

# P1A Pneumatic Mini ISO Cylinders

According to ISO 6432










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.

Hygienic design, the use of corrosion-resistant materials and initial lubrication with our food-grade grease makes the cylinders suitable for food industry applications.

- **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**

# P1A Pneumatic ISO Cylinders

## Order key

<b>P1A-S</b>	<b>016</b>	<b>M</b>	<b>S</b>	<b>-</b>	<b>0025</b>
<b>Cylinder bore mm</b>	<b>Cylinder type / function</b>			<b>Stroke length, mm</b>	
<b>010</b>	<b>M</b>		Double-acting, adjustable cushioning. Ø16-25 mm. Not for sealing material type F.		E.g. 0025 = 25 mm For standard stroke length and max length see table below.
<b>012</b>	<b>D</b>		Double-acting, non-adjustable cushioning, Ø10 - Ø25		
<b>016</b>	<b>F</b>		Double-acting, adjustable cushioning, thru-rod, Ø16-25 mm. Not for sealing material type F.		
<b>020</b>	<b>K</b>		Double-acting, non-adjustable cushioning, thru-rod, Ø10 - Ø25		
<b>025</b>	<b>S</b>		Single-acting, non-adjustable cushioning, spring return for retract stroke, Ø10-25 mm. Not for sealing material type F.		
	<b>T</b>		Single-acting, non-adjustable cushioning, spring return for advance stroke, Ø16-25 mm. Not for sealing material type F.		
	<b>Sealing material</b>				
	<b>S</b>	Standard, -20 °C to +80 °C. Magnetic piston			
	<b>F</b>		High temperature, Ø12, 16, 20 and 25 mm -10 °C to +150 °C. Non-magnetic piston		
	<b>V</b>	External seals of fluorinated rubber. -20 °C to +80 °C. Magnetic piston			

**Note:** P1A Series also available with end caps made of stainless steel - replace P1A with P1S in the order code key.

## Stroke length

Cylinder designation	Cylinder bore	● Standard stroke length in mm										■ Non standard stroke length									
		10	15	20	25*	30	40	50*	80*	100*	125*	160*	200*	250*	320*	400*	500*				
<b>Double acting with fixed end-cushioning:</b>																					
P1A-S010D	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S012D	12	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S016D	16	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S020D	20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S025D	25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
<b>Double acting with adjustable end-cushioning:</b>																					
P1A-S016M	16	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S020M	20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S025M	25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
<b>Single acting, spring return:</b>																					
P1A-S010SS	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S012SS	12	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S016SS	16	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S020SS	20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S025SS	25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
<b>Single acting, spring-extended:</b>																					
P1A-S016TS	16	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S020TS	20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P1A-S025TS	25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

\* Standard stroke lengths in mm according to ISO 4393

\*\* Max stroke 1000 mm

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

**Design variants**

**High temperature**  
 Ø12 and 16mm -10°C to +120°C Non-magnetic piston  
 Ø20 and 25mm -10°C to +150°C Non-magnetic piston

**External seals**  
 flourinated rubber -20°C to +80°C Magnetic piston

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

**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

**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

**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

**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

**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

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 77.

**Double acting adjustable cushioning**

**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

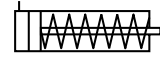
**Ø20mm - (G1/8)**

Stroke mm	Order code
20	P1A-S020MS-0020
25	P1A-S020MS-0025
30	P1A-S020MS-0030
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

Single acting push type (Spring return for retracted 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
50	P1A-S020SS-0050
80	P1A-S020SS-0080

Single acting pull type (Spring extended for advanced 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
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

Design Variants

Double acting options

Single 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



Single-acting, Spring return for retracted stroke. Non-adjustable cushioning Ø10 - Ø25

Single-acting, Spring extended for advanced stroke. Non-adjustable cushioning Ø16 - Ø25

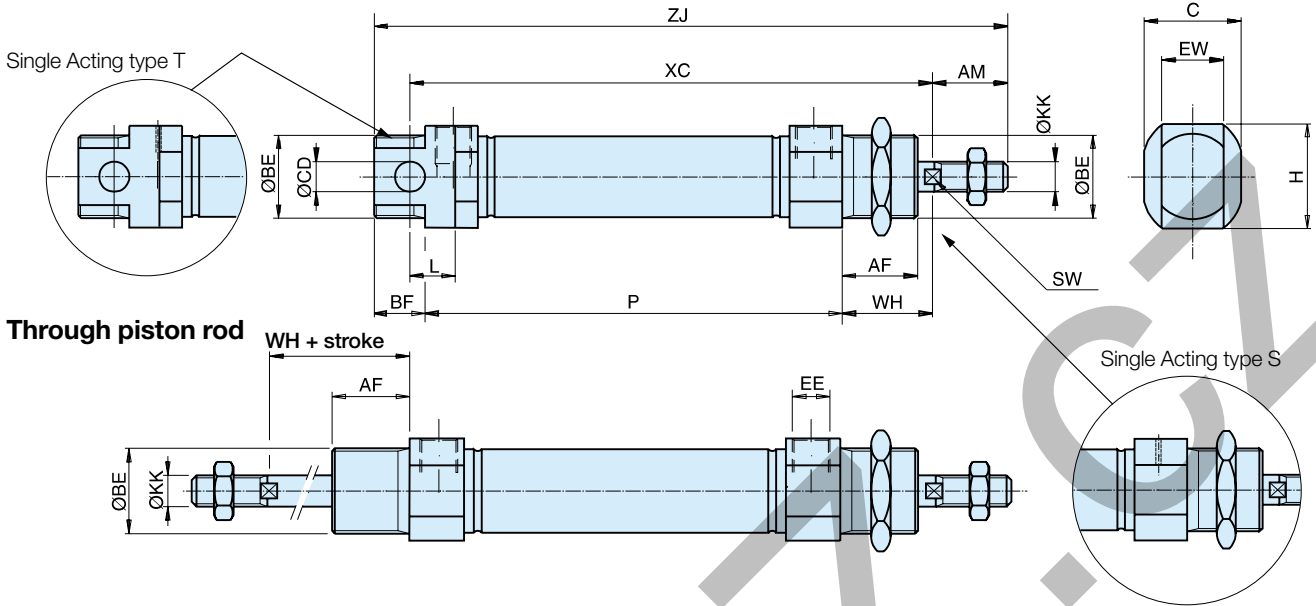
"U" style rod guidance modules, plain bearings

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	CDH9 mm	EE	EW mm	H mm	KK	L mm	SW mm	WH±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 <sup>1)</sup>	16	M16x1,5	18	13	17,8	6	M5	12	17,8	M6	9	5	22
16 <sup>2)</sup>	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	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

**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 <sup>3)</sup>	XC <sup>3)</sup>	XC <sup>3)</sup>	XC <sup>3)</sup>	XC <sup>3)</sup>	XC <sup>3)</sup>	ZJ <sup>3)</sup>	ZJ <sup>3)</sup>	ZJ <sup>3)</sup>	ZJ <sup>3)</sup>	ZJ <sup>3)</sup>	ZJ <sup>3)</sup>	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

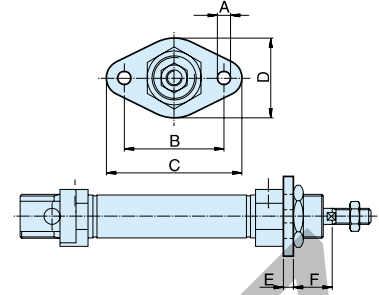
Length tolerances ±1 mm

Stroke length tolerances +1,5/0 mm

Cylinder Mountings

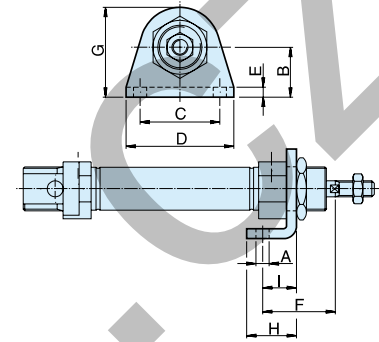
Flange-MF8

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	<b>P1A-4CMB</b>
12	5,5	40	52	30	4	18	<b>P1A-4DMB</b>
16	5,5	40	52	30	4	18	<b>P1A-4DMB</b>
20	6,6	50	66	40	5	19	<b>P1A-4HMB</b>
25	6,6	50	66	40	5	23	<b>P1A-4HMB</b>



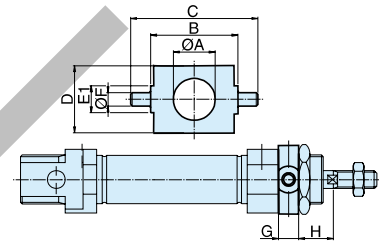
Foot-MS3

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	<b>P1A-4CMF</b>
12	5,5	20	32	42	4	32	32,5	20	14	<b>P1A-4DMF</b>
16	5,5	20	32	42	4	32	32,5	20	14	<b>P1A-4DMF</b>
20	6,5	25	40	54	5	36	45,0	25	17	<b>P1A-4HMF</b>
25	6,5	25	40	54	5	40	45,0	25	17	<b>P1A-4HMF</b>



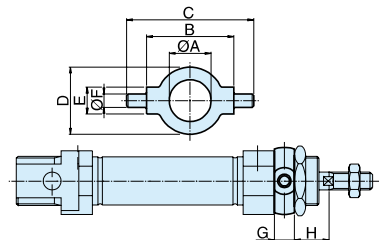
Cover trunnion

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	9	4	6	10	<b>P1A-4CMJZ</b>
12	16,5	38	58	25	13	6	8	14	<b>P1A-4DMJZ</b>
16	16,5	38	58	25	13	6	8	14	<b>P1A-4DMJZ</b>
20	22,5	46	66	30	13	6	8	16	<b>P1A-4HMJZ</b>
25	22,5	46	66	30	13	6	8	20	<b>P1A-4HMJZ</b>



Cover trunnion  
Stainless steel

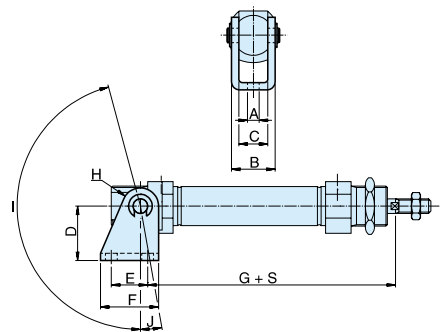
Cylinder Ø mm	A mm	B h14 mm	C mm	D mm	E mm	F e9 mm	G mm	H mm	Order code
10	12,5	26	38	20	8	4	6	10	<b>P1A-4CMJ</b>
12	16,5	38	58	25	10	6	8	14	<b>P1A-4DMJ</b>
16	16,5	38	58	25	10	6	8	14	<b>P1A-4DMJ</b>
20	22,5	46	66	30	10	6	8	16	<b>P1A-4HMJ</b>
25	22,5	46	66	30	10	6	8	20	<b>P1A-4HMJ</b>



Clevis bracket AB3

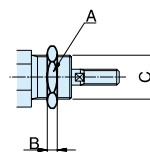
Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I °	J °	Order code
10	4,5	13	8	24	12,5	20	65,3	5	160	17	<b>P1A-4CMT</b>
12	5,5	18	12	27	15,0	25	73,0	7	170	15	<b>P1A-4DMT</b>
16	5,5	18	12	27	15,0	25	80,0	7	170	15	<b>P1A-4DMT</b>
20	6,5	24	16	30	20,0	32	91,0	10	165	10	<b>P1A-4HMT</b>
25	6,5	24	16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

S=stroke



Stainless Mounting nut

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



**Cylinder Mountings**

**Clevis AP2**

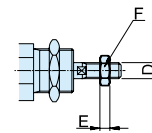
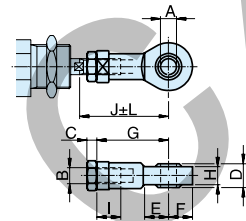
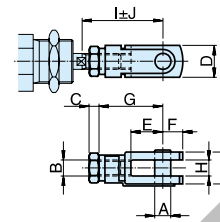
Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	Order code
10	4	M4	2,2	8	8	5	16	4	22,0	2,0	<b>P1A-4CRC</b>
12	6	M6	3,2	12	12	7	24	6	31,0	3,0	<b>P1A-4DRC</b>
16	6	M6	3,2	12	12	7	24	6	31,0	3,0	<b>P1A-4DRC</b>
20	8	M8	4,0	16	16	10	32	8	40,5	3,5	<b>P1A-4HRC</b>
25	10	M10x1,25	5,0	20	20	12	40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

**Swivel rod eye AP6**

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	<b>P1A-4CRS</b>
12	6	M6	3,2	9	10	10	30	6,8	9	38,5	11	1,5	<b>P1A-4DRS</b>
16	6	M6	3,2	9	10	10	30	6,8	9	38,5	11	1,5	<b>P1A-4DRS</b>
20	8	M8	4,0	12	12	12	36	9,0	12	46,0	14	2,0	<b>P1A-4HRS</b>
25	10	M10x1,25	5,0	14	14	14	43	10,5	15	52,5	17	2,5	<b>P1A-4JRS</b>

**Stainless Rod nut**

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



**Flange MF8**



**Foot bracket MS3**



**Cover trunnion**



**Cover trunnion  
Stainless steel**



**Stainless steel  
mounting nut**



Ø 10	<b>P1A-4CMB</b>	<b>P1A-4CMF</b>	<b>P1A-4CMJZ</b>	<b>P1A-4CMJ</b>	<b>9126725405</b>
Ø 12	<b>P1A-4DMB</b>	<b>P1A-4DMF</b>	<b>P1A-4DMJZ</b>	<b>P1A-4DMJ</b>	<b>9126725406</b>
Ø 16	<b>P1A-4DMB</b>	<b>P1A-4DMF</b>	<b>P1A-4DMJZ</b>	<b>P1A-4DMJ</b>	<b>9126725406</b>
Ø 20	<b>P1A-4HMB</b>	<b>P1A-4HMF</b>	<b>P1A-4HMJZ</b>	<b>P1A-4HMJ</b>	<b>9126725407</b>
Ø 25	<b>P1A-4HMB</b>	<b>P1A-4HMF</b>	<b>P1A-4HMJZ</b>	<b>P1A-4HMJ</b>	<b>9126725407</b>

**Clevis bracket AB3**



**Clevis AP2**



**Swivel rod eye AP6**



**Stainless steel  
Rod nut**



Ø 10	<b>P1A-4CMT</b>	<b>P1A-4CRC</b>	<b>P1A-4CRS</b>	<b>9127385121</b>
Ø 12	<b>P1A-4DMT</b>	<b>P1A-4DRC</b>	<b>P1A-4DRS</b>	<b>9127385122</b>
Ø 16	<b>P1A-4DMT</b>	<b>P1A-4DRC</b>	<b>P1A-4DRS</b>	<b>9127385122</b>
Ø 20	<b>P1A-4HMT</b>	<b>P1A-4HRC</b>	<b>P1A-4HRS</b>	<b>9127385123</b>
Ø 25	<b>P1A-4HMT</b>	<b>P1A-4JRC</b>	<b>P1A-4JRS</b>	<b>9126725404</b>