



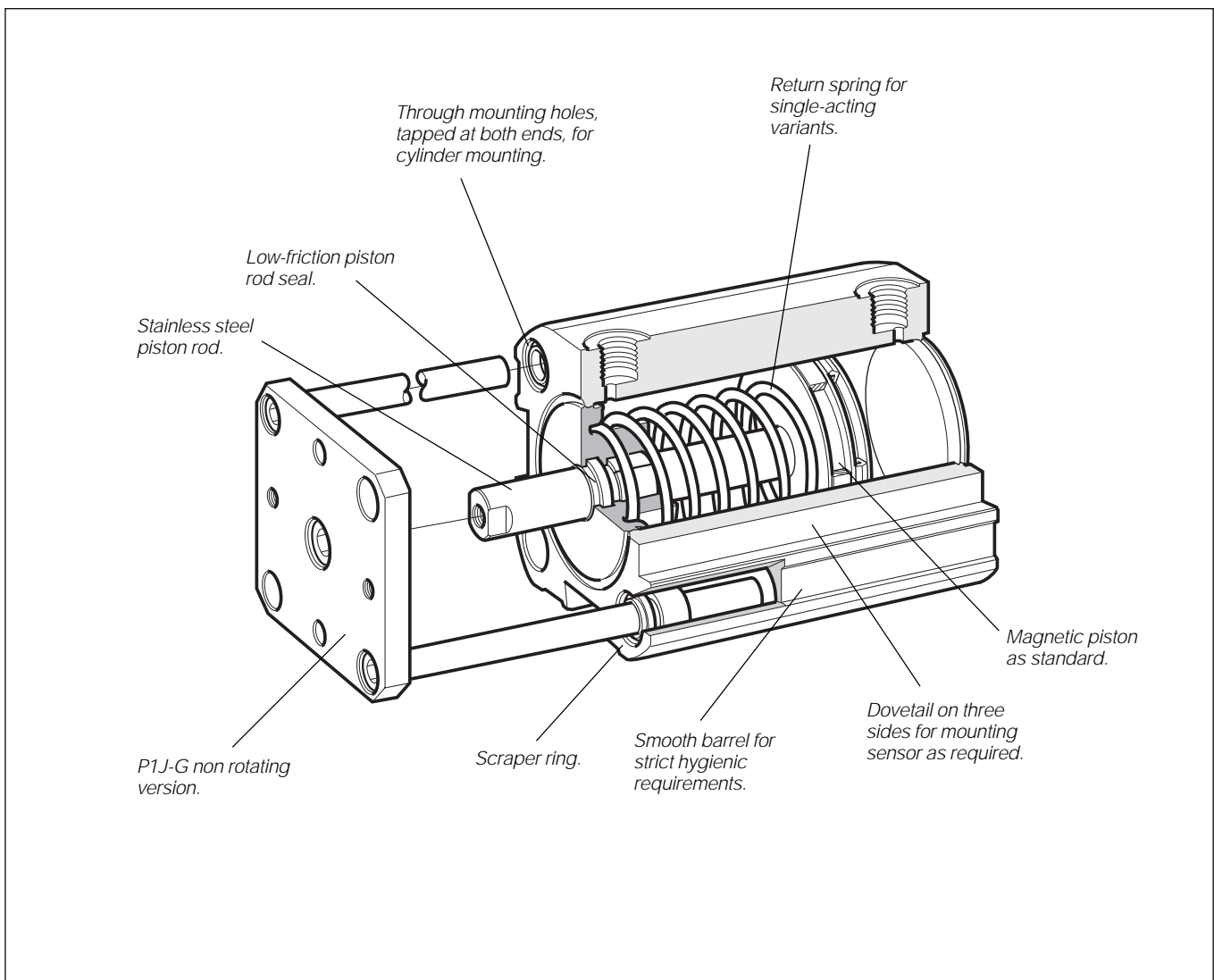
# *Pneumatic cylinders*

## *Compact cylinders*

### *Series P1J*

*Catalogue 9127007282GB-ul*





### Single acting and double acting versions

The P1J range of cylinders is intended for use in a wide range of applications. These cylinders are particularly suitable in applications such as packaging, the food industry and the textile industry.

Careful design and high quality throughout ensure long, trouble free service life.

The compact design, with through mounting holes that are countersunk and tapped at both ends, make the cylinders easy to mount, with or without mountings.

They are available in diameters of 12, 20, 25, 32, 40, 50 and 63 mm, with stroke lengths up to 100 mm.

The single acting version is available in the same bore size as the double acting version and with stroke lengths up to 50 mm. All cylinder types have magnetic pistons as standard, and are initially lubricated with our food-grade grease. Reed switch and solid state sensors are available as accessories, and can be fitted in the dovetail slots on three of the sides of the cylinder body.

### External guide device

The cylinder can be supplied with an external guide unit to prevent the piston from turning. It guides the piston rod and enables the cylinder to resist turning moments on the piston rod and/or transverse forces. The device consists of a substantial mounting plate and two guides that run along the sides of the cylinder in two bearing-support guide sleeves. The plate has pre-drilled mounting holes to aid assembly.

### Options

In addition to a large selection of standard cylinders, the P1J is available in several standard variants, such as custom stroke length, extended piston rods, double piston rods etc.

Additionally, a complete range of sensor and mounting devices is available.

## Smooth external design

There are no recesses or pockets in the end covers that could trap dirt or liquid, making cleaning simple and effective.

## Corrosion resistant

Even the basic versions of the cylinders have good corrosion resistance through appropriate choice of materials and surface treatment, allowing them to be used in demanding environments. As the end face of the cylinders is not fully anodised in the standard version, extra anodising can be specified when ordering to provide extra corrosion protection.

## Piston sensing

A complete range of sensors for piston sensing is available as accessories: both reed switch and solid state sensors are available. They are supplied with either a flying lead or with a cable plug connector, with a moulded cable.

## Mounting

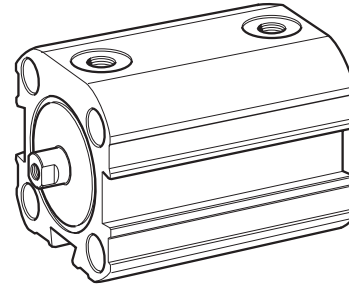
A range of mountings with appropriate surface finish is available as accessories.

## Variants

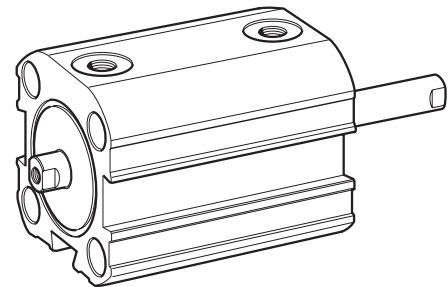
In addition to the basic versions, P1J cylinders are available in several standard variants:

- Cylinders with non-standard stroke lengths
- Cylinders with extended piston rods
- Cylinders with through piston rod
- Cylinders with through, hollow piston rod
- Single-acting cylinders
- Cylinders with anodised end faces
- Cylinders with piston rod guides

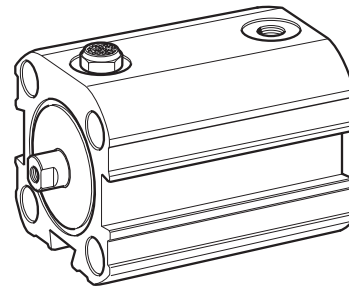
Double acting



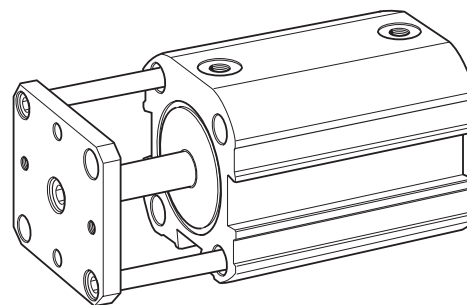
Double acting, through piston rod



Single acting, spring return



Double acting, guided piston rod



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## Main data

Cylinder designation	Cylinder		Piston rod			Basic weight		Guided weight		Air consumption Litre	Port thread
	Bore	Area	Diam.	Area	Thread (female)	at 0 mm stroke	at addition per 10 mm stroke	at 0 mm stroke	at addition per 10 mm stroke		
	mm	cm <sup>2</sup>	mm	cm <sup>2</sup>		kg	kg	kg	kg		
<b>Double acting</b>											
P1J-S 012 DS	12	1,13	6	0,28	M3	0,06	0,016	-	-	0,0139 <sup>1)</sup>	M5
P1J-S 020 DS	20	3,14	10	0,78	M5	0,13	0,030	0,17	0,033	0,0385 <sup>1)</sup>	M5
P1J-S 025 DS	25	4,91	10	0,78	M5	0,15	0,035	0,21	0,038	0,0633 <sup>1)</sup>	M5
P1J-S 032 DS	32	8,04	12	1,13	M6	0,20	0,044	0,27	0,050	0,1050 <sup>1)</sup>	G1/8
P1J-S 040 DS	40	12,6	12	1,13	M6	0,29	0,054	0,40	0,058	0,1680 <sup>1)</sup>	G1/8
P1J-S 050 DS	50	19,6	16	2,01	M8	0,50	0,070	0,65	0,080	0,2610 <sup>1)</sup>	G1/8
P1J-S 063 DS	63	31,2	16	2,01	M8	0,77	0,100	1,08	0,110	0,4220 <sup>1)</sup>	G1/8
<b>Single acting</b>											
P1J-S 012 SS	12	1,13	6	0,28	M3	0,06	0,016	-	-	0,0079 <sup>1)</sup>	M5
P1J-S 020 SS	20	3,14	10	0,78	M5	0,13	0,030	0,17	0,033	0,0220 <sup>1)</sup>	M5
P1J-S 025 SS	25	4,91	10	0,78	M5	0,16	0,035	0,22	0,038	0,0344 <sup>1)</sup>	M5
P1J-S 032 SS	32	8,04	12	1,13	M6	0,21	0,044	0,28	0,050	0,0563 <sup>1)</sup>	G1/8
P1J-S 040 SS	40	12,6	12	1,13	M6	0,30	0,054	0,41	0,058	0,0882 <sup>1)</sup>	G1/8
P1J-S 050 SS	50	19,6	16	2,01	M8	0,52	0,070	0,67	0,080	0,1372 <sup>1)</sup>	G1/8
P1J-S 063 SS	63	31,2	16	2,01	M8	0,80	0,100	1,11	0,110	0,2184 <sup>1)</sup>	G1/8

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

## Material specification

### Double and single-acting

Piston rod	Stainless steel, DIN X10 CrNiS 18 9
Piston rod seal	Nitrile rubber, NBR
Piston rod bearing, Ø20-Ø63 mm	Multi-layer PTFE/bronze/steel
Piston bearing, Ø20-Ø63 mm	UHMWPE plastic
A-cover, Ø12 mm	Brass
End cover	Aluminium
Locking ring, Ø12 mm	Surface-finished steel
O-ring, cover, Ø12 mm	Nitrile rubber, NBR
Barrel	Anodised aluminium
Piston, Ø12 mm	Brass
Piston, Ø20-Ø63 mm	Aluminium
Piston seal	Nitrile rubber, NBR
Return spring, Ø12 mm	Stainless steel
Return spring, Ø20-Ø63 mm	Surface-treated steel

## Other data

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



### 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

**Air quality is essential for maximum cylinder service life (see ISO 8573).**

## Cylinder forces

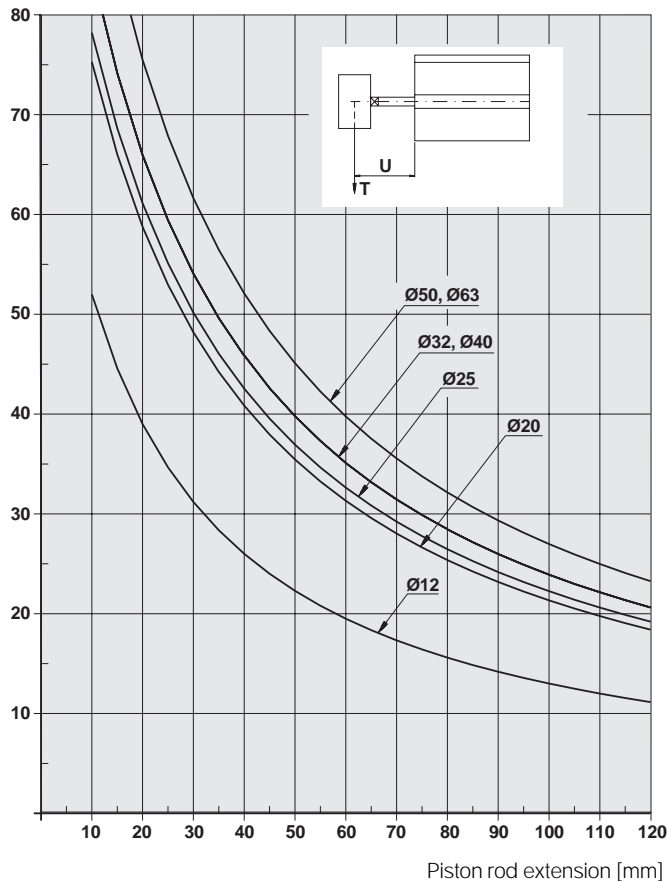
The values given below for the cylinder forces are theoretical values and should be reduced to suit the actual working conditions.

Cylinder designation	Theoretical cylinder force at 600 kPa (6 bar)		Cylinder designation	Theoretical cylinder force at 600 kPa (6 bar)		Spring return	
	Plus stroke N	Minus stroke N		Plus stroke Nmax	Nmin	Nmax	Nmin
<b>Double acting</b>			<b>Single acting</b>				
P1J-S 012 DS	67	51	P1J-S 012 SS - 05	59	58	9	8
P1J-S 020 DS	188	142	P1J-S 012 SS - 10	60	58	9	7
P1J-S 025 DS	294	247	P1J-S 012 SS - 15	61	58	9	6
P1J-S 032 DS	482	415	P1J-S 020 SS - 05	159	156	32	29
P1J-S 040 DS	754	688	P1J-S 020 SS - 10	161	156	32	27
P1J-S 050 DS	1178	1055	P1J-S 020 SS - 15	164	156	32	24
P1J-S 063 DS	1870	1751	P1J-S 020 SS - 20	166	156	32	22
			P1J-S 020 SS - 25	169	156	32	19
			P1J-S 020 SS - 30	172	156	32	16

## Side load force diagram

Permissible side loading as a function of piston rod extension.

Side load [N]



P1J-S 025 SS - 05	265	262	32	29
P1J-S 025 SS - 10	267	262	32	27
P1J-S 025 SS - 15	270	262	32	24
P1J-S 025 SS - 20	272	262	32	22
P1J-S 025 SS - 25	275	262	32	19
P1J-S 025 SS - 30	278	262	32	16
P1J-S 025 SS - 40	272	262	32	22
P1J-S 025 SS - 50	275	262	32	19
P1J-S 032 SS - 05	439	436	46	43
P1J-S 032 SS - 10	442	436	46	40
P1J-S 032 SS - 15	445	436	46	37
P1J-S 032 SS - 20	447	436	46	35
P1J-S 032 SS - 25	450	436	46	32
P1J-S 032 SS - 30	453	436	46	29
P1J-S 032 SS - 40	447	436	46	35
P1J-S 032 SS - 50	450	436	46	32
P1J-S 040 SS - 05	704	701	53	50
P1J-S 040 SS - 10	706	701	53	48
P1J-S 040 SS - 15	709	701	53	45
P1J-S 040 SS - 20	712	701	53	42
P1J-S 040 SS - 25	715	701	53	39
P1J-S 040 SS - 30	718	701	53	36
P1J-S 040 SS - 40	712	701	53	42
P1J-S 040 SS - 50	715	701	53	39
P1J-S 050 SS - 05	1088	1079	99	90
P1J-S 050 SS - 10	1096	1079	99	82
P1J-S 050 SS - 15	1105	1079	99	73
P1J-S 050 SS - 20	1114	1079	99	64
P1J-S 050 SS - 25	1123	1079	99	55
P1J-S 050 SS - 30	1131	1079	99	47
P1J-S 050 SS - 40	1114	1079	99	64
P1J-S 050 SS - 50	1123	1079	99	55
P1J-S 063 SS - 05	1774	1767	103	96
P1J-S 063 SS - 10	1780	1767	103	90
P1J-S 063 SS - 15	1786	1767	103	84
P1J-S 063 SS - 20	1793	1767	103	77
P1J-S 063 SS - 25	1799	1767	103	71
P1J-S 063 SS - 30	1806	1767	103	64
P1J-S 063 SS - 40	1793	1767	103	77
P1J-S 063 SS - 50	1799	1767	103	71

**Note**  
All technical data in this catalogue are typical data only.

## Order key

**P 1 J - S**

**0 3 2**

**D**

**S**

**-**

**0 0 2 5**

Cylinder bore mm
012
016
020
025
032
040
050
063

Cylindertype/Function	
<b>D</b>	Double-acting, Ø12 - Ø63
<b>K</b>	Double-acting, through piston rod, Ø20 - Ø63
<b>P</b>	Double-acting, through piston rod hollow, Ø20 - Ø63, max stroke: 100 mm. Not cylinder version <b>G</b>
<b>S</b>	Single-acting, spring return for retract stroke, Ø12 - Ø63

Stroke length mm	
E.g. <b>0025</b> = 25 mm	
For standard stroke length and max length see label below.	

Cylinder version	
<b>S</b>	Standard cylinder
<b>K</b>	Cylinder with end cover in anodised aluminium.
<b>G</b>	Cylinder with mounted guide unit, Ø20 - Ø63.

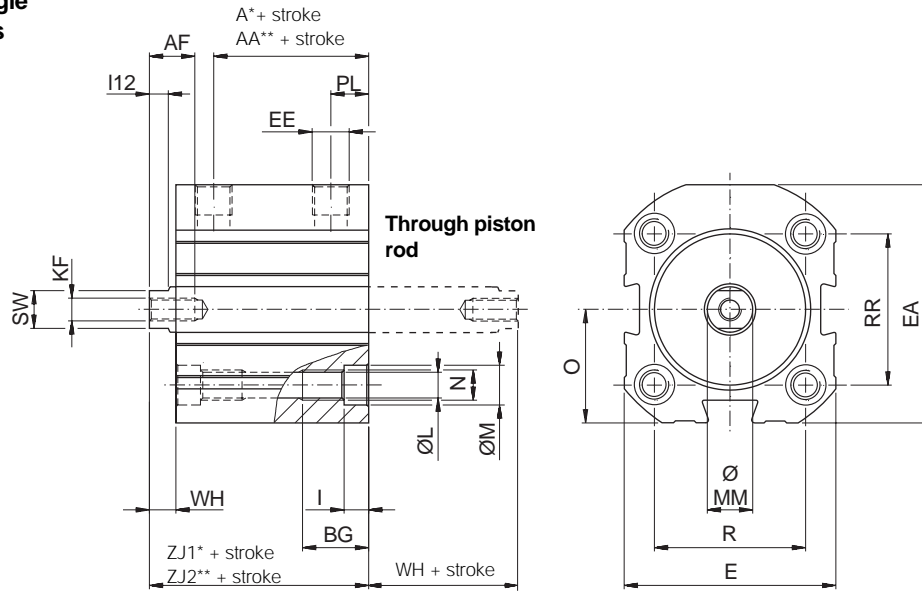
Sealing material	
<b>S</b>	Standard seals, -20 °C to +80 °C Stainless steel piston rod Magnetic piston
<b>N</b>	No Teflon™ and copper, Standard seals, -20 °C to +60 °C Magnetic piston

## Standard stroke length

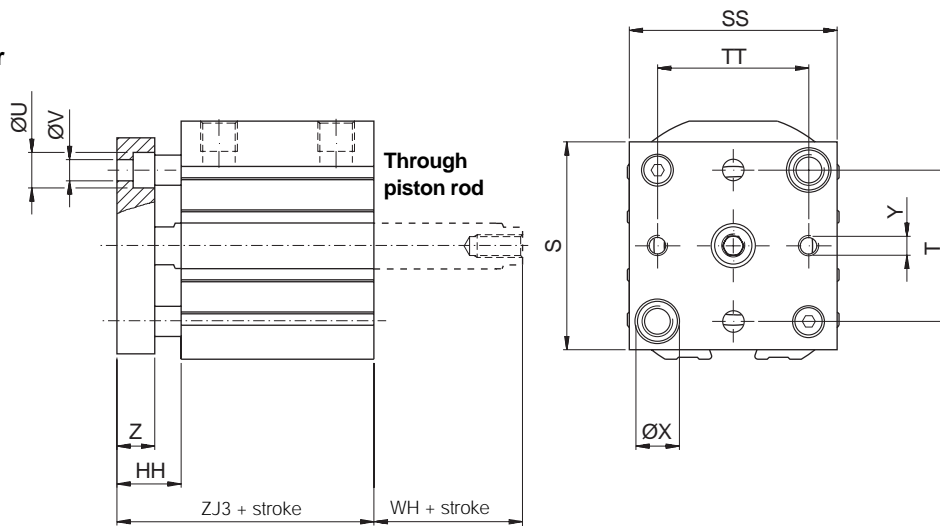
Cylinder designation	Cylinder bore	● Standard stroke length in mm							■ Non standard stroke length		
		5	10	15	20	25*	30	40	50*	80*	100*
<b>Double acting:</b>											
P1J-S 012 D	12	●	●	●	●	●					
P1J-S 020 D	20	●	●	●	●	●	●				
P1J-S 025 D	25	●	●	●	●	●	●	●			
P1J-S 032 D	32	●	●	●	●	●	●	●	●		
P1J-S 040 D	40	●	●	●	●	●	●	●	●	●	
P1J-S 050 D	50	●	●	●	●	●	●	●	●	●	●
P1J-S 063 D	63	●	●	●	●	●	●	●	●	●	●
<b>Double acting with guide unit:</b>											
P1J-G 020 D	20	●	●	●	●	●	●	●			
P1J-G 025 D	25	●	●	●	●	●	●	●	●		
P1J-G 032 D	32	●	●	●	●	●	●	●	●	●	
P1J-G 040 D	40	●	●	●	●	●	●	●	●	●	●
P1J-G 050 D	50	●	●	●	●	●	●	●	●	●	●
P1J-G 063 D	63	●	●	●	●	●	●	●	●	●	●
<b>Single acting:</b>											
P1J-S 012 S	12	●	●	●							
P1J-S 020 S	20	●	●	●	●	●	●				
P1J-S 025 S	25	●	●	●	●	●	●	●			
P1J-S 032 S	32	●	●	●	●	●	●	●	●		
P1J-S 040 S	40	●	●	●	●	●	●	●	●	●	
P1J-S 050 S	50	●	●	●	●	●	●	●	●	●	●
P1J-S 063 S	63	●	●	●	●	●	●	●	●	●	●

\* Standard stroke length in mm according to ISO 4393

**Double and single acting cylinders**



**Guided cylinder**



**Dimensions (mm)**

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

Cylinder bore	R	RR	S	SS	SW	T	TT	U	V	WH	X	Y	Z	ZJ1*	ZJ2**	ZJ3
12	13	18	-	-	5	-	-	-	-	4	-	-	-	38	-	-
20	20	30	42	32	8	22	22	8	4,5	4,8	9,4	M4	10	42,8	-	52,8
25	27	27	40	39	8	28	26	8	4,5	6	9,4	M4	10	45	60	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	11,5	M5	10	48	66	58
50	50	50	65	65	13	50	50	11,5	6,5	7	11,5	M6	12	53	71	65
63	62	62	80	80	13	62	62	14,5	9	8	14,5	M6	12	58	78	70

\* 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

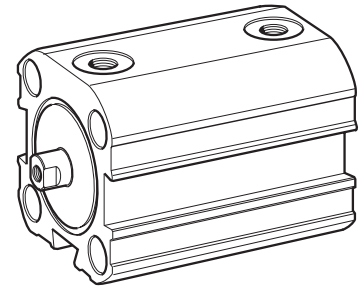
Length tolerances ±1 mm

Stroke length tolerances +1.5/0 mm

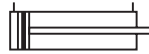
## Data

Working pressure  
Working temperature

Max. 10 bar  
Max. +80 °C

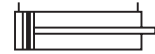


### Double acting



Cyl. bore mm	Stroke mm	Order code
<b>12</b>	05	<b>P1J-S012DS-0005</b>
	10	<b>P1J-S012DS-0010</b>
	15	<b>P1J-S012DS-0015</b>
	20	<b>P1J-S012DS-0020</b>
	25	<b>P1J-S012DS-0025</b>
M5 thread		
<b>20</b>	05	<b>P1J-S020DS-0005</b>
	10	<b>P1J-S020DS-0010</b>
	15	<b>P1J-S020DS-0015</b>
	20	<b>P1J-S020DS-0020</b>
	25	<b>P1J-S020DS-0025</b>
	30	<b>P1J-S020DS-0030</b>
	40	<b>P1J-S020DS-0040</b>
	50	<b>P1J-S020DS-0050</b>
M5 thread		
<b>25</b>	05	<b>P1J-S025DS-0005</b>
	10	<b>P1J-S025DS-0010</b>
	15	<b>P1J-S025DS-0015</b>
	20	<b>P1J-S025DS-0020</b>
	25	<b>P1J-S025DS-0025</b>
	30	<b>P1J-S025DS-0030</b>
	40	<b>P1J-S025DS-0040</b>
	50	<b>P1J-S025DS-0050</b>
M5 thread		
<b>32</b>	05	<b>P1J-S032DS-0005</b>
	10	<b>P1J-S032DS-0010</b>
	15	<b>P1J-S032DS-0015</b>
	20	<b>P1J-S032DS-0020</b>
	25	<b>P1J-S032DS-0025</b>
	30	<b>P1J-S032DS-0030</b>
	40	<b>P1J-S032DS-0040</b>
	50	<b>P1J-S032DS-0050</b>
	80	<b>P1J-S032DS-0080</b>
	G1/8 thread	

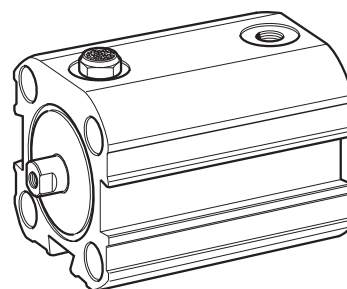
### Double acting



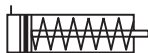
Cyl. bore mm	Stroke mm	Order code
<b>40</b>	05	<b>P1J-S040DS-0005</b>
	10	<b>P1J-S040DS-0010</b>
	15	<b>P1J-S040DS-0015</b>
	20	<b>P1J-S040DS-0020</b>
	25	<b>P1J-S040DS-0025</b>
	30	<b>P1J-S040DS-0030</b>
	40	<b>P1J-S040DS-0040</b>
	50	<b>P1J-S040DS-0050</b>
	80	<b>P1J-S040DS-0080</b>
	G1/8 thread	
<b>50</b>	05	<b>P1J-S050DS-0005</b>
	10	<b>P1J-S050DS-0010</b>
	15	<b>P1J-S050DS-0015</b>
	20	<b>P1J-S050DS-0020</b>
	25	<b>P1J-S050DS-0025</b>
	30	<b>P1J-S050DS-0030</b>
	40	<b>P1J-S050DS-0040</b>
	50	<b>P1J-S050DS-0050</b>
	80	<b>P1J-S050DS-0080</b>
	G1/8 thread	
<b>63</b>	05	<b>P1J-S063DS-0005</b>
	10	<b>P1J-S063DS-0010</b>
	15	<b>P1J-S063DS-0015</b>
	20	<b>P1J-S063DS-0020</b>
	25	<b>P1J-S063DS-0025</b>
	30	<b>P1J-S063DS-0030</b>
	40	<b>P1J-S063DS-0040</b>
	50	<b>P1J-S063DS-0050</b>
	80	<b>P1J-S063DS-0080</b>
	100	<b>P1J-S063DS-0100</b>
G1/8 thread		

## Data

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



## Single acting



Cyl. bore mm	Stroke mm	Order code
<b>12</b>	05	<b>P1J-S012SS-0005</b>
	10	<b>P1J-S012SS-0010</b>
	15	<b>P1J-S012SS-0015</b>
M5 thread		
<b>20</b>	05	<b>P1J-S020SS-0005</b>
	10	<b>P1J-S020SS-0010</b>
	15	<b>P1J-S020SS-0015</b>
	20	<b>P1J-S020SS-0020</b>
	25	<b>P1J-S020SS-0025</b>
	30	<b>P1J-S020SS-0030</b>
M5 thread		
<b>25</b>	05	<b>P1J-S025SS-0005</b>
	10	<b>P1J-S025SS-0010</b>
	15	<b>P1J-S025SS-0015</b>
	20	<b>P1J-S025SS-0020</b>
	25	<b>P1J-S025SS-0025</b>
	30	<b>P1J-S025SS-0030</b>
	40	<b>P1J-S025SS-0040</b>
	50	<b>P1J-S025SS-0050</b>
	M5 thread	
<b>32</b>	05	<b>P1J-S032SS-0005</b>
	10	<b>P1J-S032SS-0010</b>
	15	<b>P1J-S032SS-0015</b>
	20	<b>P1J-S032SS-0020</b>
	25	<b>P1J-S032SS-0025</b>
	30	<b>P1J-S032SS-0030</b>
	40	<b>P1J-S032SS-0040</b>
	50	<b>P1J-S032SS-0050</b>
	G1/8 thread	

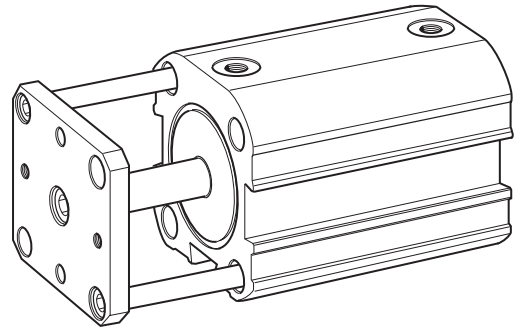
## Single acting



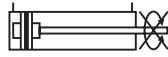
Cyl. bore mm	Stroke mm	Order code
<b>40</b>	05	<b>P1J-S040SS-0005</b>
	10	<b>P1J-S040SS-0010</b>
	15	<b>P1J-S040SS-0015</b>
	20	<b>P1J-S040SS-0020</b>
	25	<b>P1J-S040SS-0025</b>
	30	<b>P1J-S040SS-0030</b>
G1/8 thread		
<b>50</b>	40	<b>P1J-S040SS-0040</b>
	50	<b>P1J-S040SS-0050</b>
	05	<b>P1J-S050SS-0005</b>
	10	<b>P1J-S050SS-0010</b>
	15	<b>P1J-S050SS-0015</b>
<b>50</b>	20	<b>P1J-S050SS-0020</b>
	25	<b>P1J-S050SS-0025</b>
	30	<b>P1J-S050SS-0030</b>
	40	<b>P1J-S050SS-0040</b>
	50	<b>P1J-S050SS-0050</b>
	G1/8 thread	
<b>63</b>	05	<b>P1J-S063SS-0005</b>
	10	<b>P1J-S063SS-0010</b>
	15	<b>P1J-S063SS-0015</b>
	20	<b>P1J-S063SS-0020</b>
	25	<b>P1J-S063SS-0025</b>
	30	<b>P1J-S063SS-0030</b>
	40	<b>P1J-S063SS-0040</b>
	50	<b>P1J-S063SS-0050</b>
	G1/8 thread	

## Data

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

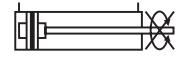


### Double acting, guided

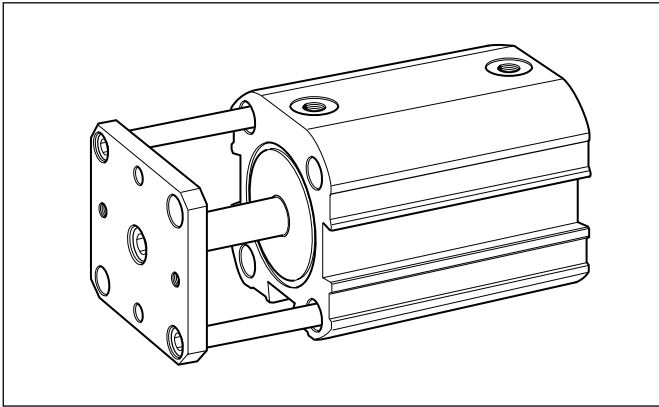


Cyl. bore mm	Stroke mm	Order code
<b>20</b>	05	<b>P1J-G020DS-0005</b>
	10	<b>P1J-G020DS-0010</b>
	15	<b>P1J-G020DS-0015</b>
	20	<b>P1J-G020DS-0020</b>
	25	<b>P1J-G020DS-0025</b>
	30	<b>P1J-G020DS-0030</b>
	40	<b>P1J-G020DS-0040</b>
M5 thread	50	<b>P1J-G020DS-0050</b>
<b>25</b>	05	<b>P1J-G025DS-0005</b>
	10	<b>P1J-G025DS-0010</b>
	15	<b>P1J-G025DS-0015</b>
	20	<b>P1J-G025DS-0020</b>
	25	<b>P1J-G025DS-0025</b>
	30	<b>P1J-G025DS-0030</b>
	40	<b>P1J-G025DS-0040</b>
M5 thread	50	<b>P1J-G025DS-0050</b>
<b>32</b>	05	<b>P1J-G032DS-0005</b>
	10	<b>P1J-G032DS-0010</b>
	15	<b>P1J-G032DS-0015</b>
	20	<b>P1J-G032DS-0020</b>
	25	<b>P1J-G032DS-0025</b>
	30	<b>P1J-G032DS-0030</b>
	40	<b>P1J-G032DS-0040</b>
50	<b>P1J-G032DS-0050</b>	
G1/8 thread	80	<b>P1J-G032DS-0080</b>

### Double acting, guided



Cyl. bore mm	Stroke mm	Order code
<b>40</b>	05	<b>P1J-G040DS-0005</b>
	10	<b>P1J-G040DS-0010</b>
	15	<b>P1J-G040DS-0015</b>
	20	<b>P1J-G040DS-0020</b>
	25	<b>P1J-G040DS-0025</b>
	30	<b>P1J-G040DS-0030</b>
	40	<b>P1J-G040DS-0040</b>
G1/8 thread	50	<b>P1J-G040DS-0050</b>
<b>50</b>	05	<b>P1J-G050DS-0005</b>
	10	<b>P1J-G050DS-0010</b>
	15	<b>P1J-G050DS-0015</b>
	20	<b>P1J-G050DS-0020</b>
	25	<b>P1J-G050DS-0025</b>
	30	<b>P1J-G050DS-0030</b>
	40	<b>P1J-G050DS-0040</b>
G1/8 thread	50	<b>P1J-G050DS-0050</b>
<b>63</b>	05	<b>P1J-G063DS-0005</b>
	10	<b>P1J-G063DS-0010</b>
	15	<b>P1J-G063DS-0015</b>
	20	<b>P1J-G063DS-0020</b>
	25	<b>P1J-G063DS-0025</b>
	30	<b>P1J-G063DS-0030</b>
	40	<b>P1J-G063DS-0040</b>
50	<b>P1J-G063DS-0050</b>	
G1/8 thread	80	<b>P1J-G063DS-0080</b>
<b>100</b>	05	<b>P1J-G100DS-0005</b>
	10	<b>P1J-G100DS-0010</b>
	15	<b>P1J-G100DS-0015</b>
G1/8 thread	100	<b>P1J-G100DS-0100</b>



**Technical data**

Working medium	Dry, filtered compressed air
Working pressure	Max. 10 bar
Working temperature	-20 °C to +80 °C

**Materials, external guide device**

Mounting plate	Anodised aluminium
Guides	Stainless steel, DIN X 10 CrNiS 18 9
Sleeves	Multi-layer, PTFE/bronze/steel
Securing bolts	Surface-finished steel

Other data as for the basic cylinder.

**Guide unit**

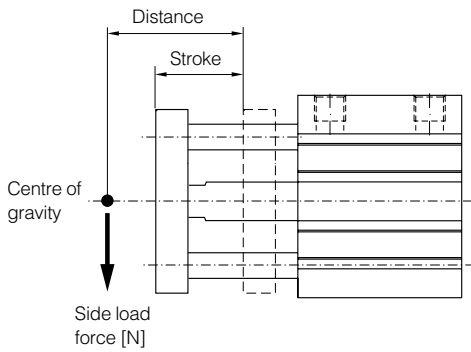
The P1J cylinders can be fitted with an external guide unit to prevent the piston rod from turning. It guides the piston rod and enables the cylinder to resist turning moments on the piston rod and/or transverse forces.

The device consists of a substantial mounting plate and twin guide rods that run in two support bearings. The mounting plate, which has pre-drilled mounting holes, is connected to the piston rod.

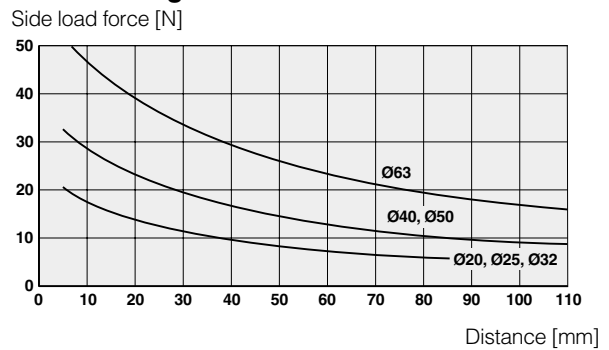
The device is available for 20, 25, 32, 40, 50 and 63 mm diameter cylinders, with stroke lengths from 5 to 100 mm. Order codes on Pages 6 and 10.

**Permissible side loading**

Permissible side loading as a function of the load distance as shown below.

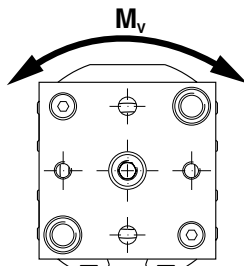


**Side load diagram**

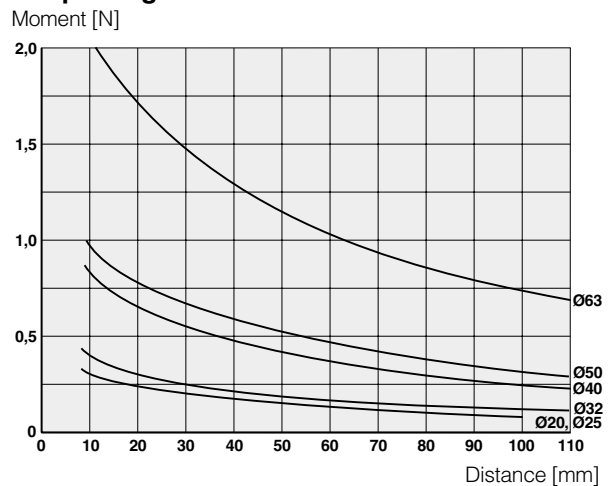


**Permissible Torque**

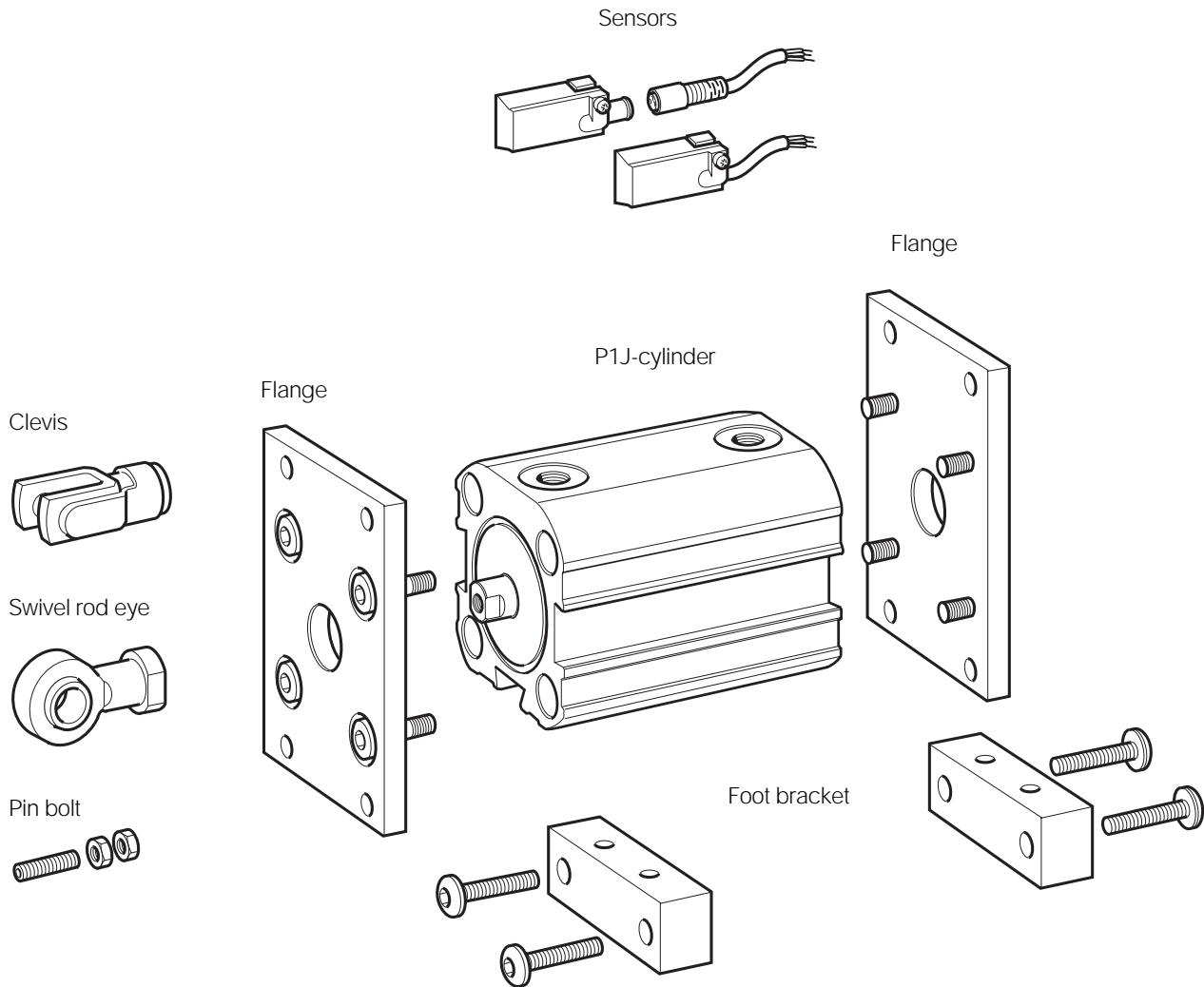
Permissible moment as shown below as a function of the load distance as shown in the load figure above.



**Torque diagram**

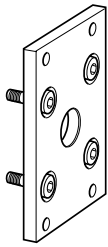


Combinations

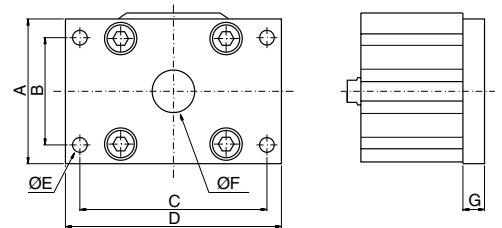


## Cylinder mountings

Type	Description	Cyl. bore Ø mm	Mass kg	Order code
<b>Flange, MF1</b>	Intended for fixed mounting of cylinder. This bracket can be fitted to front or rear end covers.  Material: Bracket: Anodised aluminium Screws: Zinc plated steel	12	0,012	<b>P1J-4DMB</b>
		20	0,031	<b>P1J-4HMB</b>
		25	0,036	<b>P1J-4JMB</b>
		32	0,052	<b>P1J-4KMB</b>
		40	0,124	<b>P1J-4LMB</b>
		50	0,151	<b>P1J-4MMB</b>
		63	0,306	<b>P1J-4NMB</b>



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

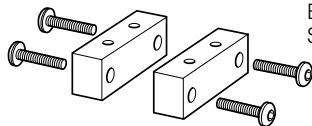


## Foot bracket

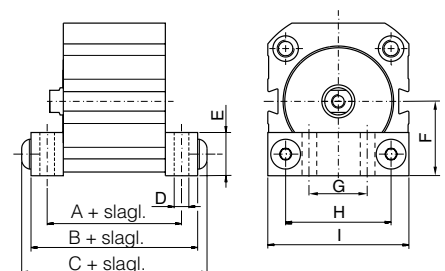
Intended for fixed mounting of cylinder. This bracket can be fitted to front or rear end covers.

Material:  
Bracket: Anodised aluminium  
Screws: Zinc plated steel

12	0,015	<b>P1J-4DMF</b>
20	0,016	<b>P1J-4HMF</b>
25	0,034	<b>P1J-4JMF</b>
32	0,030	<b>P1J-4KMF</b>
40	0,060	<b>P1J-4LMF</b>
50	0,072	<b>P1J-4MMF</b>
63	0,178	<b>P1J-4NMF</b>



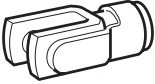
Cyl. Ø mm	A1*	A2**	B1*	B2**	C1*	C2**	D	E	F	G	H	I
12	42,0	-	50,0	-	54,4	-	3,5	12,7	17,0	25	13	33
20	44,5	-	51,0	-	57,5	-	3,5	12,7	22,0	35	20	43
25	48,5	63,5	58,0	73,0	64,5	79,5	4,5	16,0	23,0	41	27	51
32	49,3	67,3	58,7	76,7	65,3	83,3	4,5	16,0	27,0	19	32	46
40	53,7	71,7	66,5	84,5	75,2	93,2	6,5	19,0	31,5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

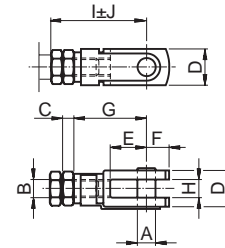
\*\* Single acting cylinders, stroke length 31 to 50 mm

## Cylinder mountings

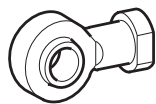
Type	Description	Cyl. bore Ø mm	Order code	Mass kg
<b>Clevis</b> 	According to ISO 8140 Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction, and is supplied complete with shaft. Intended for use with the pin bolt.	20	<b>P1J-4HRC</b>	0,011
		25	<b>P1J-4HRC</b>	0,011
		32	<b>P1A-4DRC</b>	0,022
		40	<b>P1A-4DRC</b>	0,022
		50	<b>P1A-4HRC</b>	0,045
		63	<b>P1A-4HRC</b>	0,045

Material:  
Zinc plated steel

Cyl. Ø mm	A mm	B	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
25	5	M5	2,5	10	10	6	20	5	25	2
32	6	M6	3	12	12	7	24	6	30	3
40	6	M6	3	12	12	7	24	6	30	3
50	8	M8	5	16	16	10	32	8	42	3,5
63	8	M8	5	16	16	10	32	8	42	3,5



## Swivel rod eye

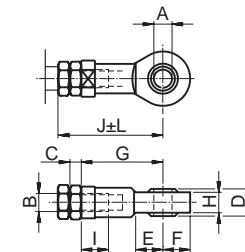


According to ISO 8139  
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction.

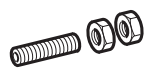
Material:  
Swivel rod eye: Zinc plated steel  
Swivel: tempered steel

12	<b>P1J-4DRS</b>	0,008
20	<b>P1J-4HRS</b>	0,019
25	<b>P1J-4HRS</b>	0,019
32	<b>P1A-4DRS</b>	0,025
40	<b>P1A-4DRS</b>	0,025
50	<b>P1A-4HRS</b>	0,045
63	<b>P1A-4HRS</b>	0,045

Cyl. Ø mm	A mm	B	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
20	5	M5	2,5	8	10	9	27	6	7,5	34,5	1
25	5	M5	2,5	8	10	9	27	6	7,5	34,5	1
32	6	M6	3	9	10	10	30	6,8	9	38,5	1,5
40	6	M6	3	9	10	10	30	6,8	9	38,5	1,5
50	8	M8	5	12	12	12	36	9	12	49	2
63	8	M8	5	12	12	12	36	9	12	49	2



## Pin bolt

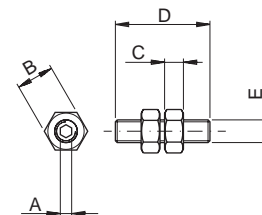


Intended for securing to the piston rod. The bolt can be combined with the swivel mount or clevis mount.

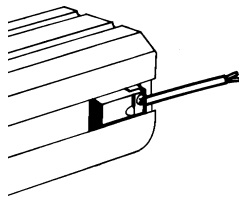
Material:  
Zinc plated steel

12	<b>P1J-6DS0</b>	0,002
20	<b>P1J-6HS0</b>	0,005
25	<b>P1J-6HS0</b>	0,005
32	<b>P1J-6KS0</b>	0,008
40	<b>P1J-6KS0</b>	0,008
50	<b>P1J-6MS0</b>	0,014
63	<b>P1J-6MS0</b>	0,014

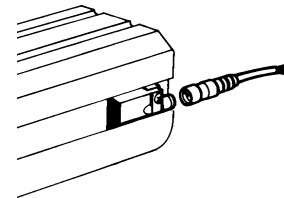
Cyl. Ø mm	A mm	B mm	C mm	D mm	E
12	1,5	5,5	1,6	10	M3
20	2,5	8	2,5	20	M5
25	2,5	8	2,5	20	M5
32	3	10	3	25	M6
40	3	10	3	25	M6
50	4	13	5	25	M8
63	4	13	5	25	M8



**P1J-2XRL**  
**P1J-2XHL**



**P1J-2XSH**  
**P1J-2XJH**



### Reed switch sensors

These sensors are based on a thoroughly proven reed switch, suitable for use at a wide range of voltages. This, together with the compact size and simple dovetail mounting, makes these sensors suitable for a wide range of applications. They can interface with electronic control systems, relay systems or conventional valves.

### Technical data

Specification	P1J-2XRL, 3 m P1J-2XSH
Type	Reed switch
Output	Normally open
Voltage range, P1J-2XRL	0-110 VAC/VDC
Voltage range, P1J-2XSH	0-60 VAC/VDC
Maximum voltage drop	2,8 V
Maximum load current	380 mA
Maximum interrupting capacity (resistive)	10 W
Minimum activation distance	11 mm
Repetition accuracy	±0,1 mm
Maximum operating frequency	500 Hz
Maximum response time	1 ms
Protection class	IP 67
Operating temperature range	-10 °C to +70 °C
Indication	LED, red
Material, sensor casing	Polyamide
Cable	PVC 2x0,2 mm <sup>2</sup>
Cable including female connector	PVC 3x0,2 mm <sup>2</sup>
Weight, sensor with 3 m cable	55 g
Weight, sensor with male connector	2 g
Weight, cable with connector, 3 m	90 g
Weight, cable with connector, 5 m	146 g
Weight, cable with connector, 10 m	286 g
Fitting	Dovetail

### Ordering data

Order code	Output	Cable length
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#### Reed switch sensors

<b>P8S-DRFLX</b>	Normally open	3 m*
<b>P8S-DRSHX</b>	Normally open	**

\* Moulded cable

\*\* Cable must be ordered separately.

### Electronic sensors

The electronic sensors are solid state sensors with no moving parts, and include squelch and transient protection circuitry as standard. The integral electronics make these sensors suitable for use in applications with very high switching frequencies.

### Technical data

Specification	P1J-2XHL, 3 m P1J-2XJH
Type	Hall element
Output	PNP, N.O.
Voltage range	10-28 VDC
Maximum voltage drop	1 V
Maximum load current	See diagram below
Maximum interrupting capacity (resistive)	12 W
Minimum activation distance	12 mm
Repetition accuracy	±0,1 mm
Maximum operating frequency	1 kHz
Maximum response time	0,01 ms
Protection class	IP 67
Operating temperature range	-10 °C to +70 °C
Indication	LED, red
Material, sensor casing	Polyamide
Cable	PVC 2x0,2 mm <sup>2</sup>
Cable including female connector	PVC 3x0,2 mm <sup>2</sup>
Weight, sensor with 3 m cable	55 g
Weight, sensor with male connector	2 g
Weight, cable with connector, 3 m	90 g
Weight, cable with connector, 5 m	146 g
Weight, cable with connector, 10 m	286 g
Fitting	Dovetail

### Ordering data

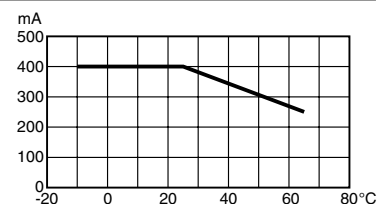
Order code	Output	Cable length
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#### Electronic sensors

<b>P8S-DPFLX</b>	7121 1001-93 PNP, NO	3 m*
<b>P8S-DPSHX</b>	7121 1001-94 PNP, NO	**

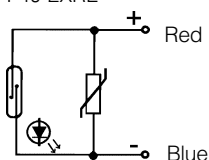
#### Cables for sensors (including female connector)

<b>9126344341</b>	3 m
<b>7121100195</b>	5 m
<b>9126344342</b>	10 m

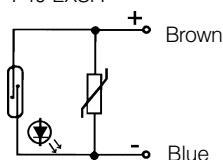


### Symbols

P1J-2XRL

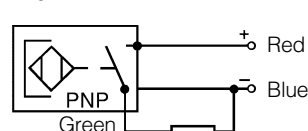


P1J-2XSH

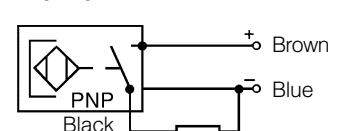


### Symbols

P1J-2XHL

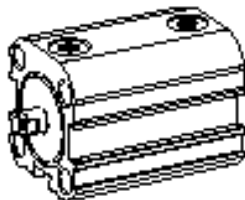


P1J-2XJH



# Service and Replacement Parts

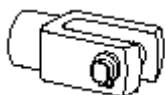
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## P1J Compact Cylinders

Non-repairable, **replace complete cylinder**

### Piston rod clevis



Bore Size	Part Number
20mm	P1J-4HRC
25mm	
32mm	P1A-4DRC
40mm	
50mm	P1A-4HRC
63mm	

### Swivel rod eye



Bore Size	Part Number
12mm	P1J-4DRS
20mm	P1J-4HRS
25mm	
32mm	P1A-4DRS
40mm	
50mm	P1A-4HRS
63mm	