

**General Description:** The Parker P1A series of pneumatic cylinders are intended for use in a wide range of applications. These 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.

Proven design and high quality manufacturing throughout ensure long service life and optimum performance.

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

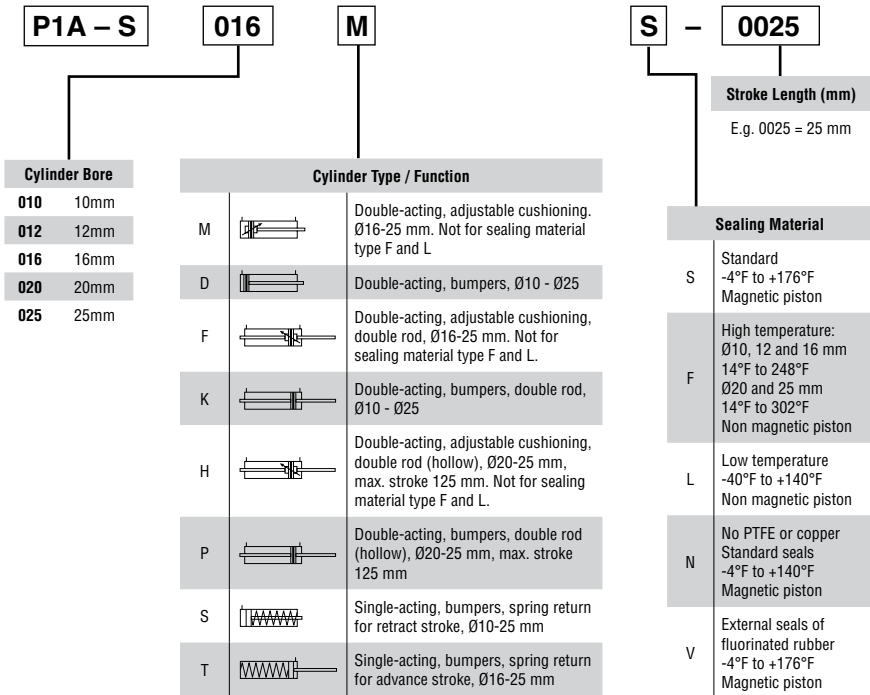
The Mini ISO range is available with bumpers or adjustable pneumatic cushioning. Controlled by simple bleed screws for fine adjustment, the adjustable cushioned cylinders can be operated with higher mass loads and at higher speeds than those with fixed end cushioning bumpers.

The Mini ISO range is also available in an all-stainless version with piston rod, cylinder body and end covers of stainless steel for use in extremely severe environments. Consult the Actuator Division for more information.

A complete range of sensors for proximity sensing is available as accessories: both reed and solid state sensors are available. Either can be supplied with flying leads or cable and multi-pin connector.

**MINI ISO PNEUMATIC CYLINDERS**

**P1A SERIES - HOW TO ORDER**



**MINI ISO PNEUMATIC CYLINDERS**

**P1A SERIES - STROKE LENGTHS**

Cylinder Model	Bore Size	Stroke Length (+ = standard, - = non-standard, blank = N/A)															
		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-S 010 D	10	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-
P1A-S 012 D	12	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-
P1A-S 016 D	16	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-
P1A-S 020 D	20	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-
P1A-S 025 D	25	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-
<b>Double Acting with adjustable end-cushioning:</b>																	
P1A-S 016 M	16				+	+	+	+	+	+	+	+	+	+	+	+	+
P1A-S 020 M	20				+	+	+	+	+	+	+	+	+	+	+	+	+
P1A-S 025 M	25				+	+	+	+	+	+	+	+	+	+	+	+	+
<b>Single Acting:</b>																	
P1A-S 010 SS	10	+	+	-	+	-	+	+	+								
P1A-S 012 SS	12	+	+	-	+	-	+	+	+								
P1A-S 016 SS(TS)	16	+	+	-	+	-	+	+	+	+	+						
P1A-S 020 SS(TS)	20	+	+	-	+	-	+	+	+	+							
P1A-S 025 SS(TS)	25	+	+	-	+	-	+	+	+	+							

\*Standard stroke lengths in mm according to ISO 4393

\*\* Not for the TS version

Note: For sensor specifications and part numbers, please refer to the Electronic Sensors section.

**MINI ISO PNEUMATIC CYLINDERS**

**P1A SERIES - STANDARD SPECIFICATIONS**

Working Pressure	max	145 PSI
Working Temperature	max	176°F
	min	4°F
High-Temperature Version	max	Ø20 and 25 mm - 302°F Ø10, 12 and 16 mm - 248°F
	min	14°F
Low-Temperature Version	max	140°F
	min	-40°F

Prelubricated, further lubrication is not normally necessary.

If additional lubrication is introduced it must be continued.

## MINI ISO PNEUMATIC CYLINDERS

### P1A SERIES - MATERIAL SPECIFICATION

<b>Piston rod:</b>	Stainless steel, DIN X 10 CrNiS 18 9
<b>Piston rod seal:</b>	Fluorocarbon rubber FPM
<b>Piston rod bearing:</b>	Multilayer PTFE/steel
<b>End covers:</b>	Anodized aluminium
<b>O-ring, internal:</b>	Nitrile rubber, NBR
<b>Cylinder barrel:</b>	Stainless steel, DIN X 5 CrNi 18 10
<b>Piston, complete:</b>	Nitrile rubber, NBR/steel
<b>Magnet holder:</b>	Thermoplastic elastomer
<b>Magnet:</b>	Plastic-coated magnetic material
<b>Return spring:</b>	Surface-treated steel
<b>Cushioning screw:</b>	Stainless steel, DIN X 10 CrNiS 18 9

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

Cylinders with double piston rods are supplied with two piston rod nuts

### Variants Mini ISO:

#### Low-temperature version, type L:

<b>Piston rod seal:</b>	Nitrile rubber, NBR
<b>Piston complete:</b>	Nitrile rubber, NBR/steel

#### High-temperature version, type F:

<b>Piston rod seal:</b>	Fluorocarbon rubber, FPM
<b>Piston complete, Ø10-Ø16:</b>	HNBR/steel
<b>Piston complete, Ø20-Ø25:</b>	FPM/steel

#### PTFE and copper free cylinders, type N:

<b>Piston rod bearing:</b>	PA plastic
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#### Cylinders with outer sealings in fluorocarbon, type V:

<b>Piston rod seal/</b>	Fluorocarbon rubber, FPM
<b>Scraper ring:</b>	

**Note:** Spare part = new cylinder

## MINI ISO PNEUMATIC CYLINDERS

### P1A SERIES - QUICK REFERENCE

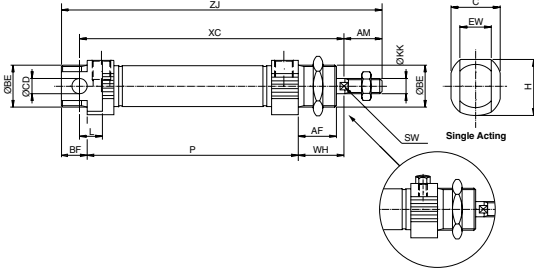
Model #	Cylinder		Piston Rod		Thread	Total Weight at 0mm Stroke (lbs)	Additional Weight per 10mm Stroke (lbs)	Air Consumption	Port Size
	Bore (mm)	Area (cm <sup>2</sup> )	Dia. (mm)	Area (cm <sup>2</sup> )					
<b>Double Acting, cushioned stroke</b>									
P1A-S 010 D	10	0.78	4	0.13	M4	0.09	0.007	0.0004 <sup>1)</sup>	M5
P1A-S 012 D	12	1.13	6	0.28	M6	0.15	0.009	0.0005 <sup>1)</sup>	M5
P1A-S 016 D	16	2.01	6	0.28	M6	0.20	0.012	0.0009 <sup>1)</sup>	M5
P1A-S 020 D	20	3.14	8	0.50	M8	0.40	0.015	0.0010 <sup>1)</sup>	G1/8
P1A-S 025 D	25	4.91	10	0.78	M10x1.25	0.89	0.025	0.0023 <sup>1)</sup>	G1/8
<b>Double Acting, adjustable cushioning</b>									
P1A-S 016 M	16	2.01	6	0.28	M6	0.20	0.012	0.0009 <sup>1)</sup>	M5
P1A-S 020 M	20	3.14	8	0.50	M8	0.40	0.015	0.0010 <sup>1)</sup>	G1/8
P1A-S 025 M	25	4.91	10	0.78	M10x1.25	0.89	0.025	0.0023 <sup>1)</sup>	G1/8
<b>Single Acting</b>									
P1A-S 010 SS	10	0.78	4	0.13	M4	0.09	0.007	0.0002 <sup>1)</sup>	M5
P1A-S 012 SS	12	1.13	6	0.28	M6	0.18	0.009	0.0003 <sup>1)</sup>	M5
P1A-S 016 SS(TS)	16	2.01	6	0.28	M6	0.22	0.012	0.0005 <sup>1)</sup>	M5
P1A-S 020 SS(TS)	20	3.14	8	0.50	M8	0.40	0.015	0.0008 <sup>1)</sup>	G1/8
P1A-S 025 SS(TS)	25	4.91	10	0.78	M10x1.25	0.58	0.025	0.0013 <sup>1)</sup>	G1/8

1) Free air consumption per 10 mm stroke length for a double stroke at 87 PSI

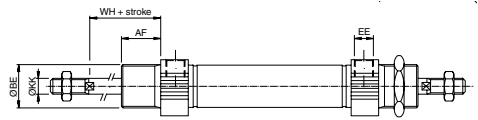
**PNEUMATIC CYLINDERS**

**P1A SERIES - DIMENSIONS**

**Double acting cylinders**



**Double piston rod**



Cylinder Bore (mm)	AM 0/-2 (mm)	BE	AF (mm)	BF (mm)	C (mm)	CD h9 (mm)	EE	EW (mm)	H (mm)	KK	L (mm)	SW (mm)	WH±1.2 (mm)
10	12	M12x1.25	12	10	14.0	4	M5	8	16.7	M4	6	-	16
12	16	M16x1.5	18	13	18.0	6	M5	12	19.1	M6	9	5	22
16 <sup>1)</sup>	16	M16x1.5	18	13	18.0	6	M5	12	19.1	M6	9	5	22
16 <sup>2)</sup>	16	M16x1.5	18	13	25.0	6	M5	12	24.0	M6	9	5	22
20	20	M22x1.5	20	14	24.0	8	G1/8	16	27.0	M8	12	7	24
25	22	M22x1.5	22	14	27.5	8	G1/8	16	29.0	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**

Cylinder Bore (mm)	XC (mm) at Various Strokes						ZJ (mm) at Various Strokes						P (mm) at Various Strokes					
	10	15	25	40	50	80	10	15	25	40	50	80	10	15	25	40	50	80
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**

Cylinder Bore (mm)	ZC <sup>3)</sup> (mm) at Various Strokes						ZJ <sup>3)</sup> (mm) at Various Strokes						P (mm) at Various Strokes					
	10	15	25	40	50	80	10	15	25	40	50	80	10	15	25	40	50	80
16	107	112	122	137	147	-	134	139	149	164	174	-	78	83	93	108	118	-
20	120	125	135	150	160	195	156	161	171	186	196	231	92	97	107	122	132	167
25	129	134	144	159	169	205	165	170	180	195	205	241	93	98	108	123	133	169

3) With piston rod retracted, as shown in the dimension drawing  
Length tolerances ±1 mm    Stroke length tolerance +1.5/0 mm