



# ***Stainless steel pneumatic cylinders***

*Series P1S*


*According to ISO*

*Catalogue 9127005082GB-ul*




Features	Air cylinder	Hydraulic cylinder	Electro mechanical actuators
Overload safe	***	***	*
Easy to limit force	***	***	*
Easy to vary speed	***	***	*
Speed	***	**	**
Reliability	***	***	***
Robustness	***	***	*
Installation cost	***	*	**
Ease of service	***	**	*
Safety in damp environments	***	***	*
Safety in explosive atmospheres	***	***	*
Safety risk with electrical installations	***	***	*
Risk of oil leak	***	*	***
Clean, hygienic	***	**	*
Standardised measurements	***	***	*
Service life	***	***	*
Hydraulic system required	***	*	***
Weight	**	***	*
Power density	***	**	**
Purchase price	***	**	*
Noise level during operation	**	***	**
High force for size	**	***	*
Positioning possibilities	*	***	***
Total energy consumption	*	**	***
Service interval	*	**	***
Compressor capacity required	*	***	***


\* = good, \*\*=average, \*\*\*=excellent



**Important**  
 Before attempting any external or internal work on the cylinder or any connected components, make sure the cylinder is vented and disconnect the air supply in order to ensure isolation of the air supply.



**Note**  
 All technical data in this catalogue are typical data only.  
 Air quality is essential for maximum cylinder service life (see ISO 8573).



**WARNING**

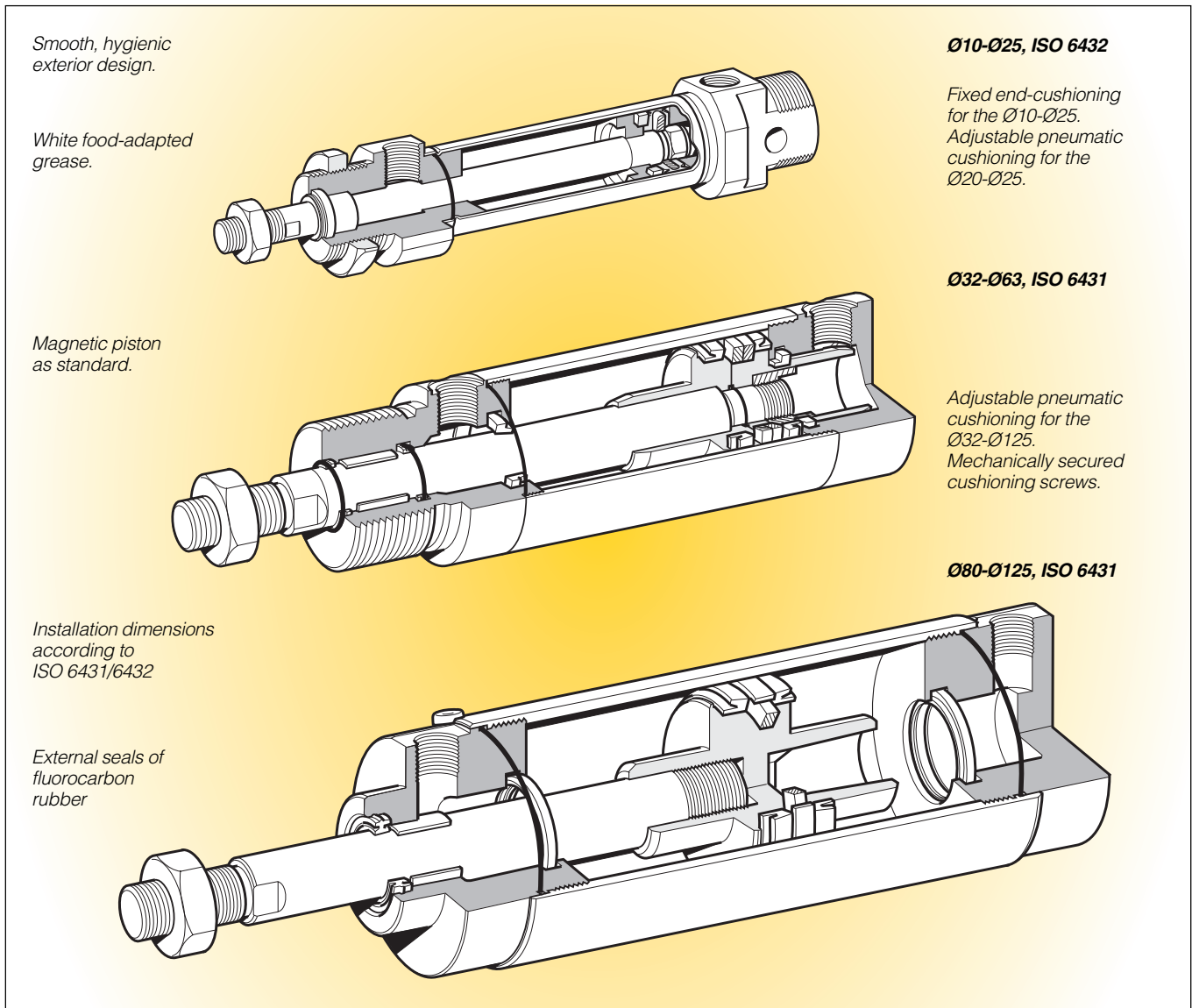
**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

**SALE CONDITIONS**

The items described in this document are available for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. Any sale contract entered into by Parker will be governed by the provisions stated in Parker's standard terms and conditions of sale (copy available upon request).

<b>Contents</b>	<b>Page</b>
Stainless steel cylinders, general information .....	4
P1S-S, ISO 6432, Ø10-Ø25 .....	6
Main data .....	6
Cylinder forces .....	6
Cushioning diagram .....	7
Material specification .....	7
Order key .....	8
Stroke length .....	8
Dimensions .....	9
Mountings .....	10-11
P1S- ISO 6431, Ø32-Ø125 .....	12
Main data .....	12
Cylinder forces .....	12
Cushioning diagram .....	12
Order key .....	13
Stroke length .....	13
Dimensions Ø32-Ø63 .....	14
Material specification Ø32-Ø63 .....	14
Dimensions Ø80-Ø125 .....	15
Material specification Ø80-Ø125 .....	15
Mountings .....	16-19
Sensors .....	20-23
Connecting cables with one connector .....	24
Male connectors for connecting cables .....	24
Ready to use connecting cables with connectors at each end .....	24
Connection block Valvetronic 110 .....	25
Seal kits and grease for P1S cylinders .....	26



**Stainless steel cylinders**

Parker Pneumatic's 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 6431/6432 simplify installation and make the cylinders physically interchangeable throughout the world.

**ISO 6432**

The cylinders are available in two versions. One with fixed end-cushioning and is available in 10, 12, 16, 20 and 25 mm diameters. A single-acting version with spring return in the negative direction, is available in the same diameters.

One version has adjustable pneumatic end-cushioning and is available in 20 and 25 mm diameters.

**ISO 6431-cylinders**

The ISO cylinders are double-acting round cylinders with several types of cylinder mountings as standard. The cylinders are available in 32 to 125 mm diameters, incorporating adjustable end-cushioning. As with the ISO 6432 it is designed to comply with hygiene requirements in accordance with the EU Machine Directive.

The cylinder can be dismantled to facilitate service and maintenance.



### Stainless steel construction

The cylinders are made for use in particularly demanding environments. The piston rod, cylinder tube and end covers are all of stainless steel.

### 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.

### Smooth external design

The end covers have no recesses or other grooves that could collect dirt or liquid. Cleaning is easy and effective.

### Dry operation

Particular attention has been paid to the design of the cylinders' scraper rings, piston rod bearings and piston rod seals. Self-lubricating materials permit regular washing/degreasing of the piston rod. This is important in applications where hygiene and cleaning must be of high standard.

### Proximity position sensing

All cylinders in normal temperature design are fitted with a magnet for proximity position sensing. Electronic type sensors and reed switches are available. They are supplied with either flying lead or cable plug connector.

### Complete range of mountings

A complete range of stainless steel mounting accessories with ISO dimensions is available.

### Variants

In addition to the basic design, several standard variants of these stainless steel cylinders are available to fulfill more demanding requirements in terms of performance and environmental conditions:

Cylinders with special stroke lengths

Cylinders with extended piston rods

Through piston rods (not Ø32-Ø63)

Single-acting cylinders with spring return, (Ø10-Ø25)

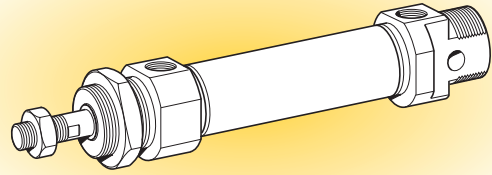
High-temperature versions for operation in temperature range  
Ø10 to Ø16 mm from -10 °C to +120 °C (not magnetic pistons)

Ø20 to Ø125 mm from -10 °C to +150 °C (not magnetic pistons)

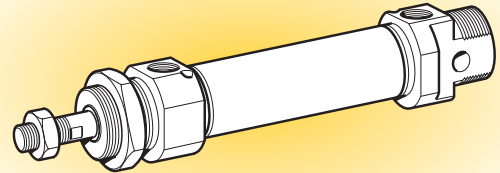
Low-temperature versions for operation in temperature range  
from -40 °C to +60 °C (not magnetic pistons, not Ø32-Ø63)

Cylinders with different mounts (Ø32-Ø125)

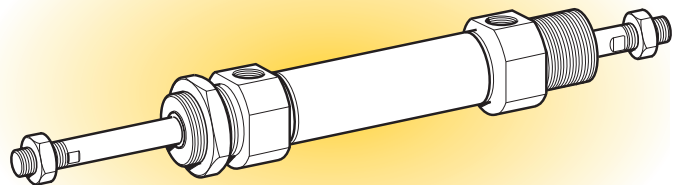
Double acting Ø10-Ø25, fixed end-cushioning



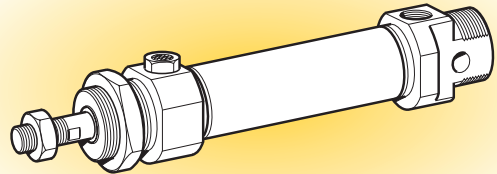
Double acting Ø20-Ø25, adjustable end-cushioning



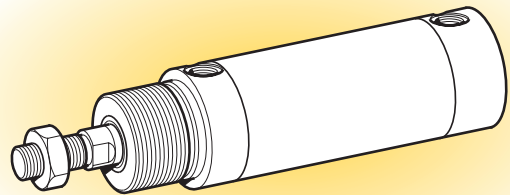
Double acting Ø10-Ø25, through piston rod



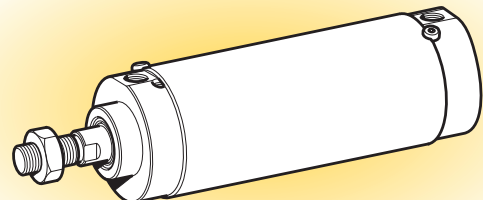
Single acting Ø10-Ø25, spring return



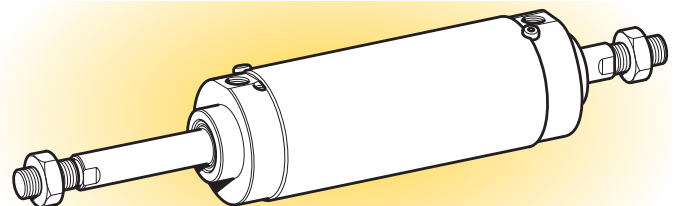
Double acting Ø32-Ø63



Double acting Ø80-Ø125



Double acting Ø80-Ø125, through piston rod



## Main data: P1S-S, ISO 6432

Cylinder designation	Cylinder bore		Piston rod		thread	Total mass		Air consumption	Port thread
	mm	cm <sup>2</sup>	mm	cm <sup>2</sup>		at 0 mm stroke	addition per 10 mm stroke		
						kg	kg	litres	
<b>Double acting with fixed end-cushioning</b>									
P1S-S010D	10	0,78	4	0,13	M4	0,04	0,003	0,0100 <sup>1)</sup>	M5
P1S-S012D	12	1,13	6	0,28	M6	0,07	0,004	0,0139 <sup>1)</sup>	M5
P1S-S016D	16	2,01	6	0,28	M6	0,09	0,005	0,0262 <sup>1)</sup>	M5
P1S-S020D	20	3,14	8	0,50	M8	0,18	0,007	0,0405 <sup>1)</sup>	G1/8
P1S-S025D	25	4,91	10	0,78	M10x1,25	0,25	0,011	0,0633 <sup>1)</sup>	G1/8
<b>Double acting with adjustable end-cushioning</b>									
P1S-S020M	20	3,14	8	0,50	M8	0,18	0,007	0,0405 <sup>1)</sup>	G1/8
P1S-S025M	25	4,91	10	0,78	M10x1,25	0,25	0,011	0,0633 <sup>1)</sup>	G1/8
<b>Single acting:</b>									
P1S-S010SS	10	0,78	4	0,13	M4	0,04	0,003	0,0055 <sup>1)</sup>	M5
P1S-S012SS	12	1,13	6	0,28	M6	0,08	0,004	0,0079 <sup>1)</sup>	M5
P1S-S016SS	16	2,01	6	0,28	M6	0,10	0,005	0,0141 <sup>1)</sup>	M5
P1S-S020SS	20	3,14	8	0,50	M8	0,18	0,007	0,0220 <sup>1)</sup>	G1/8
P1S-S025SS	25	4,91	10	0,78	M10x1,25	0,26	0,011	0,0344 <sup>1)</sup>	G1/8

1) Free air consumption per 10 mm stroke length for a double stroke at 600 kPa (6 bar)

## Cylinder forces

Indicated cylinder forces are theoretical and should be reduced according to the working conditions.

Cylinder designation	Cylinder bore	Theoretical cylinder force at 600 kPa (6 bar)		Cylinder designation	Theoretical cylinder force at 600 kPa (6 bar)			
		exp. stroke	retraction stroke		expanding stroke		spring retraction	
	mm	N	N		Nmax	Nmin	Nmax	Nmin
<b>Double acting</b>				<b>Single acting</b>				
P1S-S010D	10	47	39	P1S-S010SS-0010	38	36	11	9
P1S-S012D	12	67	50	P1S-S010SS-0015	38	36	11	9
P1S-S016D	16	120	103	P1S-S010SS-0025	39	36	11	8
P1S-S020D	20	188	158	P1S-S010SS-0040	38	34	13	9
P1S-S025D	25	294	247	P1S-S010SS-0050	39	34	13	8
				P1S-S010SS-0080	39	34	13	8
P1S-S020M	20	188	158	P1S-S012SS-0010	53	51	16	14
P1S-S025M	25	294	247	P1S-S012SS-0015	53	51	16	14
				P1S-S012SS-0025	55	51	16	12
				P1S-S012SS-0040	52	48	19	15
				P1S-S012SS-0050	53	48	19	14
				P1S-S012SS-0080	55	48	19	12
				P1S-S016SS-0010	102	99	21	18
				P1S-S016SS-0015	103	99	21	17
				P1S-S016SS-0025	105	99	21	15
				P1S-S016SS-0040	106	95	25	14
				P1S-S016SS-0050	108	95	25	12
				P1S-S016SS-0080	107	95	25	13
				P1S-S020SS-0010	163	161	27	25
				P1S-S020SS-0015	164	161	27	24
				P1S-S020SS-0025	167	161	27	21
				P1S-S020SS-0040	166	159	29	22
				P1S-S020SS-0050	168	159	29	20
				P1S-S020SS-0080	170	161	27	18
				P1S-S025SS-0010	256	253	41	38
				P1S-S025SS-0015	258	253	41	36
				P1S-S025SS-0025	262	253	41	32
				P1S-S025SS-0040	261	250	44	33
				P1S-S025SS-0050	264	250	44	30
				P1S-S025SS-0080	264	251	43	30

## Additional data

Working pressure	max 1000 kPa (10 bar)
Working temperature	max +80 °C min -20 °C
High-temperature version	max +120 °C (Ø10 - Ø 16 mm) max +150 °C (Ø20 - Ø 25 mm) min -10 °C
Low-temperature version	max +60 °C min -40 °C

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

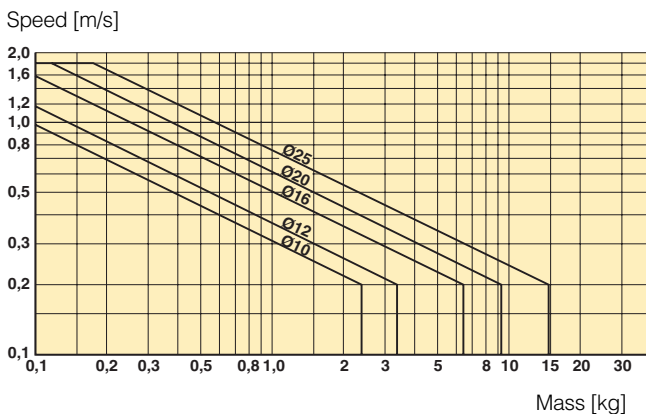
### Cushioning diagram

Use the diagram below to determine the necessary size of cylinder to provide the requisite cushioning performance. The maximum cushioning performance, as indicated in the diagram, is based on the following assumptions:

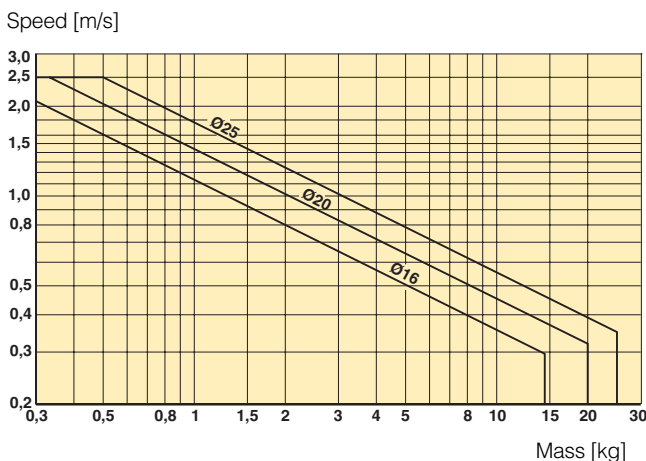
- Low load, i.e. low pressure drop across the piston
- Steady-state piston speed
- Correctly adjusted cushioning screw

The load is the sum of the internal and external friction, together with any gravity forces. At high relative loading it is recommended that, for a given speed, the load should be reduced by a factor of 2.5, or that, for a given mass, the speed should be reduced by a factor of 1.5. These factors apply in relation to the maximum performance as shown in the diagram.

Fixed end-cushioning



Adjustable pneumatic end-cushioning



### Material specification Ø10-Ø25

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

### Variants Ø10-Ø25:

#### Low-temperature version, type L

Piston rod seal	NBR
Piston, complete	NBR/steel

#### High-temperature version, type F

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

### Working medium, air quality

Working medium Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

### Recommended air quality for cylinders

For best possible service life and trouble-free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5 µm filter (standard filter) dew point +3 °C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m<sup>3</sup>, which is what a standard compressor with a standard filter gives.



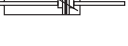


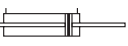

### ISO 8573-1 quality classes

Quality class	Pollution particle size (µm)	max concentration (mg/m <sup>3</sup> )	Water max. press. dew point (°C)	Oil max concentration (mg/m <sup>3</sup> )
1	0,1	0,1	-70	0,01
2	1	1	-40	0,1
3	5	5	-20	1,0
4	15	8	+3	5,0
5	40	10	+7	25
6	-	-	+10	-

**Order key**



<b>P1S - S</b>	<b>016</b>	<b>M</b>	<b>S</b>	<b>-</b>	<b>0025</b>
----------------	------------	----------	----------	----------	-------------

Cylinder bore mm
010
012
016
020
025

Cylinder type/Function		
<b>M</b>		Double acting, adjustable cushioning Ø20 - Ø25 Not for sealing material type F and L
<b>D</b>		Double acting, fixed cushioning Ø10 - Ø25
<b>F</b>		Double acting, adjustable cushioning, through piston rod, Ø20 - Ø25 Not for sealing material type F and L
<b>K</b>		Double acting, fixed cushioning, through piston rod, Ø10 - Ø25
<b>H</b>		Double acting, adjustable cushioning, through piston rod (hollow), Ø20 - Ø25, max stroke 125 mm Not for sealing material type F and L
<b>P</b>		Double acting, fixed cushioning, through piston rod (hollow), Ø20 - Ø25, max stroke 125 mm
<b>S</b>		Single acting, fixed cushioning, spring return for retract stroke, Ø10 - Ø25

Stroke in mm
E.g. 0025 = 25 mm For standard stroke length and max length, see table below

Cylinder version	
<b>S</b>	Standard cylinder acc. to Cylinder type/Function

Sealing material	
<b>S</b>	Standard, -20 °C to +80 °C Magnetic piston
<b>F</b>	 High temperature, -10 °C to +120 °C Ø10 - Ø16 mm -10 °C to +150 °C Ø20 - Ø25 mm Non magnetic piston
<b>L</b>	 Low temperature, -40 °C to +60 °C Non magnetic piston

**Stroke length**

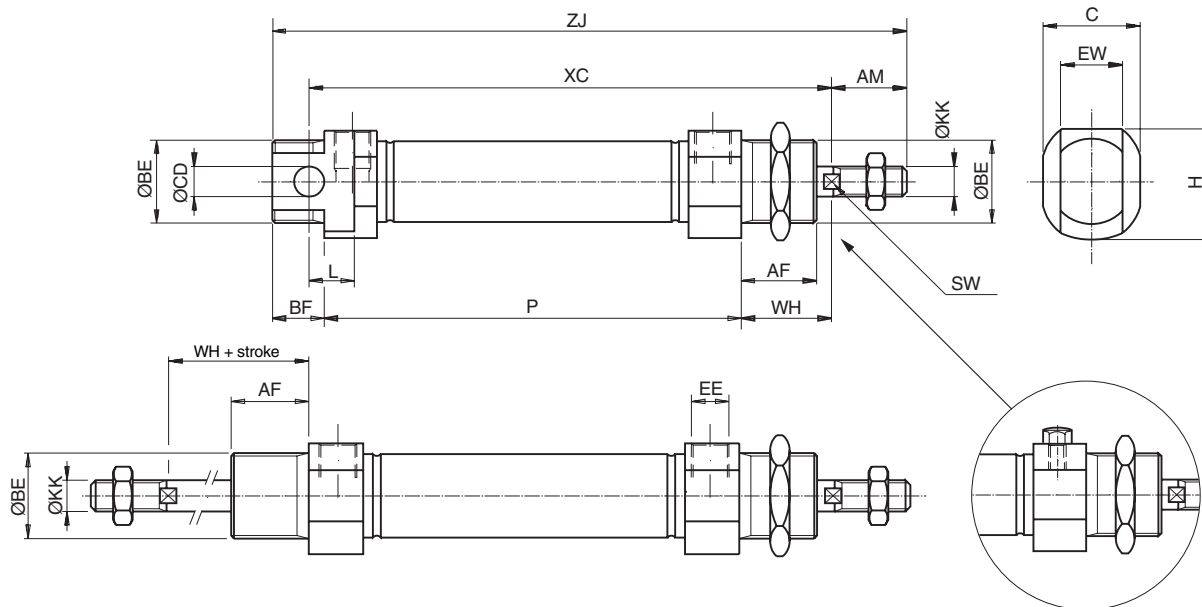
Cylinder designation	Cylinder bore	● Standard stroke length in mm													■ Non standard stroke length				
		10	15	20	25*	30	40	50*	80*	100*	125*	160*	200*	250*	320*	400*	500*		
<b>Double acting with fixed end-cushioning:</b>																			
P1S-S 010 D	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
P1S-S 012 D	12	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
P1S-S 016 D	16	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
P1S-S 020 D	20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
P1S-S 025 D	25	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
<b>Double acting with adjustable end-cushioning:</b>																			
P1S-S 020 M	20			●	●	●	●	●	●	●	●	●	●	●	●	●	●		
P1S-S 025 M	25			●	●	●	●	●	●	●	●	●	●	●	●	●	●		
<b>Single acting:</b>																			
P1S-S 010 SS	10	●	●		●		●		●		●		●		●		●		
P1S-S 012 SS	12	●	●		●		●		●		●		●		●		●		
P1S-S 016 SS	16	●	●		●		●		●		●		●		●		●		
P1S-S 020 SS	20	●	●		●		●		●		●		●		●		●		
P1S-S 025 SS	25	●	●		●		●		●		●		●		●		●		

\*Standard stroke length in mm according to ISO 4393



**CAD drawings on the Internet**

Our home page [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic) includes the AirCad Drawing Library with 2D and 3D drawings for the main versions.



**Dimensions**

Cyl. 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	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.

**Refer to order code when ordering cylinders**

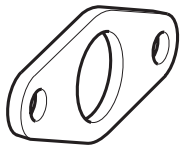
See Order key on page 8



## Cylinder mountings

Type Description Cyl. bore  $\varnothing$  mm Weight kg Order code

### Flange-MF8

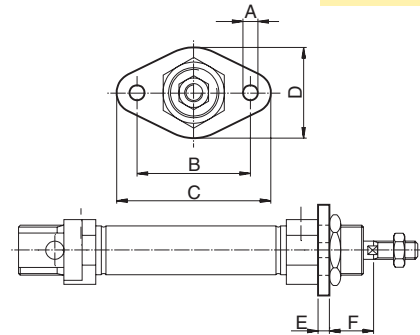


Intended for fixed attachment of the cylinder. The flange is designed for mounting on the front or rear end-covers.

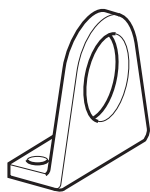
Material:  
Stainless steel, DIN X 10 CrNiS 18 9

10 0,012 **P1S-4CMB**  
12-16 0,025 **P1S-4DMB**  
20-25 0,045 **P1S-4HMB**

Cylinder $\varnothing$ mm	A mm	B mm	C mm	D mm	E mm	F mm
10	4,5	30	40	22	3	13
12-16	5,5	40	52	30	4	18
20	6,6	50	66	40	5	19
25	6,6	50	66	40	5	23



### Foot-MS3

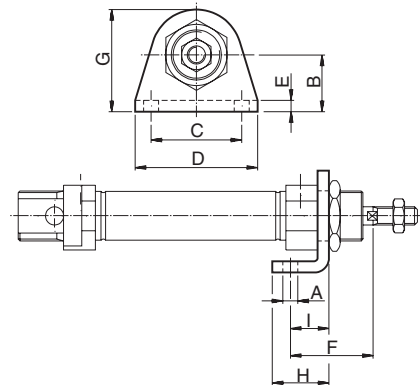


Intended for fixed attachment of the cylinder. The bracket is designed for mounting on the front or rear end-covers.

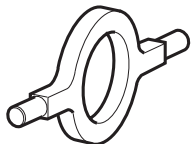
Material:  
Stainless steel, DIN X 10 CrNiS 18 9

10 0,020 **P1S-4CMF**  
12-16 0,040 **P1S-4DMF**  
20-25 0,080 **P1S-4HMF**

Cylinder $\varnothing$ mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
10	4,5	16	25	35	3	24	26	16	11
12-16	5,5	20	32	42	4	32	32,5	20	14
20	6,5	25	40	54	5	36	45	25	17
25	6,5	25	40	54	5	40	45	25	17



### Cover trunnion

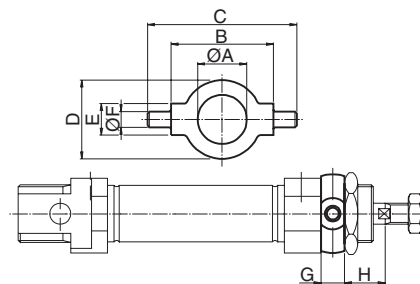


Intended for articulated mounting of the cylinder. The flange is designed for mounting on the front or rear end-covers.

Material:  
Stainless steel, DIN X 10 CrNiS 18 9

10 0,014 **P1A-4CMJ**  
12-16 0,033 **P1A-4DMJ**  
20-25 0,037 **P1A-4HMJ**

Cylinder $\varnothing$ mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm
10	12,5	26	38	20	8	4	6	10
12-16	16,5	38	58	25	10	6	8	14
20	22,5	46	66	30	10	6	8	16
25	22,5	46	66	30	10	6	8	20



### Mounting nut

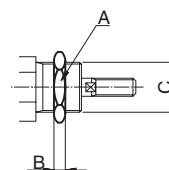


Intended for fixed mounting of the cylinder. Cylinders are supplied complete with one mounting nut.

Material:  
Stainless steel, DIN X 5 CrNi 18 10

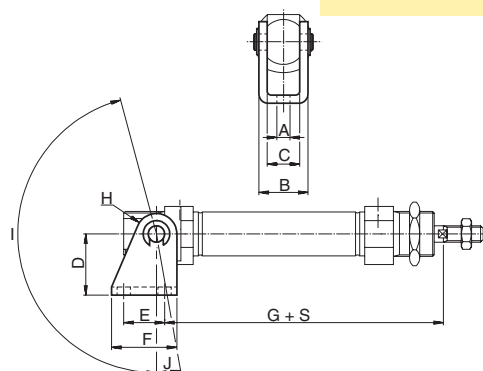
10 0,009 **9127385111**  
12-16 0,018 **9127385112**  
20-25 0,042 **9127385113**

Cylinder $\varnothing$ mm	A mm	B mm	C
10	16	3	M12x1,25
12-16	20	4	M16x1,50
20-25	27	5	M22x1,50



## Cylinder mountings

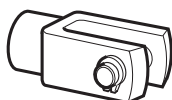
Type	Description	Cyl. bore Ø mm	Weight kg	Order code
<b>Clevis bracket</b>	Intended for articulated mounting of the cylinder. Supplied with shaft for mounting on the rear end cover.  Material: Bracket: stainless steel, DIN X 5 CrNi 18 10 Pin: tempered stainless steel, DIN X 20 Cr 13 Locking rings: stainless steel, DIN X 5 CrNi 18 10	10	0,020	<b>P1S-4CMT</b> <b>P1S-4DMT</b> <b>P1S-4HMT</b>
		12-16	0,040	
		20-25	0,080	



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

S=stroke

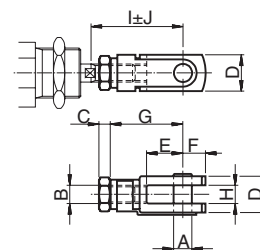
## Clevis



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

10	0,007	<b>P1S-4CRD</b> <b>P1S-4DRD</b> <b>P1S-4HRD</b> <b>P1S-4JRD</b>
12-16	0,022	
20	0,045	
25	0,095	



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

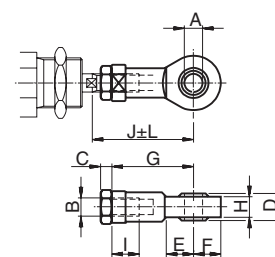
## Swivel rod eye



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

10	0,017	<b>P1S-4CRT</b> <b>P1S-4DRT</b> <b>P1S-4HRT</b> <b>P1S-4JRT</b>
12-16	0,025	
20	0,045	
25	0,085	



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
10	5	M4	2,2	8	10	9	27	6	8	33	9	2
12-16	6	M6	3,2	9	10	10	30	6,8	9	38,5	11	1,5
20	8	M8	4	12	12	12	36	9	12	46	14	2
25	10	M10x1,25	5	14	14	14	43	10,5	15	52,5	17	2,5

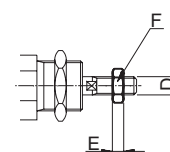
## Rod nut



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

10	0,001	<b>9127385121</b> <b>9127385122</b> <b>9127385123</b> <b>9126725404</b>
12-16	0,002	
20	0,005	
25	0,007	



Cylinder Ø mm	D	F mm	E mm
10	M4	7	2,2
12-16	M6	10	3,2
20	M8	13	4
25	M10x1,25	17	5

## Main data: ISO 6431

Cylinder designation	Cylinder		Piston rod			Cushioning distance	Total mass		Moving mass		Air consumption	Port thread
	bore	area	diam.	area	thread		at 0 mm stroke	addition per 10 mm stroke	at 0 mm stroke	addition per 10 mm stroke		
	mm	cm <sup>2</sup>	mm	cm <sup>2</sup>		mm	kg	kg	kg	kg	litres	
P1S-•032M	32	8,0	12	1,1	M10x1,25	15	0,59	0,026	0,10	0,009	0,105 <sup>1)</sup>	G1/8
P1S-•040M	40	12,6	16	2,0	M12x1,25	18	0,99	0,036	0,19	0,016	0,162 <sup>1)</sup>	G1/4
P1S-•050M	50	19,6	20	3,1	M16x1,5	19	1,63	0,057	0,32	0,024	0,253 <sup>1)</sup>	G1/4
P1S-•063M	63	31,2	20	3,1	M16x1,5	22	2,75	0,065	0,36	0,024	0,414 <sup>1)</sup>	G3/8
P1S-•080M	80	50,3	25	4,9	M20x1,5	24	5,09	0,099	1,11	0,039	0,669 <sup>1)</sup>	G3/8
P1S-•100M	100	78,5	25	4,9	M20x1,5	29	8,68	0,115	1,41	0,039	1,043 <sup>1)</sup>	G1/2
P1S-•125M	125	122,7	32	8,0	M27x2	32	15,31	0,174	2,90	0,063	1,662 <sup>1)</sup>	G1/2

1) Free air consumption per 10 mm stroke length for a double stroke at 600 kPa (6 bar)

## Cylinder forces

Indicated cylinder forces are theoretical and should be reduced in relation to working conditions.

Cylinder designation	Theoretical cylinder force at 600 kPa (6 bar)	
	exp. stroke	return stroke
	N	N
P1S-•032M	480	415
P1S-•040M	754	633
P1S-•050M	1180	990
P1S-•063M	1870	1680
P1S-•080M	3016	2721
P1S-•100M	4712	4417
P1S-•125M	7363	6880

## Working medium, air quality

Working medium Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

### Recommended air quality for cylinders

For best possible service life and trouble-free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5 µm filter (standard filter) dew point +3 °C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m<sup>3</sup>, which is what a standard compressor with a standard filter gives.

### ISO 8573-1 quality classes

Quality class	Pollution		Water max. press. dew point (°C)	Oil max concentration (mg/m <sup>3</sup> )
	particle size (µm)	max concentration (mg/m <sup>3</sup> )		
1	0,1	0,1	-70	0,01
2	1	1	-40	0,1
3	5	5	-20	1,0
4	15	8	+3	5,0
5	40	10	+7	25
6	-	-	+10	-

## Additional data

Working pressure max 10 bar  
Working temperature max +80 °C  
min -20 °C

High-temperature version max +150 °C  
min -10 °C

Low-temperature version max +40 °C  
min -40 °C  
Ø80 - Ø125

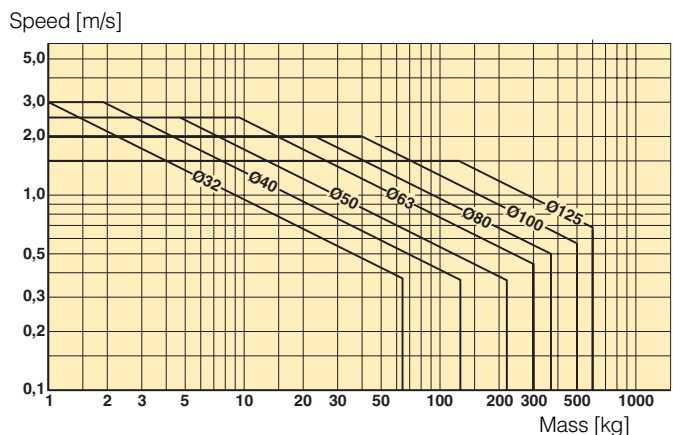
Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

## Cushioning diagram

Use the diagram below to determine the necessary size of cylinder to provide the requisite cushioning performance. The maximum cushioning performance, as indicated in the diagram, is based on the following assumptions:

- Low load, i.e. low pressure drop across the piston
- Steady-state piston speed
- Correctly adjusted cushioning screw

The load is the sum of the internal and external friction, together with any gravity forces. At high relative loading it is recommended that, for a given speed, the load should be reduced by a factor of 2.5, or that, for a given mass, the speed should be reduced by a factor of 1.5. These factors apply in relation to the maximum performance as shown in the diagram.



Order key

P
1
S
-
D

0
3
2

M

S
-
0
0
2
5

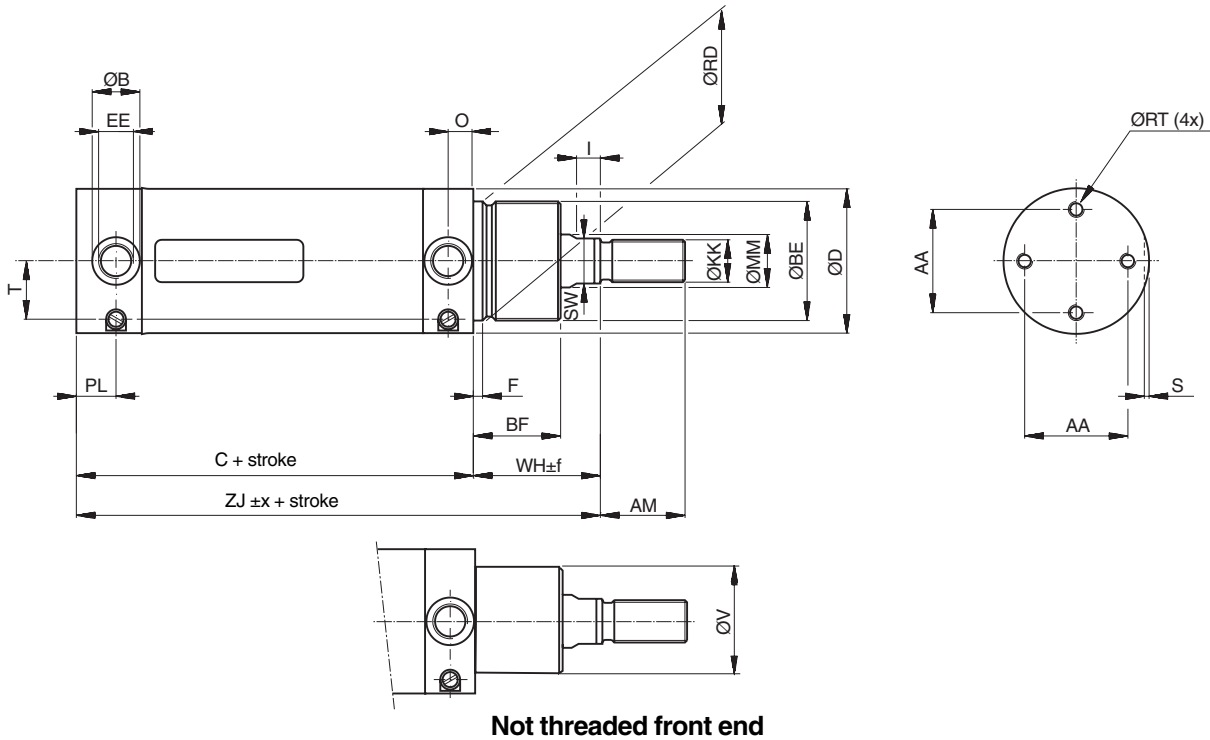
Cylinder version		Cylinder bore mm	Cylinder type/Function		Stroke in mm	Sealing material	
<b>A</b>	Trunnion pegs in front end cover, only Ø80 - Ø125	<b>032</b>	<b>M</b>	Double acting, adjustable cushioning	E.g. <b>0025</b> = 25 mm For standard stroke length and max length, see table below	<b>S</b>	Standard, -20 °C to +80 °C Magnetic piston
<b>B</b>	Trunnion pegs in rear end cover, only Ø80 - Ø125	<b>040</b>	<b>F</b>	Double acting, adjustable cushioning, through piston rod, only Ø80 - Ø125		<b>F</b>	High temperature, -10 °C to +150 °C Non magnetic piston
<b>C</b>	Threaded front end	<b>050</b>				<b>L</b>	Low temperature, -40 °C to +60 °C Non magnetic piston only Ø80 - Ø125
<b>D</b>	Threaded front end + 4 mounting holes in rear end cover	<b>063</b>				<b>Q</b>	Stainless steel scraper for piston rod -20 °C to +80 °C Magnetic piston only Ø80 - Ø125
<b>E</b>	4 mounting holes in front end cover, only Ø80 - Ø125	<b>080</b>					
<b>F</b>	4 mounting holes in rear end cover	<b>100</b>					
<b>J</b>	2 mounting holes in front end cover, only Ø80 - Ø125	<b>125</b>					
<b>K</b>	2 mounting holes in rear end cover	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Ø32 - Ø63 Cylinder version <b>K</b></p> </div> <div style="text-align: center;"> <p>Ø80 - Ø125 Cylinder version <b>J, K, M, Q, V</b></p> </div> </div>					
<b>L</b>	4 mounting holes in front and rear end cover, only Ø80 - Ø125						
<b>M</b>	4 mounting holes in front and 2 in rear end cover, only Ø80 - Ø125						
<b>Q</b>	2 mounting holes in front and 4 in rear end cover, only Ø80 - Ø125						
<b>V</b>	2 mounting holes in front and rear end cover, only Ø80 - Ø125						

Stroke length

Cylinder designation	Cylinder bore	● Standard stroke length in mm according to ISO 4393											Non standard stroke length
		25	50	80	100	125	160	200	250	320	400	500	
P1S-•032M	32	●	●	●	●	●	●	●	●	●	●	●	
P1S-•040M	40	●	●	●	●	●	●	●	●	●	●	●	
P1S-•050M	50	●	●	●	●	●	●	●	●	●	●	●	
P1S-•063M	63	●	●	●	●	●	●	●	●	●	●	●	
P1S-•080M	80	●	●	●	●	●	●	●	●	●	●	●	
P1S-•100M	100	●	●	●	●	●	●	●	●	●	●	●	
P1S-•125M	125	●	●	●	●	●	●	●	●	●	●	●	

**CAD drawings on the Internet**

Our home page [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic) includes the AirCad Drawing Library with 2D and 3D drawings for the main versions.



**Not threaded front end**

**Dimensions Ø32-Ø63**

Cylinder designation	AA	AM	B	BF	BE	C	D	EE	F	I	KK	MM	O	PL	RD	RT
	mm	mm	mm	mm		mm	mm		mm	mm		mm	mm	mm	mm	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	SW	T	V	WH	ZJ	Mounting tolerances		Stroke length
	mm	mm	mm	mm	mm	mm	x	f	0-500 mm
	mm	mm	mm	mm	mm	mm	mm	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

**Material specification Ø32-Ø63**

Piston rod	Stainless steel, DIN X 2 CrNiMo 17 13 2
Piston rod nut	Stainless steel, DIN X 5 CrNi 18 10
Piston rod seal	UHMWPE-plastic/NBR
Scraper ring	UHMWPE-plastic/fluorocarbon rubber, FPM
Piston rod bearing	HDPE-plastic
End covers	Stainless steel, DIN X 5 CrNi 18 10
Cushioning screw	Stainless steel, DIN X 10 CrNiS 18 9
Cushioning screw lockings	Stainless steel, DIN X 5 CrNi 18 10
Cushioning sealing	NBR
O-ring, cushioning screw	Fluorocarbon, FPM
O-ring, internal	NBR
Cylinder barrel	Stainless steel, DIN X 5 CrNi 18 10
Piston	POM plastic
Piston seal	NBR
Piston nut	Zinc plated steel
Magnet	Plastic-coated magnetic material

**Variants Ø32-Ø63:**

High-temperature version, type F:	
Sealings/scraper ring	Fluorocarbon rubber, FPM
Piston	Anodized aluminium

**Refer to order code when ordering cylinders**

See Order key on page 13

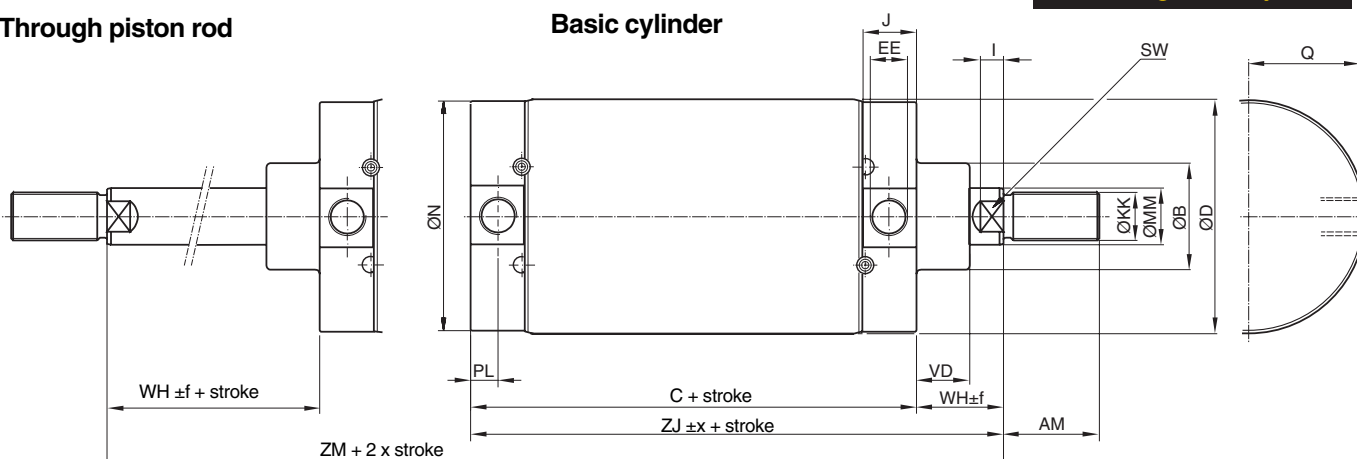
### CAD drawings on the Internet

Our home page [www.parker.com/euro\\_pneumatic](http://www.parker.com/euro_pneumatic) includes the AirCad Drawing Library with 2D and 3D drawings for the main versions.



### Through piston rod

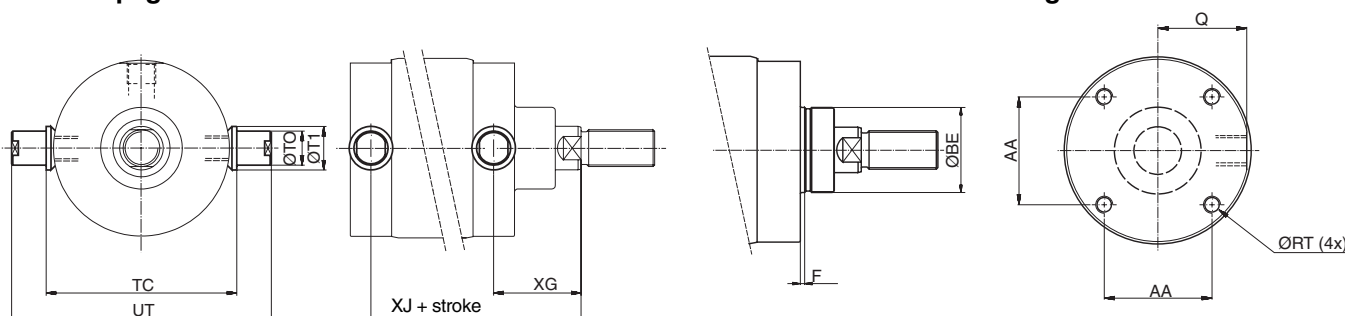
### Basic cylinder



### Trunnion pegs on front or rear end cover

### Threaded front end

### Mounting holes in the end covers



### Dimensions Ø80-Ø125

Cylinder designation	AA	AM	B	BE	C	D	EE	F	KK	I	J	MM	N	PL	Q
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
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.		Stroke length
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	x	f	0-500 mm
													mm	mm	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

### Material specification Ø80-Ø125

Piston rod	Stainless steel, DIN X 2 CrNiMo 17 13 2
Piston rod nut	Stainless steel, DIN X 5 CrNi 18 10
Piston rod seal	FPM
Scraper ring	PTFE
Piston rod bearing	Multilayer PTFE and steel
End covers	Stainless steel, DIN X 5 CrNi 18 10
Cushioning screw	Stainless steel, DIN X 10 CrNiS 18 9
Cushioning sealing	NBR
O-ring, cushioning screw	Fluorocarbon, FPM
O-ring, internal	NBR
Cylinder barrel	Stainless steel, DIN X 5 CrNi 18 10
Piston	Anodized aluminium
Piston seal	NBR
Piston bearing	UHMWPE-plastic
Piston nut	Zinc-plated steel
Magnetic band	Rubber-coated magnetic material

### Variants Ø80-Ø125:

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

Sealings/scraper ring NBR/PTFE

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

Sealings/scraper ring Fluorocarbon rubber, FPM/PTFE

#### Cylinders with steel scraper ring, type Q:

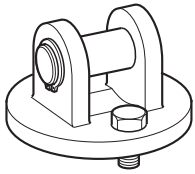
Sealings/scraper ring NBR/Stainless steel

### Refer to order code when ordering cylinders

See Order key on page 13

## Cylinder mountings Ø32 - Ø63

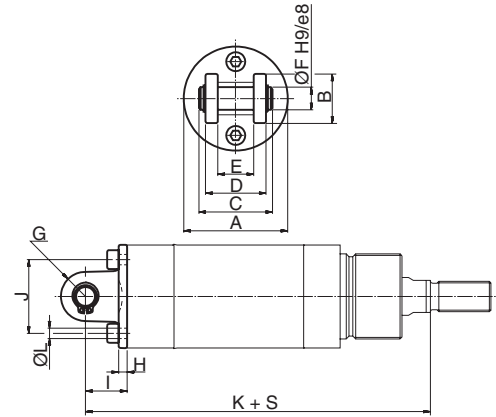
Type	Description	Cyl. bore Ø mm	Weight kg	Order code
<b>Clevis bracket MP4</b>	Intended for articulated mounting of the cylinder versions D, F or K. The bracket is mounted at the rear end cover and is supplied complete with shaft, mounting screw and O-ring for a clean joint between end cover and bracket.	32	0,09	<b>P1S-4KME</b> <b>P1S-4LME</b> <b>P1S-4MME</b> <b>P1S-4NME</b>
		40	0,12	
		50	0,19	
		63	0,34	



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
32	35,5	20	33	26	15	10	10	4,5	18,5	25	142	5,5
40	43,5	24	35	28	17	12	12	4	19	30	160	6,5
50	54,5	26	39	32	17	12	13	4,5	22	39	170	6,5
63	67,5	34	47	40	22	16	17	6	26	49	190	8,6

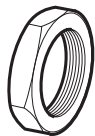
S = Stroke



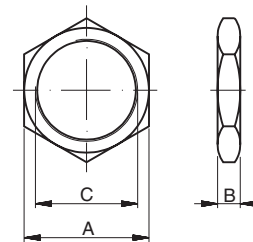
## Mounting nut

Intended for fixed mounting of the cylinder via the neck.

Material: stainless steel, DIN X 5 CrNi 18 10



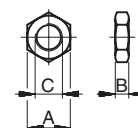
Cylinder Ø mm	A mm	B mm	C
32	36	8	M30x1,5
40	46	10	M38x1,5
50	55	10	M45x1,5
63	55	10	M45x1,5



## Cylinder mountings Ø32-Ø125

Type	Description	Cyl. bore Ø mm	Weight kg	Order code
<b>Rod nut</b>	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.)	32	0,01	<b>9126725404</b> <b>9126725405</b> <b>9126725406</b> <b>0261109921</b> <b>0261109922</b>
		40	0,01	
		50-63	0,02	
		80-100	0,04	
		125	0,10	
		Material: Stainless steel, DIN X 5 CrNi 18 10		

Cylinder Ø mm	A mm	B mm	C
32	17	5	M10x1,25
40	19	6	M12x1,25
50	24	8	M16x1,5
63	24	8	M16x1,5
80	30	10	M20x1,5
100	30	10	M20x1,5
125	41	13,5	M27x2

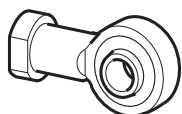




## Cylinder mountings Ø32 - Ø125

Type	Description	Cyl. bore Ø mm	Weight kg	Order code
------	-------------	-------------------	--------------	------------

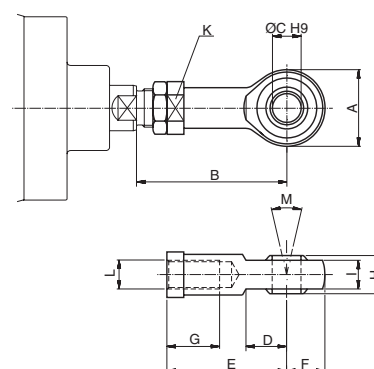
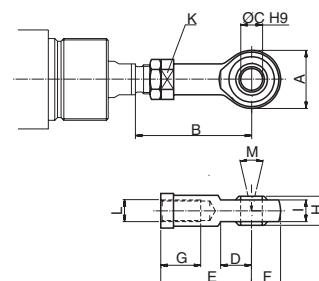
### Swivel rod eye



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

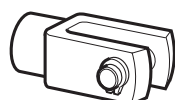
Material:  
Swivel rod eye: stainless steel, DIN X 5 CrNi 18 10  
Ball: hardened stainless steel, DIN X 5 CrNi 18 10

32	0,08	<b>P1S-4JRT</b> <b>P1S-4LRT</b> <b>P1S-4MRT</b> <b>P1S-4PRT</b> <b>P1S-4RRT</b>
40	0,12	
50-63	0,25	
80-100	0,46	
125	1,28	



Cyl. Ø mm	A mm	B <sub>min</sub> mm	B <sub>max</sub> mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	K mm	L	M
32	28	50	55	10	15	43	14	15	14	10,5	17	M10x1,25	24°
40	32	56	62	12	17	50	16	22	16	12	19	M12x1,25	24°
50	42	72	80	16	22	64	21	28	21	15	22	M16x1,5	30°
63	42	72	80	16	22	64	21	28	21	15	22	M16x1,5	30°
80	50	87	97	20	26	77	25	33	25	18	32	M20x1,5	30°
100	50	87	97	20	26	77	25	33	25	18	32	M20x1,5	30°
125	70	123,5	137	30	36	110	35	51	37	25	41	M27x2	30°

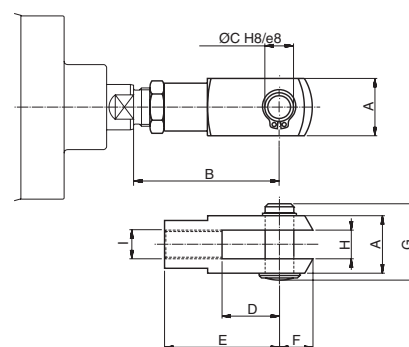
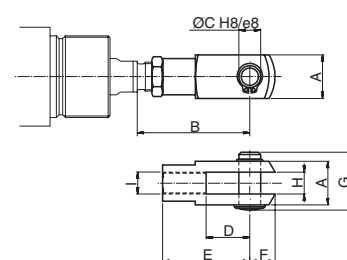
### Clevis



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

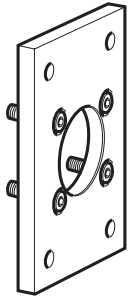
32	0,09	<b>P1S-4JRD</b> <b>P1S-4LRD</b> <b>P1S-4MRD</b> <b>P1S-4PRD</b> <b>P1S-4RRD</b>
40	0,15	
50-63	0,35	
80-100	0,75	
125	2,10	



Cylinder Ø mm	A mm	B <sub>min</sub> mm	B <sub>max</sub> mm	C mm	D mm	E mm	F mm	G mm	H mm	I
32	20	46	52	10	20	40	12	28	10	M10x1,25
40	24	54	60	12	24	48	19	32	12	M12x1,25
50	32	72	80	16	32	64	25	42	16	M16x1,5
63	32	72	80	16	32	64	25	42	16	M16x1,5
80	40	90	100	20	40	80	32	50	20	M20x1,5
100	40	90	100	20	40	80	32	50	20	M20x1,5
125	55	123,5	137	30	54	110	45	72	30	M27x2

## Cylinder mountings

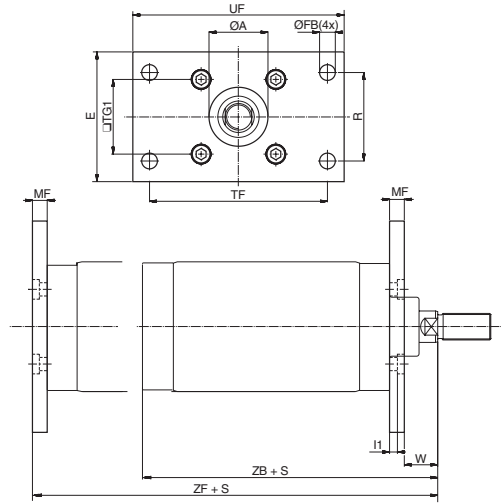
Type	Description	Cyl. bore Ø mm	Weight kg	Order code
<b>Flange MF1/MF2</b>	Intended for fixed attachment of cylinder version D, E, F, L, M or Q. The flange is designed for mounting on the front or rear end covers.	80 100 125	0,97 1,42 1,55	<b>P1S-4PMB</b> <b>P1S-4QMB</b> <b>P1S-4RMB</b>



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
80	50,2	12	86	63	126	46	150	12	6	25	178	190
100	51	14	106	75	150	60	170	12	6	23	193	205
125	61	16	132	90	180	76	205	15	8	32	230	245

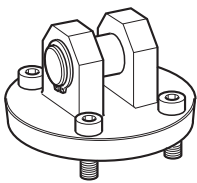
S = Stroke



## 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.

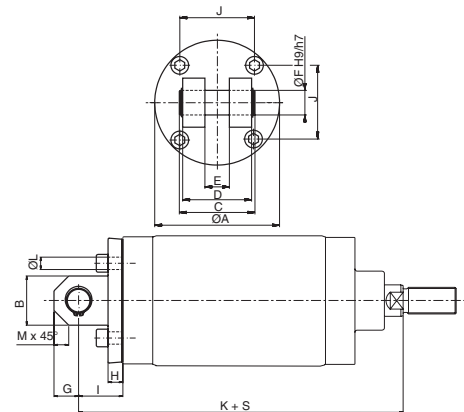
80	0,78	<b>P1S-4PME</b>
100	1,42	<b>P1S-4QME</b>
125	2,06	<b>P1S-4RME</b>



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
80	80	30	57	50	16	16	15	12	32	46	210	8,6	9
100	103	42	67	60	20	20	21	12	37	60	230	10,6	12
125	127	50	77	70	25	25	25	15	45	76	275	12,6	15

S = Stroke



## Mounting nut

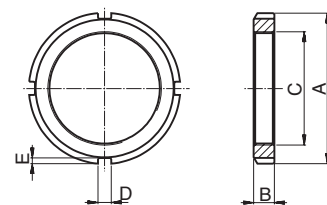
Intended for fixed mounting on the front end cover of cylinders according to cylinder version C or D.

80-100	0,16	<b>9126461304</b>
125	0,19	<b>9126461305</b>



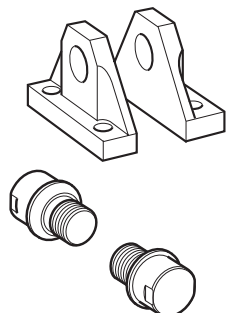
Material:  
Stainless steel, DIN X 5 CrNi 18 10

Cylinder Ø mm	A mm	B mm	C	D mm	E mm
80	70	11	M50x1,5	6	2,5
100	70	11	M50x1,5	6	2,5
125	80	11	M60x2	7	3

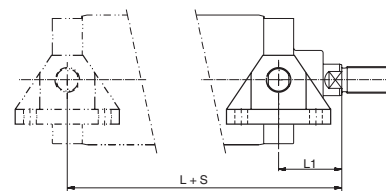
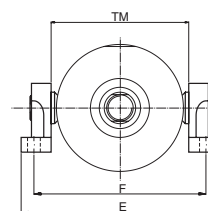
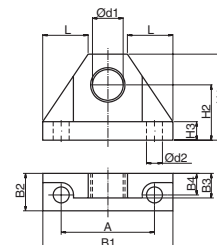


## Cylinder mountings

Type	Description	Cyl. bore Ø mm	Weight kg	Order code
<b>Bearing bracket for trunnion pegs</b>	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.	80 100-125	0,90 1,30	<b>P1S-4PMW</b> <b>P1S-4QMW</b>



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	B1	B2	B3	B4	d1	d2	H1	H2	H3	L
80	60	90	28	15	15,5	20	11	58	37	12	34,5
100-125	76	106	30	20	17,5	25	13	70	45	15	40

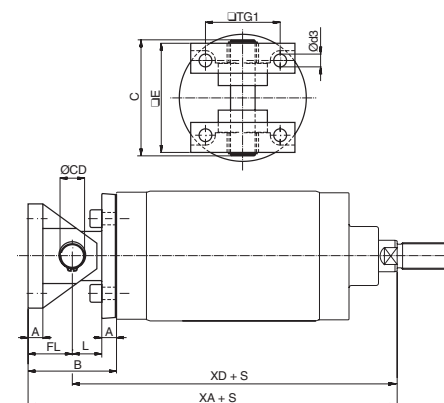
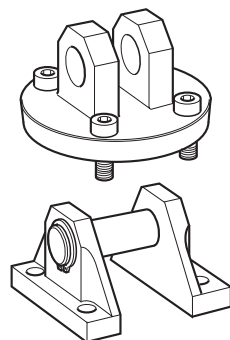
Cylinder Ø mm	E	F	L1	L2	TM
80	154	129	49,5	165,5	98
100	169	144	50,5	177,5	109
125	194	169	63	214	134

S = Stroke

## Combinated 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	B	C	CD	d3	E	FL	L	TG1	XA	XD
80	12	64	82	16	9	74	32	20	46	242	210
100	12	74	98	20	11	90	37	25	60	267	230
125	15	90	118	25	13	110	45	30	76	320	275

S = Stroke

## Our global series of sensors

This series of sensors is already being used or will be used in all future ranges in our global product programme involving cylinders/actuators. The sensors have small installation dimensions and either fit into the groove in the case profile or, as shown here, are fastened to the cylinder using a special attachment. You can choose from electronic or reed sensors with a range of cable lengths fitted with 8 mm or M12 terminals.



## 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	Sensor mounting P8S-TMC01
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 mm <sup>2</sup> see order code respectively

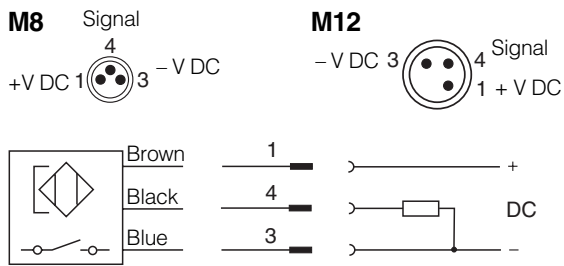
## Reed sensors

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.

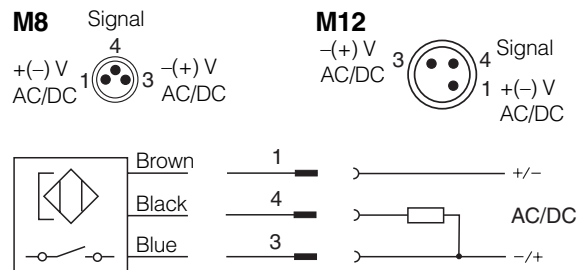
### Technical data

Design	Reed element
Mounting	Sensor mounting P8S-TMC01
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 mm <sup>2</sup> see order code respectively

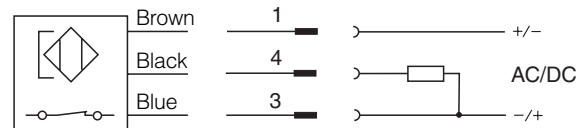
## Electronic sensors



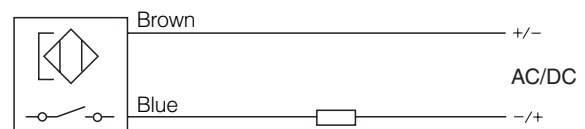
## Reed sensors



### P8S-GCFPX

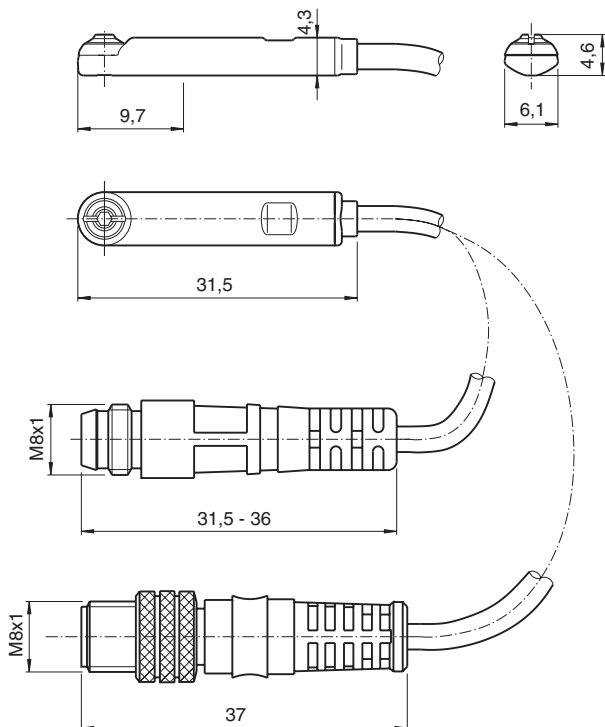


### P8S-GRFLX / P8S-GRFLX2

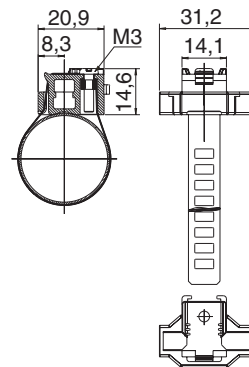


## Dimensions

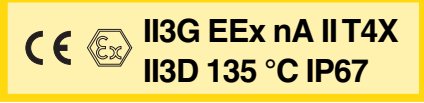
### Sensors



### Sensor mounting P8S-TMC\*\*



## Ordering data

Output/function	Cable/connector	Weight kg	Order code
<b>Electronic sensors , 10-30 V AC/DC</b>			
PNP type, normally open	0,27 m PUR-cable and 8 mm snap-in male connector	0,007	<b>P8S-GPSHX</b>
PNP type, normally open	1,0 m PUR-cable and 8 mm snap-in male connector	0,013	<b>P8S-GPSCX</b>
PNP type, normally open	1,0 m PUR-cable and M8 screw male connector	0,013	<b>P8S-GPCCX</b>
PNP type, normally open	0,27 m PUR-cable and M12 screw male connector	0,015	<b>P8S-GPMHX</b>
PNP type, normally open	3 m PVC-cable without connector	0,030	<b>P8S-GPFLX</b>
PNP type, normally open	10 m PVC-cable without connector	0,110	<b>P8S-GPFTX</b>
<b>Electronic sensor 18-30 V DC</b>			
<b>ATEX-certified</b>			
			
Type PNP , normally open	3 m PVC-cable without connector	0,030	<b>P8S-GPFLX/EX</b>
<b>Reed sensors , 10-30 V AC/DC</b>			
Normally open	0,27 m PUR-cable and 8 mm snap-in male connector	0,007	<b>P8S-GSSHX</b>
Normally open	1,0 m PUR-cable and 8 mm snap-in male connector	0,013	<b>P8S-GSSCX</b>
Normally open	1,0 m PUR-cable and M8 male connector	0,013	<b>P8S-GSCCX</b>
Normally open	0,27 m PUR-cable and M12 screw male connector	0,015	<b>P8S-GSMHX</b>
Normally open	1,0 m PUR-cable and M12 screw male connector	0,023	<b>P8S-GSMCX</b>
Normally open	3 m PVC-cable without connector	0,030	<b>P8S-GSFLX</b>
Normally open	10 m PVC-cable without connector	0,110	<b>P8S-GSFTX</b>
Normally closed	5m PVC-cable without connector <sup>1)</sup>	0,050	<b>P8S-GCFPX</b>
<b>Reed sensors, 10-120 V AC/DC</b>			
Normally open	3 m PVC-cable without connector	0,030	<b>P8S-GRFLX</b>
<b>Reed sensorer, 24-230 V AC/DC</b>			
Normalt öppen	3 m PVC-kabel utan kontakt <sup>1)</sup>	0,030	<b>P8S-GRFLX2</b>

1) Without LED

## Sensor mounting

Description	Weight kg	Order code
Sensor mounting for cylinder P1S cylinder bore Ø10 to Ø25 mm	0,07	<b>P8S-TMC01</b>
Sensor mounting for cylinder P1S cylinder bore Ø32 to Ø63 mm	0,07	<b>P8S-TMC02</b>
Sensor mounting for cylinder P1S cylinder bore Ø80 to Ø125 mm	0,07	<b>P8S-TMC03</b>

## Sensors for special applications

Sensors for applications where the short installation length and the 90 degree cable outlet are important factors. This type of sensor is a good alternative if a cylinder has a short stroke or tight installation, and installation is easier than our global series of sensors.

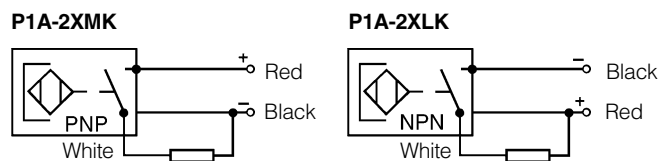
### Technical data

Design	Hall element
Output	PNP resp. NPN, N.O.
Voltage range	10-30 VDC
Max permissible ripple	10%
Max voltage drop	≤0,5 V at 100 mA
Max load current, P1A-2XMK, LK	150 mA
P1A-2XHK, EK, JH, FH	100 mA
Max breaking power (resistive)	6 W
Internal consumption	<30 mA at 30 V
Min actuating distance	5 mm
Hysteresis	1,1 - 1,3 mm
Repeatability accuracy	±0,1 mm
Max on/off switching frequency	1 kHz
Max on/off switching time	0,8/3,0 μs
Encapsulation, P1A-2XJH, FH	IP 65
Encapsulation, P1A-2XHK, EK, MK, LK	IP 67
Temperature range	-10 °C to +60 °C
Indication	LED
Shock resistance	40 g
Material, housing	Polyamid 11
Material, mould	Epoxy
Cable	PVC 3x0,15 mm <sup>2</sup>
Cable incl. female part connector	PVC 3x0,15 mm <sup>2</sup>
Connector	Diam. 8 mm snap on
Mounting	Mounting yoke
Material, mounting	Acetal/Stainless steel
Material, screw	Stainless steel

### Ordering data

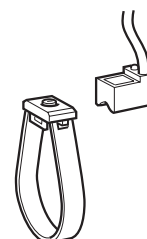
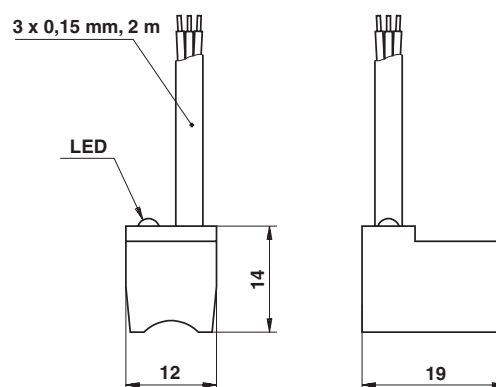
Output	Cable length	Weight kg	Order code
<b>Electronic sensors</b>			
PNP, N.O.	2 m	0,040	<b>P1A-2XMK</b>
NPN, N.O.	2 m	0,040	<b>P1A-2XLK</b>
<b>Mountings for sensors</b>			
For cylinder Ø10		0,005	<b>P1A-2CCC</b>
For cylinder Ø12		0,005	<b>P1A-2DCC</b>
For cylinder Ø16		0,008	<b>P1A-2FCC</b>
For cylinder Ø20		0,008	<b>P1A-2HCC</b>
For cylinder Ø25		0,010	<b>P1A-2JCC</b>

### Electronic sensor symbol



### Dimensions

#### P1A-2XMK and P1A-2XLK



## Connecting cables with one connector

The cables have an integral snap-in female connector.



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

## 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	<b>P8SCS0803J</b>
M12 screw connector	0,022	<b>P8SCS1204J</b>

## Ready to use connecting cables with connectors at each end

As accessories the system comprises a large number of different cables in order to meet all requirements that may arise and to make the installation simple, fast and reliable.

Cables with moulded 8 mm snap-in round contacts in both ends. The cables are available in two types, one with a straight male and female connectors respectively, and one with a straight 3-pole male connector in one end and an angled 3-pole female connector in the other end.



### Technical data

#### Contacts

Moulded 8 mm snap-in male/female contacts.

Enclosure IP67

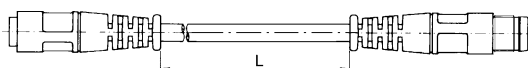
#### Cable

Conductor 3x0,25 mm<sup>2</sup> (32x0,10 mm<sup>2</sup>)

Sheath PVC/PUR

Colour Black

Cables with straight 3-pole male and female connectors respectively.



Cables with a straight 3-pole male connector in one end and an angled 3-pole female connector in the other end.



Designation	Weight kg	Order code
Cable with straight contacts, 0,2 m	0,02	<b>9121717014</b>
Cable with straight contacts, 0,3 m	0,02	<b>9121717015</b>
Cable with straight contacts, 0,5 m	0,03	<b>9121717016</b>
Cable with straight contacts, 1,0 m	0,03	<b>9121717017</b>
Cable with straight contacts, 2,0 m	0,05	<b>9121717018</b>
Cable with straight contacts, 3,0 m	0,07	<b>9121717019</b>
Cable with straight contacts, 5,0 m	0,12	<b>9121717020</b>
Cable with straight contacts, 10 m	0,23	<b>9121717021</b>

Designation	Weight kg	Order code
Cable with straight and angled connectors, 0,2 m	0,02	<b>9121717022</b>
Cable with straight and angled connectors, 0,3 m	0,02	<b>9121717023</b>
Cable with straight and angled connectors, 0,5 m	0,03	<b>9121717024</b>
Cable with straight and angled connectors, 1,0 m	0,03	<b>9121717025</b>
Cable with straight and angled connectors, 2,0 m	0,05	<b>9121717026</b>
Cable with straight and angled connectors, 3,0 m	0,07	<b>9121717027</b>
Cable with straight and angled connectors, 5,0 m	0,12	<b>9121717028</b>
Cable with straight and angled connectors, 10 m	0,23	<b>9121717029</b>



## Connection block Valvetronic 110

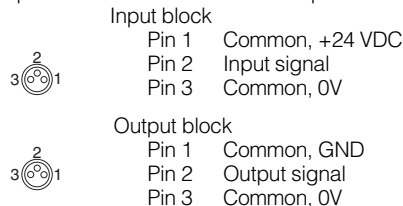
The Valvetronic 110 is a connection block that can be used for collecting signals from sensors at various points on a machine and connecting them to the control system via a multicore cable. Valvetronic 110 can also be used for central connection of the multi-core cable to the outputs of a control system, and can be laid to a machine where the output signals can be connected. The connection block has ten 8 mm snap-in circular connectors and a multi-core cable which is available in lengths of 3 or 10 m. The connections on the block are numbered from 1 to 10. Blanking plugs are available for unused connections, as labels for marking the connections of each block.



### Technical data

#### Connections:

Ten 3-pole numbered 8 mm round snap-in female contacts



#### Electrical data:

Voltage: 24 VDC (max. 60 V AC/75 V DC)  
 Insulation group: according to DIN 0110 class C  
 Load: max. 1 A per connection total max. 3 A

#### Cable:

Length: 3 m or 10 m  
 Type of cable: LifYY11Y  
 Conductor: 12  
 Area: 0.34 mm<sup>2</sup>  
 Colour marking: According to DIN 47 100

#### Mechanical data

Enclosure: IP 67, DIN 40050 with fitted contacts and/or blanking plugs.  
 Temperature: -20 °C to +70 °C




#### Material

Body: PA 6,6 VD according to UL 94  
 Contact holder: PBTP  
 Snap-in ring: LDPE  
 Moulding mass: Epoxy  
 Seal: NBR  
 Screws: Plated steel

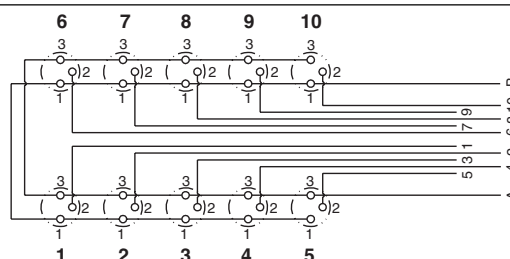
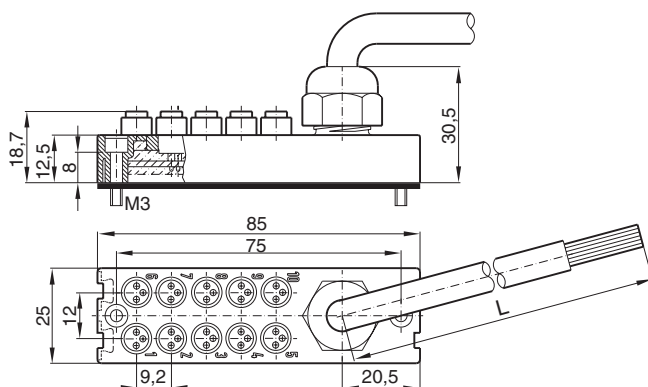
#### Industrial durability

Good chemical and oil resistance. Tests should be performed in aggressive environments.

### Ordering data

Designation	Weight kg	Order code
 Connection block Valvetronic 110 with 3 m cable	0,32	<b>9121719001</b>
Connection block Valvetronic 110 with 10 m cable	0,95	<b>9121719002</b>
 Blanking plugs (pack of 10) Use blanking plugs to close unused connections.	0,02	<b>9121719003</b>
 Labels (pack of 10) White labels to insert in grooves on the side of the connection	0,02	<b>9121719004</b>

### Dimensions and wiring diagrams



Conductor	Colour	Input	Output
1	Pink	Signal 1	Signal 1
2	Grey	Signal 2	Signal 2
3	Yellow	Signal 3	Signal 3
4	Green	Signal 4	Signal 4
5	White	Signal 5	Signal 5
6	Red	Signal 6	Signal 6
7	Black	Signal 7	Signal 7
8	Violet	Signal 8	Signal 8
9	Grey-Pink	Signal 9	Signal 9
10	Red-Blue	Signal 10	Signal 10
A	Blue	0 V	0 V
B	Brown	+24 V	PE

## Seal kits for P1S cylinders

Complete seal kits consisting of:

- Piston seals
- Cushioning seals
- Piston rod bearing
- Piston rod seal
- Scraper ring
- O-rings

Material specification, see pages 14 and 15.

### Standard temperature versions

Cylinder designation	Order code
P1S-•032MS	9121659195
P1S-•040MS	9121659196
P1S-•050MS	9121659197
P1S-•063MS	9121659198
P1S-•080MS	9121718905
P1S-•100MS	9121718906
P1S-•125MS	9121718907

### High temperature versions

Cylinder designation	Order code
P1S-•032MF	9121720595
P1S-•040MF	9121720596
P1S-•050MF	9121720597
P1S-•063MF	9121720598
P1S-•080MF	9121718925
P1S-•100MF	9121718926
P1S-•125MF	9121718927

### Low temperature versions

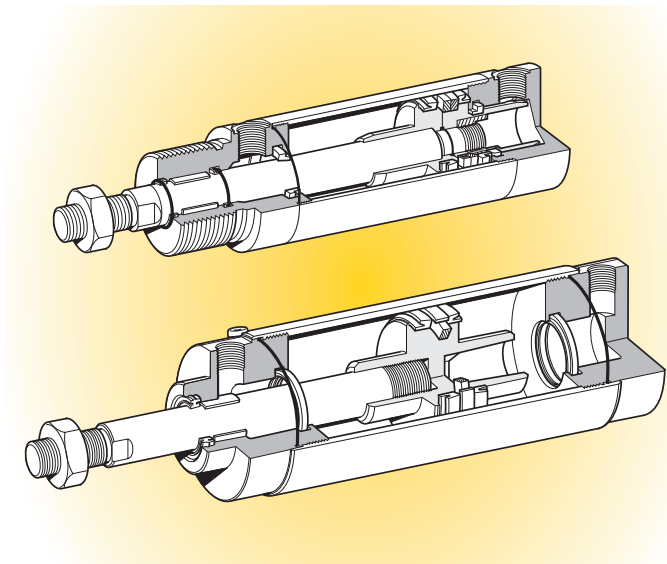
Cylinder designation	Order code
P1S-•080ML	9121718935
P1S-•100ML	9121718936
P1S-•125ML	9121718937

### Standard temperature with Through rod

Cylinder designation	Order code
P1S-•080FS	9121718955
P1S-•100FS	9121718956
P1S-•125FS	9121718957

### Standard temperature with stainless steel scraper ring

Cylinder designation	Order code
P1S-•080MQ	9121718915
P1S-•100MQ	9121718916
P1S-•125MQ	9121718917



### Grease for

Version	Weight	Order code
Standard and Low temperature	30 g	9127394541
High temperature	30 g	9127394521