

### Double and single-acting versions

The P1A range of cylinders is intended for use in a wide range of applications. The cylinders are particularly suitable for lighter duties in the packaging, food and textile industries.

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

Careful design and high quality manufacture throughout ensure long service life and optimum economy.

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

The cylinders are available in bores of 10, 12, 16, 20 and 25 mm, with stroke lengths from 10 mm to 320 mm.

Single-acting cylinders with spring return in the retract direction are available in stroke lengths up to 80 mm.

Single-acting cylinders with spring return in the advance direction are available in 16 mm, 20 mm and 25 mm bore sizes and with stroke lengths up to 80 mm.

### Double-acting cushioned cylinders

Adjustable pneumatic cushioning permits greater loads and higher operating speeds, making the cylinders suitable for more demanding duties.

These cylinders are available in bores of 16, 20 and 25 mm, with stroke lengths from 20 mm to 500 mm.

### Options

In addition to a wide range of standard cylinders, Mini ISO cylinders are available in several standard variants, such as non-standard stroke length, extended piston rods, double piston rods, high temperature versions etc. In addition, a complete range of sensors and mountings are available.

### Effective cushioning

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

### 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.

### Stainless steel versions

The Mini ISO range is also available in an all-stainless version with piston rod, barrel and end covers of stainless steel for use in particularly severe environments. See separate brochure for cylinder series P1S.

### Proximity sensing

A complete range of sensors for proximity sensing is available as accessories: both reed switch and Hall effect sensors are available. They are supplied with either flying lead or cable plug connector.

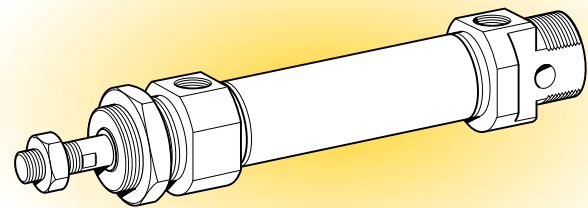
### Complete mounting programme

A complete ISO compatible mounting programme with surface-treated/stainless steel piston rod and cylinder mountings for both pivoted and fixed operation are available.

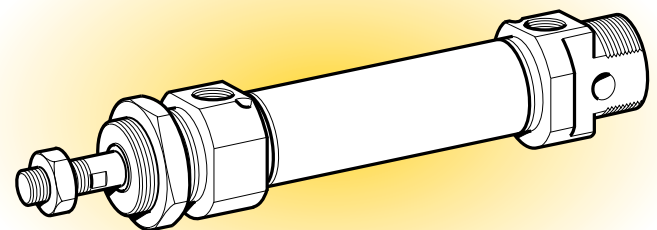
### Variants

In addition to the basic versions, a number of standard variants of Parker Pneumatics cylinders are available to meet all demands on function and environmental adaptation:

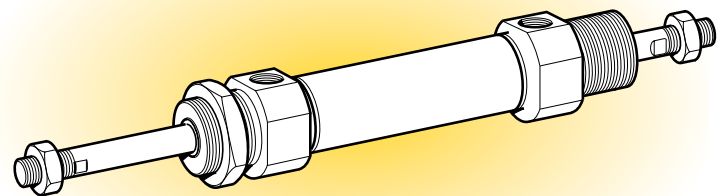
- Non-standard stroke lengths
- Extended piston rods
- Through piston rods
- Single acting cylinder with spring return (in the retract direction).
- Single acting cylinder with spring return in the advance direction (piston rod in extended position)
- External guide, for controlled guidance of the piston rod
- High-temperature cylinder versions for use in ambient temperatures ranging from -10 °C to +150 °C for bores 12, 16, 20 and 25 mm
- Cylinders with outer sealings in fluorocarbon rubber FPM
- Stainless steel cylinders, see brochure for series P1S



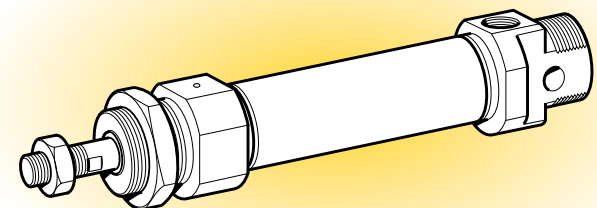
Double-acting, cushioned stroke



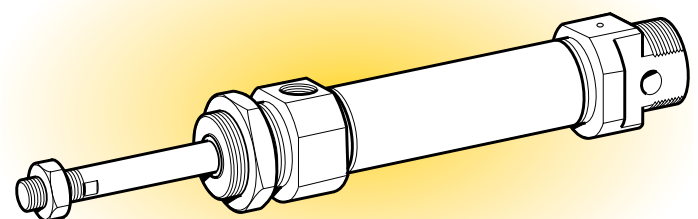
Double-acting, adjustable cushioning



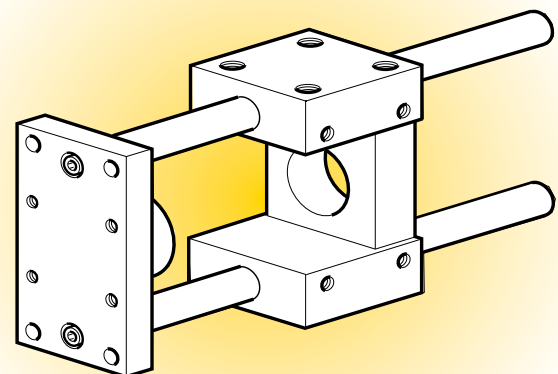
Double-acting, through piston rod



Single-acting, spring return



Single-acting, spring-extended



Double-acting, external guide device

## Cylinder forces, double acting variants

Cyl. bore/ pist. rod mm	Stroke	Pistonarea cm <sup>2</sup>	Max theoretical force in N (bar)									
			1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0
<b>10/4</b>	+	0,8	8	16	24	31	39	<b>47</b>	55	63	71	79
	-	0,7	7	13	20	26	33	<b>40</b>	46	53	59	66
<b>12/6</b>	+	1,1	11	23	34	45	57	<b>68</b>	79	90	102	113
	-	0,8	8	17	25	34	42	<b>51</b>	59	68	76	85
<b>16/6</b>	+	2,0	20	40	60	80	100	<b>120</b>	141	161	181	201
	-	1,7	17	35	52	69	86	<b>104</b>	121	138	156	173
<b>20/8</b>	+	3,1	31	63	94	126	157	<b>188</b>	220	251	283	314
	-	2,6	26	53	79	106	132	<b>158</b>	185	211	238	264
<b>25/10</b>	+	4,9	49	98	147	196	245	<b>295</b>	344	393	442	491
	-	4,1	41	82	124	165	206	<b>247</b>	289	330	371	412

+ = Outward stroke  
- = Return stroke

### Note!

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

## Cylinder forces single acting variants

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

Order code	Theoretical piston force at 6 bar				Order code	Theoretical piston force at 6 bar			
	Nmax	Nmin	Spring retraction Nmax	Nmin		Nmax	Nmin	Spring retraction Nmax	Nmin
<b>Single acting, spring return</b>					<b>Single acting, spring-extended</b>				
P1A-S010SS-0010	38	36	10	8,5	P1A-S016TS-0010	85	84	22,3	20,2
P1A-S010SS-0015	38	36	10	7,8	P1A-S016TS-0015	86	84	22,3	19
P1A-S010SS-0025	39	36	10	6,6	P1A-S016TS-0025	88	84	22,3	17
P1A-S010SS-0040	38	34	13	9	P1A-S016TS-0040	90	84	22,3	14
P1A-S010SS-0050	39	34	13	8	P1A-S016TS-0050	91	84	22,3	12
P1A-S010SS-0080	39	34	12	7					
P1A-S012SS-0010	53	51	16	14,4	P1A-S020TS-0010	132	130	30	28
P1A-S012SS-0015	53	51	16	13,6	P1A-S020TS-0015	133	130	30	27
P1A-S012SS-0025	55	51	16	12	P1A-S020TS-0025	135	130	30	25
P1A-S012SS-0040	52	48	19	13,4	P1A-S020TS-0040	138	130	30	22
P1A-S012SS-0050	53	48	19	12	P1A-S020TS-0050	140	130	30	20
P1A-S012SS-0080	55	48	21,4	12	P1A-S020TS-0080	139	108	31	17
P1A-S016SS-0010	102	99	22,3	20,2	P1A-S025TS-0010	205	203	38,5	36
P1A-S016SS-0015	103	99	22,3	19	P1A-S025TS-0015	207	203	38,5	34,7
P1A-S016SS-0025	105	99	22,3	17	P1A-S025TS-0025	210	203	38,5	32
P1A-S016SS-0040	106	95	22,3	14	P1A-S025TS-0040	214	203	38,5	28,5
P1A-S016SS-0050	108	95	22,3	12	P1A-S025TS-0050	217	203	38,5	26
P1A-S016SS-0080	107	95	22,5	12	P1A-S025TS-0080	223	206	36	21
P1A-S020SS-0010	163	161	30	28					
P1A-S020SS-0015	164	161	30	27					
P1A-S020SS-0025	167	161	30	25					
P1A-S020SS-0040	166	159	30	22					
P1A-S020SS-0050	168	159	30	20					
P1A-S020SS-0080	170	161	29,4	18					
P1A-S025SS-0010	256	253	44,3	41,4					
P1A-S025SS-0015	258	253	44,3	40					
P1A-S025SS-0025	262	253	44,3	37					
P1A-S025SS-0040	261	250	44,3	32					
P1A-S025SS-0050	264	250	44,3	30					
P1A-S025SS-0080	264	251	44,4	30					

## Main data

Cylinder designation	Cylinder		Piston rod			Total mass		Air consumption	Conn. thread
	bore	area	bore	area	thread	at 0 mm stroke	addition per 10 mm stroke		
	mm	cm <sup>2</sup>	mm	cm <sup>2</sup>		kg	kg	litres	
<b>Double acting, cushioned stroke</b>									
P1A-S010D	10	0,78	4	0,13	M4	0,04	0,003	0,0100 <sup>1)</sup>	M5
P1A-S012D	12	1,13	6	0,28	M6	0,07	0,004	0,0139 <sup>1)</sup>	M5
P1A-S016D	16	2,01	6	0,28	M6	0,09	0,005	0,0262 <sup>1)</sup>	M5
P1A-S020D	20	3,14	8	0,50	M8	0,18	0,007	0,0405 <sup>1)</sup>	G1/8
P1A-S025D	25	4,91	10	0,78	M10x1,25	0,25	0,011	0,0633 <sup>1)</sup>	G1/8
<b>Double acting, adjustable cushioning</b>									
P1A-S016M	16	2,01	6	0,28	M6	0,09	0,005	0,0262 <sup>1)</sup>	M5
P1A-S020M	20	3,14	8	0,50	M8	0,18	0,007	0,0405 <sup>1)</sup>	G1/8
P1A-S025M	25	4,91	10	0,78	M10x1,25	0,25	0,011	0,0633 <sup>1)</sup>	G1/8
<b>Single acting, spring return</b>									
P1A-S010SS	10	0,78	4	0,13	M4	0,04	0,003	0,0055 <sup>1)</sup>	M5
P1A-S012SS	12	1,13	6	0,28	M6	0,08	0,004	0,0079 <sup>1)</sup>	M5
P1A-S016SS	16	2,01	6	0,28	M6	0,10	0,005	0,0141 <sup>1)</sup>	M5
P1A-S020SS	20	3,14	8	0,50	M8	0,18	0,007	0,0220 <sup>1)</sup>	G1/8
P1A-S025SS	25	4,91	10	0,78	M10x1,25	0,26	0,011	0,0344 <sup>1)</sup>	G1/8
<b>Single acting, spring-extended</b>									
P1A-S016TS	16	2,01	6	0,28	M6	0,10	0,005	0,0141 <sup>1)</sup>	M5
P1A-S020TS	20	3,14	8	0,50	M8	0,18	0,007	0,0220 <sup>1)</sup>	G1/8
P1A-S025TS	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 6 bar

## 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  
(Ø12, 16, 20 and 25 mm)min -10 °C

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

**Material specification**

Piston rod	Stainless steel, DIN X 10 CrNiS 18 9
Piston rod seal	Nitrile rubber, NBR
Piston rod bearing	Multilayer PTFE/steel
End covers	Anodized aluminium
O-ring, internal	Nitrile rubber, NBR
Cylinder barrel	Stainless steel, DIN X 5 CrNi 18 10
Piston, complete	Nitrile rubber, 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 Mini ISO:**

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

Piston rod seal	Nitrile rubber, NBR
Piston complete	Nitrile rubber, NBR/steel

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

Piston rod seal	Fluorocarbon rubber, FPM
Piston complete	HNBR/steel

**Cylinders with outer sealings in fluorocarbon, type V:**

Piston rod seal/ Scraper ring	Fluorocarbon rubber, FPM
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Spare part = new cylinder

**Cushioning diagram**

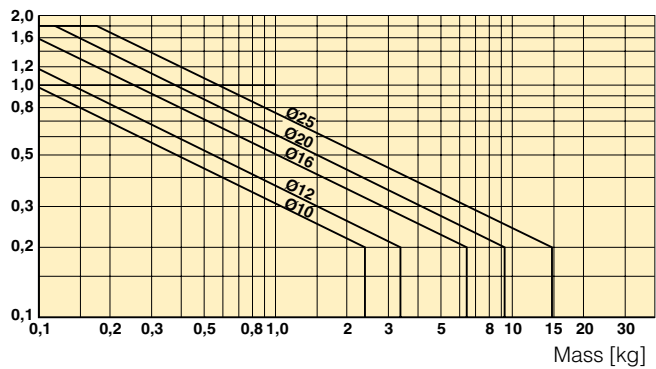
Use the diagram below to determine the necessary size of cylinder to provide the requisite cushioning performance. The maximum cushioning performance, as indicated in the diagram, is based on the following assumptions:

- 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.

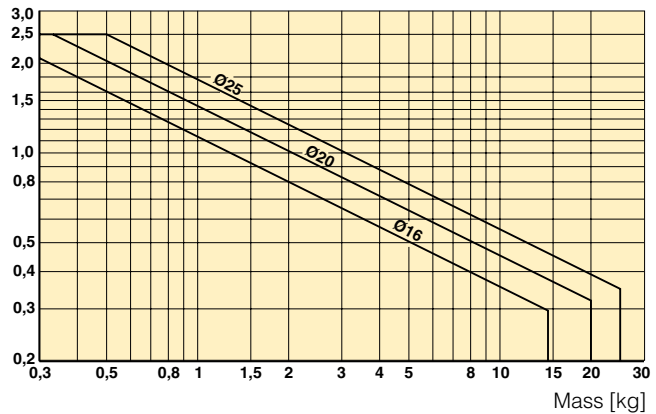
Fixed end-cushioning

Speed [m/s]



Adjustable pneumatic end-cushioning

Speed [m/s]



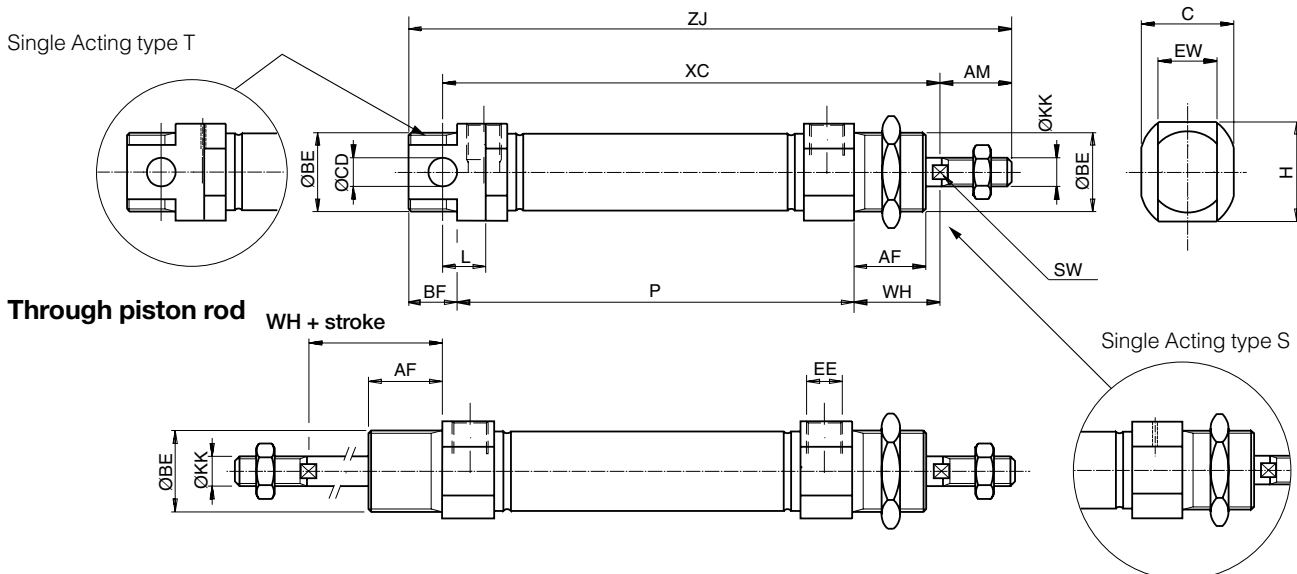
## Dimensions

### Double and single acting cylinders

### 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.

**AirCad™**  
Drawing Library



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

1) P1A-S016DS/SS/TS

2) P1A-S016MS

### Double acting cylinders

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

### Single-acting, spring return, type SS

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

### Single-acting, spring-extended, type TS

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

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

Length tolerances  $\pm 1$  mm

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

**Guide for selecting suitable tubing**

The selection of the correct size of tubing is often based on experience, with no great thought to optimizing energy efficiency and cylinder velocity. This is usually acceptable, but making a rough calculation can result in worthwhile economic gains.

**The following is the basic principle:**

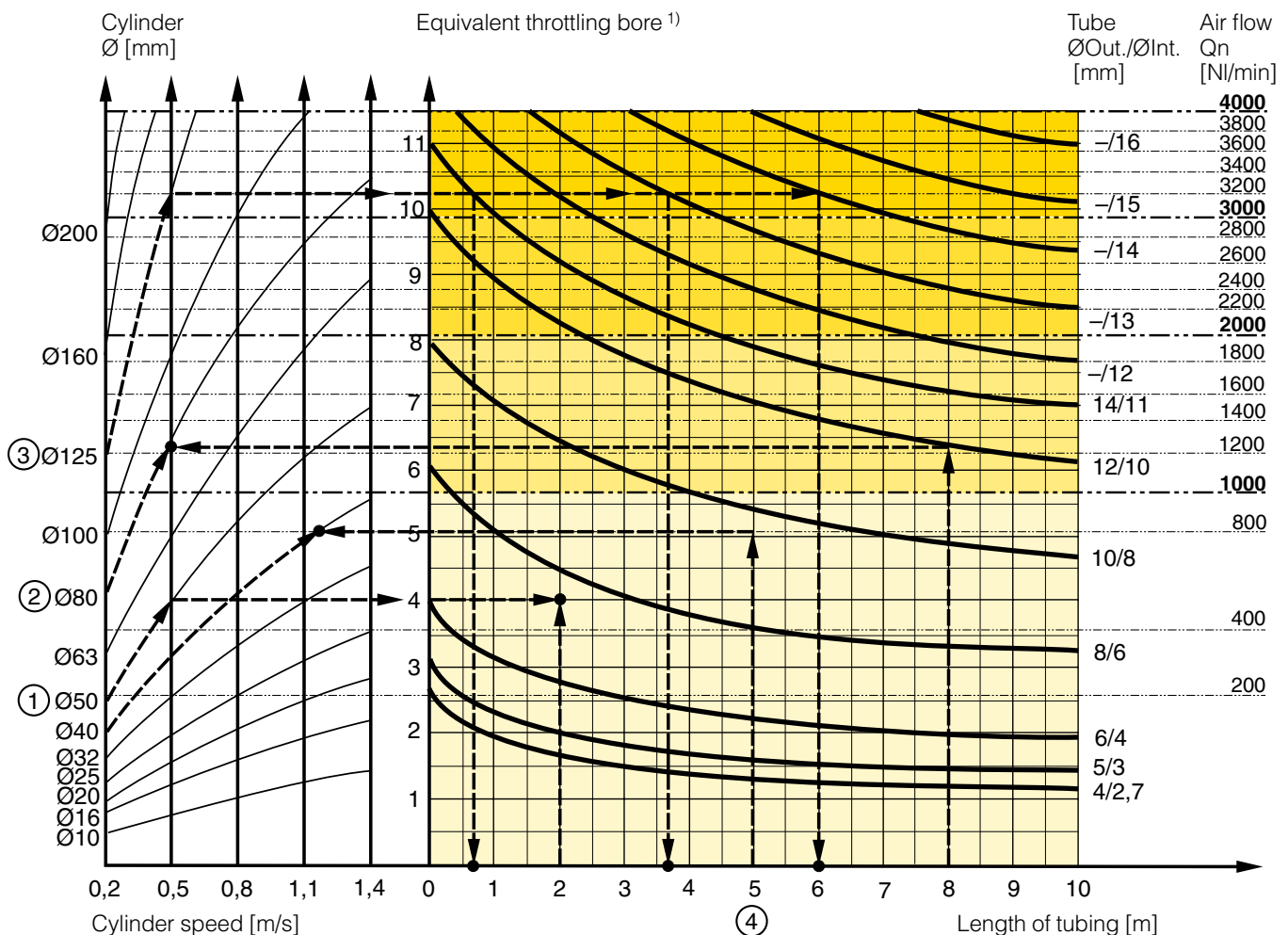
1. The primary line to the working valve could be over sized (this does not cause any extra air consumption and consequently does not create any extra costs in operation).
2. The tubes between the valve and the cylinder should, however, be optimized according to the principle that an insufficient bore throttles the flow and thus limits the cylinder speed, while an oversized pipe creates a dead volume which increases the air consumption and filling time.

The chart below is intended to help when selecting the correct size of tube to use between the valve and the cylinder.

**The following prerequisites apply:**

The *cylinder load should be about 50%* of the theoretical force (= normal load). A lower load gives a higher velocity and vice versa. The tube size is selected as a function of the *cylinder bore*, the desired *cylinder velocity* and the *tube length* between the valve and the cylinder.

If you want to use the capacity of the valve to its maximum, and obtain maximum speed, the tubing should be chosen so that they at least correspond with the equivalent restriction diameter (see description below), so that the tubing does not restrict the total flow. This means that a short tubing must have at least the equivalent restriction diameter. If the tubing is longer, choose it from the table below. Straight fittings should be chosen for highest flow rates. (Elbow and banjo fittings cause restriction.)



- 1) The "equivalent throttling bore" is a long throttle (for example a tube) or a series of throttles (for example, through a valve) converted to a short throttle which gives a corresponding flow rate. This should not be confused with the "orifice" which is sometimes specified for valves. The value for the orifice does not normally take account of the fact that the valve contains a number of throttles.
- 2) Qn is a measure of the valve flow capacity, with flow measured in litre per minute (l/min) at 6 bar(e) supply pressure and 1 bar pressure drop across the valve.









## Order key

<b>P1A-S</b>	<b>016</b>	<b>M</b>	<b>S</b>	<b>-</b>	<b>0025</b>
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Cylinder bore mm
010
012
016
020
025


  

Cylinder type / function
<b>M</b>  Double-acting, adjustable cushioning, Ø16-25 mm. Not for sealing material type F and L
<b>D</b>  Double-acting, non-adjustable cushioning, Ø10 - Ø25
<b>F</b>  Double-acting, adjustable cushioning, thru-rod, Ø16-25 mm. Not for sealing material type F
<b>K</b>  Double-acting, non-adjustable cushioning, thru-rod, Ø10 - Ø25
<b>S</b>  Single-acting, non-adjustable cushioning, spring return for retract stroke, Ø10-25 mm
<b>T</b>  Single-acting, non-adjustable cushioning, spring return for advance stroke, Ø16-25 mm

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

Sealing material
<b>S</b> Standard, -20 °C to +80 °C. Magnetic piston
<b>F</b>  High temperature, Ø12, 16, 20 and 25 mm -10 °C to +150 °C. Non-magnetic piston
<b>V</b> External seals of fluorinated rubber. -20 °C to +80 °C. Magnetic piston

## Stroke length

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

\* Standard stroke lengths in mm according to ISO 4393

\*\* Max stroke 1000 mm

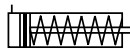


## Data

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



### Single-acting spring return Fixed end cushioning



Cyl.bore mm	Stroke mm	Order code
<b>10</b> Conn. M5	10	P1A-S010SS-0010
	15	P1A-S010SS-0015
	25	P1A-S010SS-0025
	40	P1A-S010SS-0040
	50	P1A-S010SS-0050
	80	P1A-S010SS-0080
<b>12</b> Conn. M5	10	P1A-S012SS-0010
	15	P1A-S012SS-0015
	25	P1A-S012SS-0025
	40	P1A-S012SS-0040
	50	P1A-S012SS-0050
	80	P1A-S012SS-0080
<b>16</b> Conn. M5	10	P1A-S016SS-0010
	15	P1A-S016SS-0015
	25	P1A-S016SS-0025
	40	P1A-S016SS-0040
	50	P1A-S016SS-0050
	80	P1A-S016SS-0080
<b>20</b> Conn. G1/8	10	P1A-S020SS-0010
	15	P1A-S020SS-0015
	25	P1A-S020SS-0025
	40	P1A-S020SS-0040
	50	P1A-S020SS-0050
	80	P1A-S020SS-0080
<b>25</b> Conn. G1/8	10	P1A-S025SS-0010
	15	P1A-S025SS-0015
	25	P1A-S025SS-0025
	40	P1A-S025SS-0040
	50	P1A-S025SS-0050
	80	P1A-S025SS-0080

### Single-acting spring-extended Fixed end cushioning



Cyl.bore mm	Stroke mm	Order code
<b>16</b> Conn. M5	10	P1A-S016TS-0010
	15	P1A-S016TS-0015
	25	P1A-S016TS-0025
	40	P1A-S016TS-0040
	50	P1A-S016TS-0050
<b>20</b> Conn. G1/8	10	P1A-S020TS-0010
	15	P1A-S020TS-0015
	25	P1A-S020TS-0025
	40	P1A-S020TS-0040
	50	P1A-S020TS-0050
<b>25</b> Conn. G1/8	10	P1A-S025TS-0010
	15	P1A-S025TS-0015
	25	P1A-S025TS-0025
	40	P1A-S025TS-0040
	50	P1A-S025TS-0050
	80	P1A-S025TS-0080

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

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

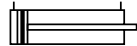
## Data

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



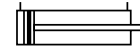
## Double-acting

### Fixed end cushioning



Cyl.bore mm	Stroke mm	Order code
<b>10</b> Conn. M5	10	P1A-S010DS-0010
	15	P1A-S010DS-0015
	20	P1A-S010DS-0020
	25	P1A-S010DS-0025
	30	P1A-S010DS-0030
	40	P1A-S010DS-0040
	50	P1A-S010DS-0050
	80	P1A-S010DS-0080
	100	P1A-S010DS-0100
	125	P1A-S010DS-0125
Max stroke 500 mm		
<b>12</b> Conn. M5	10	P1A-S012DS-0010
	15	P1A-S012DS-0015
	20	P1A-S012DS-0020
	25	P1A-S012DS-0025
	30	P1A-S012DS-0030
	40	P1A-S012DS-0040
	50	P1A-S012DS-0050
	80	P1A-S012DS-0080
	100	P1A-S012DS-0100
	125	P1A-S012DS-0125
160	P1A-S012DS-0160	
200	P1A-S012DS-0200	
Max stroke 500 mm		
<b>16</b> Conn. M5	10	P1A-S016DS-0010
	15	P1A-S016DS-0015
	20	P1A-S016DS-0020
	25	P1A-S016DS-0025
	30	P1A-S016DS-0030
	40	P1A-S016DS-0040
	50	P1A-S016DS-0050
	80	P1A-S016DS-0080
	100	P1A-S016DS-0100
	125	P1A-S016DS-0125
160	P1A-S016DS-0160	
200	P1A-S016DS-0200	
Max stroke 500 mm		

### Fixed end cushioning



Cyl.bore mm	Stroke mm	Order code
<b>20</b> Conn. G1/8	10	P1A-S020DS-0010
	15	P1A-S020DS-0015
	20	P1A-S020DS-0020
	25	P1A-S020DS-0025
	30	P1A-S020DS-0030
	40	P1A-S020DS-0040
	50	P1A-S020DS-0050
	80	P1A-S020DS-0080
	100	P1A-S020DS-0100
	125	P1A-S020DS-0125
160	P1A-S020DS-0160	
200	P1A-S020DS-0200	
250	P1A-S020DS-0250	
320	P1A-S020DS-0320	
Max stroke 1000 mm		
<b>25</b> Conn. G1/8	10	P1A-S025DS-0010
	15	P1A-S025DS-0015
	20	P1A-S025DS-0020
	25	P1A-S025DS-0025
	30	P1A-S025DS-0030
	40	P1A-S025DS-0040
	50	P1A-S025DS-0050
	80	P1A-S025DS-0080
	100	P1A-S025DS-0100
	125	P1A-S025DS-0125
160	P1A-S025DS-0160	
200	P1A-S025DS-0200	
250	P1A-S025DS-0250	
320	P1A-S025DS-0320	
Max stroke 1000 mm		

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

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

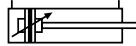
## Data

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



## Double-acting

### Adjustable cushioning



Cyl.bore mm	Stroke mm	Order code
<b>16</b> Conn. M5	20	P1A-S016MS-0020
	25	P1A-S016MS-0025
	30	P1A-S016MS-0030
	40	P1A-S016MS-0040
	50	P1A-S016MS-0050
	80	P1A-S016MS-0080
	100	P1A-S016MS-0100
	125	P1A-S016MS-0125
	160	P1A-S016MS-0160
	200	P1A-S016MS-0200
	250	P1A-S016MS-0250
	320	P1A-S016MS-0320
	400	P1A-S016MS-0400
	500	P1A-S016MS-0500
Max stroke 500 mm		
<b>20</b> Conn. G1/8	20	P1A-S020MS-0020
	25	P1A-S020MS-0025
	30	P1A-S020MS-0030
	40	P1A-S020MS-0040
	50	P1A-S020MS-0050
	80	P1A-S020MS-0080
	100	P1A-S020MS-0100
	125	P1A-S020MS-0125
	160	P1A-S020MS-0160
	200	P1A-S020MS-0200
	250	P1A-S020MS-0250
	320	P1A-S020MS-0320
	400	P1A-S020MS-0400
	500	P1A-S020MS-0500
Max stroke 1000 mm		

Cyl.bore mm	Stroke mm	Order code
<b>25</b> Conn. G1/8	20	P1A-S025MS-0020
	25	P1A-S025MS-0025
	30	P1A-S025MS-0030
	40	P1A-S025MS-0040
	50	P1A-S025MS-0050
	80	P1A-S025MS-0080
	100	P1A-S025MS-0100
	125	P1A-S025MS-0125
	160	P1A-S025MS-0160
	200	P1A-S025MS-0200
	250	P1A-S025MS-0250
	320	P1A-S025MS-0320
	400	P1A-S025MS-0400
	500	P1A-S025MS-0500
Max stroke 1000 mm		

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

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