8 mm	SA* mm	SA2* mm	Order code
12	4,5	15,5	44	35	5,5	8,0	17	29,5	2	-	8	51,0	56,0	P1M-4DMF
16	4,5	20,0	48	39	6,0	8,0	19	33,5	2	-	10	52,5	57,5	P1M-4FMF
20	6,6	25,5	62	50	7,5	9,0	24	42,0	3,2	-	12	59,5	64,5	P1M-4HMF
25	6,6	28,0	66	52	7,5	10,5	26	46,0	3,2	-	12	59,5	65,5	P1M-4JMF
32	7,0	32,5	45	32	11,0	24,0	32	54,5	8,0	-	30	88,5	97,0	P1C-4KMZ
40	9,0	38,0	52	36	7,0	28,0	36	62,0	8,0	-	35	98,5	106,5	P1C-4LMZ
50	9,0	46,5	65	45	13,0	32,0	45	77,5	10,0	-	40	108,5	115,0	P1C-4MMZ
63	9,0	56,5	75	50	13,0	32,0	50	35,0	5,5	27,5	-	114,0	119,5	P1C-4NMF
80	12,0	72,0	95	63	14,0	41,0	63	49,0	6,5	40,5	-	136,5	145,5	P1C-4PMF
100	14,0	89,0	115	75	15,0	41,0	71	54,0	6,5	43,5	-	146,0	154,5	P1C-4QMF

S = Stroke length

* SA for cylinders with both ports in front end (type H)
* SA2 for all other cylinders (type G, J, K)

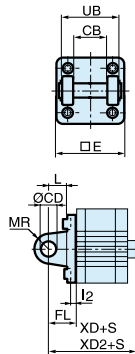
Pivot bracket with rigid bearing



Cyl. bore mm	CK H9 mm	S5 H13 mm	K1 JS14 mm	K2 JS14 mm	G1 JS14 mm	G2 JS14 mm	EM mm	G3 mm	CA JS15 mm	H6 mm	R1 mm	Order code
32	10	6,6	38	51	21	18	25,5	31	32	8	10	P1C-4KMD
40	12	6,6	41	54	24	22	27,0	35	36	10	11	P1C-4LMD
50	12	9,0	50	65	33	30	31,0	45	45	12	13	P1C-4MMD
63	16	9,0	52	67	37	35	39,0	50	50	12	15	P1C-4NMD
80	16	11,0	66	86	47	40	49,0	60	63	14	15	P1C-4PMD
100	20	11,0	76	96	55	50	59,0	70	71	15	19	P1C-4QMD

Dimensions (mm),

Clevis bracket MP2

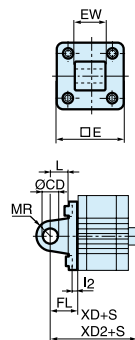


Cyl. bore mm	E h14 mm	UB H14 mm	CB ±0,2 mm	FL mm	L mm	I2 H9 mm	CD mm	MR mm	XD* mm	XD2* mm	Order code
12	27,0	10	5,2	14	7	-	5	6	52,5	57,5	P1M-4DMT
16	31,5	12	6,7	15	10	-	5	6	55,0	60,0	P1M-4FMT
20	38,5	16	8,2	18	12	-	8	9	59,0	65,0	P1M-4HMT
25	41,0	20	10,2	20	14	-	10	10	63,5	69,5	P1M-4JMT
32	45,0	25	12,2	22	16	5,5	10	10	70,5	79,0	P1C-4KMT
40	52,0	32	15,2	25	18	5,5	12	12	75,5	83,5	P1C-4LMT
50	65,0	40	18,2	27	20	6,5	12	12	79,5	86,0	P1C-4MMT
63	75,0	50	22,2	30	24	6,5	16	16	90,0	95,5	P1C-4NMT
80	95,0	63	28,2	36	28	10,0	16	16	100,5	109,5	P1C-4PMT
100	115,0	80	35,2	41	32	10,0	20	20	117,0	125,5	P1C-4QMT

S = Stroke length

* XD for cylinders with both ports in front end (type H)
XD2 for all other cylinders (type G, J, K)

Clevis bracket MP4

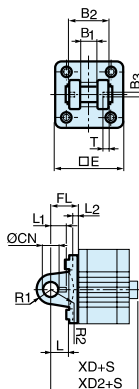


Cyl. bore mm	E mm	EW mm	FL ±0,2 mm	L mm	I2 mm	CD H9 mm	MR mm	XD* mm	XD2* mm	Order code
12	27,0	4,7	14	7	-	5	6	52,5	57,5	P1M-4DME
16	31,5	6,2	15	10	-	5	6	55,0	60,0	P1M-4FME
20	38,5	7,7	18	12	-	8	9	59,0	65,0	P1M-4HME
25	41,0	9,7	20	14	-	10	10	63,5	69,5	P1M-4JME
32	45,0	12,2	22	16	5,5	10	10	70,5	79,0	P1C-4KME
40	52,0	15,2	25	18	5,5	12	12	75,5	83,5	P1C-4LME
50	65,0	18,2	27	20	6,5	12	12	79,5	86,0	P1C-4MME
63	75,0	22,2	30	24	6,5	16	16	90,0	95,5	P1C-4NME
80	95,0	28,2	36	28	10,0	16	16	100,5	109,5	P1C-4PME
100	115,0	35,2	41	32	10,0	20	20	117,0	125,5	P1C-4QME

S = Stroke length

* XD for cylinders with both ports in front end (type H)
XD2 for all other cylinders (type G, J, K)

Clevis bracket GA

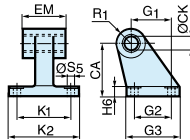


Cyl. bore mm	E mm	B2 d12 mm	B1 H14 mm	T mm	B3 mm	R2 mm	L1 mm	FL ±0,2 mm	I2 mm	L mm	CN F7 mm	R1 mm	XD* mm	XD2* mm	Order code
32	45	34	14	3	3,3	17	11,5	22	5,5	12	10	11	70,5	79,0	P1C-4KMCA
40	52	40	16	4	4,3	20	12,0	25	5,5	15	12	13	75,5	83,5	P1C-4LMCA
50	65	45	21	4	4,3	22	14,0	27	6,5	17	16	18	79,5	86,0	P1C-4MMCA
63	75	51	21	4	4,3	25	14,0	32	6,5	20	16	18	90,0	95,5	P1C-4NMCA
80	95	65	25	4	4,3	30	16,0	36	10,0	20	20	22	100,5	109,5	P1C-4PMCA
100	115	75	25	4	4,3	32	16,0	41	10,0	25	20	22	117,0	125,5	P1C-4QMCA

S = Stroke length

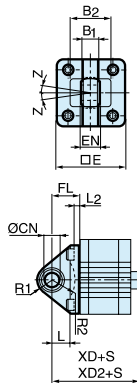
* XD for cylinders with both ports in front end (type H)
XD2 for all other cylinders (type G, J, K)

Dimensions (mm),

Pivot bracket with
swivel bearing

Cyl. bore	CN mm	S5 H7 mm	K1 H13 mm	K2 JS14 mm	EU mm	G1 JS14 mm	G2 JS14 mm	EN mm	G3 mm	CH JS15 mm	H6 mm	ER mm	Z mm	Order code
32	10	6,6	38	51	10,5	21	18	14	31	32	10	16	4°	P1C-4KMA
40	12	6,6	41	54	12,0	24	22	16	35	36	10	18	4°	P1C-4LMA
50	16	9,0	50	65	15,0	33	30	21	45	45	12	21	4°	P1C-4MMA
63	16	9,0	52	67	15,0	37	35	21	50	50	12	23	4°	P1C-4NMA
80	20	11,0	66	86	18,0	47	40	25	60	63	14	28	4°	P1C-4PMA
100	20	11,0	76	96	18,0	55	50	25	70	71	15	30	4°	P1C-4QMA

Swivel eye bracket

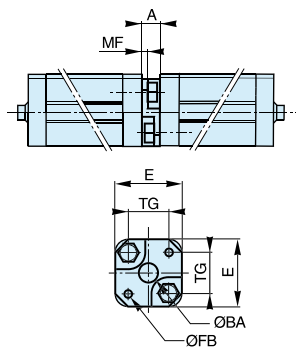


Cyl. bore	E mm	B1 mm	B2 mm	EN mm	R1 mm	R2 mm	FL mm	I2 mm	L H7 mm	CN mm	XD* mm	XD2* mm	Z mm	Order code
32	45	10,5	38	14	16	14	22	5,5	12	10	70,5	79,0	4°	P1C-4KMSA
40	52	12,0	44	16	18	16	25	5,5	15	12	75,5	83,5	4°	P1C-4LMSA
50	65	15,0	51	21	21	19	27	6,5	15	16	79,5	86,0	4°	P1C-4MMSA
63	75	15,0	56	21	23	22	32	6,5	20	16	90,0	95,5	4°	P1C-4NMSA
80	95	18,0	72	25	29	25	36	10,0	20	20	100,5	109,5	4°	P1C-4PMSA
100	115	18,0	82	25	31	27	41	10,0	25	20	117,0	125,5	4°	P1C-4QMSA

S=Stroke length

* XD for cylinders with both ports in front end (type H)
XD2 for all other cylinders (type G, J, K)

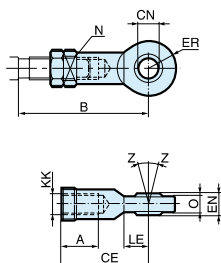
Mounting kit



Cyl. bore	E mm	TG mm	ØFB mm	MF mm	A mm	ØBA mm	Order code
32	50	32,5	6,5	5	16	30	P1E-6KB0
40	60	38,0	6,5	5	16	35	P1E-6LB0
50	66	46,5	8,5	6	20	40	P1E-6MB0
63	80	56,5	8,5	6	20	45	P1E-6NB0
80	100	72,0	10,5	8	25	45	P1E-6PB0
100	118	89,0	10,5	8	25	55	P1E-6QB0

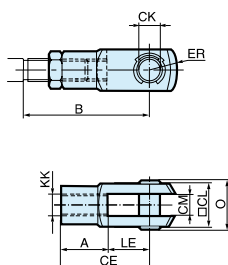
Dimensions (mm),

Swivel rod eye



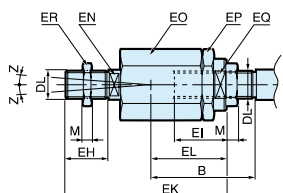
Cyl. bore mm	A	B min max	B min max	CE	CN H9	EN h12	ER	KK	LE min	M	N	O	Z	Order code
12	9	37	40	30	6	9	10	M6	10	3,2	10	6,8	10°	P1A-4DRS
16	9	37	40	30	6	9	10	M6	10	3,2	10	6,8	10°	P1A-4DRS
20	12	44	48	36	8	12	12	M8	12	4,0	13	9,0	12°	P1A-4HRS
25	15	48	55	43	10	14	14	M10x1,25	14	5,0	17	10,5	12°	P1A-4JRS
32	20	48	55	43	10	14	14	M10x1,25	15	5,0	17	10,5	12°	P1C-4KRS
40	22	56	62	50	12	16	16	M12x1,25	17	6,0	19	12,0	12°	P1C-4LRS
50	28	72	80	64	16	21	21	M16x1,5	22	8,0	22	15,0	15°	P1C-4MRS
63	28	72	80	64	16	21	21	M16x1,5	22	8,0	22	15,0	15°	P1C-4MRS
80	33	87	97	77	20	25	25	M20x1,5	26	10,0	32	18,0	15°	P1C-4PRS
100	33	87	97	77	20	25	25	M20x1,5	26	10,0	32	18,0	15°	P1C-4PRS

Clevis



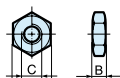
Cyl. bore mm	A	B min max	B min max	CE	CK h11/E9	CL	CM	ER	KK	LE min	M	O	Order code
12	12	28	34	24	6	12	6	7	M6	12	3,2	17,0	P1A-4DRC
16	12	28	34	24	6	12	6	7	M6	12	3,2	17,0	P1A-4DRC
20	16	37	44	32	8	16	8	10	M8	16	4,0	22,0	P1A-4HRC
25	20	45	52	40	10	20	10	12	M10x1,25	20	5,0	28,0	P1A-4JRC
32	20	45	52	40	10	20	10	16	M10x1,25	20	5,0	28,0	P1C-4KRC
40	24	54	60	48	12	24	12	19	M12x1,25	24	6,0	32,0	P1C-4LRC
50	32	72	80	64	16	32	16	25	M16x1,5	32	8,0	41,5	P1C-4MRC
63	32	72	80	64	16	32	16	25	M16x1,5	32	8,0	41,5	P1C-4MRC
80	40	90	100	80	20	40	20	32	M20x1,5	40	10,0	50,0	P1C-4PRC
100	40	90	100	80	20	40	20	32	M20x1,5	40	10,0	50,0	P1C-4PRC

Flexocoupling



Cyl. bore mm	B min	B max	DL	EH	EI	EK	EL	EN	EO	EP	EQ	M	Z	Order code
32	36	43	M10x1,25	20	23	70	31	12	30	30	19	5	4°	P1C-4KRF
40	37	43	M12x1,25	23	23	67	31	12	30	30	19	6	4°	P1C-4LRF
50	53	61	M16x1,5	40	32	112	45	19	41	41	30	8	4°	P1C-4MRF
63	53	61	M16x1,5	40	32	112	45	19	41	41	30	8	4°	P1C-4MRF
80	57	67	M20x1,5	39	42	122	56	19	41	41	30	10	4°	P1C-4PRF
100	57	67	M20x1,5	39	42	122	56	19	41	41	30	10	4°	P1C-4PRF

Nut



Cyl. bore mm	d	M	S	Order code
12	M6	3,2	10	0261210800
16	M6	3,2	10	0261210800
20	M8	4,0	13	0261211000
25	M10x1,25	5,0	17	9128985601
32	M10x1,25	5,0	17	9128985601
40	M12x1,25	6,0	19	0261109910
50	M16x1,5	8,0	24	9128985603
63	M16x1,5	8,0	24	9128985603
80	M20x1,5	10,0	30	0261109911
100	M20x1,5	10,0	30	0261109911

This range of stainless steel cylinders has been specially designed for use in difficult environments. Hygienic design, external seals of flouriated rubber and prelubrication with our food-industry-approved grease according to USDA-H1 make the cylinders particularly suitable for food industry use. All cylinders have magnetic pistons for proximity position sensing. Fixing dimensions to ISO 6432 simplify installation and make the cylinders physically interchangeable throughout the world.



- Mini - cylinders according to ISO 6432
- All stainless in 10 to 25 mm bores
- Magnetic piston as standard
- Double and single acting
- End stroke buffers for long service life
- Available with adjustable cushioning

Operating information

Working pressure: Max 10 bar
Temperature range: -20°C to +80°C Ø10-25mm

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For technical information see CD

Double acting fixed cushioning

Ø10mm - (M5)

Stroke mm	Order code
10	P1S-S010DS-0010
15	P1S-S010DS-0015
25	P1S-S010DS-0025
40	P1S-S010DS-0040
50	P1S-S010DS-0050
80	P1S-S010DS-0080
100	P1S-S010DS-0100
125	P1S-S010DS-0125

Ø12mm - (M5)

Stroke mm	Order code
10	P1S-S012DS-0010
15	P1S-S012DS-0015
25	P1S-S012DS-0025
40	P1S-S012DS-0040
50	P1S-S012DS-0050
80	P1S-S012DS-0080
100	P1S-S012DS-0100
125	P1S-S012DS-0125
160	P1S-S012DS-0160
200	P1S-S012DS-0200

Ø16mm - (M5)

Stroke mm	Order code
10	P1S-S016DS-0010
15	P1S-S016DS-0015
25	P1S-S016DS-0025
40	P1S-S016DS-0040
50	P1S-S016DS-0050
80	P1S-S016DS-0080
100	P1S-S016DS-0100
125	P1S-S016DS-0125
160	P1S-S016DS-0160
200	P1S-S016DS-0200

Ø20mm - (G1/8)

Stroke mm	Order code
10	P1S-S020DS-0010
15	P1S-S020DS-0015
25	P1S-S020DS-0025
40	P1S-S020DS-0040
50	P1S-S020DS-0050
80	P1S-S020DS-0080
100	P1S-S020DS-0100
125	P1S-S020DS-0125
160	P1S-S020DS-0160
200	P1S-S020DS-0200
250	P1S-S020DS-0250
320	P1S-S020DS-0320

Ø25mm - (G1/8)

Stroke mm	Order code
10	P1S-S025DS-0010
15	P1S-S025DS-0015
25	P1S-S025DS-0025
40	P1S-S025DS-0040
50	P1S-S025DS-0050
80	P1S-S025DS-0080
100	P1S-S025DS-0100
125	P1S-S025DS-0125
160	P1S-S025DS-0160
200	P1S-S025DS-0200
250	P1S-S025DS-0250
320	P1S-S025DS-0320

Double acting adjustable cushioning

Ø20mm - (G1/8)

Stroke mm	Order code
15	P1S-S020MS-0015
25	P1S-S020MS-0025
40	P1S-S020MS-0040
50	P1S-S020MS-0050
80	P1S-S020MS-0080
100	P1S-S020MS-0100
125	P1S-S020MS-0125
160	P1S-S020MS-0160
200	P1S-S020MS-0200
250	P1S-S020MS-0250
320	P1S-S020MS-0320

Ø25mm - (G1/8)

Stroke mm	Order code
15	P1S-S025MS-0015
25	P1S-S025MS-0025
40	P1S-S025MS-0040
50	P1S-S025MS-0050
80	P1S-S025MS-0080
100	P1S-S025MS-0100
125	P1S-S025MS-0125
160	P1S-S025MS-0160
200	P1S-S025MS-0200
250	P1S-S025MS-0250
320	P1S-S025MS-0320

Design Variants

Working temperatures

High temperature

Ø10 and Ø16mm	-10°C to +120°C Non-magnetic piston
Ø20 and Ø25mm	-10°C to +150°C Non-magnetic piston

Low temperature

Ø10, 12 and 16mm	-40°C to +60°C Non-magnetic piston
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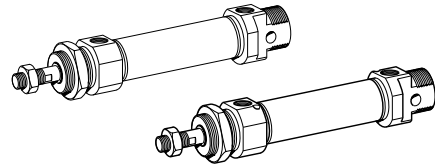


Double acting options

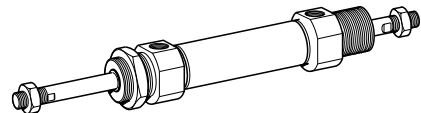
Effective end-cushioning

A version of ISO 6432 Ø10-Ø25 incorporates fixed end-cushioning, while the cylinders Ø20-Ø125 have pneumatic end-cushioning with adjusting screws for exact setting, permitting heavier loads and higher speeds for short cycle times.

Double-acting adjustable cushioning	Ø20 - Ø25 (not for seal material type F and L)
Double-acting non-adjustable cushioning	Ø10 - Ø25

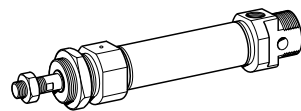


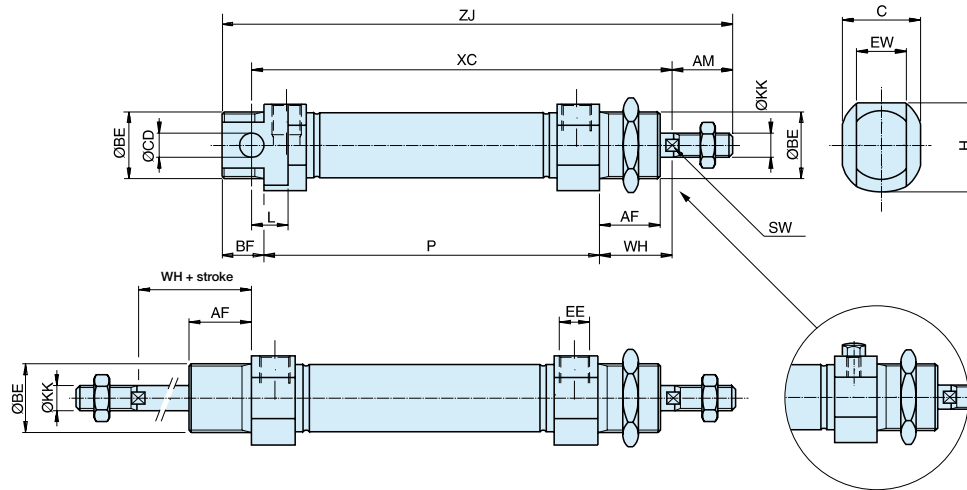
Double-acting, adjustable cushioning through rod	Ø20 - Ø25 (not for seal material type F and L)
Double-acting, non-adjustable cushioning through rod	Ø10 - Ø25
Double-acting, adjustable cushioning through rod, hollow	Ø20 - Ø25 (not for seal material type F and L)
Double-acting, non-adjustable cushioning through rod, hollow	Ø20 - Ø25 max stroke 125mm



Single acting options

Single-acting, non-adjustable cushioning, spring return for retract stroke	Ø10 - Ø25
Single-acting, push type	Ø20 - Ø25





Dimensions

Cyl. bore mm	AM 0/-2 mm	BE	AF mm	BF mm	C mm	CDH9 mm	EE mm	EW mm	H mm	KK	L mm	SW mm	WH±1,2 mm
10	12	M12x1,25	12	10	14	4	M5	8	19	M4	6	—	16
12	16	M16x1,5	18	13	18	6	M5	12	19	M6	9	5	22
16	16	M16x1,5	18	13	18	6	M5	12	19	M6	9	5	22
20	20	M22x1,5	20	14	24	8	G1/8	16	29	M8	12	7	24
25	22	M22x1,5	22	14	28	8	G1/8	16	32	M10x1,25	12	9	28

Double acting cylinders

Cyl. bore mm	XC mm	ZJ mm	P mm
10	64 + stroke	84 + stroke	46 + stroke
12	75 + stroke	99 + stroke	48 + stroke
16	82 + stroke	104 + stroke	53 + stroke
20	95 + stroke	125 + stroke	67 + stroke
25	104 + stroke	132 + stroke	68 + stroke

Single acting with spring return, type SS

Stroke/ Cyl. bore mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm	10 mm	15 mm	25 mm	40 mm	50 mm	80 mm
	XC	XC	XC	XC	XC	XC	ZJ	ZJ	ZJ	ZJ	ZJ	ZJ	P	P	P	P	P	P
10	74	79	89	126	136	174	94	99	109	146	156	194	56	61	71	108	118	156
12	85	90	100	132	142	185	109	114	124	156	166	209	58	63	73	105	115	158
16	92	97	107	122	132	184	114	119	129	144	154	206	63	68	78	93	103	155
20	105	110	120	135	145	191	135	140	150	165	175	221	77	82	92	107	117	163
25	114	119	129	144	154	201	142	147	157	172	182	229	78	83	93	108	118	165

Length tolerances ±1 mm

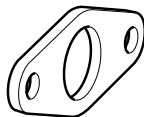
Stroke length tolerances +1,5/0 mm

Cylinders are supplied complete with mounting and adjusting nuts.

Cylinders with through piston rod are supplied complete with two adjusting nuts and one mounting nut.

Cylinder mountings

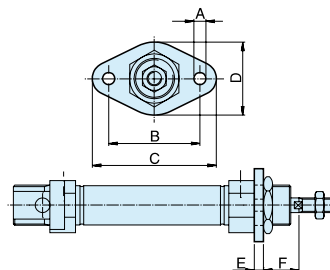
Flange-MF8



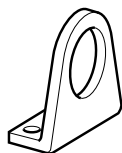
Intended for fixed attachment of the cylinder. The flange is designed for mounting on the front or rear end-covers.

Material:
Stainless steel, DIN X 10 CrNiS 18 9

Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	Weight Kg	Order code
10	4,5	30	40	22	3	13	0,012	P1S-4CMB
12-16	5,5	40	52	30	4	18	0,025	P1S-4DMB
20	6,6	50	66	40	5	19	0,045	P1S-4HMB
25	6,6	50	66	40	5	23	0,045	P1S-4HMB



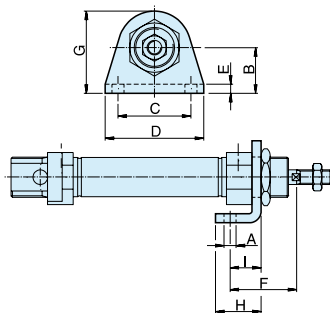
Foot-MS3



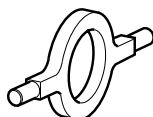
Intended for fixed attachment of the cylinder. The bracket is designed for mounting on the front or rear end-covers.

Material:
Stainless steel, DIN X 10 CrNiS 18 9

Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	Weight Kg	Order code
10	4,5	16	25	35	3	24	26	16	11	0,020	P1S-4CMF
12-16	5,5	20	32	42	4	32	32,5	20	14	0,040	P1S-4DMF
20	6,5	25	40	54	5	36	45	25	17	0,080	P1S-4HMF
25	6,5	25	40	54	5	40	45	25	17	0,080	P1S-4HMF



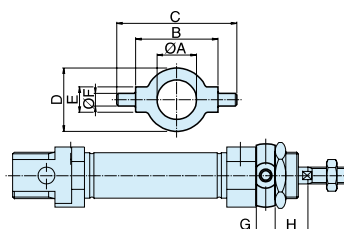
Cover trunnion



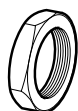
Intended for articulated mounting of the cylinder. The flange is designed for mounting on the front or rear end-covers.

Material:
Stainless steel, DIN X 10 CrNiS 18 9

Cylinder Ø	A mm	B h14 mm	C mm	D mm	E e9 mm	F mm	G mm	H mm	Weight Kg	Order code
10	12,5	26	38	20	8	4	6	10	0,014	P1A-4CMJ
12-16	16,5	38	58	25	10	6	8	14	0,033	P1A-4DMJ
20	22,5	46	66	30	10	6	8	16	0,037	P1A-4HMJ
25	22,5	46	66	30	10	6	8	20	0,037	P1A-4HMJ



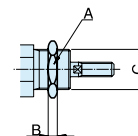
Mounting nut



Intended for fixed mounting of the cylinder. Cylinders are supplied complete with one mounting nut.

Material:
Stainless steel, DIN X 5 CrNi 18 10

Cylinder Ø mm	A mm	B mm	C	Weight Kg	Order code
10	17	5	M12x1,25	0,009	9126725405
12-16	24	8	M16x1,50	0,018	9126725406
20-25	27	5	M22x1,50	0,042	9126725407



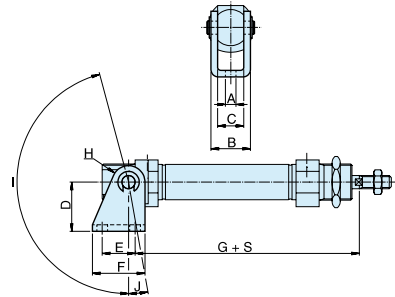
Cylinder mountings

Clevis bracket



Intended for articulated mounting of the cylinder. Supplied with shaft for mounting on the rear end cover.

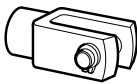
Material:
Bracket: stainless steel, DIN X 5 CrNi 18 10
Pin: tempered stainless steel, DIN X 20 Cr 13
Locking rings: stainless steel, DIN X 5 CrNi 18 10



Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I °	J °	Weight Kg	Order code
10	4,5	13	8	24	12,5	20	65,3	5	160	17	0,020	P1S-4CMT
12	5,5	18	12	27	15	25	73	7	170	15	0,040	P1S-4DMT
16	5,5	18	12	27	15	25	80	7	170	15	0,040	P1S-4DMT
20	6,5	24	16	30	20	32	91	10	165	10	0,080	P1S-4HMT
25	6,5	24	16	30	20	32	100	10	165	10	0,080	P1S-4HMT

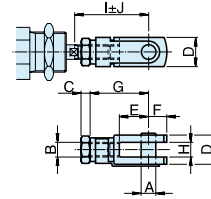
S=stroke

Clevis



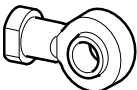
According to ISO 8140
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction. Supplied complete with pin.

Material:
Stainless steel, DIN X 5 CrNi 18 10



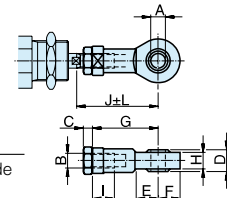
Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	Weight	Order code
10	4	M4	2,2	8	8	5	16	4	22	2	0,007	P1S-4CRD
12-16	6	M6	3,2	12	12	7	24	6	31	3	0,022	P1S-4DRD
20	8	M8	4	16	16	10	32	8	40,5	3,5	0,045	P1S-4HRD
25	10	M10x1,25	5	20	20	12	40	10	49	3	0,095	P1S-4JRD

Swivel rod eye



According to ISO 8139
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction.

Material:
Swivel rod eye: stainless steel, DIN X 5 CrNi 18 10
Ball: hardened stainless steel, DIN X 5 CrNi 18 10



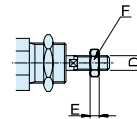
Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	Weight	Order code
10	5	M4	2,2	8	10	9	27	6	8	33	9	2	0,017	P1S-4CRT
12-16	6	M6	3,2	9	10	10	30	6,8	9	38,5	11	1,5	0,025	P1S-4DRT
20	8	M8	4	12	12	12	36	9	12	46	14	2	0,045	P1S-4HRT
25	10	M10x1,25	5	14	14	14	43	10,5	15	52,5	17	2,5	0,085	P1S-4JRT

Rod nut



Intended for fixed mounting on the piston rod. Cylinders are supplied complete with one rod nut. (cylinders with through piston rod are supplied with two rod nuts.)

Material:
Stainless steel, DIN X 5 CrNi 18 10



Cylinder Ø mm	D	F mm	E mm	Weight	Order code
10	M4	7	2,2	0,001	9127385121
12-16	M6	10	3,2	0,002	9127385122
20	M8	13	4	0,005	9127385123
25	M10x1,25	17	5	0,007	9126725404

This range of stainless steel cylinders has been specially designed for use in difficult environments. Hygienic design, external seals of fluorinated rubber and prelubrication with our food-industry-approved grease according to USDA-H1 make the cylinders particularly suitable for food industry use. All cylinders have magnetic pistons for proximity position sensing. Fixing dimensions to ISO 6431 simplify installation and make the cylinders physically interchangeable throughout the world.



- Round cylinder to ISO 6431
- All stainless steel
- Clean, smooth washdown design
- Magnetic piston as standard
- Adjustable cushioning for long service life
- Complete range of mountings and sensors

Operating information

Working pressure: Max 10 bar
Temperature range: -20°C to +70°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For technical information see CD

Standard stroke lengths

Ø32mm - (G1/8)

Stroke mm	Order code
25	P1S-D032MS-0025
50	P1S-D032MS-0050
80	P1S-D032MS-0080
100	P1S-D032MS-0100
125	P1S-D032MS-0125
160	P1S-D032MS-0160
200	P1S-D032MS-0200
250	P1S-D032MS-0250
320	P1S-D032MS-0320
400	P1S-D032MS-0400
500	P1S-D032MS-0500

Ø63mm - (G3/8)

Stroke mm	Order code
25	P1S-D063MS-0025
50	P1S-D063MS-0050
80	P1S-D063MS-0080
100	P1S-D063MS-0100
125	P1S-D063MS-0125
160	P1S-D063MS-0160
200	P1S-D063MS-0200
250	P1S-D063MS-0250
320	P1S-D063MS-0320
400	P1S-D063MS-0400
500	P1S-D063MS-0500

Ø100mm - (G1/2)

Stroke mm	Order code
25	P1S-L100MS-0025
50	P1S-L100MS-0050
80	P1S-L100MS-0080
100	P1S-L100MS-0100
125	P1S-L100MS-0125
160	P1S-L100MS-0160
200	P1S-L100MS-0200
250	P1S-L100MS-0250
320	P1S-L100MS-0320
400	P1S-L100MS-0400
500	P1S-L100MS-0500

Ø40mm - (G1/4)

Stroke mm	Order code
25	P1S-D040MS-0025
50	P1S-D040MS-0050
80	P1S-D040MS-0080
100	P1S-D040MS-0100
125	P1S-D040MS-0125
160	P1S-D040MS-0160
200	P1S-D040MS-0200
250	P1S-D040MS-0250
320	P1S-D040MS-0320
400	P1S-D040MS-0400
500	P1S-D040MS-0500

Ø80mm - (G3/8)

Stroke mm	Order code
25	P1S-L080MS-0025
50	P1S-L080MS-0050
80	P1S-L080MS-0080
100	P1S-L080MS-0100
125	P1S-L080MS-0125
160	P1S-L080MS-0160
200	P1S-L080MS-0200
250	P1S-L080MS-0250
320	P1S-L080MS-0320
400	P1S-L080MS-0400
500	P1S-L080MS-0500

Ø125mm - (G1/2)

Stroke mm	Order code
25	P1S-L125MS-0025
50	P1S-L125MS-0050
80	P1S-L125MS-0080
100	P1S-L125MS-0100
125	P1S-L125MS-0125
160	P1S-L125MS-0160
200	P1S-L125MS-0200
250	P1S-L125MS-0250
320	P1S-L125MS-0320
400	P1S-L125MS-0400
500	P1S-L125MS-0500

Ø50mm - (G1/4)

Stroke mm	Order code
25	P1S-D050MS-0025
50	P1S-D050MS-0050
80	P1S-D050MS-0080
100	P1S-D050MS-0100
125	P1S-D050MS-0125
160	P1S-D050MS-0160
200	P1S-D050MS-0200
250	P1S-D050MS-0250
320	P1S-D050MS-0320
400	P1S-D050MS-0400
500	P1S-D050MS-0500

Design Variants

Working temperatures

High temperature -10°C to +150°C Non-magnetic piston

Low temperature

Ø10 and Ø125mm -40°C to +40°C Non-magnetic piston

Stainless steel scraper for piston rod

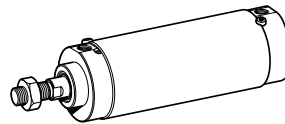
-20°C to +80°C Magnetic piston



Double acting options

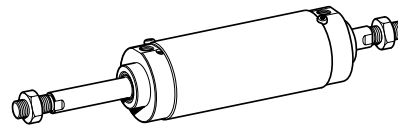
Double-acting
adjustable cushioning

Ø80 - Ø125



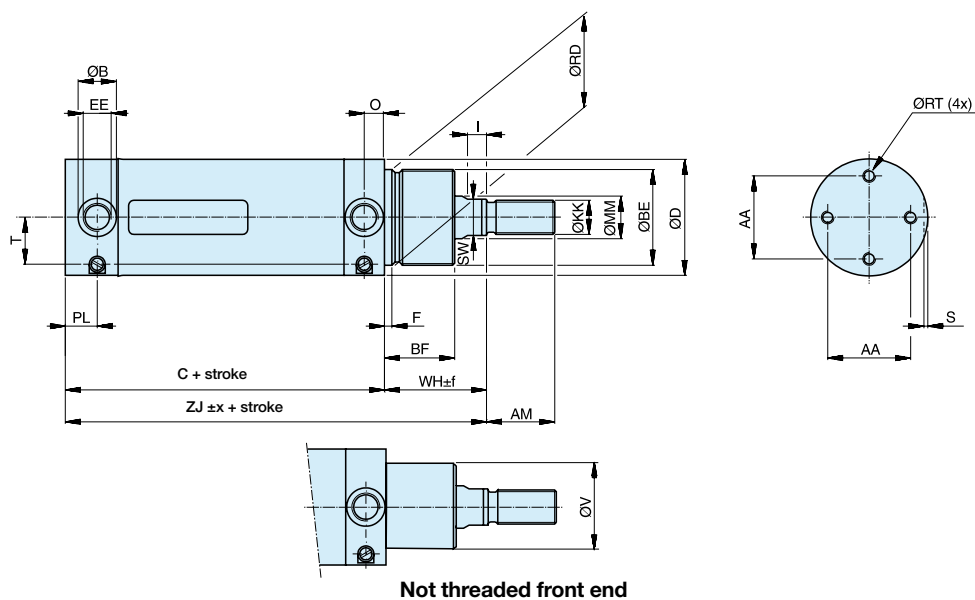
Double-acting
adjustable cushioning
through rod only

Ø80 - Ø125



Mounting options

ISO 6431 Stainless Steel Cylinders are available with a variety of integral threaded mounting holes or trunnion pegs. See Technical Catalogue CD for details.

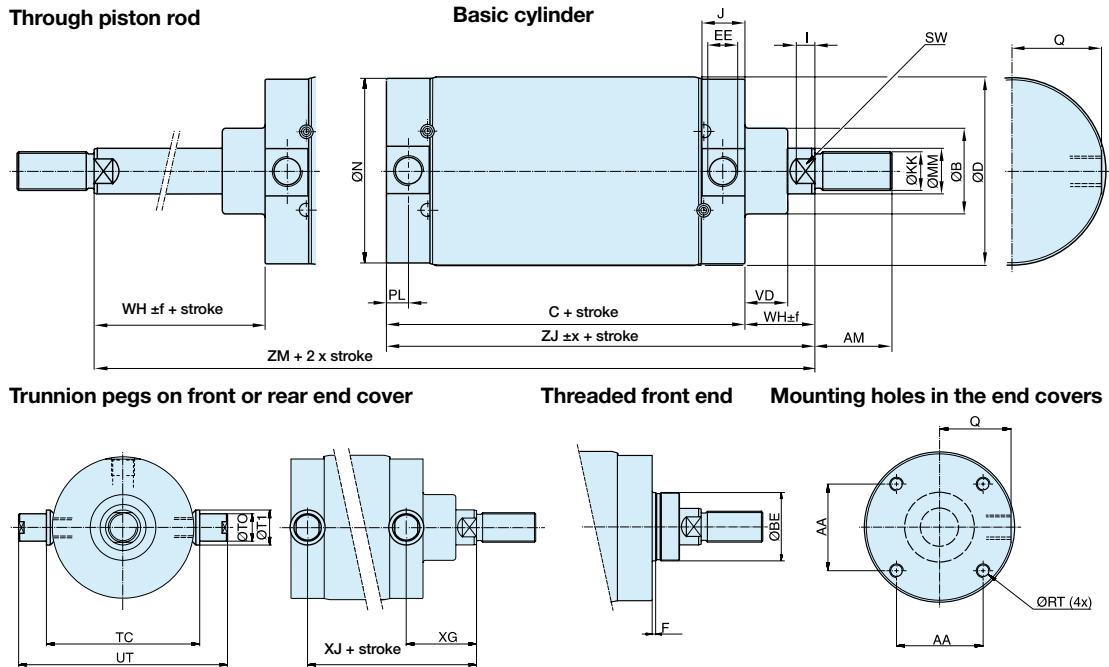


Not threaded front end

Dimensions Ø32-Ø63

Cylinder designation	AA mm	AM mm	B mm	BF mm	BE mm	C mm	D mm	EE mm	F mm	I mm	KK mm	MM mm	O mm	PL mm	RD mm	RT mm
P1S-D032M	24,5	22	15	25	M30x1,5	88	36	G1/8	4,2	6	M10x1,25	12	8	13	30	M5
P1S-D040M	30	24	18	30	M38x1,5	97	44	G1/4	4,5	9	M12x1,25	16	9,5	15	38	M6
P1S-D050M	39	32	18	33	M45x1,5	101	55	G1/4	4,5	9	M16x1,5	20	9,5	15	45	M6
P1S-D063M	49	32	25	33	M45x1,5	117	68	G3/8	4,5	9	M16x1,5	20	13,3	20,5	45	M8

Cylinder designation	S mm	SW mm	T mm	V mm	WH mm	ZJ mm	Mounting tolerances x f mm mm	Stroke length 0-500 mm mm
P1S-D032M	1,5	10	12,2	26	35,5	123,5	1,2 2,5	+2,0
P1S-D040M	1,5	14	16,5	35	44	141	1,0 2,2	+2,0
P1S-D050M	1,5	17	22	41	47	148	0,9 2,3	+2,0
P1S-D063M	1,5	17	26	41	47	164	1,4 2,3	+2,5



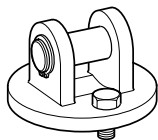
Dimensions Ø80-Ø125

Cylinder designation	AA	AM	B	BE	C	D	EE	F	KK	I	J	MM	N	PL	Q
P1S-•Ø80M	46	40	50	M50x1,5	141	86	G3/8	4	M20x1,5	10	24,5	25	84	12,5	40
P1S-•100M	60	40	50	M50x1,5	158	106	G1/2	4	M20x1,5	8	30	25	104	15,5	49,5
P1S-•125M	76	54	60	M60x2	183	132	G1/2	4	M27x2	13	30	32	129	15,5	62,5

Cylinder designation	RT	SW	TC	TO	T1	UT	VD	WH	XG	X3	ZJ	ZM	Mounting tol. x f	Stroke length 0-500 mm
P1S-•Ø80M	M8	21	98	20	25	125	19	37	49,5	165,5	178	215	1,5 2,5	+2,5
P1S-•100M	M10	21	109	25	32	152	19	35	50,5	177,5	193	228	1,5 2,5	+2,5
P1S-•125M	M12	27	134	25	32	177	24	47	63	214	230	277	2,0 2,5	+4,0

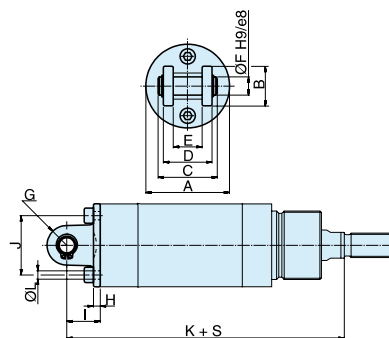
Cylinder mountings Ø32 - Ø63

Clevis bracket MP2



Intended for articulated mounting of the cylinder versions D, F or K. The bracket is mounted at the rear end cover and is supplied complete with shaft, mounting screw and O-ring for a clean joint between end cover and bracket.

Material:
Stainless steel, DIN X 5 CrNi 18 10



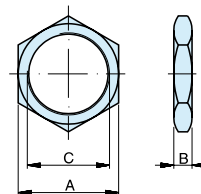
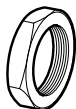
Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	Weight Kg	Order code
32	35,5	20	33	26	15	10	10	4,5	18,5	25	142	5,5	0,09	P1S-4KME
40	43,5	24	35	28	17	12	12	4	19	30	160	6,5	0,12	P1S-4LME
50	54,5	26	39	32	17	12	13	4,5	22	39	170	6,5	0,19	P1S-4MME
63	67,5	34	47	40	22	16	17	6	26	49	190	8,6	0,34	P1S-4NME

S = Stroke

Mounting nut

Intended for fixed mounting of the cylinder via the neck.

Material: stainless steel, DIN X 5 CrNi 18 10



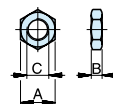
Cylinder Ø mm	A mm	B mm	C mm	Weight Kg	Order code
32	36	8	M30x1,5	0,03	9127294401
40	46	10	M38x1,5	0,06	9127294402
50	55	10	M45x1,5	0,08	9127294403
63	55	10	M45x1,5	0,08	9127294403

Cylinder mountings Ø32-Ø125

Rod nut

Intended for fixed mounting on the piston rod. Cylinders are supplied complete with one rod nut. (cylinders with through piston rods are supplied with two rod nuts.)

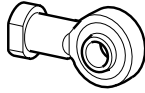
Material:
Stainless steel, DIN X 5 CrNi 18 10



Cylinder Ø	A mm	B mm	C mm	Weight Kg	Order code
32	17	5	M10x1,25	0,01	9126725404
40	19	6	M12x1,25	0,01	9126725405
50	24	8	M16x1,5	0,02	9126725406
63	24	8	M16x1,5	0,02	9126725406
80	30	10	M20x1,5	0,04	0261109921
100	30	10	M20x1,5	0,04	0261109921
125	41	13,5	M27x2	0,10	0261109922

Cylinder mountings Ø32 - Ø125

Swivel rod eye



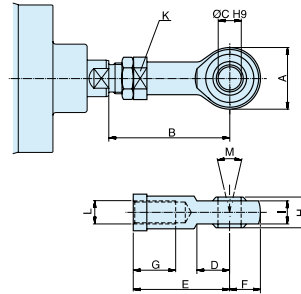
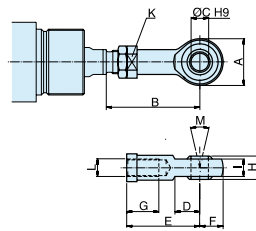
According to ISO 8139
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction.

Material:

Swivel rod eye: stainless steel, DIN X 5 CrNi 18 10
Ball: hardened stainless steel, DIN X 5 CrNi 18 10

32	0,09
40	0,15
50-63	0,35
80-100	0,75
125	2,10

P1S-4JRD
P1S-4LRD
P1S-4MRD
P1S-4PRD
P1S-4RRD



Cyl. Ø mm	A mm	B _{min} mm	B _{max} mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	K mm	L	M	Weight Kg	Order code
32	28	50	55	10	15	43	14	15	14	10,5	17	M10x1,25	24°	0,08	P1S-4JRT
40	32	56	62	12	17	50	16	22	16	12	19	M12x1,25	24°	0,12	P1S-4LRT
50	42	72	80	16	22	64	21	28	21	15	22	M16x1,5	30°	0,25	P1S-4MRT
63	42	72	80	16	22	64	21	28	21	15	22	M16x1,5	30°	0,25	P1S-4MRT
80	50	87	97	20	26	77	25	33	25	18	32	M20x1,5	30°	0,46	P1S-4PRT
100	50	87	97	20	26	77	25	33	25	18	32	M20x1,5	30°	0,46	P1S-4PRT
125	70	123,5	137	30	36	110	35	51	37	25	41	M27x2	30°	1,28	P1S-4RRD

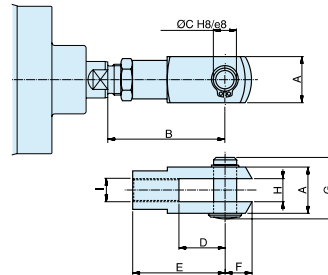
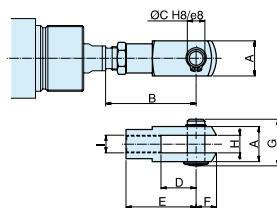
Clevis



According to ISO 8140
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction. Supplied complete with pin.

Material:

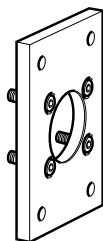
Clevis: stainless steel, DIN X 10 CrNiS 18 9
Pin: stainless steel, DIN X 5 CrNi 18 10
Locking rings according to DIN 471



Cylinder Ø mm	A mm	B _{min} mm	B _{max} mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	Weight Kg	Order code
32	20	46	52	10	20	40	12	28	10	M10x1,25	0,09	P1S-4JRD
40	24	54	60	12	24	48	19	32	12	M12x1,25	0,15	P1S-4LRD
50	32	72	80	16	32	64	25	42	16	M16x1,5	0,35	P1S-4MRD
63	32	72	80	16	32	64	25	42	16	M16x1,5	0,35	P1S-4MRD
80	40	90	100	20	40	80	32	50	20	M20x1,5	0,75	P1S-4PRD
100	40	90	100	20	40	80	32	50	20	M20x1,5	0,75	P1S-4PRD
125	55	123,5	137	30	54	110	45	72	30	M27x2	2,10	P1S-4RRD

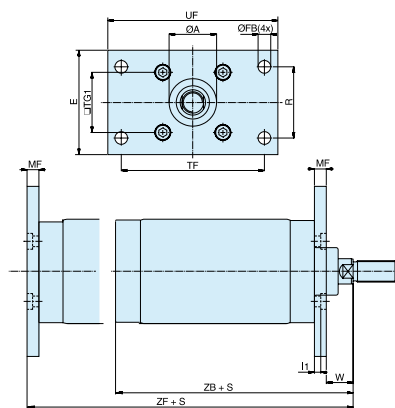
Cylinder mountings

Flange MF1/MF2



Intended for fixed attachment of cylinder version D, E, F, L, M or Q. The flange is designed for mounting on the front or rear end covers.

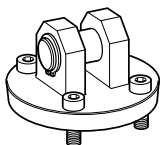
Material:
Stainless steel, DIN X 5 CrNiMo 17 13 3



Cylinder Ø mm	A mm	FB mm	E mm	R mm	TF mm	TG1 mm	UF mm	MF mm	I1 mm	W mm	ZB mm	ZF mm	Weight Kg	Order code
80	50,2	12	86	63	126	46	150	12	6	25	178	190	0,97	P1S-4PMB
100	51	14	106	75	150	60	170	12	6	23	193	205	1,42	P1S-4QMB
125	61	16	132	90	180	76	205	15	8	32	230	245	1,55	P1S-4RMB

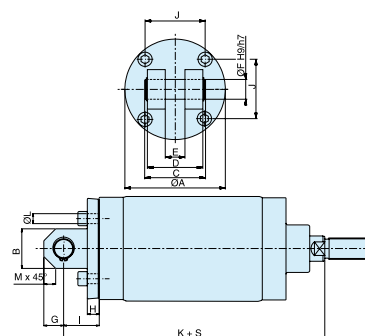
S = Stroke

Clevis bracket MP4



Intended for articulated mounting of cylinder versions D, F, L or Q. The bracket is mounted on the rear end cover and is supplied complete with shaft, mounting screw and O-ring for a clean joint between end cover and bracket.

Material:
Bracket: stainless steel, DIN X 5 CrNi 18 10
Pin: stainless steel, DIN X 5 CrNiMo 17 13 3



Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M mm	Weight Kg	Order code
80	80	30	57	50	16	16	15	12	32	46	210	8,6	9	0,78	P1S-4PME
100	103	42	67	60	20	20	21	12	37	60	230	10,6	12	1,42	P1S-4QME
125	127	50	77	70	25	25	25	15	45	76	275	12,6	15	2,06	P1S-4RME

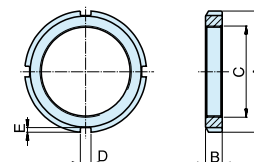
S = Stroke

Mounting nut



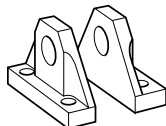
Intended for fixed mounting on the front end cover of cylinders according to cylinder version C or D.

Material:
Stainless steel, DIN X 5 CrNi 18 10



Cylinder Ø mm	A mm	B mm	C	D mm	E mm	Weight Kg	Order code
80	70	11	M50x1,5	6	2,5	0,16	9126461304
100	70	11	M50x1,5	6	2,5	0,16	9126461304
125	80	11	M60x2	7	3	0,19	9126461305

Cylinder mountings

Bearing bracket
for trunnion pegs

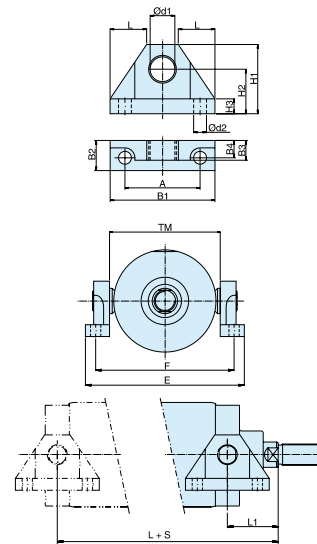
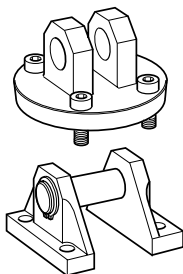
Intended for articulated mounting of the cylinder. The trunnion pegs are factory mounted on the front or rear end cover and are combined with bearing brackets. Supplied in pairs.

Material:
Bearing brackets: stainless steel, DIN X 5 CrNi 18 10
Journal bearing: stainless steel,
DIN X 5 CrNiMo 17 13 3/PTFE

Cylinder Ø mm	A mm	B1 mm	B2 mm	B3 mm	B4 mm	d1 mm	d2 mm	H1 mm	H2 mm	H3 mm	L mm	Weight Kg	Order code
80-100	60	90	28	15	15,5	20	11	58	37	12	34,5	0,16	P1S-4PMW
125	76	106	30	20	17,5	25	13	70	45	15	40	0,19	P1S-4QMW

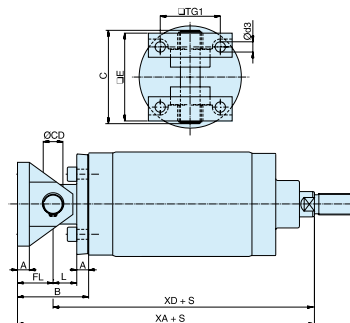
Cylinder Ø mm	E mm	F mm	L1 mm	L2 mm	TM mm	Weight Kg	Order code
80	154	129	49,5	165,5	98	0,16	P1S-4PMW
100	169	144	50,5	177,5	109	0,16	P1S-4QMW
125	194	169	63	214	134	0,19	P1S-4QMW

S = Stroke

Combined mounting
MP2/MP4

Intended for articulated mounting of cylinder versions D, F, L or Q. The unit is mounted on the rear end cover and is combined with bearing brackets MP2 and is supplied complete with shaft, mounting screw and O-ring for a clean joint between end cover and bracket.

Material:
Bearing brackets: stainless steel, DIN X 5 CrNi 18 10
Journal bearing: stainless steel,
Journal bearing: DIN X 5 CrNiMo 17 13 3/PTFE
Bracket: stainless steel, DIN X 5 CrNi 18 10
Pin: stainless steel, DIN X 5 CrNiMo 17 13 3



Cylinder Ø mm	A mm	B mm	C mm	CD mm	d3 mm	E mm	FL mm	L mm	TG1 mm	XA mm	XD mm	Weight Kg	Order code
80	12	64	82	16	9	74	32	20	46	242	210	1,29	P1S-4PML
100	12	74	98	20	11	90	37	25	60	267	230	2,33	P1S-4QML
125	15	90	118	25	13	110	45	30	76	320	275	3,30	P1S-4RML

S = Stroke

P5T cylinders are a modern and versatile range of cylinders with integral guides. The cylinders are double-acting, with end stop cushioning for quiet and vibration free operation. The strong guide shafts make it possible to adsorb considerable thrust forces and torque.



- Complete cylinder function with integral guidance
- Stainless steel guide rods
- Wide range of standard strokes, diameter 16-100 mm
- Flexible porting as standard
- Magnetic piston as standard with drop-in sensor technology
- End stop cushions as standard

Operating information

Working pressure Max 10 bar
Working temperature -20 °C to +80 °C

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it must be continued.

For technical information see CD

Double acting - Plain bearing and top & rear connections

Ø16mm - (M5)

Stroke.mm	Order code
10	P5T-C016DGSN010
25	P5T-C016DGSN025
40	P5T-C016DGSN040
50	P5T-C016DGSN050
75	P5T-C016DGSN075
100	P5T-C016DGSN100

Ø20mm - (G1/8)

Stroke.mm	Order code
25	P5T-C020DGSN025
40	P5T-C020DGSN040
50	P5T-C020DGSN050
75	P5T-C020DGSN075
100	P5T-C020DGSN100
125	P5T-C020DGSN125
150	P5T-C020DGSN150

Ø25mm - (G1/8)

Stroke.mm	Order code
25	P5T-C025DGSN025
50	P5T-C025DGSN050
75	P5T-C025DGSN075
100	P5T-C025DGSN100
125	P5T-C025DGSN125
150	P5T-C025DGSN150

Ø32mm - (G1/8)

Stroke.mm	Order code
25	P5T-C032DGSN025
50	P5T-C032DGSN050
75	P5T-C032DGSN075
100	P5T-C032DGSN100
125	P5T-C032DGSN125
150	P5T-C032DGSN150
175	P5T-C032DGSN175
200	P5T-C032DGSN200

Ø40mm - (G1/8)

Stroke.mm	Order code
25	P5T-C040DGSN025
50	P5T-C040DGSN050
75	P5T-C040DGSN075
100	P5T-C040DGSN100
125	P5T-C040DGSN125
150	P5T-C040DGSN150
175	P5T-C040DGSN175
200	P5T-C040DGSN200

Ø50mm - (G1/4)

Stroke.mm	Order code
25	P5T-C050DGSN025
50	P5T-C050DGSN050
75	P5T-C050DGSN075
100	P5T-C050DGSN100
125	P5T-C050DGSN125
150	P5T-C050DGSN150
175	P5T-C050DGSN175
200	P5T-C050DGSN200

Ø63mm - (G1/4)

Stroke.mm	Order code
25	P5T-C063DGSN025
50	P5T-C063DGSN050
75	P5T-C063DGSN075
100	P5T-C063DGSN100
125	P5T-C063DGSN125
150	P5T-C063DGSN150
175	P5T-C063DGSN175
200	P5T-C063DGSN200

Ø80mm - (G3/8)

Stroke.mm	Order code
25	P5T-C080DGSN025
50	P5T-C080DGSN050
75	P5T-C080DGSN075
100	P5T-C080DGSN100
125	P5T-C080DGSN125
150	P5T-C080DGSN150
175	P5T-C080DGSN175
200	P5T-C080DGSN200

Ø100mm - (G3/8)

Stroke.mm	Order code
25	P5T-C100DGSN025
50	P5T-C100DGSN050
75	P5T-C100DGSN075
100	P5T-C100DGSN100
125	P5T-C100DGSN125
150	P5T-C100DGSN150
175	P5T-C100DGSN175
200	P5T-C100DGSN200

 Indicates stocked product.

Design Variants

In addition to the standard designs, a number of variants of the P5T range are available to special order, to provide effective solutions in a large number of applications.

- Cylinders with special strokes
- Cylinders with two fixing plates
- Cylinders with adjustable stops, with cushioning
- High-temperature cylinders for the temperature range of -10°C to +150°C (not magnetic piston).

Special design for food industry applications

There is a special version of the P5T for food industry applications and other installation cases where high corrosion resistance and hygiene are required. This version has steel parts and other components in either stainless steel or special treated aluminium. Please contact Customer Service for more information.

Plain bearing or recirculating ball bearings

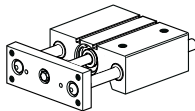
The P5T is supplied with plain bearings as standard. This type of bearing has guide rods of greater diameter, providing excellent support for heavy loads, especially static loads. Plain bearings are highly tolerant of vibration and dirt, and are suitable for regular cleaning.

Recirculating ball bearings are used for applications which require high precision and low friction.

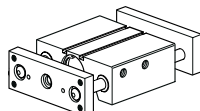
The choice should be based on the following factors:

Application requirements	Plain bearing	Recirculating ball bearings
Precision	Good	Excellent
Friction	Higher	Low
Coefficient of friction	Variable	Constant
Precision during service life	Variable	Constant
Static load capacity	Excellent	Good
Dynamic load capacity	Good, but with friction losses	Good
Vibration tolerance	Excellent	Average
Dirt tolerance	Excellent	Poor
Washing tolerance	Excellent	Poor

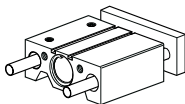
Double acting, connections on top.



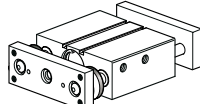
Double acting with two fixing plates, side connections are recommended.



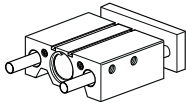
Double acting, connections at rear.



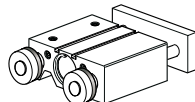
Double acting with two fixing plates and adjustable end stops with cushioning, side connections are recommended.



Double acting, connections on side.



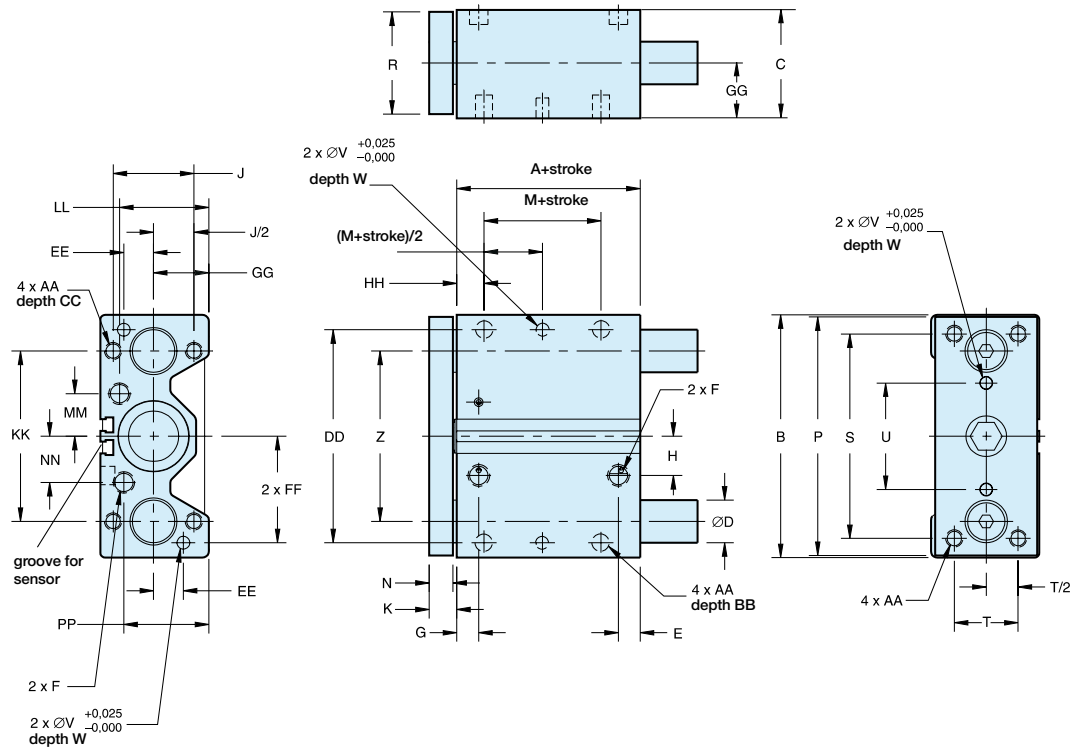
Double acting with one fixing plate adjustable end stops with cushioning, connections on side, on top or at rear.



Dimensions, P5T basic cylinder

Connection option **D**

(connection from above or rear)



Cylinder diam. mm	A mm	B mm	C mm	D1*) mm	D2*) mm	E mm	F mm	G mm	H mm	J mm	K mm	M mm	N mm	P mm	R mm	S mm	T mm	U mm	V mm
16	37,8	64	31	8	10	10,1	M5	10,1	7	22	9,9	7	7,9	62	25,4	52	16	20	3
20	35	74	36	10	12	19	G1/8	10	15,8	26	9,9	10	7,9	72	31,8	60	18	30	4
25	38	88	42	12	16	21	G1/8	11,4	15,5	32	9,9	10	7,9	86	38	70	26	34	4
32	36	114	51	16	20	10,3	G1/8	10,4	18,4	38	13,1	5	11,1	112	44,5	96	30	50	6
40	44	124	51	16	20	12,1	G1/8	14,9	22,5	38	13,1	10	11,1	122	44	106	30	60	6
50	44,9	140	62	20	25	14,5	G1/4	16,1	27	44	14,7	10	12,7	138	57	120	40	60	8
63	50,1	150	75	20	25	16,4	G1/4	14,5	33	44	14,7	10	12,7	148	70	130	50	72	8
80	59,5	188	95	25	30	17,5	G3/8	19	37	56	18	15	16	185	88,9	160	60	92	10
100	66**)	224	115	30	35	21,9**)	G3/8	23	40	62	18	15	16	221	108	190	80	114	10

Cylinder diam. mm	W mm	Z mm	AA mm	BB mm	CC mm	DD mm	EE mm	FF mm	GG mm	HH mm	KK mm	LL mm	MM mm	NN mm	PP mm	Piston rod Ø mm
16	6	42	M5x0,8	7,5	10	54	8	27	15	13,1	42	22,5	11,3	9,7	23	8
20	6	52	M5x0,8	7,5	10	64	10	32	17	13,1	52	26	15,4	15,4	26	10
25	6	62	M6x1,0	10	12	76	11	38	21	14,1	62	33,4	17	17	33,4	10
32	6	80	M8x1,25	11	16	100	14	50	26	12,9	80	42	20	21,7	38	16
40	6	90	M8x1,25	11	16	110	14	55	26	13,9	90	41	24	26,4	37,9	16
50	8	100	M10x1,5	12	20	124	16	62	30	14,3	100	51	29	33	44	20
63	8	110	M10x1,5	15	20	132	18	66	36,5	16,3	110	62	36	37,8	57,8	20
80	10	140	M12x1,75	18	24	166	22	83	46,5	21	140	78	45	48	75,5	25
100	10	170	M14x2,0	21	28	200	24	100	56,5	25	170	91,5	53	51	95,5	25

Length tolerance ± 1 mm

*) D1 = bearing rod diameter for recirculating ball bearing

Stroke tolerance $\pm 1.5/0$ mm

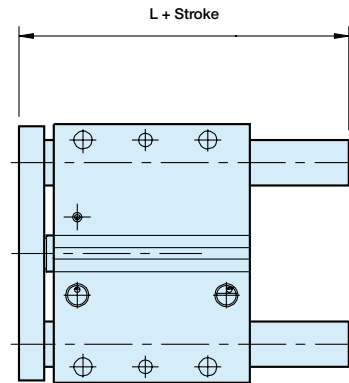
*) D2 = bearing rod diameter for plain bearing

**) Stroke 25 mm, A=75 mm, E=28 mm

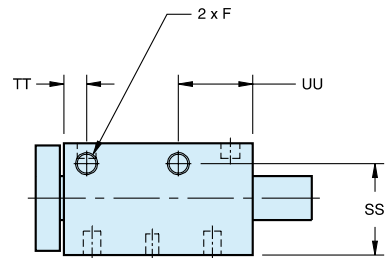
Dimensions, P5T basic cylinder

Standard lengths

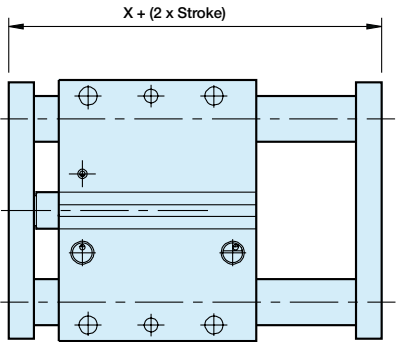
Cylinder diam mm	Stroke mm	L mm
16	10	36,2
	25, 40, 50, 75	60,2
	100	75,2
20	25, 40, 50, 75	66,9
	100, 125	91,9
25	25, 50, 75, 100	69,9
	125, 150	91,9
32	25, 50, 75, 100	77,9
	125, 150, 175, 200	116,0
40	25, 50, 75, 100	77,9
	125, 150, 175, 200	116,0
50	25, 50, 75, 100	84,0
	125, 150, 175, 200	124,1
63	25, 50, 75, 100	84,0
	125, 150, 175, 200	124,1
80	25, 50, 75, 100	101,8
	125, 150, 175, 200	140,0
100	25	122,8
	50, 75, 100	120,3
	125, 150, 175, 200	158,4

**Dimensions, P5T basic cylinder**Connection option **S** (side connections)

Cylinder diam. mm	SS mm	TT mm	UU mm	F mm
16	24,1	10	20	M5
20	29,2	10	20	M5
25	35,2	11,4	25	M5
32	41,7	10,4	34	G1/8
40	41,7	14,9	34	G1/8
50	51,3	16,1	38	G1/4
63	60,7	15,6	41,8	G1/4
80	75,5	19	47	G3/8
100	83,7	23	53,3	G3/8

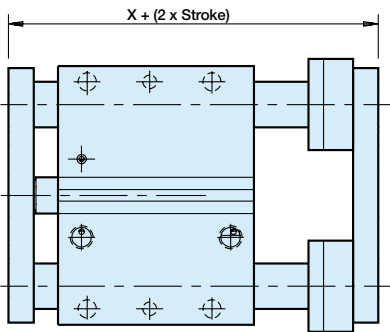


Dimensions, P5T basic cylinder
Option D



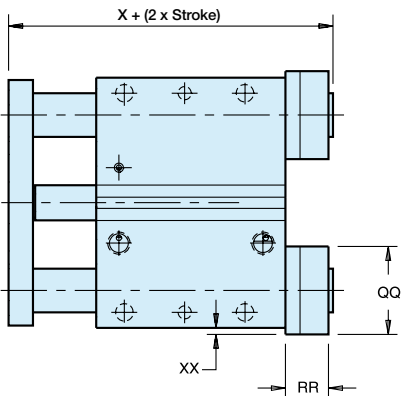
Please note that load capacity increases with two fixing plates, due to greater bearing distance.

Dimensions, P5T with two fixing plates and adjustable end stop with cushioning
Option A



Cylinder diam. mm	Guide rod dia. mm	X for option			QQ mm	RR mm	XX mm
		D mm	A mm	E mm			
16	8	57,6	70,6	62,7	18,0	13,0	0
	10	57,6	70,6	62,7	24,0	13,0	1
20	10	54,9	67,9	59,9	24,0	13,0	1
	12	54,9	72,6	64,6	28,0	17,7	3
25	12	57,8	75,5	67,6	28,0	17,7	1
	16	57,8	77,5	69,6	34,0	19,7	4
32	16	62,2	81,9	70,8	34,0	19,7	0
	20	62,2	83,9	72,8	41,4	21,7	3,7
40	16	70,2	89,9	78,8	34,0	19,7	0
	20	70,2	91,9	80,8	41,4	21,7	3,7
50	20	74,3	96,0	83,3	41,4	21,7	0,7
	25	74,3	96,0	83,3	50,8	21,7	5,4
63	20	79,5	101,2	88,5	41,4	21,7	0,7
	25	79,5	101,2	88,5	50,8	21,7	5,4
80	25	95,5	117,2	101,2	50,8	21,7	1,4
	30	95,5	117,2	101,2	60,5	21,7	6,3
100	30	102,0	123,7	107,7	60,5	21,7	3,3
	35	102,0	123,7	107,7	65,0	21,7	5,5

Dimensions, P5T with adjustable end stop with cushioning
Option E



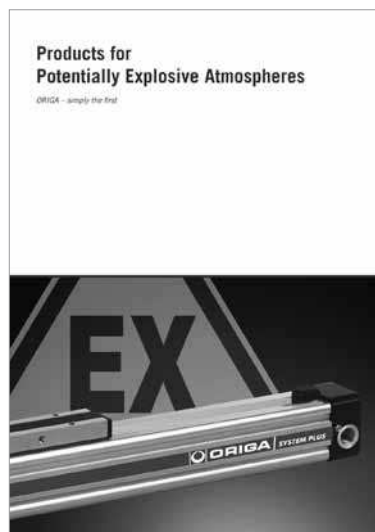
Parker Origa rodless pneumatic cylinders are the first rodless cylinders that have been approved for use in potentially explosive atmospheres in Equipment Group II, Category 2 GD.

The Cylinders are to the ATEX Certification 94/9/EG (ATEX 95) for Pneumatic Components.

For the different classifications and details please see data sheet P-1.10.020E and P-1.45.105E.

For full details and information on the OSP-P range of rodless cylinders please see catalogue no. : P-A4 p011

You will find further information on the ATEX Directives in our brochure P-A5P060E.



Special Versions



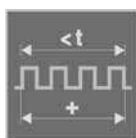
for use in Ex-Areas



for Clean Room Applications
certified to
DIN EN ISO 14644-1



Stainless steel version
for special applications



with special pneumatic
cushioning system for cycle
time optimization,
for Ø 16 to 50 mm
– on request



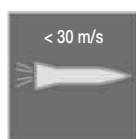
High Temperature Version
for temperatures up to
+120°C



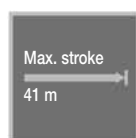
Low Temperature Version
for temperatures up to
-40°C



Slow Speed Version
 $v = 0.005 - 0.2 \text{ m/s}$



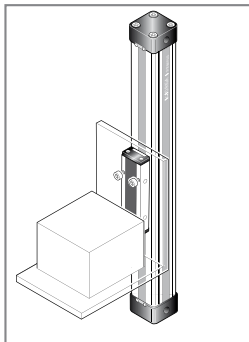
High Speed Version
 $v_{\text{max.}} = 30 \text{ m/s}$



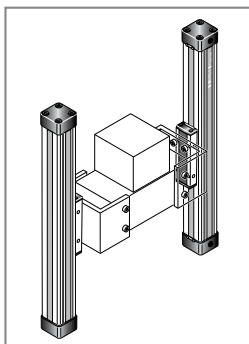
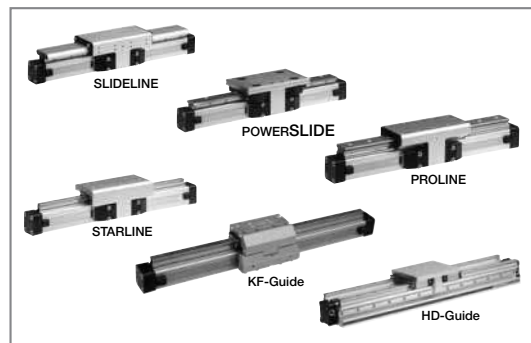
Cylinders with extreme long
strokes
Stroke length up to 41 m

OSP-P APPLICATION EXAMPLES

ORIGA SYSTEM PLUS – rodless linear drives offer maximum flexibility for any application.



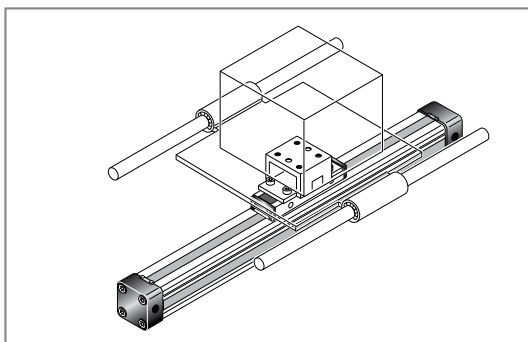
The high load capacity of the piston can cope with high bending moments without additional guides.



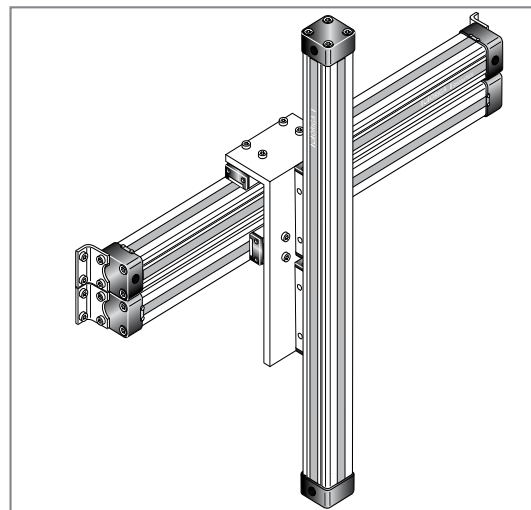
The mechanical design of the OSP-P allows synchronised movement of two cylinders.

Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

Optimal system performance by combining multi-axis cylinder combinations.



When using external guides, the clevis mounting is used to compensate for deviations in parallelism.



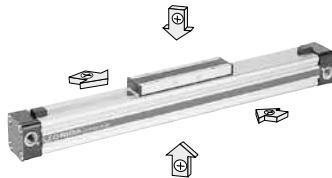
For further information and assembly instructions, please contact your local Parker Origa dealer.

OPTIONS AND ACCESSORIES FOR SYSTEM VERSATILITY

SERIES OSP-P

STANDARD VERSIONS OSP-P10 to P80

Data Sheet P-1.10.002E-1, -2, -3
Standard carrier with integral guidance. End cap can be rotated 4 x 90° to position air connection on any side.
Magnetic piston as standard.
Dovetail profile for mounting of accessories and the cylinder itself.



LONG-STROKE VERSION Data Sheet P-1.10.002E- 11

For extremely long strokes up to max. 41m



BASIC CYLINDER OPTIONS

CLEAN ROOM CYLINDERS Data Sheet P-1.10.003E

For use in clean room applications, certified with the IPA-Certificate (to DIN EN ISO 14644-1).
The special design of the linear drive enables all emissions to be led away.



ATEX-Version
Data Sheet P-1.10.020E
For use in Ex-Areas



STAINLESS VERSION

For use in constantly damp or wet environments. All screws are A2 quality stainless steel (material no.1.4301 / 1.4303)



SLOW SPEED OPTIONS

Specially formulated grease lubrication facilitates slow, smooth and uniform piston travel in the speed range from 0.005 to 0.2 m/s. Minimum achievable speeds are dependent on several factors. Please consult our technical department.
Slow speed lubrication in combination with Viton® on demand. Oil free operation preferred.



VITON® VERSION

For use in an environment with high temperatures or in chemically aggressive areas.
All seals are made of Viton®.
Sealing bands: Stainless steel.



END-FACE AIR CONNECTION

Data Sheet P-1.10.002E-6

To solve special installation problems.



BOTH AIR CONNECTIONS AT ONE END

Data Sheet P-1.10.002E-7

For simplified tubing connections and space saving.



INTEGRATED VOE VALVES

Data Sheet P-1.10.002E-8

The complete compact solution for optimal cylinder control.



DUPLEX CONNECTION

Data Sheet P-1.45.011E

The duplex connection combines two OSP-P cylinders of the same size into a compact unit with high performance.



MULTIPLEX CONNECTION

Data Sheet P-1.45.012E

The multiplex connection combines two or more OSP-P cylinders of the same size into one unit.
The orientation of the carriers can be freely selected.



ORIGA SYSTEM PLUS

– INNOVATION FROM A PROVEN DESIGN

A completely new generation of linear drives which can be simply and neatly integrated into any machine layout.

A NEW MODULAR LINEAR DRIVE SYSTEM

With this second generation linear drive Parker Origa offers design engineers complete flexibility.

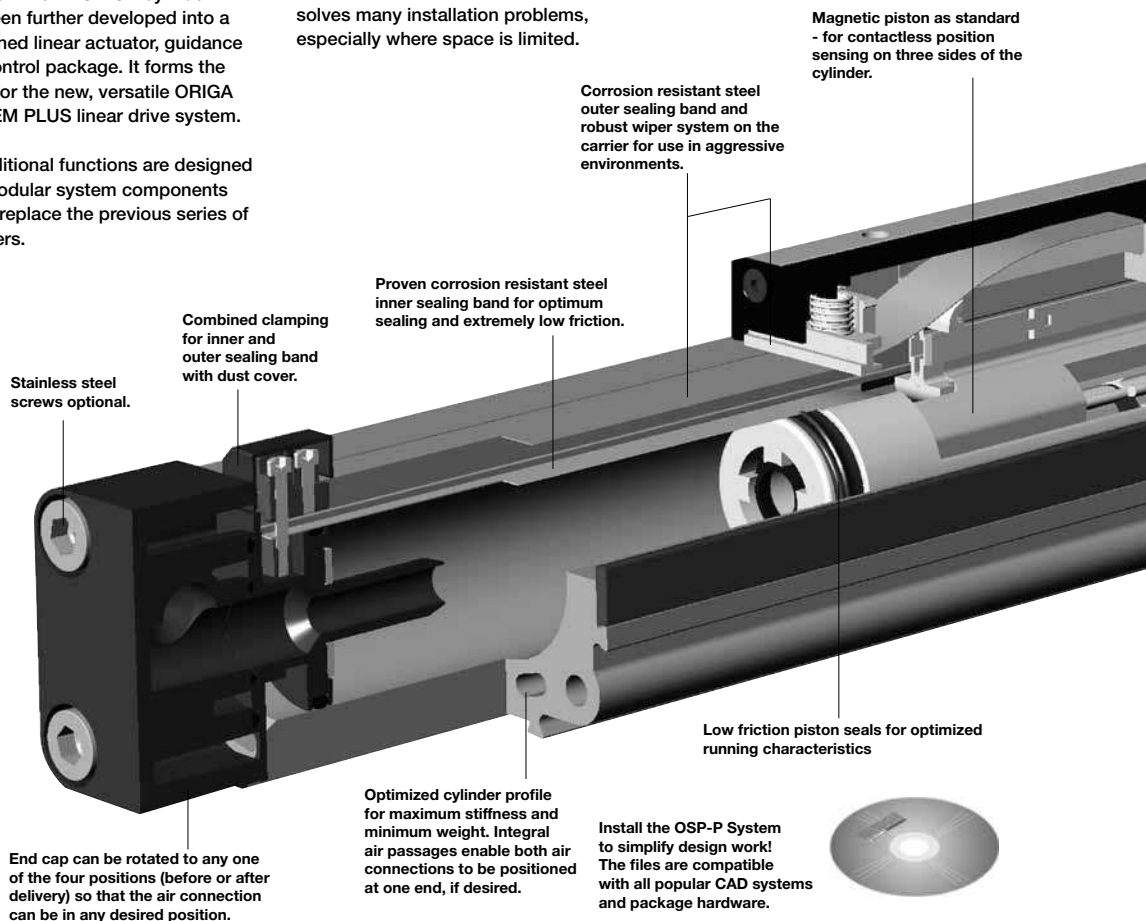
The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed into modular system components which replace the previous series of cylinders.

MOUNTING RAILS ON 3 SIDES

Mounting rails on 3 sides of the cylinder enable modular components such as linear guides, brakes, valves, magnetic switches etc. to be fitted to the cylinder itself. This solves many installation problems, especially where space is limited.

The modular system concept forms an ideal basis for additional customer-specific functions.



PDE2600PNUK

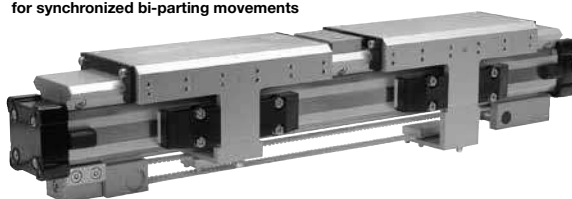
Parker One Pneumatic

Origa OSP-P Rodless Cylinders

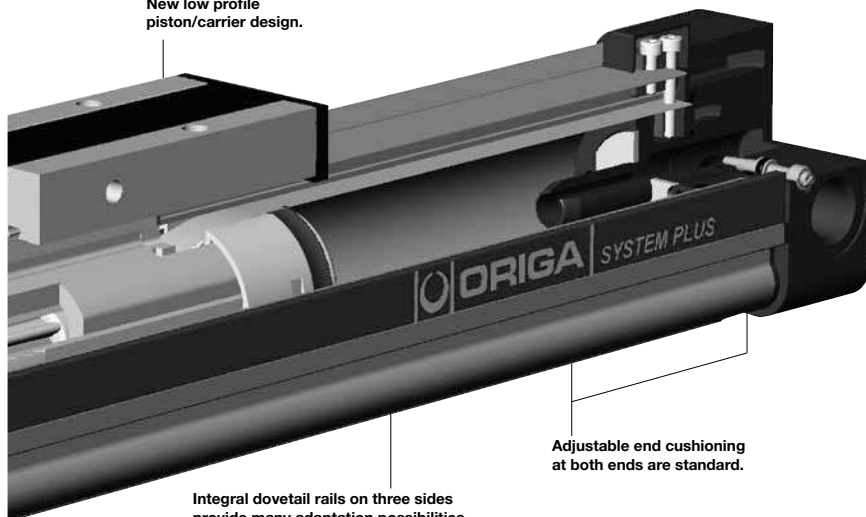
Clean Room Version
certified to DIN EN ISO 14644-1



Rodless Cylinder
for synchronized bi-parting movements

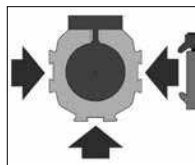


New low profile
piston/carrier design.



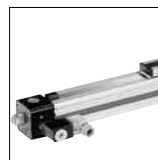
Integral dovetail rails on three sides
provide many adaptation possibilities
(linear guides, magnetic switches,
etc.).

Modular system components
are simply clamped on.

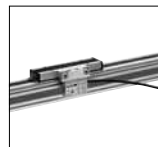


Adjustable end cushioning
at both ends are standard.

**INTEGRATED
VOE VALVES**
The complete
compact solution
for optimal cylinder
control.



SENSOFLEX
SFI-plus
incremental
measuring system
with 0,1 (1,0) mm
resolution.



SLIDELINE
Combination with
linear guides pro-
vides for heavier
loads.



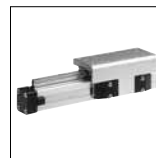
POWERSLIDE
Roller bearing
precision guidance
for smooth travel
and high dynamic
or static loads.



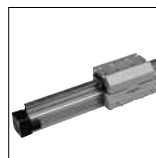
PROLINE
The compact
aluminium roller
guide for high loads
and velocities.



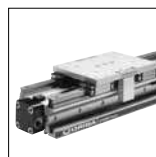
STARLINE
Recirculating ball
bearing guide for
very high loads
and precision.



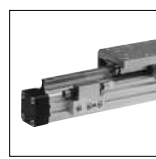
KF GUIDE
Recirculating ball
bearing guide
– the mounting
dimensions corre-
spond to FESTO
Type: DGPL-KF



**HEAVY DUTY
GUIDE HD**
for heavy duty
applications.



**VARIABLE STOP
VS**
The variable stop
provides simple
stroke limitation.



Passive
pneumatic brake
reacts automati-
cally to pressure
failure.



Active pneumatic
brake for secure,
positive stopping
at any position.



ACCESSORIES

MAGNETIC SWITCHES TYPE RS, ES, RST, EST

Data Sheet 1.45.100E, 1.45.104E,
1.45.105E

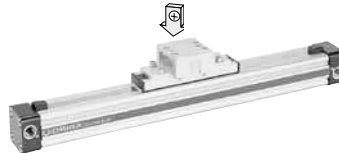
For electrical sensing of end and
intermediate piston positions, also in
EX-Areas.



CLEVIS MOUNTING

Data Sheet 1.45.002E

Carrier with tolerance and paralle-
lism compensation for driving loads
supported by external linear guides.



MID-SECTION SUPPORT

Data Sheet 1.45.004E

For supporting long cylinders or
mounting the cylinder by its dovetail
rails.



END CAP MOUNTING

Data Sheet 1.45.003E

For end-mounting of the cylinder.

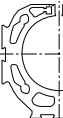
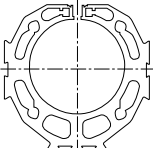


INVERSION MOUNTING

Data Sheet 1.45.006E

The inversion mounting transfers the
driving force to the opposite side, e.
g. for dirty environments.



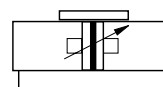
Characteristics			Pressures quoted as gauge pressure				
Characteristics	Symbol	Unit	Description				
General Features							
Type			Rodless cylinder				
Series			OSP-P				
System			Double-acting, with cushioning, position sensing capability				
Mounting			See drawings				
Air Connection			Threaded				
Ambient range	T _{min}	°C	-10	Other temperature on request			
temperature range	T _{max}	°C	+80				
Weight (mass)		kg	See table below				
Installation			In any position				
Medium air			Filtered, unlubricated compressed (other media on request)				
Lubrication			Permanent grease lubrication (additional oil mist lubrication not required) Option: special slow speed grease				
Material	Cylinder Profile		Anodized aluminium				
	Carrier (piston)		Anodized aluminium				
	End caps		Aluminium, lacquered / Plastic (P10)				
	Sealing bands		Corrosion resistant steel				
	Seals		NBR (Option: Viton®)				
	Screws		Galvanized steel Option: stainless steel				
	Dust covers, wipers		Plastic				
Max. operating pressure p_{max}		bar	8				
Weight (mass) kg							
Cylinder series (Basic cylinder)		Weight (Mass) kg					
		At 0 mm stroke	per 100 mm stroke				
OSP-P10		0.087	0.052				
OSP-P16		0.22	0.1				
OSP-P25		0.65	0.197				
OSP-P32		1.44	0.354				
OSP-P40		1.95	0.415				
OSP-P50		3.53	0.566				
OSP-P63		6.41	0.925				
OSP-P80		12.46	1.262				
Size Comparison							
P10	P16	P25	P32	P40	P50	P63	P80
							

Rodless Pneumatic Cylinder

ø 10-80 mm

OSP
— ORIGA
— SYSTEM
— PLUS

Series OSP-P..



Standard Versions:

- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

Long-Stroke Cylinders for stroke lengths up to 41 m

(see data sheet 1.10.002E-11)

Special Versions:

- with special pneumatic cushioning system (on request)
- Clean room cylinders (see data sheet 1.10.003E)
- ATEX-Version (see data sheet 1.10.020E)
- Stainless steel screws
- Slow speed lubrication
- Viton® seals
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves



- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm, Long-Stroke version (Ø50-80mm) for stroke lengths up to 41 m

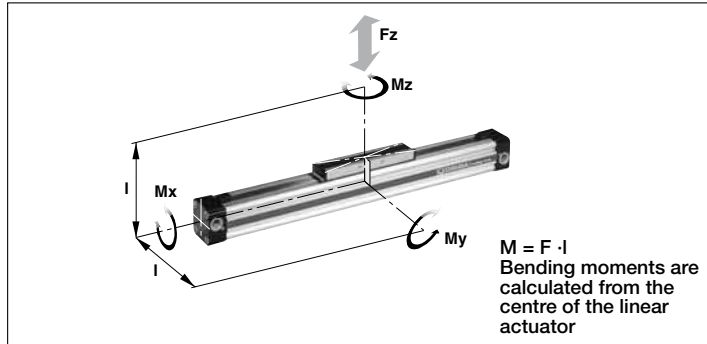
Loads, Forces and Moments

Choice of cylinder is decided by:

- Permissible loads, forces and moments
- Performance of the pneumatic end cushions. The main factors here are the mass to be cushioned and the piston speed at start of cushioning (unless external cushioning is used, e. g. hydraulic shock absorbers).

The adjacent table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation. Load and moment data are based on speeds $v \leq 0.5$ m/s.

When working out the action force required, it is essential to take into account the friction forces generated by the specific application or load.



Cylinder-Series [mm Ø]	Theoretical Action Force at 6 bar [N]	effective Action Force F_A at 6 bar [N]	max. Moments			max. Load F [N]	Cushion Length [mm]
			M_x [Nm]	M_y [Nm]	M_z [Nm]		
OSP-P10	47	32	0.2	1	0.3	20	2.5 *
OSP-P16	120	78	0.45	4	0.5	120	11
OSP-P25	295	250	1.5	15	3	300	17
OSP-P32	483	420	3	30	5	450	20
OSP-P40	754	640	6	60	8	750	27
OSP-P50	1178	1000	10	115	15	1200	30
OSP-P63	1870	1550	12	200	24	1650	32
OSP-P80	3016	2600	24	360	48	2400	39

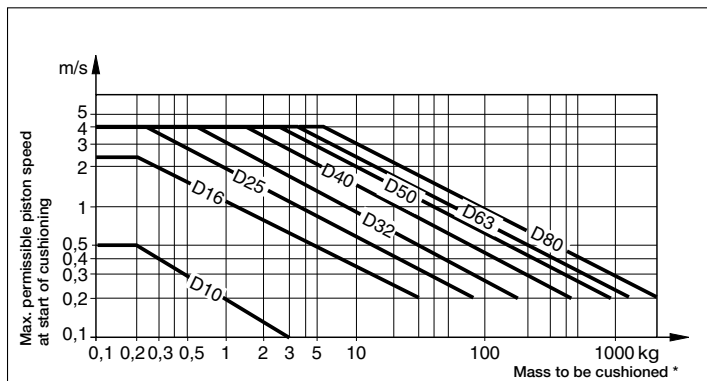
* A rubber element (non-adjustable) is used for end cushioning. To deform the rubber element enough to reach the absolute end position would require a Δp of 4 bar!

Cushioning Diagram

Work out your expected moving mass and read off the maximum permissible speed at start of cushioning.

Alternatively, take your desired speed and expected mass and find the cylinder size required.

Please note that piston speed at start of cushioning is typically ca. 50 % higher than the average speed, and that it is this higher speed which determines the choice of cylinder. If these maximum permissible values are exceeded, additional shock absorbers must be used.



* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

If the permitted limit values are exceeded, either additional shock absorbers should be fitted in the area of the centre of gravity or you can consult us about our special cushioning system – we shall be happy to advise you on your specific application.

	OSPP	25	0	0	0	0	0	01000	
--	------	----	---	---	---	---	---	-------	--

Piston Diameter

10 = 10 mm	40 = 40 mm
16 = 16 mm	50 = 50 mm
25 = 25 mm	63 = 63 mm
32 = 32 mm	80 = 80 mm

Piston Mounting

0 = Standard
1 = Tandem

Air Connections

0 = Standard A = VOE 24 V =
 1 = On the end-face B = VOE 230 V ~ / 110 =
 2 = Both at one end C = VOE 48 V =
 E = VOE 110 V ~

Seals

0 = Standard (NBR)
1 = Viton ®

Stroke Length

In mm (5 digits)

Screws

0 = Standard (galvanized steel)
1 = Stainless steel

Grease Lubrication

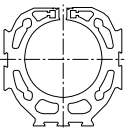
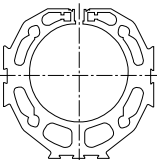
0 = Standard
1 = Slow ¹⁾

¹⁾ Slow speed lubrication in combination with Viton® seals on demand.

Description	Further information see Data Sheet No.
Clevis Mounting	1.45.002E
End Cap Mountings	1.45.003E
Mid-Section Support	1.45.004E
Inversion Mounting	1.45.006E
Adaptor Profile	1.45.007E
T-Slot Profile	1.45.008E
Adaptor Profile	1.45.009E
Duplex Connection	1.45.011E
Multiplex Connection	1.45.012E
Magnetic Switches	1.45.100E, 1.45.104E, 1.45.105E
Cable Cover	1.45.102E

Characteristics			Pressures quoted as gauge pressure		
Characteristics		Symbol	Unit	Description	
General Features					
Type				Rodless cylinder	
Series				OSP-P	
System				Double-acting, with cushioning, position sensing capability	
Mounting				See drawings	
Air Connection				Threaded	
Ambient ranges temperature range		T _{min} T _{max}	°C °C	+10 +40	Other temperature on request
Weight (mass)			kg	See table below	
Installation				vertical, horizontal (piston at top or at bottom)	
Medium air				Filtered, unlubricated compressed (other media on request)	
Lubrication				Permanent grease lubrication (additional oil mist lubrication not required) Option: special slow speed grease	
Material	Cylinder Profile			Anodized aluminium	
	Carrier (piston)			Anodized aluminium	
	End caps			Anodized aluminium	
	Sealing bands			Corrosion resistant steel	
	Seals			NBR (Option: Viton®)	
	Screws			Galvanized steel Option: stainless steel	
	Dust covers, wipers			Plastic	
Max. operating pressure		p _{max}	bar	8	
Max. speed		v	m/s	2	

Weight (mass) kg		
Cylinder series (Basic cylinder)	At 0 mm stroke	Weight (Mass) kg per 100 mm stroke
OSP-P50LS	3,53	0,566
OSP-P63LS	6,41	0,925
OSP-P80LS	12,46	1,262

Size Comparison			
P50	P63	P80	
			

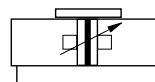
Rodless Pneumatic Cylinder

Ø 50-80 mm



Long-Stroke Cylinder for strokes up to 41 m

Series OSP-P..LS



Standard Versions:

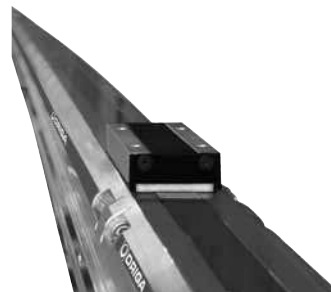
- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

Special Versions:

- Stainless steel screws
- Slow speed lubrication
- Viton® seals

Options:

- Displacement measuring system SFI-plus
- Active Brake AB..

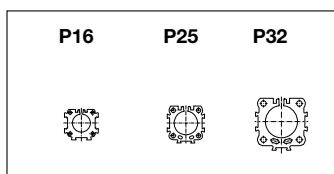


Characteristics			Pressure quoted as gauge pressure
Characteristics	Symbol	Unit	Description
General Features			
Type			Rodless Cylinder
Series			OSP-P
System			Double-acting, with cushioning, position sensing capability
Mounting			see drawings
Air connection			Threaded
Ambient and medium temperature range	T_{min} T_{max}	°C °C	-10 – other temperature ranges +80 on request
Weight (Mass)		kg	See table below
Installation			In any position
Medium			Filtered, unlubricated compressed air (other media on request)
Lubrication			Permanent grease lubrication (additional oil mist lubrication not required) Option: special slow speed grease
Material	Cylinder profile		Anodized aluminium
	Carrier (piston)		Anodized aluminium
	End caps		Aluminium, lacquered
	Sealing bands		Corrosion resistant steel
	Seals		NBR (Option: Viton®)
	Screws		Stainless steel
	Covers		Anodized aluminium
	Guide plate		Plastic
Max. operating pressure* p_{max}		bar	8

* Pressure quoted as gauge pressure

Weight (Mass) kg

Cylinder series (basic cylinder)	Weight (Mass) kg	
	at 0 mm stroke	per 100 mm stroke
OSP-P16	0.22	0.1
OSP-P25	0.65	0.197
OSP-P32	1.44	0.354

Size Comparison

Clean Room Cylinder

ø 16 – 32 mm

Rodless Cylinder

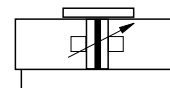
certified to
DIN EN ISO 14644-1

**Standard Versions:**

- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing
- Stainless steel screws

Special Versions:

- Slow speed lubrication
- Viton® seals

Series OSP-P.**Features:**

- Clean room classification
ISO Class 4 at $v_m = 0.14$ m/s
ISO Class 5 at $v_m = 0.5$ m/s
- suitable for smooth slow speed operation up to $v_{min} = 0.005$ m/s
- optional stroke length up to 1200 mm (longer strokes on request)
- Low maintenance
- Compact design with equal force and velocity in both directions
- Aluminium piston with bearing rings to support high direct and cantilever loads



Informations for ATEX-Directives

The rodless pneumatic cylinders of Parker Origa are the first linear drive unit, for that Ex range in the group of equipment II, Category 2 GD are certified.

Detail informations for use pneumatic components in Ex-Areas see leaflet A5P060E "EU Directive 94/9/EG (ATEX 95) for Pneumatic Components".

Components for EX-Areas



Technical Data (deviant to the Standard Cylinder)

Pressure quoted as gauge pressure

Characteristics	Symbol	Unit	Description
Ambient temperature range	T_{min} T_{max}	°C °C	-10 +60
Max. switching frequency		Hz	1 (double stroke/s) Basic cylinder 0.5 (1 stroke/s) Cylinder with guide
Operating pressure range	p_{max}	bar	Max. 8
Max. speed	v_{max}	m/s	3 Basic cylinder 2 Cylinder with guide
Medium			Filtered, unlubricated compressed air – free from water and dirt to ISO 8573-1 Solids: Class 7 particle size < 40 µm for Gas Water content: pressure dew point +3 °C, class 4, but at least 5 °C below minimum operating temperature
Noise level		dB (A)	70
Information for materials			Aluminium: see data sheet "Material" Lubrication: see security data sheet "Grease for use in Cylinder with guides" Sealing bands: Corrosion resistant steel

For all other details for dimensions, weights, allowable loads, cushioning diagrams and accessories see data sheets in this catalogue.

Equipment Group II Categorie 2GD

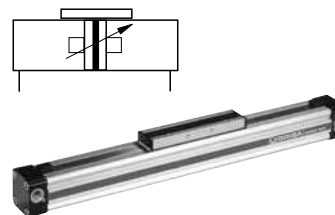
Rodless cylinder: II 2GD c T4 T135°C -10°C ≤ Ta ≤ +60°C

Series	Size	Stroke range	Accessories
OSP-P	Ø 10 to 80	1– 6000 mm	Mountings programme
SLIDELINE	Ø 16 to 80	1– 6000 mm	Mountings programme

OSP
— ORIGA
— SYSTEM
— PLUS

Rodless Cylinder Ø 10 – 80 mm Basic Cylinder

Series: OSP-PATEX



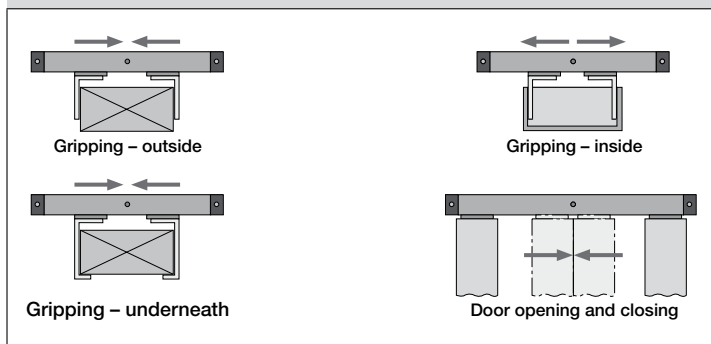
Plain Bearing Guide SLIDELINE Ø 16 – 80 mm

Series: SL -..ATEX



Characteristics			
Characteristics	Symbol	Unit	Description
General Features			
Type			Rodless cylinder for synchronized bi-parting movements
Series			OSP-P
System			Double acting with end cushioning For contactless position sensing
Guide			Slideline SL40
Synchronization			Toothed belt
Mounting			See drawings
Ambient temperature range	T_{min} T_{max}	°C °C	-10 +60
Weight (Mass)		kg	see Data Sheet No P-1.10.021E-2
Medium			Filtered, unlubricated compressed air (other media on request)
Lubrication			Special slow speed grease – additional oil mist lubrication not required
Material			
Toothed Belt			Steel-corded polyurethane
Belt wheel			Aluminium
Operating pressure range	p_{max}	bar	6
Cushioning middle position			Elastic buffer
Max. Speed	v_{max}	m/s	0.2
Max. stroke of each stroke		mm	500
Max. mass per guide carrier		kg	25
Max. moments on guide carrier			
lateral moment	Mx_{max}	Nm	25
axial moment	My_{max}	Nm	46
rotating moment	Mz_{max}	Nm	46
For more technical information see Data Sheet No. P-1.10.002E and P-1.40.002E			

Applications



Rodless Cylinder Ø 40 mm

for synchronized
bi-parting movements

Type OSP-P40-SL-BP



Features:

- Accurate bi-parting movement through toothed belt synchronization
- Optimum slow speed performance
- Increased action force
- Anodized aluminium guide rail with prism-form slideway arrangement
- Adjustable polymer slide units
- Combined sealing system with polymer and felt elements to remove dirt and lubricate the slideway
- Integrated grease nipples for guide lubrication

Applications:

- Opening and closing operations
- Gripping of workpieces – outside
- Gripping of hollow workpieces – inside
- Gripping underneath larger objects
- Clamping force adjustable via pressure regulator



OSP

— ORIGA
— SYSTEM
— PLUS

Adaptive modular system

The Origa system plus – OSP – provides a comprehensive range of linear guides for the pneumatic and electric linear drives.

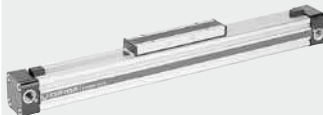
Advantages:

- Takes high loads and forces
- High precision
- Smooth operation
- Can be retrofitted
- Can be installed in any position

Rodless Pneumatic Cylinder Series OSP - P

Piston diameters 10 – 80 mm

See data sheet
P-1.10.002E (Standard)
P-1.10.020E (ATEX-Version)



Linear Guides

SLIDELINE

The cost-effective plain bearing guide for medium loads. Active/ Passive Brake optional.

Piston diameters 16 – 80 mm

See data sheet
P-1.40.002E (Standard)
P-1.10.020E (ATEX-Version)



POWERSLIDE

The roller guide for heavy loads and hard application conditions

Piston diameters 16 – 50 mm

See data sheet 1.40.003E



PROLINE

The compact aluminium roller guide for high loads and velocities.

Active/ Passive Brake optional.
Piston diameters 16 – 50 mm

See data sheet no. P-1.40.005E



STARLINE

Recirculating ball bearing guide for very high loads and precision

Piston diameters 16 – 50 mm

See data sheet no. P-1.40.006E



KF GUIDE

Recirculating ball bearing guide. Correspond to FESTO dimensions (Type DGPL-KF)

Piston diameters 16 – 50 mm

See data sheet no. P-1.40.007E



HD HEAVY DUTY GUIDE

The recirculating ball bearing guide for highest loads and greatest accuracy..

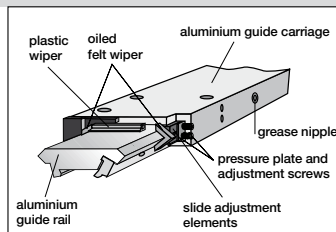
Piston diameters 25 – 50 mm

See data sheet no. P-1.40.008E

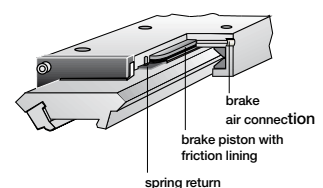


Versions

for pneumatic linear drive:
Series OSP-P



Option – Integrated Brake

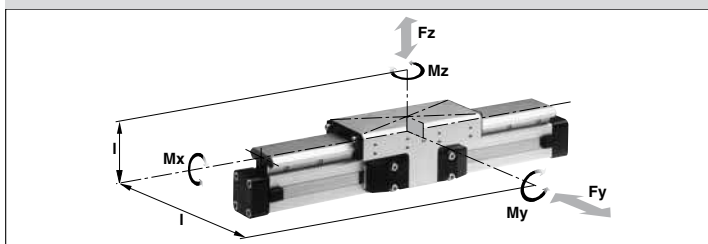


Integrated Brake (optional)
for series OSP-P25 to OSP-P50:

- Actuated by pressure
- Released by exhausting and spring return

For further technical data see also
linear drives OSP-P (P-1.10.002E)

Loads, Forces and Moments



Technical Data

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

The load and moment figures apply to speeds $v < 0.2$ m/s.

* Please note:
In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

Plain Bearing Guide SLIDELINE

OSP
— ORIGA
— SYSTEM
— PLUS

Series SL 16 to 80
for Linear-drive
• Series OSP-P

Features:

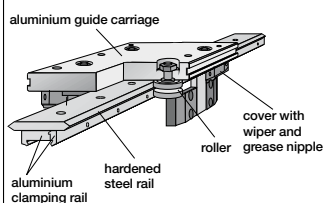
- ATEX-version (without brake) is also available (see data sheet no. P-1.10.020E)
- Anodised aluminium guide rail with prism-shaped slideway arrangement
- Adjustable plastic slide elements – optional with integral brake
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideways
- Corrosion resistant version available on request
- Any length of stroke up to 5500 mm (longer strokes on request)

- 1) Only with integrated brake:
Braking force on dry oil-free surface. Values are decreased for lubricated slideways
- 2) Corrosion resistant fixtures available on request

Series	For linear drive	Max. moments [Nm]			Max. loads [N] Fy, Fz	Maximum braking force at 6 bar [N] ¹⁾ with 0 mm stroke	Mass of linear drive with guide [kg]		Mass* of guide carriage [kg]	Order No. SLIDELINE ²⁾ for	
		Mx	My	Mz			increase per 100 mm stroke			OSP-P without brake	OSP-P with brake
SL16	OSP-P16	6	11	11	325	–	0.57	0.22	0.23	20341	–
SL25	OSP-P25	14	34	34	675	325	1.55	0.39	0.61	20342	20409
SL32	OSP-P32	29	60	60	925	545	2.98	0.65	0.95	20196	20410
SL40	OSP-P40	50	110	110	1500	835	4.05	0.78	1.22	20343	20411
SL50	OSP-P50	77	180	180	2000	1200	6.72	0.97	2.06	20195	20412
SL63	OSP-P63	120	260	260	2500	–	11.66	1.47	3.32	20853	–
SL80	OSP-P80	120	260	260	2500	–	15.71	1.81	3.32	21000	–

Versions

for pneumatic linear drive:
Series OSP-P

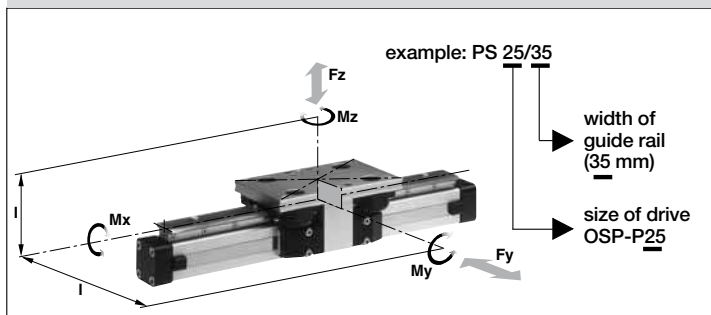


Roller Guide POWERSLIDE

OSP
— ORIGA
— SYSTEM
— PLUS

Series PS 16 to 50
for Linear-drive
• Series OSP-P

Loads, Forces and Moments



Technical Data

The table shows the maximum per-missible values for smooth operation, which should not be exceeded even under dynamic conditions.
For further information and technical data see data sheets for linear drives OSP-P (P-1.10.002E).

*** Please note:**
In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

Features:

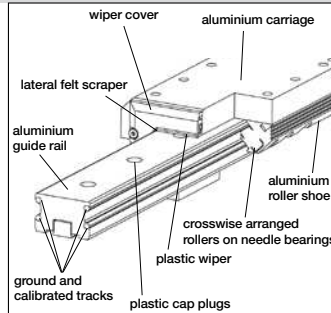
- Anodised aluminium guide carriage with vee rollers having 2 rows of ball bearings
- Hardened steel guide rail
- Several guide sizes can be used on the same drive
- Corrosion resistance version available on request
- Max. speed $v = 3 \text{ m/s}$,
- Tough roller cover with wiper and grease nipple
- Any length of stroke up to 3500 mm, (longer strokes on request)

Series	For linear drive	Max. moments [Nm]			Max. load [N]	Mass of linear drive with guide [kg]		Mass* of guide carriage [kg]	Order-No. Powerslide for OSP-P ¹⁾
		Mx	My	Mz		with 0 mm stroke	increase per 100 mm stroke		
PS 16/25	OSP-P16	14	45	45	1400	0.93	0.24	0.7	20285
PS 25/25	OSP-P25	14	63	63	1400	1.5	0.4	0.7	20015
PS 25/35	OSP-P25	20	70	70	1400	1.7	0.4	0.8	20016
PS 25/44	OSP-P25	65	175	175	3000	2.6	0.5	1.5	20017
PS 32/35	OSP-P32	20	70	70	1400	2.6	0.6	0.8	20286
PS 32/44	OSP-P32	65	175	175	3000	3.4	0.7	1.5	20287
PS 40/44	OSP-P40	65	175	175	3000	4.6	1.1	1.5	20033
PS 40/60	OSP-P40	90	250	250	3000	6	1.3	2.2	20034
PS 50/60	OSP-P50	90	250	250	3000	7.6	1.4	2.3	20288
PS 50/76	OSP-P50	140	350	350	4000	11.5	1.8	4.9	20289

¹⁾ corrosion resistance version available on request (max. loads and moments are 25% lower)

Versions

for pneumatic linear drive:
Series OSP-P



Aluminium Roller Guide PROLINE

OSP
— ORIGA
— SYSTEM
— PLUS

Series PL 16 to 50
for Linear-drive
• Series OSP-P

Technical Data

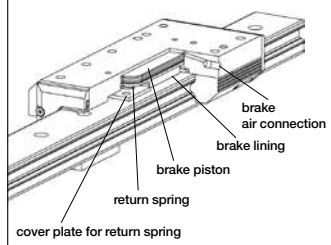
The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1. With a load factor of less than 1, service life is 8000 km

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

Option – Integrated Brake



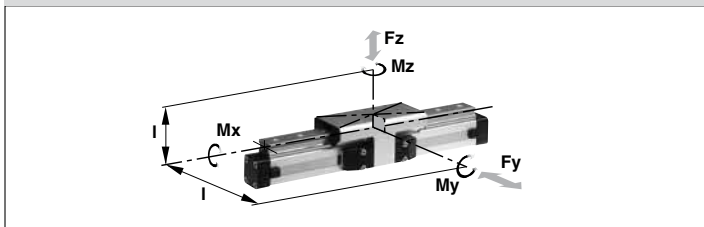
Features:

- High precision
- High velocities (10 m/s)
- Smooth operation - low noise
- Integrated wiper system
- Long life lubrication
- Compact dimensions - compatible to Slideline plain bearing guide
- Any length of stroke up to 3750 mm

**Integrated Brake (optional)
for Series OSP-P25 to OSP-P50:**

- Actuated by pressurisation
- Release by depressurisation and spring actuation

Loads, Forces and Moments



* Please note:

The mass of the carriage has to be added to the total moving mass when using the cushioning diagram.

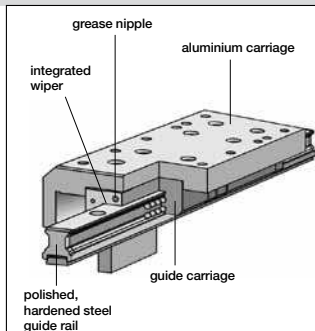
Series	For linear drive	Max. moments [Nm]			Max. loads [N] Fy, Fz	Maximum braking force at 6 bar [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]	Order No. PROLINE for OSP-P	
		Mx	My	Mz			with 0 mm stroke	increase per 100 mm stroke		without brake	with brake
PL 16	OSP-P16	8	12	12	542	-	0.55	0.19	0.24	20855	-
PL 25	OSP-P25	16	39	39	857	on request	1.65	0.40	0.75	20856	20860
PL 32	OSP-P32	29	73	73	1171	on request	3.24	0.62	1.18	20857	20861
PL 40	OSP-P40	57	158	158	2074	on request	4.35	0.70	1.70	20858	20862
PL 50	OSP-P50	111	249	249	3111	on request	7.03	0.95	2.50	20859	20863

¹⁾ Only for version with brake:

Braking surface dry – oiled surface reduces the effective braking force.

Versions

for pneumatic linear drive:
Series OSP-P

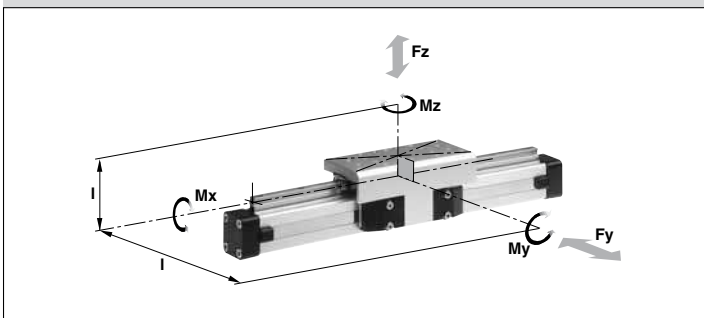


Recirculating Ball Bearing Guide STARLINE

OSP
— ORIGA
— SYSTEM
— PLUS

Series STL 16 to 50
for Linear Drive Series OSP-P

Loads, Forces and Moments



Technical Data

The table shows the maximum permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

Features:

- Polished and hardened steel guide rail
- For very high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Anodized aluminium guide carriage – dimensions compatible with OSP guides SLIDELINE and PROLINE
- Installation height (STL16 - 32) compatible with OSP guides SLIDELINE and PROLINE

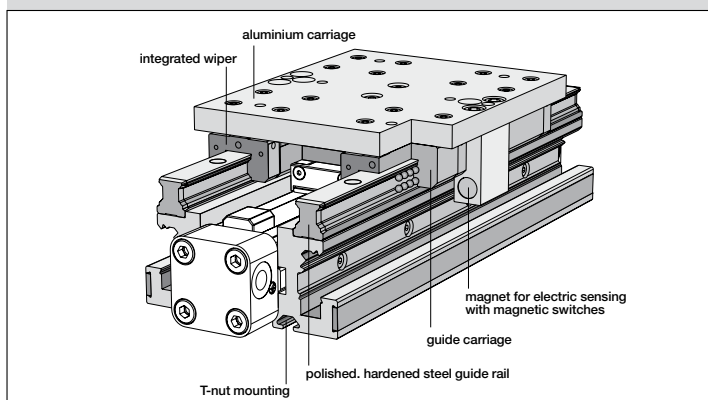
- Maximum speed
STL16: v = 3 m/s
STL25 to 50: v = 5 m/s

** Please note:

The mass of the carriage has to be added to the total moving mass when using the cushioning diagram.

Series	For linear drive	Max. moments [Nm]			Max. loads [N]		Mass of linear drive with guide [kg]		Mass** guide carriage [kg]	Order No. STARLINE for OSP-P
		Mx	My	Mz	Fy	Fz	with 0 mm stroke	increase per 100 mm stroke		
STL16	OSP-P16	15	30	30	1000	1000	0.598	0.210	0.268	21111
STL25	OSP-P25	50	110	110	3100	3100	1.733	0.369	0.835	21112
STL32	OSP-P32	62	160	160	3100	3100	2.934	0.526	1.181	21113
STL40	OSP-P40	150	400	400	4000	7500	4.452	0.701	1.901	21114
STL50	OSP-P50	210	580	580	4000	7500	7.361	0.936	2.880	21115

Version with pneumatic linear drive series OSP-P

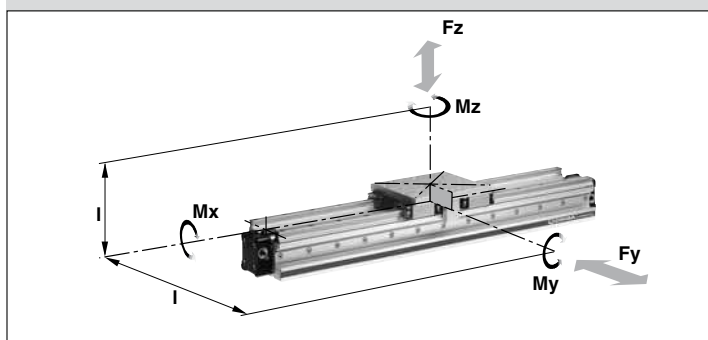


Heavy Duty- Guide HD

OSP
ORIGA
SYSTEM
PLUS

Series HD 25 to 50
for Linear Drive Series OSP-P

Loads, Forces and Moments



Features:

- Guide system: 4-row recirculating ball bearing guide
- Polished and hardened steel guide rail
- For highest loads in all directions
- Highest precision
- Integrated wiper system
- Integrated grease nipples
- Any lengths of stroke up to 3700 mm (longer strokes on request)
- Anodized aluminium guide carriage - dimensions compatible with OSP guide GUIDELINE
- Maximum speed $v = 5 \text{ m/s}$

Options:

- With variable stop
- With intermediate stop module

Technical Data

The table shows the maximum permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} + \frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} \leq 1$$

The sum of the loads should not >1

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

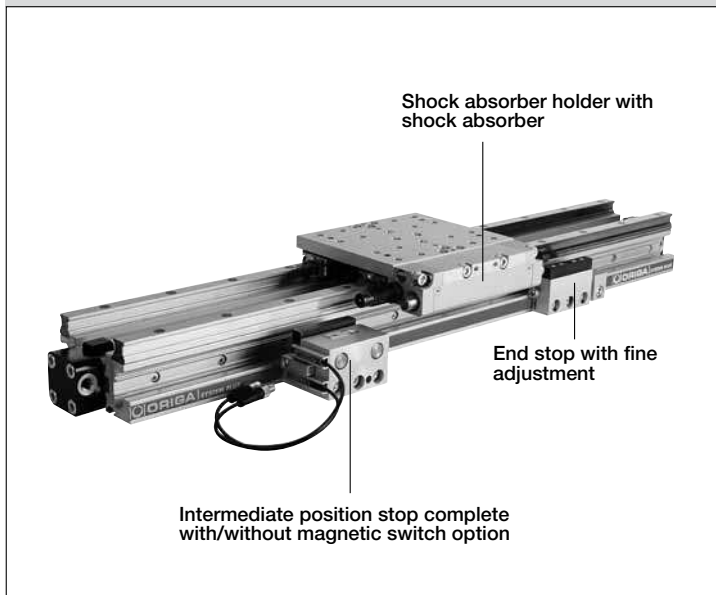
* Please note:

The mass of the carriage does not have to be added to the total moving mass when using the cushioning diagram.



Series	for linear drive	Max. moments [Nm]			Max. loads [N]		Mass of the linear drive with guide [kg]		Mass* guide carriage [kg]	Order No. HD guide for OSP-P
		Mx	My	Mz	Fy	Fz	with 0 mm stroke	increase per 100 mm stroke		
HD 25	OSP-P25	260	320	320	6000	6000	3.065	0.924	1.289	21246
HD 32	OSP-P32	285	475	475	6000	6000	4.308	1.112	1.367	21247
HD 40	OSP-P40	800	1100	1100	15000	15000	7.901	1.748	2.712	21248
HD 50	OSP-P50	1100	1400	1400	18000	18000	11.648	2.180	3.551	21249

Intermediate stop module Type ZSM..HD



Technical data

Temperature range	-10°C to +70°C
Operating pressure range	4 – 8 bar
Intermediate position grid	85 mm

Intermediate stop module

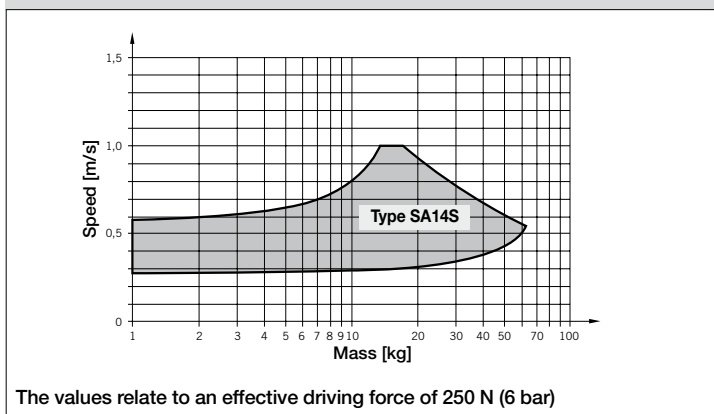
The intermediate stop module ZSM allows the guide carriage to stop at any desired intermediate positions with high accuracy. It can be retro-fitted. Depending on the application, i.e. the number of intermediate stops, one or more intermediate position stops can be used. The intermediate position stops can be retracted and extended without the need for the guide carriage to be moved back out of position.

Therefore the guide carriage can be made to stop at the defined intermediate positions in any order.

ORIGA intermediate stop module ZSM:

- Allows stopping at any intermediate positions
- Intermediate position stops can be located steplessly anywhere along the whole stroke length
- Movement to the next position without reverse stroke
- Compact unit
- Cost-effective positioning module without electrical or electronic components
- Option: end stop with fine adjustment

Shock Absorber Type SA14S



OSP
 — ORIGA
 — SYSTEM
 — PLUS

Versions:

- ACTIVE Brake
- Plain bearing guide with integrated ACTIVE Brake
- Aluminium roller guide with integrated ACTIVE Brake
- Plain bearing guide with PASSIVE Brake
- Aluminium roller guide with PASSIVE Brake

Active Brakes and Passive Brakes

Active Brake
 for pneumatic linear drive
 Series OSP-P
 Piston diameters 25 - 80 mm.

See data sheet no.
 P-1.42.002E



Slideline with Active Brake
 Plain bearing guide SLIDELINE - SL
 with integrated ACTIVE Brake
 Piston diameters 25 - 50 mm.

See data sheet no.
 P-1.40.002E



Proline with Active Brake
 Aluminium roller guide
 PROLINE - PL with
 integrated ACTIVE Brake
 Piston diameters 25 - 50 mm.

See data sheet no.
 P-1.40.005E



Multibrake with Slideline
 MULTI BRAKE – PASSIVE Brake
 with plainbearing guide
 SLIDELINE - SL
 Piston diameter 25 - 80 mm.

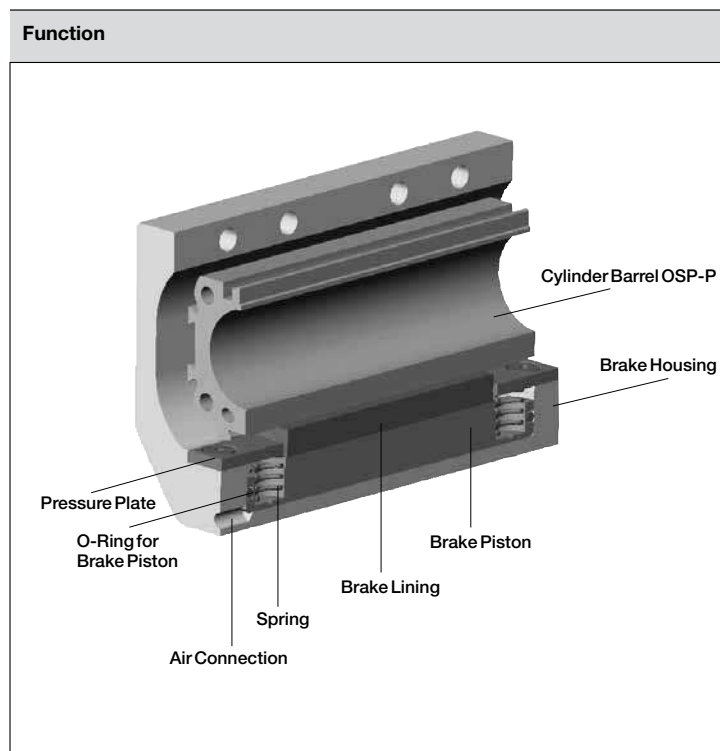
See data sheet no.
 P-1.42.003E



Multibrake with Proline
 MULTI BRAKE – PASSIVE Brake
 with aluminium roller guide
 PROLINE - PL
 Piston diameters 25 - 50 mm.

See data sheet no.
 P-1.42.004E





Active Brake



**Series AB 25 to 80
for linear drive**
• Series OSP-P

Features:

- Actuated by pressurisation
- Released by spring actuation
- Completely stainless version
- Holds position, even under changing load conditions

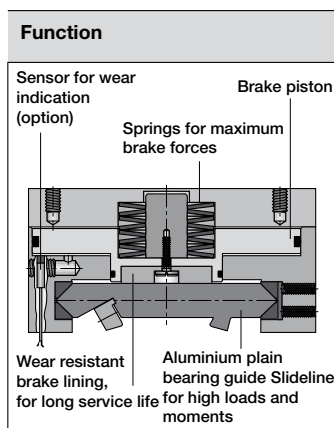
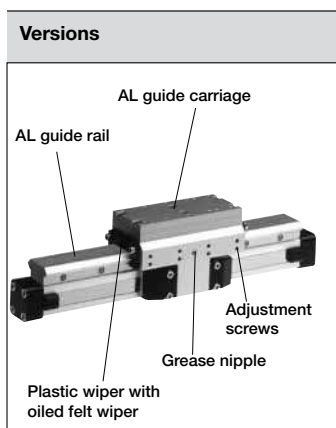
For further technical data, please refer to the data sheets for linear drives OSP-P (P-1.10.002E).

Forces and Weights							
Series	For linear drive	Max. braking force [N] ⁽¹⁾	Brake pad way [mm]	Linear drive with brake 0 mm stroke	Mass [kg] increase per 100mm stroke	brake*	Order No. Active brake
AB 25	OSP-P25	350	2.5	1.0	0.197	0.35	20806
AB 32	OSP-P32	590	2.5	2.02	0.354	0.58	20807
AB 40	OSP-P40	900	2.5	2.83	0.415	0.88	20808
AB 50	OSP-P50	1400	2.5	5.03	0.566	1.50	20809
AB 63	OSP-P63	2170	3.0	9.45	0.925	3.04	20810
AB 80	OSP-P80	4000	3.0	18.28	1.262	5.82	20811

⁽¹⁾ – at 6 bar
both chambers pressurised
with 6 bar
Braking surface dry
– oil on the braking surface will
reduce the braking force

*** Please Note:**
The mass of the brake has to be
added to the total moving mass
when using the cushioning diagram.





Multi-Brake Passive Brake

with plain bearing
guide Slideline SL

OSP
ORIGA
SYSTEM
PLUS

Series MB-SL 25 to 80
for Linear-drive
• Series OSP-P

Function:

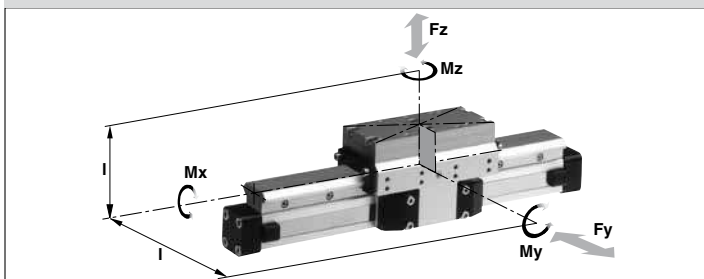
The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurisation. The high friction,

wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

Features:

- Brake operated by spring actuation
- Brake release by pressurisation
- Optional sensor to indicate brake lining wear
- Anodised aluminium rail, with prism shaped slide elements
- Adjustable plastic slide elements
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Replenishable guide lubrication by integrated grease nipples
- Blocking function in case of pressure loss
- Intermediate stops possible

Loads, Forces and Moments



Technical Data:

The table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation.

Load and moment data are based on speeds $v < 0.2$ m/s.

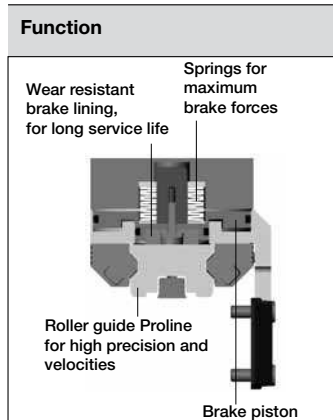
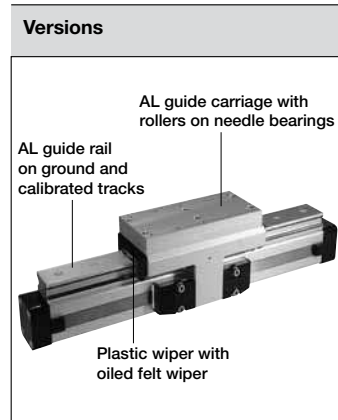
Operating pressure 4.5 - 8 bar
A pressure of 4.5 bar is required to release the brake.

For further technical information, please refer to the data sheets for linear drives OSP-P (P-1.10.002E)

¹⁾ Braking surface dry – oil on the braking surface will reduce the braking force

* **Please note:**
in the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.

Series	For linear drive	Max. moments [Nm]			Max. loads [N] Ly, Lz	Max. brake force [N] ¹⁾	Mass of linear drive with guide [kg] with 0 mm increase per stroke		Mass* guide carriage [kg]	Order No. – MB-SL	
		Mx	My	Mz						without sensor	with sensor for wear indication
MB-SL 25	OSP-P25	14	34	34	675	470	2.04	0.39	1.10	20796	on request
MB-SL 32	OSP-P32	29	60	60	925	790	3.82	0.65	1.79	20797	on request
MB-SL 40	OSP-P40	50	110	110	1500	1200	5.16	0.78	2.34	20798	on request
MB-SL 50	OSP-P50	77	180	180	2000	1870	8.29	0.97	3.63	20799	on request
MB-SL 63	OSP-P63	120	260	260	2500	2900	13.31	1.47	4.97	20800	on request
MB-SL 80	OSP-P80	120	260	260	2500	2900	17.36	1.81	4.97	20846	on request



Multi-Brake Passive Brake with Aluminium Roller Guide Proline PL



Series MB-PL 25 to 50
for Linear-drive
• Series OSP-P

Function:

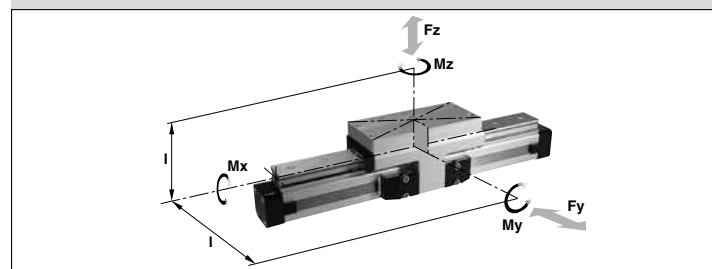
The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurisation. The high friction, wear resistant

brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

Features:

- Brake operated by spring actuation
- Brake release by pressurisation
- Optional sensor to indicate brake lining wear
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Blocking function in case of pressure loss
- Intermediate stops possible

Loads, Forces and Moments



Technical Data

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{M_x}{M_{x_{max}}} + \frac{M_y}{M_{y_{max}}} + \frac{M_z}{M_{z_{max}}} + \frac{F_x}{F_{x_{max}}} + \frac{F_y}{F_{y_{max}}} + \frac{F_z}{F_{z_{max}}} \leq 1$$

The sum of the loads should not exceed >1.
With a load factor of less than 1, service life is 8000 km

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

Operating Pressure 4.5 - 8 bar.
A pressure of min. 4.5 bar release the brake.

¹⁾ Braking surface dry – oil on the braking surface will reduce the braking force

* Please note:

In the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.

Series	For linear drive	Max. moments [Nm]			Max. loads [N]	Max. brake force [N] ¹⁾	Mass of linear drive with guide [kg]		Mass* guide carriage [kg]	Order No. – MB-PL	
		Mx	My	Mz			with 0 mm stroke	increase per 100 mm stroke		without sensor	with sensor for wear indication
MB-PL25	OSP-P25	16	39	39	857	315	2.14	0.40	1.24	20864	on request
MB-PL32	OSP-P32	29	73	73	1171	490	4.08	0.62	2.02	20865	on request
MB-PL40	OSP-P40	57	158	158	2074	715	5.46	0.70	2.82	20866	on request
MB-PL50	OSP-P50	111	249	249	3111	1100	8.60	0.95	4.07	20867	on request

Linear Drive-Accessories (Mountings and Magnetic Switches) Series OSP-P



Description	Data Sheet No.
Overview	P-1.45.001E
Clevis Mounting	P-1.45.002E
End Cap Mountings	P-1.45.003E
End Cap Mountings (for Linear Drives with guides)	P-1.45.00E-2,-6,-7
Mid-Section Support	P-1.45.004E
Mid-Section Support (for Linear Drives with guides)	P-1.45.005E-3,-5,-8,-9
Inversion Mounting	P-1.45.006E
Adaptor Profile	P-1.45.007E
T-Slot Profile	P-1.45.008E
Connection Profile	P-1.45.009E
Duplex Connection	P-1.45.011E
Multiplex Connection	P-1.45.012E
Magnetic Switch, standard version	P-1.45.100E
Magnetic Switch for T-Nut mounting	P-1.45.104E
Magnetic Switch ATEX-version 	P-1.45.105E
Cable Cover	P-1.45.102E

ORIGA- Sensoflex

Displacement measuring system
for automated movement

Series SFI-plus
(incremental measuring system)

for cylinder series

- OSP-P...

Characteristics

- Contactless magnetic displacement measurement system
- Displacement length up to 32 m
- Resolution 0.1 mm (option: 1 mm)
- Displacement speed up to 10 m/s
- For linear and non-linear rotary motion
- Suitable for almost any control or display unit with a counter input

The SFI-plus magnetic displacement measuring system consists of 2 main components.

- **Measuring Scale**
Self-adhesive magnetic measuring scale

- **Sensing Head**

Converts the magnetic poles into electrical signals which are then processed by counter inputs downstream
(e.g. PLC, PC, digital counter)



The thrust cylinders are linear actuators, designed for a high force to size ratio. This makes the cylinder ideal to use for clamping, riveting, punching and similar applications where a high force is required.

- Thrust cylinders provide large forces
- Compact dimensions
- C0D, diaphragm type
- C0P, piston type
- Available in single and double acting versions



Operating information

Working pressure: Max 8 bar
Working temperature: -20°C to +70°C

Stainless steel piston rod
Piston rod according to ISO 4395



Compressed air cylinders, types C0D and C0P should not be used in vertical applications without external stop.

For technical information see CD

C0D - Double acting

Force at code 6 bar, N	size	Port mm	Stroke	Order
3000	G1/4	40	C0D300-40	
6000	G1/4	50	C0D600-50	
12000	G1/2	50	C0D1200-50	
25000	G1/2	60	C0P2500-60	
25000	G1/2	80	C0P2500-80	

C0P - Single acting

Force at 6 bar, N	Spring N force Max N Min N	Port size	Stroke mm	Order code
1600	314 128	G1/4	50	C0P160-50S
1600	314 128	G1/4	80	C0P160-80S
3000	314 128	G1/4	50	C0P300-50S
3000	314 128	G1/4	80	C0P300-80S
3000	294 98	G1/4	40	C0D300-40S
6000	638 98	G1/4	50	C0D600-50S
12000	981 235	G1/2	50	C0D1200-50S
25000	2700 883	G1/2	60	C0P2500-60S
25000	2700 883	G1/2	100	C0P2500-100S

The spring forces in single acting cylinders are sufficient to return the piston rod without load

Accessories

Neck mounting nut

Lock nut thread	For cylinder	Order code
M24x2	C0D300	9141100000
M36x3	C0D600/1200	9141100100
M48x3	C0P2500	9141100200
M24x3	C0P160/300	9141100300



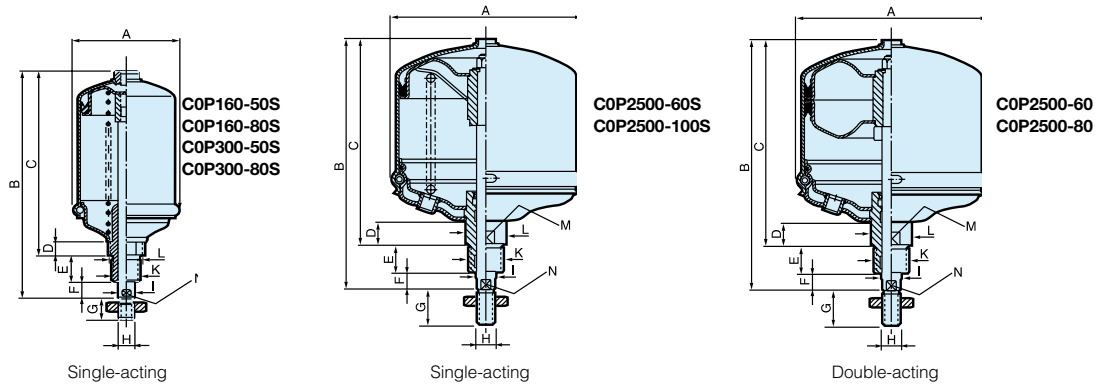
Indicates stocked product.

Piston rod nut (one nut is included)

Piston rod nut thread	For cylinder	Order code
M12	C0P160/300 and C0D300	0266211200
M16	C0D600	0266211400
M20	C0D1200	0266211600
M24	C0P2500	0266211800

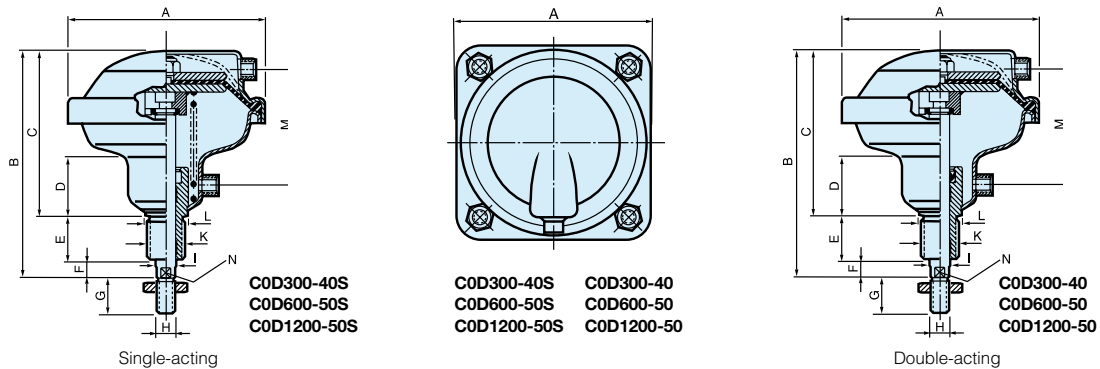


Dimensions (mm), piston type



Type	Connection thread	A	B	C	D	E	F	G	H	I Ø	K	L Ø	M	N
C0P160-50S	G1/4	66	192	151	18	30	11	24	M12x1,75	14	M24x3	30	30	12
C0P160-80S	G1/4	66	222	181	18	30	11	24	M12x1,75	14	M24x3	30	30	12
C0P300-50S	G1/4	93	192	151	18	30	11	24	M12x1,75	14	M24x3	30	30	12
C0P300-80S	G1/4	93	222	181	18	30	11	24	M12x1,75	14	M24x3	30	30	12
C0P2500-60S	G1/2	268	345	285	33	40	20	48	M24x3	28	M48x3	56	50	25
C0P2500-100S	G1/2	268	385	325	33	40	20	48	M24x3	28	M48x3	56	50	25
C0P2500-60	G1/2	268	345	285	33	40	20	48	M24x3	28	M48x3	56	50	25
C0P2500-80	G1/2	268	385	325	33	40	20	48	M24x3	28	M48x3	56	50	25

Dimensions (mm), diaphragm type



Type	Connection thread	A	B	C	D	E	F	G	H	I Ø	K	L Ø	M	N
C0D300-40S	G1/4	150	183	131	48	38	14	24	M12x1,75	16	M24x2	30	90	13
C0D300-40	G1/4	150	183	131	48	38	14	24	M12x1,75	16	M24x2	30	90	13
C0D600-50S	G1/4	195	212	154	55	38	20	32	M16x2	20	M36x3	43	107	17
C0D600-50	G1/4	195	212	154	55	38	20	32	M16x2	20	M36x3	43	107	17
C0D1200-50S	G1/2	261	243	178	58	45	20	40	M20x2,5	25	M36x3	43	117	22
C0D1200-50	G1/2	261	243	178	58	45	20	40	M20x2,5	25	M36x3	43	117	22

Press stand for thrust cylinders

A simple press for efficient mounting and pressing can easily be built by screwing the thrust cylinders into the threaded holes in the very stable and strong steel press stand. The stand is available in two versions with different fastening threads for the cylinders.

The top plate has two different threads, and can be rotated through 180 degrees to present the correct thread for nose fitting of the cylinders.

The sub-base is fitted with a T-track for easy mounting of accessories. It also has two through holes for simple and secure fitting to a work bench.

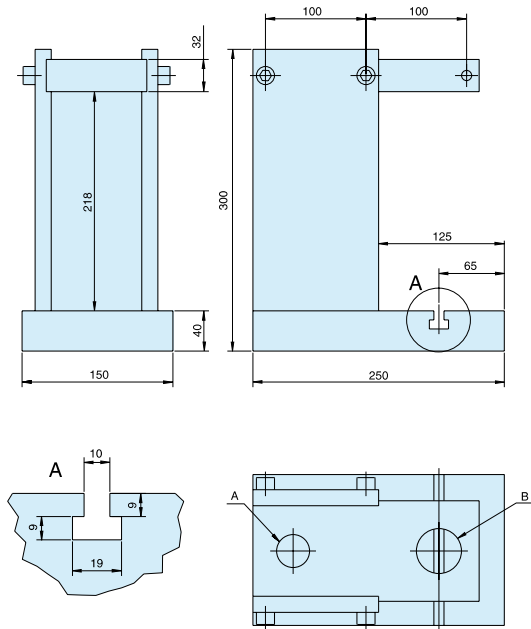


NOTE! Remember that an approved two-handed press control must be used with the cylinders and the press stand to prevent crush injuries. We recommend the use of our type PXP two-handed press control. It is available in a number of versions, and is simple, ergonomic and safe to incorporate in the press stand. It meets the requirements of safety standards EN574 and EN954-1.

For more information, see our website:
www.parker.com/euro_pneumatic

Description	Threads A/B	Weight kg	Order No.
Press stand for C0P160 / C0P300 / C0D300	M24x2/M24x3	24	C0P-C0D-P01
Press stand for C0D600 / C0D1200 / C0P2500	M36x3/M48x3	24	C0P-C0D-P02

Dimensions



Air bellows are the ideal choice for applications requiring short stroke, high thrust single acting actuators.

Manufactured from fabric reinforced synthetic rubber in one, two or three convolutions according to stroke and model. They incorporate no reciprocating meatl parts and so provide virtually frictionless thrust compared with conventional pneumatic cylinders.



- 10 sizes, diameters 70-660 mm
- Strokes from 45 to 375 mm
- Single, double or triple convolutions
- High thrust and frictionless movement
- Maintenance free

Operating information

Working pressure: Max 8 bar
 Working temperature: -30°C to +70°C
 High temperature version
 Working temperature: -30°C to +115°C
 Operation: Dry air



It is recommended that external mechanical stops are used to limit the stroke. The units should not achieve maximum stroke or be allowed to 'bottom out'. Air Bellows may not be stacked, use singly only.

Air bellows are suitable for vibration applications i.e. device feeders at high frequency.

For technical information see CD

Single convolution

Symbol	Ø mm (inches)	Port size	Max force (N) at 1 bar (0 stroke)	Max stroke mm	Order code
	110 (4½ x 1)	G3/8	1150	45	9109400
	150 (6 x 1)	G1/2	1900	55	9109004A
	200 (8 x 1)	G1/2	3200	75	9109014
	250 (10 x 1)	G1/2	5000	100	9109024
	300 (12 x 1)	G1/2	6500	100	9109044
	370 (14½ x 1)	G1/2	9600	115	9109064

Double convolution

Symbol	Ø mm (inches)	Port size	Max force (N) at 1 bar (0 stroke)	Max stroke mm	Order code
	70 (2¾ x 2)	G1/4	400	50	9109009
	110 (4½ x 2)	G3/8	900	80	9109401
	150 (6 x 2)	G1/2	1800	112	9109001A
	200 (8 x 2)	G1/2	3000	180	9109011
	250 (10 x 2)	G1/2	4800	200	9109021
	300 (12 x 2)	G1/2	6800	195	9109041
	370 (14½ x 2)	G1/2	10000	225	9109061
	410 (16 x 2)	G1/2	11400	250	9109171
	550 (21½ x 2)	G3/4	24000	300	9109150
	660 (26 x 2)	G3/4	30800	310	9109156

Triple convolution

Symbol	Ø mm (inches)	Port size	Max force (N) at 1 bar (0 stroke)	Max stroke mm	Order code
	70 (2¾ x 3)	G1/4	370	65	9109010
	110 (4½ x 3)	G3/8	900	100	9109402
	150 (6 x 3)	G1/2	1800	173	9109007A
	200 (8 x 3)	G1/2	3000	225	9109017
	250 (10 x 3)	G1/2	4800	300	9109031
	300 (12 x 3)	G1/2	6800	330	9109051
	370 (14½ x 3)	G1/2	10200	350	9109069
	410 (16 x 3)	G1/2	10500	375	9109177

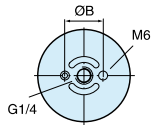


Indicates stocked product.

Dimensions (mm)

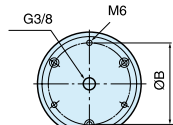
Ø70 mm (2¾")

Aluminium end plate version



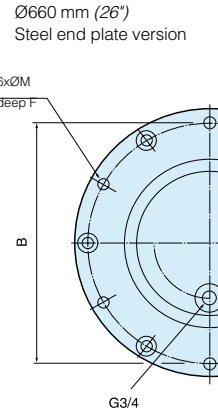
Ø110 mm (4½")

Aluminium end plate version



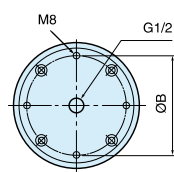
Ø550 mm (21½")

Steel end plate version



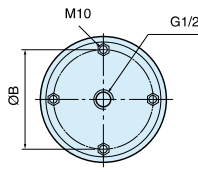
Ø150 mm (6")

Aluminium end plate version



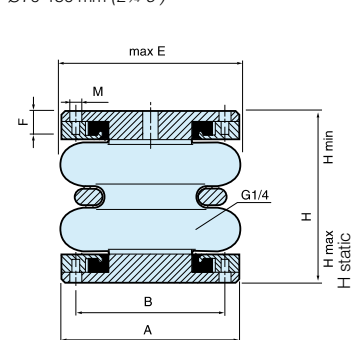
Ø200-410 mm (8-16")

Aluminium end plate version



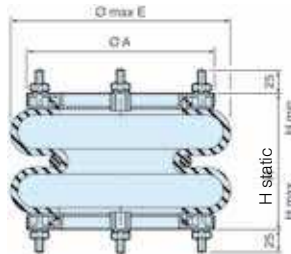
Ø	Number of convolutions	H min	H static	H max	Stroke max	ØE max	ØA	ØB	ØM	F
70	2	65	90	115	50	80	78	36	M6	9
70	3	80	110	145	65	80	78	36	M6	9
110	1	45	65	90	45	125	110	93	M6	13
110	2	65	100	145	80	125	110	93	M6	13
110	3	100	145	200	100	125	110	93	M6	13
150	1	50	80	105	55	175	155	127	M8	16
150	2	78	130	190	172	175	155	127	M8	16
150	3	102	190	275	173	175	155	127	M8	16
200	1	50	90	125	75	230	184	155,5	M10	
200	2	70	160	250	180	230	184	155,5	M10	
200	3	100	205	325	225	230	184	155,5	M10	
250	1	50	100	150	100	280	210	181	M10	
250	2	70	170	270	250	280	210	181	M10	
250	3	100	250	400	300	280	210	181	M10	
300	1	50	100	150	100	330	260	232	M10	
300	2	75	170	270	195	330	260	232	M10	
300	3	100	250	430	330	330	260	232	M10	
370	1	50	110	165	115	395	310	282,5	M10	
370	2	70	180	295	225	395	310	282,5	M10	
370	3	100	280	450	350	395	310	282,5	M10	
410	2	75	200	325	250	440	310	282,5	M10	
410	3	125	300	500	375	440	310	282,5	M10	
550	2	90	200	390	300	580	498,5	470	M10	19
660	2	90	200	400	310	700	498,5	470	M10	19

Ø70-150 mm (2¾-6")



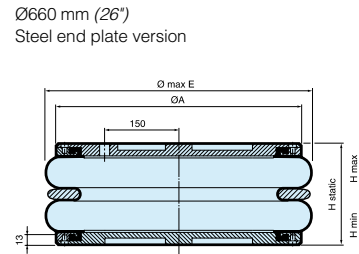
Ø200-410 mm (8-16")

Steel end plate version



Ø550 mm (21½")

Aluminium end plate version





Stainless Steel Air Motors

P1V-S Series

*An ideal choice for the **Food Industry***



Designed for demanding applications and available in a wide variety of speeds and output torques. The all round, dirt-trap free design, stainless steel construction and viton external seals makes them the ideal choice for the Food Industry, where washdown with aggressive cleaning agents is common.

All versions are reversible in use and are fitted with a keyed shaft as standard. Power output from 120 to 1200 Watts is available and they are extremely efficient in operation, air consumption is low, ranging from 3,7 l/s to 27l/s.

P1V-S is a range of air motors with all external components made of stainless steel, which means that they can be used in food grade applications, and in all other applications where there is a risk of corrosion.

- Power from 0,02 kW to 1,2 kW
- ATEX CE Ex approved from 0,12 kW to 1,2 kW
- Designed for arduous applications
- No-lube intermittent operation as standard
- 0,2 kW and 0,3 kW Brakemotors for higher safety



Operating information

Working pressure: Max 7 bar (max 6 bar in Ex area)
 Working temperature: -30° to +100° C (-20° to +40° C in Ex area)
 Fluid: Compressed air with ISO 8573-1 Quality class 3.4.3
 (no-lube operation) and 3..5 (lube operation)
 ATEX approval: CE Ex II 2 GD c IIC T6 (80°C)X
 CE Ex II 2 GD c IIC T5 (95°C)X

For ATEX specific products contact Sales Office

Note: All technical data is based on a working pressure of 6 bar in the inlet port

Reversible air motors

Keyed shaft, P1V-S002A series, 20 watt - (M5)	Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
	0,02	1300	650	0,29	0,44	1.7	M5	3	P1V-S002A0130
	0,02	950	475	0,40	0,60	1.7	M5	3	P1V-S002A0095

Keyed shaft, P1V-S008A series, 80 watt - (M8 x 0,75, 3 push in nippels for plastic pipes Ø6/4 mm supplied)

0,08	24000	12000	0,06	0,09	3,5	M8 x 0,75*	4	P1V-S008A0Q00
0,08	7000	3500	0,22	0,33	3,5	M8 x 0,75*	4	P1V-S008A0700
0,08	1900	950	0,80	1,20	3,5	M8 x 0,75*	4	P1V-S008A0190
0,08	1300	650	1,20	1,80	3,5	M8 x 0,75*	4	P1V-S008A0130

Keyed shaft, P1V-S012A series, 120 watt - (G1/8)

CE II2GD cIIC T6 (80°C) X

0,12	22000	11000	0,10	0,15	5,0	G1/8	6	P1V-S012A0N00
0,12	5500	2750	0,42	0,63	5,0	G1/8	6	P1V-S012A0550
0,12	3600	1800	0,64	0,95	5,0	G1/8	6	P1V-S012A0360
0,12	1400	700	1,64	2,40	5,0	G1/8	6	P1V-S012A0140
0,12	900	450	2,54	3,80	5,0	G1/8	6	P1V-S012A0090
0,12	600	300	3,82	5,00*	5,0	G1/8	6	P1V-S012A0060
0,12	100	50	5,00*	5,00*	5,0	G1/8	6	P1V-S012A0010

Threaded shaft, P1V-S012D series, 120 watt - (G1/8)

CE II2GD cIIC T6 (80°C) X

0,12	22000	11000	0,10	0,15	5,0	G1/8	6	P1V-S012D0N00
0,12	5500	2750	0,42	0,63	5,0	G1/8	6	P1V-S012D0550
0,12	3600	1800	0,64	0,95	5,0	G1/8	6	P1V-S012D0360
0,12	1400	700	1,64	2,40	5,0	G1/8	6	P1V-S012D0140
0,12	900	450	2,54	3,80	5,0	G1/8	6	P1V-S012D0090
0,12	600	300	3,82	5,00*	5,0	G1/8	6	P1V-S012D0060
0,12	100	50	5,00*	5,00*	5,0	G1/8	6	P1V-S012D0010

Keyed shaft, P1V-S020A series, 200 watt - (G1/8)

CE II2GD cIIC T6 (80°C) X

0,20	14500	7250	0,26	0,40	6,3	G1/8	10	P1V-S020A0E50
0,20	4600	2300	0,80	1,20	6,3	G1/8	10	P1V-S020A0460
0,20	2400	1200	1,60	2,40	6,3	G1/8	10	P1V-S020A0240
0,20	1400	700	2,70	4,10	6,3	G1/8	10	P1V-S020A0140
0,20	700	350	5,40	8,20	6,3	G1/8	10	P1V-S020A0070
0,20	350	160	12,00	18,00	6,3	G1/8	10	P1V-S020A0035
0,10	180	90	10,50	15,00	6,3	G1/8	10	P1V-S020A0018
0,20	110	55	33,00	49,50	6,3	G1/8	10	P1V-S020A0011
0,20	60	30	72,00	108,00*	6,3	G1/8	10	P1V-S020A0006
0,18	50	25	20,00*	20,00*	6,3	G1/8	10	P1V-S020A0005
0,18	20	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020A0002
0,18	10	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020A0001
0,20	5	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020A00005

Indicates stocked product.

* Max allowed torque



Reversible air motors

Threaded shaft, P1V-S020D series, 200 watt - (G1/8)

CE II2GD cIIIC T6 (80°C) X

Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
0,20	14500	7250	0,26	0,40	6,3	G1/8	10	P1V-S020D0E50
0,20	4600	2300	0,80	1,20	6,3	G1/8	10	P1V-S020D0460
0,20	2400	1200	1,60	2,40	6,3	G1/8	10	P1V-S020D0240
0,20	1400	700	2,70	4,10	6,3	G1/8	10	P1V-S020D0140
0,20	700	350	5,40	8,20	6,3	G1/8	10	P1V-S020D0070
0,20	350	160	12,00	18,00	6,3	G1/8	10	P1V-S020D0035
0,10	180	90	10,50	15,00	4,5	G1/8	10	P1V-S020D0018
0,20	50	25	20,00*	20,00*	6,3	G1/8	10	P1V-S020D0005

Keyed shaft, P1V-S030A series, 300 watt - (G1/4)

CE II2GD cIIIC T6 (80°C) X

0,30	14500	7250	0,40	0,60	8,0	G1/4	10	P1V-S030A0E50
0,30	4600	2300	1,20	1,90	8,0	G1/4	10	P1V-S030A0460
0,30	2400	1200	2,40	3,60	8,0	G1/4	10	P1V-S030A0240
0,30	1400	700	4,10	6,10	8,0	G1/4	10	P1V-S030A0140
0,30	600	300	9,60	14,30	8,0	G1/4	10	P1V-S030A0060
0,30	280	140	20,50	26,00	8,0	G1/4	10	P1V-S030A0028
0,30	230	115	24,00	36,00	8,0	G1/4	10	P1V-S030A0023
0,13	180	90	13,80	21,00	4,7	G1/4	10	P1V-S030A0018
0,30	100	50	57,00	85,50	8,0	G1/4	10	P1V-S030A0010
0,30	50	25	36,00*	36,00*	8,0	G1/4	10	P1V-S030A0005

Threaded shaft, P1V-S030D series, 300 watt - (G1/4)

CE II2GD cIIIC T6 (80°C) X

0,30	14500	7250	0,40	0,60	8,0	G1/4	10	P1V-S030D0E50
0,30	4600	2300	1,20	1,90	8,0	G1/4	10	P1V-S030D0460
0,30	2400	1200	2,40	3,60	8,0	G1/4	10	P1V-S030D0240
0,30	1400	700	4,10	6,10	8,0	G1/4	10	P1V-S030D0140
0,30	600	300	9,60	14,30	8,0	G1/4	10	P1V-S030D0060
0,30	280	140	20,50	26,00	8,0	G1/4	10	P1V-S030D0028
0,13	180	90	13,80	21,00	4,7	G1/4	10	P1V-S030D0018
0,30	50	25	36,00*	36,00*	8,0	G1/4	10	P1V-S030D0005

Keyed shaft, P1V-S060A series, 600 watt - (G3/8)

CE II2GD cIIIC T6 (80°C) X

0,60	14000	7000	0,82	1,23	14,5	G3/8	12	P1V-S060A0E00
0,60	4000	2000	2,90	4,30	14,5	G3/8	12	P1V-S060A0400
0,60	2700	1350	4,20	6,40	14,5	G3/8	12	P1V-S060A0270
0,60	1700	850	6,70	10,10	14,5	G3/8	12	P1V-S060A0170
0,60	720	360	15,90	24,00	14,5	G3/8	12	P1V-S060A0072
0,60	480	240	23,90	36,00	14,5	G3/8	12	P1V-S060A0048
0,60	300	150	38,20	57,00	14,5	G3/8	12	P1V-S060A0030
0,30	100	50	60,00*	60,00*	14,5	G3/8	12	P1V-S060A0010

Keyed shaft, P1V-S120A series, 1200 watt - (G3/4)

CE II2GD cIIIC T5 (95°C) X

1,20	8000	4000	2,90	4,30	27,0	G3/4	19	P1V-S120A0800
1,20	2700	1350	8,50	12,70	27,0	G3/4	19	P1V-S120A0270
1,20	1100	550	21,00	31,00	27,0	G3/4	19	P1V-S120A0110
1,20	780	390	29,40	44,00	27,0	G3/4	19	P1V-S120A0078
1,20	320	160	71,60	107,00	27,0	G3/4	19	P1V-S120A0032
1,20	200	100	66,90	110,00*	19,0	G3/4	19	P1V-S120A0012

* Max allowed torque

 Indicates stocked product.

Brake motors

The integrated brake is a spring-loaded disk brake, which is released at a minimum air pressure of 5 bar. The brake is applied in the absence of pressure.

The technology and the size of air motors with integrated running and stationary brake make them ideal for applications requiring repeated precise positioning.

The motor can also be kept stationary in a specific position, and the stopping time for a rotating weight can be shortened significantly. Another typical application for brake motors is when the output shaft needs to be held in one position when the motor stops delivering torque.

The brake can handle more than 1500 braking operations per hour at maximum braking torque.

Note!

Brake motors must only ever be supplied with unlubricated air, otherwise there is a risk of oil from the supply air getting into the brake unit, resulting in poor brake performance or no braking effect.

Please check the allowed maximum torque applied on the motor from the load in the technical catalogue

Brake motors with keyed shaft, P1V-S020AD series, 200 watt - (G1/8)

Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
0,20	14500	7250	0,26	0,40	6,3	G1/8	10	P1V-S020ADE50
0,20	4600	2300	0,80	1,20	6,3	G1/8	10	P1V-S020AD460
0,20	2400	1200	1,60	2,40	6,3	G1/8	10	P1V-S020AD240
0,20	1400	700	2,70	4,10	6,3	G1/8	10	P1V-S020AD140
0,20	700	350	5,40	8,20	6,3	G1/8	10	P1V-S020AD070
0,20	350	160	12,00	18,00	6,3	G1/8	10	P1V-S020AD035
0,10	180	90	10,50	15,00	4,5	G1/8	10	P1V-S020AD018
0,20	110	55	33,00	49,50	6,3	G1/8	10	P1V-S020AD011
0,20	60	30	72,00	108,00*	6,3	G1/8	10	P1V-S020AD006
0,18	50	25	20,00*	20,00*	6,3	G1/8	10	P1V-S020AD005
0,18	20	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020AD002
0,18	10	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020AD005
0,18	5	-	20,00*	20,00*	6,3	G1/8	10	P1V-S020AD0005

Brake motors with keyed shaft, P1V-S030AD series, 300 watt - (G1/4)

0,30	14500	7250	0,40	0,60	8,0	G1/4	10	P1V-S030ADE50
0,30	4600	2300	1,20	1,90	8,0	G1/4	10	P1V-S030AD460
0,30	2400	1200	2,40	3,60	8,0	G1/4	10	P1V-S030AD240
0,30	1400	700	4,10	6,10	8,0	G1/4	10	P1V-S030AD140
0,30	600	300	9,60	14,30	8,0	G1/4	10	P1V-S030AD060
0,30	280	140	20,50	26,00	8,0	G1/4	10	P1V-S030AD028
0,30	230	115	24,00	36,00	8,0	G1/4	10	P1V-S030AD023
0,30	100	50	57,00	85,50	8,0	G1/4	10	P1V-S030AD010
0,30	50	25	36,00*	36,00*	8,0	G1/4	10	P1V-S030AD005

* Max allowed torque

P1V-S Accessories

Flange

	For air motor	For drilling motor	Order code
	P1V-S002		P1V-S4002B
	P1V-S008	P1V-S008	P1V-S4008B
	P1V-S012		P1V-S4012B
	P1V-S020	P1V-S025	P1V-S4020B
	P1V-S030	P1V-S040	P1V-S4030B
	P1V-S060		P1V-S4060B
	P1V-S120		P1V-S4120B

Foot

	For air motor	For drilling motor	Order code
	P1V-S008	P1V-S008	P1V-S4008F
	P1V-S012		P1V-S4012F
	P1V-S020	P1V-S025	P1V-S4020F
	P1V-S030	P1V-S040	P1V-S4030F
	P1V-S020A0011		P1V-S4020C
	P1V-S020A0006		P1V-S4020C
	P1V-S020A0023		P1V-S4020C
	P1V-S020A0010		P1V-S4020C
	P1V-S060		P1V-S4060F
	P1V-S120		P1V-S4120F

Design Variants

A large number of drilling motors, milling motors and grinding motors have been developed using the P1V-S as the base motor in order to make it easier to install air motors in machining applications.

NB: These motors must be supplied with lubricated air



Operating information

Working pressure:	Max 7 bar
Working temperature:	-30°C to +100°C
Medium:	40 µm filtered oil mist (unlubricated for grinding motor P1V-S009)

For technical information see CD

P1V-M is a series of air motors, with planetary gearbox and motor made of black varnished steel. Its robustness makes it suitable for all normal air motor applications.

The range contains three different sizes with power ratings of 200, 400 or 600 Watts, shaft speeds ranging from 29 rpm to 10000 rpm, and torques up to 401 Nm at maximum power (more than 800 Nm torque if the motor is braked to stationary).

The standard range includes a total of 27 versions, covering all possible requirements for these power ratings.



- Power 0,2 kW, 0,4 kW and 0,6 kW
- Patented way for simple change of vanes
- Free speeds from 28 up to 10000 rpm
- Torque from 0,38 Nm up to 380NM by max output power
- Standard equipped with flange mounting
- Foot mountings as accessories

Operating information

Working pressure	Max 7 bar
Working temperature	-30 °C to +100 °C
Medium	Filtered dry air and oil mist, purity class ISO 8573-1 class 3.-.5 for indoor use and with a dew point lower than ambient temperature for outdoor use.

P1V-M020A, 200 watt motor with flange

Max power kW	Free speed r/Min	Speed at max power r/Min	Torque at max power Nm	Min start torque Nm	Air consumption at max power l/s	Conn. ID	Min pipe mm	Weight Kg	Order code
0,200	10 000	5 000	0,38	0,57	6,5	G1/8	10	1,94	P1V-M020A0A00
0,200	2 890	1 445	1,31	1,97	6,5	G1/8	10	1,94	P1V-M020A0290
0,200	1 466	733	2,59	3,89	6,5	G1/8	10	1,94	P1V-M020A0150
0,200	810	405	4,69	7,04	6,5	G1/8	10	2,94	P1V-M020A0081
0,200	413	206	9,20	13,81	6,5	G1/8	10	2,94	P1V-M020A0041
0,200	209	105	18,14	27,21	6,5	G1/8	10	2,94	P1V-M020A0021
0,200	90	45	42,34	63,50	6,5	G1/8	10	7,44	P1V-M020A0009
0,200	59	29	64,76	97,15	6,5	G1/8	10	7,44	P1V-M020A0006
0,200	30	15	126,99	190,48	6,5	G1/8	10	7,44	P1V-M020A0003

P1V-M040A, 400 watt motor with flange

Max power	Free speed	Speed at max power	Torque at max power	Min start torque	Air consumption at max power	Conn. ID	Min pipe	Weight	Order code
kW	r/Min	r/Min	Nm	Nm	l/s		mm	Kg	
0,400	10 000	5 000	0,76	1,15	9,5	G3/8	12	2,32	P1V-M040A0A00
0,400	2 890	1 445	2,63	3,98	9,5	G3/8	12	2,32	P1V-M040A0290
0,400	1 466	733	5,18	7,84	9,5	G3/8	12	2,32	P1V-M040A0150
0,400	810	405	9,39	14,20	9,5	G3/8	12	4,32	P1V-M040A0081
0,400	413	206	18,41	27,85	9,5	G3/8	12	4,32	P1V-M040A0041
0,400	209	105	36,28	54,90	9,5	G3/8	12	4,32	P1V-M040A0021
0,400	90	45	84,67	128,12	9,5	G3/8	12	7,82	P1V-M040A0009
0,400	59	29	129,53	195,99	9,5	G3/8	12	7,82	P1V-M040A0006
0,400	30	15	253,98	384,31	9,5	G3/8	12	7,82	P1V-M040A0003

P1V-M060A, 600 watt motor with flange

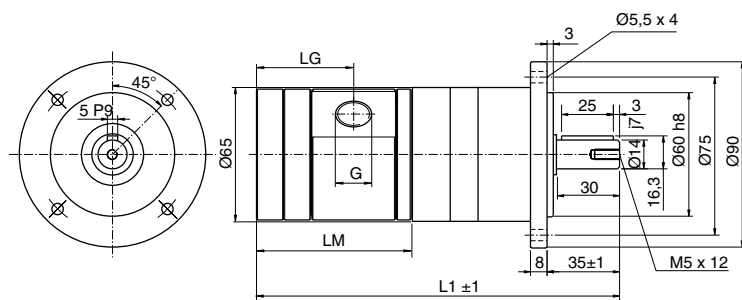
Max power	Free speed	Speed at max power	Torque at max power	Min start torque	Air consumption at max power	Conn. ID	Min pipe ID	Weight	Order code
kW	r/Min	r/Min	Nm	Nm	l/s			mm	Kg
0,600	10 000	5 000	1,14	1,71	15,0	G3/8	12	5,59	P1V-M060A0A00
0,600	2 890	1 445	3,94	5,92	15,0	G3/8	12	5,59	P1V-M060A0290
0,600	1 466	733	7,77	11,66	15,0	G3/8	12	5,59	P1V-M060A0150
0,600	810	405	14,08	21,12	15,0	G3/8	12	6,59	P1V-M060A0081
0,600	413	206	27,61	41,42	15,0	G3/8	12	6,59	P1V-M060A0041
0,600	209	105	54,42	81,64	15,0	G3/8	12	6,59	P1V-M060A0021
0,600	90	45	127,01	190,51	15,0	G3/8	12	11,09	P1V-M060A0009
0,600	59	29	194,29	291,44	15,0	G3/8	12	11,09	P1V-M060A0006
0,600	30	15	380,97	571,45	15,0	G3/8	12	11,09	P1V-M060A0003

Dimensions

Motor P1V-M0●0A0A00

Motor P1V-M0●0A0290

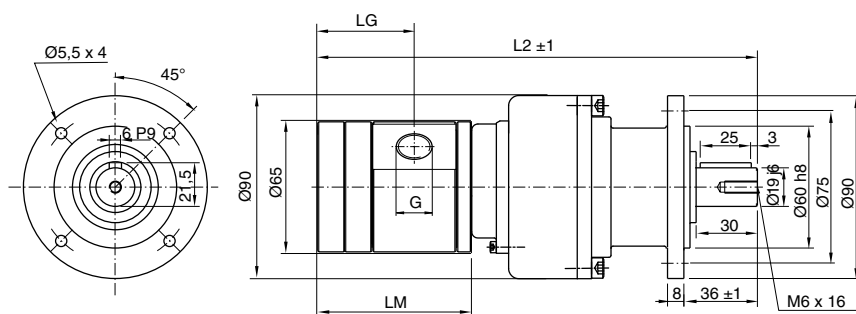
Motor P1V-M0●0A0150



Motor P1V-M0●0A0081

Motor P1V-M0●0A0041

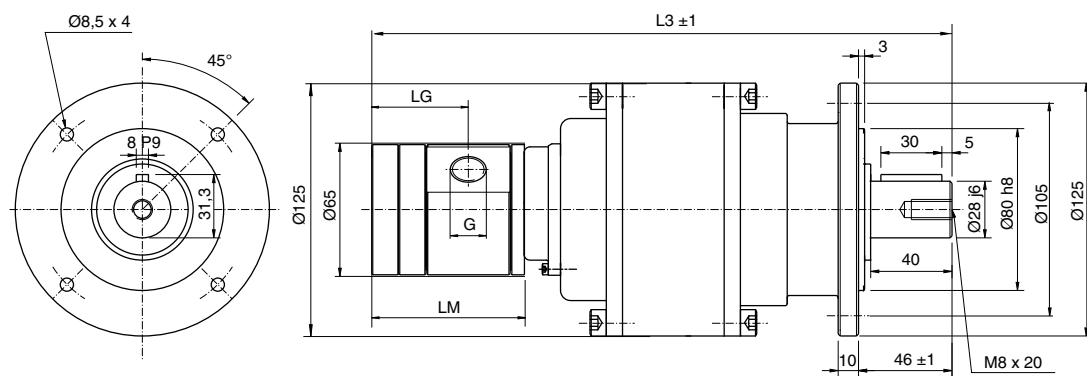
Motor P1V-M0●0A0021



Motor P1V-M0●0A0009

Motor P1V-M0●0A0006

Motor P1V-M0●0A0003



Motor type	G	LG	LM	L1	L2	L3
P1V-M020A	G1/8	39,0	57,5	160,5	197,5	267,5
P1V-M040A	G3/8	49,0	77,5	180,5	217,5	287,5
P1V-M060A	G3/8	56,5	92,0	195,0	232,0	302,0

Rotary actuators are an efficient and easy way to generate torque from compressed air, in a very compact size. They are ideal for the compact applications in a wide range of industries such as, packaging, process, electronics etc.

- Compact design
- Durable construction
- Long maintenance-free life
- High output torque/weight ratio
- Wide choice of torques available (up to 247 Nm)
- Range of mounting option, hydro-cushioning and position sensors



Operating information

Working pressure: Max 10 bar
 Permissible fluid: Filtered (<5µ) with or without lubrication
 Standard working temperature:
 PRN/PRO 3 to 20 -5°C to +80°C
 Other models -5°C to +60°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.
 For technical information see CD

PRN miniature (fixed oscillating angle)

Single vane	Torque at 6 bar (N.m)	Oscillating reference point		90°	Oscillating angle 180°	270°
		45°	90°			
PRNA1S	0,16		X	PRNA1S-90-90	PRNA1S-180-90	
PRNA3S	0,38		X	PRNA3S-90-90	PRNA3S-180-90	
PRNA10S	1,20		X	PRNA10S-90-90	PRNA10S-180-90	
PRNA20S	2,10		X	PRNA20S-90-90	PRNA20S-180-90	
PRN30SE	4,10	X		PRN30SE-90-45	PRN30SE-180-45	PRN30SE-270-45
Double vane						
PRNA3D	0,65			PRNA3D-90-45		
PRNA10D	2,54			PRNA10D-90-45		
PRNA20D	4,70			PRNA20D-90-45		
PRN30DE	9,50			PRN30DE-90-45		

PRO (adjustable oscillating angle)

Single vane	Torque at 6bar (N.m)	Oscillating angle	Order code	Torque at 6bar (N.m)	Oscillating angle	Order code
			Double vane			
	0,38	30 to 180°	PROA3S-0-90	0,65	30 to 90°	PROA3D-0-45
	1,20	30 to 180°	PROA10S-0-90	2,54	30 to 90°	PROA10D-0-45
	2,10	30 to 180°	PROA20S-0-90	4,70	30 to 90°	PROA20D-0-45
	4,10	30 to 270°	PRO30SE-0-45	9,50	30 to 90°	PRO30DE-0-45

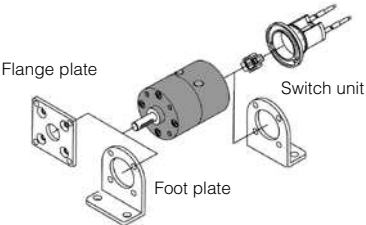
PRN high torque range (fixed oscillating angle)

Single vane	Torque at 6 bar (N.m)	90°	Oscillating angle 180°	270°
PRN50SE	5,9	PRN50SE-90-45	PRN50SE-180-45	PRN50SE-270-45
PRN150SE	18,0	PRN150SE-90-45	PRN150SE-180-45	PRN150SE-270-45
PRN300SE	34,5	PRN300SE-90-45	PRN300SE-180-45	PRN300SE-270-45
PRN800SE	123,0	PRN800SE-90-45	PRN800SE-180-45	PRN800SE-270-45
Double vane (oscillating angle 45°)				
PRN50DE	12,8	PRN50DE-90-45		
PRN150DE	41,5	PRN150DE-90-45		
PRN300DE	83,0	PRN300DE-90-45		
PRN800DE	247,0	PRN800DE-90-45		

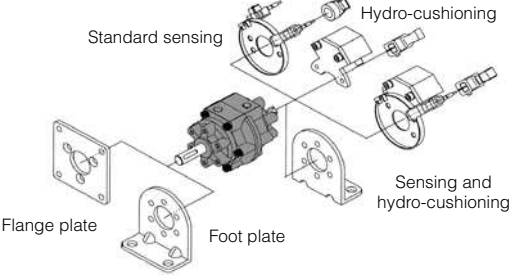
Indicates stocked product.

Design Variants

PRO and miniature PRN ranges



PRN high torque range



Hydro-cushion for PRN050 to PRN800 rotary actuators

Rotary actuator	Hydro-cushion	Claw for hydro-cushion - Oscillating angle		
		90°	180°	270°
PRN50S	CRN50	CRN50-90-45-T	CRN50-180-45-T	CRN50-270-45-T
PRN150S	CRN150	CRN150-90-45-T	CRN150-180-45-T	CRN150-270-45-T
PRN300S	CRN300	CRN300-90-45-T	CRN300-180-45-T	CRN300-270-45-T
PRN50D	CRN50	CRN50-90-45-T		
PRN150D	CRN150	CRN150-90-45-T		
PRN300D	CRN300	CRN300-90-45-T		

Vane actuators provide the maximum amount of output torque from the smallest possible envelope size. They convert pneumatic pressure into rotary motion for a wide variety of industrial applications.

Two basic styles are available. Single vane models have a maximum rotation of 280°, while the double vane units produce twice the torque output from identical envelope dimensions and have a maximum rotation of 100°.

- Double acting actuators
- Single or double vane
- Compact smooth design
- Uniform torque in both directions
- Angle adjustment and sensors available.



Operating information

Type	Double acting actuation	
Standard rotation (tolerance $\pm 1^\circ$)	Single vane	0 to 275°, size 10 to 11 0 to 280°, size 22 to 23
	Double vane	0 to 95°, size 10 to 11 0 to 100°, size 22 to 23
Temperature	-10°C to +80°C	
Air supply	Lubricated or non-lubricated	
Pressure range	2 to 10 bar max	

Basic Unit

Size	Max.rotation	Type	Shaft	Order code.
10	275°	Single	Not through rod	6V5100010F-275
	95°	Double		6V5100010F-095
11	275°	Single	Not through rod	6V5200010F-275
	95°	Double		6V5200010F-095
22	280°	Single	Through rod	6V1300030F-280
	100°	Double		6V1300030F-100
33	280°	Single	Through rod	6V2400030F-280
	100°	Double		6V2400030F-100

Angle adjustment and sensor kits

Size	Options	Order code.
22	Angle adjustment kit	6V03570
	Angle adjustment kit with sensors PNP	6V03575
	Angle adjustment kit with sensors NPN	6V03576
33	Angle adjustment Kit	6V04570
	Angle adjustment kit with sensors PNP	6V04575
	Angle adjustment kit with sensors NPN	6V04576

Complete with angle adjustment and sensors

Size	Max.rotation	Type	Shaft	Order code.
22	220°	Single	Angle adjustment kit	6V1357630F-220
	100°	Double		6V1357730F-100
	220°	Single	As above + PNP Sensors + plug	6V1357635F-220
	100°	Double		6V1357735F-100
	220°	Single	As above + NPN Sensors + plug	6V1357636F-220
	100°	Double		6V1357736F-100
33	220°	Single	Angle adjustment kit	6V2457630F-220
	100°	Double		6V2457730F-100
	220°	Single	As above + PNP Sensors + plug	6V2457635F-220
	100°	Double		6V2457735F-100
	220°	Single	As above + NPN Sensors + plug	6V2457636F-220
	100°	Double		6V2457736F-100

The P5W units provide precise control from 0° - 190° even under heavy loads, with specially designed load fixing and centring capabilities. End stroke cushioning using adjustable stops or hydraulic buffers offers dependable linear cushioning enabling objects to be carried and positioned safely and securely.



- Rack and pinion patented movement.
- Continuously adjustable stroke.
- Large ball bearings on the shaft.
- Through hole in the pinion.
- Optional rubber end stroke or hydraulic shock-absorber.
- Mid position stop (MPS).

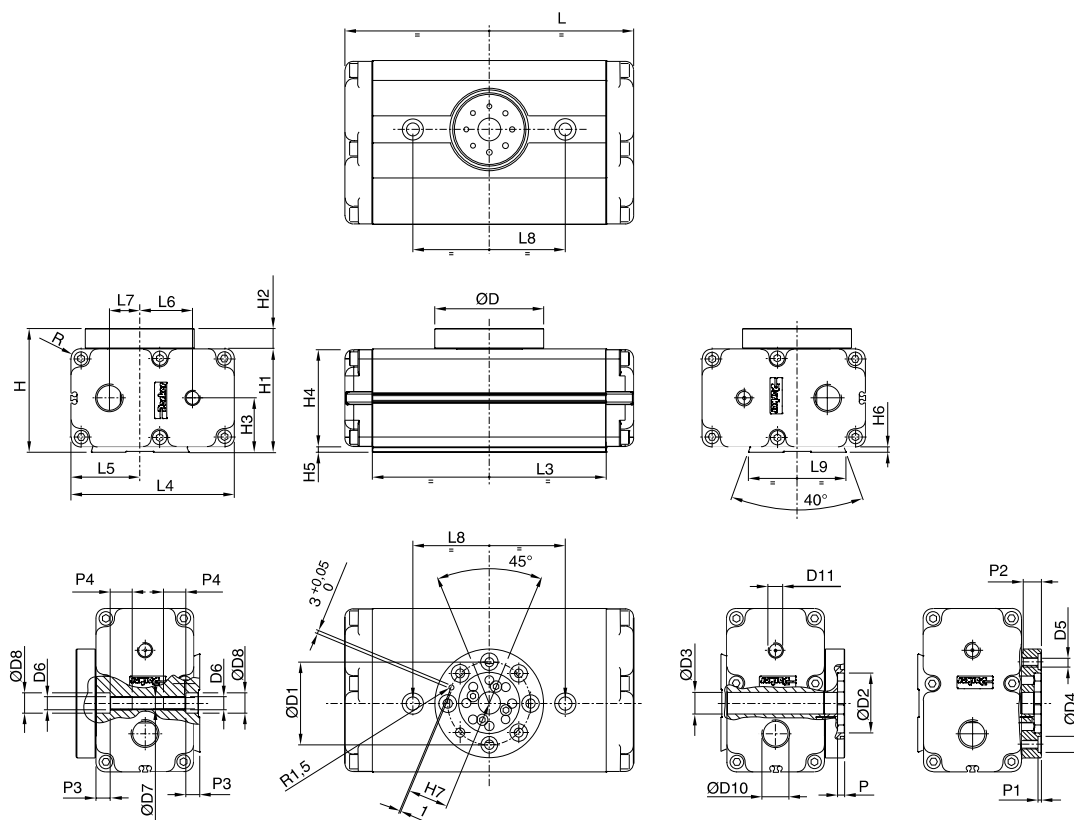
Operating information

Working pressure:	1.5 - 8 bar
Temperature range:	+5°C to +60°C
Operation:	Filtered dry air, lubricated or not
For technical information see CD	

Rotary table

Must be fitted with either external cushioning or other cushioning

Size Ø mm	Connection	Weight kg	Order code
10	M5	0,234	P5WCM10NMN0190B
12	M5	0,557	P5WCM12NMN0190B
20	M5	0,966	P5WCM20NMN0190B
25	G1/8	1,682	P5WCM25NMN0190B
35	G1/8	2,473	P5WCM35NMN0190B
45	G1/4	5,252	P5WCM45NMN0190B
63	G1/4	8,184	P5WCM63NMN0190B



Stroke	L	L3	L4	L5	L6	L7	L8 ±0,02	L9	D	D1 ±0,02	D2	D3	D4 H8	D5	D6	D7	D8 H8	D10	D11
Ø mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			mm	mm		
10	81	65	38	19	10	9	50	40	32	23	–	5	7	M4	M5	4,3	9	M8x1	M5
12	108	88	50	25	13	13	59	40	45	31,5	22	6	7	M4	M6	5,2	11	M10x1	M5
20	130	110	65	32,5	16	13,5	72	56	45	31,5	22	8	7	M4	M6	5,2	11	M12x1	M5
25	162	136	80	40,5	24	18	86	70	65	50	37	10	9	M5	M8	6,8	15	M12x1	G1/8
35	170	140	100	47	28,5	17,5	86	70	65	50	37	12	9	M5	M8	6,8	15	M14x1,5	G1/8
45	230	180	120	56	37	26	140	90	100	76	55	18	15	M8	M12	10,5	19	M20x1,5	G1/4
63	265	215	150	63	48,5	28	140	90	100	76	55	20	15	M8	M12	10,5	19	M25x1,5	G1/4

Stroke Ø mm	H mm	H1 mm	H2 mm	H3 mm	H4 mm	H5 mm	H6 mm	H7 mm	P mm	P1 mm	P2 mm	P3 mm	P4 mm	R mm
10	35	27	8	16	21,5	5,25	5	–	–	2,5	6,5	6	10	2,75
12	47	37	10	21	31	5,5	5	15,25	4	2,5	8	6	12	3,5
20	54	44	10	24,5	38	5,5	5	15,25	4	2,5	8	6	12	4,5
25	64	50	14	27,5	44	5,5	5	24,5	5	3	12	10	18	5
35	76	62	14	33,5	55	5,5	5	24,5	5	3	12	10	18	7
45	95,5	77	18,5	41	70	5,5	5	37,5	7	3,5	16	13	24	7
63	113,5	95	18,5	50	88	5,5	5	37,5	7	3,5	16	13	24	9

Damping**Shock Absorber**

Size Ø mm	Order code
10	MC10MH
12	TK10M-6-1
20	MC75M-3-NB-111
25	MC75M-3-NB-111
35	MC150MH2
45	MC225MH2
63	MC600MH2

Rubber Damper

Size Ø mm	Order code
10	P5WCM10B
12	P5WCM12B
20	P5WCM20B
25	P5WCM20B

Mid position stop

The Mid position stop unit is a stroke reducer, acting against the rack of the rotary table unit by a piston rod. The stopping unit piston bore is larger than the rotary unit and pressurised at the same pressure it stops in the middle of the rotary unit stroke. When not pressurised a spring keeps the stopping unit piston rod against the rotary unit rack.



Size Ø mm	Weight kg	Intermediate stop Order code
10	0.055	P5WCM10M
12	0.100	P5WCM12M
20	0.190	P5WCM20M
25	0.300	P5WCM25M
35	0.450	P5WCM35M
45	1.000	P5WCM45M
63	1.675	P5WCM63M

Magnetic Sensors

All switches are normally open (NO) in the unswitched position. When introduced to the magnetic field, the switch closes. Switches are designed for simple flush mounting without the need for additional brackets.



Ouput / Function	Cable / connector	Weight kg	Order code
Type PNP , normally open	2,5 m PUR-cable	0,007	P8S-SPFL3
Type NPN , normally open	2,5 m PUR-cable	0,007	P8S-SNFL3
Type PNP , normally open	0.3 m M8 / Snap-in	0.013	P8S-SPSH3
Type NPN , normally open	0.3 m M8 / Snap-in	0.013	P8S-SNSH3

These modern lightweight grippers offer high performance with a choice of options to suit most applications.

- Compact design
- Double acting, square jaws
- Automatic grip retention by mechanical system
- High reliability



Operating information

Working pressure	3-8 bar
Working temperature (with or without sensors)	+5°C to +60°C
Operation	Dry air, with or without lubrication
For technical information see CD	

Design Variants

Parallel double acting, square jaw carriers

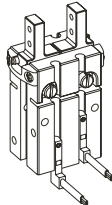
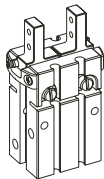
Gripper is opened and closed by pneumatic pressure.
No grip retention at closing.
4 sizes available.

Sensors

Check on closing and opening of gripper by means of sensors.

Spring function

Self-locking in closed or opened position by internal spring.
In case of air failure, the retention force is equal to the clamping force divided by 4.



Angular double acting, square jaw carriers

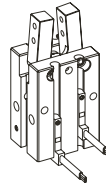
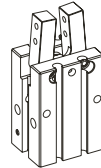
Gripper is opened and closed by pneumatic pressure.
No self-locking in closed position.
4 sizes available.

Sensors

Check on closing and opening of gripper by means of sensors.

Spring function

Self-locking in closed or opened position by internal spring.
In case of air failure, the retention force is equal to the clamping force divided by 4.

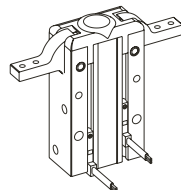
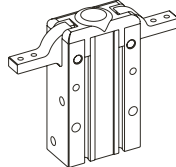


Radial double acting, square jaw carriers

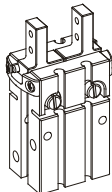
Gripper is opened and closed by pneumatic pressure.
Automatic grip retention by mechanical system.
4 sizes available.

Sensors

Check on opening and closing of gripper by means of sensors.



Parallel Grippers



Without spring

Size	Order code
10	P5GCM10HMN0004B
16	P5GCM16HMN0006B
20	P5GCM20HMN0010B
25	P5GCM25HMN0014B

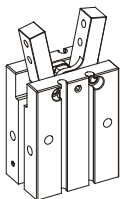
Spring opening

Size	Order code
10	P5GCM10HBN0004B
16	P5GCM16HBN0006B
20	P5GCM20HBN0010B
25	P5GCM25HBN0014B

Spring Closing

Size	Order code
10	P5GCM10HDN0004B
16	P5GCM16HDN0006B
20	P5GCM20HDN0010B
25	P5GCM25HDN0014B

Angular Grippers



Without spring

Size	Order code
10	P5GCM10KMN0040B
16	P5GCM16KMN0040B
20	P5GCM20KMN0040B
25	P5GCM25KMN0040B

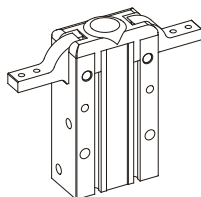
Spring opening

Size	Order code
10	P5GCM10KBN0040B
16	P5GCM16KBN0040B
20	P5GCM20KBN0040B
25	P5GCM25KBN0040B

Spring Closing

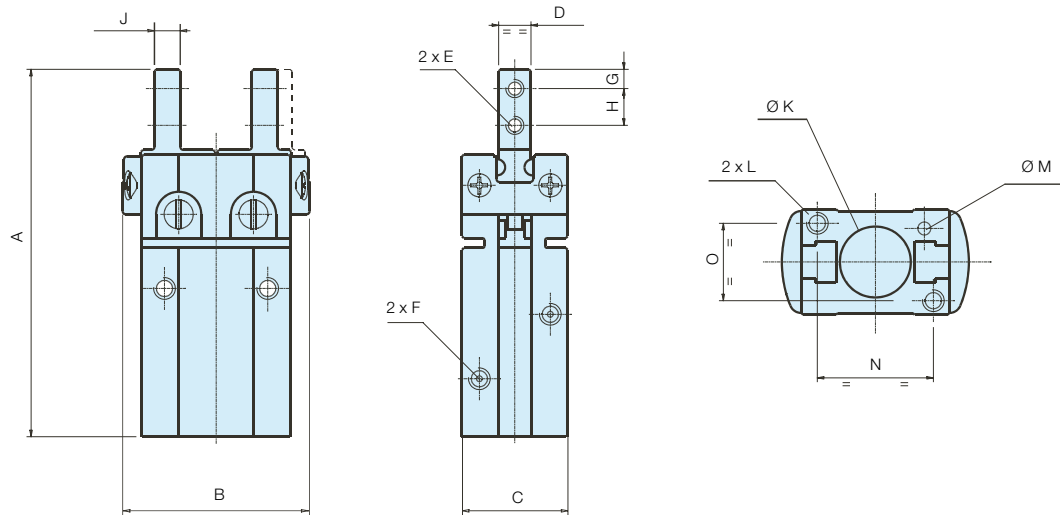
Size	Order code
10	P5GCM10KDN0040B
16	P5GCM16KDN0040B
20	P5GCM20KDN0040B
25	P5GCM25KDN0040B

Radial Grippers



Size	Order code
10	P5GCM10BMN0180B
16	P5GCM16BMN0180B
20	P5GCM20BMN0180B
25	P5GCM25BMN0180B

Dimensions (mm)



Type	Size	A	B	C	D	E	F	G	H	J	ØK	L	ØM	N	O	Stroke mm
Parallel	10	57	29,4	16,4	5	M2,5	M3	3	5,7	4	11	M3	2	18	12	4,4
	16	67,3	38,6	23,6	8	M3	M5	4	7	5	17	M4	3	22	15	6,6
	20	84,8	50,4	27,6	10	M4	M5	5	9	8	21	M5	4	32	18	10,2
	25	102,7	64,0	33,6	12	M5	M5	6	12	10	26	M6	4	40	22	14
Angular	10	53	23	16,4	6,4	M2,5	M3	3	5,7	4	11	M3	-	18	12	40°
	16	63,3	30,6	23,6	8	M3	M5	4	7	7	17	M4	-	22	15	40°
	20	78,7	42	27,6	10	M4	M5	5,2	9	8	21	M5	-	32	18	40°
	25	93,3	52	33,6	12	M5	M5	8	12	10	26	M6	-	40	22	40°
Radial	10	71	30	15	6	M3	M5	3	6	4	11	M3	3	24	9	180°
	16	84	38	20	8	M3	M5	4	7	5	17	M4	3	30	12	180°
	20	106	48	26	10	M4	M5	5	9	8	21	M5	4	38	16	180°
	25	131	58	30	12	M5	M5	6	12	10	26	M6	4	46	18	180°

Sensors for P5GC gripper

Sensors can be adjusted along grooves

			Size 10	Size 16	Size 20	Size 25
P8S-SPFL3	PNP	2.5m cable	☒ (1)	☒ ☒ (1)	☒ ☒ (1)	☒ ☒ (1)
P8S-SNFL3	NPN	2.5m cable	☒ (1)	☒ ☒ (1)	☒ ☒ (1)	☒ ☒ (1)
P8S-SPSH3	PNP	M8 connector	☒ (1)	☒ ☒ (1)	☒ ☒ (1)	☒ ☒ (1)
P8S-SNSH3	NPN	M8 connector	☒ (1)	☒ ☒ (1)	☒ ☒ (1)	☒ ☒ (1)
P8S-SPTH2	PNP	M8 connector	☐	☒ ☐	☒ ☐	☒ ☐

(1) By using the adaptor provided with the sensor

Order code	P8S-SPFL3	P8S-SNFL3	P8S-SPSH3	P8S-SNSH3	P8S-SPTH2

Linear Actuator Products

A complete range of pneumatic actuators

PDE2612TCUK



Parker is the world leader in motion and control technologies, providing systematic, precision-engineered solutions for a wide variety of, industrial markets. Throughout the world, Parker Hannifin is working together with companies to make their machines more reliable and more productive. Parker products are in operation on satellites orbiting the earth: in machine tools and mobile plant; on oil rigs and refineries; in hospitals and laboratories. In fact, wherever there are machines that depend on motion or fluid control, you will find innovative and reliable Parker components and systems.

The Parker range of linear actuators encompasses both compact, lightweight and rodless versions and ISO/VDMA models. Versions specifically for the food industry both in aluminium and stainless steel and products for arduous applications in harsh environments are all featured.

PDE2612TCUK
Linear Actuator Products

Minimum Space Applications

P1G Compact Cylinders



- Ø6, 10 & 16mm Bore sizes
- Non-lube operation
- Corrosion resistant design
- Integral mounting thread
- Compact construction
- Single acting as standard.

Clamping & Locking Operations

C05 Short Stroke Cylinders



- Ø8 - 63mm bore sizes
- Short stroke providing high clamping force
- Compact dimensions for confined spaces
- Single and double acting
- Simple installation and mounting.

Light Duties in Packaging, Food and Textile

P1A Mini ISO Cylinders



- Ø10 - 25mm Bore size to ISO 6432
- Magnetic piston as standard
- End stroke buffers for long service life
- Adjustable cushioning Ø16 - 25mm Bore sizes
- Complete range of mountings & sensors
- Piston rod guidance units available.

Confined Space Applications

P1J Compact Cylinders



- Ø12 - 63mm
- Stroke lengths up to 100mm
- Single and double acting
- Magnetic piston as standard
- Compact dimensions for confined spaces
- Complete range of mountings & sensors.

Flexible Porting Options

P1M Cylinders



- Ø12 - 100mm
- Stroke lengths up to 500mm
- Single and double acting
- Magnetic piston as standard
- Flexible porting options
- Complete range of mountings & sensors.

Harsh Environments / Food Industry

P1S Stainless Steel Cylinders



- All stainless steel design
- Mini ISO 6432 Ø10 - 25mm Bore sizes
- Standard ISO 6431 Ø32 - 125mm Bore sizes
- Magnetic piston as standard
- Clean design ideal for washdown
- Adjustable end cushioning.
- Initial lubrication with food grade grease.

Resistance to Side Load

P5T Compact Cylinders



- Ø12 - 100mm bore size
- Complete cylinder with integral guidance
- Plain bearing or twin recirculating bearings
- End stop cushioning as standard
- Magnetic as standard
- Flexible porting and mounting
- Standard strokes 10 - 200mm

Light Duty Applications

P1K Cylinders



- Ø32 - 125mm Bore sizes
- Single and double acting
- Clean line profile design
- Designed for dry piston rod operation
- End stroke buffers for long service life
- Position sensing versions.

Short Stroke, High Thrust Single Acting Applications

Air Bellows



- 10 sizes Ø70 - 660mm
- Strokes from 45 - 430mm
- High thrust frictionless movement
- Single, double or triple convolutions
- Maintenance free.



PDE2612TCUK

Linear Actuator Products

General Industrial & Food Industry Versions

P1D ISO/VDMA Cylinders



- Ø32 - 125mm Bore size ISO/VDMA standard
- Double acting with adjustable end cushioning
- Magnetic piston as standard
- Flexible porting option
- Non-lube operation
- 'Clean' version for food industry
- Complete range of sensors and mountings

Clamping & Tightening

Hydraulic Clamp Cylinders



- Single acting cylinders with built-in hydro-pneumatic intensifier
- Compact size with large clamping forces up to 2700 daN (depending on air pressure)
- Operated using a compressed air supply, no special installation required
- Easy adjustment through a fully threaded body
- Simple and rapid installation

Gripping for most applications

P5G-C Robotic Grippers



- 4 sizes available
- Parallel or angular action
- Square jaw carriers
- One or two magneto-inductive sensor can be mounted on all sizes to provide signal to monitor gripper opening and closing.

Demanding Environments

P1E VDMA 24562 Cylinders



- Ø160 - 200mm Bore sizes VDMA standard
- Double acting with adjustable end cushioning
- Magnetic piston as standard
- Non-lube operation
- Tie rod construction
- Complete range of mountings & sensors.

Wide Variety of Industrial Applications

PV Rotary Actuators - Vane Type



- Double acting actuators
- Single or double vane
- Compact smooth design
- Uniform torque in both directions
- Angle adjustment and sensors available.

Hydraulic Damping Cylinder

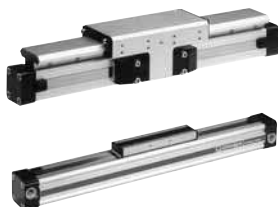
Hydrochecks



- Range of imperial sizes
- Gives smooth control feeds
- Strokes up to 450mm

Door Actuation, Special Purpose Machinery

Rodless Cylinders



- High precision cushioning
- Flexible porting
- High efficiency sealing technology
- Integral sensor slot with enhancement strip
- Heavy load carrying capability

Clamping, Riveting & Punching Applications

C0D - C0P Thrust Cylinders



- Short stroke high thrust design
- Compact dimensions
- Diaphragm or piston versions
- Single or double acting.

Chip Mounting, Glass, Injection Mold, Sheet Metal

Vacuum



- Mini vacuum generators
- Compact "air saver" vacuum generators
- Multi-function vacuum generators with holding
- Valve and rapid release options
- Wide range of suction cups
- Wide range materials



Rotary Actuator and Air Motor Products

A complete range of rotary actuator and air motor products

PDE2613TCUK



Parker is the world leader in motion and control technologies, providing systematic, precision-engineered solutions for a wide variety of, industrial markets.

Throughout the world, Parker Hannifin is working together with companies to make their machines more reliable and more productive. Parker products are in operation on satellites orbiting the earth: in machine tools and mobile plant; on oil rigs and refineries; in hospitals and laboratories. In fact, wherever there

are machines that depend on motion or fluid control, you will find innovative and reliable Parker components and systems.

The Parker range of rotary actuators and airmotors offers a choice of oscillating or continuous rotary motion. Stainless steel versions specifically for food industry or more robust models for general industrial applications are available.

PDE2613TCUK

Rotary Actuator and Air Motor Products

Harsh Environments & Food Industry

P1V-S Air Motors



- All stainless steel design
- From 0.120kW - 1.2kW power
- For arduous applications
- Non-lube intermittent operation
- External seals viton
- Ideal for food industry applications.

Arduous Applications

P1V-B Large Vane Air Motors



- Power 5,1 kW, 9 kW and 18 kW
- For the very heavy applications
- Free speed from 400 up to 300 rpm
- High torque from 57 to 160 Nm by max output power

Packaging, Process, Electronic Applications

PRO-PRN Rotary Actuators



- Compact design
- Durable construction
- Long maintenance-free life
- High output torque/weight ratio
- Wide choice of torques available (up to 247 Nm)

Minimum Noise Level

P1V-P Radial Piston Air Motors



- P1V-P piston motor
- Power 0,73 kW, 0,125kW and 0,228kW
- Low speed and high torque
- Available as base and brake motors
- Free speed from 2200 down to 7,4 rpm
- High torque from 0,637Nm up to 500Nm

Arduous Applications

P1V-A Large Air Motors



- Designed for arduous applications.
- Wide range of optional gears
- Wide speed and torque range 1.6kW, 2.6kW, 3.6kW

Rack and Pinion Piston Rods

RA Rotary Actuators Rack & Pinion Type



- High torque
- Uniform torque in both directions
- Compact design
- 90° or 180° rotation
- Output shaft with key

Robust Air Motor

P1V-M Robust Vane Air Motors



- Power 0,2 kW, 0,4 kW and 0,6 kW
- Patented way for simple change of vanes
- Free speeds from 28 up to 10000 rpm
- Torque from 0,38 Nm up to 380Nm by max output power
- Standard equipped with flange mounting
- Footmountings as accessories

Heavy Duty Applications

P5W Rotary Table Units



- Rack and pinion patented movement.
- Continuously adjustable stroke.
- Large ball bearings on the shaft.
- Through hole in the pinion.
- Optional rubber end stroke or hydraulic shock-absorber.
- Mid position stop (MPS)

