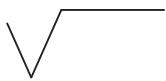


Technical data:
Forces and working conditions



from page 1.1.1

ISO 6432



from page 1.2.1

ISO15552 (ø 32-125)



from page 1.5.1

ISO 15552 (ø 160-320)



from page 1.8.1

Round cylinders



from page 1.11.1

CNOMO 06.07.00



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Compact cylinders 21287 - UNITOP



from page 1.17.1

Short stroke cylinders



from page 1.20.1

Compact guided cylinders



from page 1.23.1

Rodless cylinders



from page 1.26.1

Rotary cylinders



from page 1.40.1

Hi-rotor cylinders



from page 1.50.1

Rotary actuators ARC



from page 1.50.20

Rotary actuators ARP



from page 1.50.30

Cartridge cylinders



from page 1.55.1

Slide units for cylinders ISO 6432



from page 1.70.1

Slide units for cylinders ISO 6431



from page 1.70.20

Piston rod brake for cylinders ISO 6432



from page 1.75.1

Piston rod brake for cylinders ISO 15552



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Hand grips



from page 1.80.1

Piston rod accessories



from page 1.85.1

Mounting accessories for cylinders ISO 6432



from page 1.95.1

Mounting accessories for cylinders ISO 15552



from page 1.97.1

Mounting accessories for cylinders CNOMO



from page 1.99.1

Mounting accessories for cylinders compact UNITOP



from page 1.100.1

Shock absorbers



from page 1.105.1

Switches and brackets



from page 1.110.1

The pneumatic cylinder is an engine that uses pneumatic energy, transforming it into mechanical work by means of rectilinear movement.

It is composed of a tube, closed at the ends by two heads, within which a piston moves, separating two chambers. The piston is equipped with a rod that, when exiting through one or both of the heads, permits the exploitation of the force developed by the cylinder.

The characteristic parameters of a cylinder are:

Bore = internal diameter of the tube [mm].
Stroke = working movement to be performed [mm].
Diameter of piston rod = closely correlated to the bore [mm].
Number of actings = number of strokes per cycle during which work is performed. These may be either one (single acting); or two (double acting).

Operating pressure [1 bar].

Operating temperature [°C].

Translation velocity [m/s].

Number of adjustable end cushionings.

Kinetic energy absorbed by the cushionings [Nm].

Air consumption [nl/min].

Theoretical force Ft [N].

BORE Ø

A finite number of bores are available, all of which are standardized. The range goes from bores measuring just a few millimetres to those of 300 mm.

PRESSURE p

This value is not very variable, due to technical-economical reasons. It covers the range 5-7 bar. A system operating at 6 bar is considered optimized.

PISTON ROD DIAMETER d

This is standardized for all the bores available.

STROKE c

The most frequently requested strokes are available in our warehouse. Any technically compatible stroke can be supplied in a short time. It is advisable to choose easily available strokes that are greater than the operating strokes, halting the stroke at the desired value by means of external mechanical stops, in order to obtain mechanical precision and greater durability of the cylinder.

OPERATING TEMPERATURE

Ambient temperature must not be such as to make the cylinder assume values outside the temperature range for which it was constructed. It is possible to construct cylinders that are resistant to very low or very high temperatures, using special materials.

The catalogues always show the operating temperature range.

The cylinder can also reach high temperatures due to particular conditions of use: in general, when the friction between the tube and the mobile apparatus increases greatly (e.g. due to high speeds with insufficient lubrication, the exhaustion of assembly lubrication or excessive compression of the air). The seals of the cylinder are the most short-lived component and those that are most sensitive to temperature.

TRANSLATION VELOCITY v

It is advisable to adjust the translation velocity by means of the air discharge.

The movement of the piston is fairly regular even with minimum velocities of 40 mm/s.

The maximum velocity acceptable without additional lubrication to assembly lubrication, is equivalent to 1000 mm/s. Velocities of 2 ÷ 3 m/s can be reached with appropriate lubrication.

For high velocities, as for high masses, the kinetic energy to be reabsorbed is excessive for the air cushionings. It is necessary to use external hydraulic cushionings of an appropriate size.

THEORETICAL FORCE Ft

The theoretical force generated by a cylinder can be calculated by multiplying the actual area of the piston subjected to pressure by the operating pressure.

For cylinders during pushing, the effective area of the piston corresponds to the bore:

$$F_t = \pi \Phi^2 p / 40 \text{ [N]}$$

Φ = bore [mm]

P = operating pressure [bar]

N.B.: the formula considers passages from bars to N/m² and from mm² to m².

For cylinders in traction, it is necessary to subtract the area of the rod from that of the piston:

$$F_t = \pi (\Phi^2 - d^2) p / 40 \text{ [N]}$$

The **MOTIVE POWER F** available to the piston rod is:

$$F = F_t - R$$

Where R represents a force of reaction that comprises numerous factors: **friction, form and type of seals, operating pressure, counter-pressure at discharge**.

The value of R is not easy to quantify as its component factors are not only numerous, but also variable. A cautious estimate for usual applications could be 30% **Ft**.

As shown by the graph illustrated below, which indicates the progress of the pressure values of delivery and discharge during the uniform movement of a cylinder, the delivery value Pm and the discharge value Ps remain constant during the stroke of the cylinder, if we exclude the brief transitory periods: of acceleration following the switching of the distributing valve and cushion at the end of the stroke.

The cylinder is thus prevalently subject to a motive power F proportional to Pm and the pushing surface, and to a counter-pressure force **Fs** proportional to the pressure Ps and the section upon which it acts, both of which are constant. The load reaction Fc must be added to these two forces.

In other words, the cylinder, in dynamic equilibrium, will - like all engines in this state - find itself under the action of contrasting forces that balance each other. It will move at a constant speed under the action of a constant force.

Ft - Fs - Fa = Fc Where Fs is the counter-pressure force and Fa is a force that bears in mind the friction and reduction of the operating power, to which Ft is linked, which does not reach the static network pressure, as can be seen in the graph. During the transitory acceleration period, the force Fs is very low, as the air is being discharged. As the speed of the piston increases, the air being discharged is compressed and the force Fs increases until the state of equilibrium is reached.

For example, we wish to find the cylinder capable of overcoming the load value Fc = 1200 [N].

The theoretical force Ft must be at least 30% greater. Let's assume that Ft = 1600 [N].

This gives the following result:

$$\Phi = \sqrt{40F_t/\pi p} \quad \Phi = \sqrt{40 \times 1600 / 3,14 \times 6} \quad \approx 58 \text{ [mm]}$$

The closest standardized bores turn out to be: 50 mm and 63 mm. It is advisable to choose the bore $\Phi = 63 \text{ mm}$, also because it enables a reserve of power to be obtained.

The uniform movement of the cylinder can be obtained by regulating the air at the discharge.

In order to obtain high values, on the other hand, it is necessary to make an appropriate increase in the discharge space in order to obtain accelerated movements, as the equilibrating force of counter-pressure is no longer present.

PEAK LOAD

In the case of long strokes, the load that can be applied to the piston rod is reduced due to the decrease in resistance at peak load.

The lifespan of a cylinder depends largely on its mechanical application. Installation must be performed in such a way as to avoid, or at least minimize, bending moments and radial loads on the piston rod (the most onerous kind of anchorage is the hinge type).

If only axial loads need be applied, the piston rod will be subjected to the peak load during pushing.

As the acceptable peak load is proportional to the diameter of the piston rod **d** (through the elastic modulus and the inertia moment) and inversely proportional to twice the stroke (length of free inflexion), in the case in which it does not allow the application of the required force, it is necessary to increase the diameter of the piston rod, passing to a suitably larger bore.

The choice of the standardized bore that best satisfies the requirements of the application in question is not just linked to the satisfaction of the force to be provided, but also to that of other conditions. These include the need to always have a power reserve (by choosing a larger size) and that of not causing excessive stress to the cushionings.

AIR CONSUMPTION [nl/min]

Air consumption air is a working value; it has a significant influence on costs.
It is possible to calculate the average air consumption using the following formula:

$$Q = \pi \Phi^2 / 4 \times 60 c/t \times (p+p_0) / p_0 \times 10^{-3} \times 10^{-3} [\text{nl/min}]$$

Where:

Q = air consumption [nl/min]

Φ = bore [mm]

c = stroke [mm]

t = time taken to perform the stroke [s]

p = atmospheric operating pressure [bar]

p_0 = atmospheric pressure: 1 bar

For example, we want to calculate the consumption of the following cylinder:

$d = 50 \text{ mm}$; $c = 300 \text{ mm}$; $t = 0,45 \text{ s}$; $p = 6 \text{ bar}$

$$Q = 3,14 \times 25 \times 10^2 / 4 \times (60 \times 3 \times 10^2 / 0,45) \times 7 \times 10^{-3} \times 10^{-3} = 550 [\text{nl/min}]$$

THEORETICAL TABLE OF CYLINDER FORCES

PISTON FORCE

The piston force (F) can be determined on the basis of the following formulae relating to the area of the piston rod (A), operating pressure (p) and friction (R):

$$\text{Piston force } F = a \cdot p - R$$

$$(\text{final pressure}) \quad F = p \cdot 10 \frac{d^2 \cdot \pi \cdot 10}{4} - R$$

p = bar

d = bore (mm)

R = friction = 10% (N)

A = area of piston rod

F = actual force of piston (N)

Pressure/force table for pneumatic cylinders										
Operating pressure bar	1	2	3	4	5	6	7	8	9	10
Bore mm	Piston force (N)									
6	2,5	5,1	7,6	10,2	12,7	15,3	17,8	20,4	22,9	25,4
8	4,5	9,0	13,6	18,1	22,6	27,1	31,7	36,2	40,7	45,2
10	7,1	14,1	21,2	28,3	35,3	42,4	49,5	56,5	63,6	70,7
12	10,2	20,4	30,5	40,7	50,9	61,0	71,3	81,4	91,6	101
16	18,1	36,2	54,3	72,4	90,5	109	127	145	163	181
20	28,3	56,5	84,8	113	141	170	198	226	254	283
25	44,2	88,4	133	177	221	265	309	353	398	442
32	72,3	145	217	290	362	434	507	579	651	724
40	113	226	339	452	565	679	792	905	1020	1130
50	177	353	530	707	884	1060	1240	1410	1590	1770
63	281	561	842	1120	1400	1680	1960	2240	2520	2810
80	452	905	1360	1810	2260	2710	3170	3620	4070	4520
100	707	1410	2120	2830	3530	4240	4950	5650	6360	7070
125	1100	2210	3310	4420	5520	6630	7730	8840	9940	11000
160	1810	3620	5430	7240	9050	10900	12700	14500	16300	18100
200	2830	5650	8480	11300	14100	17000	19800	22600	25400	28300
250	4420	8840	13300	17700	22100	26500	30900	35300	39800	44200
320	7240	14500	21700	29000	36200	43400	50700	57900	65100	72400

Cylinders ISO 6432

Bores from 8 to 25 mm

Single acting



Standard executions		
Version	Symbol	Type
Non magnetic		MS
Magnetic		MSM



On request, they can be supplied according Directive 94/9/EC - ATEX
CE Ex II 2 GDc T5

Options	Suffix
Through rod from bore 16 to 25 mm.	P
Rear spring from bore 16 to 25 mm.	T
Seals FKM max 150 °C	V
Extended rod in hardened and chrome plated steel suitable for piston rod brake from bore 12 to 25 mm.	B
Special versions on request	/ S

The options can be combined one another (when this is possible)

Series of cylinders conforming to ISO 6432 standards
The heads are connected with the body through rolling; this guarantees perfect fit.

The cushionings are in nitrile rubber to cushion the impact of the piston.

The standard cylinders are provided with head and rod nut.
One or more magnetic reed switches can be applied to the magnetic type.

For the magnetic reed switches type ASV see from page 1.110.1.

For mounting accessories see from page 1.95.1.

For rod accessories see from page 1.85.1.

For dimensions of the cylinder with the piston rod brake see page 1.75.5.

Seal kits not available for these cylinders.

How to order: 25 / 50 MSP

25	/	50	MS	P
Bore	/	Stroke	Type	Option

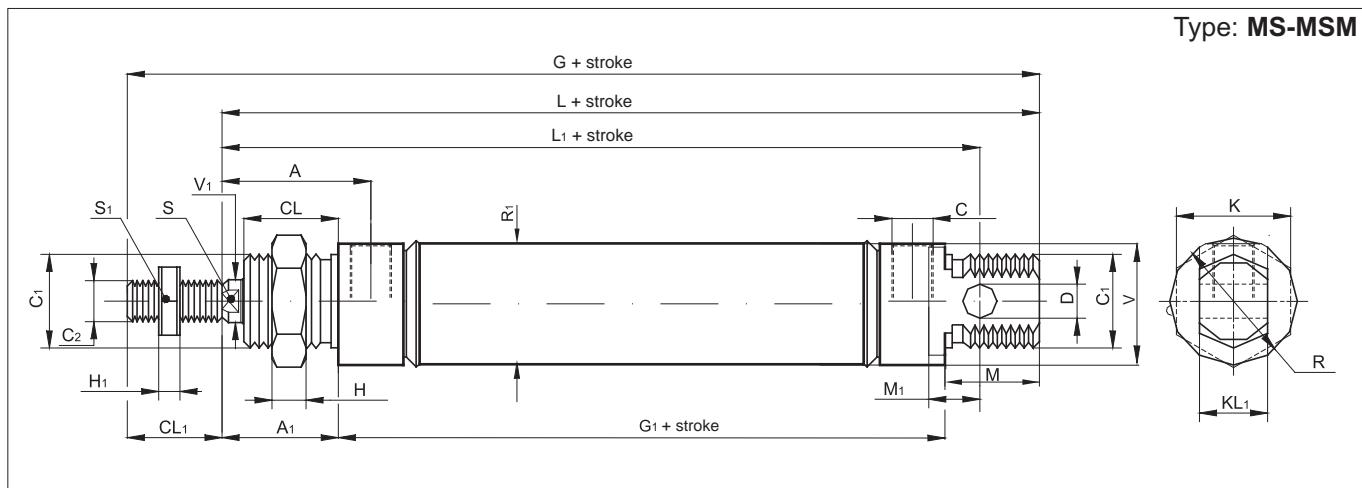
Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure	max 10 bar
Temperature range	-30 °C + + 80°C
Materials	Heads: Anodised aluminium Tube: Stainless steel AISI 304 Rod: Stainless steel AISI 303 Seals: Polyurethane - Brass piston

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Thrust force at 6 bar (N)	Traction force of the spring (N)			
				Stroke 10 min.	Stroke 10 max	Stroke 25 min.	Stroke 25 max
8	10, 25, 50	50	20	4,8	5,3	4	5,3
10			35	4,8	5,3	4	5,3
12			50	6,3	6,9	5,4	6,9
16			90	13,1	14	11,8	14
20			148	18,1	19,4	16,4	19,4
25			250	22,9	23,9	21,1	23,9
				17,7	23,9		

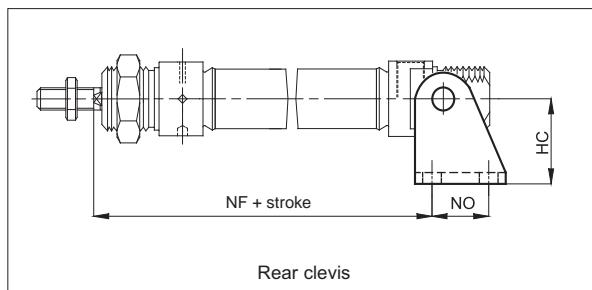
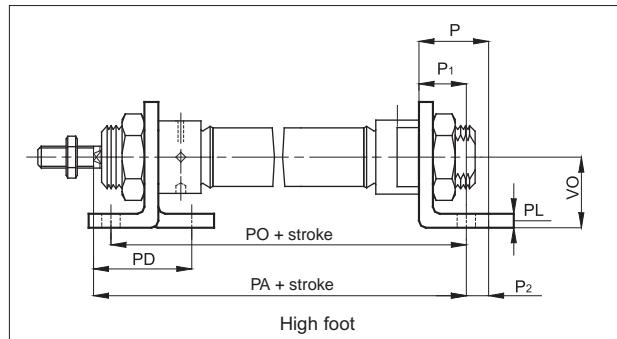
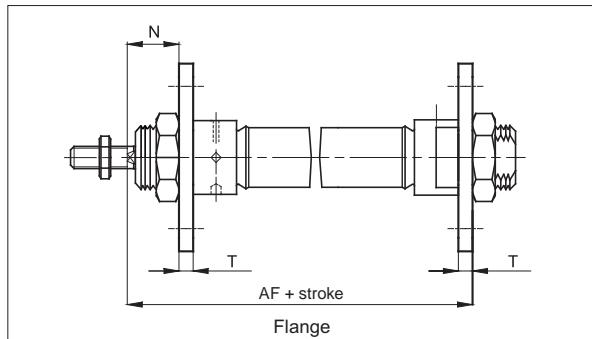
Cylinders ISO 6432

Bores from 8 to 25 mm

Single acting



\varnothing mm	C_2	V_1	C_1	R	KL_1	R_1	V	D	CL_1	L_1	L	M	G_1	A_1	CL	A	M_1	S	C	G	K	H	H_1	S_1
8	M4	4	M12x1,25	16	8	9,27	15	4	12	64	74	12	46	16	12	21	6	/	M5	86	19	6	2	7
10	M4	4	M12x1,25	16	8	11,27	15	4	12	64	74	12	46	16	12	21	6	/	M5	86	19	6	2	7
12	M6	6	M16x1,5	19	12	13,27	18	6	16	75	88	16	48	22	16	27	9	5	M5	104	22	5	3	10
16	M6	6	M16x1,5	21	12	17,27	19	6	16	82	96	16	58	22	16	27	9	5	M5	112	19	5	3	12
20	M8	8	M22x1,5	30	16	21,27	28,5	8	20	95	105	22	59	24	18	31,5	12	7	1/8"	125	27	8	4	14
25	M10x1,25	10	M22x1,5	30	16	26,5	28,5	8	22	104	114	22	64	28	20	36	12	9	1/8"	136	27	8	6	17



\varnothing mm	AF	HC	P	P_1	P_2	PA	PD	PL	PO	T	VO	N	NF	NO
8	65	24	16	11	5	73	24	3	68	3	16	13	62,5	12,5
10	65	24	16	11	5	73	24	3	68	3	16	13	62,5	12,5
12	76	27	20	14	6	86	32	4	78	4	20	18	73	15
16	84	27	20	14	6	94	32	4	86	4	20	18	80	15
20	88	30	25	17	8	100	36	5	93	5	25	19	91	20
25	97	30	25	17	8	109	40	5	98	5	25	23	100	20

For dimensions and codes of the accessories see page 1.95.1.

Cylinders ISO 6432

Bores from 8 to 25 mm

Double acting



Standard executions		
Version	Symbol	Type
Non magnetic		MD
Magnetic		MDM
Magnetic with cushionings from bore 16 to 25 mm		MDMA



On request, they can be supplied according Directive 94/9/EC - ATEX
CE II 2 GDc T5

Options	Suffix
Through rod from bore 16 to 25 mm.	P
Seals FKM max 150 °C	V
Extended rod in hardened and chrome plated steel suitable for piston rod brake from bore 12 to 25 mm.	B
Special versions on request	/ S

The options can be combined one another (when this is possible)



Series of cylinders conforming to ISO 6432 standards
The heads are connected with the body through rolling; this guarantees perfect fit.

The cushionings are in nitrile rubber to relieve the impact of the piston; the MDMA type is provided with adjustable air cushioning at both ends.

The standard cylinders are provided with head and rod nut.
One or more magnetic reed switches can be applied to the magnetic type.

For the magnetic reed switches type ASV see from page 1.110.1

For mounting accessories see from page 1.95.1.

For rod accessories see from page 1.85.1.

For dimensions of the cylinder with the piston-rod brake see page 1.75.5.

How to order: 25 / 50 MDMP

25	/	50	MDM	P
Bore	/	Stroke	Type	Option

Technical data

Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.			
Pressure	max 10 bar			
Temperature range	-30 °C ÷ + 80°C			
Materials	Heads: Anodised aluminium Tube: Stainless steel AISI 304 Rod: Stainless steel AISI 303 Seals: Polyurethane - Brass piston			

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Cushion length (mm)
8		200	—
10	10, 25, 50, 80	200	—
12	100, 125, 160	320	—
16	200, 250, 320, 400, 500	1000	16
20		1000	17
25		1000	20

The MDMA type can only be supplied with bores 16, 20, 25; the minimum stroke is 25 mm.

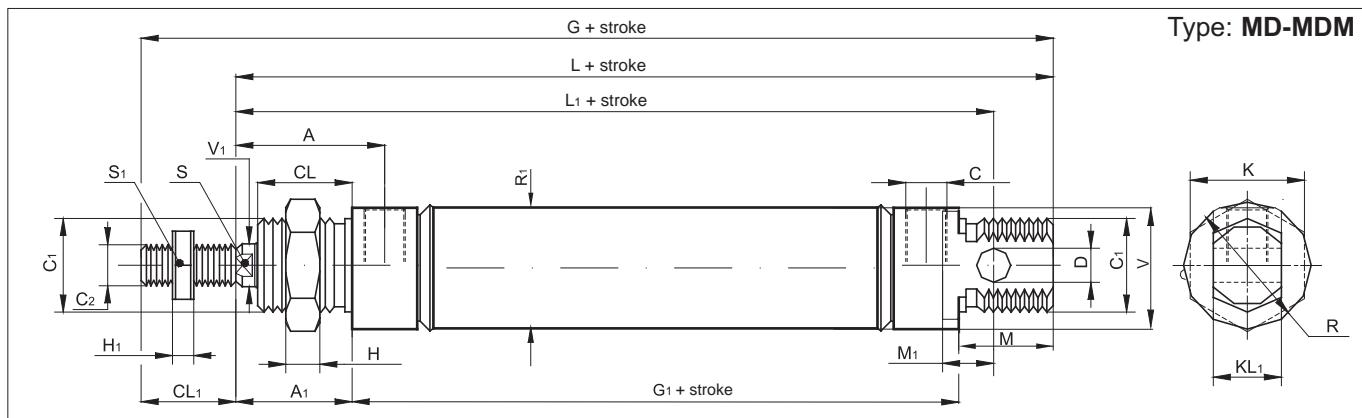
See page 1.1.3 to calculate the cylinder force.

Seal kits not available for these cylinders.

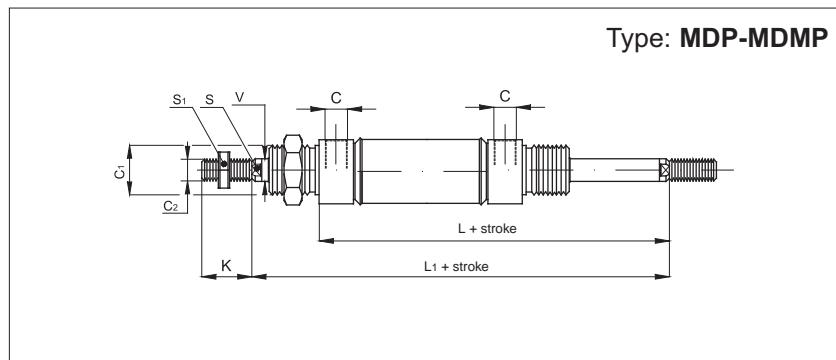
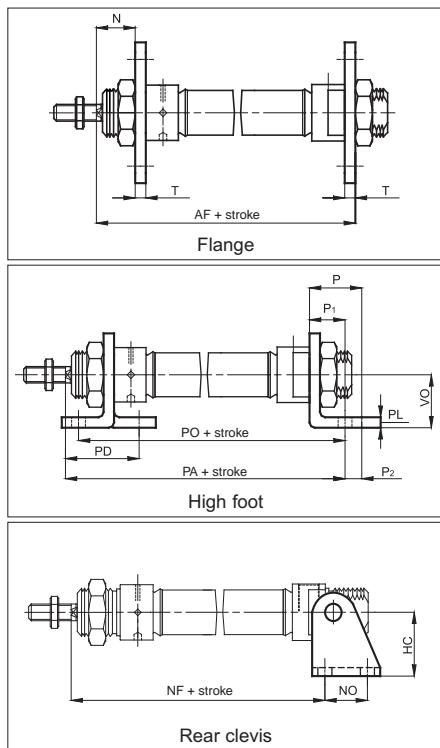
Cylinders ISO 6432

Bores from 8 to 25 mm

Double acting



\varnothing mm	C_2	V_1	C_1	R	KL_1	R_1	V	D	CL_1	L_1	L	M	G_1	A_1	CL	A	M_1	S	C	G	K	H	H_1	S_1
8	M4	4	M12x1,25	16	8	9,27	15	4	12	64	74	12	46	16	12	21	6	/	M5	86	19	6	2	7
10	M4	4	M12x1,25	16	8	11,27	15	4	12	64	74	12	46	16	12	21	6	/	M5	86	19	6	2	7
12	M6	6	M16x1,5	21	12	13,27	19	6	16	75	89	16	51	22	16	27	9	5	M5	105	19	5	3	12
16	M6	6	M16x1,5	21	12	17,27	19	6	16	82	96	16	58	22	16	27	9	5	M5	112	19	5	3	12
20	M8	8	M22x1,5	30	16	21,27	28,5	8	20	95	105	22	59	24	18	31,5	12	7	1/8"	125	27	8	4	14
25	M10x1,25	10	M22x1,5	30	16	26,5	28,5	8	22	104	114	22	64	28	20	36	12	9	1/8"	136	27	8	6	17



\varnothing mm	L	L_1	C	C_1	C_2	S	S_1	V	K
8	62	78	M5	M12x1,25	M4	/	7	4	12
10	62	78	M5	M12x1,25	M4	/	7	4	12
12	73	95	M5	M16x1,5	M6	5	12	6	16
16	80	102	M5	M16x1,5	M6	5	12	6	16
20	83	107	1/8"	M22x1,5	M8	7	14	8	20
25	92	120	1/8"	M22x1,5	M10x1,25	9	17	10	22

\varnothing mm	AF	HC	P	P_1	P_2	PA	PD	PL	PO	T	VO	N	NF	NO
8	65	24	16	11	5	73	24	3	68	3	16	13	62,5	12,5
10	65	24	16	11	5	73	24	3	68	3	16	13	62,5	12,5
12	77	27	20	14	6	87	32	4	79	4	20	18	73	15
16	84	27	20	14	6	94	32	4	86	4	20	18	80	15
20	88	30	25	17	8	100	36	5	93	5	25	19	91	20
25	97	30	25	17	8	109	40	5	98	5	25	23	100	20

For dimensions and codes of the accessories see page 1.95.1

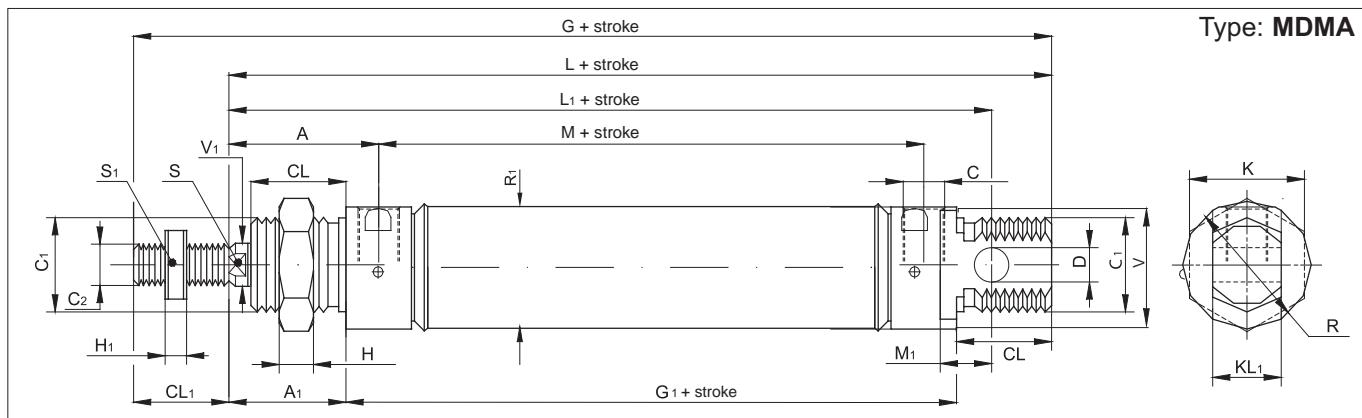
Cylinders ISO 6432

Bores from 8 to 25 mm

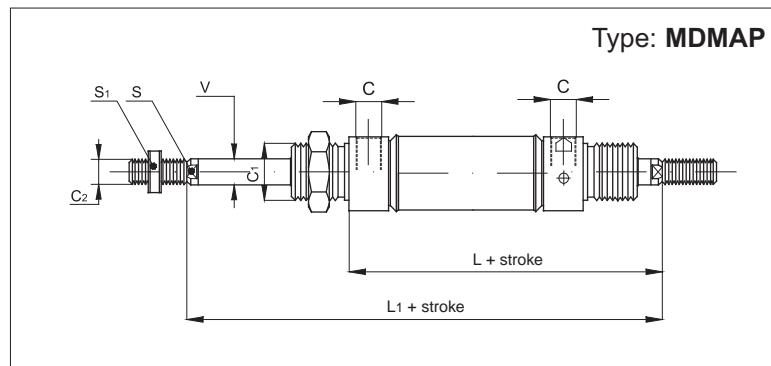
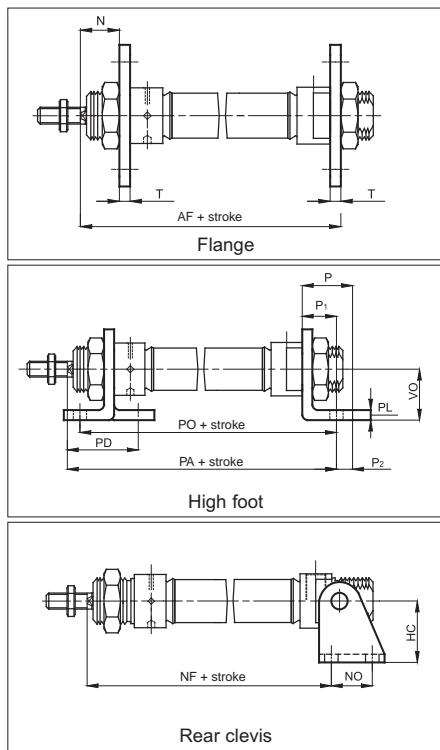
Double acting



1



\varnothing mm	C_2	V_1	C_1	R	KL_1	R_1	V	D	CL_1	L_1	L	M	G_1	A_1	CL	A	M_1	S	C	G	K	H	H_1	S_1
16	M6	6	M16x1,5	21	12	17,27	18	6	16	82	93	18	53	22	18	27	9	5	M5	109	22	5	3	10
20	M8	8	M22x1,5	30	16	21,27	28,5	8	20	95	105	22	59	24	18	31,5	12	7	1/8"	125	27	8	4	14
25	M10x1,25	10	M22x1,5	30	16	26,5	28,5	8	22	104	114	22	64	28	20	36	12	9	1/8"	136	27	8	6	17



\varnothing mm	L	L_1	C	C_1	C_2	S	S_1	V
16	76	97	M5	M16x1.5	M6	5	10	6
20	83	107	1/8"	M22x1.5	M8	7	14	8
25	92	120	1/8"	M22x1.5	M10x1,25	9	17	10

\varnothing mm	AF	HC	P	P_1	P_2	PA	PD	PL	PO	T	VO	N	NF	NO
16	82	27	20	14	6	92	32	4	84	4	20	18	80	15
20	88	30	25	17	8	100	36	5	93	5	25	19	91	20
25	97	30	25	17	8	109	40	5	98	5	25	23	100	20

For dimensions and codes of the accessories see page 1.95.1

Cylinders ISO 15552

Bores from 32 to 125 mm

Double acting



Standard executions

Version	Shape of barrel	Symbol	Type
MAGNETIC STANDARD			AMA
			AMT

For the magnetic reed switches type ASV see from page 1.110.1.
For coupling cylinders/reed switches/brackets see table on page 1.120.5

For mounting accessories see from page 1.97.1.

For rod accessories see from page 1.85.1.

For dimensions of the cylinder with piston rod brake see page 1.75.15.



On request, they can be supplied according Directive 94/9/EC - ATEX
CE II 2 GDc T5



New series of cylinders conforming to ISO 15552 standards. They can be supplied with two different shapes of the barrel:

AMA type with grooves allowing to use the flush-mounted magnetic switch and the AMT type round with tie-rods.

The main features of this cylinder are the "clean" modern design and the attention to details.

A particular attention has been given to the manufacture of the end caps; there are no external casting cavities, thus eliminating contamination traps.

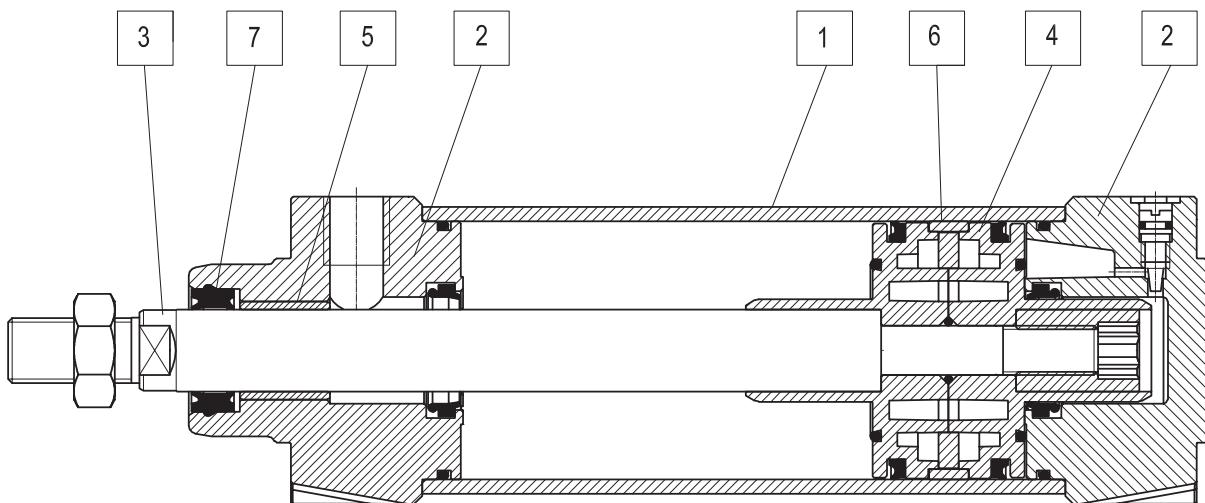
Options	Suffix
Through rod (page 1.5.4)	P
Rod in stainless steel AISI 304	K
Extended rod in hardened and chrome plated steel for the application of the piston rod brake (page 1.5.4)	B
Seals FKM max 150°C (scraper ring only = V1)	V
Tandem forward movement piston rods coupled together (page 1.5.5)	TA1
Tandem forward movement piston rods independent (page 1.5.5)	TA2
Tandem back to back (page 1.5.5)	TA3
Tandem front to front (page 1.5.5)	TA4
Extended rod (indicate the requested WH dimension in mm. E.g.: WH -100).	WH-...
Without adjustable cushionings	D
Adjustable rear cushioning only	D1
Adjustable front cushioning only	D2
Special male thread (indicate the requested thread. E.g. : R-M 10x1,5). The dimension AM of the special thread will be the same as the standard. The cylinder will be supplied without rod nut.	R-M...
Female thread; for dimensions see page 1.5.4	F
With bellows for protection of the rod (in this case the dimension WH will be extended according the stroke of the cylinder)	Z
Low friction (type AMT only)	L
Piston rod tightness in nitrile rubber NBR	H
Special on request	/S

The options can be combined (when this is possible).

The suffix of the options are to be added to the model number of the standard product, as shown in the following table.

How to order: 63 / 100 AMAKVR-M12x1,25

63	/	100	AMA	K	V	R-M12X1,25
Bore	/	Stroke	Type	Option	Option	Option



Materials (standard types)

[1] Tube	Anodised aluminium
[2] Heads	Die-cast painted aluminium
[3] Rod	Chrome-plated steel C45
[4] Piston	Die-cast aluminium
[5] Bushing	Self-lubricating sintered bronze
[6] Guide ring	Natural Delrin
[7] Rod seals	Polyurethane
Other seals	Nitrile rubber NBR/polyurethane

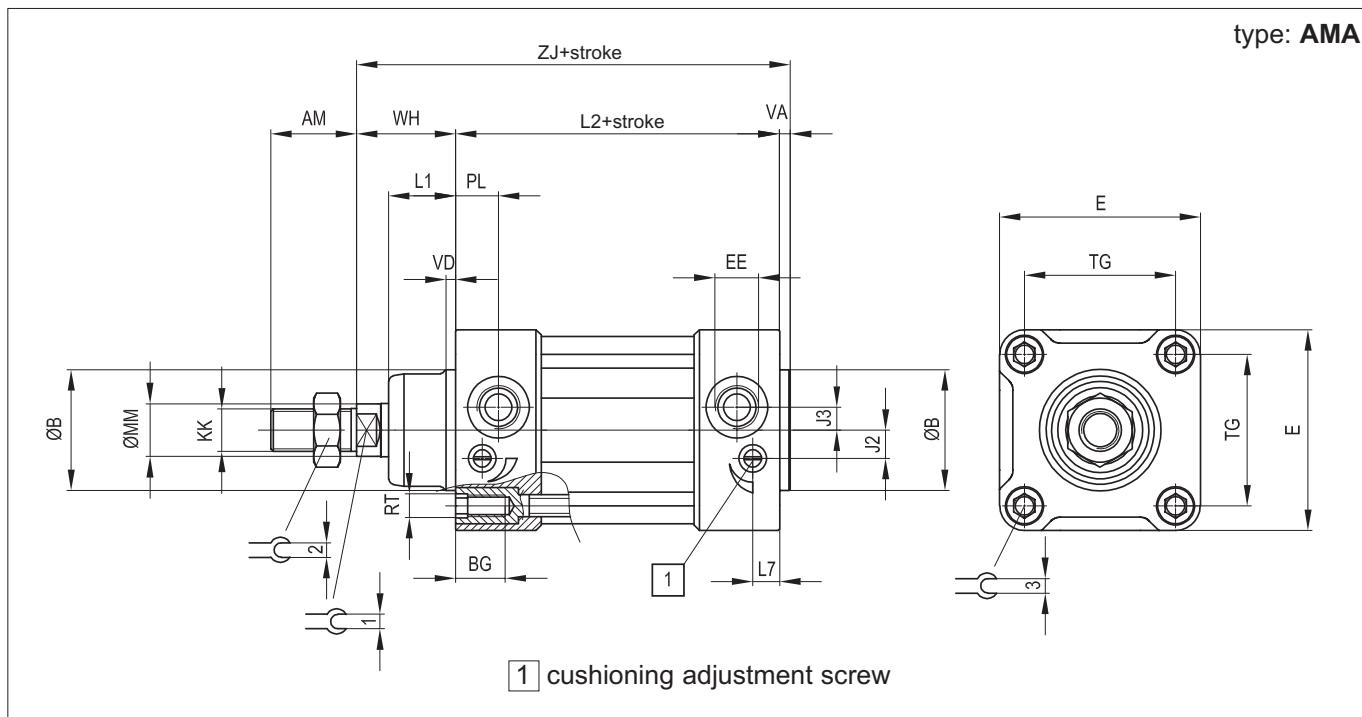
Technical data

Bore (mm)	32	40	50	63	80	100	125
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.						
Pressure range	1 ÷ 10 bar						
Temperature range	-20 °C ÷ +80 °C						
Stroke	from 10 mm to 2500 mm						
Cushion lenght	20	22	25	25	35	35	35
Ports	1/8"	1/4"		3/8"		1/2"	
Rod thread	M10 x 1,25	M12 x 1,25	M16 x 1,5		M20 x 1,5		M27 x 2
Weight	Stroke zero (g)						
	Additional 10 mm stroke (g)						

Cylinders ISO 15552

Bores from 32 to 125 mm

Standard dimensions



\varnothing (mm)	AM	B \varnothing d11	BG	E	EE	J2	J3	KK	L1	L2
32	22	30	15	47	G ^{1/8}	6	5	M10x1,25	20	94
40	24	35	15	52	G ^{1/4}	8	6	M12x1,25	22	105
50	32	40	16	65	G ^{1/4}	10,5	6	M16x1,5	26	106
63	32	45	15	75	G ^{3/8}	10,5	8,5	M16x1,5	25	121
80	40	45	17	95	G ^{3/8}	14	9,5	M20x1,5	32	128
100	40	55	17	115	G ^{1/2}	15	10	M20x1,5	38	138
125	54	60	21	140	G ^{1/2}	20	10	M27x2	40	160

\varnothing (mm)	L7	MM \varnothing f7	PL	RT	TG	VA	VD	WH	ZJ	1	2	3
32	18	12	14	M6	32,5	4	4	26	124	10	17	6
40	20	16	15	M6	38	4	4	30	139	13	19	6
50	20	20	15	M8	46,5	4	4	37	147	17	24	8
63	10	20	16	M8	56,5	4	4	37	162	17	24	8
80	13,5	25	20,5	M10	72	4	4	46	178	22	30	10
100	13	25	20	M10	89	4	4	51	193	22	30	10
125	33	32	27	M12	110	5	5	65	230	27	41	12

Seal kits												
n. 1	Rod seal											
n. 2	Cushioning seal											
n. 2	Piston lip-seal											
n. 1	Linear rubber ring for piston (damper)											
n. 2	Tube O-ring											
n. 1	Piston guiding ring											
n. 2	O-ring for cushioning screw											
n. 1	O-ring to seal two semi-pistons											

How to order: 63 / SG / AM

63	/	SG	/	AM
Bore	/	Seal kit	/	Type

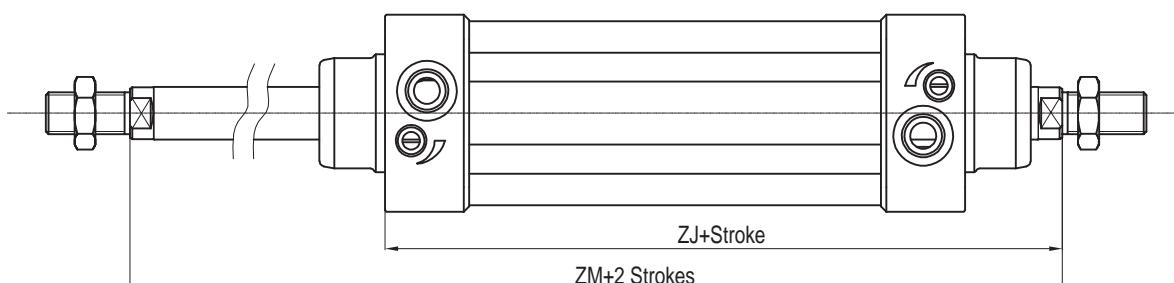
Cylinders ISO 15552

Bores from 32 to 125 mm

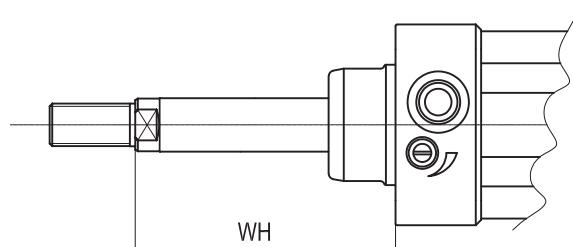
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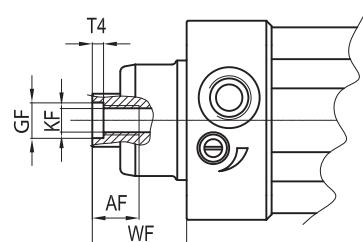
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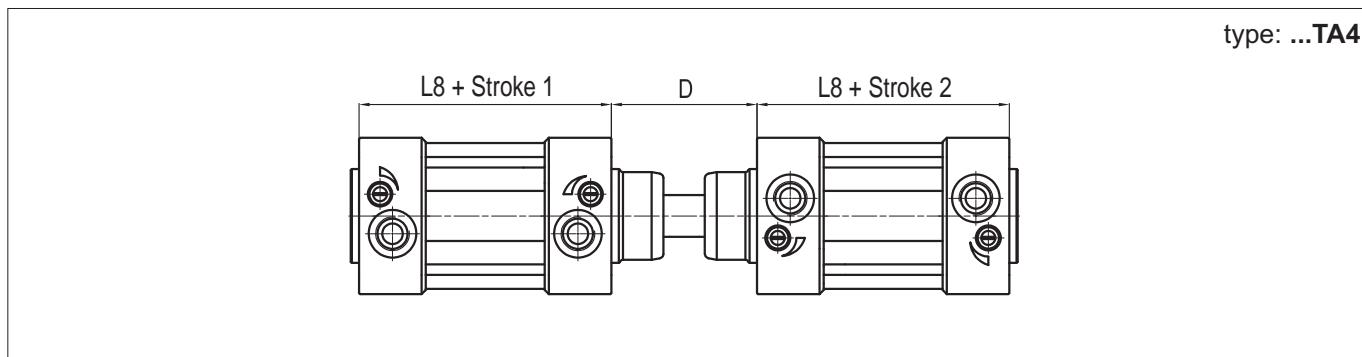
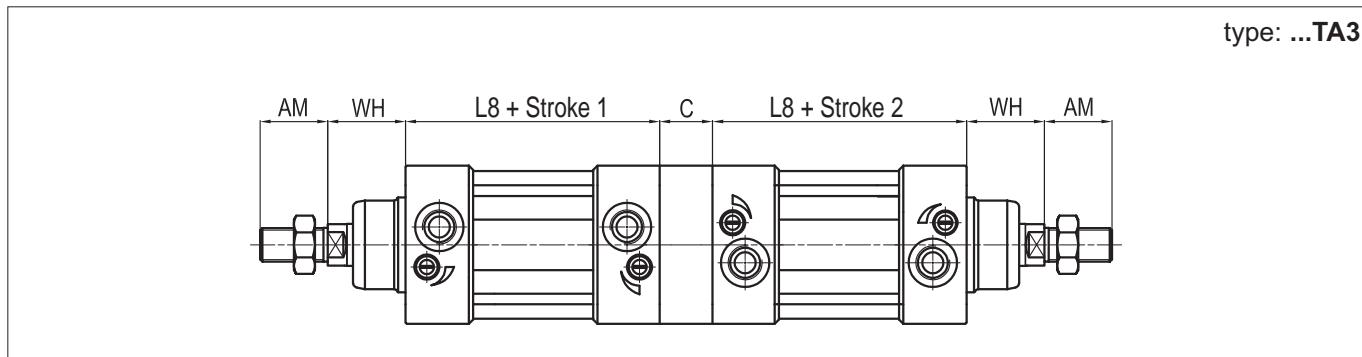
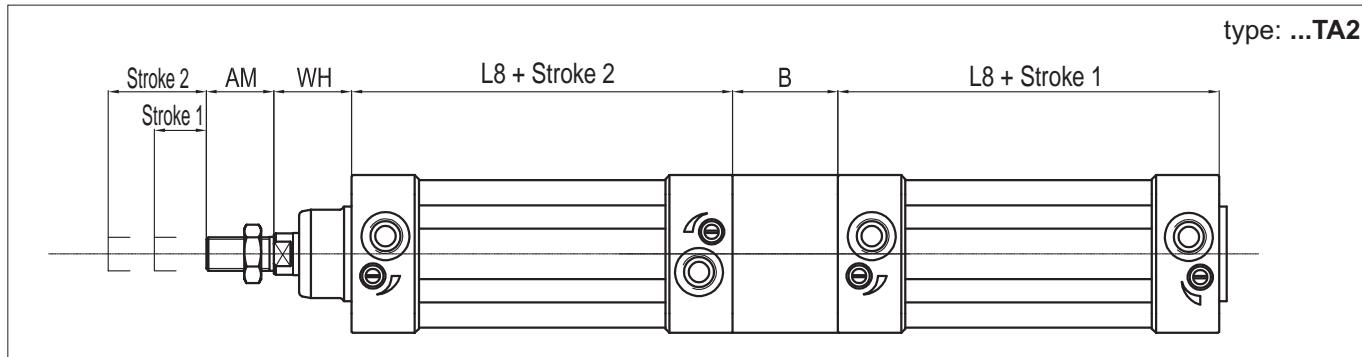
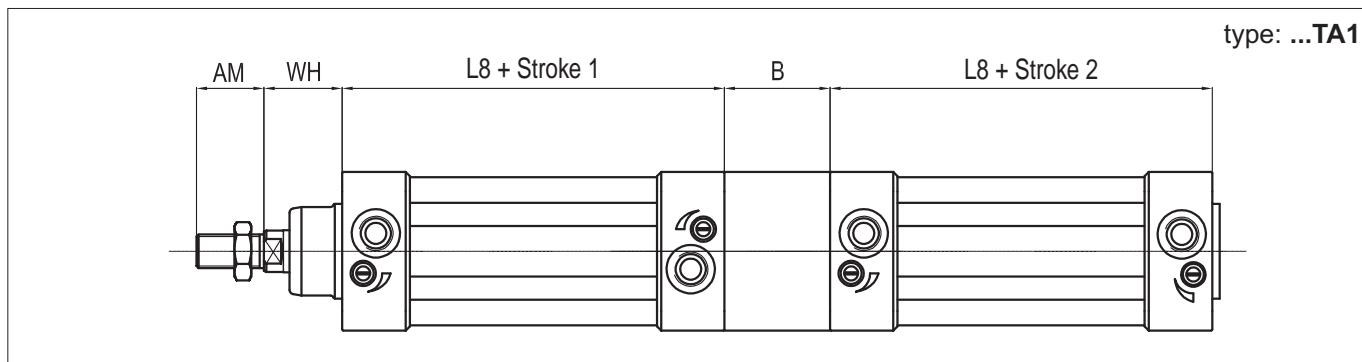
type:B



type:F



\varnothing mm	AF	GF	KF	T4	WF	WH	ZJ	ZM
32	12	8	M6	2,6	26	74	120	146
40	12	10	M8	3,3	30	85	135	165
50	16	12	M10	4,7	37	107	143	180
63	16	12	M10	4,7	37	107	158	195
80	20	14	M12	6,1	46	136	174	220
100	20	14	M12	6,1	51	143	189	240
125	32	18	M16	8	65	187	225	290

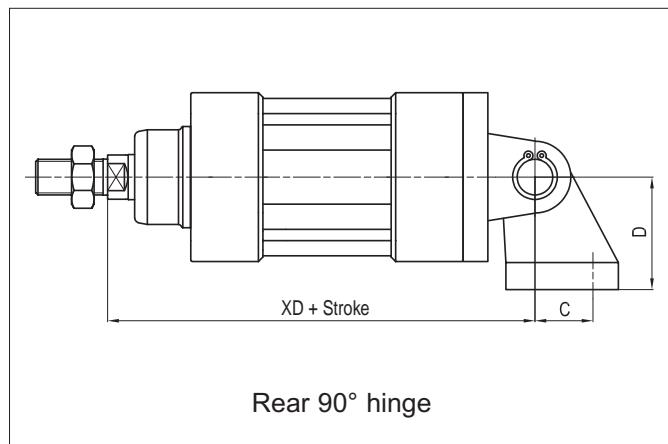
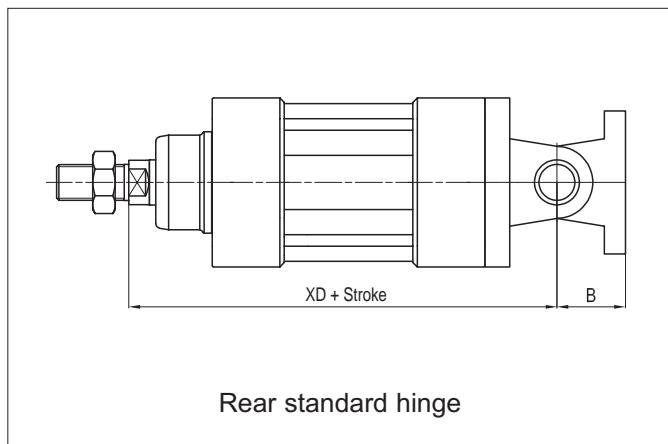
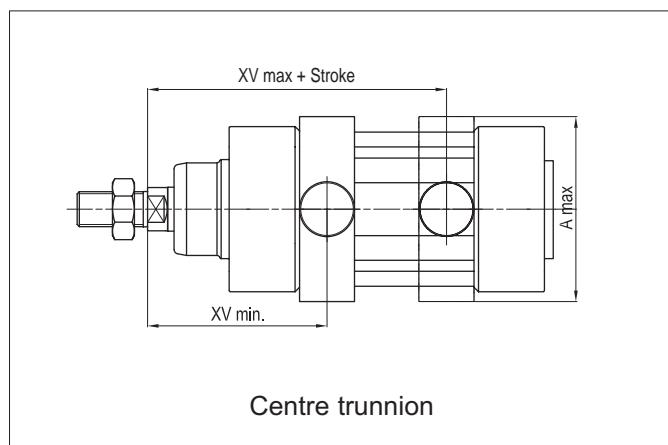
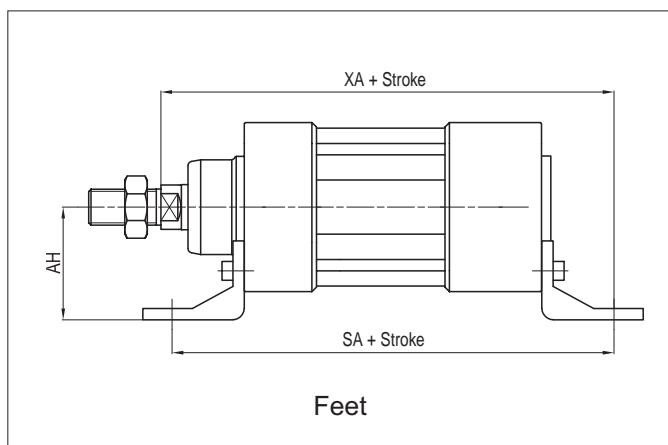
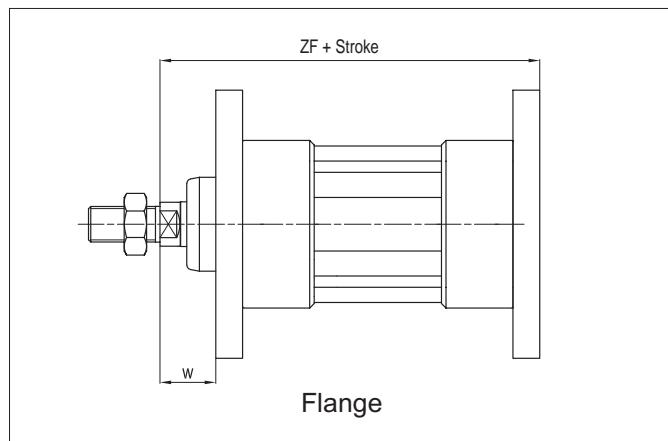
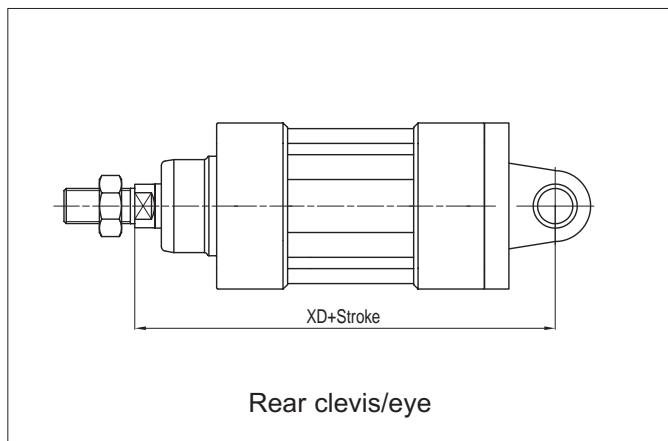


\varnothing mm	AM	B	C	D	L8	WH
32	22	40	12	48	94	26
40	24	44	12	54	105	30
50	32	52	16	69	106	37
63	32	50	16	69	121	37
80	40	64	20	86	128	46
100	40	76	20	91	138	51
125	54	80	35	120	160	65

Cylinders ISO 15552

Bores from 32 to 125 mm

Mounting accessories ISO VDMA



\varnothing mm	A max	AH	B	C	D	SA	W	XA	XD	XV min	XV max	ZF
32	70	32	22	21	32	142	16	144	142	60	86	130
40	78	36	25	24	36	161	20	163	160	69	96	145
50	91	45	27	33	45	170	25	175	170	78	102	155
63	94	50	32	37	50	185	25	190	190	82	113	170
80	130	63	36	47	63	210	30	215	210	97	123	190
100	145	71	41	55	71	220	35	230	230	107	133	205
125	170	90	50	70	90	250	45	270	275	126,5	163,5	245

For dimensions and codes of the accessories: see page 1.97.1

Standard executions		
Version	Symbol	Type
MAGNETIC STANDARD		AMT

For the magnetic reed switches type ASV see from page 1.110.1.

For coupling cylinders/reed switches/brackets see table on page 1.120.5

For mounting accessories see from page 1.97.1.

For rod accessories see from page 1.85.1.



On request, they can be supplied according Directive 94/9/EC - ATEX
CE II 2 GDc T5

New series of cylinders conforming to ISO 15552 standards. External tie-rods and round anodised aluminium tube. The main features of this cylinder are the modern design and the attention to details.

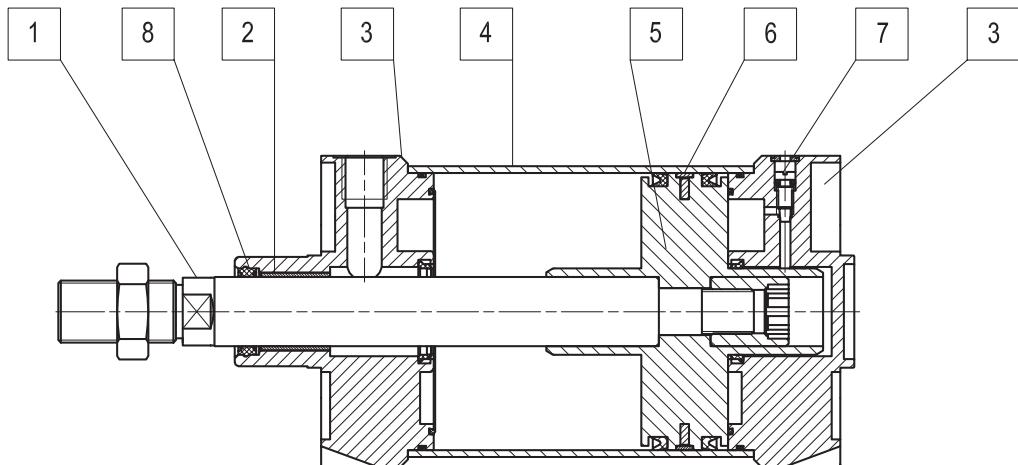
Options	Sigla
Through rod (page 1.8.4)	P
Rod in stainless steel AISI 304	K
Seals FKM max 150°C (scraper ring only = V1)	V
Tandem forward movement piston rods coupled together (page 1.5.5)	TA1
Tandem forward movement piston rods independent (page 1.5.5)	TA2
Tandem back to back (page 1.5.5)	TA3
Tandem front to front (page 1.5.5)	TA4
Extended rod (indicate the requested WH dimension in mm. E.g.: WH -100).	WH-...
Without adjustable cushionings	D
Adjustable rear cushioning only	D1
Adjustable front cushioning only	D2
Special male thread (indicate the requested thread. E.g. : R-M 10x1,5). The dimension AM of the special thread will be the same as the standard. The cylinder will be supplied without rod nut.	R-M...
Female thread; for dimensions see page 1.5.4	F
With bellows for protection of the rod (in this case the dimension WH will be extended according the stroke of the cylinder)	Z
Piston rod tightness in nitrile rubber NBR	H
Special on request	/S

The options can be combined (when this is possible).

The suffix of the options are to be added to the model number of the standard product, as shown in the following table.

How to order: 160 / 100 AMTKVR-M20x1,5

160	/	100	AMT	K	V	R-M20x1,5
Bore	/	Stroke	Type	Option	Option	Option



Materials (standard types)

[1] Rod	Chrome-plated steel C45
[2] Bushing	Self-lubricating sintered bronze
[3] Heads	Die-cast painted aluminium
[4] Tube	Anodised aluminium
[5] Piston	Die-cast aluminium
[6] Guide ring	Natural Delrin
[7] Cushioning adjustment screw	Stainless steel AISI 303
[8] Rod seals	Polyurethane
Other seals	Nitrile rubber NBR/polyurethane

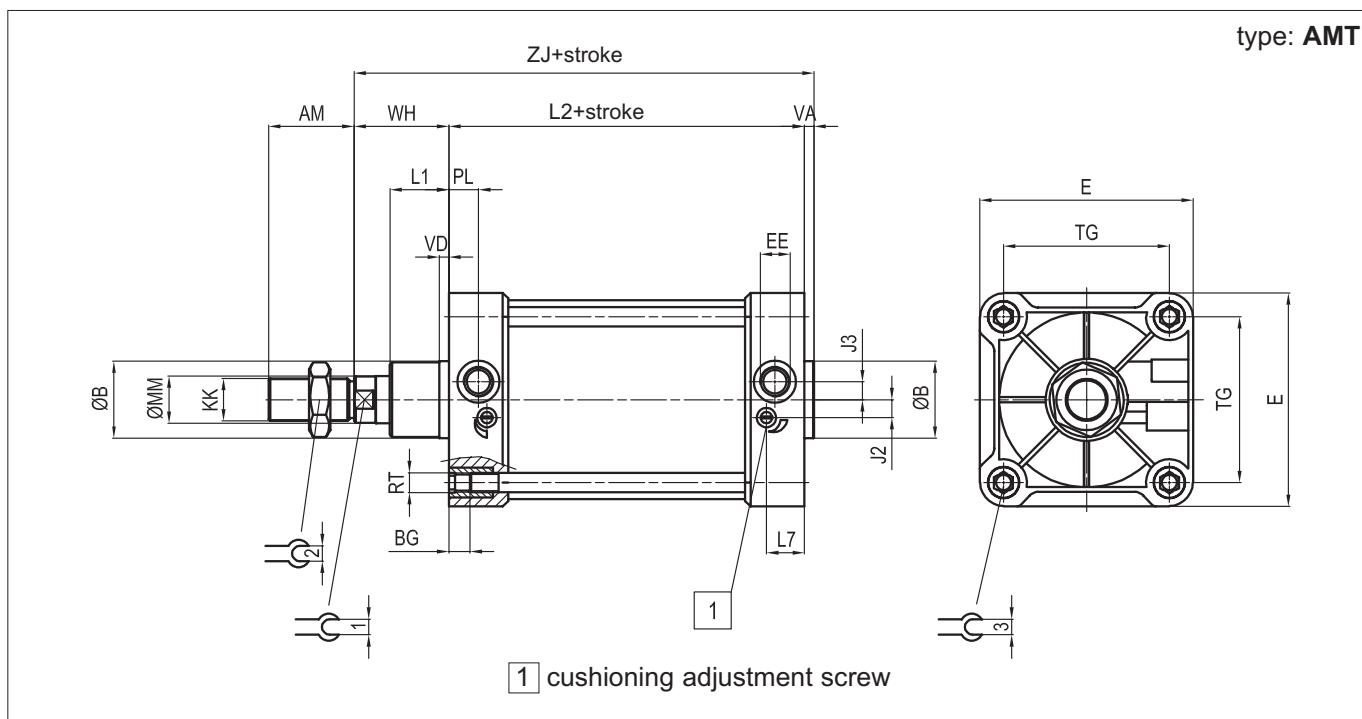
Technical data

Bore (mm)	160	200	250	320
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.			
Pressure range	1 ÷ 10 bar			
Temperature range	-20 °C ÷ +80 °C			
Stroke	from 10 mm to 2500 mm			
Cushion lenght				
Ports	3/4"		1"	
Rod thread	M36 x 2		M42 x 2	M48 x 2
Weight	Stroke zero (g)			
	Additional 10 mm stroke (g)			

Cylinders ISO 15552

Bores from 160 to 320 mm

Standard dimensions



Ø (mm)	AM	B Ø d11	BG	E	EE	J2	J3	KK	L1	L2
160	72	65	23	180	G 3/4	15	15	M36x2	50	180
200	72	75	23	220	G 3/4	15	15	M36x2	65	180
250	84	90	25	270	G 1	25	25	M42x2	75	200
320	96	110	30	350	G 1	35	35	M48x2	90	220

Ø (mm)	L7	MM Ø f7	PL	RT	TG	VA	VD	WH	ZJ	⌚ 1	⌚ 2	⌚ 3
160	32	40	25	M16	140	6	8	80	266	36	55	16
200	34	40	25	M16	175	6	25	95	281	36	55	16
250	40	50	30	M20	220	8	25	105	313	46	65	20
320	45	63	30	M24	270	10	25	120	350	55	75	24

Seal kits	
n. 1	Rod seal
n. 2	Cushioning seal
n. 2	Piston lip-seal
n. 1	Linear rubber ring for piston (damper)
n. 2	Tube O-ring
n. 1	Piston guiding ring
n. 2	O-ring for cushioning screw
n. 1	O-ring to seal two semi-pistons

How to order: 200 / SG / AM

200	/	SG	/	AM
Bore	/	Seal kit	/	Type

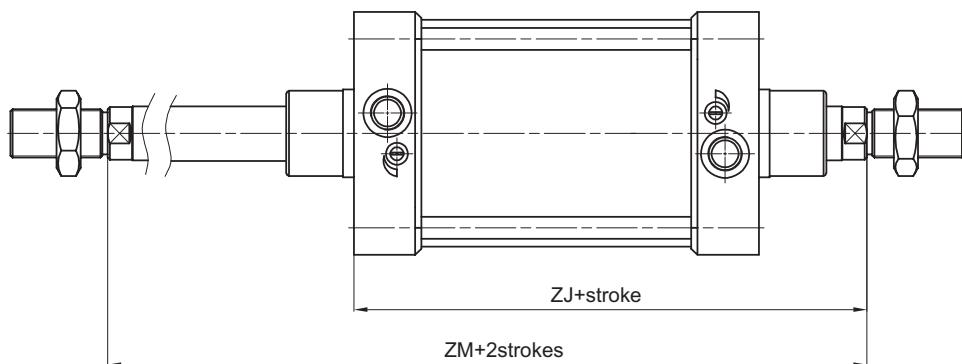
Cylinders ISO 15552

Bores from 160 to 320 mm

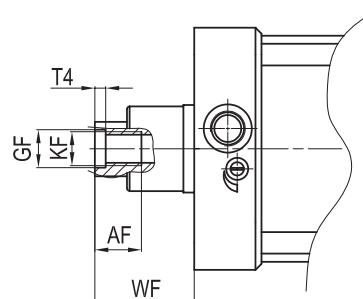
Options



type:P



type:F

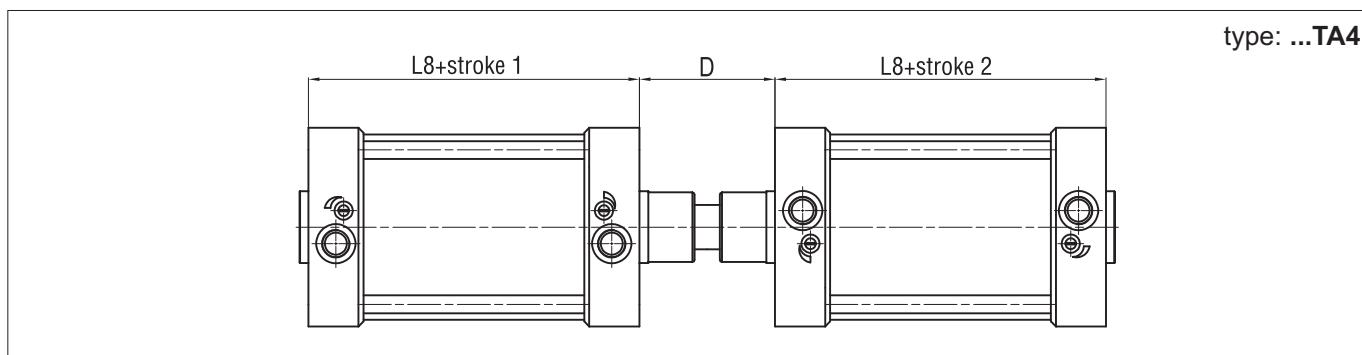
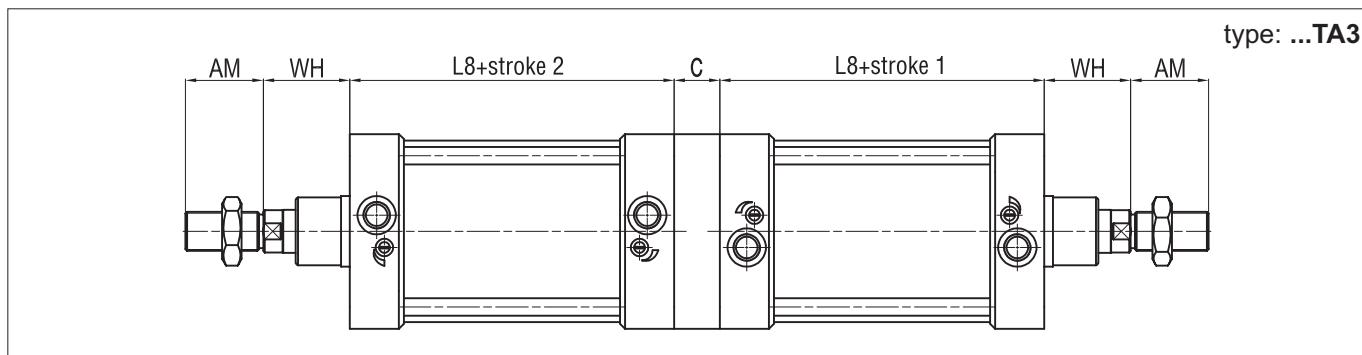
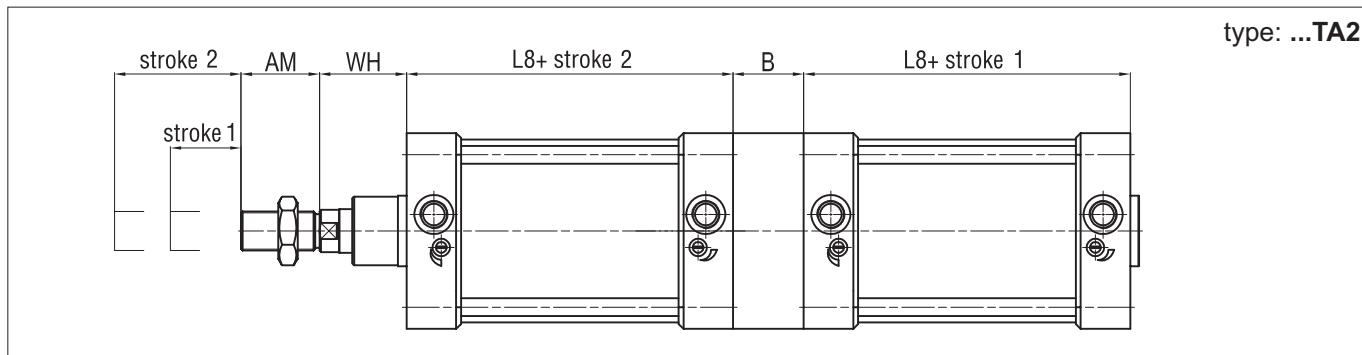
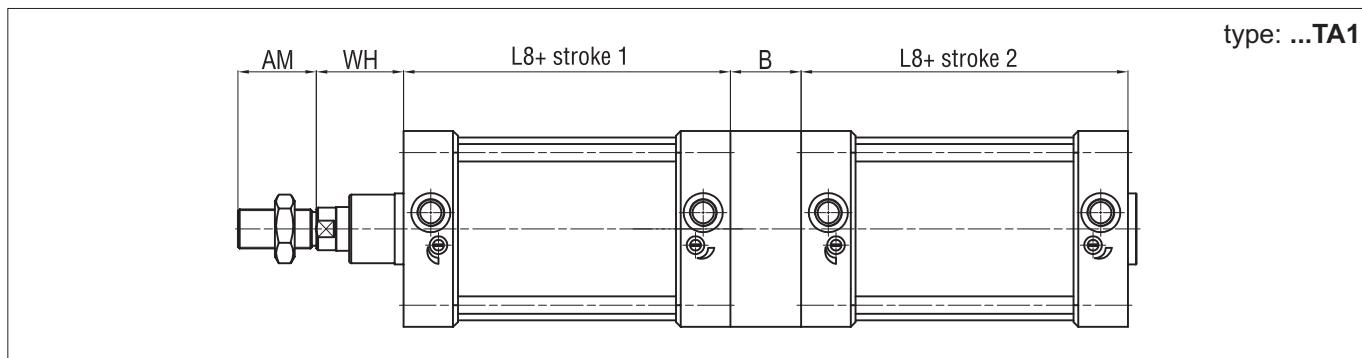


\varnothing mm	AF	KF	T4	WF	GF	ZJ	ZM
160	36	M20	10	80	22	260	340
200	36	M20	10	95	22	275	370
250	40	M24	12	105	26	305	410
320	50	M30	15	120	32	340	460

Cylinders ISO 15552

Bores from 160 to 320 mm

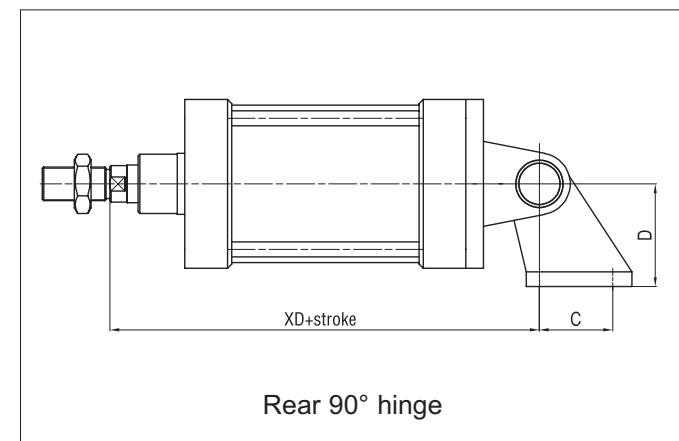
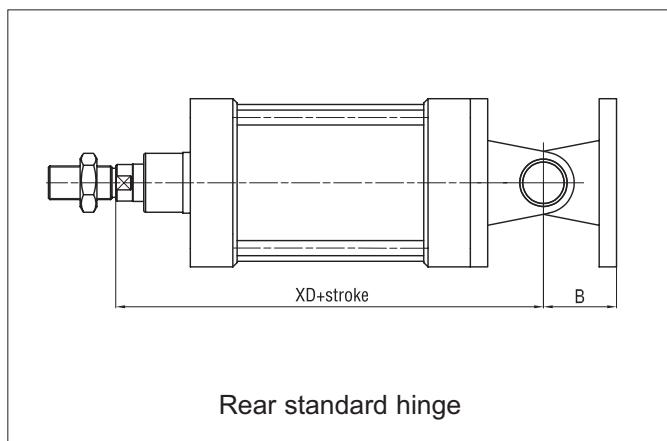
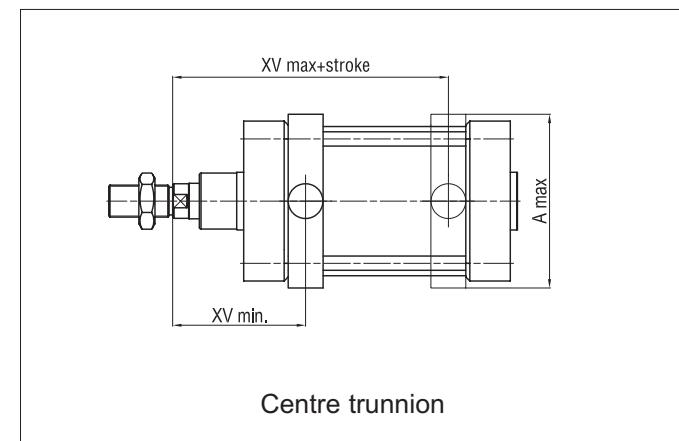
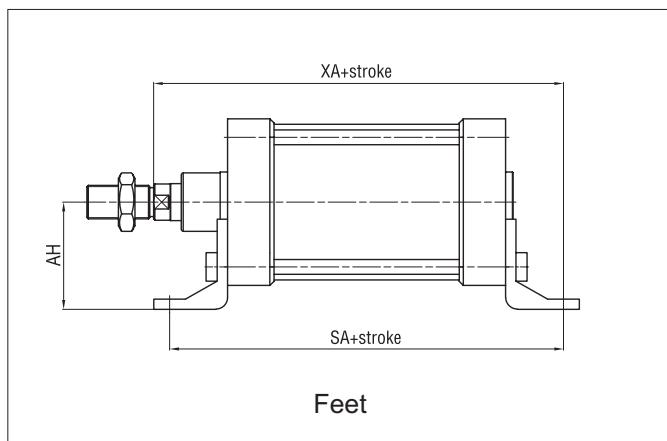
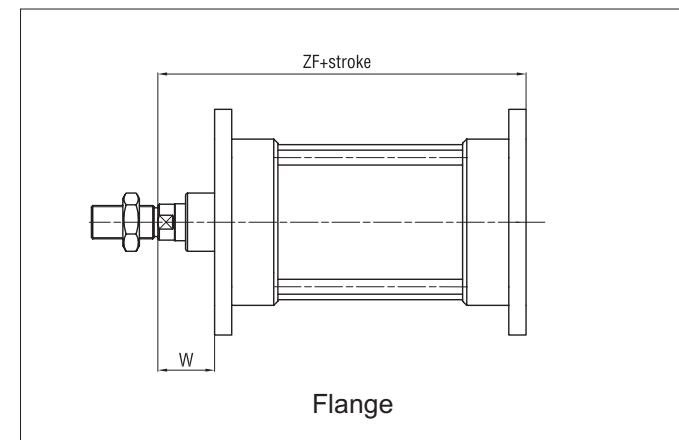
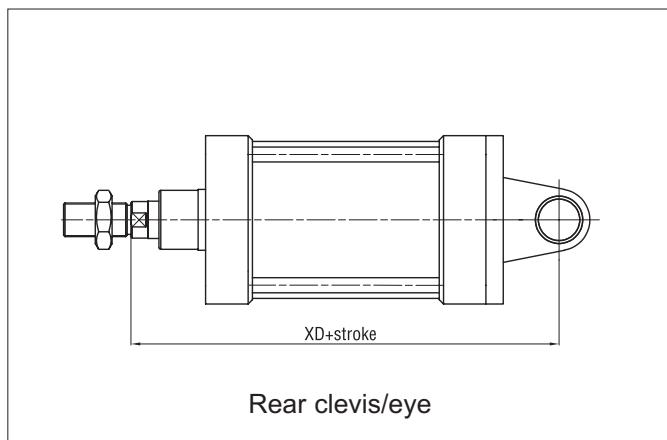
Options



\varnothing mm	AM	B	C	D	L8	WH
160	72	100	50	152	180	80
200	72	130	50	167	180	95
250	84	150	60	180	200	105
320	96	180	70	200	220	120

Cylinders ISO 15552

Bores from 160 to 320 mm Mounting accessories ISO VDMA



\varnothing mm	A max	AH	B	C	D	SA	W	XA	XD	XV min	XV max	ZF
160	190	115	55	88	115	300	60	320	315	150	190	280
200	240	135	60	90	135	320	70	345	335	165	205	300
250	296	165	70	110	165	350	80	380	375	185	225	330
320	380	200	80	122	200	390	90	425	420	207	253	370

Standard executions		
Version	Symbol	Type
Double acting		RED
Double acting magnetic		REDM



On request, they can be supplied according Directive 94/9/EC - **ATEX**
CE II 2 GDc T5



Options	Suffix
Through rod	P
Seals FKM max 150 °C	V
Special versions on request	/ S

The options can be combined (when this is possible)

Series of cylinders not conforming to standards
The heads are connected with the body through thread; this guarantees perfect fit.

The cushionings are in nitrile rubber to relieve the impact of the piston.

The standard cylinders are provided with rod nut.

One or more magnetic reed switches can be applied to the magnetic type.

For the magnetic reed switches type ASV see from page 1.110.1.

For mounting accessories see from page 1.11.3.

For rod accessories see from page 1.85.5.

How to order: 40 / 50 REDMP

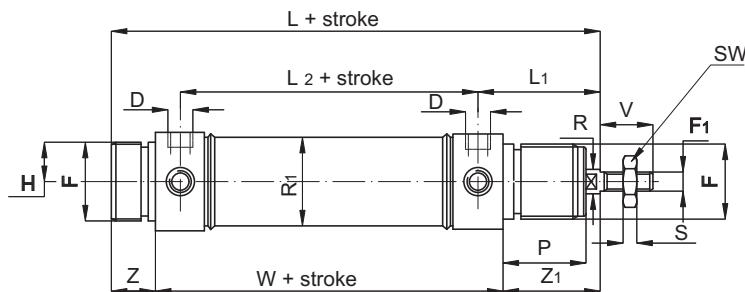
40	/	50	REDM	P
Bore	/	Stroke	Type	Option

Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure	max 10 bar
Temperature range	-20 °C + + 80°C
Materials	Heads: Anodised aluminium Barrel: Anodised aluminium Rod: Chrome-plated C 45 steel Seals: poliuretano - NBR

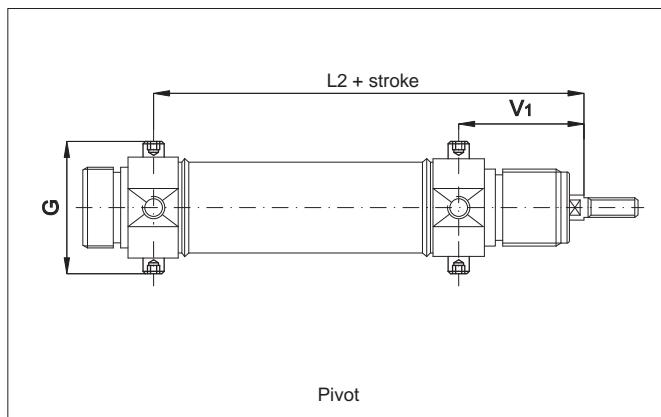
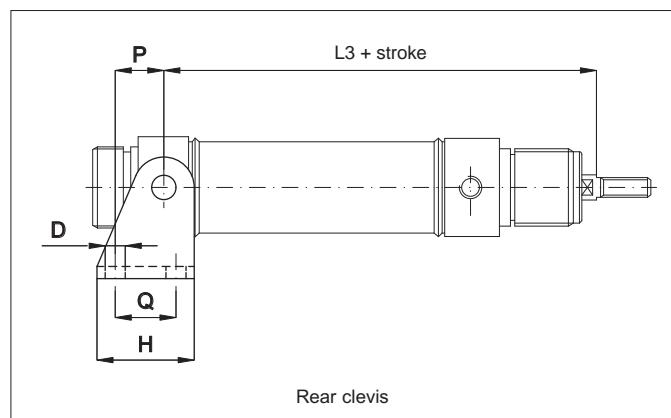
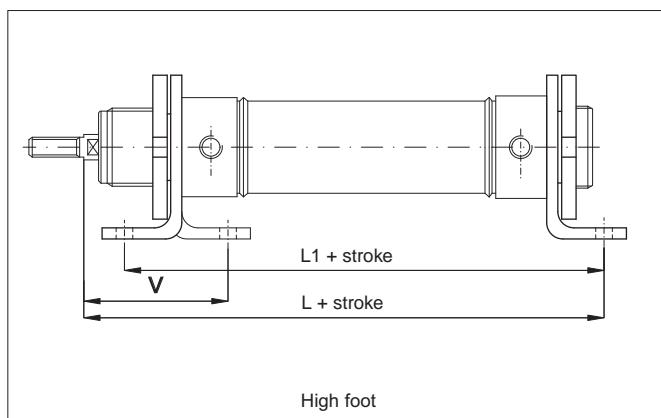
Bore (mm)	Standard strokes (mm)	Max stroke (mm)
32	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	
40		1000
50		

See page 1.1.3 to calculate the double acting cylinder force.
Seal kits not available for these cylinders.

Type: **RED-REDM**



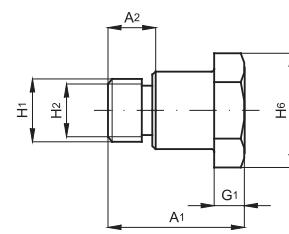
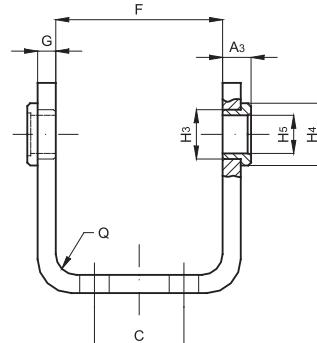
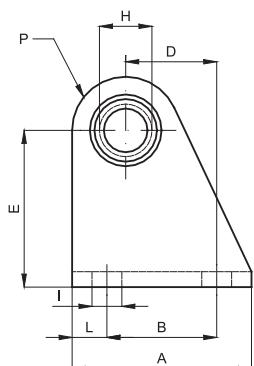
\varnothing mm	V	F	P	D	F_1	R	L_2	Z	Z_1	W	L_1	L	R_1	H	S	SW
32	20	M 30x1,5	30	1/8"	M10x1,5	12	78	14	38	96	47	148	36	17,5	6	17
40	24	M 38x1,5	35	1/4"	M12x1,75	16	89	16	45	113	57	174	45	21	7	19
50	32	M 45x1,5	38	1/4"	M16x2	20	96	18	50	120	62	188	55	26,5	8	24



\varnothing mm	L	L_1	L_2	L_3	V	V_1	P	H	Q	G	D
32	148	124	125	125	48	47	20	40	24	51	7
40	178	153	146	146	60	57	27	50	30	61	9
50	190	160	158	158	64	62	30	54	34	75	9

Rear clevis
Type: **CF..AQM**

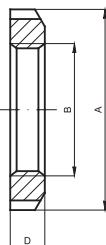
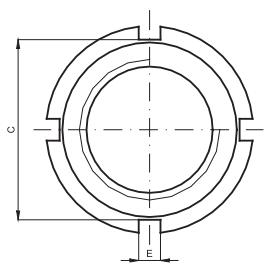
STEEL



Material: Zinc plated steel
The standard rear clevis is provided with two pins.

Code	Item	\varnothing mm	A	A ₁	A ₂	A ₃	B	C	D	E	F	G	G ₁	H	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	I	L	P	Q
040058	CF32AQM	32	40	18	6	6	24	20	20	35	38,1	4	4	12	10	M8x1	12	15	10	13	7	8	12	4
040059	CF40AQM	40	50	21,6	7	7	30	28	27	40	46,1	5	5	15	12	M10x1	15	20	12	17	9	10	13	5
040060	CF50AQM	50	54	26,4	9	8,5	34	36	30	45	57,1	6	6	18	14	M12x1,5	18	23	14	19	9	10	14	6

Heads nut
Type: **GH..AQM**

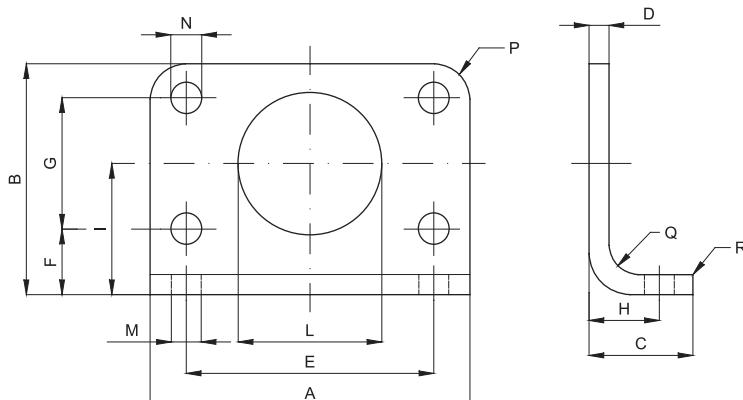


Material: Zinc plated steel

Code	Item	\varnothing mm	A	B	C	D	E
040066	GH32AQM	32	\varnothing 45	M30x1,5	40	7	5
040067	GH40AQM	40	\varnothing 50	M38x1,5	46	8	5
040068	GH50/63AQM	50	\varnothing 58	M45x1,5	53	9	6

High foot/Flange
Type: **P..AQM**

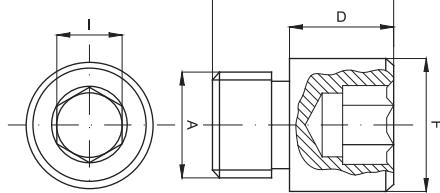
STEEL



Material: Zinc plated steel

Code	Item	\varnothing mm	A	B	C	D	E	F	G	H	I	L	M	N	P	Q	R
040054	P32AQM	32	66	49	21	4	52	14	28	14	28	30	7	7	7	4	2
040055	P40AQM	40	80	58	30	5	60	18	30	20	33	38	9	9	10	5	2
040056	P50AQM	50	90	70	30	6	70	20	40	20	40	45	9	9	10	6	2

Pin
Type: **SEC..AQM**



Material: Zinc plated steel
The kit is provided with two pins.

Code	Item	\varnothing mm	A	D	E	F	I
040062	SEC32AQM	32	M8x1	8	14	\varnothing 10	5
040063	SEC40AQM	40	M10x1	9,5	15,5	\varnothing 12	6
040064	SEC50AQM	50	M12x1,5	11	20	\varnothing 14	6

Cylinders Cnomo 06.07.00

Bores from 25 to 200 mm

Double effect



Standard executions		
Version	Symbol	Type
Non magnetic		CX
Magnetic		CM



For reed switches ASV see page 1.110.1

For mounting accessories see from page 1.99.1

For rod accessories see from page 1.85.10.

Series of cylinders conforming to CNOMO, 06.07.00.

They are provided with a round barrel and external tie rods for the bores from 25 to 200 mm.

The standard cylinders are provided with adjustable cushionings at both ends.

Options	Suffix
Through rod	P
Seals FKM max 150°C (scraper ring only = V1)	V
Tandem forward movement piston rods coupled together	TA1
Tandem forward movement piston rods independent	TA2
Tandem back to back	TA3
Tandem front to front	TA4
Special on request	/S

The options can be combined (when this is possible).

The suffix of the options are to be added to the model number of the standard product, as shown in the following table.

How to order: 50/200CXV

50	/	200	CX	V
Bore	/	Stroke	Type	Option

How to order: 50 / SG / CX

50	/	SG	/	CX
Bore	/	Seal kit	/	Type

How to order: 50 / SG / CM

50	/	SG	/	CM
Bore	/	Seal kit	/	Type

Seal kits	
n. 1	Rod seal
n. 2	Cushioning seal
n. 1	Piston monobloc
n. 2	Tube O-ring
n. 2	O-ring for cushioning screw
n. 2	O-ring to seal two semi-pistons

Seal kits	
n. 1	Rod seal
n. 2	Cushioning seal
n. 2	Piston lip-seal
n. 2	Tube O-ring
n. 1	Piston guiding ring
n. 2	O-ring for cushioning screw
n. 2	O-ring to seal two semi-pistons

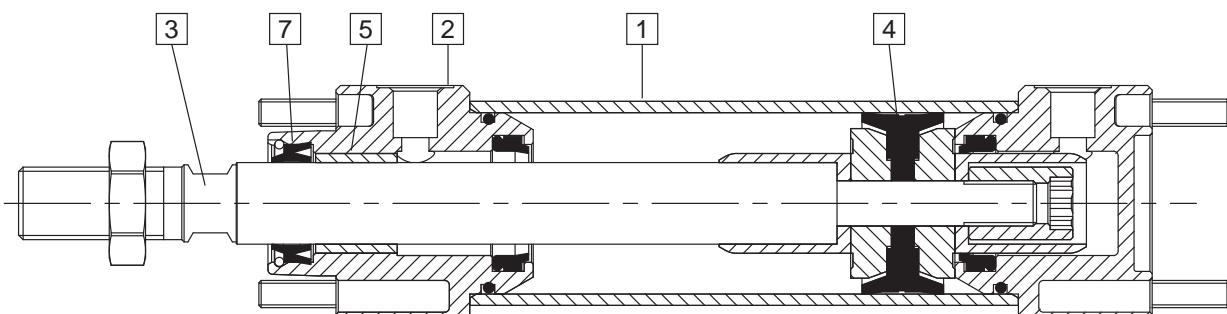
Cylinders Cnomo 06.07.00

Bores from 25 to 200 mm

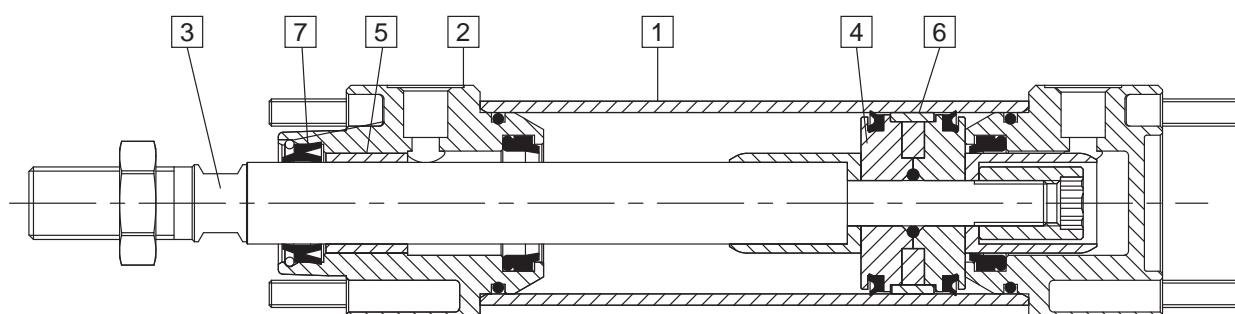
Technical data



Type: CX



Type: CM



See page 1.1.3 to calculate the cylinder force.

Materials (standard types)

[1] Tube	Anodised aluminium
[2] Heads	Die-cast painted aluminium
[3] Piston rod	Chrome-plated steel C45
[4] Piston	Monobloc (CX) - Aluminium (CM)
[5] Bushing	Sintered bronze
[6] Guide ring	Natural Delrin (CM)
[7] Rod seals	Polyurethane
Other seals	Nitrile rubber NBR/polyurethane

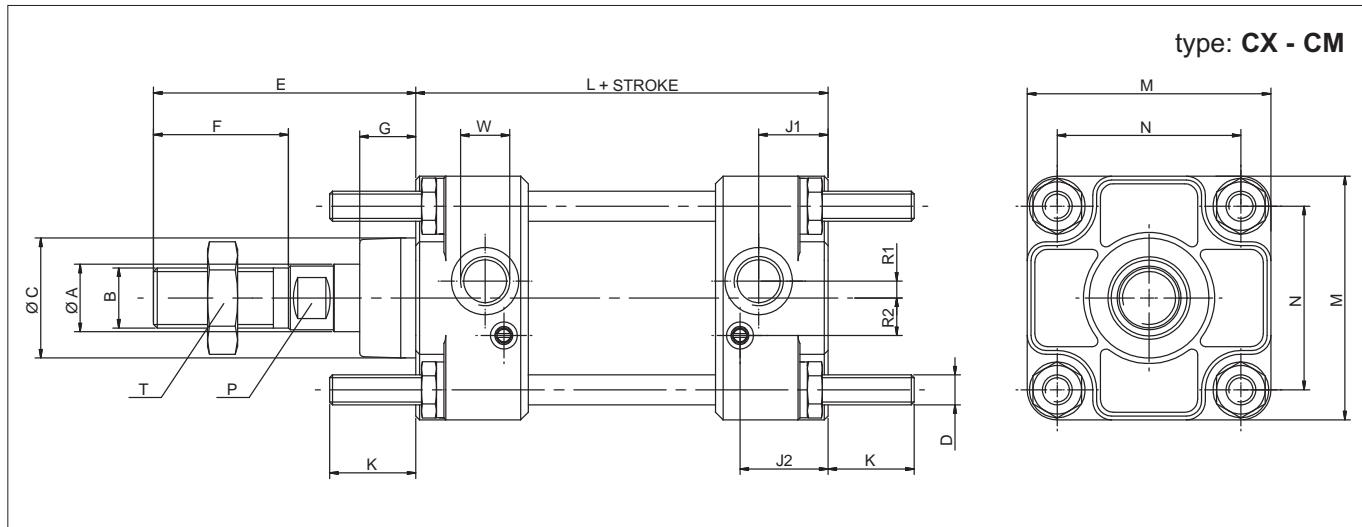
Technical data

Bore (mm)	25	32	40	50	63	80	100	125	160	200
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.									
Pressure range	1 ÷ 10 bar									
Temperature range	-20 °C ÷ +80 °C									
Stroke	from 10 mm to 2500 mm									
Cushion length	21	21	28	28	34	34	38	27	40	40

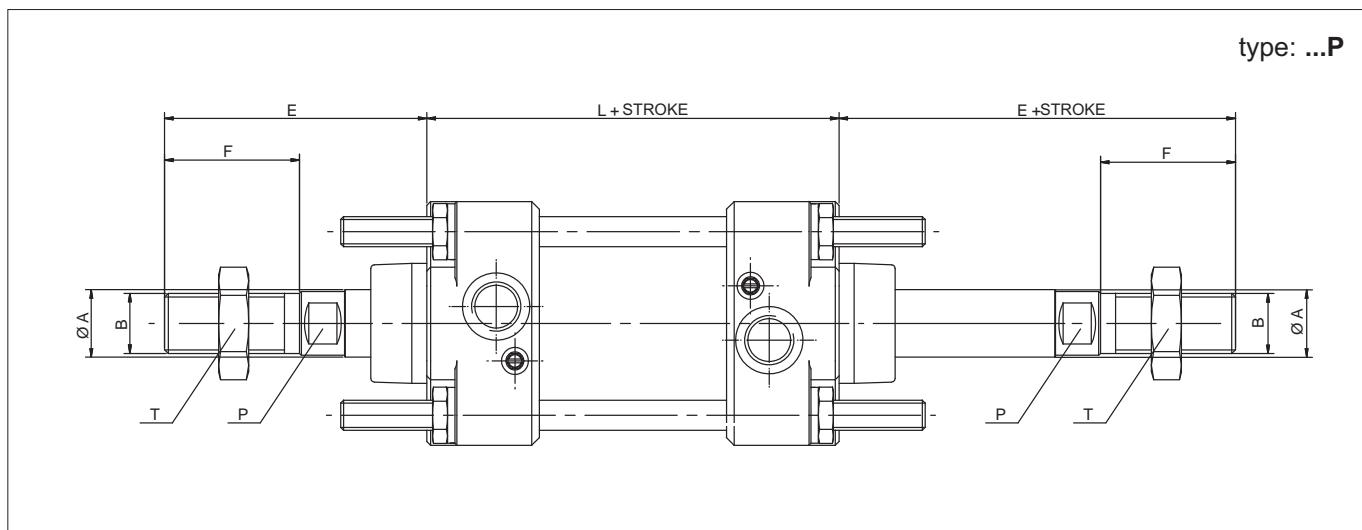
Cylinders Cnomo 06.07.00

Bores from 25 to 200 mm

Standard dimensions and options



\emptyset (mm)	$\emptyset A$ f7	B	$\emptyset C$ e9	E	F	G	L ± 1	P	T	D	K	W	M	N	J1	J2	R1	R2
25	12	M10x1.5	25	45	20	15	80	8	17	M6	17	G1/8	40	28	7	11	0.75	7.5
32	12	M10x1.5	25	45	20	15	80	8	17	M6	17	G1/8	45	33	15	16.5	6	8
40	18	M16x1.5	32	70	36	15	110	13	24	M6	17	G1/4	52	40	17.5	23	3	11
50	18	M16x1.5	32	70	36	15	110	13	24	M8	23	G1/4	65	49	18.5	23.5	4.5	10
63	22	M20x1.5	45	85	46	20	125	17	30	M8	23	G3/8	75	59	19	23	4.5	14
80	22	M20x1.5	45	85	46	20	125	17	30	M10	28	G3/8	95	75	22	25	8	13
100	30	M27x2	55	110	63	20	145	22	41	M10	28	G1/2	115	90	26	31	12	10
125	30	M27x2	55	110	63	20	145	22	41	M12	34	G1/2	140	110	-	-	-	-
160	40	M36x2	65	135	85	25	180	32	54	M16	42	G3/4	180	140	-	-	-	-
200	40	M36x2	65	135	85	25	180	32	54	M16	42	G3/4	220	175	-	-	-	-

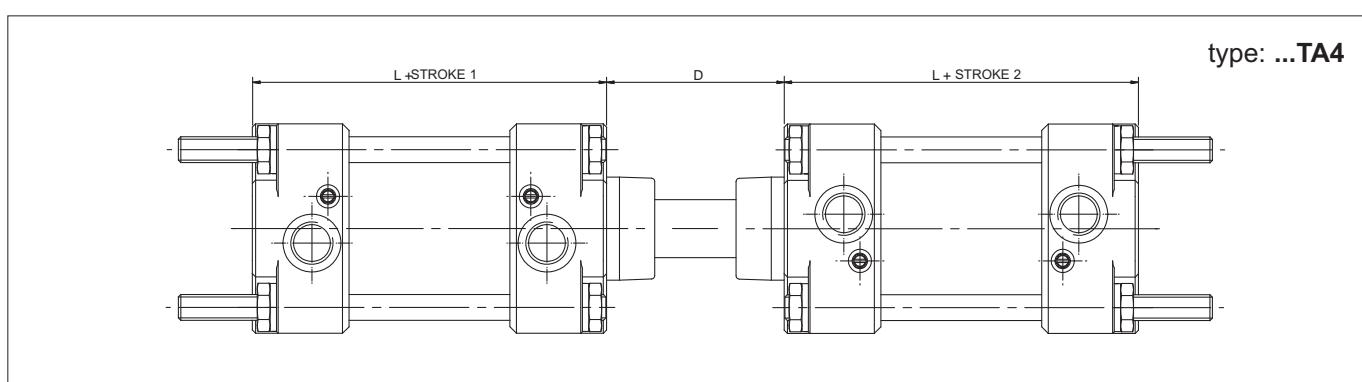
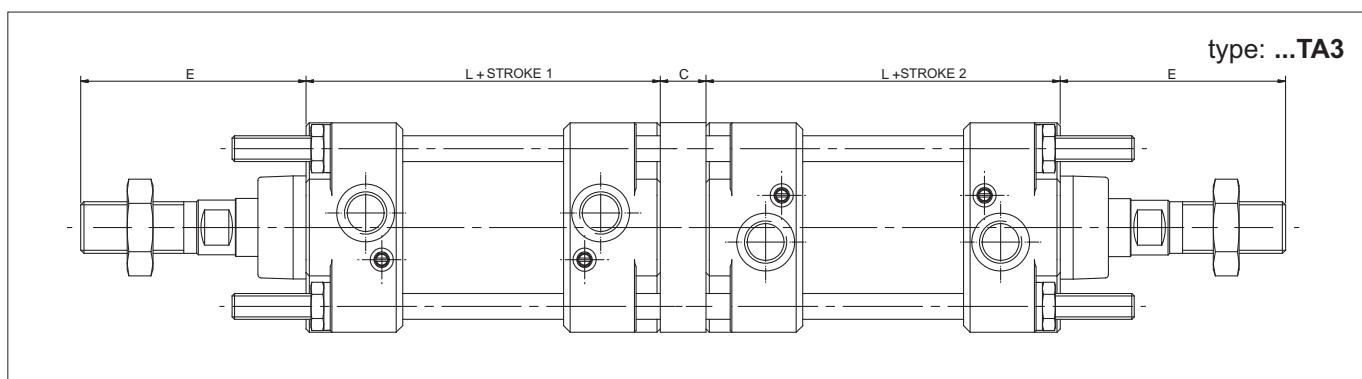
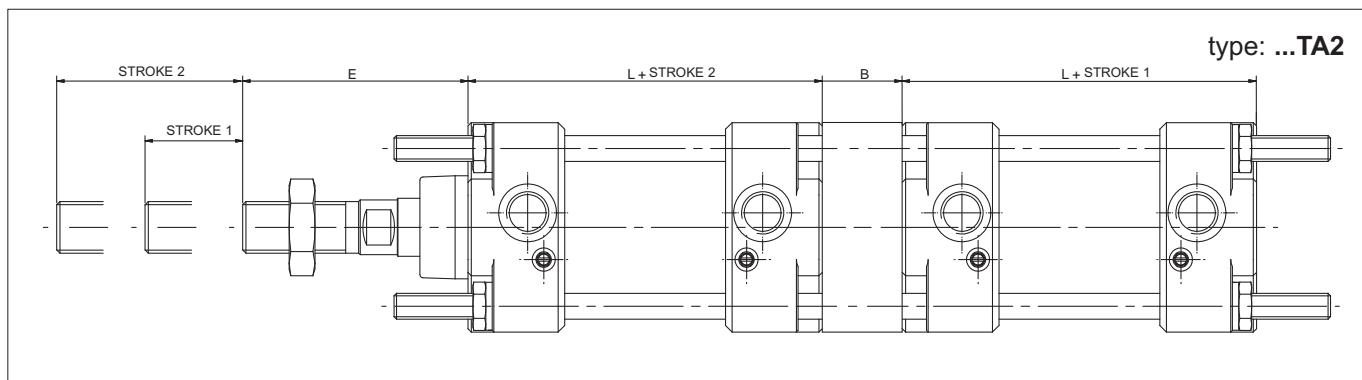
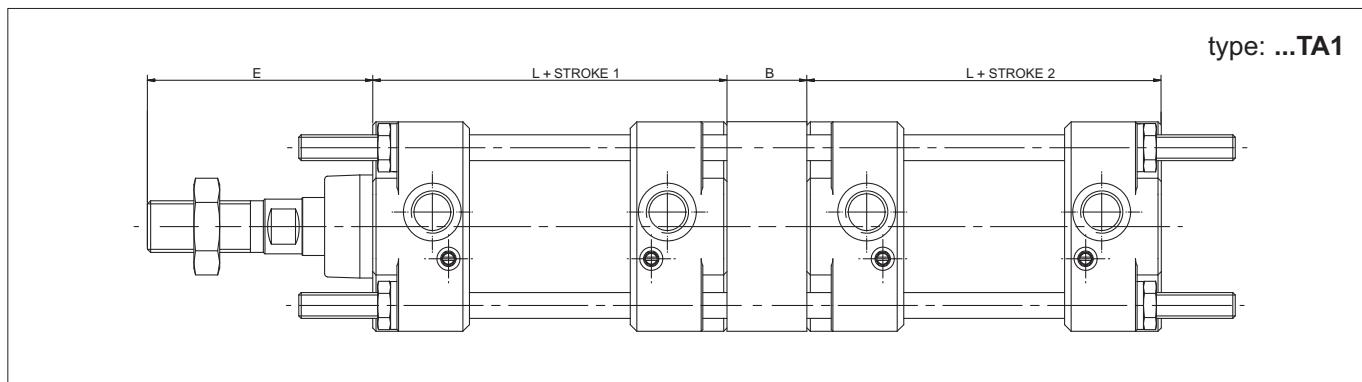


\emptyset (mm)	$\emptyset A$ f7	B	E	F	L ± 1	P	T
25	12	M10x1.5	45	20	90	8	17
32	12	M10x1.5	45	20	90	8	17
40	18	M16x1.5	70	36	129	13	24
50	18	M16x1.5	70	36	129	13	24
63	22	M20x1.5	85	46	143	17	30
80	22	M20x1.5	85	46	143	17	30
100	30	M27x2	110	63	164	22	41
125	30	M27x2	110	63	164	22	41
160	40	M36x2	135	85	200	32	54
200	40	M36x2	135	85	200	32	54

Cylinders Cnomo 06.07.00

Bores from 25 to 200 mm

Options



Ø	E	L	B	C	D
25	45	80	30	5	36
32	45	80	30	5	38
40	70	110	30	8	40
50	70	110	30	8	47
63	85	125	40	10	59
80	85	125	40	10	62
100	110	145	40	15	55
125	110	145	40	15	80
160	135	180	50	20	102
200	135	180	50	20	87

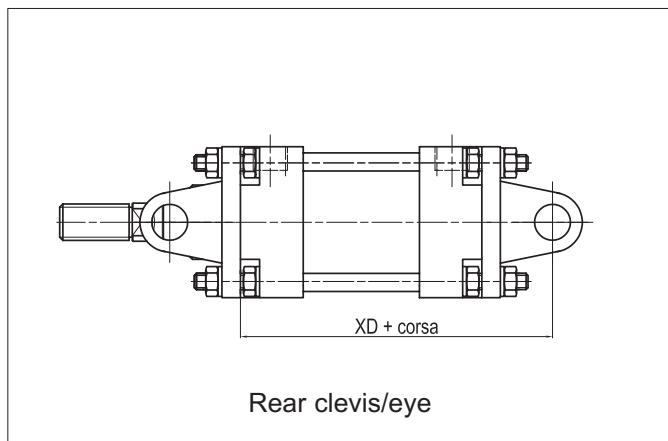
Cylinders Cnomo 06.07.00

Bores from 25 to 200 mm

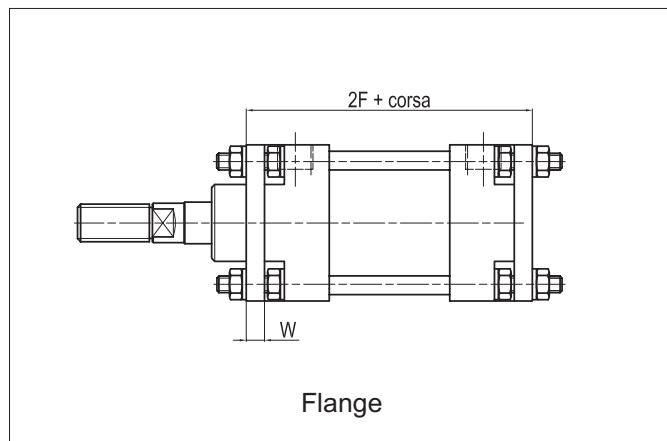
CNOMO mountings



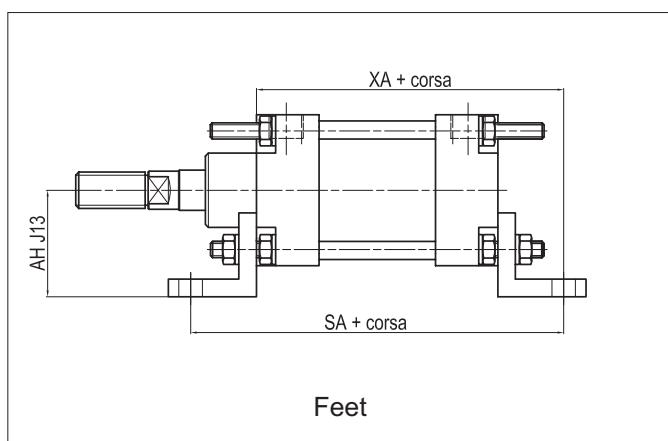
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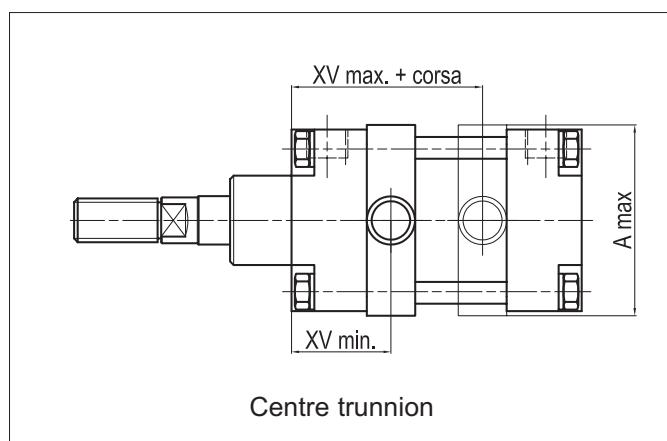
Rear clevis/eye



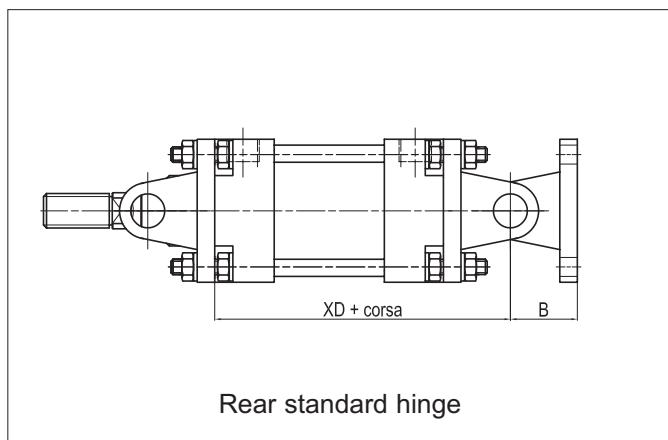
Flange



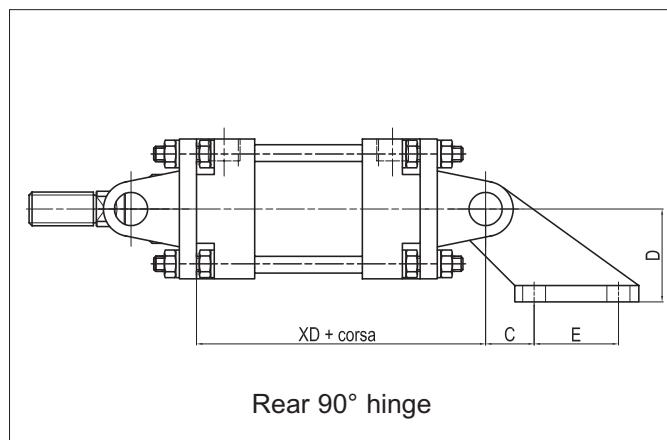
Feet



Centre trunnion



Rear standard hinge



Rear 90° hinge

For dimensions and codes of the accessories see page 1.99.1.

\varnothing mm	A max	AH	B	C	D	E	SA	W	XA	XD	XV min	XV max	2F
32	46	32	18	18	32	20	134	8	107	98	32,5	47,5	96
40	58	36	26	25	45	32	164	8	137	134	41	69	126
50	68	45	26	25	45	32	180	10	145	138	45	65	130
63	84	45	34	32	63	50	195	10	160	155	52,5	72,5	145
80	102	63	34	32	63	50	211	12	168	157	52,5	72,5	149
100	124	73	41	40	90	70	231	12	188	182	57	88	169
125	152	91	41	40	90	70	249	15	197	186	58	87	175
160	190	115	55	50	140	110	304	20	242	235	67	113	220
200	250	135	55	50	140	110	304	20	242	235	68	112	220



Notes

Compact cylinders ISO 21287

Bores from 16 to 125 mm



Standard executions		
Version	Symbol	Type
Single acting, magnetic, with female thread		CIS
Double acting, magnetic, with female thread		CI
Double acting, magnetic, anti-rotating		CIN



For the magnetic reed switches type ASV see from page 1.110.1.

For mounting accessories see from page 1.100.1 and 1.97.1

For rod mountings see from page 1.85.1.



On request, they can be supplied
according Directive 94/9/EC - ATEX
 II 2 GDc T5

Series of compact cylinders conforming to ISO 21287 standards.
The new barrel with grooves allow the mounting of the magnetic reed switches directly in the tube without brackets; the reed switch will not protrude out the barrel profile.
This series is equipped with elastic dampers on the piston
Only magnetic version available
One or more magnetic reed switches can be mounted.

Options	Suffix
Single acting, rear spring	T
Male thread on piston-rod	M
Through-rod	P
Seals FKM max 150°C	V
Tandem with coupled rods	TA1
Tandem with independent rods	TA2
Tandem back to back	TA3
Tandem front to front	TA4
Extended rod (indicate the requested WH dimension in mm. E.g.: WH-50).	WH-...
Special on request	/S

When possible options can be combined.

The suffix of the options are to be added to the model number of the standard product, as shown in the following table.

How to order: 63/100CIMP

63	/	100	CI	M	P
Bore	/	Stroke	Type	Option	Option

Seal kits	
n. 1	Rod-wiper
n. 2	Tube O-ring
n. 1	Piston lip-seal

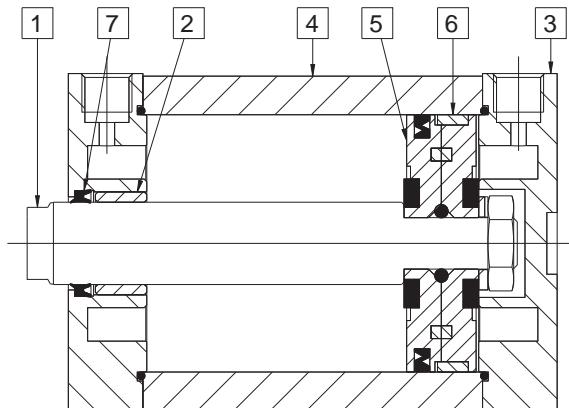
How to order: 32 / SG / CIP

32	/	SG	/	CI	P
Bore	/	Seal kit	/	Type	Option

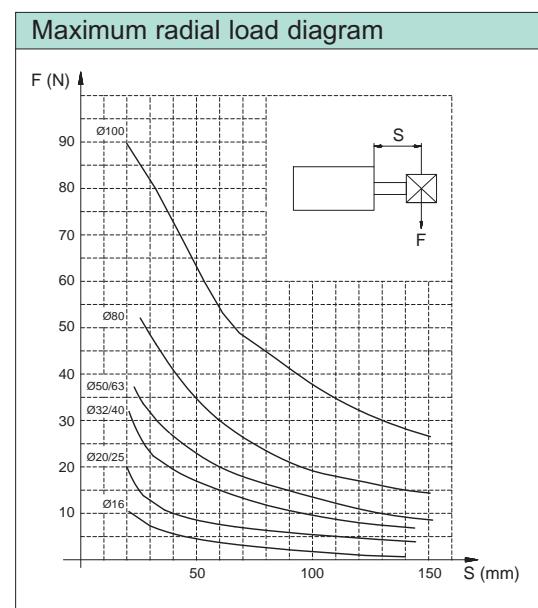
Compact cylinders ISO 21287

Bores from 16 to 125 mm

Technical data



Materials (standard types)	
1 Rod	Chrome-plated steel C45
2 Bushing	Stainless steel, sintered bronze, PTFE
3 Heads	Anodised aluminium
4 Tube	Anodised aluminium
5 Piston	Aluminium
6 Guide ring	PTFE
7 Rod seals	Polyurethane
Other seals	Nitrile rubber NBR / polyurethane



Caratteristiche tecniche	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure range	Single acting 2 ÷ 10 bar - Double acting 1 ÷ 10 bar
Temperature range	-20 °C ÷ +80 °C

Bore (mm)	Standard stroke		Standard stroke CIN
	CIS	CI	
16	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50 (1÷300)	5, 10, 15, 20, 25, 30, 40, 50 (1÷200)
20	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60 (1÷300)	5, 10, 15, 20, 25, 30, 40, 50, 60 (1÷200)
25	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60 (1÷300)	5, 10, 15, 20, 25, 30, 40, 50, 60 (1÷200)
32	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷400)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷300)
40	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷400)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷300)
50	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷400)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷300)
63	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷400)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷300)
80	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷500)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80 (1÷400)
100	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100 (1÷500)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100 (1÷400)
125	5, 10, 15, 20, 25 (1÷25)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100 (1÷500)	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100 (1÷400)

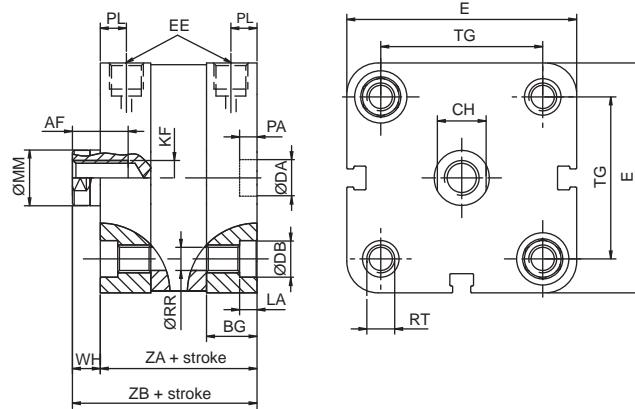
Compact cylinders ISO 21287

Bores from 16 to 125 mm

Standard dimensions

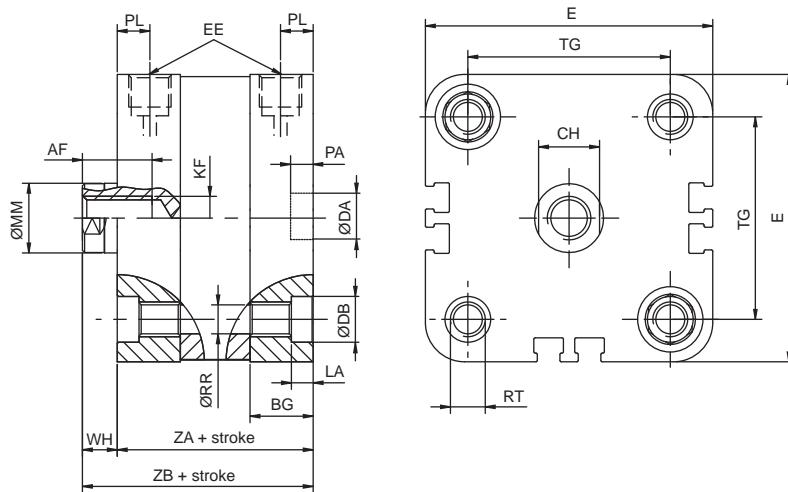


Type: CI - CIS
Bore: 16 - 20 - 25



\varnothing (mm)	\varnothing MM f7	AF	WH	ZA	ZB	KF	EE	BG	RR	TG	E	RT	LA	\varnothing DB	PL	CH	\varnothing DA H9	PA +0.1
16	8	10	4,5	35	39,5	M4	M5	12,7	3,1	18	29	M4	3,5	-	8	7	6	4
20	10	10	6	37	43	M6	M5	15	4,1	22	38	M5	4,1	8,2	6	8	9	2,1
25	10	10	6	39	45	M6	M5	15	4,1	26	41	M5	4,1	8,2	5	8	9	2,1

Type: CI - CIS
Bore: 32 - 40 - 50 - 63

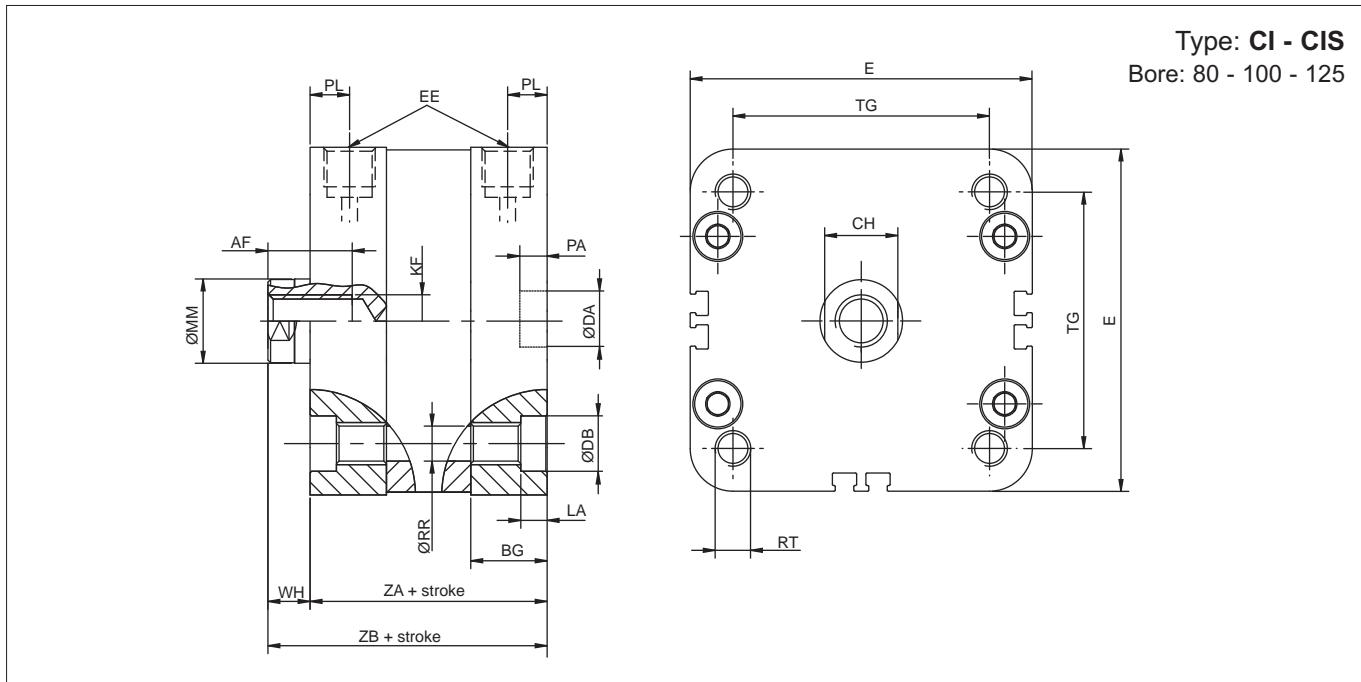


\varnothing (mm)	\varnothing MM f7	AF	WH	ZA	ZB	KF	EE	BG	RR	TG	E	RT	LA	\varnothing DB	PL	CH	\varnothing DA H9	PA +0.1
32	12	12	7	44	51	M8	G 1/8	16	5,1	32,5	50	M6	5,1	8,5	7	10	9	2,1
40	12	12	7	45	52	M8	G 1/8	16	5,1	38	58	M6	5,1	8,5	7,5	10	9	2,1
50	16	16	8	45	53	M10	G 1/8	16	6,4	46,5	70	M8	6,1	10,5	7,5	14	12	2,6
63	16	16	8	49	57	M10	G 1/8	16	6,4	56,5	80	M8	6,1	10,5	7	14	12	2,6

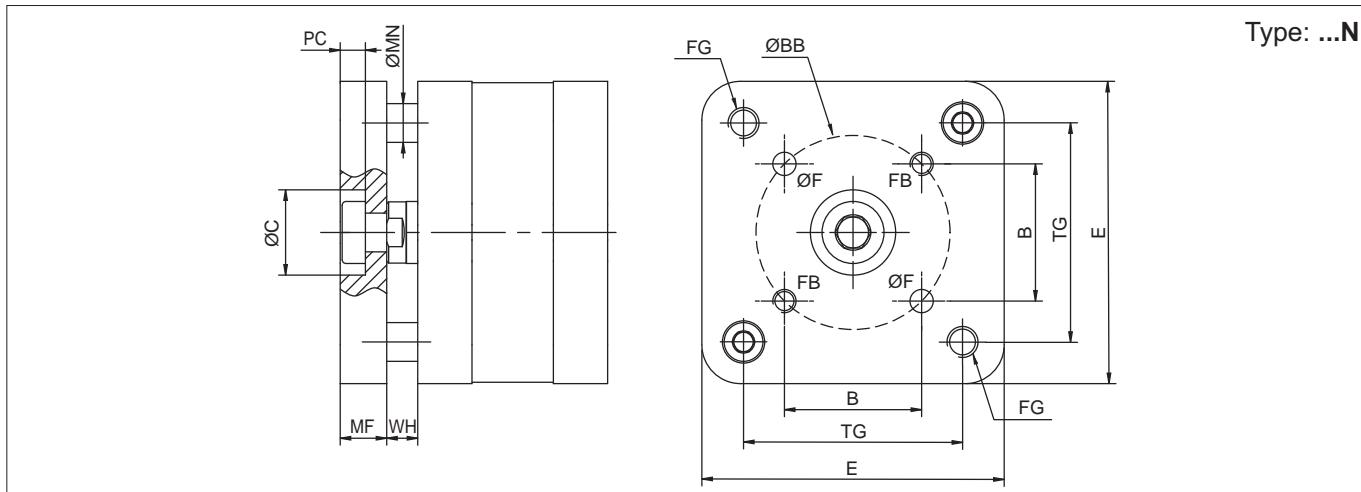
Compact cylinders ISO 21287

Bores from 16 to 125 mm

Standard dimensions



\varnothing (mm)	\varnothing MM f7	AF	WH	ZA	ZB	KF	EE	BG	RR	TG	E	RT	LA	Ø DB	PL	CH	Ø DA H9	PA +0.1
80	20	20	10	54	64	M12	G 1/8	17	8,4	72	96	M10	8,5	13	8	17	12	2,6
100	20	20	10	67	77	M12	G 1/8	17	8,4	89	116	M10	8,5	13	8,5	17	12	2,6
125	25	24	11	81	92	M16	G 1/4	20	10,2	110	135	M12	10,5	17	10	21	12	2,6



\varnothing (mm)	WH	MF +0,1	E	TG	B	FG	ØBB ±0,1	ØF +0,1	FB	ØC H9	PC	MN f7
16	4,5	-	29	-	-	-	-	-	-	-	-	-
20	6	8	38	22	12	M5	17	4	M4	-	-	6
25	6	8	41	26	12	M5	22	5	M5	14	4,5	6
32	7	10	50	32,5	14	M6	28	5	M5	17	5,5	8
40	7	10	58	38	14	M6	33	5	M5	17	5,5	8
50	8	12	70	46,5	18	M8	42	6	M6	22	6,5	10
63	8	12	80	56,5	18	M8	50	6	M6	22	6,5	10
80	10	14	96	72	24	M10	65	8	M8	24	7,5	10
100	10	14	116	89	24	M10	80	10	M10	24	7,5	12
125	-	-	-	-	-	-	-	-	-	-	-	-

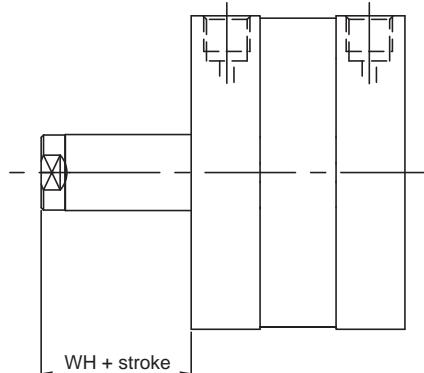
Compact cylinders ISO 21287

Bores from 16 to 125 mm

Options

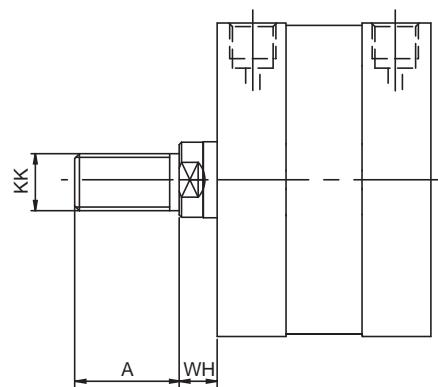


Type: ...T

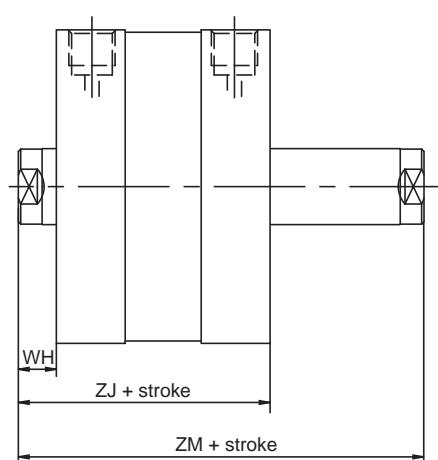


Available stroke: 1÷25

Type: ...M



Type: ...P

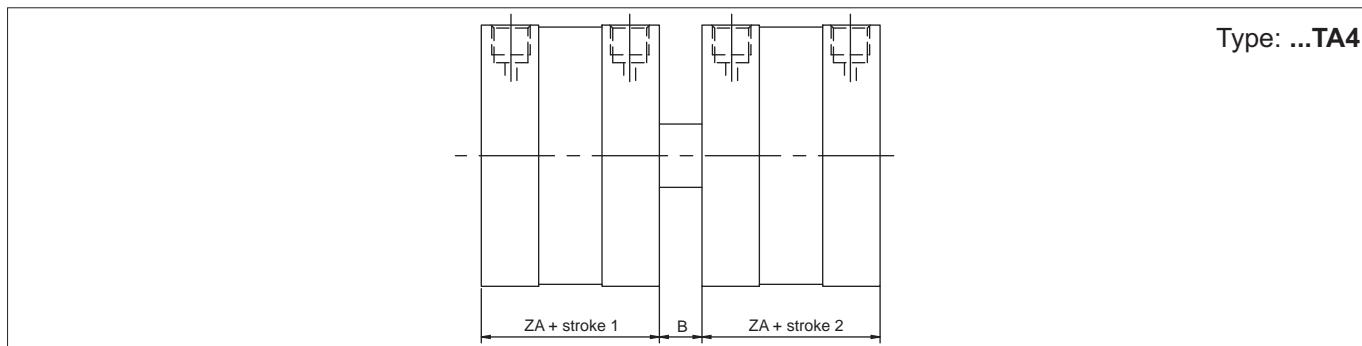
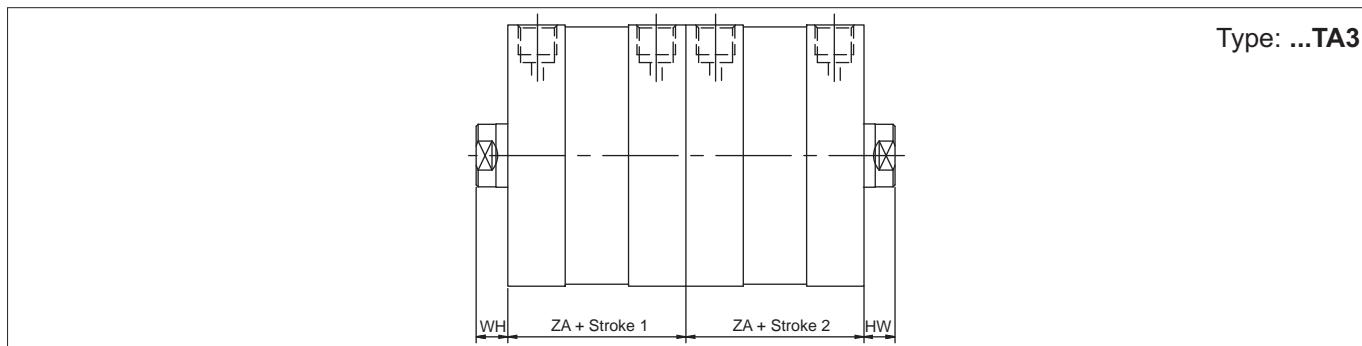
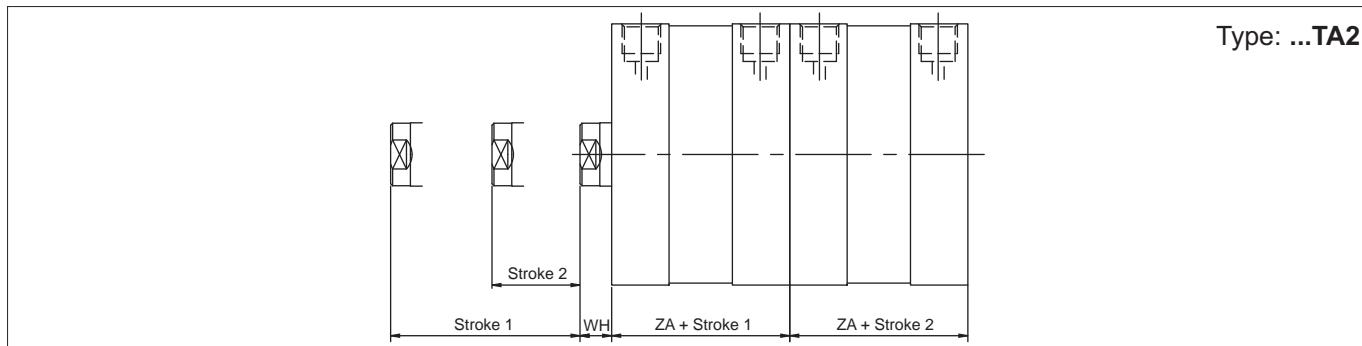
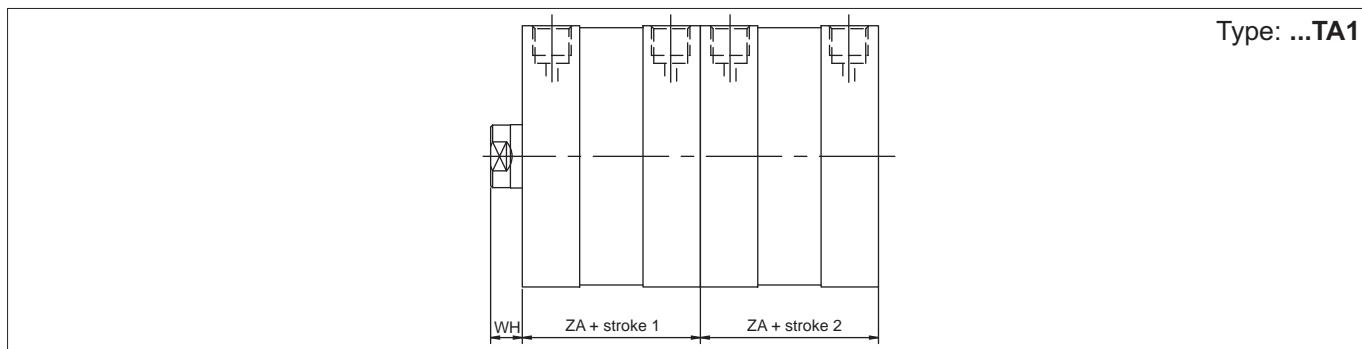


\varnothing (mm)	A	KK	WH	ZJ	ZM
16	20	M8x1.25	4,5	-	-
20	16	M8x1.25	6	43	49
25	16	M8x1.25	6	45	51
32	19	M10x1.25	7	51	58
40	19	M10x1.25	7	52	59
50	22	M12x1.25	8	53	61
63	22	M12x1.25	8	57	65
80	28	M16x1.5	10	64	74
100	28	M16x1.5	10	77	87
125	-	-	-	-	-

Compact cylinders ISO 21287

Bores from 16 to 125 mm

Options



\varnothing (mm)	ZA	WH	B
16	35	4,5	-
20	37	6	9
25	39	6	11
32	44	7	12
40	45	7	13
50	45	8	15
63	49	8	15
80	54	10	16
100	67	10	20
125	81	11	-

Standard executions		
Version	Symbol	Type
Magnetic		CS



On request, they can be supplied according Directive 94/9/EC - ATEX
CE II 2 GDc T5



Options	Suffix
Rear spring	T
Seals FKM max 150 °C	V
Piston rod with male thread	M
Special versions on request	/ S

The options can be combined (when this is possible).

Series of compact cylinders conforming to European UNITOP standards.

The new barrel has grooves allowing the mounting of the magnetic reed switch directly onto the barrel itself without further brackets; this allows the magnetic sensor not to protrude beyond the profile of the barrel.

Elastic cushioning are mounted on the piston.

Only in the version with magnetic piston.

One or more magnetic sensors can be applied.

For the magnetic reed switches type ASV see from page 1.110.1

For mounting accessories see from page 1.100.1.

For rod accessories see from page 1.85.1

How to order: 32 / 50 CST

32	/	50	CS	T
Bore	/	Stroke	Type	Option

On request this series of cylinders can also be supplied with the mounting hole dimensions conforming to ISO 6431 standards, from bore 32 to 100 mm: type CSI.

For accessories see from page 1.97.1.

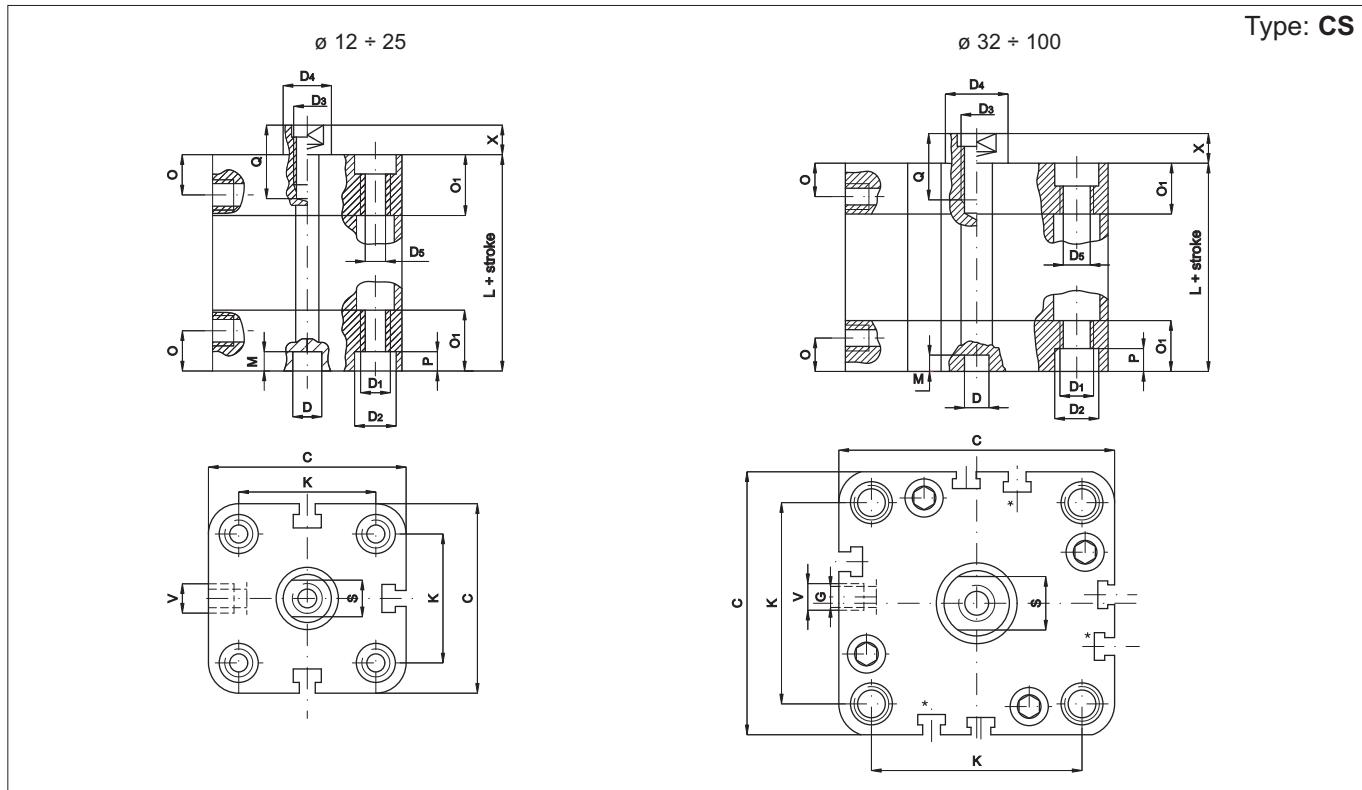
Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure range	2 ÷ 10 bar
Temperature range	-30 °C ÷ + 80°C
Materials	Heads: Anodised aluminium Barrel: Anodised aluminium Rod: Stainless steel AISI 303 Seals: Polyurethane - Aluminium piston

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Thrust force at 6 bar (N)	Max traction force of the spring (N)	Number of grooves for the sensors
12	5, 10, 15, 20 25, 30, 40, 50	50	59	6	3
16			110	6	
20			177	7	
25			270	12	
32			448	16	
40			700	23	
50			1125	30	
63	10, 15, 20, 25, 30, 40, 50		1800	35	7
80			2900	60	
100			4510	100	

Compact Cylinders

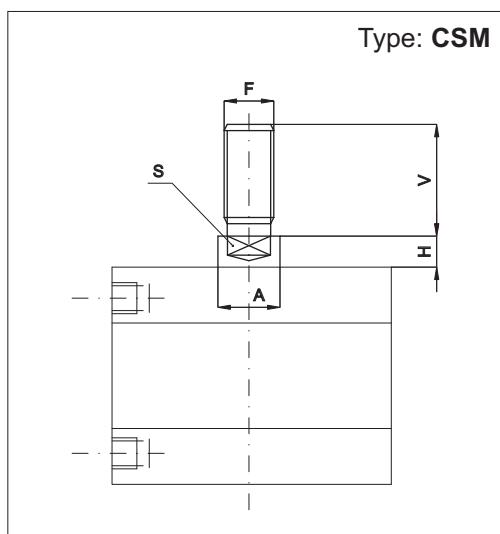
Bores from 12 to 100 mm

Single acting



\varnothing mm.	C	D \varnothing	D_1 \varnothing	D_2 \varnothing	D_3 \varnothing	D_4 \varnothing	D_5 \varnothing	G	V	O	O_1	K	S	P	M	Q	X	L
12	29	6	M4	6	M3	6	3,3	0	M5	8	12,25	18	5	3,5	4	6	4,5	38
16	29	6	M4	6	M4	8	3,3	0	M5	8	12,25	18	6	3,5	4	8	4,5	38
20	36	6	M5	7,5	M5	10	4,2	0	M5	8	12,25	22	8	4,5	4	10	4,5	38
25	40	6	M5	7,5	M5	10	4,2	0	M5	8	12,75	26	8	4,5	4	10	5,5	39,5
32	50	6	M6	9	M6	12	5,2	4	1/8"	8	14,5	32	10	5,5	4	12	6	44,5
40	58	6	M6	9	M6	12	5,2	3	1/8"	8	14,75	42	10	5,5	4	12	6,5	45,5
50	67	6	M8	10,5	M8	16	6,7	0	1/8"	8	14,75	50	13	6,5	4	12	7,5	45,5
63	80	8	M10	13,5	M8	16	8,5	0	1/8"	8	14,25	62	13	8,5	4	14	7,5	50
80	100	8	M10	13,5	M10	20	8,5	0	1/8"	8,5	16	82	17	8,5	4	15	8	56
100	124	8	M10	13,5	M12	25	8,5	0	1/4"	10,5	19,25	103	22	8,5	4	20	10	66,5

*From 30 mm stroke add to above dimensions: 10 mm for \varnothing 12-16-20, 20 mm for \varnothing 25-32-40-50-63, 30 mm for \varnothing 80-100.



\varnothing mm	A	V	F	S	H
12	6	16	M6	5	4,5
16	8	20	M8	6	4,5
20	10	22	M10x1,25	8	4,5
25	10	22	M10x1,25	8	5,5
32	12	22	M10x1,25	10	6
40	12	22	M10x1,25	10	6,5
50	16	24	M12x1,25	13	7,5
63	16	24	M12x1,25	13	7,5
80	20	32	M16x1,5	17	8
100	25	40	M20x1,5	22	10

Seal kit.

Here are the quantities and the description of the components comprised in each kit.

Description	N°	CS
Rod seal	1	1
Tube o-ring	2	1
Lip seal	2	1

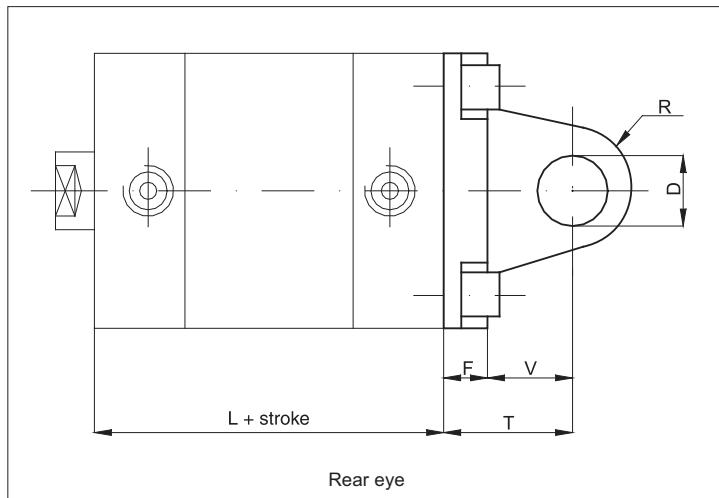
The magnetic ring to be ordered separately.

How to order: 32 / SG / CSV

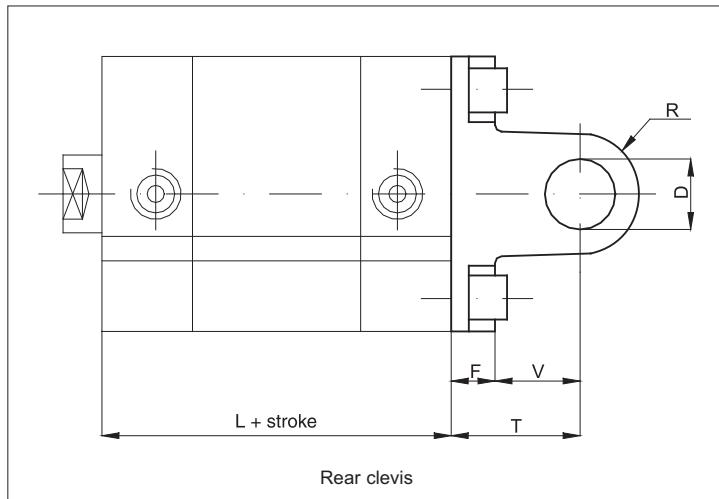
32	/	SG	/	CS	V
Bore	/	Series of seals	/	Type	Option

The seal kit for the cylinders in non-standard executions is to be composed according to the option.

1

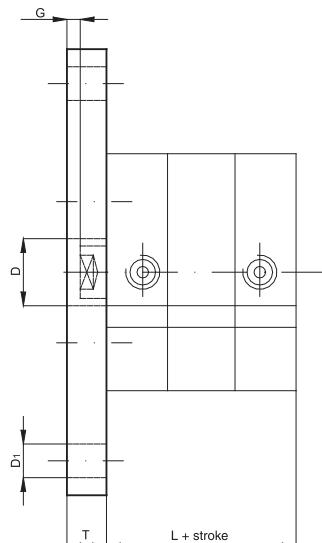


Ø mm	F	V	T	D	R	L
12	6	10	16	6	6	38
16	6	10	16	6	6	38
20	6	14	20	8	8	38
25	6	14	20	8	8	39,5



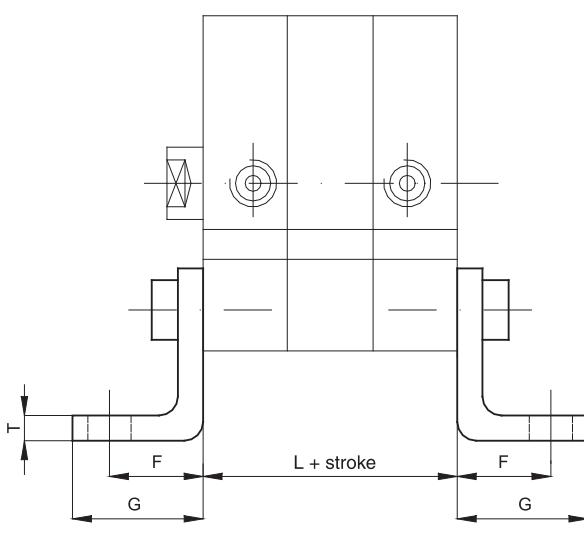
Ø mm	F	V	T	D	R	L
32	9	13	22	10	10	44,5
40	9	16	25	12	12,5	45,5
50	11	16	27	12	12,5	45,5
63	11	21	32	16	15	50
80	13	23	36	16	15	56
100	15	26	41	20	20	66,5

For dimensions and codes of the accessories see page 1.100.1.



Flange

\varnothing mm	G	T	D ₁	D	L
12	5,5	10	5,5	10	38
16	5,5	10	5,5	10	38
20	5,5	10	6,5	12	38
25	4,5	10	6,5	12	39,5
32	4	10	7	14	44,5
40	3,5	10	9	14	45,5
50	4,5	12	9	18	45,5
63	7,5	15	9	18	50
80	7	15	12	23	56
100	5	15	14	28	66,5



Low foot

\varnothing mm	F	G	T	L
12	13	17,5	3	38
16	13	17,5	3	38
20	16	22	4	38
25	16	22	4	39,5
32	18	26	5	44,5
40	20	28	5	45,5
50	24	32	6	45,5
63	27	39	6	50
80	30	42	8	56
100	33	45	8	66,5

For dimensions and codes of the accessories see page 1.100.1.

Standard executions		
Version	Symbol	Type
Magnetic		CD
Magnetic anti-rotating from bore 16 mm		CDN

On request, they can be supplied according Directive 94/9/EC - ATEX
CE II 2 GDc T5

Options	Suffix
Through rod	P
Seals FKM max 150 °C	V
Piston rod with male thread	M
Special versions on request	/ S

The options can be combined (when this is possible).



Series of compact cylinders conforming to European UNITOP standards.

The new design barrel has grooves allowing the mounting of the magnetic reed switch directly onto the barrel itself without further brackets; this allows the magnetic sensor not to protrude beyond the profile of the barrel.

Elastic cushioning are mounted on the piston.

Only in the version with magnetic piston.

One or more magnetic sensors can be applied to.

For the magnetic reed switches type ASV see from page 1.110.1

For mounting accessories see from page 1.100.1.

For rod accessories see from page 1.85.1.

How to order: 50 / 100 CDNP

50	/	100	CDN	P
Bore	/	Stroke	Type	Option

On request this series of cylinders can also be supplied with the mounting hole dimensions conforming to ISO 6431 standards, from bore 32 to 100 mm: type CDI, CDNI.

For accessories see from page 1.97.1.

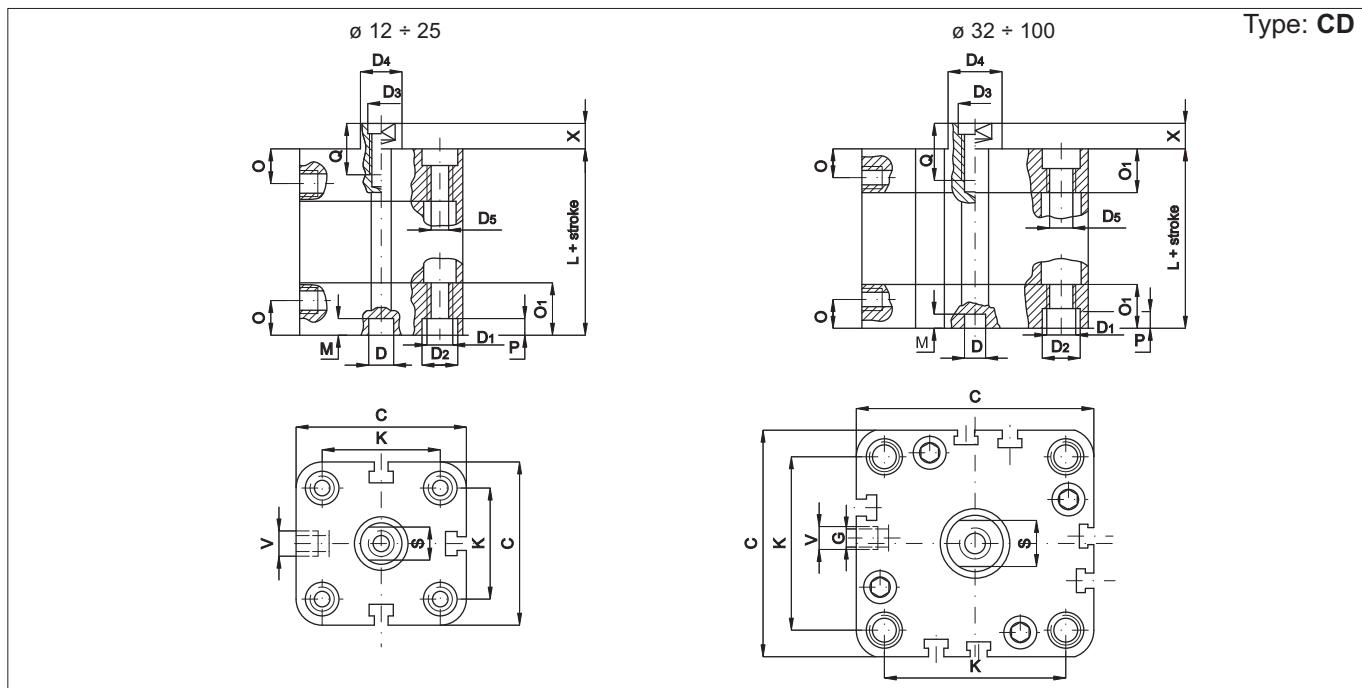
Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure range	2 ÷ 10 bar
Temperature range	-30 °C ÷ + 80°C
Materials	Heads: Anodised aluminium Barrel: Anodised aluminium Rod: Stainless steel AISI 303 Anti-rotating plate: Anodised aluminium Seals: Polyurethane - Aluminium piston

Bore (mm)	Standard strokes CD (mm)	Standard strokes CDN (mm)	Max stroke (mm)	Number of grooves for the sensors	See page 1.1.3 to calculate the cylinder force.
12	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100	—	See table standard strokes	3	Should you require intermediate strokes, the overall dimensions of the cylinder body will be those of the cylinder of the following standard stroke (in fact the intermediate stroke is obtained applying a distancer).
16	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125			
20	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125			
25	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160			
32	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200			
40	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200			
50	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250			
63	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250			
80	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250		7	
100	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250	10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250			

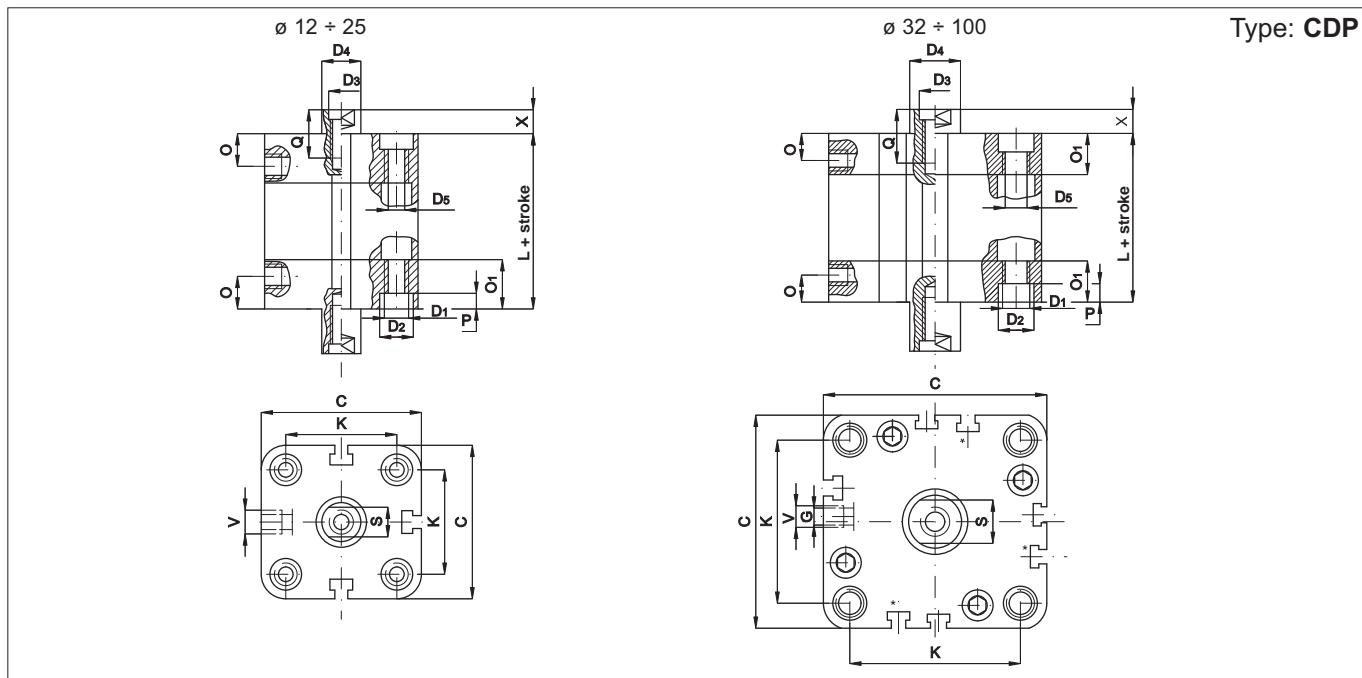
Compact Cylinders

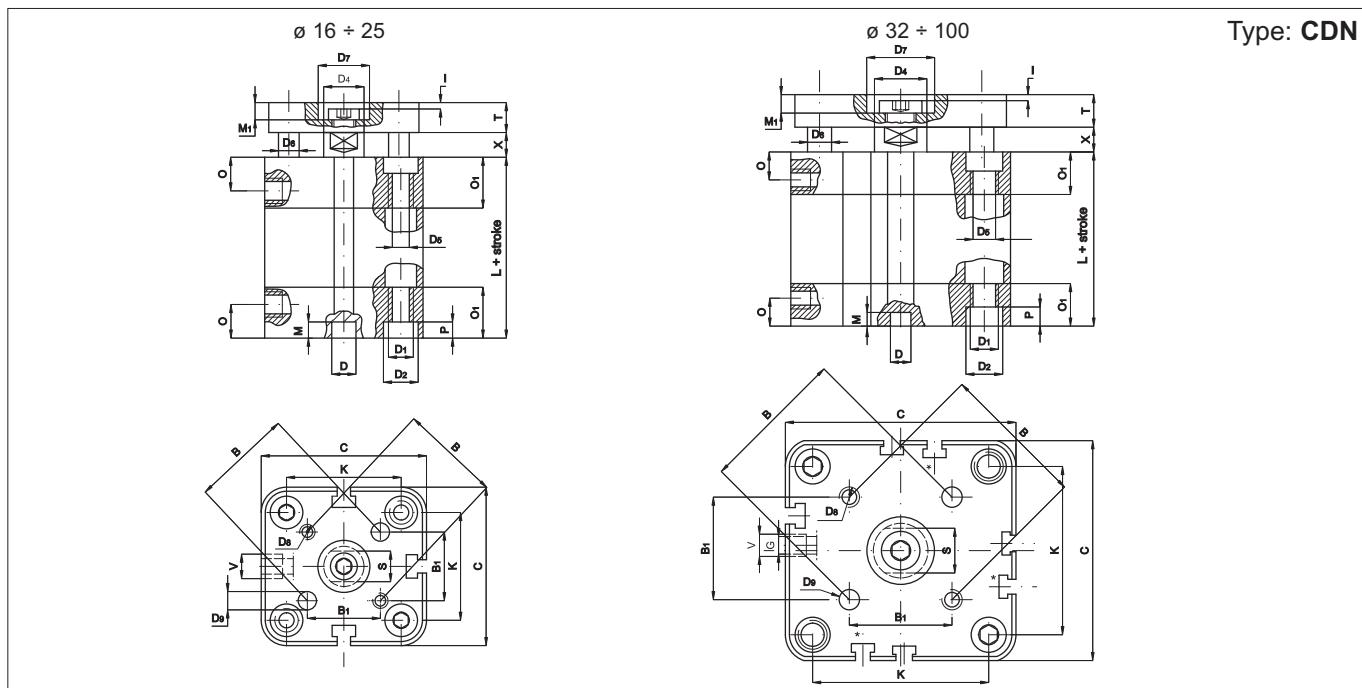
Bores from 12 to 100 mm

Double acting

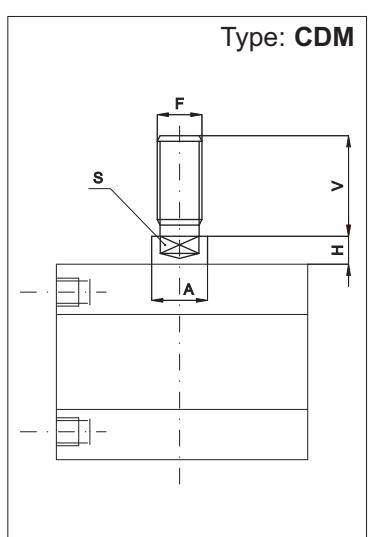


\varnothing mm	C	D \varnothing	D ₁ \varnothing	D ₂ \varnothing	D ₃ \varnothing	D ₄ \varnothing	D ₅ \varnothing	G	V	O	O ₁	K	S	P	M	Q	X	L
12	29	6	M4	6	M3	6	3,3	0	M5	8	12,25	18	5	3,5	4	6	4,5	38
16	29	6	M4	6	M4	8	3,3	0	M5	8	12,25	18	6	3,5	4	8	4,5	38
20	36	6	M5	7,5	M5	10	4,2	0	M5	8	12,25	22	8	4,5	4	10	4,5	38
25	40	6	M5	7,5	M5	10	4,2	0	M5	8	12,75	26	8	4,5	4	10	5,5	39,5
32	50	6	M6	9	M6	12	5,2	4	1/8"	8	14,5	32	10	5,5	4	12	6	44,5
40	58	6	M6	9	M6	12	5,2	3	1/8"	8	14,75	42	10	5,5	4	12	6,5	45,5
50	67	6	M8	10,5	M8	16	6,7	0	1/8"	8	14,75	50	13	6,5	4	12	7,5	45,5
63	80	8	M10	13,5	M8	16	8,5	0	1/8"	8	14,25	62	13	8,5	4	14	7,5	50
80	100	8	M10	13,5	M10	20	8,5	0	1/8"	8,5	16	82	17	8,5	4	15	8	56
100	124	8	M10	13,5	M12	25	8,5	0	1/4"	10,5	19,25	103	22	8,5	4	20	10	66,5





\varnothing mm	C	D \varnothing	D1 \varnothing	D2 \varnothing	D4 \varnothing	D5 \varnothing	D6 \varnothing	D7 \varnothing	D8 \varnothing	D9 \varnothing	G	V	O	O1	K	B	B1	S	P	M	M1	I	T	X	L
16	29	6	M4	6	8	3,3	5	9	M3	3	0	M5	8	12,25	18	14	9,9	6	3,5	4	3,8	1	6	4,5	38
20	36	6	M5	7,5	10	4,2	5	11	M4	4	0	M5	8	12,25	22	17	12	8	4,5	4	5	1,5	8	4,5	38
25	40	6	M5	7,5	10	4,2	6	14	M5	5	0	M5	8	12,75	26	22	15,6	8	4,5	4	5	1,5	8	5,5	39,5
32	50	6	M6	9	12	5,2	8	17	M5	5	4	1/8"	8	14,5	32	28	19,8	10	5,5	4	6,5	2,5	10	6	44,5
40	58	6	M6	9	12	5,2	10	17	M5	5	3	1/8"	8	14,75	42	33	23,3	10	5,5	4	6,5	2,5	10	6,5	45,5
50	67	6	M8	10,5	16	6,7	10	22	M6	6	0	1/8"	8	14,75	50	42	29,7	13	6,5	4	7,5	2,5	12	7,5	45,5
63	80	8	M10	13,5	16	8,5	10	22	M6	6	0	1/8"	8	14,25	62	50	35,4	13	8,5	4	7,5	2,5	12	7,5	50
80	100	8	M10	13,5	20	8,5	14	28	M8	8	0	1/8"	8,5	16	82	65	46	17	8,5	4	9	3	14	8	56
100	124	8	M10	13,5	25	8,5	14	30	M10	10	0	1/4"	10,5	19,25	103	80	56,6	22	8,5	4	10	3	14	10	66,5



\varnothing mm	A	V	F	S	H
12	6	16	M6	5	4,5
16	8	20	M8	6	4,5
20	10	22	M10x1,25	8	4,5
25	10	22	M10x1,25	8	5,5
32	12	22	M10x1,25	10	6
40	12	22	M10x1,25	10	6,5
50	16	24	M12x1,25	13	7,5
63	16	24	M12x1,25	13	7,5
80	20	32	M16x1,5	17	8
100	25	40	M20x1,5	22	10

Seal kit.

Here are the quantities and the description of the components comprised in each kit.

Description	N°	CD	CDN
Rod seal	1	1	1
Tube o-ring	2	1	1
Lip seal	2	1	1

The magnetic ring to be ordered separately.

How to order: 32 / SG / CDP

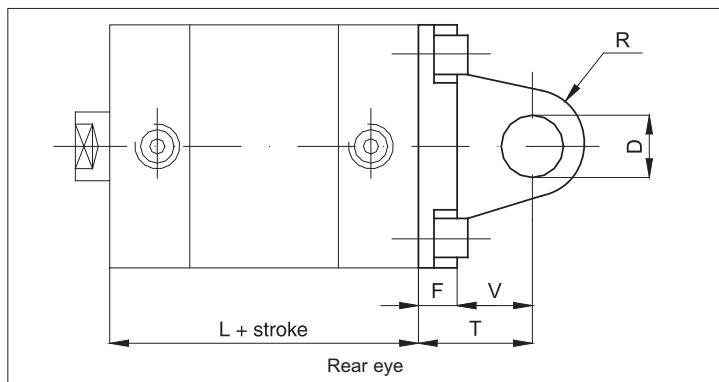
32	/	SG	/	CD	P
Bore	/	Series of seals	/	Type	Option

The seal kit for the cylinders in non-standard executions is to be composed according to the option.

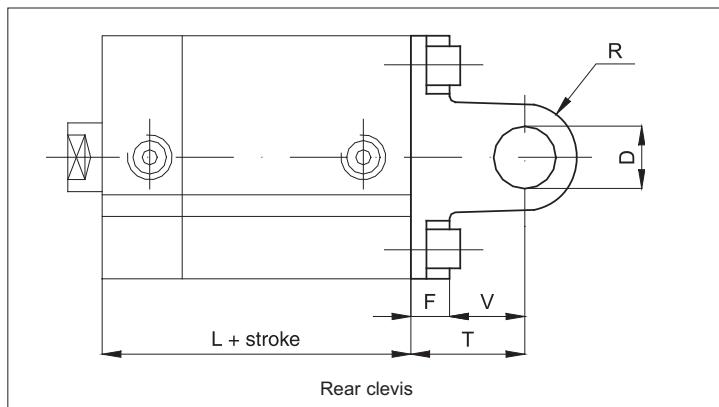
Compact Cylinders

Bores from 12 to 100 mm

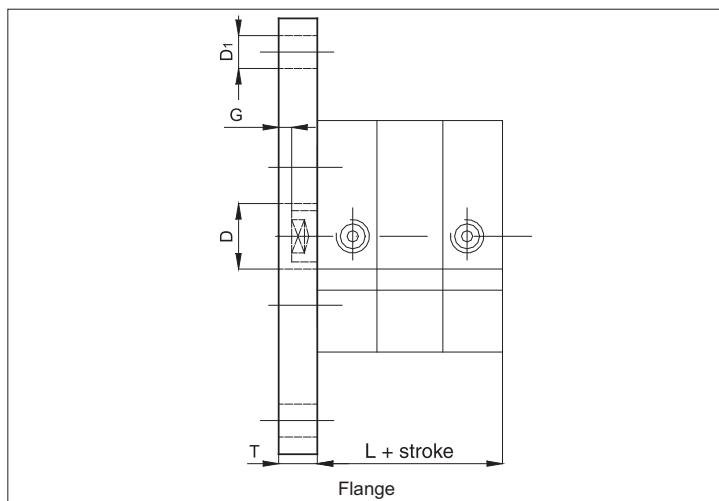
Double acting



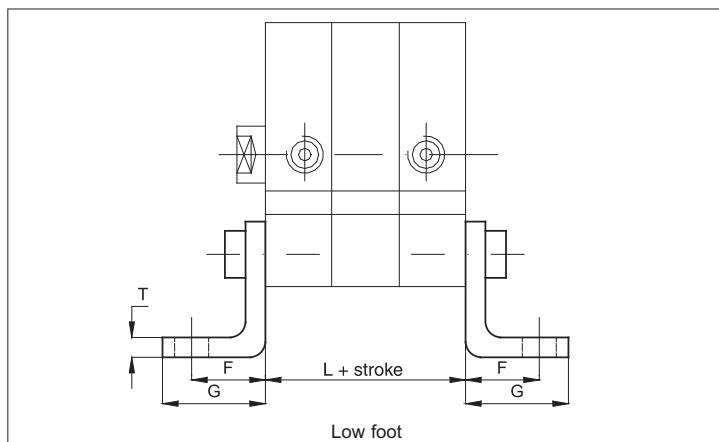
\varnothing mm	F	V	T	D	R	L
12	6	10	16	6	6	38
16	6	10	16	6	6	38
20	6	14	20	8	8	38
25	6	14	20	8	8	39,5



\varnothing mm	F	V	T	D	R	L
32	9	13	22	10	10	44,5
40	9	16	25	12	12,5	45,5
50	11	16	27	12	12,5	45,5
63	11	21	32	16	15	50
80	13	23	26	16	15	56
100	15	26	41	20	20	66,5



\varnothing mm	G	T	D ₁	D	L
12	5,5	10	5,5	10	38
16	5,5	10	5,5	10	38
20	5,5	10	6,5	12	38
25	4,5	10	6,5	12	39,5
32	4	10	7	14	44,5
40	3,5	10	9	14	45,5
50	4,5	12	9	18	45,5
63	7,5	15	9	18	50
80	7	15	12	23	56
100	5	15	14	28	66,5



\varnothing mm	F	G	T	L
12	13	17,5	3	38
16	13	17,5	3	38
20	16	22	4	38
25	16	22	4	39,5
32	18	26	5	44,5
40	20	28	5	45,5
50	24	32	6	45,5
63	27	39	6	50
80	30	42	8	56
100	33	45	8	66,5

For dimensions and codes of the accessories see page 1.100.1.

Short Stroke Cylinders

Bores from 12 to 100 mm

Single acting



Standard executions		
Version	Symbol	Type
Non magnetic		BS
Magnetic		BSM



On request, they can be supplied according Directive 94/9/EC - ATEX
CE Ex II 2 GDc T5

Options	Suffix
Rear spring	with bore from 12 to 63 mm T
Seals FKM	max 150 °C V
Special versions on request	/ S

The options can be combined (when this is possible)

Series of short stroke cylinders with extruded aluminium profile barrel and fixing holes directly made on it.

In the magnetic type the sensor can be fixed in the groove for sensor mounting by the bracket not included in the kit.

The magnetic version is provided with elastic dampers set on the heads.

For the magnetic reed switches type ASV see from page 1.110.1.

For the bracket type AS108 see page 1.120.1

For mounting accessories see from page 1.20.20.

For the rod with male thread see nipple page 1.20.20.

For rod accessories see from page 1.85.1.

How to order: 50 / 50 BSMT

50	/	50	BSM	T
Bore	/	Stroke	Type	Option

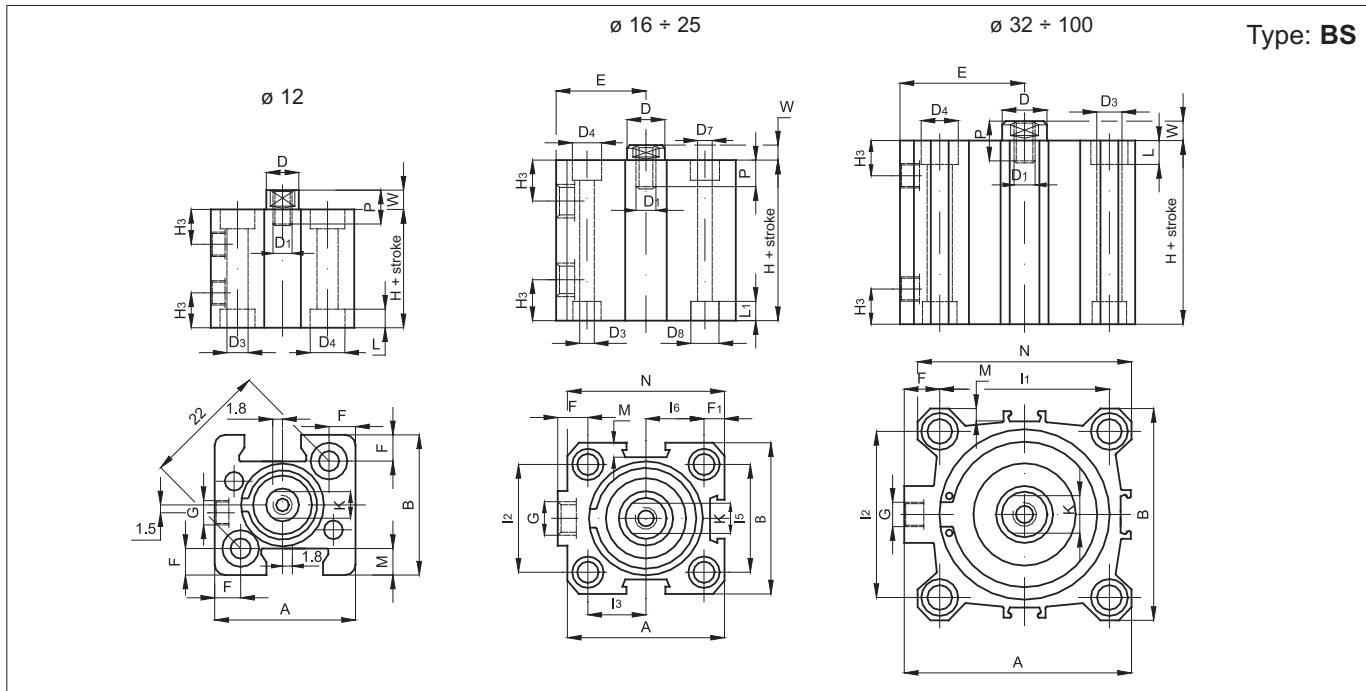
Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure range	2 ÷ 10 bar
Temperature range	-20 °C ÷ + 80°C
Materials	Heads: from 12 to 25 mm.: Brass from 32 to 100 mm.: Aluminium Barrel: Anodised aluminium Rod: Stainless steel AISI 303 Seals: NBR Piston: Non magnetic: from 12 to 32 mm: Delrin from 40 to 100 mm: Aluminium Magnetic: from 12 to 63 mm: Delrin from 80 to 100 mm: Aluminium

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Thrust force at 6 bar (N)	Traction force of the spring (N)
12	5, 10	10	55	5
16			105	6
20	5, 10, 15, 20, 25	25	170	6
25			255	13
32	5, 10, 15, 20, 25, 30, 40, 50		435	18
40			715	20
50			1050	40
63	10, 15, 20, 25, 30, 40, 50		1700	49
80			2850	76
100			4400	131

Short Stroke Cylinders

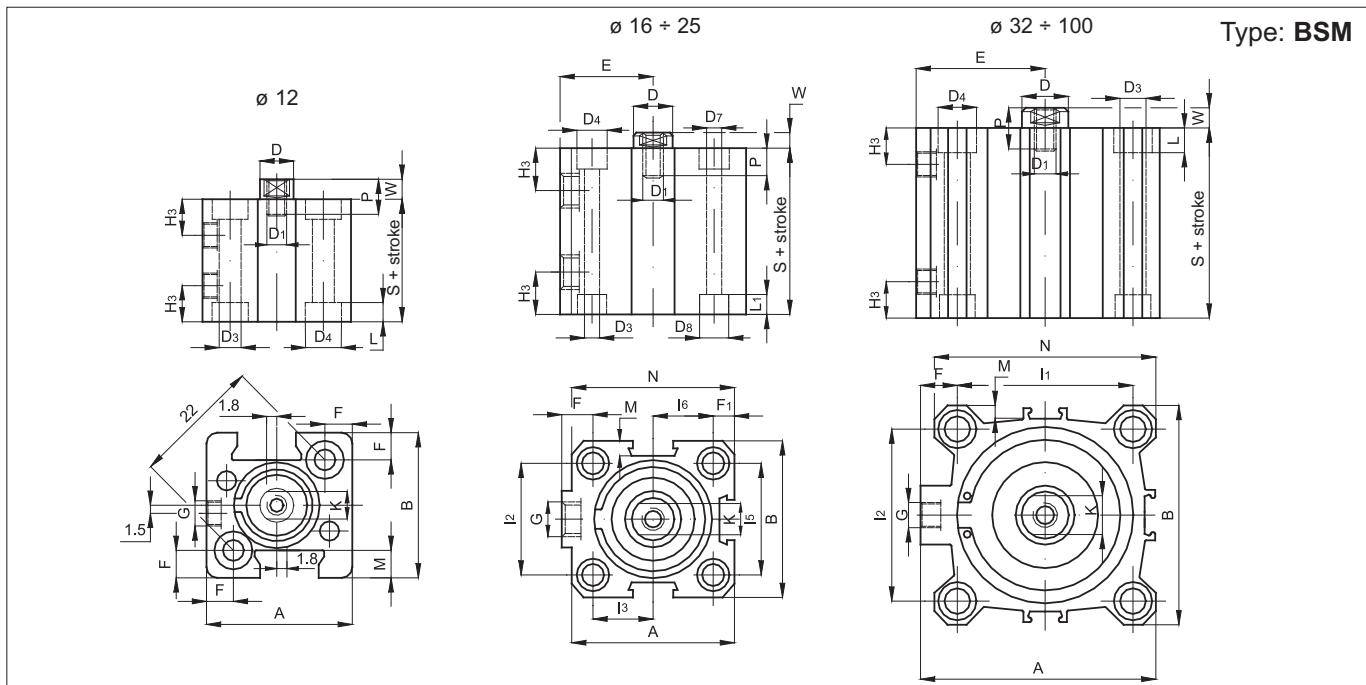
Bores from 12 to 100 mm

Single acting



mm Ø	A	B	D Ø	D ₁	D ₃ Ø	D ₄	D ₇ Ø	D ₈	E	F	F ₁	G	H ₃	I ₁	I ₂	I ₃	I ₅	I ₆	K	L	L ₁	M	N	P	W	H*	S*
12	25	25	6	M3	3,7	5,6	-	-	4,7	-	M5	5,5	-	-	-	-	-	5	3,5	-	4,7	-	6	3,5	17	27	
16	34	30	8	M4	4,7	7,5	3,7	5,6	19	7	5	M5	8	-	18	12	20	10	6	4,6	3,5	4	32	8	4,5	27	32
20	40	36	10	M5	5,8	9	5,8	9	22	7	5,2	M5	8	-	20	15	25,5	12,7	8	5,7	5,7	5,7	38,5	10	5	27	32
25	44,5	40	10	M5	5,8	9	5,8	9	24,5	9	6	1/8"	10,5	-	26	15,5	28	14	8	5,7	5,7	4,5	42	10	5,5	28,5	38,5
32	51	46	12	M6	5,8	9	-	-	27	9	-	1/8"	11,5	36	32	-	-	-	10	5,7	-	4	48	12	6	29,5	39,5
40	58	55	12	M6	5,8	9	-	-	30,5	9,5	-	1/8"	11	42	42	-	-	-	10	5,7	-	4	55	12	6	29,5	39,5
50	70	65	16	M8	6,8	11	-	-	37,5	12,5	-	1/8"	11,5	50	50	-	-	-	13	6,8	-	4	65	12	7,5	34,5	39,5
63	86	80	16	M8	9	14	-	-	46	15	-	1/8"	11	62	62	-	-	-	13	8,8	-	5	80	14	7	37	42
80	105	100	20	M10	9	14	-	-	55	14	-	1/4"	14	82	82	-	-	-	17	9	-	6	100	15	8	46	46
100	131	124	25	M12	11	17,2	-	-	69	17,5	-	1/4"	16	103	103	-	-	-	22	11	-	7,5	124	20	10	56	56

*Over 30 mm stroke add 10 mm to above dimensions.



Short Stroke Cylinders

Bores from 12 to 200 mm

Double acting



Standard executions		
Version	Symbol	Type
Non magnetic		BD
Magnetic		BDM
Anti-rotating magnetic from bore 20 to 100 mm		BDMN

On request, they can be supplied according Directive 94/9/EC - ATEX
 II 2 GDc T5

Options	Suffix
Through rod from bore 16 to 100 mm	P
Seals FKM max 150 °C from bore 12 to 100 mm	V
Special versions on request	/ S

The options can be combined (when this is possible).



1

Series of short stroke cylinders with extruded aluminium profile barrel (up to the bore 100 mm) and fixing holes directly in the profile. In the magnetic type, up to the bore 100 mm, the sensor can be fixed in the groove for sensor mounting by the bracket not included in the kit.

The sensor is to be fixed on the external tie rods with the bores 125, 160 and 200 mm.

Standard elastic dampers (except the non magnetic type up to the bore 100 mm).

For the magnetic reed switches type ASV see from page 1.110.1.

For the bracket type AS108 see page 1.120.1

For mounting accessories see from page 1.20.20.

For the rod with male thread see nipple page 1.20.20.

For rod accessories see from page 1.85.1.

How to order: 40 / 50 BDP

40	/	50	BD	P
Bore	/	Stroke	Type	Option

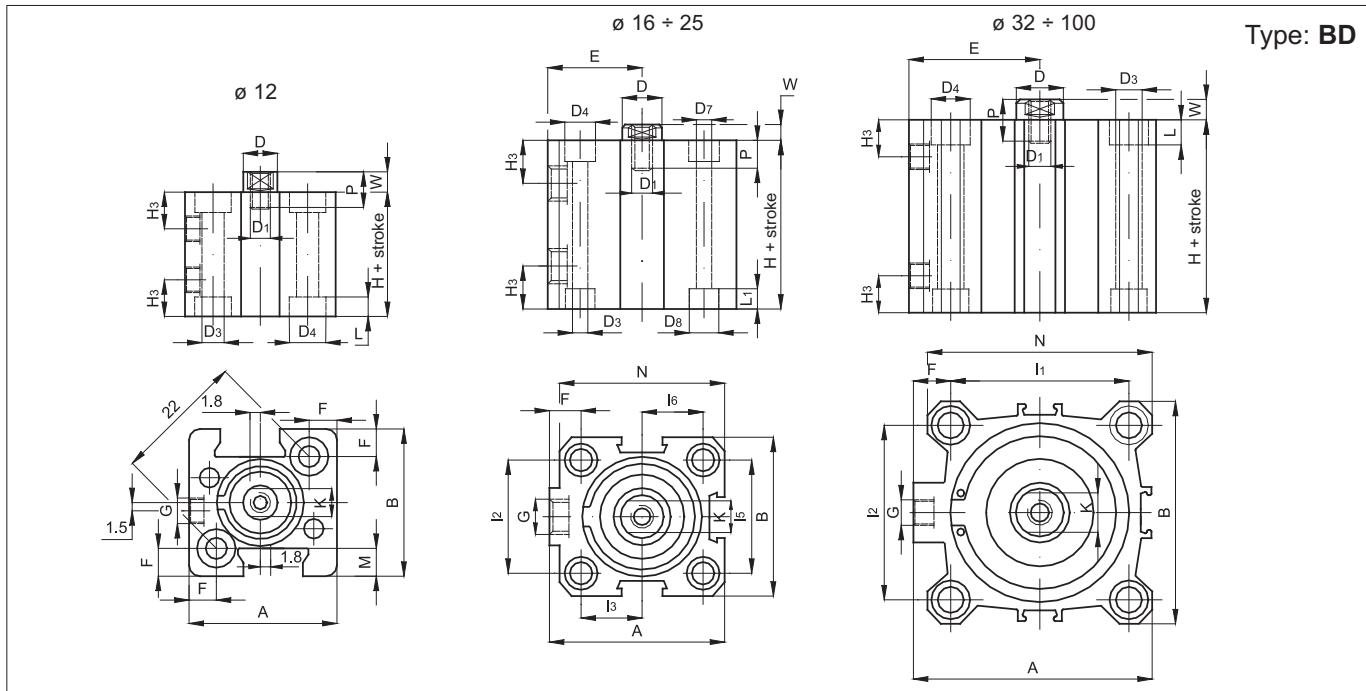
Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure range	2 + 10 bar
Temperature range	-20 °C + + 80°C
Materials	Heads: from 12 to 25 mm: Brass from 32 to 200 mm: Aluminium Barrel: Anodised aluminium (the bores 125, 160 and 200 mm are provided with a round profile) Rod: Stainless steel AISI 303 Seals: NBR Piston: Non magnetic: from 12 to 32 mm: Delrin from 40 to 200 mm: Aluminium Magnetic: from 12 to 63 mm: Delrin from 80 to 200 mm: Aluminium

Bore (mm)	Standard strokes BD (mm)	Standard strokes BDM (mm)	Standard strokes BDMN (mm)	Max strokes (mm)			See page 1.1.3 to calculate the cylinder force.
				BD	BDM	BDMN	
12	5, 10, 15, 20, 25, 30, 40	5, 10, 15, 20, 25, 30		40	30		Should you require intermediate strokes, the overall dimensions of the cylinder body will be those of the cylinder of the following standard stroke (in fact the intermediate stroke is obtained applying a distancer).
16		5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100,			100		
20	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125		50	125		
25			5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100			100	
32	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100,	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125, 160			160		
40				100		125	
50		10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125, 160, 200	10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125	200		125	
63	10, 15, 20, 25, 30, 40, 50, 60, 80, 100,		10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125, 160		250	160	
80							
100							
125							
160	25, 50, 75, 100, 125, 160, 200, 250	25, 50, 75, 100, 125, 160, 200, 250		250	250		
200							

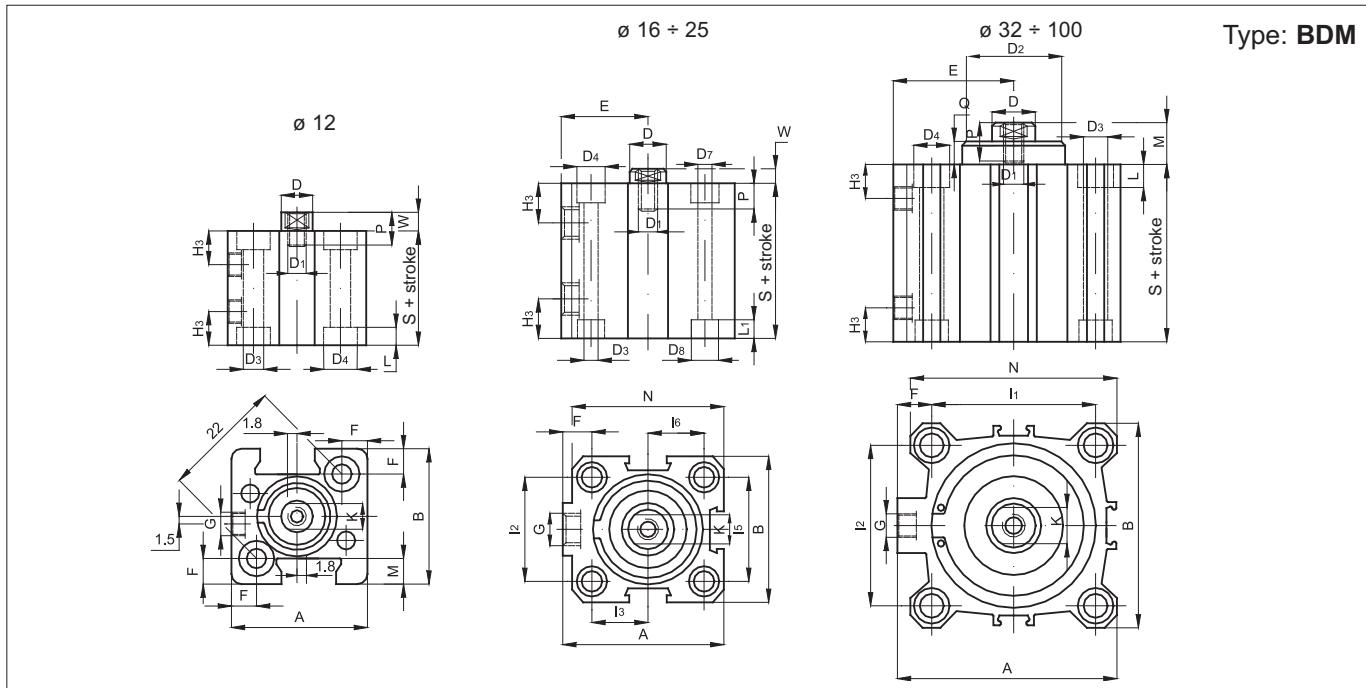
Short Stroke Cylinders

Bores from 12 to 200 mm

Double acting



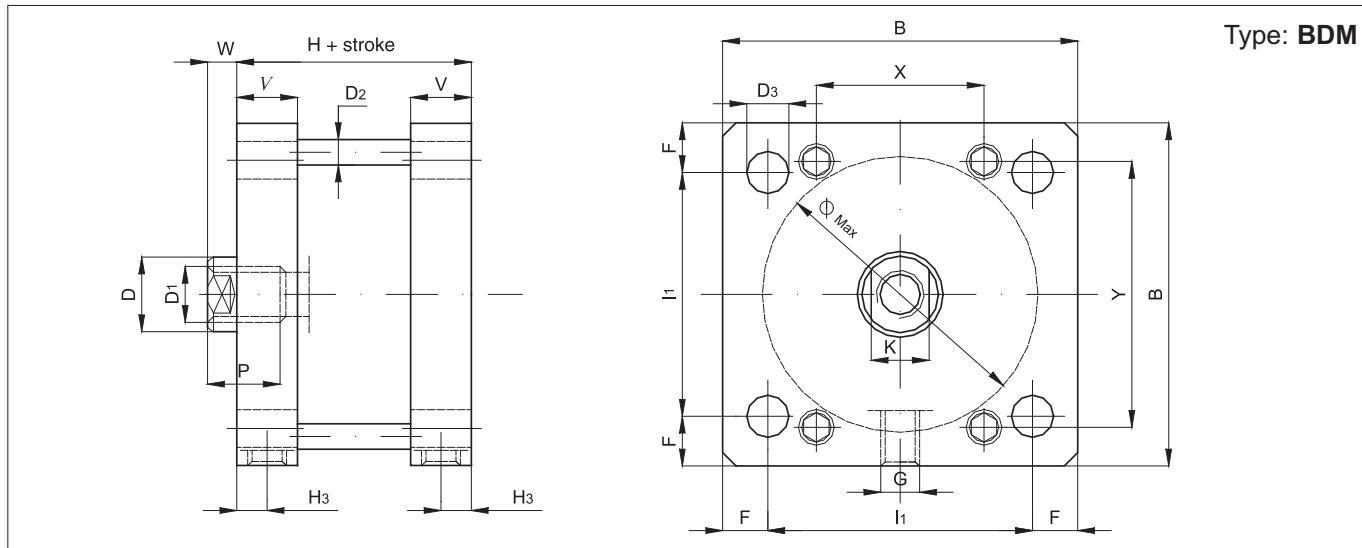
Ø mm	A	B	D Ø	D ₁	D ₂	D ₃ Ø	D ₄ Ø	D ₇ Ø	D ₈ Ø	E	F	Q	G	H ₃	I ₁	I ₂	I ₃	I ₅	I ₆	K	L	L ₁	M	N	P	W	H	S
12	25	25	6	M3	-	3,7	5,6	-	-	-	4,7	-	M5	5,5	-	-	-	-	5	3,5	-	3,5	-	6	3,5	17	27	
16	34	30	8	M4	-	4,7	7,5	3,7	5,6	19	7	-	M5	8	-	18	12	20	10	6	4,6	3,5	4,5	32	8	4,5	27	32
20	40	36	10	M5	-	5,8	9	5,8	9	22	7	-	M5	8	-	20	15	25,5	12,7	8	5,7	5,7	4,5	38,5	10	5	27	32
25	44,5	40	10	M5	-	5,8	9	5,8	9	24,5	9	-	1/8"	10,5	-	26	15,5	28	14	8	5,7	5,7	5,5	42	10	5,5	28,5	38,5
32	51	46	12	M6	24,5	5,8	9	-	-	27	9	5	1/8"	11,5	36	32	-	-	-	10	5,7	-	11	48	12	6	29,5	39,5
40	58	55	12	M6	28	5,8	9	-	-	30,5	9,5	6	1/8"	11	42	42	-	-	-	10	5,7	-	12,5	55	12	6	29,5	39,5
50	70	65	16	M8	34	6,8	11	-	-	37,5	12,5	6	1/8"	11,5	50	50	-	-	-	13	6,8	-	13,5	65	12	7,5	34,5	39,5
63	86	80	16	M8	38,5	9	14	-	-	46	15	8	1/8"	11	62	62	-	-	-	13	8,8	-	15	80	14	7	37	42
80	105	100	20	M10	44	9	14	-	-	55	14	10	1/4"	14	82	82	-	-	-	17	9	-	18	100	15	8	46	46
100	131	124	25	M12	56	11	17,2	-	-	69	17,5	10,5	1/4"	16	103	103	-	-	-	22	11	-	20,5	124	20	10	56	56



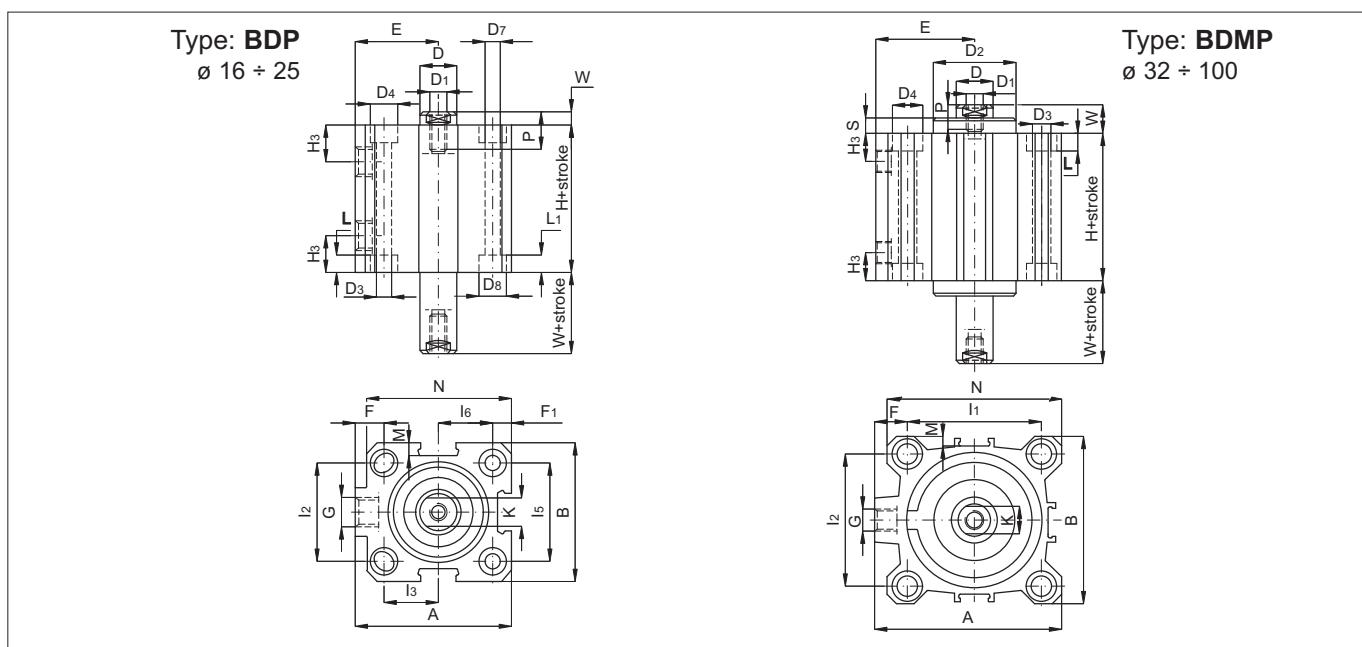
Short Stroke Cylinders

Bores from 12 to 200 mm

Double acting



\varnothing mm	B	D \varnothing	D ₁ \varnothing	D ₂ \varnothing	D ₃ \varnothing	F	G	H ₃	I ₁	K	P	V	W	X	Y	\varnothing est. max.	H
125	140	30	M14	10	10,2	15	1/4"	10	110	28	25	22	10	77	123	132	78
160	180	40	M20	12	14,2	20	3/8"	12	140	36	30	26	12	94	157	168	87
200	220	40	M20	14	14,2	22,5	3/8"	12	175	36	30	26	12	126	193	210	87



\varnothing mm	A	B	D \varnothing	D ₁	D ₂	D ₃	D ₄	D ₇	D ₈	E	F	F ₁	G	H ₃	I ₁	I ₂	I ₃	I ₅	I ₆	K	L	L ₁	M	N	P	S	W	H
16	34	30	8	M4	-	4,7	7,5	3,7	5,6	19	7	5	M5	8	-	18	12	20	10	6	4,6	3,5	4	32	8	-	4,5	32
20	40	36	10	M5	-	5,8	9	5,8	9	22	7	2,5	M5	8	-	20	15	25,5	12,7	8	5,7	5,7	5,7	38,5	10	-	4,5	32
25	44,5	40	10	M5	-	5,8	9	5,8	9	24,5	9	6	1/8"	10,5	-	26	15,5	28	14	8	5,7	5,7	4,5	42	10	-	5,5	38,5
32	51	46	12	M6	24,5	5,8	9	-	-	27	9	-	1/8"	11,5	36	32	-	-	-	10	5,7	-	4	48	12	5	11	39,5
40	58	55	12	M6	28	5,8	9	-	-	30,5	9,5	-	1/8"	11	42	42	-	-	-	10	5,7	-	4	55	12	6	12,5	39,5
50	70	65	16	M8	34	6,8	11	-	-	37,5	12,5	-	1/8"	11,5	50	50	-	-	-	13	6,8	-	4	65	12	6	13,5	39,5
63	86	80	16	M8	38,5	9	14	-	-	46	15	-	1/8"	11	62	62	-	-	-	13	8,8	-	5	80	14	8	15	47
80	105	100	20	M10	44	9	14	-	-	55	14	-	1/4"	14	82	82	-	-	-	17	9	-	6	100	15	10	18	51
100	131	124	25	M12	56	11	17,2	-	-	69	17,5	-	1/4"	16	103	103	-	-	-	22	11	-	7,5	124	20	10,5	20,5	65

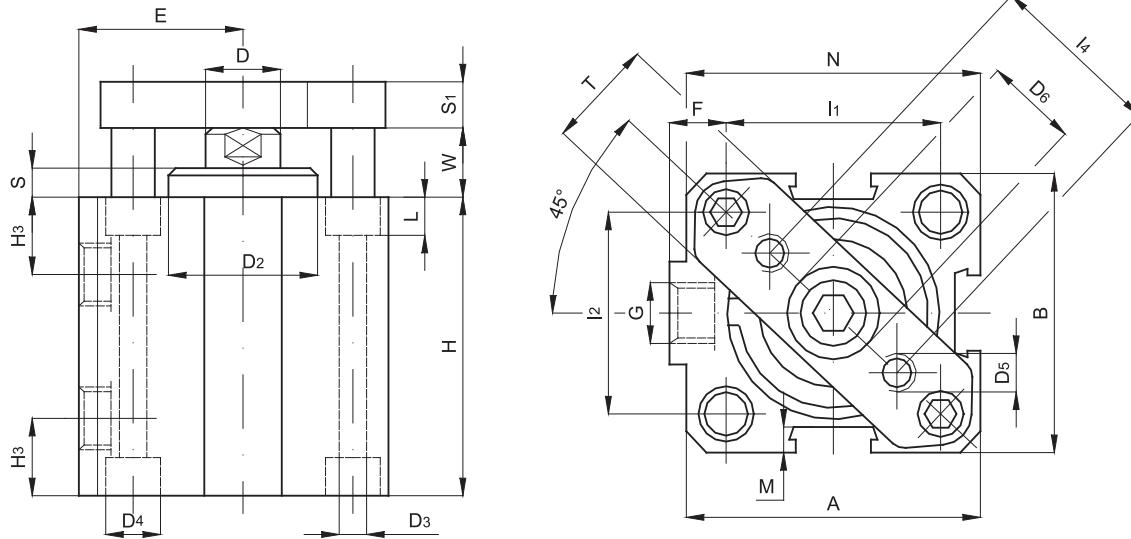
Short Stroke Cylinders

Bores from 12 to 200 mm

Double acting



Type: **BDMN**



\varnothing mm	A	B	α	D \varnothing	D ₂ \varnothing	D ₃ \varnothing	D ₄ \varnothing	D ₅ \varnothing	D ₆ \varnothing	E	F	G	H ₃	I ₁	I ₂	I ₄	L	M	N	S	S ₁	T	W	H
20	40	36	45°	10	-	5,8	9,2	M4	11	22	9,3	M5	8	25,5	25,5	20	5,7	5,7	38,5	-	8	15	4,5	32
25	44,5	40	45°	10	-	5,8	9,2	M4	11	24,5	10,5	1/8"	11	28	28	22	5,7	4,5	42	-	8	15	5,5	38,5
32	51	46	41,5°	12	24,5	5,8	9,2	M5	17	27	9	1/8"	11,5	36	32	28	5,7	4	48	5	10	20	11	39,5
40	58	55	45°	12	28	5,8	9,2	M5	17	30,5	9,5	1/8"	11,5	42	42	33	5,7	4	55	6	10	20	12,5	39,5
50	70	65	45°	16	34	6,8	11	M6	22	37,5	12,5	1/8"	11,5	50	50	42	6,8	4	65	6	12	30	13,5	39,5
63	86	80	45°	16	38,5	9	14	M6	22	46	15	1/8"	12	62	62	50	8,8	5	80	8	12	30	15	42
80	105	100	45°	20	44	9	14	M8	28	55	14	1/4"	14	82	82	65	9	6	100	10	14	50	18	46
100	131	124	45°	25	56	11	17,2	M10	30	69	17,5	1/4"	16	103	103	80	11	7,5	124	10,5	14	50	20,5	56

Seal kit

Here are the quantities and the components comprised in each kit.

Description	N°	BD	BDM	BDMN
Rod seal	1	1	1	1
Tube o-ring	2	1	1	1
Lip seal	2	1	1	1

The magnetic ring to be ordered separately.

How to order: 50 / SG / BDP

50	/	SG	/	BD	P
Bore	/	Series of seals	/	Type	Option

The seal kit for the cylinders in non-standard executions is to be composed according to the option.

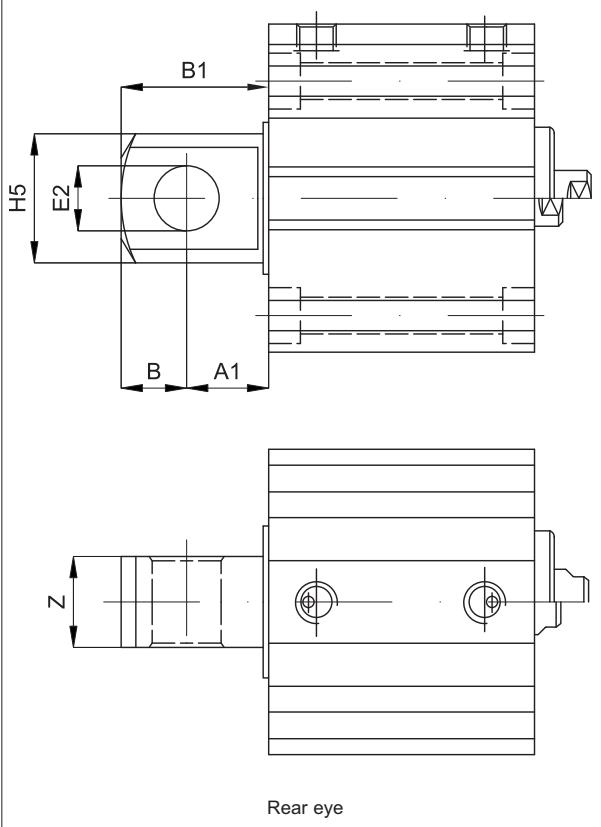
Short Stroke Cylinders

Bores from 12 to 200 mm

Mountings



Type: CM

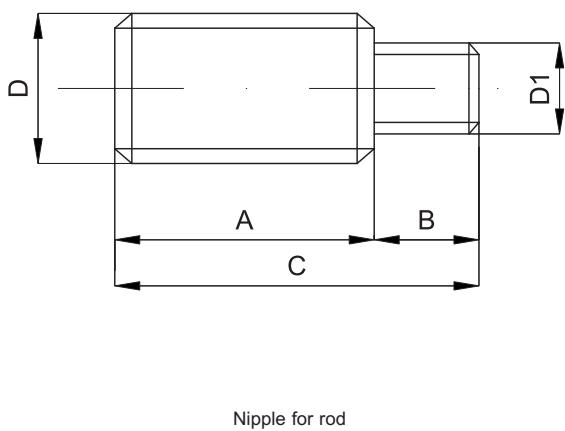


Code	Item	\varnothing mm	A ₁	B	E ₂ \varnothing (H8)	H ₅ \varnothing	Z	B ₁
040070	CM16ALB	16	8	6	6	12	7	14
040071	CM20ALB	20	10	8	8	16	9	18
040072	CM25ALB	25	10	8	8	16	9	18
040073	CM32ALB	32	13	10	10	20	14	23
040074	CM40ALB	40	15	12	12	24	16	27
040075	CM50ALB	50	15	12	12	24	17	27
040076	CM63ALB	63	19	16	16	32	22	35
040077	CM80ALB	80	19	16	16	32	22	35
040078	CM100ALB	100	23	20	20	40	26	43

Material: Aluminium

Note: This accessory must be ordered together with the cylinder.

Type: N



Code	Item	\varnothing mm	D	D ₁	A	B	C
040079	N6-3AQB	12	6x1	M3	16	6,5	22,5
040080	N6-4AQC	16	6x1	M4	15	8	23
040081	N8-5AQB	20-25	8x1,25	M5	20	10	30
040082	N10-6AQB	32-40	10x1,25	M6	22	12	34
040083	N12-8AQB	50-63	12x1,25	M8	24	14	38
040084	N16-8AQB	50-63	16x1,5	M8	32	14	46
040085	N16-10AQB	80	16x1,5	M10	32	15	47
040086	N20-12AQB	100	20x1,5	M12	40	20	60

Material: Zinc plated steel

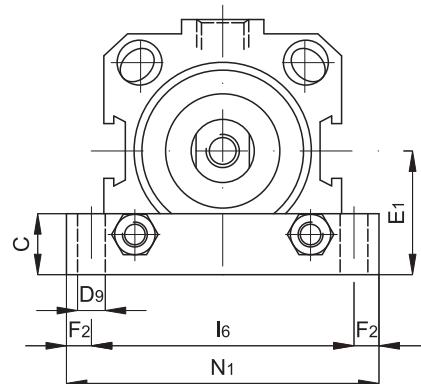
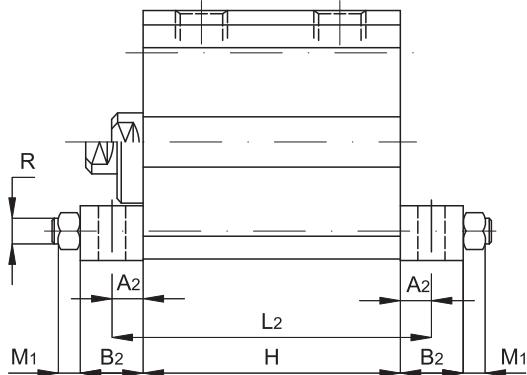
Short Stroke Cylinders

Bores from 12 to 200 mm

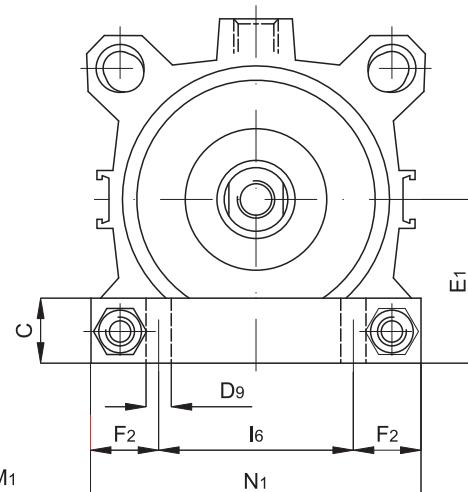
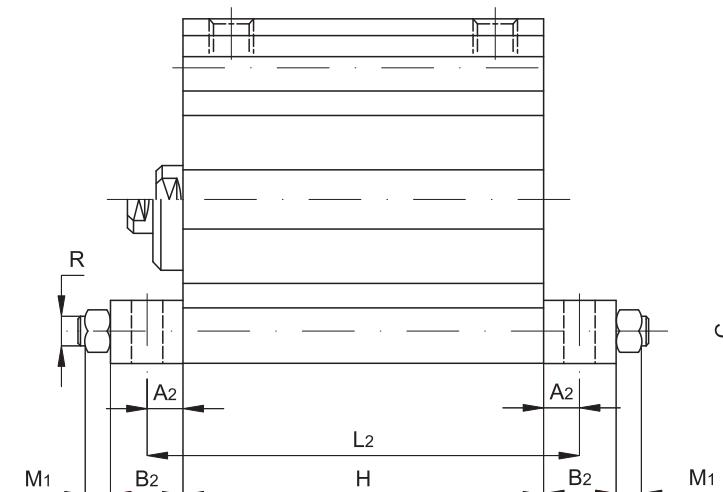
Mountings



Type: P



High foot \varnothing 16 ÷ 63



High foot \varnothing 80 ÷ 100

The dimension H is according to the stroke and the bore of the cylinder.

The kit includes 2 high feet; the tie rods for the mounting of the feet are not included.

Material: Aluminium.

Code	Item	\varnothing mm	A ₂	B ₂	C	D ₉ \varnothing	E ₁	F ₂	I ₆	L ₂	M ₁	N ₁	R \varnothing
040087	P16ALB	16	5	10	10	3,5	17	5	30	H*+10	2,4	40	M3
040088	P20ALB	20	5	10	10	5,5	18	5	40	H*+10	4	50	M5
040095	P25ALB	25	6	12	12	5,5	20	7,5	45	H*+12	4	60	M5
040089	P32ALB	32	6	12	12	5,5	24	5	50	H*+12	4	60	M5
040090	P40ALB	40	6	12	12	5,5	27,5	5	60	H*+12	4	70	M5
040091	P50ALB	50	7,5	15	15	6,5	32,5	5	70	H*+15	5	80	M6
040092	P63ALB	63	7,5	15	15	8,5	40	7,5	85	H*+15	6,5	100	M8
040093	P80ALB	80	10	20	20	8,5	50	20	60	H*+20	6,5	100	M8
040094	P100ALB	100	10	20	20	10,5	62	22	80	H*+20	8	124	M10

Compact Guided Cylinders

Bores from 10 to 63 mm

Double acting



Standard executions		
Version	Symbol	Type
With self-lubricating bushings		GEDB
With spherical bearings		GEDS



On request, they can be supplied according Directive 94/9/EC - **ATEX**
CE II 2 GDc T5

Options	Suffix
Seals FKM max 150 °C	V
Special versions on request	/ S

The options can be combined (when this is possible).

Series of compact guided cylinders magnetic as standard. A one piece body is provided with grooves allowing the mounting of the magnetic reed switch without further brackets; this makes the magnetic sensor not protrude outside the body itself. The bottom plates are provided with elastic cushionings.

For the magnetic reed switches type ASC see from page 1.110.1.

How to order: 32 / 50 GEDBV

32	/	50	GEDB	V
Bore	/	Stroke	Type	Option

Technical data				
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.			
Pressure range	1,5 ÷ 9 bar			
Temperature range	-10 °C ÷ + 70°C			
Materials	Bottom plates:	Anodised aluminium		
	Body:	Anodised aluminium		
	Plate:	Anodised aluminium		
	Guiding rods:	GEDB: Chrome-plated and ground steel GEDS: Chrome steel hardened and chrome-plated		
	Piston rod:	Chrome-plated steel C 45		
	Seals:	Nitrile rubber (NBR) - Piston: Brass		
	Guiding bushings :	GEDB: Sintered bronze GEDS: Spherical bearings		

Bore (mm)	Standard strokes (mm)	Max stroke (mm)
10	25, 50, 75, 100	100
16		
20	25, 50, 75, 100, 125, 150, 175, 200	200
25		
32	30, 50, 75, 100, 125, 150, 175, 200, 250	250
40		
50	30, 50, 75, 100, 125, 150	150
63		

See page 1.1.3 to calculate the cylinder force.

Should you require intermediate strokes, the overall dimensions of the cylinder body will be those of the cylinder with the following standard stroke (in fact the intermediate stroke is obtained applying a distancer).

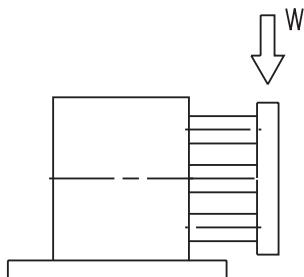
Compact Guided Cylinders

Bores from 10 to 63 mm

Loads



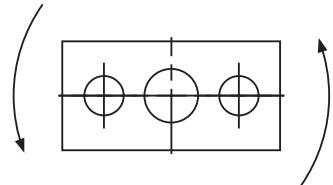
Admissible transverse load



Bore mm	Type	Stroke mm						
		25	30	50	75	100	125	150
\varnothing 10	GEDB	8	6	4	8	6	4	3
	GEDS	1,5	1,2	1	4	3,5	3	2,5
\varnothing 16	GEDB	8	6	4	8	6	4	3
	GEDS	1,5	1,2	1	4	3,5	3	2,5
\varnothing 20	GEDB	14	12	10	12	10	8	5
	GEDS	2,5	2,1	2	8	6	4	3
\varnothing 25	GEDB	20	18	16	20	18	15	12
	GEDS	7	6	5	20	16	13	10
\varnothing 32	GEDB	27	24	22	24	22	20	18
	GEDS	9	8	7	25	22	27	18
\varnothing 40	GEDB	27	24	22	24	22	20	18
	GEDS	9	8	9	25	22	20	18
\varnothing 50	GEDB	45	42	40	45	40	35	30
	GEDS	12	11	9,5	40	32	28	25
\varnothing 63	GEDB	45	42	40	45	40	35	30
	GEDS	12	11	9,5	40	32	28	25

Note: Cylinders from 75 mm stroke are supplied with double guiding bushings.

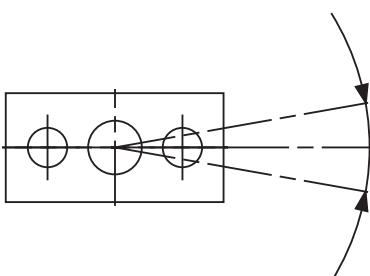
Maximum admissible torque



Bore mm	Type	Stroke mm						
		25	30	50	75	100	125	150
\varnothing 10	GEDB	25	20	15	25	20	15	10
	GEDS	3	2,5	2	4	3	2	1,5
\varnothing 16	GEDB	25	20	15	25	20	15	10
	GEDS	3	2,5	2	4	3	2	1,5
\varnothing 20	GEDB	40	35	30	40	35	30	25
	GEDS	4	3	2	15	12	10	8
\varnothing 25	GEDB	65	55	50	65	55	50	40
	GEDS	2	10	8	30	25	20	16
\varnothing 32	GEDB	90	80	70	90	75	60	45
	GEDS	18	16	14	50	45	40	35
\varnothing 40	GEDB	90	80	70	90	75	60	45
	GEDS	18	16	14	50	45	40	35
\varnothing 50	GEDB	150	130	110	150	120	100	80
	GEDS	35	30	25	100	85	70	55
\varnothing 63	GEDB	150	130	110	150	120	100	80
	GEDS	35	30	25	120	85	70	55

Note: Cylinders from 75 mm stroke are supplied with double guiding bushings.

Non-rotating accuracy



Bore mm	Non-rotating accuracy ν
\varnothing 10 \varnothing 16	$\pm 0,18$
\varnothing 20 \varnothing 25	$\pm 0,17$
\varnothing 32 \varnothing 40	$\pm 0,16$
\varnothing 50 \varnothing 63	$\pm 0,15$

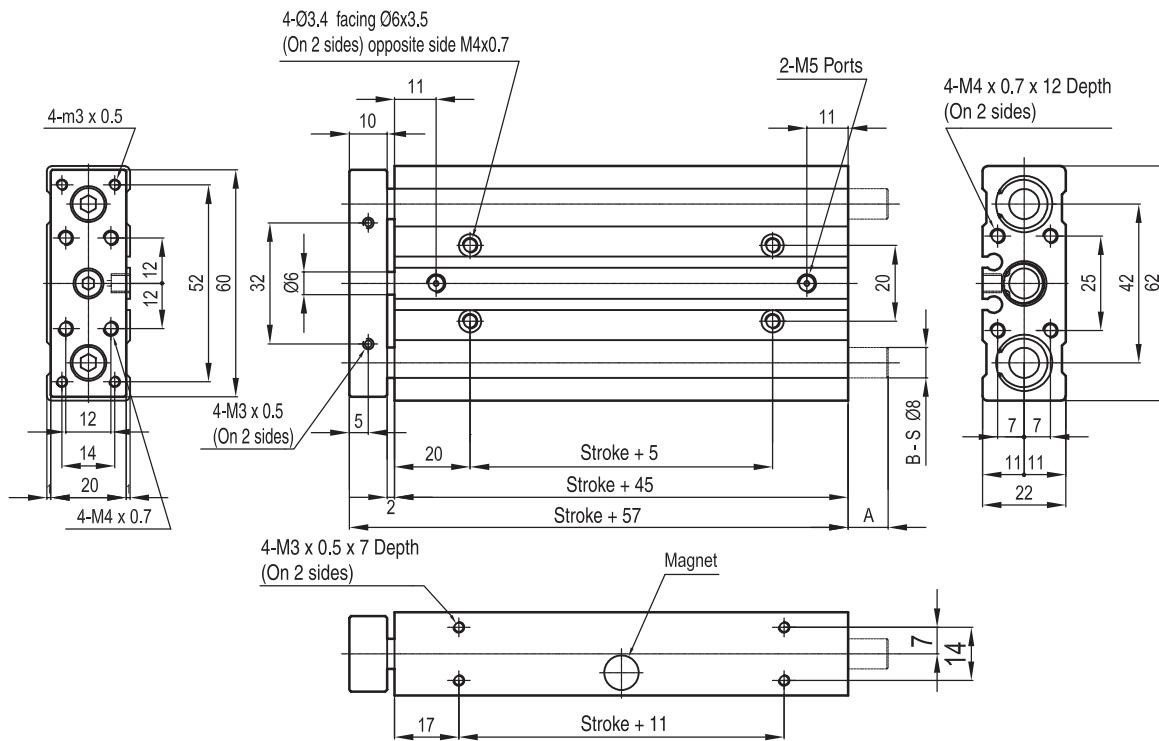
Compact Guided Cylinders

Bores from 10 to 63 mm

$\varnothing 10 - \varnothing 16$



$\varnothing 10$

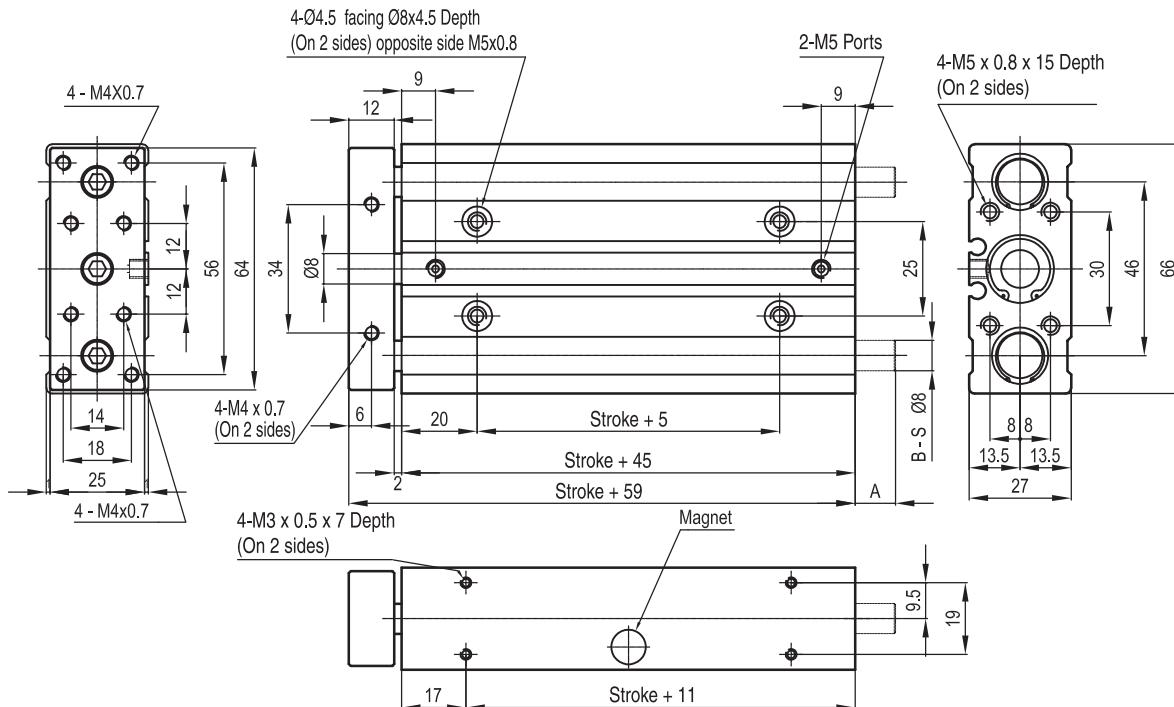


COMPACT GUIDED CYLINDER

Type: GEDB (S) 10 X 75 Stroke

Dimension	Stroke mm.	25	50	75	100
A	0	0	10.5	10.5	

$\varnothing 16$



COMPACT GUIDED CYLINDER

Type: GEDB (S) 16 X 75 Stroke

Dimension	Stroke mm.	25	50	75	100	125	150	175	200
A	0	0	12	12	12	12	12	12	12

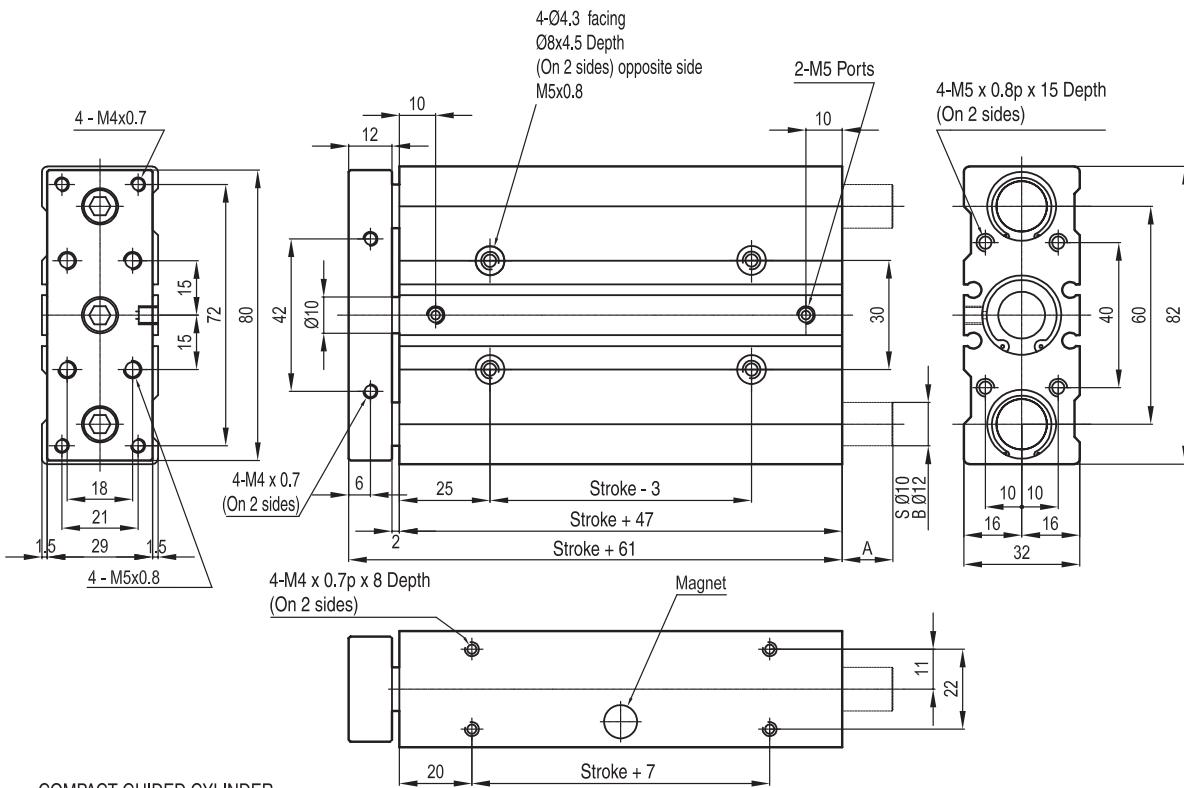
Compact Guided Cylinders

Bores from 10 to 63 mm

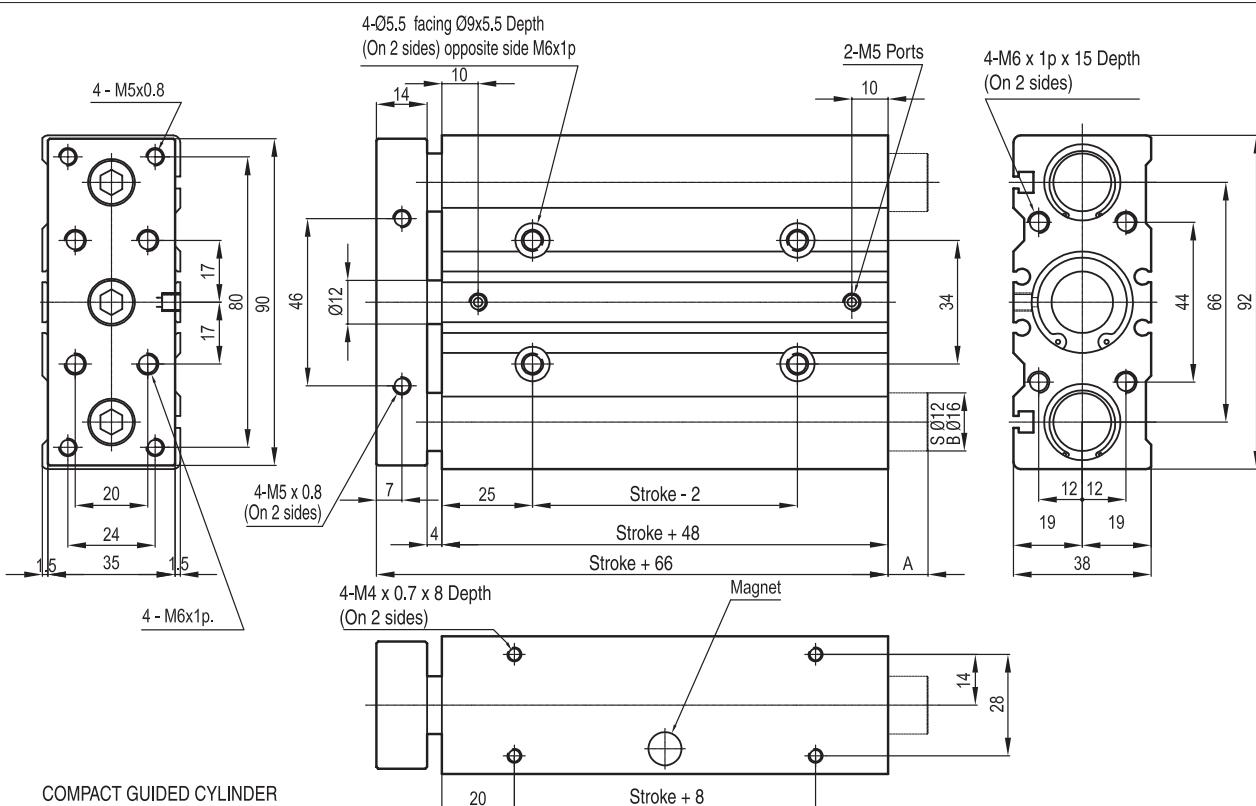
$\varnothing 20 - \varnothing 25$



$\varnothing 20$



$\varnothing 25$



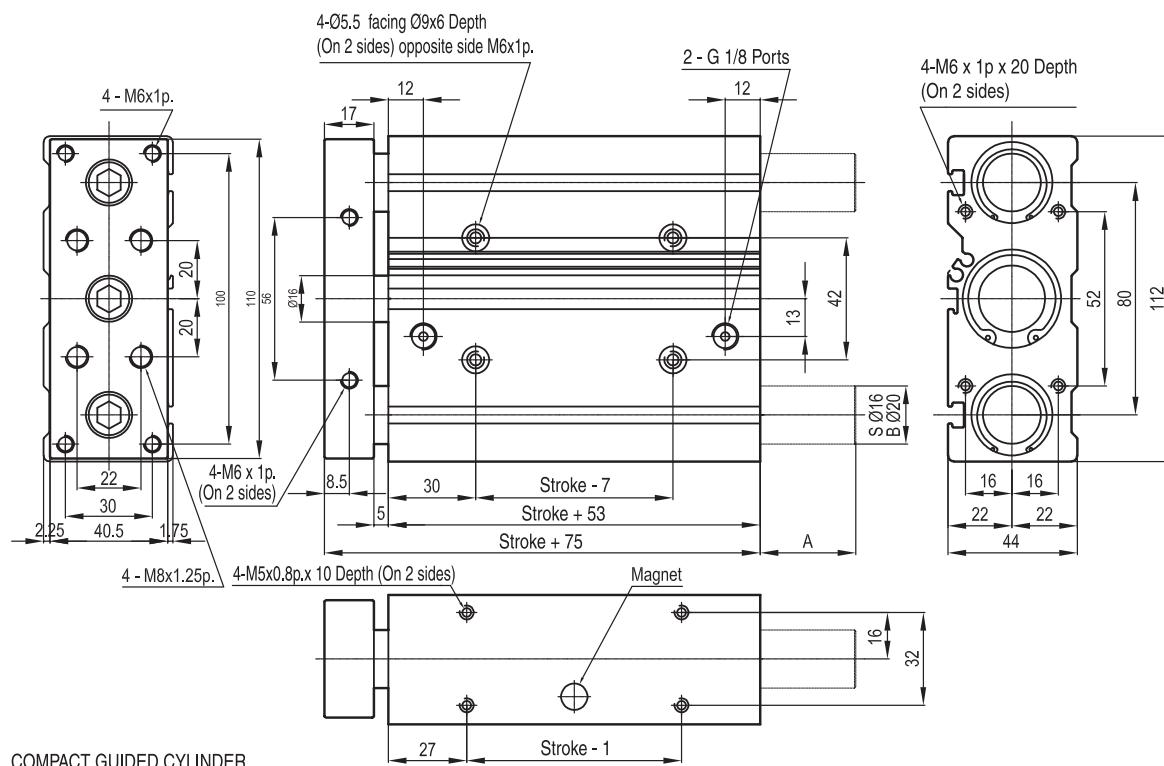
Compact Guided Cylinders

Bores from 10 to 63 mm

$\varnothing 32 - \varnothing 40$

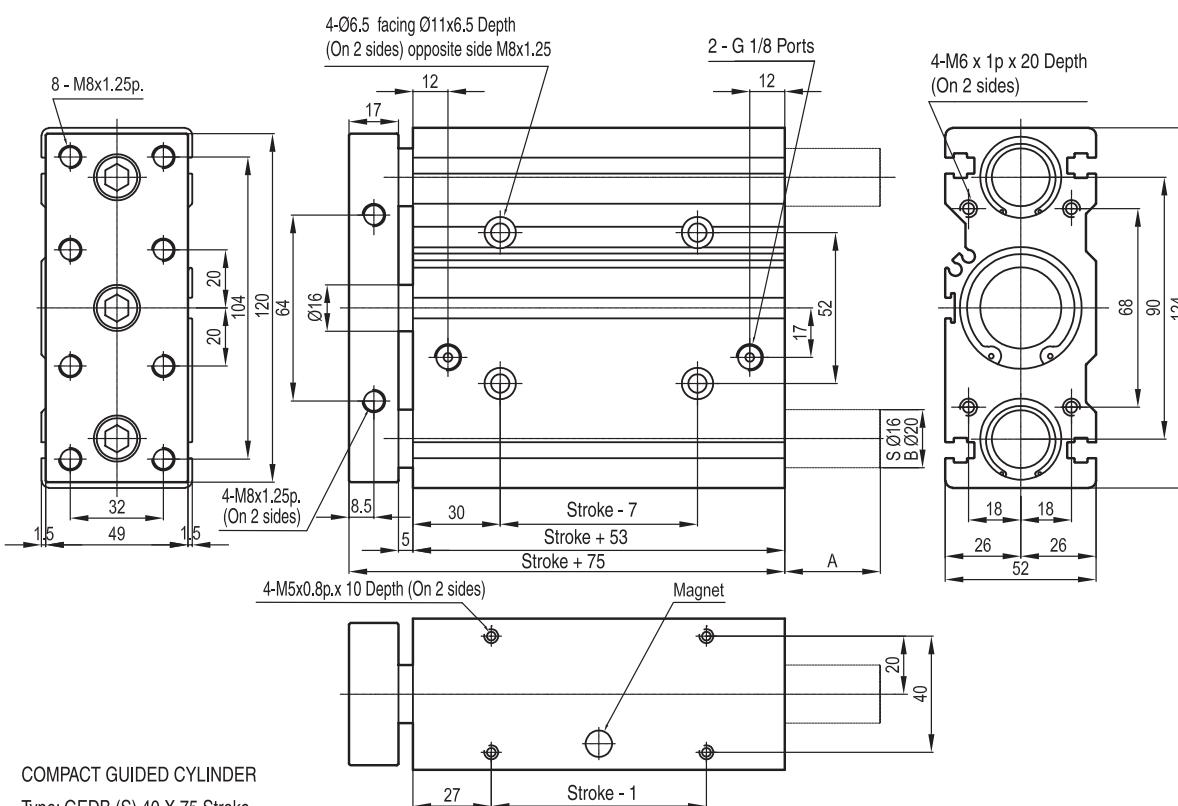


$\varnothing 32$



Dimension	Stroke mm.	30	50	75	100	125	150	175	200	250
A	0	0	0	33	33	33	33	33	33	33

$\varnothing 40$



Dimension	Stroke mm.	30	50	75	100	125	150	135	200	250
A	0	0	0	33	33	33	33	33	33	33

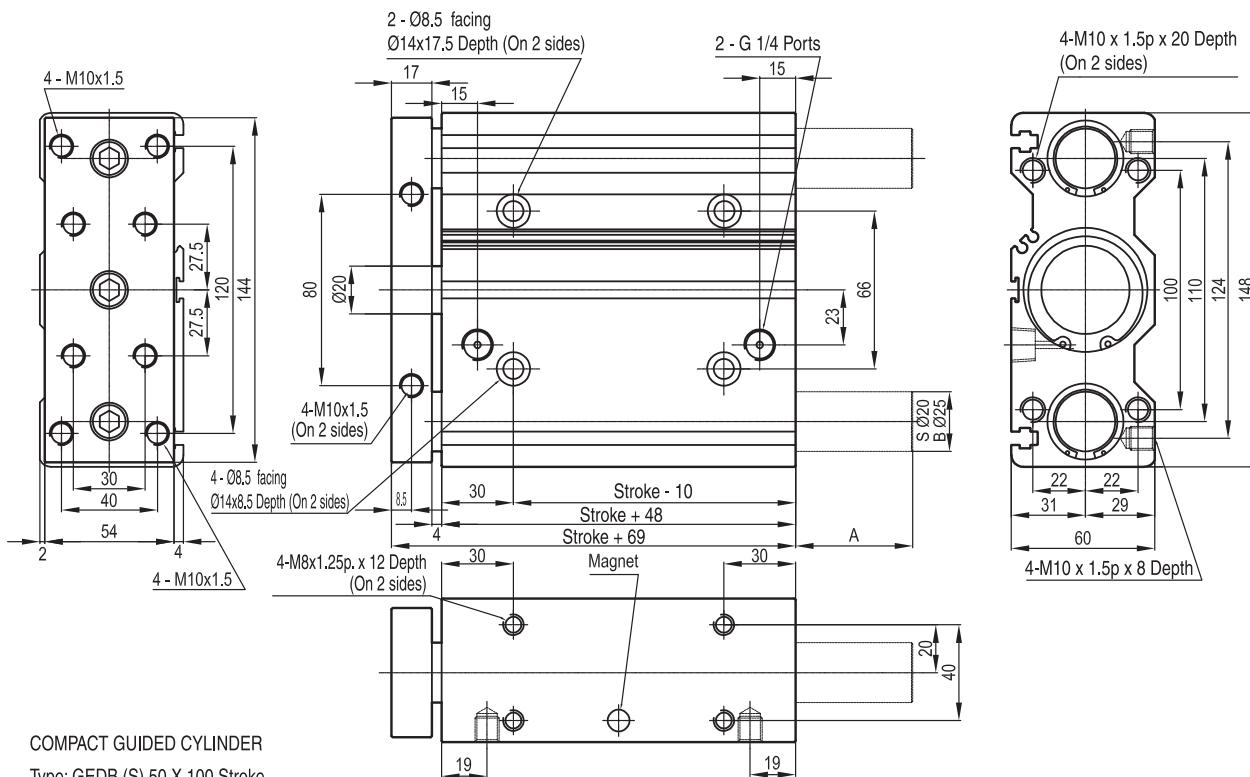
Compact Guided Cylinders

Bores from 10 to 63 mm

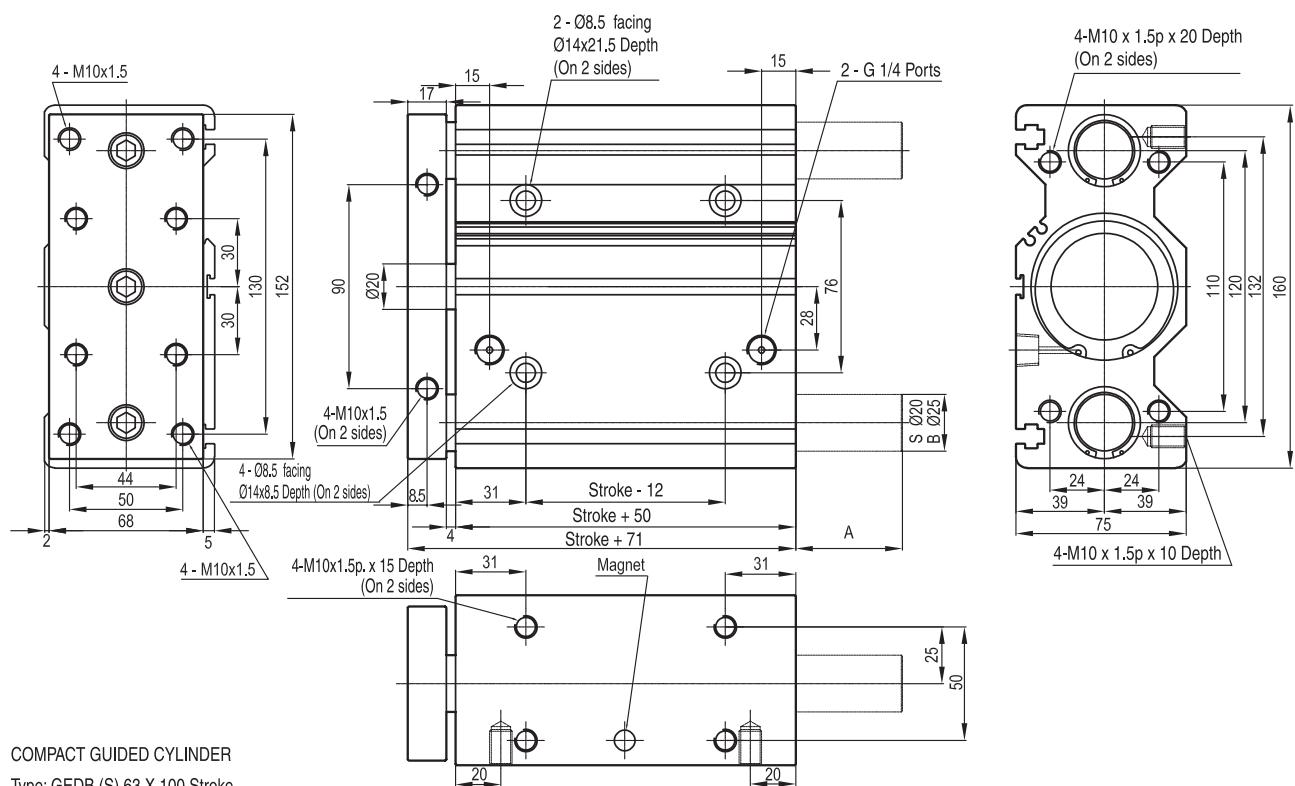
$\varnothing 50 - \varnothing 63$



$\varnothing 50$



$\varnothing 63$



Rodless Cylinders

Bores from 18 to 63 mm

Double acting



Standard executions		
Version	Symbol	Type
Standard		S1
Short (for light loads)		S2



On request, they can be supplied according Directive 94/9/EC - **ATEX**
CE II 2 GDc T5

1

Options	Suffix
Both connections from bore on one head 25 mm.	U
Carriage with integral brake (see page 1.26.35)	B
Special versions on request	/ S

The options can be combined (when this is possible).

Rodless cylinders, magnetic as standard.
Cylinders with direct power transmission through the tube slot onto the yoke.
The new cushionings are adjustable at both ends; the flow rate is regulated from 0 to 100% by turning a pin of an angle of 90°. The new barrel with high resistance to deflection is provided with grooves for fixing various accessories.

The magnetic reed switches are fixed by a bracket.
The short cylinder type S2, in comparison to the standard cylinder - 0 - stroke, is up to 42% shorter; the total fitting length is therefore reduced and the cylinder is more compact and money-saving.
For the magnetic reed switches type ASV see from page 1.110.1.
For mounting accessories see from page 1.26.28.

How to order: 32 / 1000 S1U

32	/	1000	S1	U
Bore	/	Stroke	Type	Option

Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure range	2 ÷ 8 bar
Temperature range	-20 °C ÷ + 80°C
Materials	Heads: Anodised aluminium Barrel: Anodised aluminium Seals: Polyurethane - Piston: monobloc/yoke: Aluminium Internal strip: Nylon External strip: Stainless steel AISI 304 Wiper ring: PVC

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Cushion length (mm)	Theoretical force at 6 bar (N)	Weight at 0 stroke Type S1 (g)	Weight at 0 stroke Type S2 (g)	Weight for every 10 mm stroke (g)
18			15	140	300	200	15
25			18	270	600	400	26
32			24	440	1100	700	36
40			34	680	1800	1200	48
50			40	1060	3200	2000	74
63			49	1680	5600	3200	101
from 10 to 6000		9000					

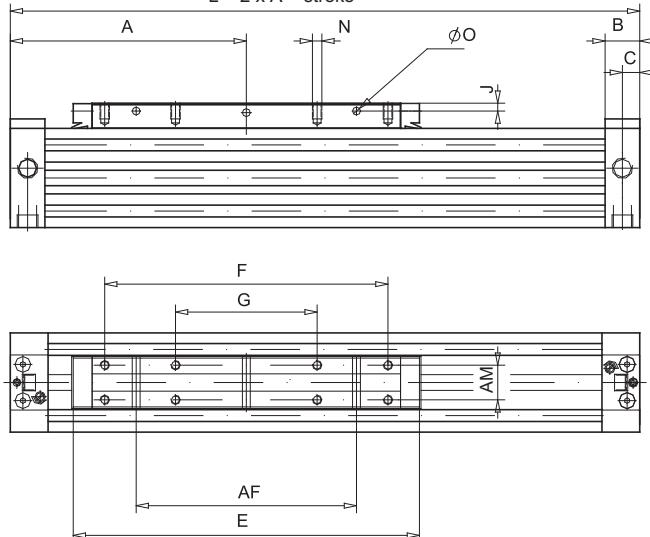
Rodless Cylinders

Bores from 18 to 63 mm

Double acting



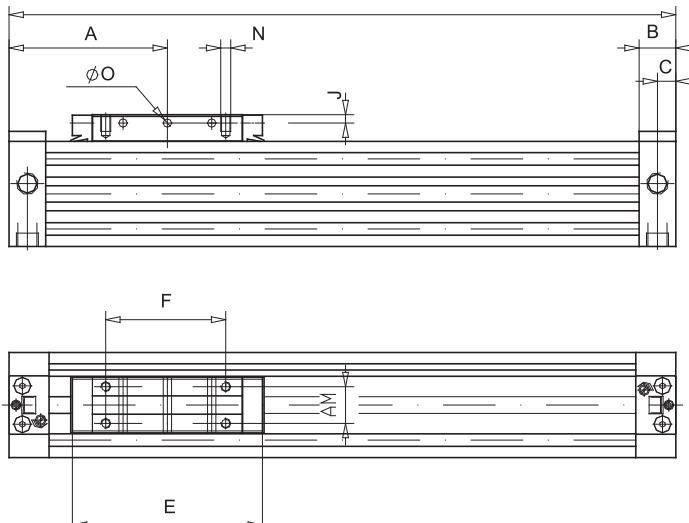
$L = 2 \times A + \text{stroke}$



Type: **S1**

\varnothing mm	A	AF	AM	B	C	CA	D	DA	DB	DC	E	F	G	J	M	N	\varnothing O	\square S	T	\square U	W
18	80	50	10	16,5	6,5	-	M5x6	15,5	-	-	103	75	-	3	15,5	M3x6	3,5	23,5	M3x7	30	39
25	100	70	13	20	8,5	7	1/8"x8	25,5	14	28	131	100	50	3,5	20	M4x7	4,5	33	M4x9	42	53
32	120	100	16	20	8,5	7	1/8"x8	32	16	34,5	171	140	70	4,5	25	M5x9	5,5	41	M5x10	52	65
40	150	140	22	23	12	11	1/4"x12	37,5	18,5	41	220	180	90	5	33	M6x10	7	51	M6x12	63	79
50	180	180	29	23	12	12	1/4"x12	47,5	22,5	47,5	280	220	110	6,5	42	M8x12,5	7	63	M8x12	78	96
63	215	230	40	29	12,5	12,5	3/8"x12	59,5	24,5	59,5	333	280	140	8	54	M8x15	9	78	M8x12	93	113,5

$L = 2 \times A + \text{stroke}$



Type: **S2**

\varnothing mm	A	AM	B	C	CA	CB	D	DA	DB	DC	E	F	J	M	N	\varnothing O	\square S	T	\square U	W
18	57,5	10	16,5	6,5	-	-	M5x5,5	17,5	-	-	58	30	3	15,5	M3x6	3,5	23,5	M3x7	30	39
25	67,5	13	20	8,5	7	13	1/8"x8	25,5	14	28	66	35	3,5	20	M4x7	4,5	33	M4x9	42	53
32	77,5	16	20	8,5	7	13	1/8"x8	32	17,5	34,5	86	55	4,5	25	M5x9	5,5	41	M5x10	52	65
40	95	22	24	11	9,5	14,5	1/4"x12	37,5	20	42	110	70	5	33	M6x10	7	51	M6x12	63	79
50	105	29	24	11	9,5	14,5	1/4"x12	47,5	26	52	130	70	6,5	42	M8x12,5	7	63	M8x12	78	96
63	125	40	30	14,5	11	18,5	3/8"x12,5	59,5	30	62	153	100	8	54	M8x15	9	78	M8x12	93	113,5

Rodless Cylinders

Bores from 18 to 63 mm

Double acting



Standard executions		
Version	Symbol	Type
Guided		S3
Short guided (for light loads)		S5
Double guide		S6



On request, they can be supplied according Directive 94/9/EC - **ATEX**
CE II 2 GDc T5

Options	Suffix
Both connections on one head	from bore 25 mm. U
Special versions on request	/ S

The options can be combined (when this is possible).

Rodless cylinders, magnetic as standard.

Cylinders with direct power transmission through the tube slot onto the yoke.

The new cushionings are adjustable at both ends; the flow rate is regulated from 0 to 100% by turning a pin of an angle of 90°.

The new barrel is provided with grooves for fixing various accessories. The magnetic reed switches are fixed by a bracket.

The side carriage (which can also be installed at a later date) is adjustable and this allows to use the cylinder with heavier loads; the guide moves by Teflon slides, fixed in the grooves of the tube. The short guided cylinders type S5, in comparison to the standard cylinder - 0 - stroke, is up to 42% shorter; the total fitting length is therefore reduced and the cylinder is more compact and money-saving.

For the magnetic reed switches type ASV see from page 1.110.1.

For mounting accessories see from page 1.26.28.

How to order: 50 / 1000 S6U

50	/	1000	S6	U
Bore	/	Stroke	Type	Option

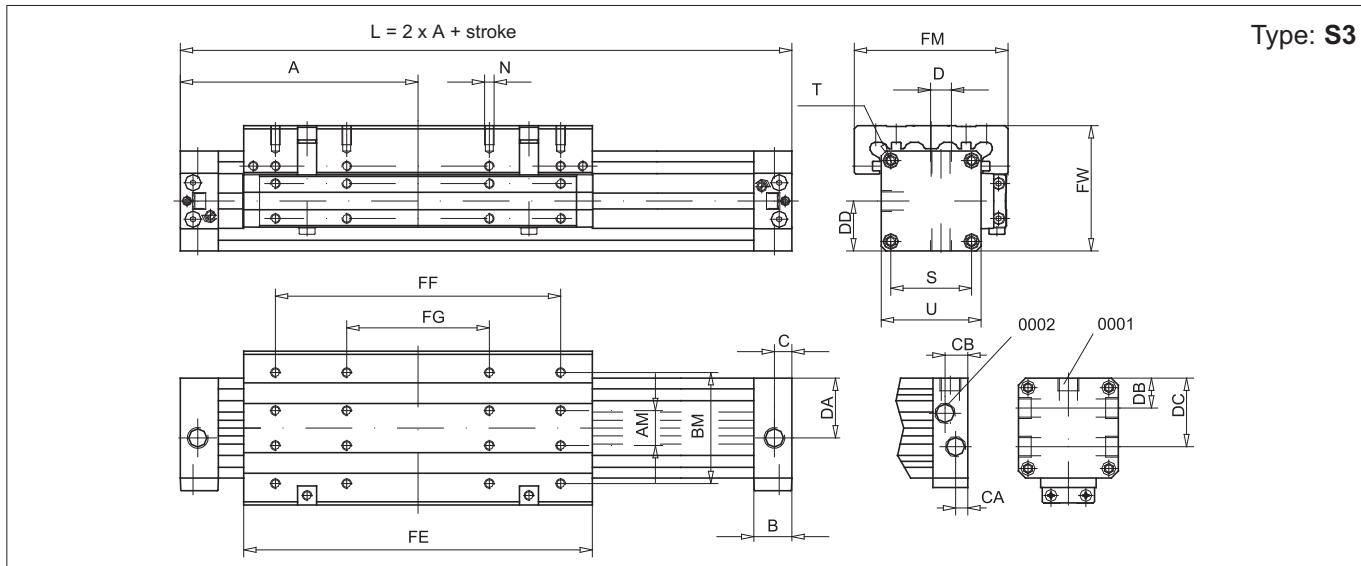
Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.
Pressure range	2 ÷ 8 bar
Temperature range	-20 °C ÷ + 80°C
Materials	Heads: Anodised aluminium Barrel: Anodised aluminium Seals: Polyurethane - Piston: monobloc/yoke: Aluminium Internal strip: Nylon External strip: Stainless steel AISI 304 Wiper ring: PVC Carriage: Aluminium

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Cushion length (mm)	Theoretical force at 6 bar (N)	Weight at 0 stroke Type S3 (g)	Weight at 0 stroke Type S5 (g)	Weight at 0 stroke Type S6 (g)	Weight for every 10 mm stroke (g)
18	from 10 to 6000	9000	15	140	400	250	500	15
25			18	270	900	550	1200	26
32			24	440	1500	1100	1900	36
40			34	680	2800	1700	3800	48
50			40	1060	4900	2850	6600	74
63			49	1680	8000	4400	10400	101

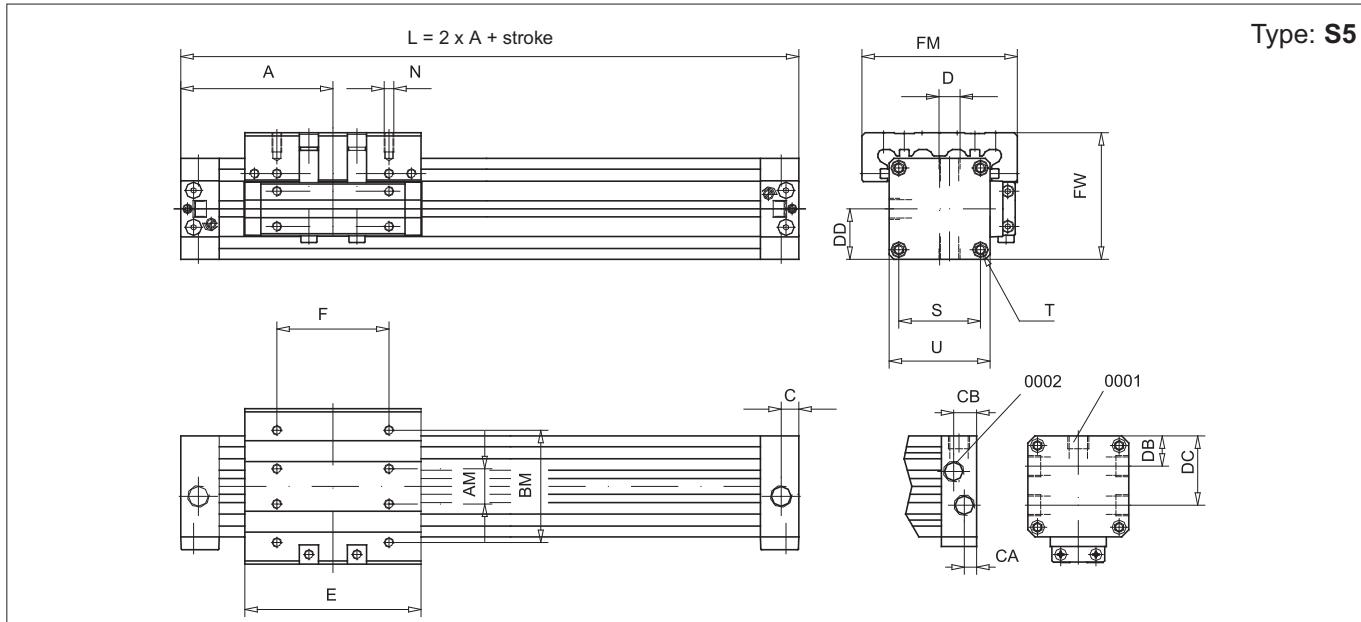
Rodless Cylinders

Bores from 18 to 63 mm

Double acting



\varnothing mm	A	AM	B	BM	C	CA	CB	D	DA	DB	DC	DD	FE	FF	FG	FM	FW	N	<input type="checkbox"/> S	T	<input type="checkbox"/> U
18	80	10	16,5	35	6,5	-	-	M5x6	17,5	-	-	15	103	75	-	50	39	M4x7,5	23,5	M3x7	30
25	100	13	20	45	8,5	7	13	1/8"x8	25,5	14	28	21	131	100	50	66	53	M4x8	33	M4x9	42
32	120	16	20	55	8,5	7	13	1/8"x8	32	17,5	34,5	26	171	140	70	80	65	M5x10	41	M5x10	52
40	150	22	24	70	11	9,5	14,5	1/4"x12	37,5	20	42	31,5	220	180	90	97	79	M6x12	51	M6x12	63
50	180	29	24	85	11	9,5	14,5	1/4"x12	47,5	26	52	39	280	220	110	116	96	M8x16	63	M8x12	78
63	215	40	30	105	14,5	11	18,5	3/8"x12	59,5	30	62	46,5	333	280	140	136	113,5	M8x16	78	M8x12	93



\varnothing mm	A	AM	B	BM	C	CA	CB	D	DA	DB	DC	DD	E	F	FM	FW	N	<input type="checkbox"/> S	T	<input type="checkbox"/> U
18	57,5	10	16,5	35	6,5	-	-	M5x6	17,5	-	-	15	58	30	50	39	M4x7,5	23,5	M3x7	30
25	67,5	13	20	45	8,5	7	13	1/8"x8	25,5	14	28	21	66	35	66	53	M4x8	33	M4x9	42
32	77,5	16	20	55	8,5	7	13	1/8"x8	32	17,5	34,5	26	86	55	80	65	M5x10	41	M5x10	52
40	95	22	24	70	11	9,5	14,5	1/4"x12	37,5	20	42	31,5	110	70	97	79	M6x12	51	M6x12	63
50	105	29	24	85	11	9,5	14,5	1/4"x12	47,5	26	52	39	130	70	116	96	M8x16	63	M8x12	78
63	125	40	30	105	14,5	11	18,5	3/8"x12,5	59,5	30	62	46,5	153	100	136	113,5	M8x16	78	M8x12	93

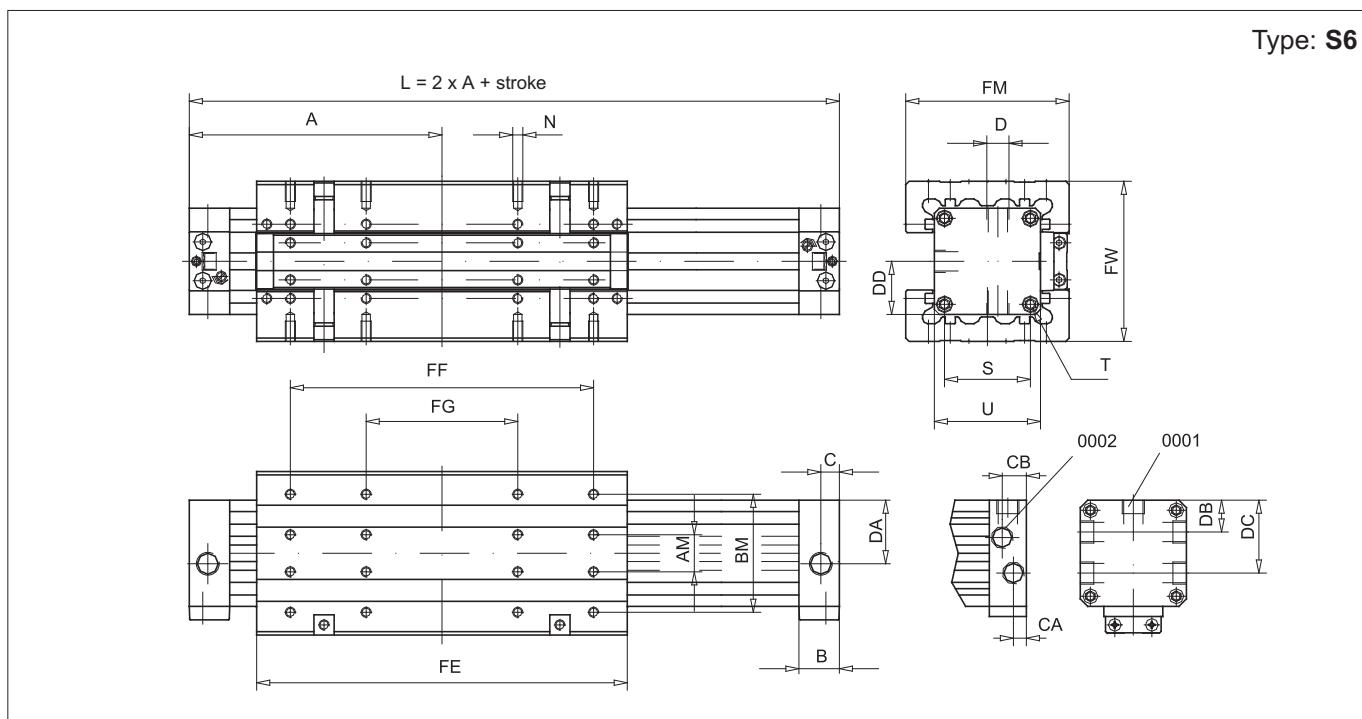
Rodless Cylinders

Bores from 18 to 63 mm

Double acting



Type: S6



1

\varnothing mm	A	AM	B	BM	C	CA	CB	D	DA	DB	DC	DD	FE	FF	FG	FM	FW	N	\square S	T	\square U
18	80	10	16,5	35	6,5	-	-	M5x6	17,5	-	-	15	103	75	-	50	48	M4x7,5	23,5	M3x7	30
25	100	13	20	45	8,5	7	13	1/8"x8	25,5	14	28	21	131	100	50	66	64	M4x8	33	M4x9	42
32	120	16	20	55	8,5	7	13	1/8"x8	32	17,5	34,5	26	171	140	70	80	78	M5x10	41	M5x10	52
40	150	22	24	70	12	9,5	14,5	1/4"x12	37,5	20	42	31,5	220	180	90	97	95	M6x12	51	M6x12	63
50	180	29	24	85	12	9,5	14,5	1/4"x12	47,5	26	52	39	280	220	110	116	114	M8x16	63	M8x12	78
63	215	40	30	105	12,5	11	18,5	3/8"x12	59,5	30	62	46,5	333	280	140	136	134	M8x16	78	M8x12	93

For parameters of the loads and moments see from page 1.26.25.
For seal kits see from page 1.26.21.



Notes

Rodless Cylinders

Bores from 18 to 63 mm

Double acting



Standard executions		
Version	Symbol	Type
Parallel from bore 25 mm.		S4



On request, they can be supplied according Directive 94/9/EC - ATEX
CE II 2 GDc T5



1

Options	Suffix
Special versions on request	/ S

Rodless cylinders, standard in the magnetic version. Cylinders with direct power transmission through the tube slot onto the yoke.

The new cushionings are adjustable at both ends; the flow rate is regulated from 0 to 100% by turning a pin of an angle of 90°. The new barrel is provided with grooves for fixing various accessories. The magnetic reed switches are fixed by a bracket.

They are fit for heavy loads and moments in every direction; they are double action force cylinders provided with central air connections. Should it be necessary, linear guides can also be applied at a later date (special application). The yokes are provided with front and side wiper strips.

For the magnetic reed switches type ASV see from page 1.110.1.

For mounting accessories see from page 1.26.28.

How to order: 50 / 500 S4

50	/	500	S4	
Bore	/	Stroke	Type	Option

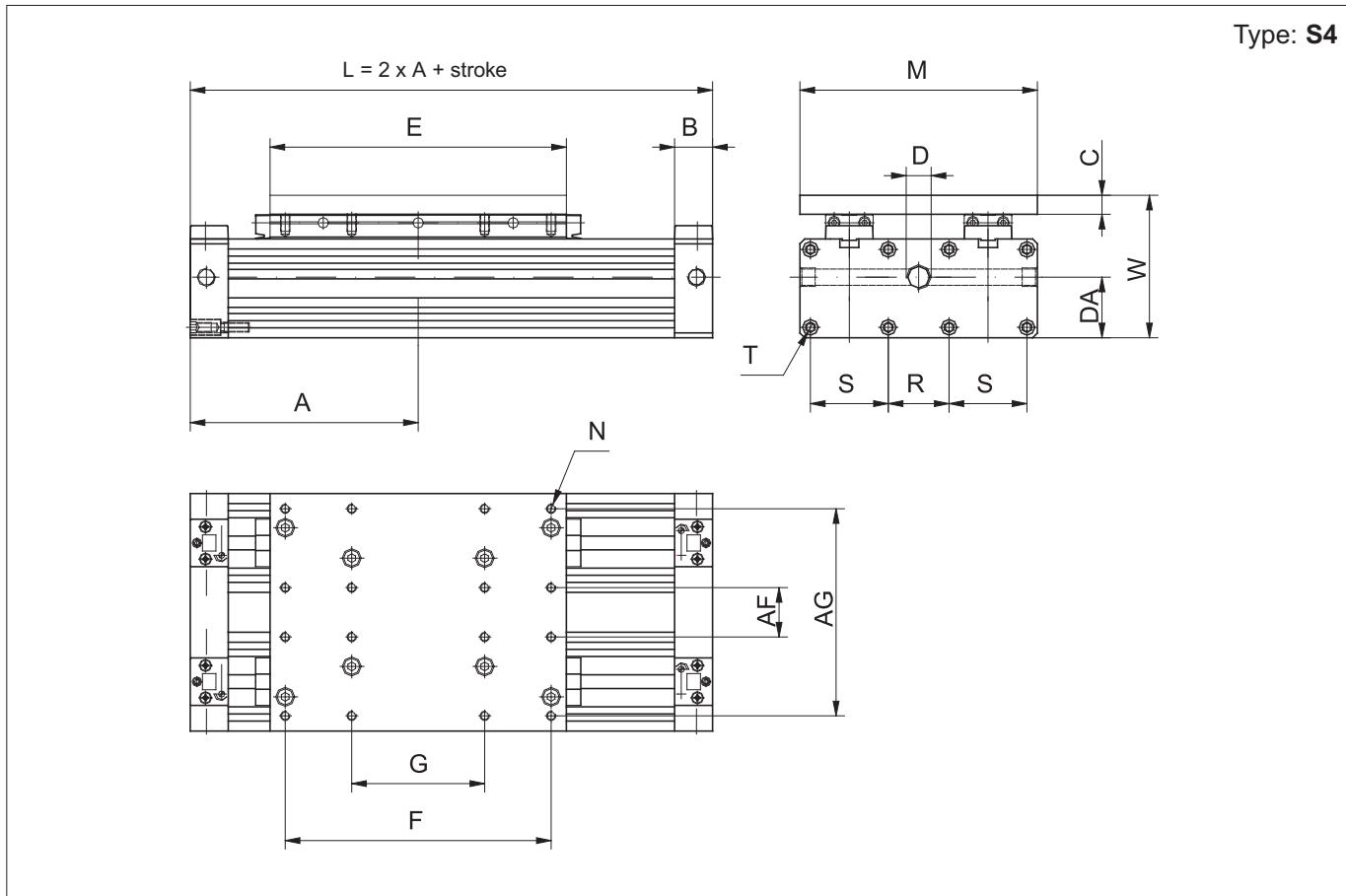
Technical data					
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.				
Pressure range	2 ÷ 8 bar				
Temperature range	-20 °C ÷ + 80°C				
Materials	Heads:	Anodised aluminium			
	Barrel:	Anodised aluminium			
	Seals:	Polyurethane - Piston monobloc/yoke: Aluminium			
	Internal strip:	Nylon			
	External strip:	Stainless steel AISI 304			
	Wiper ring:	PVC			
	Coupling plate:	Aluminium			

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Cushion length (mm)	Theoretical force at 6 bar (N)	Weight at 0 stroke Type S4 (g)	Weight for every 10 mm stroke (g)
25	from 10 to 6000	9000	18	540	1200	52
32			24	880	2600	72
40			34	1360	4600	98
50			40	2120	8200	150
63			49	3360	13600	204

Rodless Cylinders

Bores from 18 to 63 mm

Double acting



\varnothing mm	A	B	C	D	DA	E	F	G	AF	AG	M	N	R	S	T	W
25	100	20	8	1/4"x11,7	25,5	116	100	50	21	79	92	M4	17	33x33	M4x9	61
32	120	20	10	1/4"x11,7	40	156	140	70	26	109	125	M5	32	41x41	M5x10	75
40	150	24	12	3/8"x11,7	47	200	180	90	35	133	153	M6	45	51x51	M6x12	91
50	180	24	16	3/8"x11,7	59	260	220	110	44	164	184	M8	43	63x63	M8x12	112
63	215	30	16	1/2"x13	71	313	280	140	55	195	218	M8	47	78x78	M8x12	129,5

Seal kit

Here are the quantities and the description of the components comprised in each kit.

Description	N°	S1	S2	S3	S4 *	S5	S6 **
Front wiper rings	2	1	1	1	1	1	1
Side wiper rings	2	1	1	1	1	1	1
Piston seals	2	1	1	1	1	1	1
Cushionings seals	2	1	1	1	1	1	1
Heads o-ring	2	1	1	1	1	1	1
Cushioning pin 0-ring	2	1	1	1	1	1	1
s Internal strip	1	1	1	1	1	1	1
s External strip	1	1	1	1	1	1	1
s Internal seals (between the strip and the tube)	2	1	1	1	1	1	1
Teflon slides for guide	2			1		1	1

s The length is according to the stroke of the cylinder.

* For the type S4 (parallel) one seal kit includes twice as many as the components are.

** For the type S6 (double guide) one seal kit includes 4 Teflon slides.

How to order: 32 / 500 / SG / S4

32	/	500	/	SG	/	S4	
Bore	/	Cylinder stroke	/	Series of seals	/	Type	Option

Rodless Cylinders

Bores from 18 to 63 mm

Loads and moments

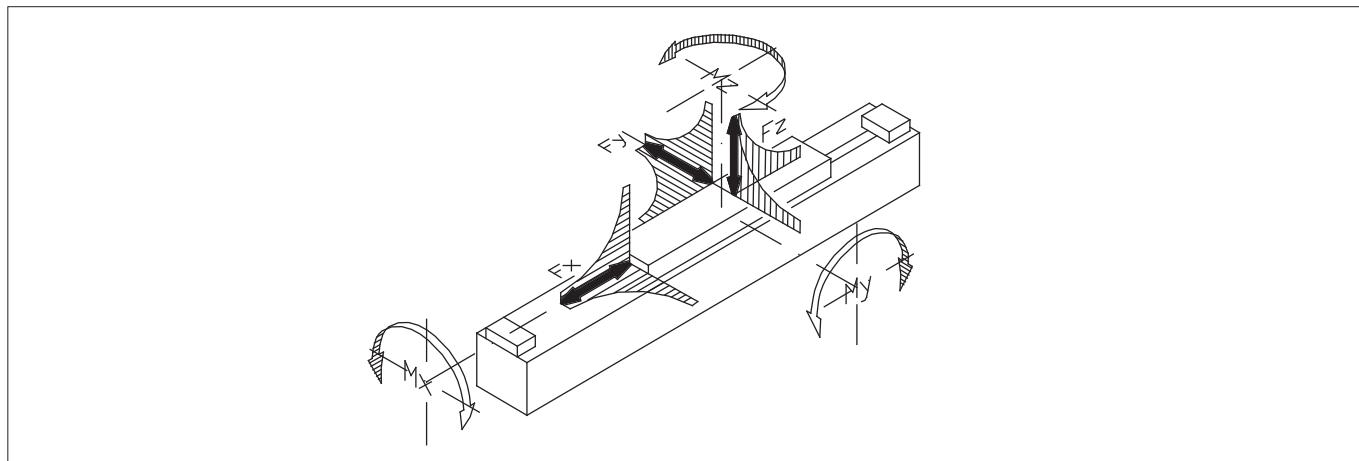


All data concerning forces refer to a speed of $V < 0,35 \text{ m/s}$.

Keeping the indicated values ensures the maximum service life, the minimum noise and the best operating result.

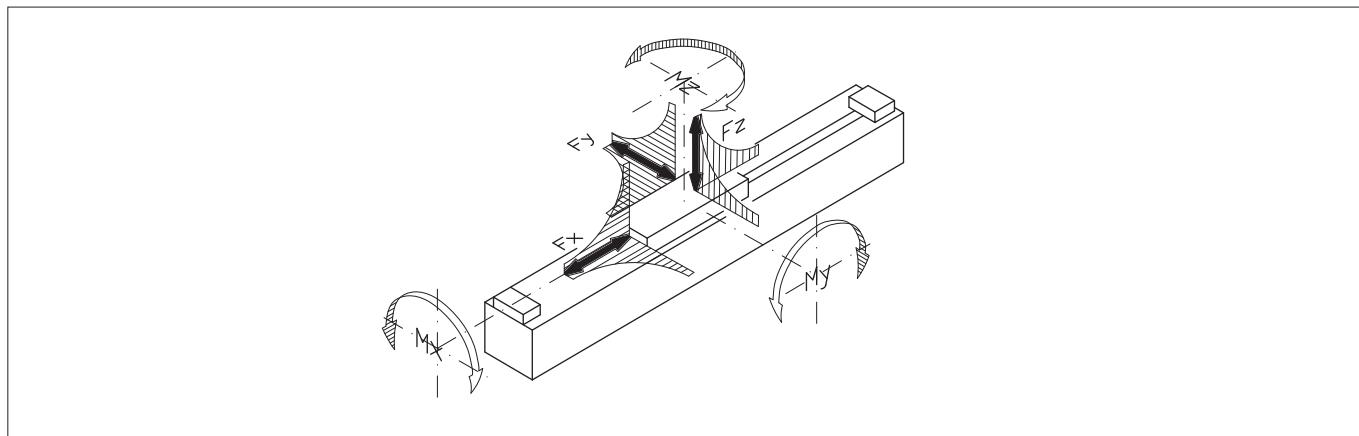
Higher speeds reduce the admissible forces.

Were the working conditions out of the allowed limits (see table below), the energy of the mass in motion should be absorbed by devices (such as hydraulic cushionings, stops) mounted as much nearer as possible to the barycentre of the mass.



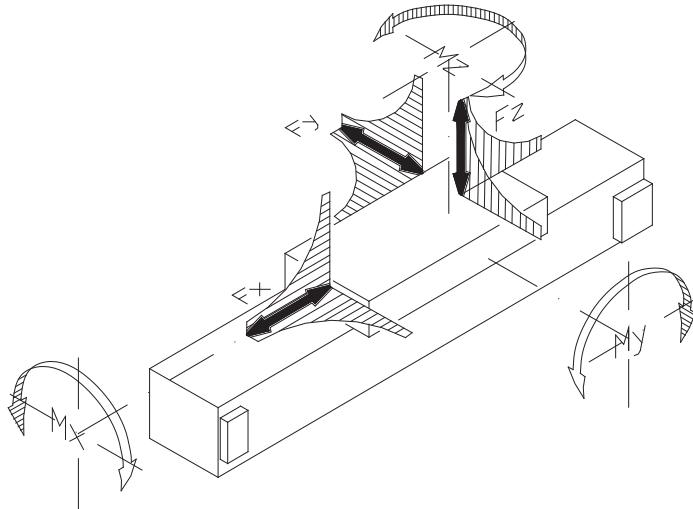
Type: **S1**

Ø mm	Force ($V_{\max} \leq 0,35 \text{ m/s}$)			F (load in N)			Moments		
	Fx (N) 6 bar	Fy (N) 6 bar	Fz (N) 6 bar	at 0,75 m/s	at 1 m/s	at 1,5 m/s	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
18	140	80	300	80	40	20	1	3	3
25	270	110	480	155	90	40	2	13	13
32	440	165	650	280	155	70	3,5	25	25
40	680	225	800	500	290	125	5,5	40	40
50	1060	325	1060	790	420	195	10	65	65
63	1680	435	1680	1500	850	370	16	100	100

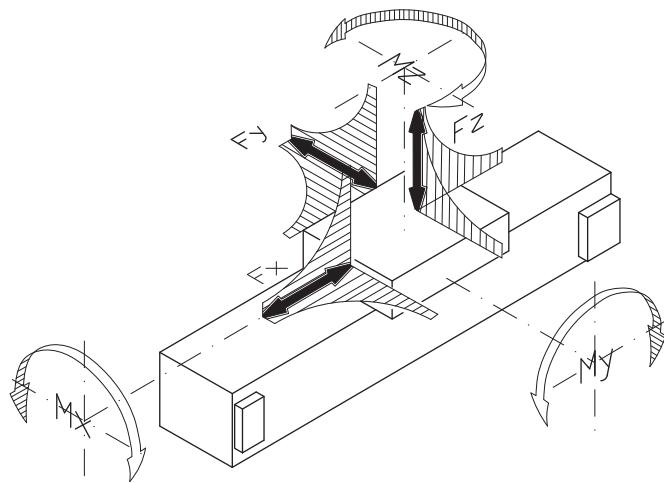


Type: **S2**

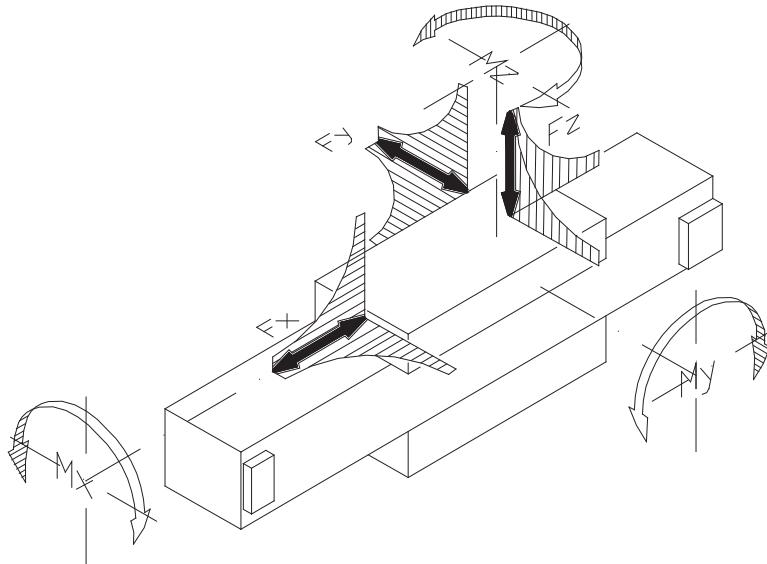
Ø mm	Force ($V_{\max} \leq 0,35 \text{ m/s}$)			F (load in N)			Moments		
	Fx (N) 6 bar	Fy (N) 6 bar	Fz (N) 6 bar	at 0,75 m/s	at 1 m/s	at 1,5 m/s	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
18	140	40	140	40	25	10	0,4	1,7	1,7
25	270	55	230	90	50	25	0,7	2,7	2,7
32	440	70	320	200	110	45	1	5	5
40	680	100	400	420	240	110	2	8,5	8,5
50	1060	140	480	750	440	190	3,5	13	13
63	1680	180	590	1500	850	380	5	18	18

Type: **S3**

∅ mm	Force ($V_{\max} \leq 0,35 \text{ m/s}$)			F (load in N)			Moments		
	Fx (N) 6 bar	Fy (N) 6 bar	Fz (N) 6 bar	at 0,75 m/s	at 1 m/s	at 1,5 m/s	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
18	140	370	370	100	58	26	3,5	6	6
25	270	800	800	280	160	65	10	20	20
32	440	1200	1200	510	300	140	25	45	45
40	680	1600	1600	1000	550	250	40	75	75
50	1060	2100	2100	1500	850	380	80	150	150
63	1680	2800	2800	2500	1400	610	110	250	250

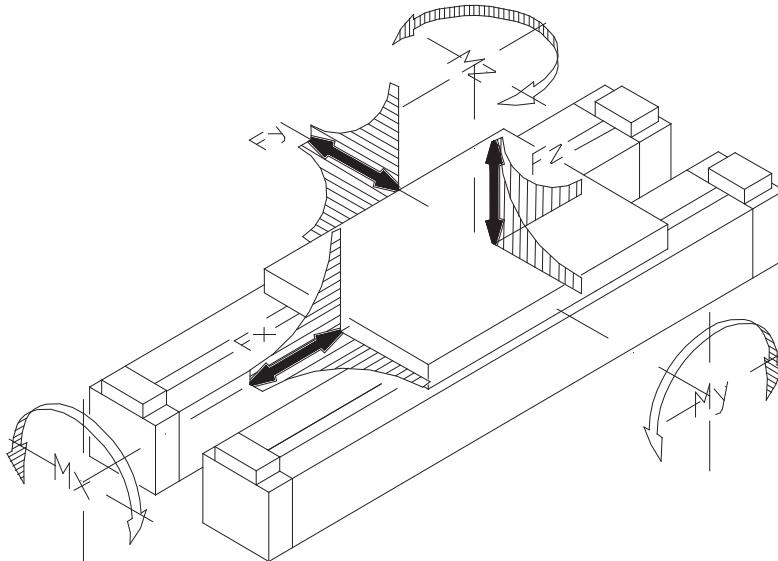
Type: **S5**

∅ mm	Force ($V_{\max} \leq 0,35 \text{ m/s}$)			F (load in N)			Moments		
	Fx (N) 6 bar	Fy (N) 6 bar	Fz (N) 6 bar	at 0,75 m/s	at 1 m/s	at 1,5 m/s	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
18	140	150	150	50	30	12	1,8	1,8	1,8
25	270	250	250	100	60	30	4	4	4
32	440	450	450	250	135	65	10	10	10
40	680	600	600	480	280	140	16	16	16
50	1060	900	900	800	480	220	30	30	30
63	1680	1100	1100	1500	950	400	45	45	45



Type: S6

∅ mm	Force ($V_{max} \leq 0,35 \text{ m/s}$)			F (load in N)			Moments		
	Fx (N) 6 bar	Fy (N) 6 bar	Fz (N) 6 bar	at 0,75 m/s	at 1 m/s	at 1,5 m/s	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
18	140	550	550	150	80	20	5,2	9	9
25	270	1200	1200	420	210	80	15	30	30
32	440	1800	1800	750	400	170	37	67	67
40	680	2400	2400	1500	750	300	60	110	110
50	1060	3200	3200	2200	1150	460	120	220	220
63	1680	4200	4200	3700	1900	740	170	370	370



Type: S4

∅ mm	Force ($V_{max} \leq 0,35 \text{ m/s}$)			F (load in N)			Moments		
	Fx (N) 6 bar	Fy (N) 6 bar	Fz (N) 6 bar	at 0,75 m/s	at 1 m/s	at 1,5 m/s	Mx (Nm) Fy/Fz	My (Nm) Fx/Fz	Mz (Nm) Fx/Fy
32	880	360	1220	540	300	130	29	52	52
40	1360	540	1750	1090	620	280	55	88	88
50	2120	750	2500	1760	1000	450	90	155	155
63	3360	1000	3300	2900	1660	720	148	260	260

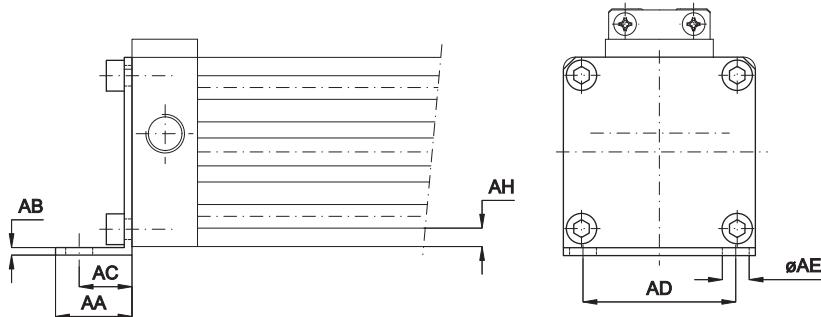
Rodless Cylinders

Bores from 18 to 63 mm

Mountings



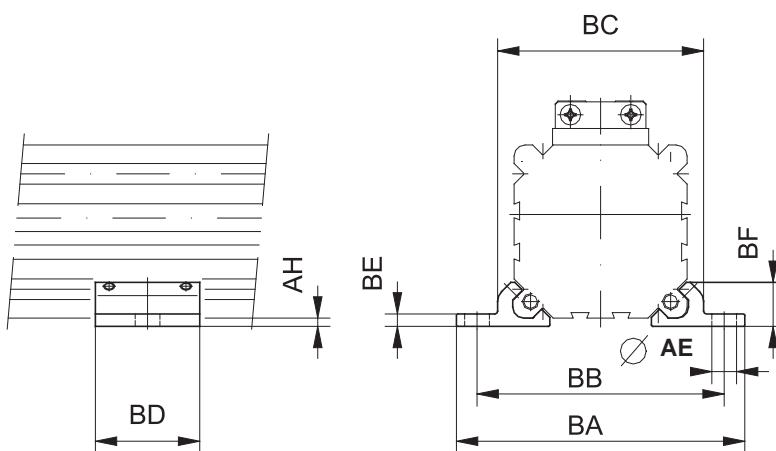
Foot type: P



The feet can be mounted on the cylinder in all the 4 possible positions.
The kit includes 2 feet and 8 bolts. Material: Anodised aluminium.

Code	Item	\varnothing mm	AA	AB	AC	AD	AE	AH
559010	P18S	18	15	2	10	20	6	2
559011	P25S	25	18	2	12,5	30	6	2
559012	P32S	32	20	2,5	13,5	40	7	3
559013	P40S	40	25	2,5	17,5	50	9	3
559014	P50S	50	28	3	20	60	9	3
559015	P63S	63	30	3	21	75	11	4,5

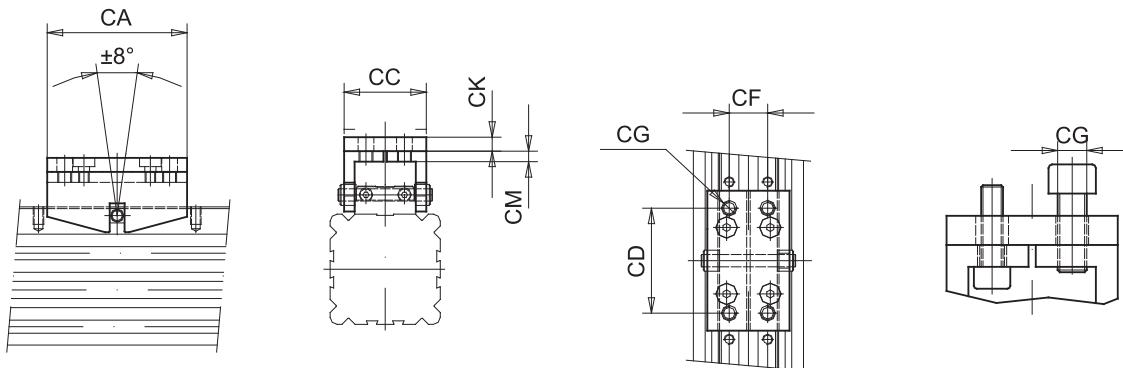
Mid support type: SI



The mid support must be used in case of deflection of the cylinder (see page 1.26.40).
The mid support can be used instead of the foot. It is advisable to install it at the end of the cylinder and to secure it against any sideways drift of the cylinder by means of 2 bolts with washers that are screwed in at the front.
The kit includes 2 mid supports and 8 bolts. Material: Anodised aluminium.

Code	Item	\varnothing mm	AE \varnothing	AH	BA	BB	BC	BD	BE	BF
559020	SI18S	18	6	2	56	46	36,5	23	2,5	8,25
559021	SI25S	25	6	2	70	60	50	28	3,5	11
559022	SI32S	32	7	3	85	73	61,5	33	4	13,8
559023	SI40S	40	9	3	105	90	75	38	4,5	16
559024	SI50S	50	9	3	122	106	91	43	5	19
559025	SI63S	63	11	4,5	144	125	107	48	6	22

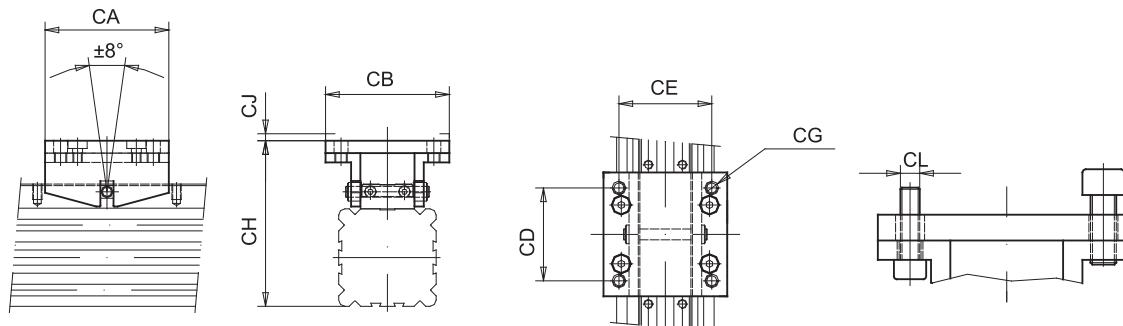
Light flexible coupling type: CL



The light flexible coupling can be mounted where a guide must be connected to a rodless cylinder.
The light flexible coupling transfers the action power to the guiding element without any tension.
The kit includes 1 flexible coupling, 1 pin, 1 seeger, 2 distancers. Material: Anodised aluminium.

Code	Item	\varnothing mm	CA	CC	CD	CF	CG	CK	CM
559038	CL18S	18	50	25,5	30	9	M5	4	4
559037	CL25S	25	60	30	40	14	M5	4	4
559032	CL32S	32	70	37	50	16	M6	6	6
559033	CL40S	40	80	47	60	22	M8	8	8
559034	CL50S	50	90	56	70	30	M8	8	8
559035	CL63S	63	100	73	80	40	M10	8	8

Heavy flexible coupling type: C



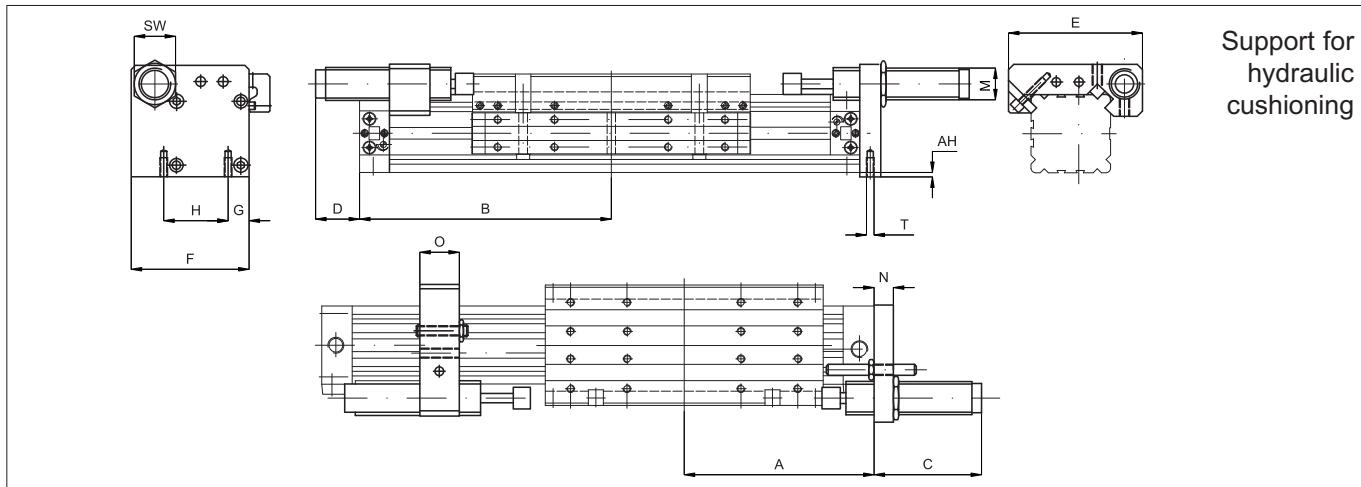
The heavy flexible coupling works as the light ones but can be used with higher forces.
The kit includes 1 flexible coupling, 1 pin, 1 seeger, 2 distancers. Material: Anodised aluminium.

Code	Item	\varnothing mm	CA	CB	CD	CE	CG	CH	CJ	CL
559001	C18S	18	50	41,5	30	34	M5	54	2,5	M4
559002	C25S	25	60	50	40	38	M5	70	3	M4
559003	C32S	32	70	60	50	48	M6	86	3,5	M5
559004	C40S	40	80	80	60	60	M8	107	4,5	M6
559005	C50S	50	90	95	70	70	M8	123	4,5	M6
559006	C63S	63	100	120	80	80	M10	145,5	5	M8

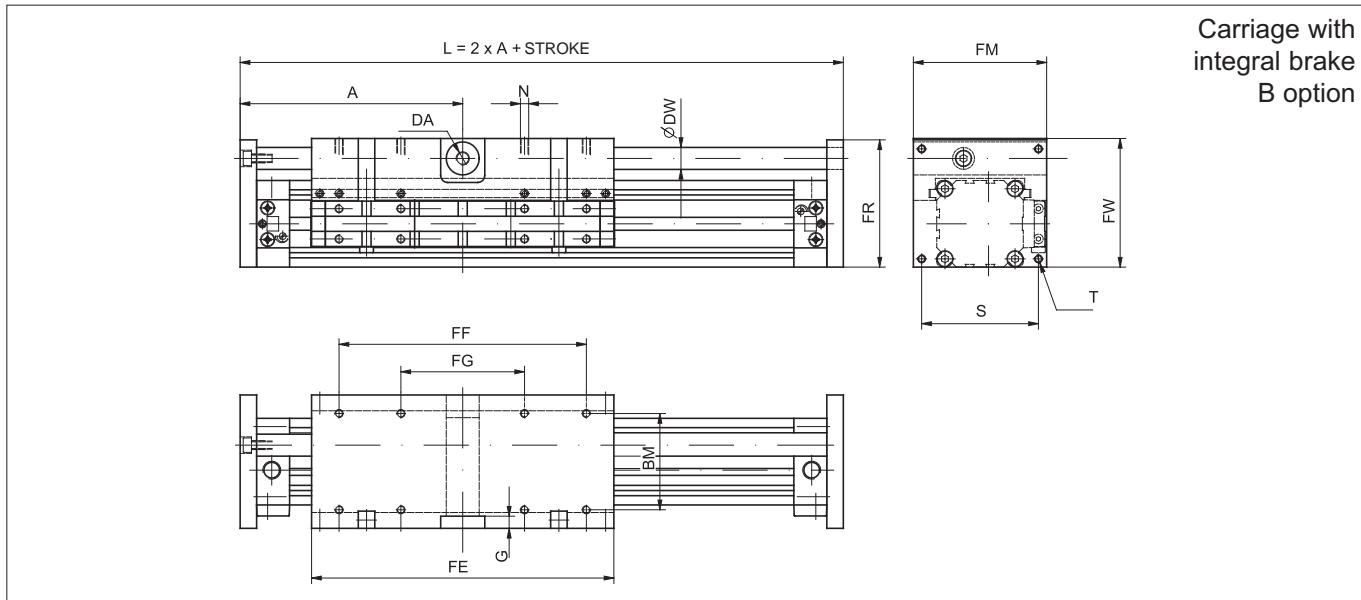
Rodless Cylinders

Bores from 18 to 63 mm

Mounting accessories



Type: SID																			Type: STD	
Code	Item	\varnothing mm	A		AH	B		C max	D max	E	F	G	H	M	N	O	SW	T	Code	Item
			S ₁	S ₂		S ₁	S ₂													
559060	SID18S	18	80	57,5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	559070	STD18S
559061	SID25S	25	100	67,5	2	117,5	85	37	40	72	57	12,5	33	M14x1,5	10	20	17	M4x10	559071	STD25S
559062	SID32S	32	120	77,5	3	135,5	90	70	30	84	70	14,5	41	M14x1,5	12	20	17	M5x12	559072	STD32S
559063	SID40S	40	150	95	3	165	110	65	50	105	93	16	51	M25x1,5	15	30	32	M6x15	559073	STD40S
559064	SID50S	50	180	105	3	195	140	80	65	126	102	22,5	63	M25x1,5	15	30	32	M8x20	559074	STD50S
559065	SID63S	63	215	125	4,5	-	-	-	-	-	-	-	-	-	-	-	-	-	559075	STD63S

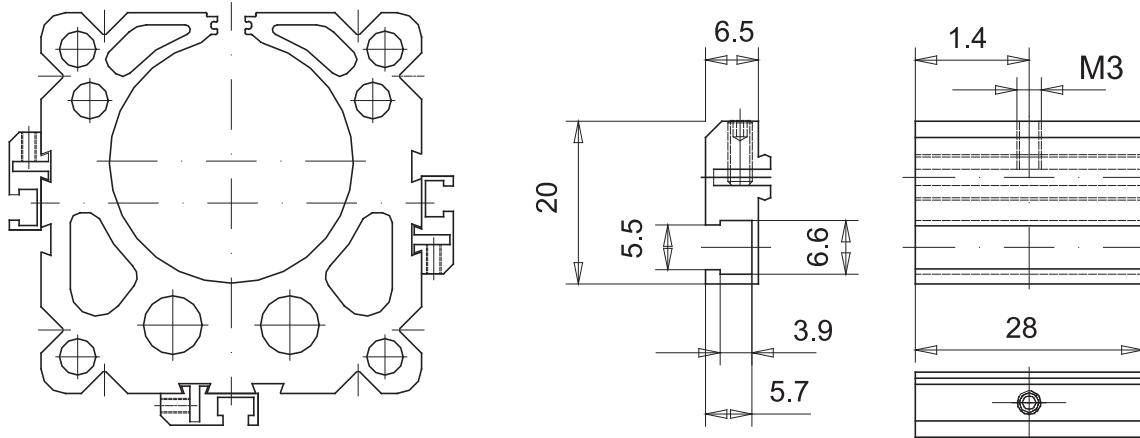


Should it be necessary to lock a working or a handling, the carriage with integral brake can be used.

Materials: carriage: Aluminium; rod: Hardened and chrome plated steel.

\varnothing mm	A	BM	D	DA	DW	FE	FF	FG	FM	FW	FR	G	N	S	T	U	Fb
18	86	35	M5-5,5	M5	\varnothing 6	103	75	-	50	48	47	6	M4-7,5	42	M3	6	180N
25	110	45	1/8"-7,7	M5	\varnothing 12	131	100	50	66	67	66	-	M4-8	54	M4	10	600N
32	130	55	1/8"-7,7	M5	\varnothing 12	171	140	70	80	79	78	5	M5-10	68	M5	10	600N
40	162	70	1/4"-11,7	1/8"	\varnothing 16	220	180	90	97	93,5	92,5	-	M5-12	80	M6	12	1000N
50	195	85	1/4"-11,7	1/8"	\varnothing 20	280	220	110	116	11,5	114,5	-	M8-16	100	M8	15	1400N
63	230	105	3/8"-11,7	1/8"	\varnothing 25	333	280	140	136	139	138	-	M8-16	120	M8	15	2500N

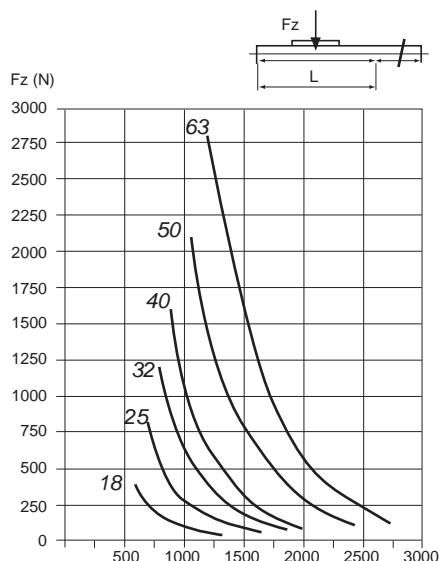
Bracket for the mounting of the magnetic reed switches type: **AS55** (code 559050)



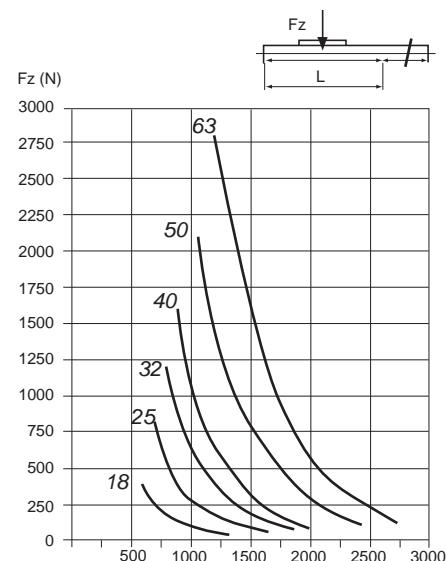
This bracket for the mounting of the magnetic reed switch (see page 1.110.1) can be used on all the diameters and types of rodless cylinders.

Maximum admissible deflections

F_z at deflection of 0,5 mm.



F_z at deflection of 0,5 mm.



With cylinders of long strokes or heavy loads, you should pay attention to the tube deflection.
One or more mid supports can be used according to the amount of deflection.

Example: When applying a force F_z of 500 N a cylinder 25 mm should deflect by a maximum of 0,5 mm and be no longer than 750 mm as according to the diagram.

Should you exceed 750 mm use one or more mid supports (see page 1.26.28).



Notes

Rotary Cylinders

Bores from 32 to 125 mm

Double acting



Standard executions		
Version	Symbol	Type
Male pinion		CR
Female pinion		CRF
Male pinion with rotation angle adjustment		CRR
Female pinion with rotation angle adjustment		CRRF



1

Options	Suffix
Seals FKM max 150 °C	V
Special versions on request	/ S

The options can be combined (when this is possible)

Rotary cylinders with rack / pinion, magnetic as standard. The standard cylinders are provided with adjustable cushionings at both ends.

One or more magnetic reed switches can be applied to. For the magnetic reed switches type ASV see from page 1.110.1.

How to order: 63 / 90° CRV

63	/	90°	CR	V
Bore	/	Rotation angle	Type	Option

Technical data				
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.			
Pressure range	1 + 12 bar			
Temperature range	-20 °C + + 80°C			
Materials	Heads: Die-cast aluminium Barrel: Anodised aluminium Pinion/Rack: Chrome plated steel C40 Body: Anodised aluminium Seals: Nitrile rubber (NBR) - Piston: monobloc			

Bore (mm)	Standard rotation	Maximum rotation	Moments (Nm)			
			3 bar	6 bar	9 bar	12 bar
32	90°, 180°, 360°	360°	3,7	7	11	14
40			7,5	15	20	30
50			12	25	32	45
63			25	50	80	100
80			40	80	130	160
100			90	190	270	360
125			135	270	400	520

Seal kit

Here are the quantities and the description of the components comprised in each kit.

Description	N°	CR - CRF - CRR - CRRF
Magnetic one piece piston	2	1
Tube o-ring	4	1
Cushioning seal	2	1

How to order: 80 / SG / CRV

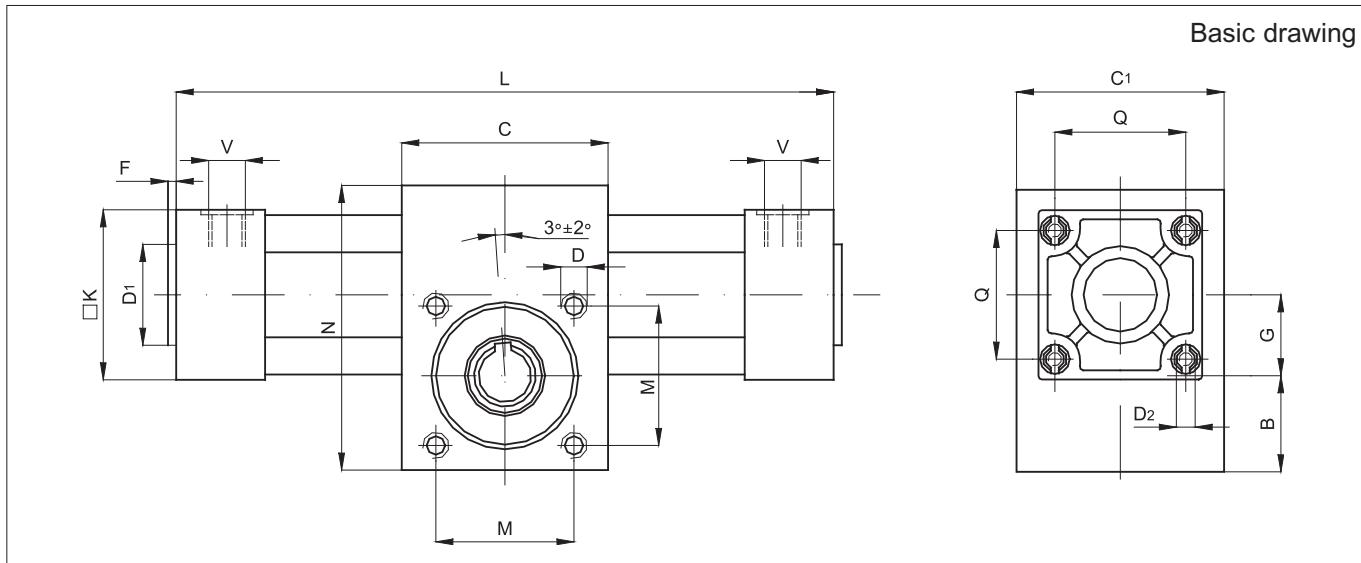
80	/	SG	/	CR	V
Bore	/	Series of seals	/	Type	Option

The seal kit for the cylinders in non-standard execution is to be composed according to the options.

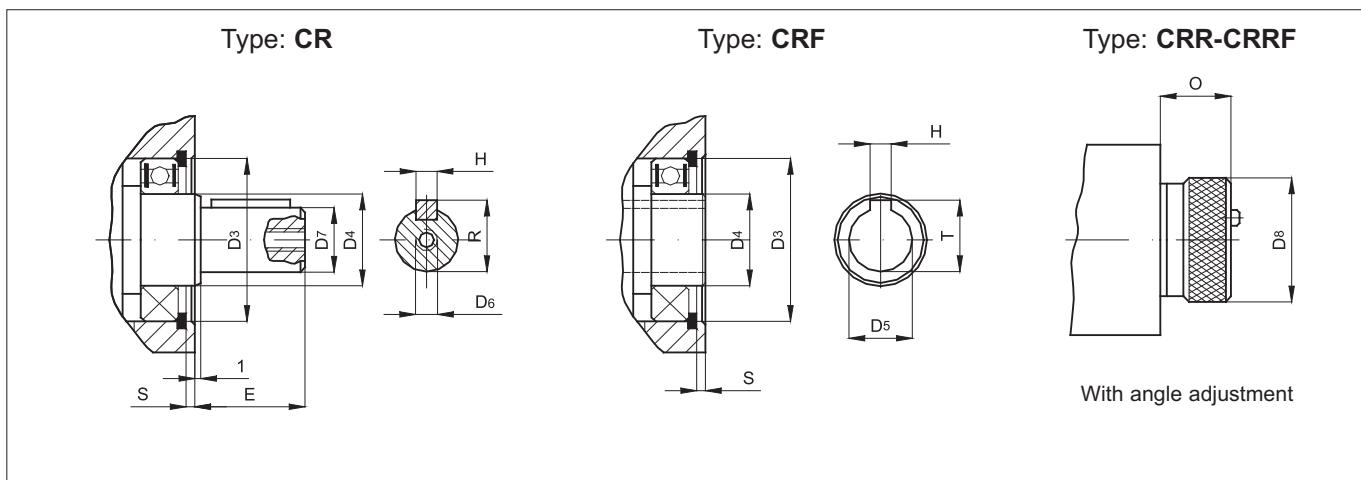
Rotary Cylinders

Bores from 32 to 125 mm

Double acting



Ø mm	L			B	C	C ₁	D	D ₁ e9	D ₂	F	G	H	K	M	N	Q	V
	96°	186°	366°														
32	221	268	352	24	50	50	M6x10	25	M6x5	3	22	45	45	35	70	33	1/8"
40	289	352	478	32,5	72	65	M8x14	32	M6x12	3	27,5	52	52	47	92,5	40	1/4"
50	289	352	478	32,5	72	65	M8x14	32	M8x13	3	27,5	65	65	47	92,5	49	1/4"
63	348,5	434,5	603,5	42,5	93	95	M10x16	45	M8x13	4	36	75	75	62	126	59	3/8"
80	348,5	434,5	603,5	42,5	93	95	M10x16	45	M10x14	5	36	95	95	62	126	75	3/8"
100	340,5	558,5	793,5	64	128	140	M14x24	55	M10x14	5	52,5	115	115	90	186,5	90	1/2"
125	340,5	558,5	793,5	64	128	140	M14x24	55	M12x14	5	52,5	140	140	90	186,5	110	1/2"



Ø mm	D ₃ k7	D ₄ k6	D ₅ H7	D ₆	D ₇ h6	D ₈	E	H	O max	R +0 -0,1	S +0 -0,2	T +0,1 -0
32	35	17	10	M4x15	12	28	20	4	20	13,5	2,4	11,7
40	47	25	15	M5x15	16	35	30	5	23	18	3,2	17,2
50	47	25	15	M5x15	16	35	30	5	23	18	3,2	17,2
63	62	35	24	M8x20	24	48,5	40	8	27	27	3,9	27,2
80	62	35	24	M8x20	24	48,5	40	8	27	27	3,9	27,2
100	90	55	35	M12x20	35	60	50	10	39	38,5	5,4	38,7
125	90	55	35	M12x20	35	60	50	10	39	38,5	5,4	38,7

Hi-Rotor Cylinders

Sizes: 1, 3, 10, 20, 30, 50, 150, 300, 800

Double acting



Standard executions		
Version	Symbol	Type
Single vane Fixed rotation angle		P
Double vane Fixed rotation angle		P1
Single vane Adjustable rotation angle		PR
Double vane Adjustable rotation angle		P1R



1

Series of Hi-rotor cylinders with fixed and adjustable rotation angles and reduced overall dimensions.

They are provided with elastic dampers to relieve the impacts of the vanes, which are available in the single and double (on some types) versions to get a higher torque.

For mounting accessories see from page 1.50.10.

Options	Suffix
Magnetic with two sensors. For the complete pre-mounted kit see page 1.50.15.	M
Special versions on request	/ S

The options can be combined (when this is possible).

How to order: 20/90° P

20	/	90°	P	
Size	/	Rotation angle*	Type	Option

* Were the model adjustable, you should indicate the maximum rotation angle.

Technical data				
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.			
Pressure range	2 ÷ 10 bar - Models 1P-3P-3PR: 3 ÷ 7 bar - Models 10P-20P-10PR: 2 ÷ 7 bar			
Temperature range	+5 °C ÷ +60°C			
Materials	Body: Die-cast aluminium Shaft: Steel Bearing: Sintered bronze Seals: Nitrile rubber (NBR)			

Type	Standard rotation angles	Maximum rotation angle	Rotation angle tolerance	Moment (Nm)			Possible rotation angles
				3 bar	6 bar	9 bar	
1P	90°, 180°, 270°	270°	from 0° to +4°	0,076	0,156	-	90° and 180°
3P				0,16	0,38	-	
10P				0,56	1,2	-	
20P				0,95	2,1	3,26	
30P			from 0° to +3°	1,8	4,1	6,5	90°, 180° and 270°
50P				2,59	5,9	9,5	
150P				8,5	18	27,3	
300P				16,5	34,5	51,8	
800P				59,1	123	186	
30P1				4,4	9,5	14,8	
50P1				5,79	12,8	20,1	
150P1				19	41,5	62	
300P1			from 0° to +3°	39	83	124	90°
800P1				120	247	371	
3PR				0,162	0,324	-	Adjustable from 30° ÷ 180°
10PR				0,46	1,06	-	
20PR			from 0° a +3°	0,8	1,95	3,1	Adjustable from 30° ÷ 270°
30PR				1,8	4,1	6,5	
30P1R				4,4	9,5	14,8	

Seal kits not available for these cylinders.

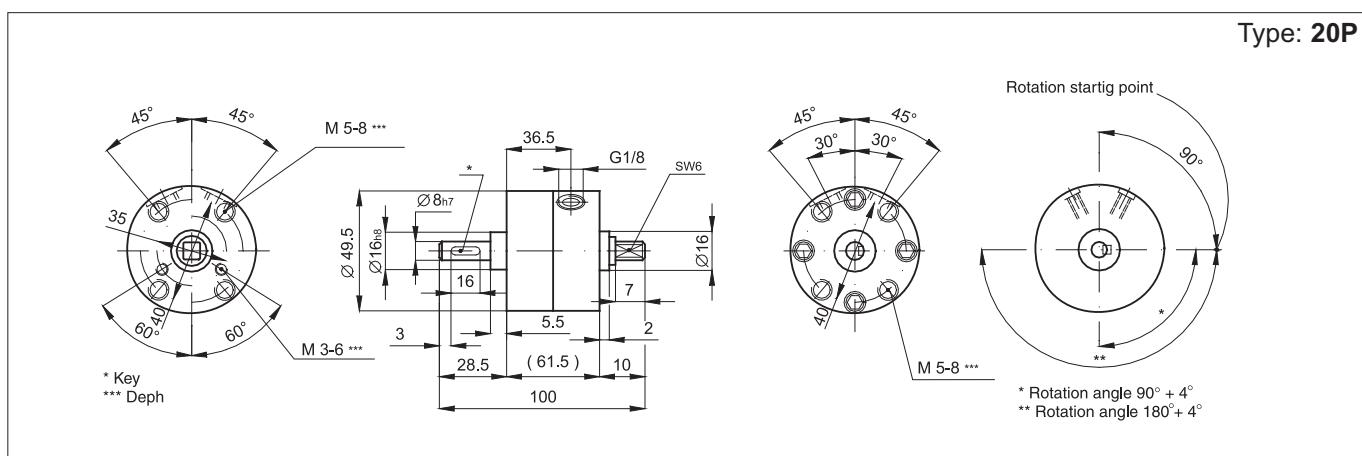
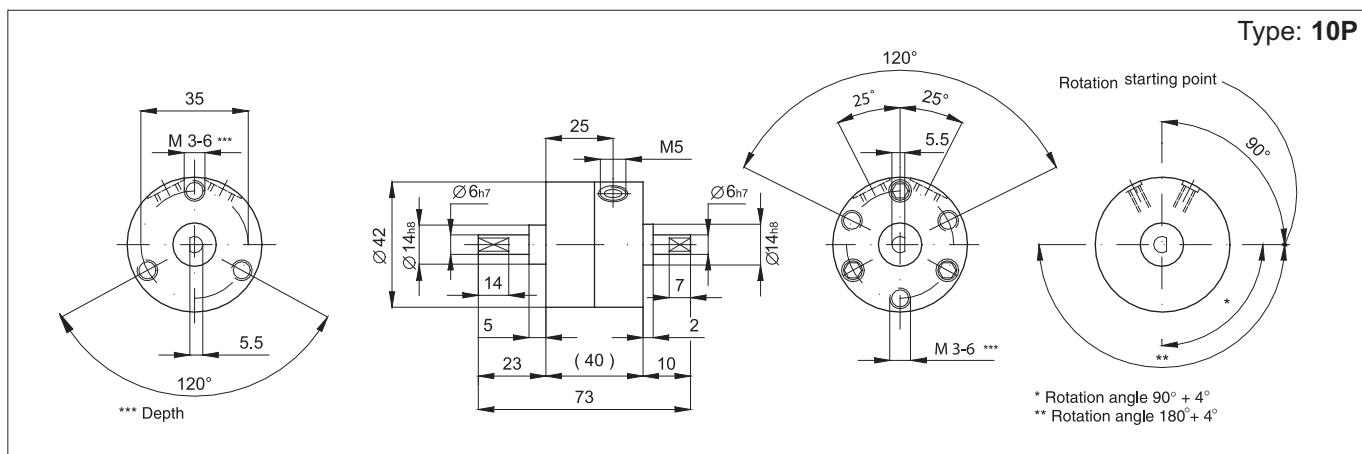
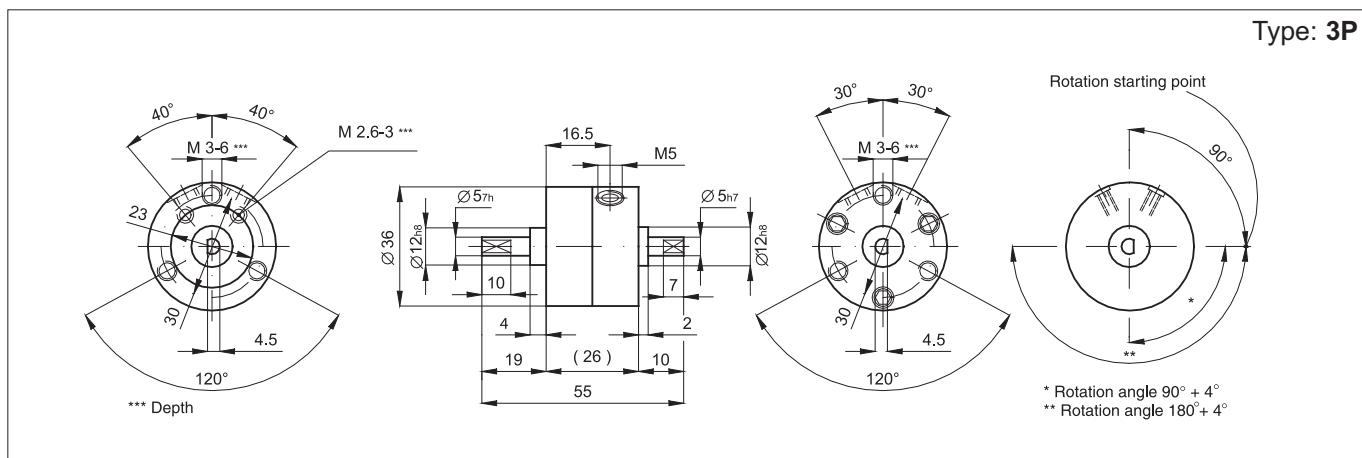
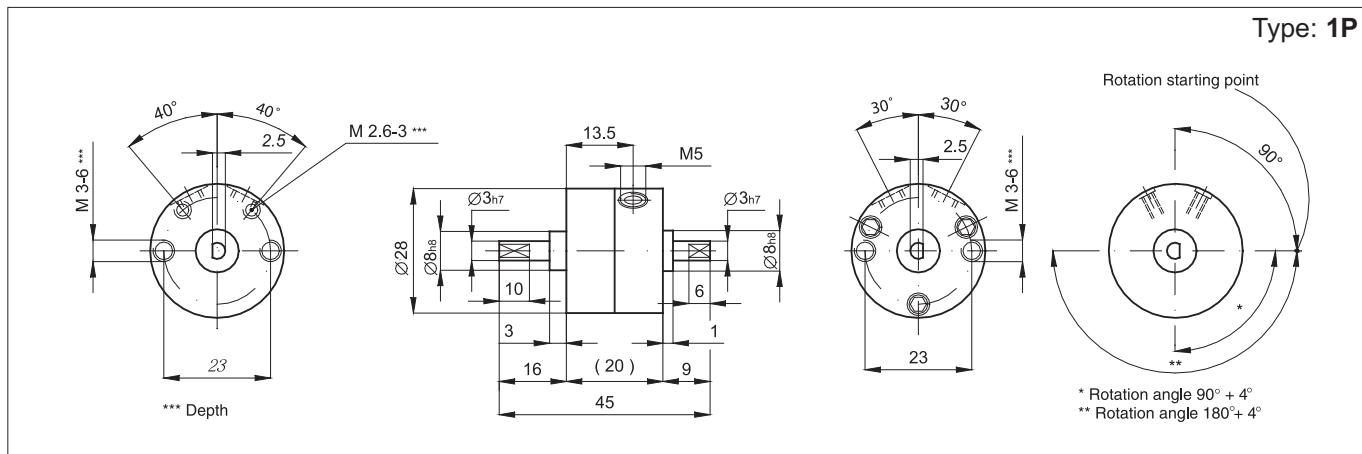
Hi-Rotor Cylinders

Sizes: 1, 3, 10, 20, 30, 50, 150, 300, 800

Double acting



Dimensions and oscillating points



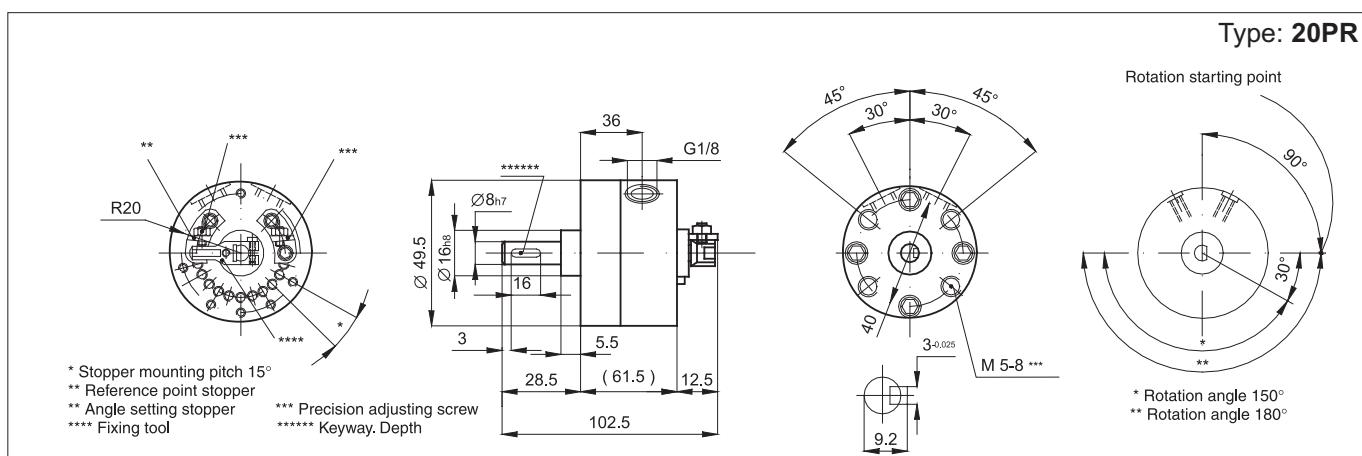
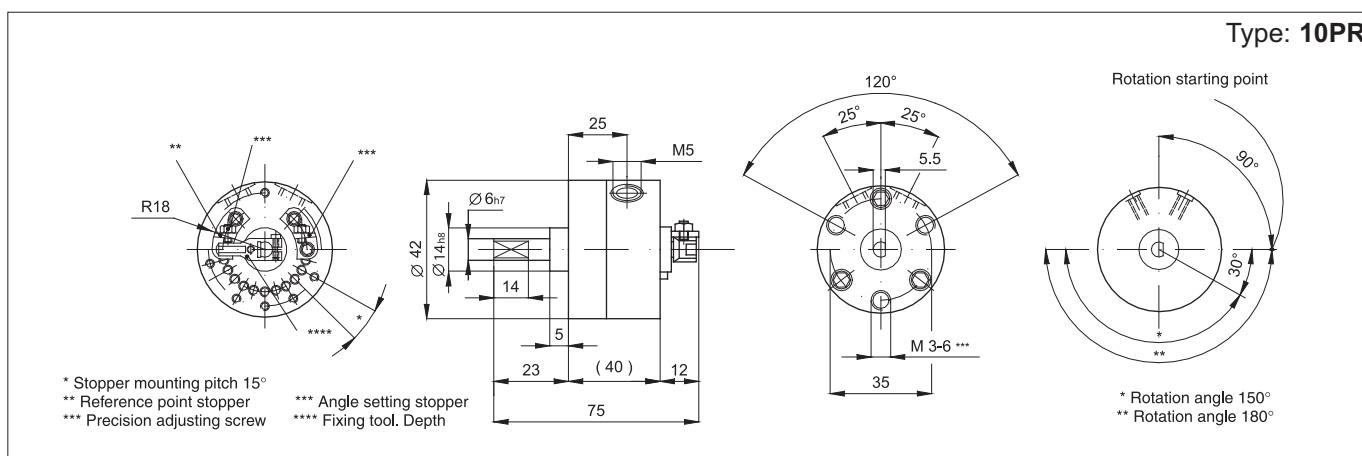
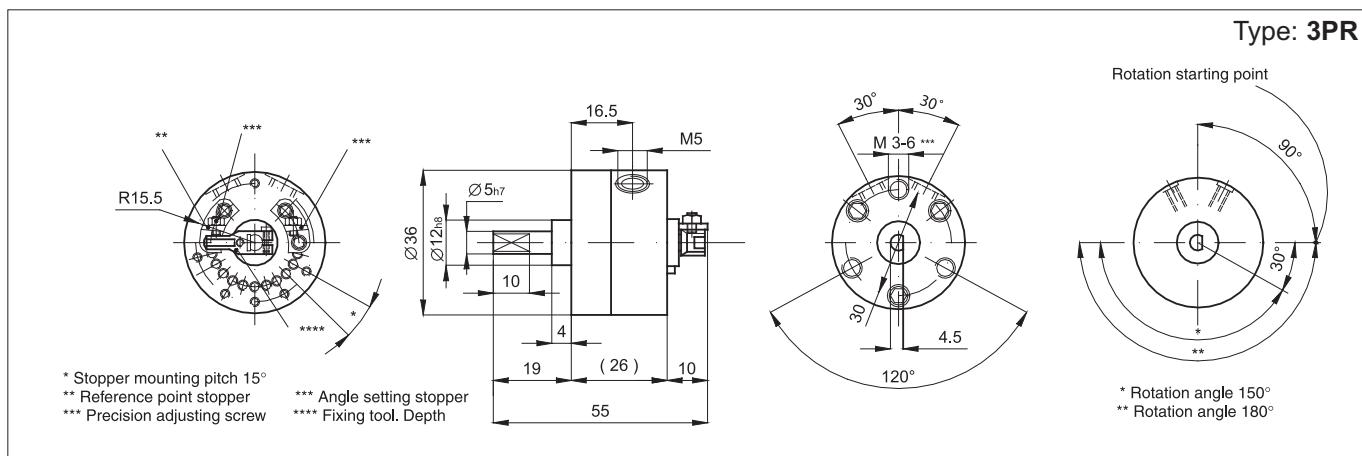
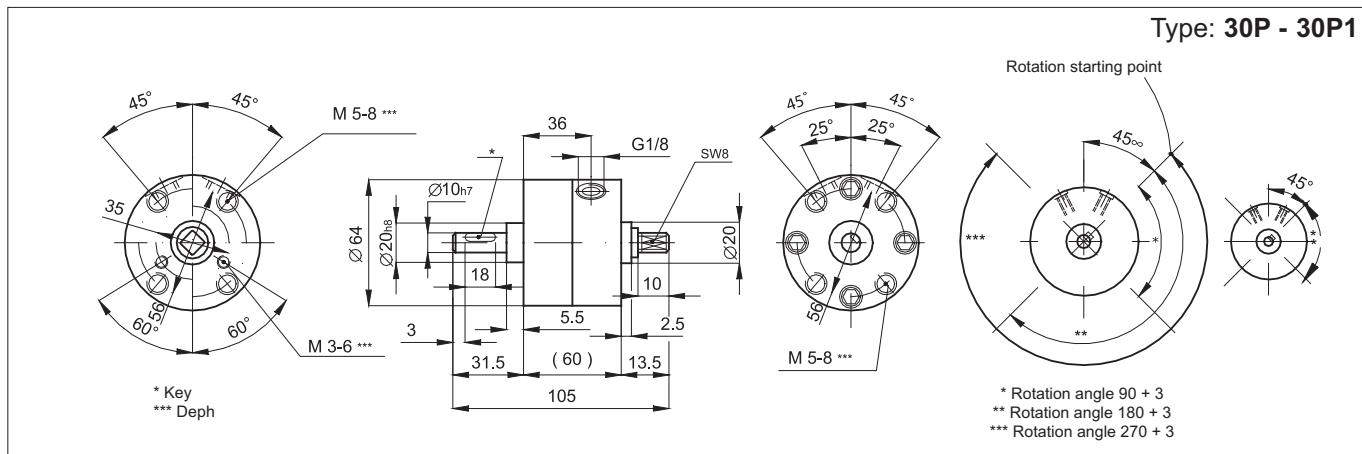
Hi-Rotor Cylinders

Sizes: 1, 3, 10, 20, 30, 50, 150, 300, 800

Double acting



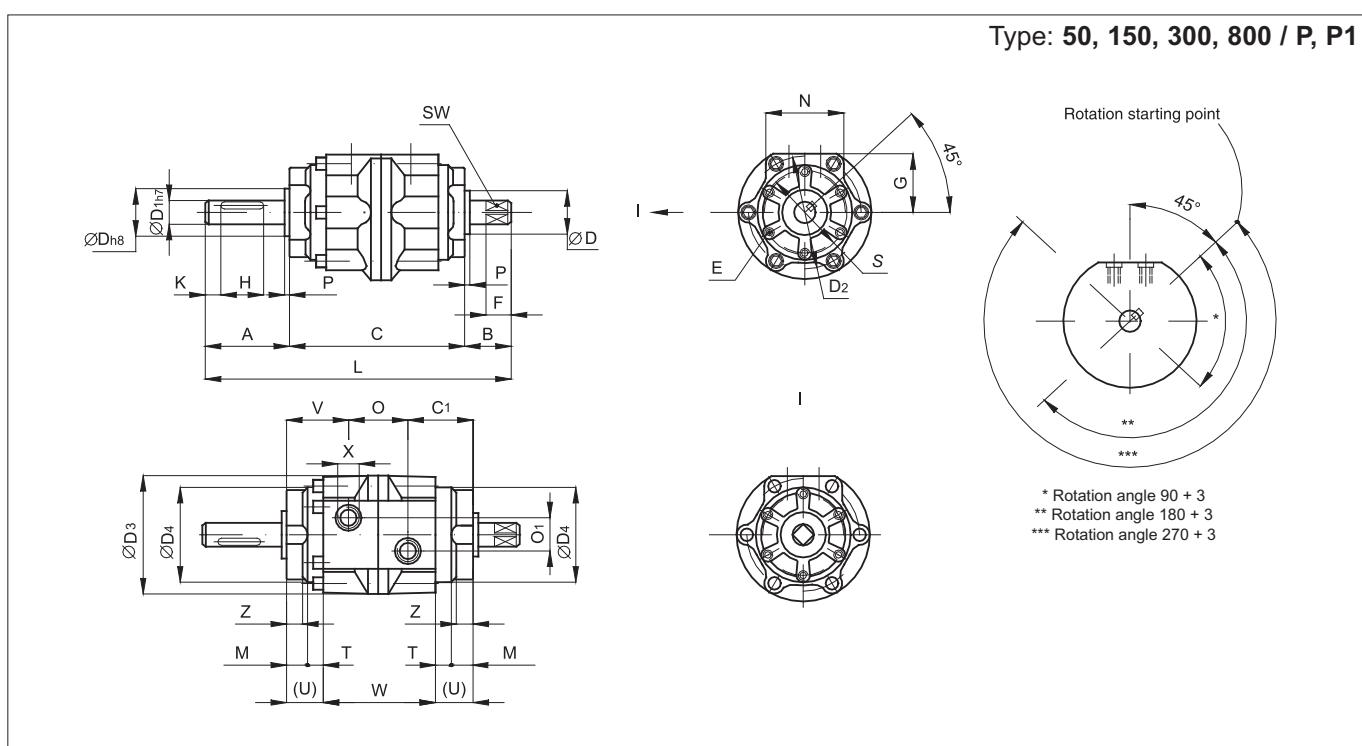
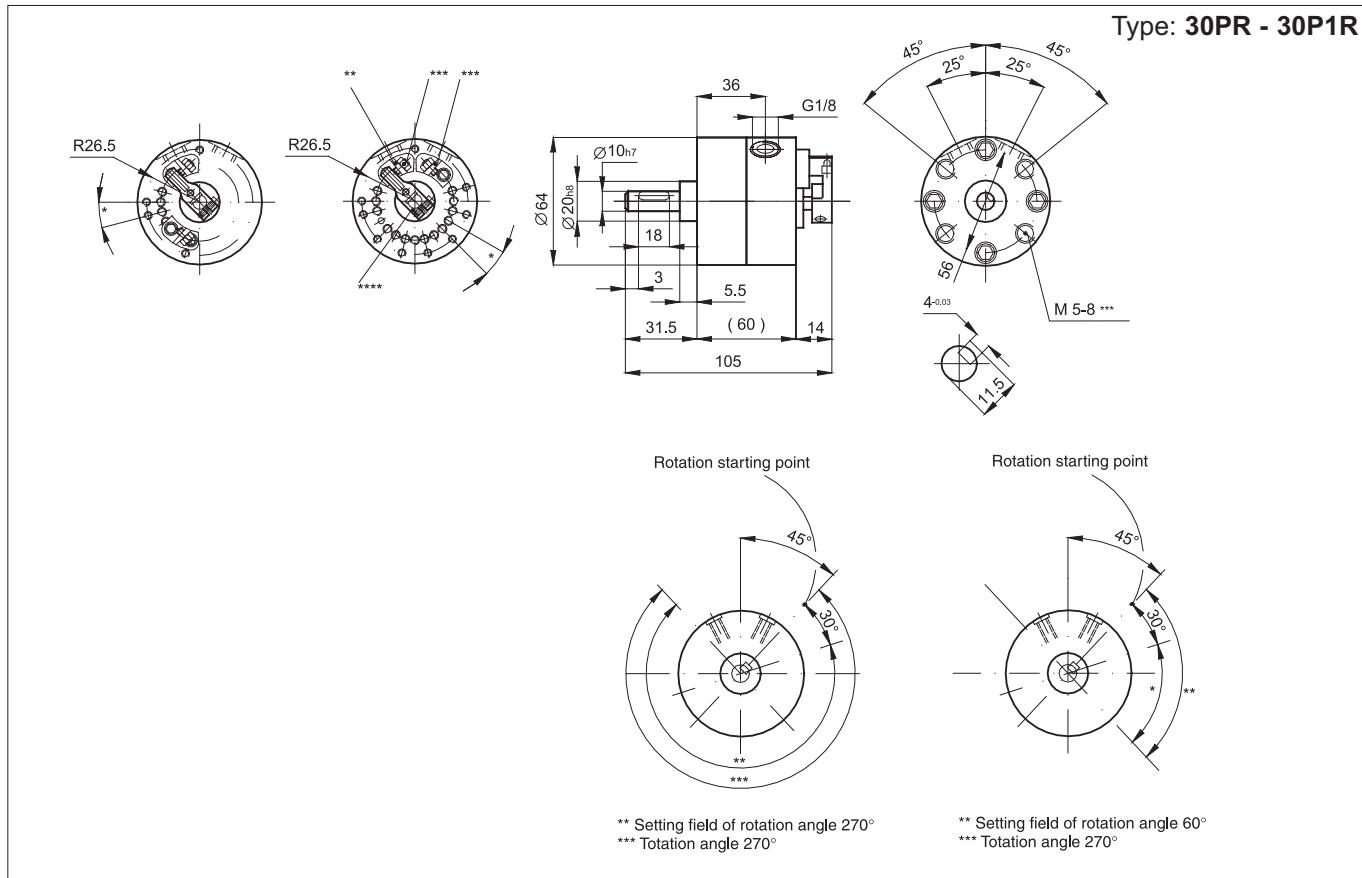
Dimensions and oscillating points



Hi-Rotor Cylinders

Sizes: 1, 3, 10, 20, 30, 50, 150, 300, 800

Double acting

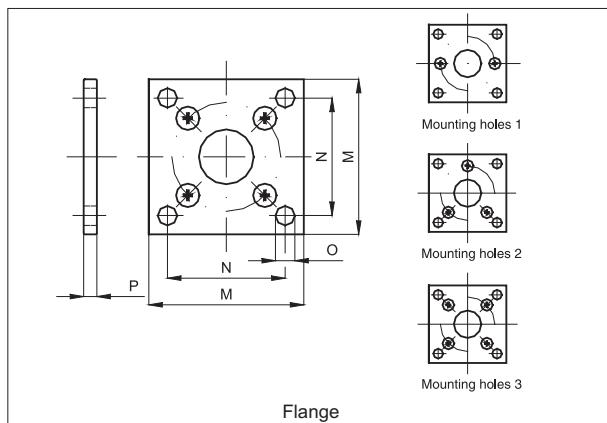


Size	A	B	C	C1	D	D1	D2	D3	D4	E	F	G	H	K	L	M	N	O	O1	P	S	T	U	V	W	X	Z	SW	Kg
50	39,5	19,5	86	29	25	12	68	79	58	M6x9	13	36	20	5	145	14	44	28	16	2,5	45	6	20	29	46	1/8"	11	10	0,82
150	53,5	23,5	103	34,5	30	17	97	110	85,5	M8x12	16	51	36	5	180	15,5	61	34	24	3	70	8	23,5	34,5	56	1/4"	10,5	13	2
300	65	30	125	41,5	45	25	125	141,5	110	M10x15	22	66	40	5	220	17,5	78	42	32	3,5	80	10	27,5	41,5	70	3/8"	13	19	4,3
800	69,5	44,5	171	53,5	70	40	173	196	152	M12x18	25	90	40	10	285	21	110	64	44	4,5	120	11,5	32,5	53,5	106	1/2"	14,5	32	12,7

Hi-Rotor Cylinders

Sizes: 1, 3, 10, 20, 30, 50, 150, 300, 800

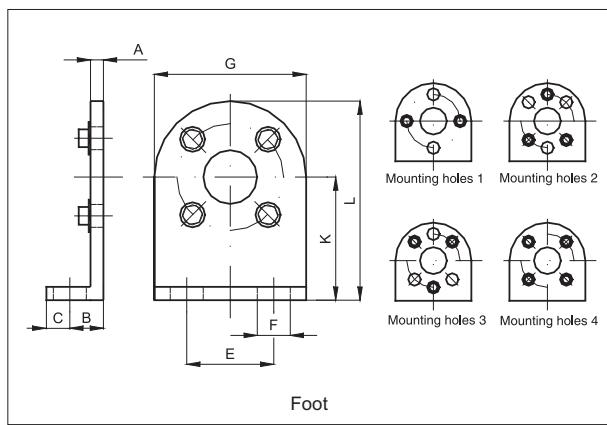
Mountings



Type: **FP**

Code	Item	Size	M	N	O	P	Mounting holes	Rotation angles*	Kg
040901	FP001	1	30	24	3,4	2	1	180°	0,04
040902	FP003	3	27	30	3,4	2,5	2	120°	0,07
040903	FP010	10	42	34	3,5	3	2	120°	0,14
040904	FP020	20	50	41	5,5	3,5	3	90°	0,36
040905	FP030	30	64	52	5,5	3,5	3	90°	0,47

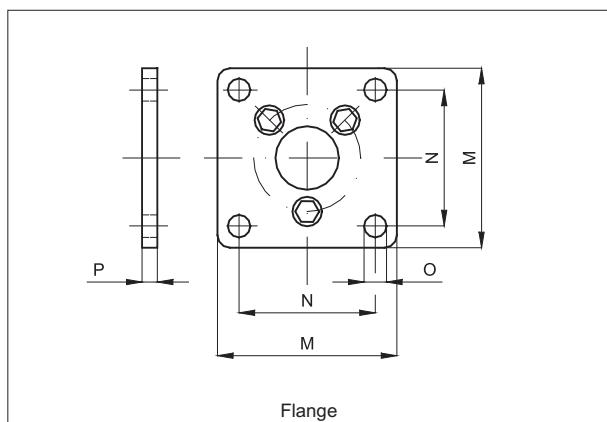
* The mounting can be rotated through the indicated angle.



Type: **PP**

Code	Item	Size	A	B	C	E	F	G	K	L	Mount. Holes*	Rot. ang.*	Kg
040910	PP001	1	2	10	5	20	4,8	30	22	37	1	90°	0,04
040911	PP003	3	2,5	11	7	26	4,8	36	25	43	2	60°	0,05
040912	PP010	10	2,3	12	8	30	5,8	42	30	51	3	60°	0,09
040913	PP020	20	3,5	15	10	36	7	49	34	58,5	4	90°	0,20
040914	PP030	30	4,5	18	12	48	6,5	66	42	75	4	90°	0,20

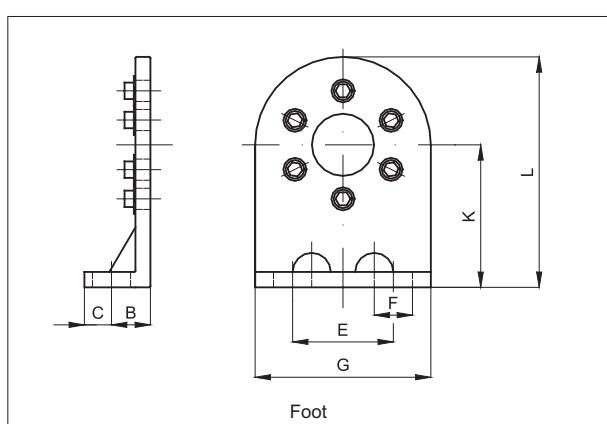
* The mounting can be rotated through the indicated angle.



Type: **FP**

Code	Item	Size	M	N	O	P	Rotation angles*	Kg
040920	FP050	50	80	64	7	35	60°	0,20
040921	FP150	150	110	88	9	47,5	60°	0,51

* The mounting can be rotated through the indicated angle.



Type: **PP**

Code	Item	Size	A	B	C	E	F	G	K	L	Rotation angles*	Kg
040925	PP050	50	4,5	25	10	55	11	75	45	82,5	60°	0,26
040926	PP150	150	10	28	12	80	13	110	65	115	60°	1,14
040927	PP300	300	12	32	13	100	15	140	80	135	60°	1,24
040928	PP800	800	15	35	15	140	15	200	110	185	60°	4,45

* The mounting can be rotated through the indicated angle.

Hi-Rotor Cylinders

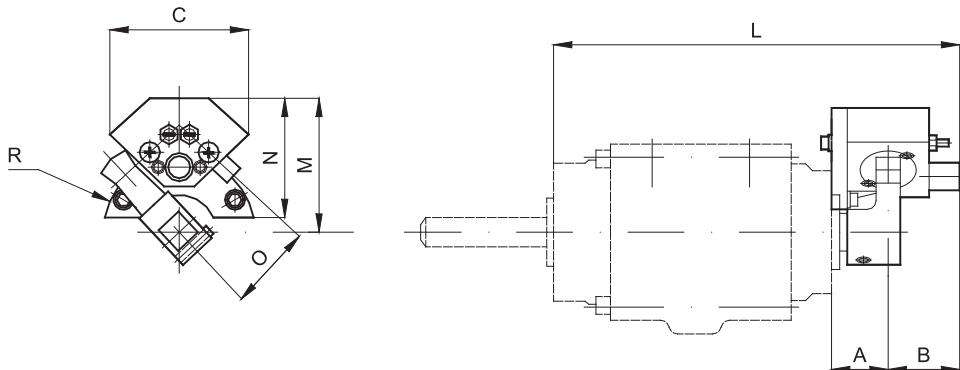
Sizes: 1, 3, 10, 20, 30, 50, 150, 300, 800

Mountings



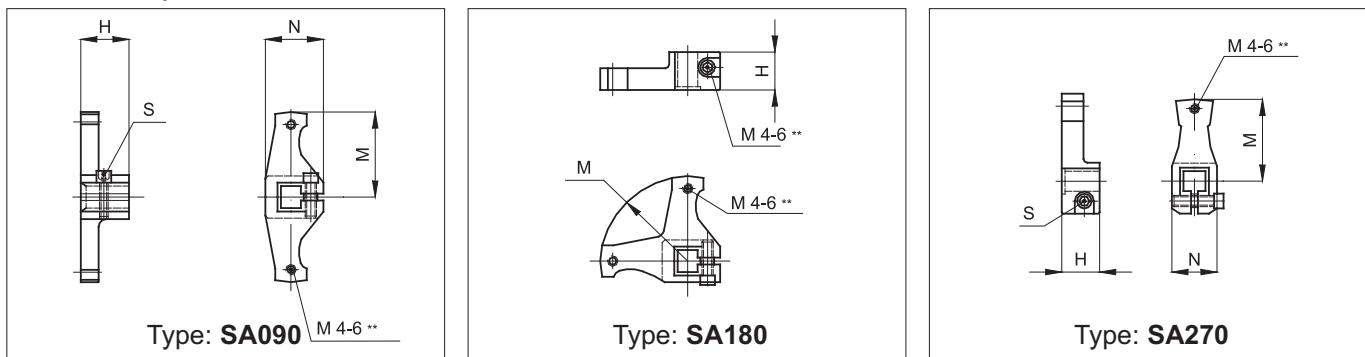
Hydro-cushion kit

Type: KA



Code	Item	Size	A	B	C	L	M	N	O	R
040930	KA050	50	20,5	30	56	136,5	54	50	34	38
040931	KA150	150	22,5	34	80	159,5	71,5	62	46	51
040932	KA300	300	25,5	37	95	187,5	95	87	62	68

Bracket for hydraulic cushion

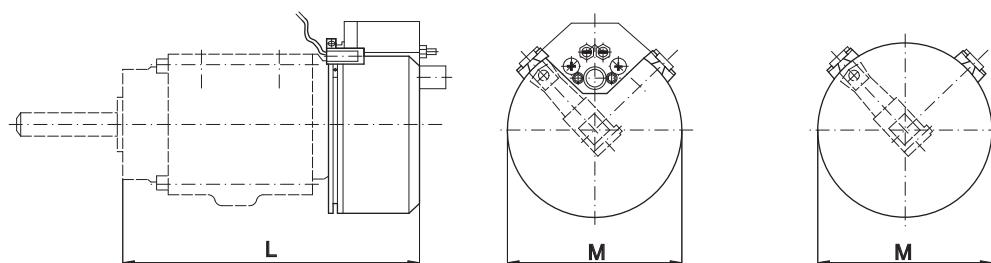


** Depth

Code	Item	Code	Item	Code	Item	Size	H	M	N	S
040935	SA090050	040940	SA180050	040945	SA270050	50	18	38	23	4
040936	SA090150	040941	SA180150	040946	SA270150	150	20	51	28	5
040937	SA090300	040942	SA180300	040947	SA270300	300	23,5	68	40	6

Kit for the mounting of the sensors (with one sensor), option M.....

L	M
123	85
143	111
169	145



The kit is to be ordered together with the cylinder.

Options and technical data of the magnetic reed switches

Option	Nominal voltage (V)	Rating current range (mA)	LED	Varistor
MA1	AC 100 / DC 24	5 ~ 45	•	
MD1	DC 24	25 ~ 65	•	
MA2L	AC 100 / 110	5 ~ 150	•	•
MA2H	AC 200 / 220	5 ~ 150	•	•
MD3	DC 5,6	≤ 50 (inductive load) ≤ 300 (resistive load)	•	
MR	AC / DC 5 ~ 100	≤ 50 (inductive load) ≤ 300 (resistive load)		

Rotary actuators serie ARC

Bores from 15 to 25 mm

Double acting



Standard executions		
Version	Code	Item
Bore 15 mm (x2)	073063	15ARC
Bore 18 mm (x2)	073064	18ARC
Bore 20 mm (x2)	073065	20ARC
Bore 25 mm (x2)	073066	25ARC



Options	Suffix
With hydraulic shock absorbers	D
Rotary actuator	Cushioning capability max (kgf.m)
15ARC	2
18ARC	4
20ARC	4
25ARC	20

Series of rotary actuators with double rack with rotation angles 90°-180° and adjustmenet angle from 0°÷90°.

They are standard magnetic provided with groves on the body allowing the direct mounting of the magnetic reed switches.

The mechanical stoppers are standard; the hydraulic shock absorbers can be supplied on request.

For the magnetic reed switches type ASC see from page 1.110.1

How to order: 20ARCD

20	ARC	D
Bore	Type	Option

Technical data				
Type	15ARC	18ARC	20ARC	25ARC
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continous.			
Pressure range	1,5 ÷ 7 bar			
Temperature range	0 °C ÷ + 50° C			
Rotation angle	90° and 180°			
Adjustment angle	0° ÷ 90°			
Rotation moments (Nm)	1,5	2,2	3,2	5,5
Ports	M5			1/8"
Weight (g)	530	990	1290	2100

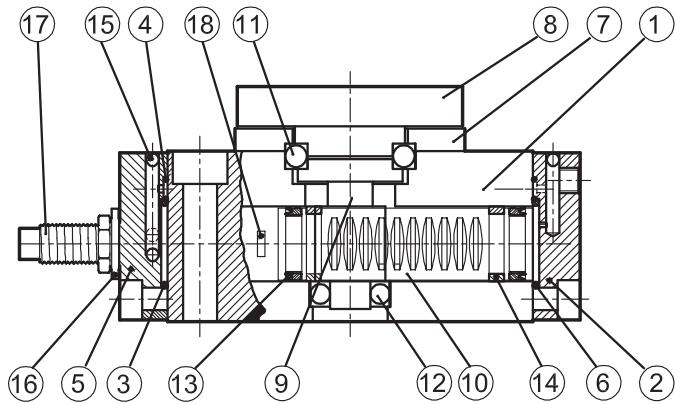
Rotary actuators serie ARC

Bores from 15 to 25 mm

Double acting

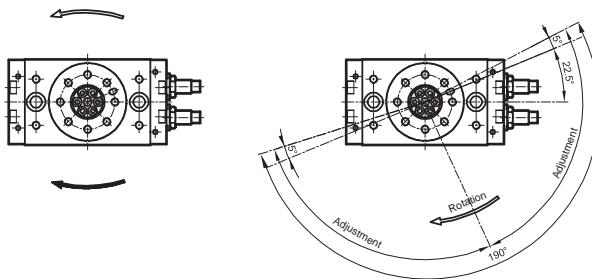


Materials

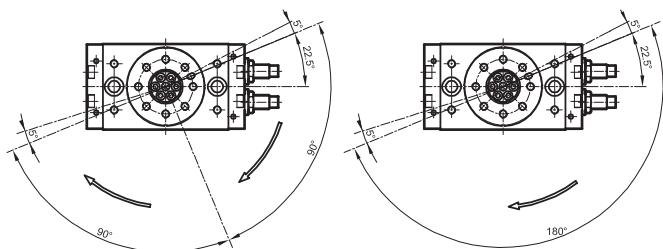


N.	Component	Material
1	Body	Anodized aluminium
2	Front head	Anodized aluminium
3	O-Ring	NBR
4	O-Ring	NBR
5	Rear head	Anodized aluminium
6	O-Ring	NBR
7	Bearings cover	Anodized aluminium
8	Rotating plate	Anodized aluminium
9	Piston rod	Hardened steel
10	Rack	Stainless steel
11	Spherical bearing	Steel
12	Spherical bearing	Steel
13	Piston seal	NBR
14	Washer	Plastic material
15	Ball	Steel alloy
16	Limit switch seal	NBR
17	Mechanical stopper	Steel alloy
18	Magnet	Metal

Direction and rotation angle



Rotation angles



Possible loads

Type \ Kind of loads	Side (N)	(a)	(b)	Torque moment (N)
Load	Side (N)	(a)	(b)	Torque moment (N)
ARC15	70	68	70	2
ARC18	140	130	130	3,5
ARC20	185	188	358	4,8
ARC25	300	285	442	9

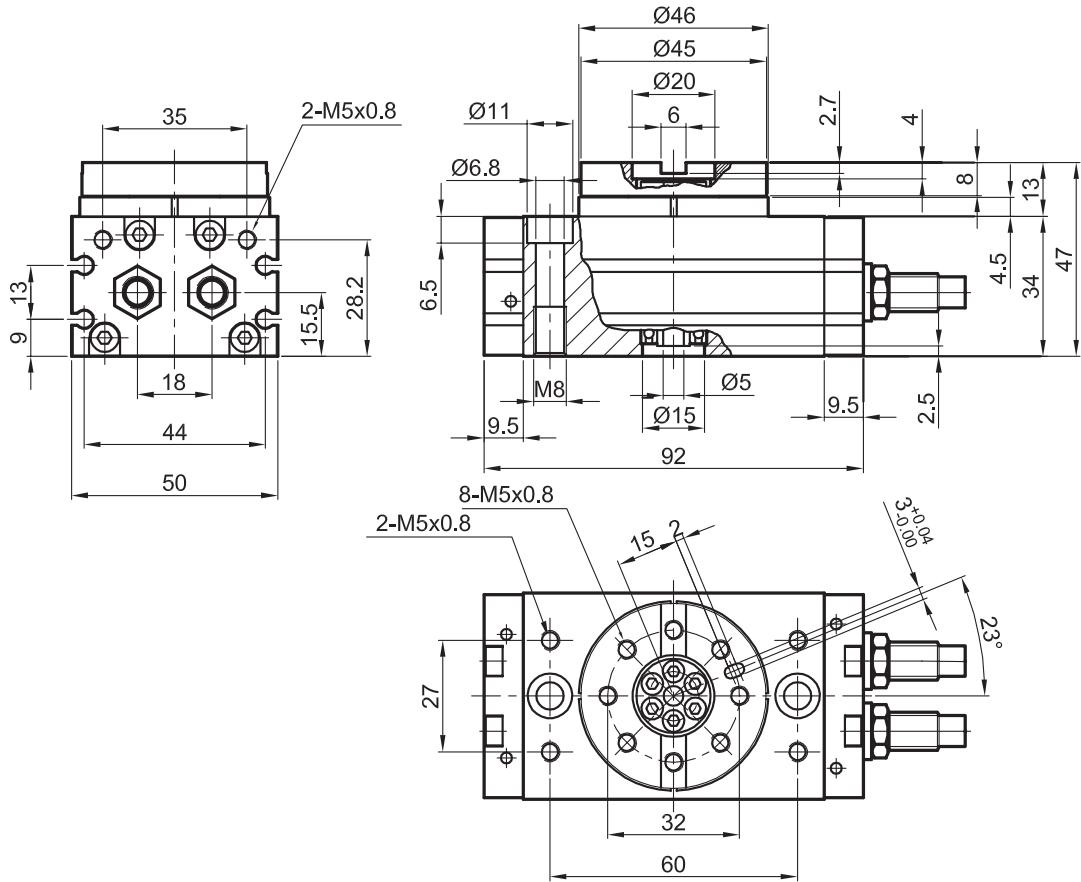
Rotary actuators serie ARC

Bores from 15 to 25 mm

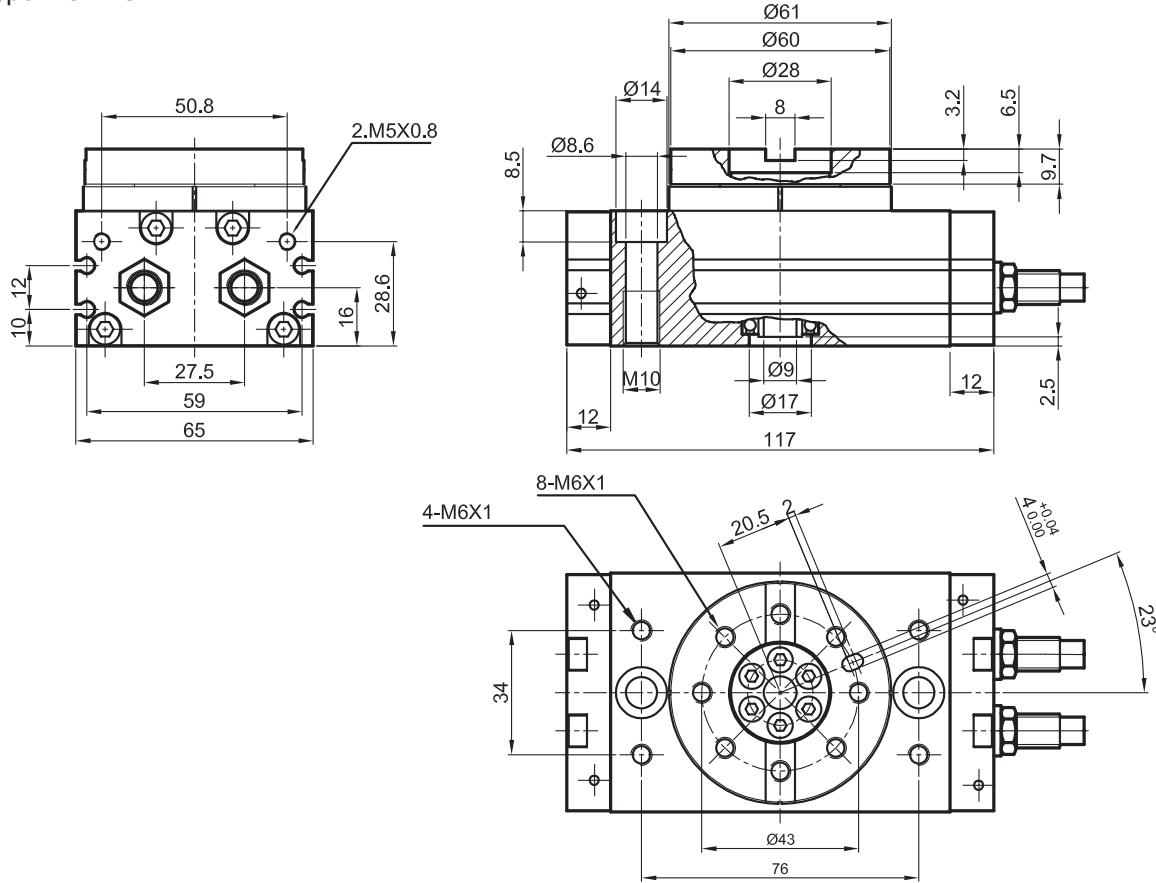
Double acting



Type: 15ARC



Type: 18ARC



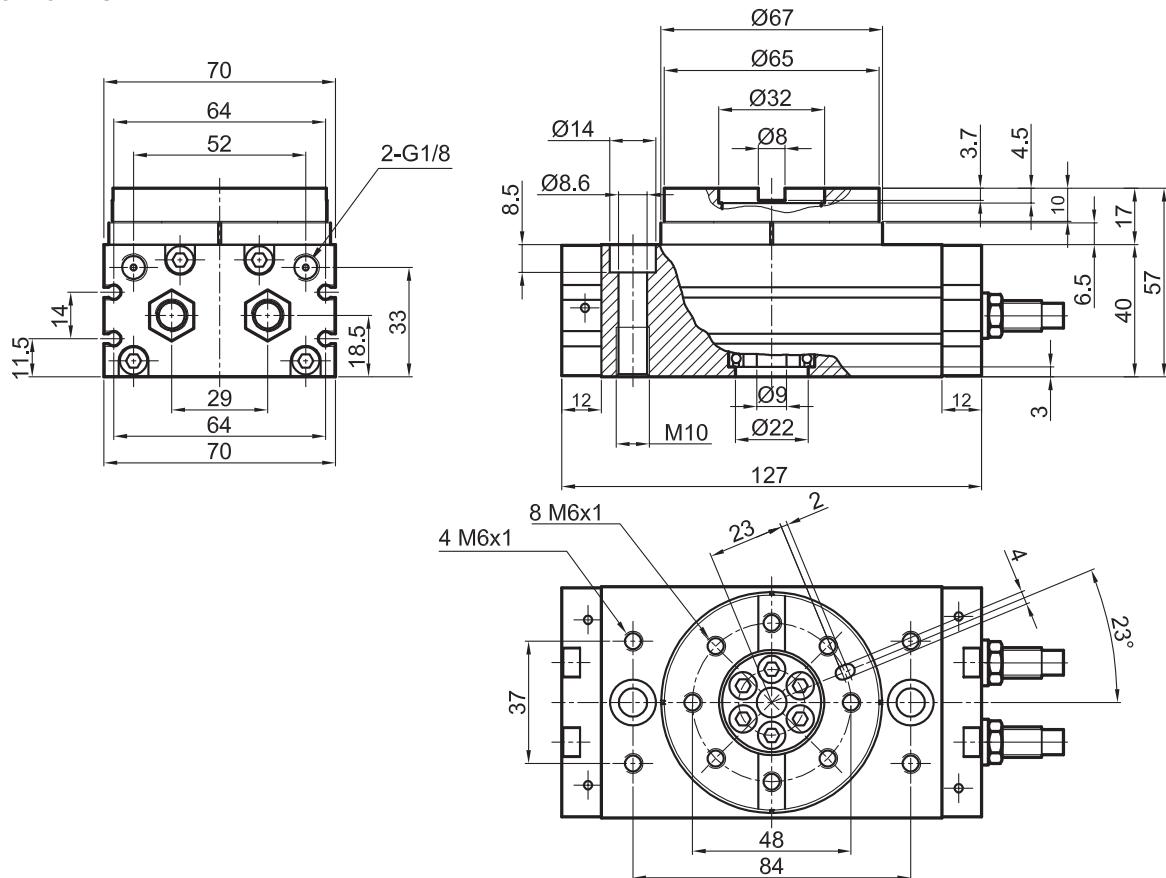
Rotary actuators serie ARC

Bores from 15 to 25 mm

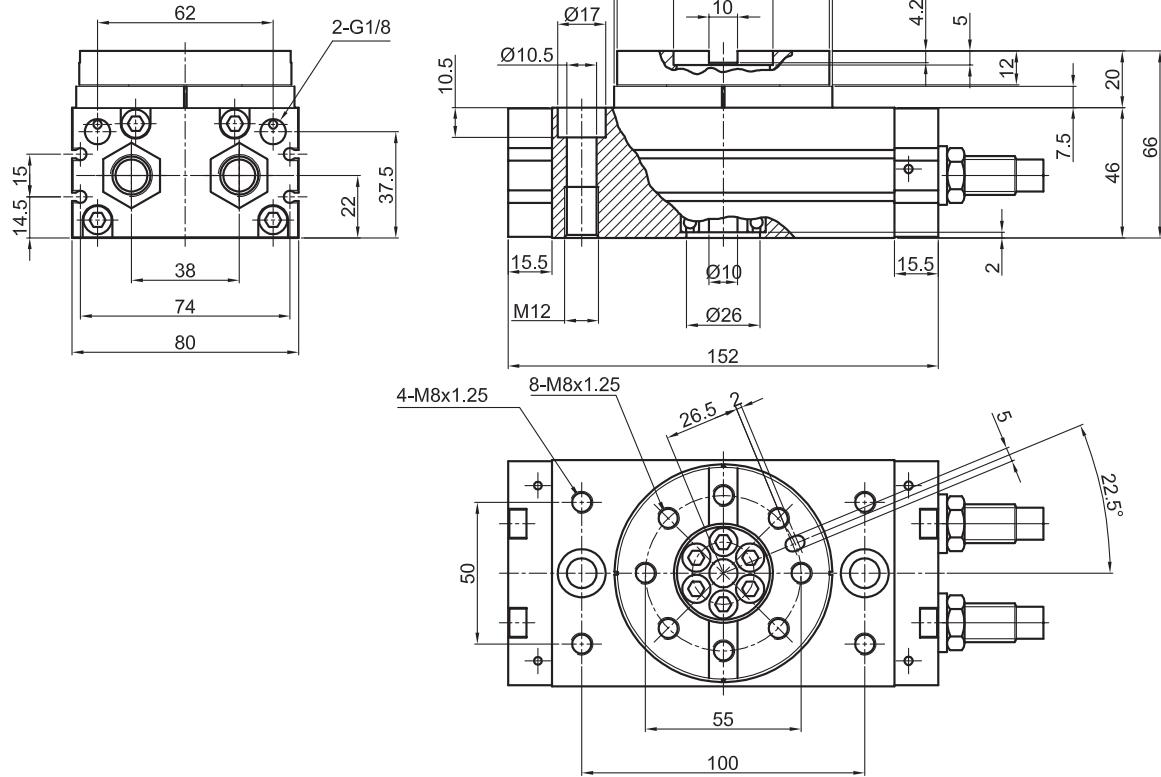
Double acting



Type: 20ARC



Type: 25ARC



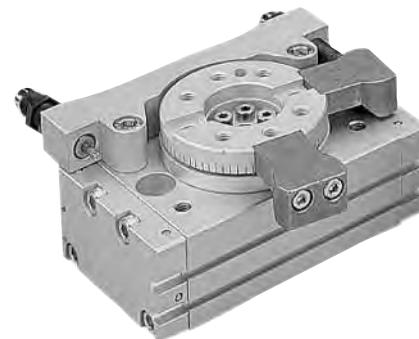
Rotary actuators serie ARP

Bores from 15 to 25 mm

Double acting



Esecuzioni standard		
Version	Code	Item
Bore 15 mm (x2), 90°	073071	15/90ARP
Bore 18 mm (x2), 90°	073072	18/90ARP
Bore 20 mm (x2), 90°	073073	20/90ARP
Bore 25 mm (x2), 90°	073074	25/90ARP
Bore 15 mm (x2), 180°	073079	15/180ARP
Bore 18 mm (x2), 180°	073080	18/180ARP
Bore 20 mm (x2), 180°	073081	20/180ARP
Bore 25 mm (x2), 180°	073082	25/180ARP



Option	Suffix
With hydraulic shock absorbers	D
Rotary actuator	Cushioning capability max (kgf.m)
15ARP	0,1
18ARP	0,15
20ARP	2,1
25ARP	2,1

Series of rotary actuators with piston and external mechanical stoppers.

Rotation angles 90°-180°.

They are standard magnetic provided with grooves on the body allowing the direct mounting of the magnetic reed switches.

The mechanical stoppers are standard; the hydraulic shock absorbers can be supplied on request.

For the magnetic reed switches type ASC see from page 1.110.1

How to order: 20ARCD

19	/	90	ARP	D
Bore	/	Rotation	Type	Option

Technical data				
Type	15ARP	18ARP	20ARP	25ARP
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continous.			
Pressure range	1,5 ÷ 7 bar			
Temperature range	0 °C ÷ + 50 °C			
Rotation angle	90° and 180°			
Rotation moments (Nm)	2,5	4,1	5,5	9,8
Ports	M5x0,8		1/8"	
Weight (g)				
Materials	Body: Seals:	Anodized aluminium NBR		

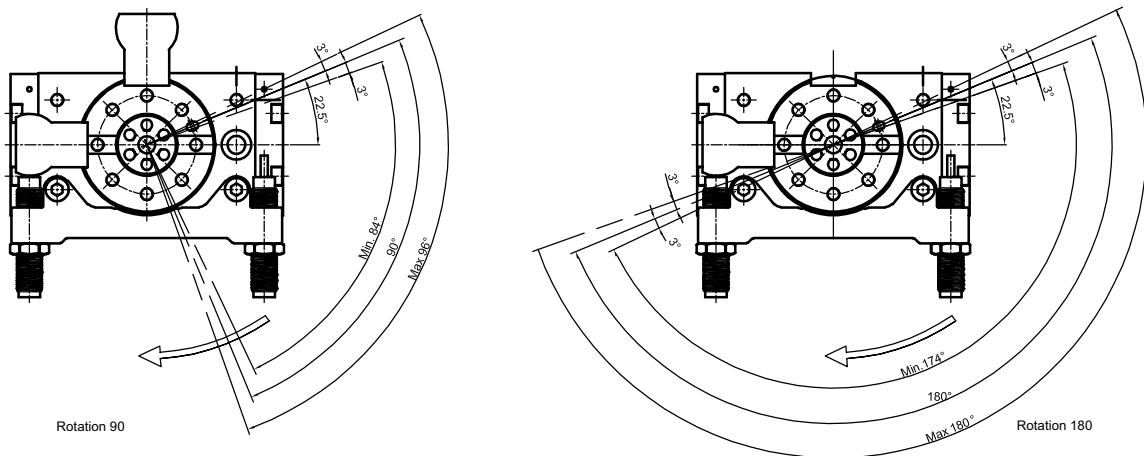
Rotary actuators serie ARP

Bores from 15 to 25 mm

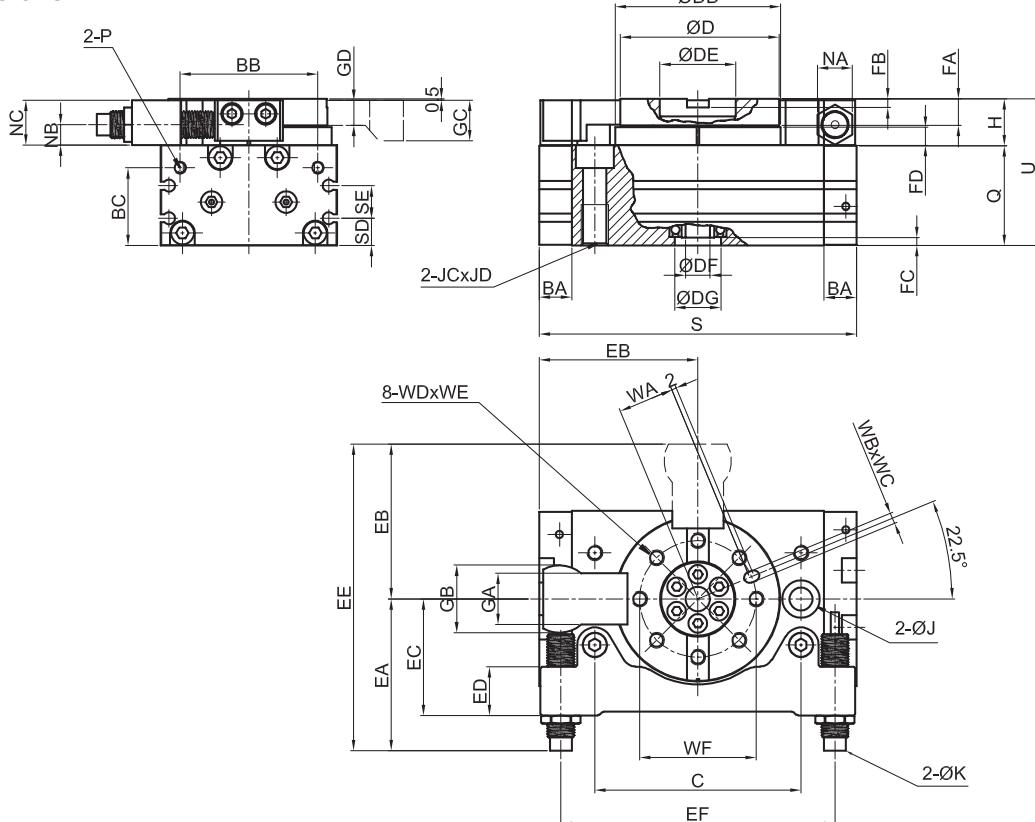
Double acting



Rotation angles



Dimensions



Type	A	BA	BB	BC	C	D	DD	DE	DF	DG	EA	EB	EC	ED	EE	EF	FA	FB	FC	FD	GA	GB	GC	GD	H
15ARP	50	9,5	35	28,2	60	45	46	20	5	15	51,6	44,5	34	14	96,1	80	8	4	2,5	4,5	15	20	12	7,5	13
18ARP	65	12	50,8	28,5	76	60	61	28	9	17	56	57	43	18	113	101	9,7	6,5	2,5	6,6	19	25	9	15	17
20ARP	70	12	52	33	84	65	67	32	9	22	59	62	46	18	121	110	10	4,5	3	6,5	20	28	16	9	17
25ARP	80	15,5	62	37,5	100	75	77	35	10	26	85	73	55	20	158	131	12	5	2	7,5	25	35	18	11,5	20

Type	J	JA	JB	JC	JD	K	NA	NB	NC	ND	P	Q	S	SD	SE	SF	U	WA	WB	WC	WD	WE	WF
15ARP	6,6	11	6,5	M8x1,25	12	M8x1	11	6	12,5	3	M5x0,8	34	92	9	13	44	47	15	3	3,5	M5x0,8	8	32
18ARP	8,6	14	8,5	M10x1,5	15	M10x1	12,7	7,5	16,5	3	M5x0,8	37	117	10	12	59	54	20,5	4	5	M6x1	10	43
20ARP	8,6	14	8,5	M10x1,5	15	M10x1	12,7	8,5	16,5	3	RC 1/8	40	127	11,5	14	64	57	23	4	4,5	M6x1	10	48
25ARP	10,5	17	10,5	M12x1,75	18	M14x1,5	19	8,5	19,5	6	RC 1/8	46	152	14,5	15	74	66	26,5	5	5,5	M8x1,25	10	55

Cartridge Cylinders

Bores from 6 to 16 mm

Single acting



Standard executions		
Version	Symbol	Type
With non-threaded rod		MCN
With threaded rod		MCF



Series of cartridge microcylinders single acting with threaded body.

The threaded body allows a further adjustment of the end position of the stroke.

How to order: 10/15 MCN

Options	Suffix
Special versions on request	/ S

10	/	15	MCN	
Bore	/	Stroke	Type	Option

Seal kits not available for these cylinders.

Technical data									
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous.								
Pressure range	2 + 7 bar								
Temperature range	-20 °C + + 80°C								
Materials	<table> <tr> <td>Body:</td> <td>Nickel plated brass</td> </tr> <tr> <td>Rod:</td> <td>Stainless steel AISI 303</td> </tr> <tr> <td>Seals:</td> <td>Polyurethane</td> </tr> <tr> <td>Spring:</td> <td>Stainless steel AISI 302</td> </tr> </table>	Body:	Nickel plated brass	Rod:	Stainless steel AISI 303	Seals:	Polyurethane	Spring:	Stainless steel AISI 302
Body:	Nickel plated brass								
Rod:	Stainless steel AISI 303								
Seals:	Polyurethane								
Spring:	Stainless steel AISI 302								

Bore (mm)	Possible strokes (mm)	Thrust force at 6 bar (N)	Traction force (N)			Maximum side admissible load (N)
			5	10	15	
6	5, 10, 15	14	1,4	2	1,5	0,1
10		42	3,9	3,4	2,9	0,15
16		109	9,9	8,7	7,4	0,20

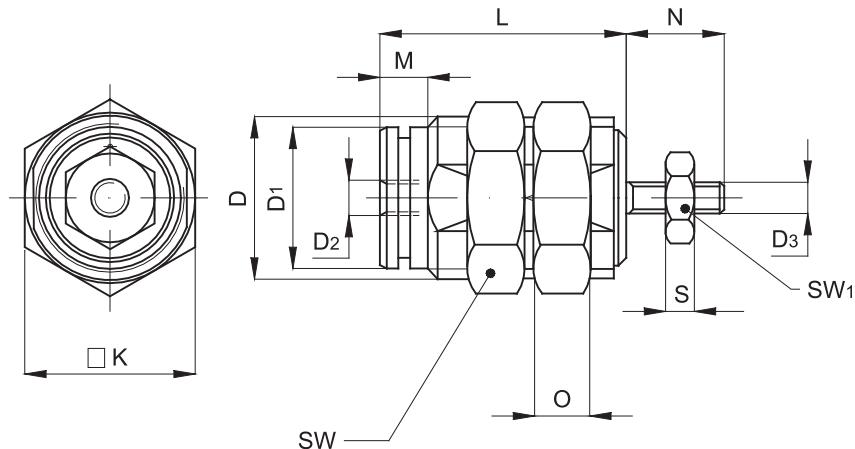
Cartridge Cylinders

Bores from 6 to 16 mm

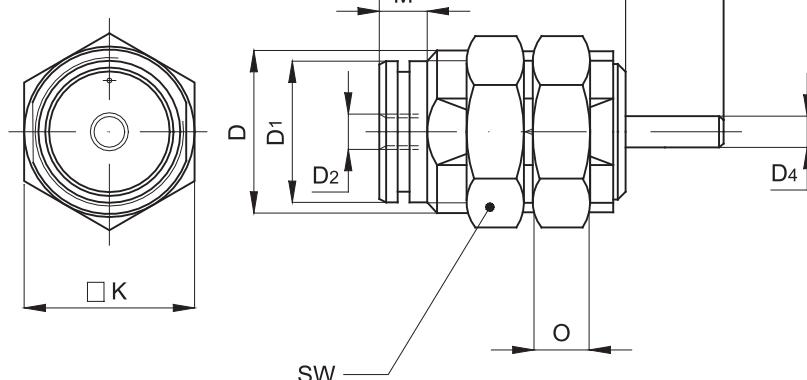
Single acting



Type: **MCF**



Type: **MCN**



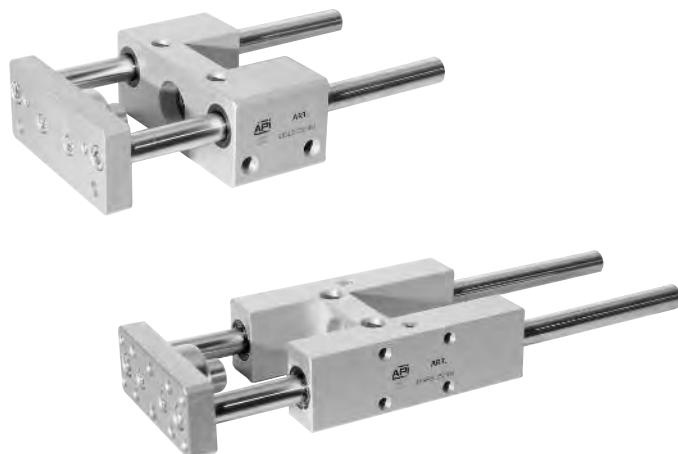
\varnothing mm	D	D ₁	D ₂	D ₃	D ₄	K	M	L (with the stroke included)			N	O	SW	S	SW ₁
								5	10	15					
6	M10x1	8,5	M5	M3	3	9	5	19,5	26,5	33,5	8	3	14	2,4	5,5
10	M15x1,5	12	M5	M4	4	19	7	23	29,5	36,5	10,5	4	19	2	7
16	M22x1,5	19	M5	M5	5	20	6	27	32	37	13	5	27	4	8

Slide Units for Cylinders ISO 6432

Bores from 12 to 25 mm



Standard executions		
Version	Symbol	Type
U-shaped (light) with sintered bronze bushings		UGLB
H-shaped (heavy) with sintered bronze bushings		UGPB
H-shaped (heavy) with spherical bearings		UGPS



On request, they can be supplied according Directive 94/9/EC - ATEX
CE II 2 GDc T5

Option	Suffix
Rods in stainless steel AISI 304	K
Special versions on request	/ S

The options can be combined (when this is possible)

Series of linear slide units for cylinders ISO 6432 with four possible fixing surfaces.

They must be used with heavy loads to guarantee a better linearity of movement and a higher precision.

They can sometimes be used as anti-rotating devices too.

The versions with spherical bearings slide better but can support lighter loads than the versions with bronze bushings.

The U-shaped versions, can support lighter loads than the H-shaped ones.

For loads see pages 1.70.5 - 1.70.10.

How to order: UGPB20/100K

UGPB	20	/	100	K
Type	Cylinder bore	/	Cylinder stroke	Option

Technical data	
Temperature range:	-20 °C + + 70°C
Materials	<p>Body: Anodised aluminium</p> <p>Plate: Anodised aluminium</p> <p>Seals: Polyurethane - Bronze bushing: Sintered bronze</p> <p>Bushings: UGLB - UGPB: Sintered bronze UGPS: Spherical bearings</p> <p>Rods: UGLB - UGPB: Chrome plated steel C45 UGPS: Hardened and chrome plated steel CF51</p>

Cylinder bore (mm)	Standard strokes of cylinders D.A. (mm)	Maximum stroke of cylinders D.A. (mm)
12		
16	10, 25, 50, 80 100, 125, 160	1000
20	200, 250, 320, 400, 500	
25		

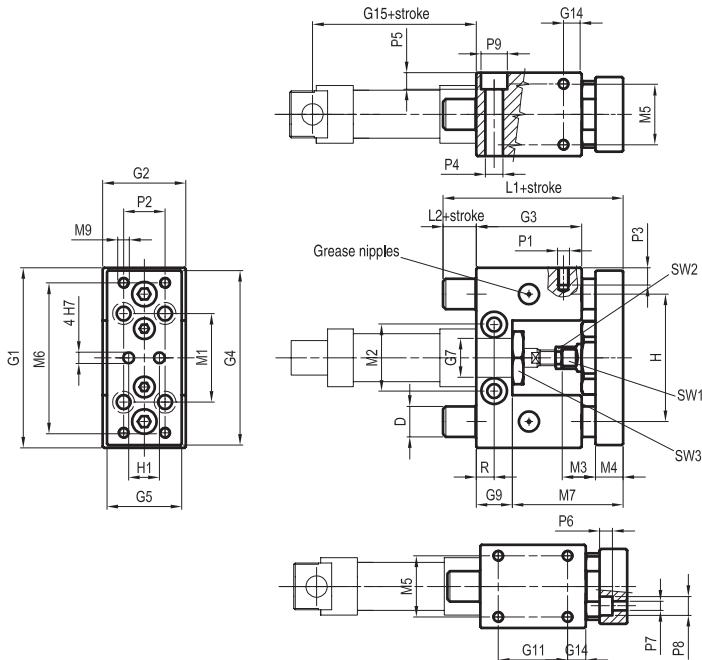
Seal kits not available.

Slide Units for Cylinders ISO 6432

Bores from 12 to 25 mm



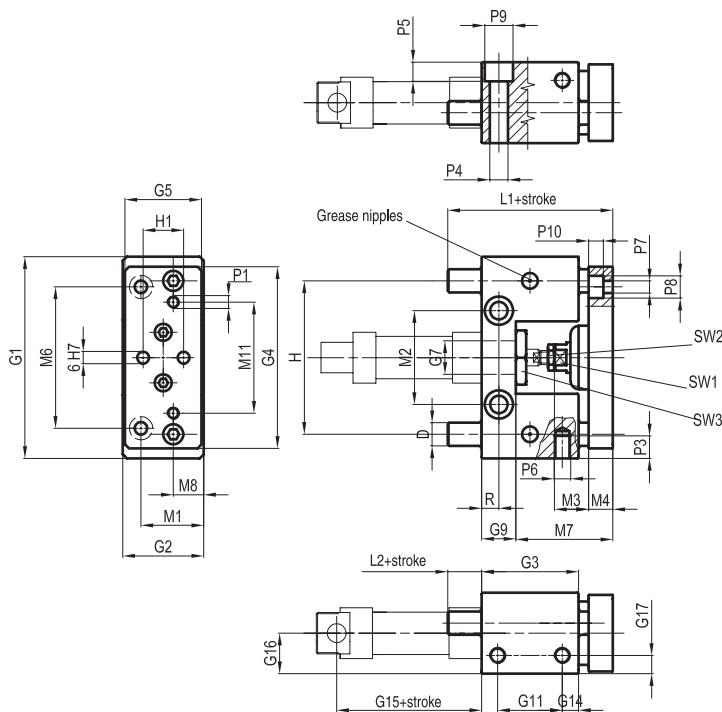
Type: UGLB 12/16



\varnothing mm	D	G ₁	G ₂	G ₃	G ₄	G ₅	G ₇	G ₉	G ₁₁	G ₁₄	G ₁₅	H	H ₁	L ₁	L ₂	M ₁	M ₂	M ₃
12	10	65	30	38	63	27	16	13	25	6,5	53	46	32	74	10	32	24	12
16	10	65	30	38	63	27	16	13	25	6,5	60	46	32	74	10	32	24	12

\varnothing mm	M ₄	M ₅	M ₆	M ₇	M ₉	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉	R	SW ₁	SW ₂	SW ₃
12	10	22	54	51	M4	M4	15	8	5,2	5,5	4,5	4,5	7	8,5	6,5	8	10	19
16	12	22	54	51	M4	M4	15	8	5,2	5,5	4,5	4,5	7	8,5	6,5	8	10	19

Type:: UGLB 20/25



\varnothing mm	D	G ₁	G ₂	G ₃	G ₄	G ₅	\varnothing G ₇	G ₉	G ₁₁	G ₁₄	G ₁₅	G ₁₆	G ₁₇	H	H ₁	R	M ₁	M ₂	M ₃
20	12	100	40	48	90	38	22	17	32	8	71	24	10	76	20	8,5	30	46,5	19
25	12	100	40	48	90	38	22	17	32	8	76	24	10	76	20	8,5	30	46,5	19

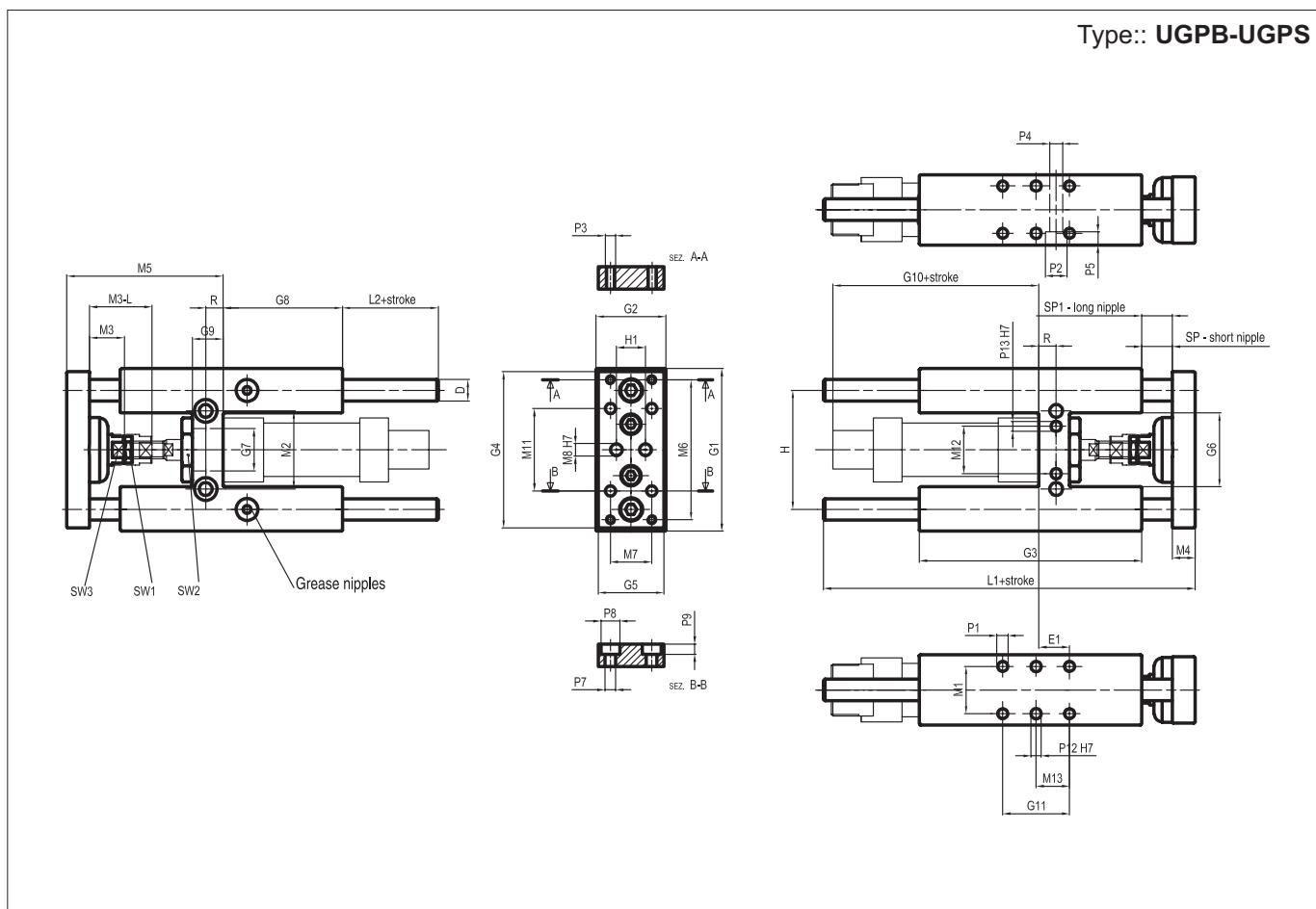
\varnothing mm	M ₄	M ₆	M ₇	M ₈	M ₁₁	L ₁	L ₂	\varnothing P ₁	P ₃	\varnothing P ₄	P ₅	\varnothing P ₆	\varnothing P ₇	\varnothing P ₈	\varnothing P ₉	P ₁₀	SW ₁	SW ₂	SW ₃
20	12	70	48	15	55	75	12	M6	15	9	9	M8	6,5	11	14	7	13	13	27
25	12	70	54	15	55	83	12	M6	15	9	9	M8	6,5	11	14	7	13	17	27

Slide Units for Cylinders ISO 6432

Bores from 12 to 25 mm



Type:: UGPB-UGPS



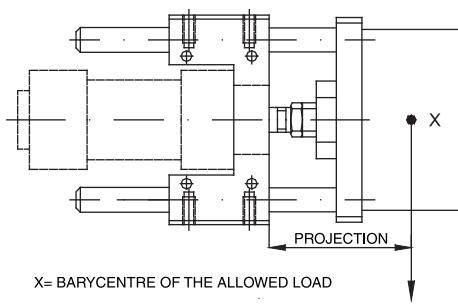
\varnothing mm	D	E_1	G_1	G_2	G_3	G_4	G_5	G_6	G_7	G_8	G_9	G_{10}	G_{11}	H	H_1
12	10	11	65	30	75	63	27	27	16	37	13	66	32,5	46	15
16	10	11	65	30	75	63	27	27	16	37	13	71	32,5	46	15
20	12	15	79	34	108	76	32	36	22	58	15	87	32,5	58	20
25	12	15	79	34	108	76	32	36	22	58	15	90	32,5	58	20

\varnothing mm	L_1	L_2	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_{11}	M_{12}	M_{13}	M_{3L}	P_1
12	125	37	22	24	12	10	51	54	15	4	32	/	16,25	/	M4
16	125	37	22	24	12	10	51	54	15	4	32	/	16,25	/	M4
20	160	37	23	38	18	12	65	68	20	6	40	23	16,25	40	M6
25	160	37	23	38	18	12	65	68	20	6	40	23	16,25	40	M6

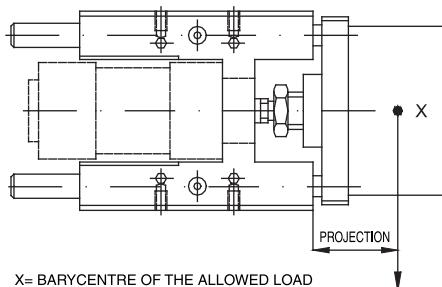
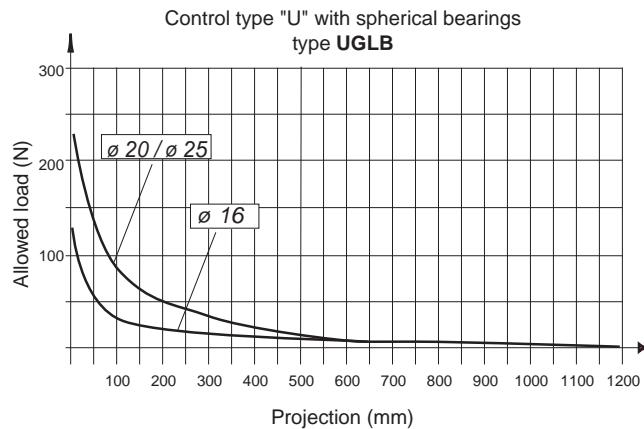
\varnothing mm	P_2	P_3	P_4	P_5	P_7	P_8	P_9	P_{13}	P_2	R	SP	SP1	SW1	SW2	SW3
12	8,5	M4	5,5	5,5	4,5	7	4,5	/	/	6,5	3	3	10	19	8
16	8,5	M4	5,5	5,5	4,5	7	4,5	/	/	6,5	3	3	10	19	8
20	10,5	M5	6,5	7	5,5	9	6	5	5	8,5	3	22	13	27	13
25	10,5	M5	6,5	7	5,5	9	6	5	5	8,5	3	22	17	27	13

Slide Units for Cylinders ISO 6432

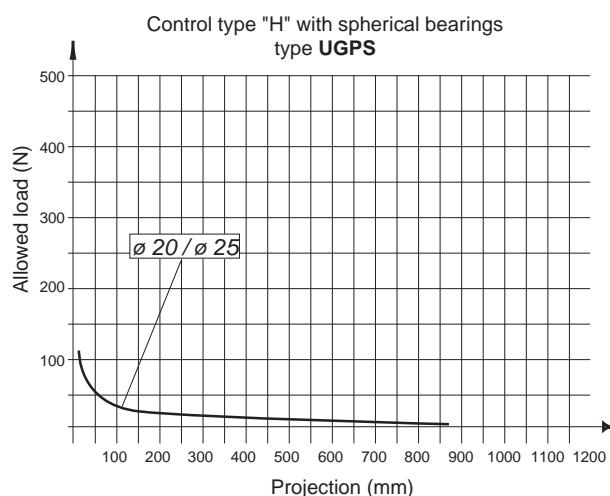
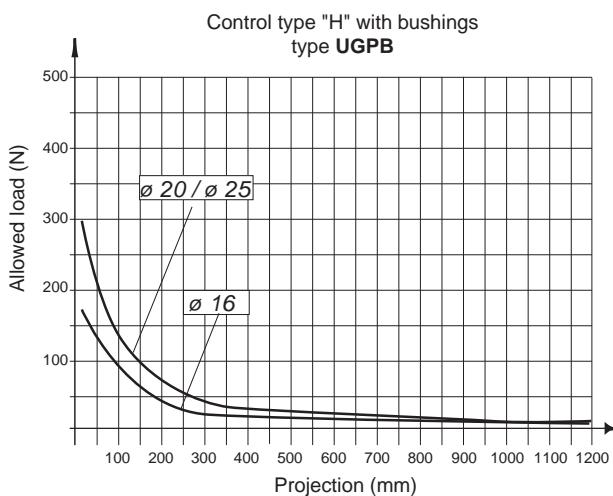
Bores from 12 to 25 mm



Graph of the maximum allowed load according to the projection (vertical loading plane)



Graph of the maximum allowed load according to the projection (vertical loading plane)



Slide Units for Cylinders DIN ISO 6431 and VDMA 24 562

Bores from 32 to 100 mm



Standard executions		
Version	Symbol	Type
U-shaped (light) with sintered bronze bushings		UGLB
H-shaped (heavy) with sintered bronze bushings		UGPB
H-shaped (heavy) with spherical bearings		UGPS



On request, they can be supplied according Directive 94/9/EC - **ATEX**
CE II 2 GDc T5



1

Series of linear slide units for cylinders DIN ISO 6431 and VDMA 24 562 with 4 possible fixing surfaces.

They must be used with heavy loads to guarantee a better linearity of movement and a higher precision.

They can sometimes be used as anti-rotating devices too.

The versions with spherical bearings slide better but can support lighter loads than the version with bronze bushings.

The U-shaped versions, can support lighter loads than the H-shaped ones.

For loads see pages 1.70.25 - 1.70.30.

For mounting accessories see from page 1.70.40.

How to order: UGPS40/200K

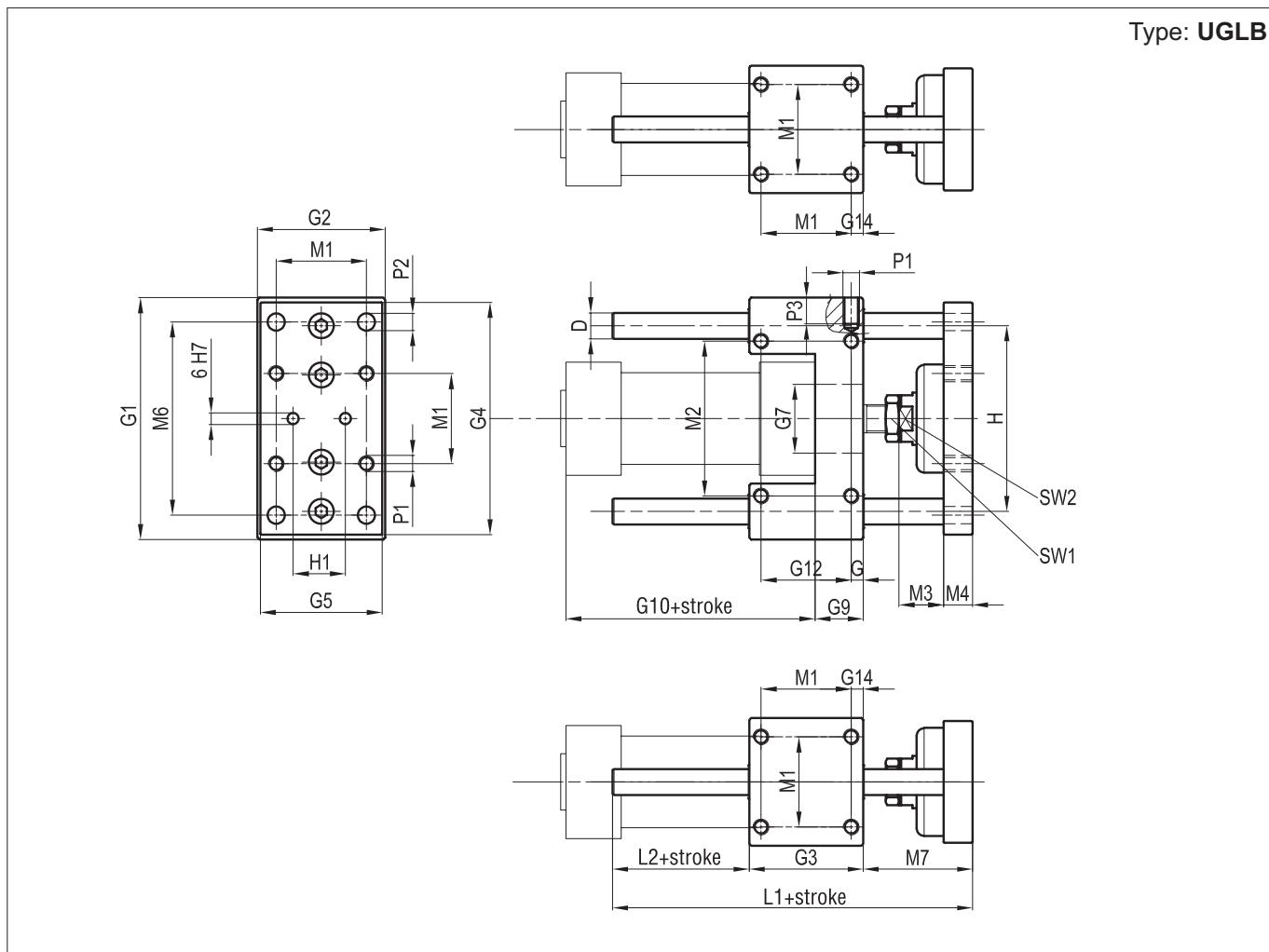
UGPS	40	/	200	K
Type	Cylinder bore	/	Cylinder stroke	Option

The options can be combined (when this is possible)

Technical data	
Temperature range	-20 °C + + 70°C
Materials	<p>Body: Anodised aluminium</p> <p>Plate: Anodised aluminium</p> <p>Seals: Polyurethane</p> <p>Bushings: UGLB-UGPB: Sintered bronze UGPS: Spherical bearings</p> <p>Rods: UGLB-UGPB: Chrome plated steel C45 UGPS: Hardened and chrome plated steel CF51</p>

Cylinder bore (mm)	Standard strokes of cylinders D. A. (mm)	Maximum stroke of cylinders D. A. (mm)	Seal kits not available.
32			
40			
50	25, 50, 80, 100, 125, 160, 200, 250, 300, 320 400, 500	2500	
63			
80			
100			

Slide Units for Cylinders DIN ISO 6431 and VDMA 24 562
Bores from 32 to 100 mm



\varnothing mm	D	G	G ₁	G ₂	G ₃	G ₄	G ₅	\varnothing G ₇	G ₉	G ₁₀	G ₁₂	G ₁₄	H	H ₁
32	12	7,8	100	48	48	95	45	30	17	94	32,5	7,8	74	31
40	12	10	106	56	58	101	53	35	21	105	38	10	80	36
50	16	6,3	125	66	59	120	63	40	25	106	46,5	6,3	96	45
63	16	9,8	132	76	76	127	73	45	25	121	56,5	9,8	104	45
80	20	20	165	98	90	160	95	45	34	128	50	9	130	56
100	20	20	185	118	110	180	115	55	39	138	70	10,5	150	56

\varnothing mm	M ₁	M ₂	M ₃	M ₄	M ₆	M ₇	L ₁	L ₂	\varnothing P ₁	P ₂	P ₃	SW ₁	SW ₂
32	32,5	58	23	11	78	46	108	14	M6	6,5	12	15	17
40	38	64	23	15	84	52	120	10	M6	6,5	12	15	17
50	46,5	80	24	15	100	65	130	6	M8	8,5	15	22	24
63	56,5	95	24	15	105	65	145	4	M8	8,5	15	22	24
80	72	130	30	16	130	71	170	9	M10	11	18	27	27
100	89	150	30	18	150	71	190	9	M10	11	18	27	27

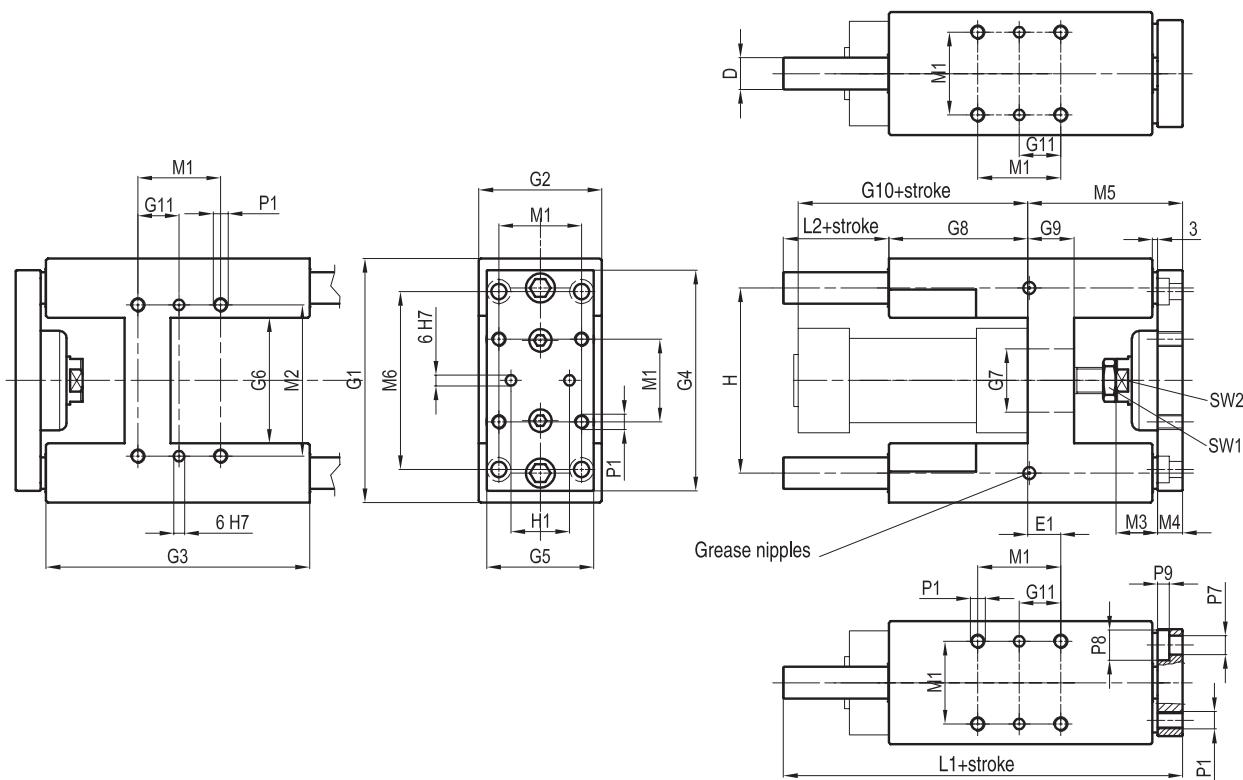
Slide Units for Cylinders DIN ISO 6431 and VDMA 24 562

Bores from 32 to 100 mm



Type: UGPB-UGPS

1

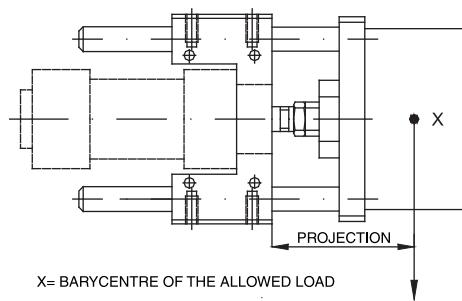


\varnothing mm	D	E ₁	G ₁	G ₂	G ₃	G ₄	G ₅	G ₆	\varnothing G ₇	G ₈	G ₉	G ₁₀	G ₁₁	H	H ₁
32	12	4,3	97	49	125	90	45	50,2	30	76	17	94	16,25	74	31
40	16	11	115	58	139	110	54	58,2	35	81	21	105	19	87	36
50	20	18,8	137	69	148	124	60	70,2	40	78	26	106	23,25	104	45
63	20	15,3	152	85	178	145	79	85,2	45	107	26	121	28,25	119	46
80	25	21	189	105	215	180	99	106	45	128	34	128	36	148	56
100	25	24,5	213	129	220	200	120	131	55	128	39	138	44,5	172	56

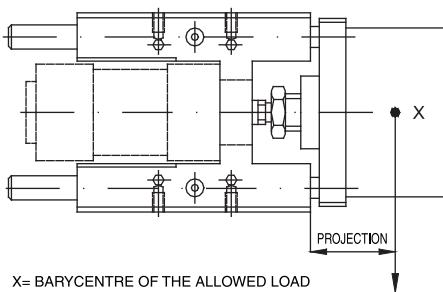
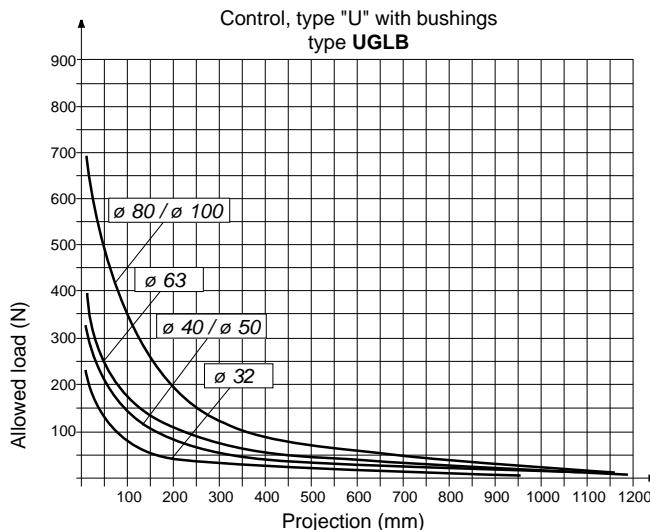
\varnothing mm	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	L ₁	L ₂	\varnothing P ₁	\varnothing P ₇	\varnothing P ₈	P ₉	SW ₁	SW ₂
32	32,5	61	23	11	63	78	177	38	M6	6,5	10,5	6,5	15	17
40	38	69	23	15	76	84	192	35	M6	6,5	10,5	6,5	15	17
50	46,5	85	24	15	88	100	205	39	M8	8,5	13,5	9	22	24
63	56,5	100	24	15	89	105	237	41	M8	8,5	13,5	9	22	24
80	72	130	30	20	110	130	280	42	M10	11	18	11	27	27
100	89	150	30	20	115	150	280	37	M10	11	18	11	27	27

Slide Units for Cylinders DIN ISO 6431 and VDMA 24 562

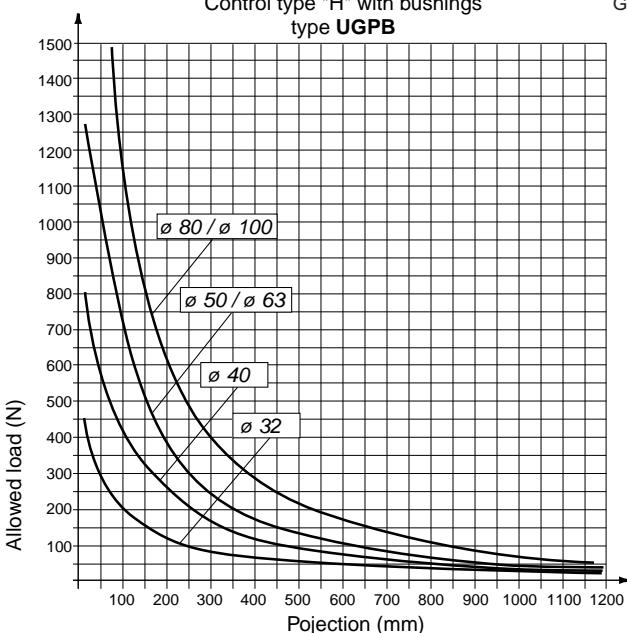
Bores from 32 to 100 mm



Graph of the maximum allowed load according to the projection (vertical loading plane)

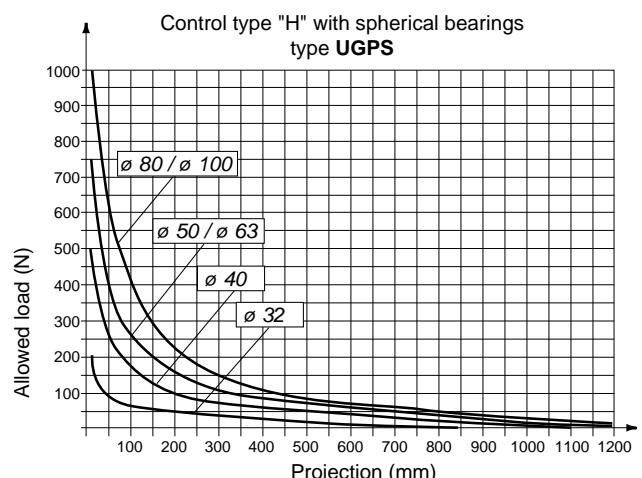


Control type "H" with bushings
type UGPB



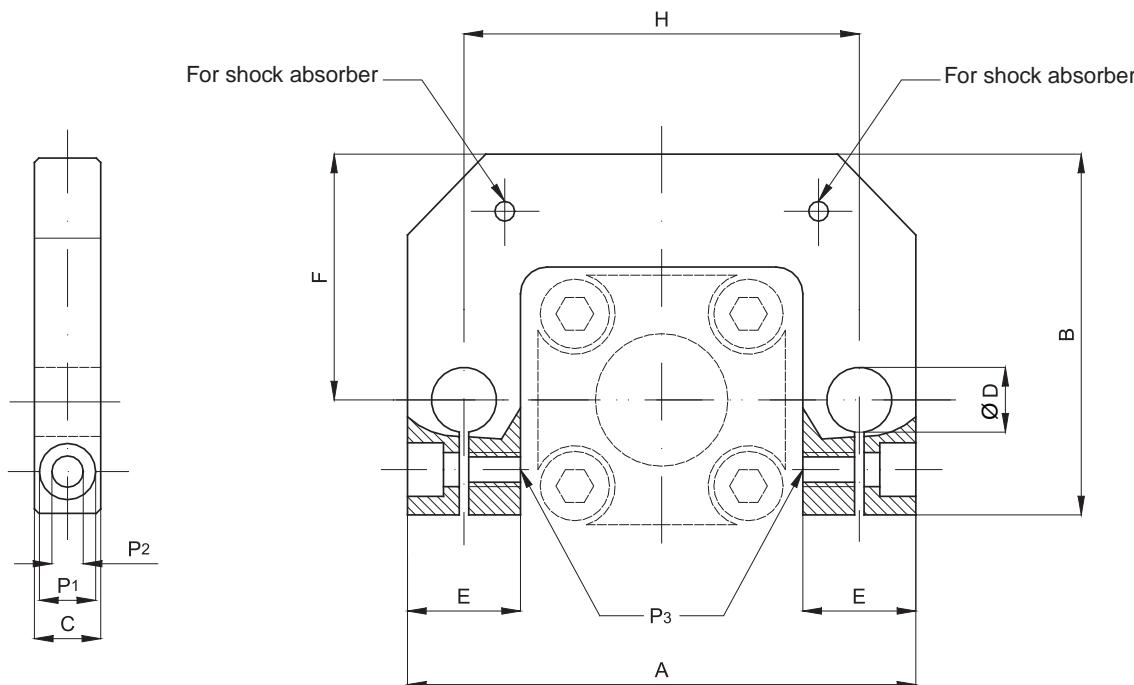
Graph of the maximum allowed load according to the projection (vertical loading plane)

Control type "H" with spherical bearings
type UGPS



Connecting bracket for rods

Type: **SCSG**



Code	Item	For cyl. ø mm	A	B	C	D ø	E	F	H	P ₁	P ₂	P ₃
077901	SCSG032	32	95	68	12	12	21	46	74	10,5	6,5	M6
077902	SCSG040	40	113	78	15	15	26	56	87	10,5	6,5	M6
077903	SCSG050	50	135	98	17	20	30	66	104	10,5	6,5	M6
077904	SCSG063	63	149	118	17	20	31	78	119	13,5	8,5	M8
077905	SCSG080	80	187	142	20	25	39	99	148	13,5	8,5	M8
077906	SCSG100	100	211	163	20	25	39	114	172	13,5	8,5	M8

For shock absorbers see page 1.105.1.



Notes

Piston-rod brake for Cylinders ISO 6432

Bores from 20 to 25 mm



Standard executions		
Version	Symbol	Type
Normally closed		ABS....CRD
Normally open		ABS....ARD



1

Series of piston rod brakes rod units for cylinders ISO 6432 with pneumatic releasing and rod mechanical locking obtained through a double jaw (the locking is pneumatic in the type normally open).

For the application of the locking rod unit to a cylinder ISO 6432 it is necessary to order the cylinder with the rod arranged for this (the extended one in hardened steel, option B; see pages 1.2.1-1.2.10).

Used in applications when compressed air failure would present hazardous cylinder movement.

How to order: ABS020CRD

ABS	020	CRD
Type	Bore	Option

For standard items, codes and dimensions see tables page 1.75.5.

Technical data	
Fluid	Compressed filtered air with or without lubrication
Pressure range	4 ÷ 8 bar
Temperature range	-10 °C ÷ + 80°C
Materials	Body: Anodised aluminium Jaws: Brass Seals: Nitrile rubber (NBR) Locking cylinder: Anodised aluminium

Cylinder bore (mm)	Locking force (N)
20	300
25	400

The locking force refers to static load; slidings can happen exceeding the maximum indicated values.

The locking rod unit must be unclamped only when both chambers of the cylinder are in pressure, otherwise the cylinder rod could move not uniformly and this could cause damage to the application.

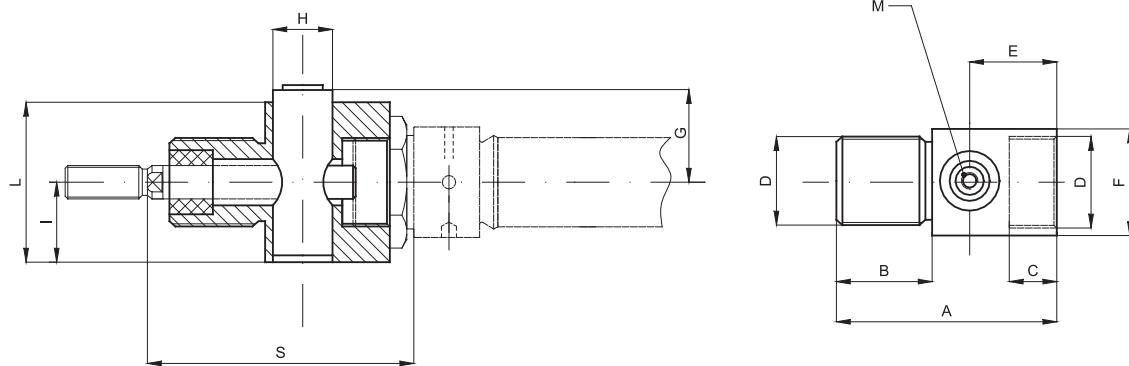
Seal kits not available.

Piston-rod brake for Cylinders ISO 6432

Bores from 20 to 25 mm



type: **ABS**



For cylinder ø mm	A	B	C	E	F	G	H	I	D	L	M	S
20	58	23	12	24	27	21	20	19	M22x1,5	38	M5	72
25	58	23	12	24	27	21	20	19	M22x1,5	38	M5	74

Normally closed

Code	Item	For cylinder ø mm
042022	ABS 0020CRD	20
042023	ABS 0025CRD	25

Normally open

Code	Item	For cylinder ø mm
042032	ABS 0020ARD	20
042033	ABS 0025ARD	25

Standard executions		
Version	Symbol	Type
Normally closed		ABS....CRD
Normally open		ABS....ARD



Series of locking rod units for cylinders DIN ISO 6431 and VDMA 24562 with pneumatic releasing and rod mechanical locking obtained through a double jaw (the locking is pneumatic in the type normally open).

For the application of the locking rod unit to a cylinder IDIN ISO 6431 and VDMA 24562 it is necessary to order the cylinder with the rod arranged for this (the extended one in hardened steel, option B; see page 1.5.1).

Used in applications when compressed air failure would present hazardous cylinder movement.

How to order: ABS0050CRD

ABS	050	CRD
Type	Cylinder bore	Option

For standard items, codes and dimensions see tables page 1.75.15.

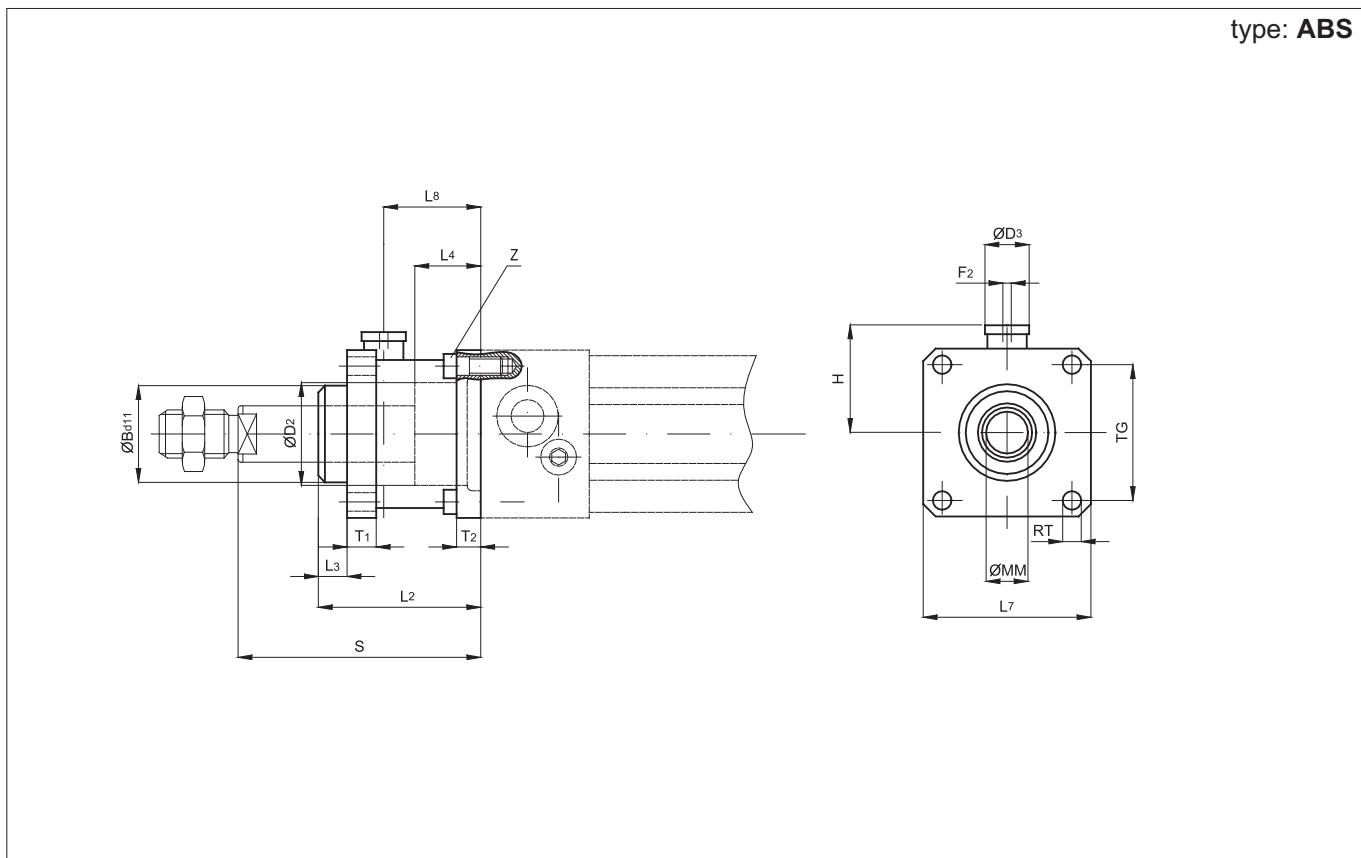
Technical data		
Fluid	Compressed filtered air with or without lubrication	
Pressure range	4 ÷ 8 bar	
Temperature range	-10 °C ÷ + 80°C	
Materials	Body: Anodised aluminium Jaws: Brass Seals: Nitrile rubber (NBR) Locking cylinder: Anodised aluminium	

Cylinder bore (mm)	Locking force (N)
32	650
40	1100
50	1600
63	2500
80	4000
100	6300
125	8700

The locking force refers to static load; slidings can happen exceeding the maximum indicated values.

The locking rod unit must be unclamped only when both chambers of the cylinder are in pressure, otherwise the cylinder rod could move not uniformly and this could cause a damage to the application.

Seal kits not available.



For cylinder \varnothing mm	B \varnothing	D_2 \varnothing	D_3 \varnothing	F_2	H	L_2	L_3	L_4	L_7	L_8	MM \varnothing	RT	T_1	T_2	TG	Z	S
32	30	30,5	20	M5	25,5	58	10	20,5	45	31,5	12	M6	13	8	32,5	M6x20	74
40	35	35	24	1/8"	30	65	10	22,5	50	36	16	M6	13	8	38	M6x20	85
50	40	40	30	1/8"	36	82	12	29,5	60	45,5	20	M8	16	15	46,5	M8x30	107
63	45	45	38	1/8"	40	82	12	29,5	70	49,5	20	M8	16	15	56,5	M8x30	107
80	45	45	48	1/8"	50	110	20	35	90	61	25	M10	20	18	72	M10x35	136
100	55	55	48	1/8"	58	115	23	39	105	65	25	M10	20	18	89	M10x35	143
125	60	60	65	1/8"	80	167	45	51	140	86,5	32	M12	30	22	110	M12x40	187

Normally closed

Code	Item	For cylinder \varnothing mm
042001	ABS 032CRD	32
042002	ABS 040CRD	40
042003	ABS 050CRD	50
042004	ABS 063CRD	63
042005	ABS 080CRD	80
042006	ABS 100CRD	100
042007	ABS 125CRD	125

Normally open

Code	Item	For cylinder \varnothing mm
042011	ABS 032ARD	32
042012	ABS 040ARD	40
042013	ABS 050ARD	50
042014	ABS 063ARD	63
042015	ABS 080ARD	80
042016	ABS 100ARD	100
042017	ABS 125ARD	125

Angular Hand Grips

Bores from 10 to 32 mm

Double acting



Executions		
Version	Code	Item
Bore 10 mm	075023	10PAB
Bore 16 mm	075004	16PAB
Bore 20 mm	075006	20PAB
Bore 25 mm	075008	25PAB
Bore 32 mm	075010	32PAB



1

Series of pneumatic angular hand grips available in 5 different sizes.

They are standard magnetic with grooves on the body allowing the direct mounting of magnetic reed switches.

Options	Suffix
Single acting	/ SE

For magnetic reed switch type ASC see from page 1.110.1.
For mounting accessories see from page 1.80.60.

How to order : 20PAB/SE

20	PAB	/SE
Bore	Type	Option

Technical data					
Type	10PAB	16PAB	20PAB	25PAB	32PAB
Fluid	Compressed filtered air. Lubrication, if be used, must be continuous.				
Pressure range	1,5 ÷ 7 bar				
Temperature range	0 °C ÷ + 80°C				
Max. operation frequency	180 cycle / min.				
Lubrication	Piston : with or without lubrication				
	Levers : lubrication is required on moving parts				
Holding moments M* (Ncm)	Closing* 1,6 x P	8 x P	17 x P	34 x P	61 x P
	Opening* 2,6 x P	11 x P	23 x P	43 x P	81 x P
Effective gripping force F (N)	$F = M / L^{**} \times 0,85$				
Maximum length of gripping point L (mm)	30	40	60	70	85
Weight (g)	40	100	200	330	540
Lever open/close angle	- 10° ÷ + 30°				
Ports	M3		M5		

* P = operating pressure (bar)

** L = distance of the gripping point (mm)

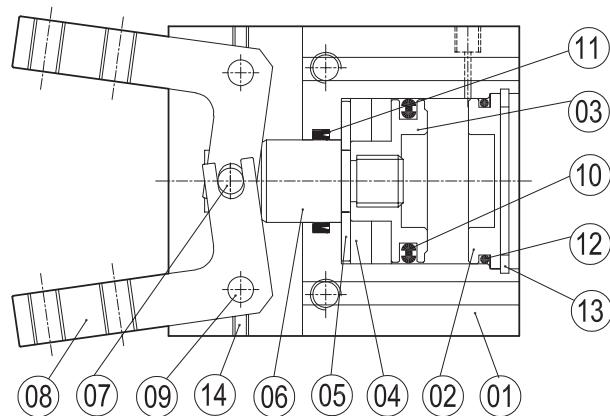
Angular Hand Grips

Bores from 10 to 32 mm

Double acting

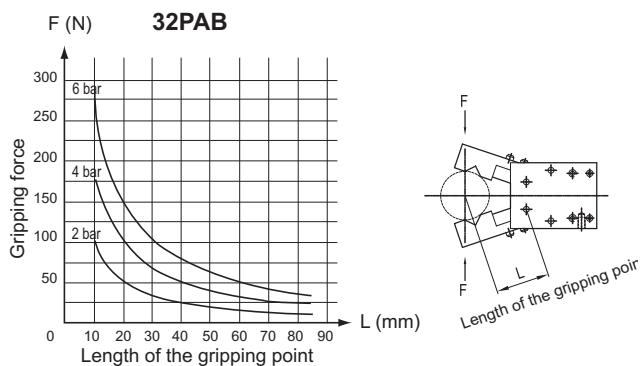
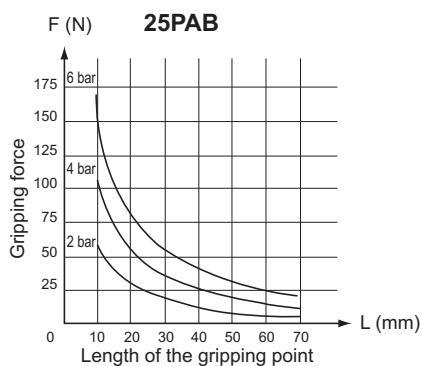
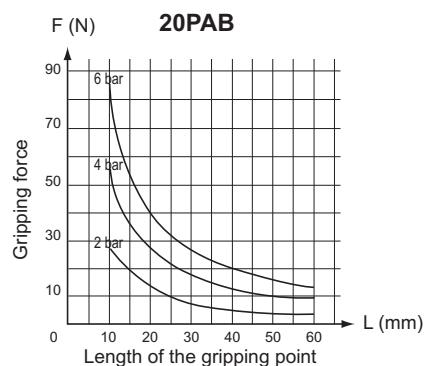
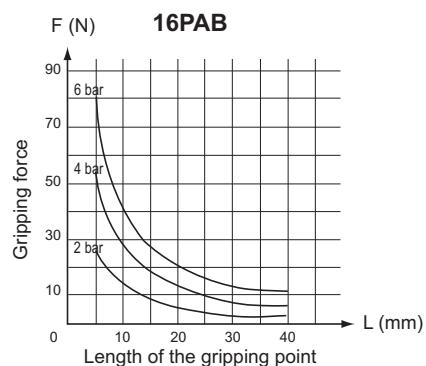
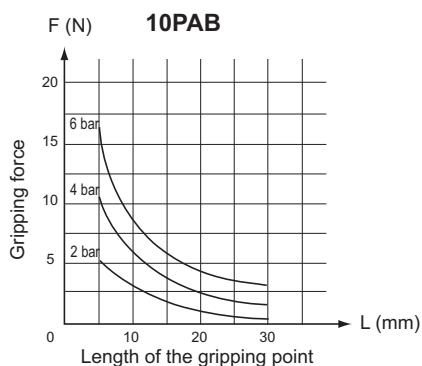


Materials

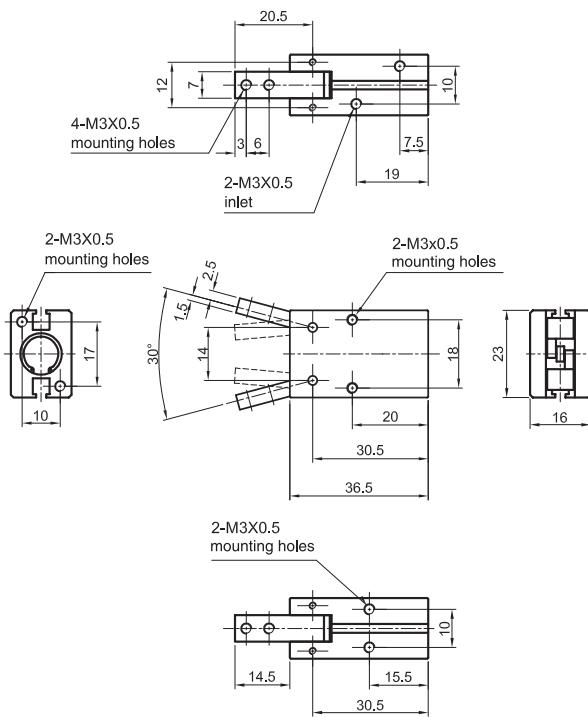


N.	Component	Material
1	Body	Aluminium
2	End cover	Brass
3	Piston	Brass
4	Magnet	Plastic magnet
5	Magnet holder	Brass
6	Piston rod	Stainless steel
7	Piston rod pin	Steel
8	Fingers	Steel alloy
9	Slide pin	Steel
10	Piston seal	NBR
11	Piston rod seal	NBR
12	End cover O-ring	NBR
13	Seeger	Steel
14	Hexagonal screw	Steel alloy

Gripping forces



type: 10PAB



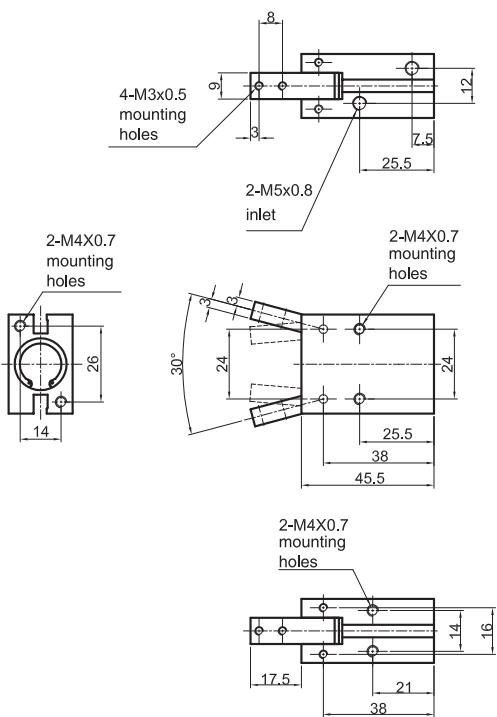
Angular Hand Grips

Bores from 10 to 32 mm

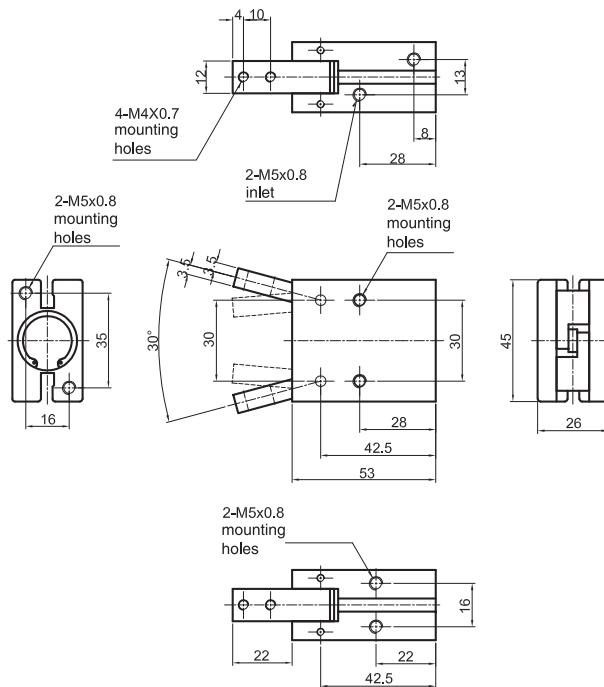
Double acting



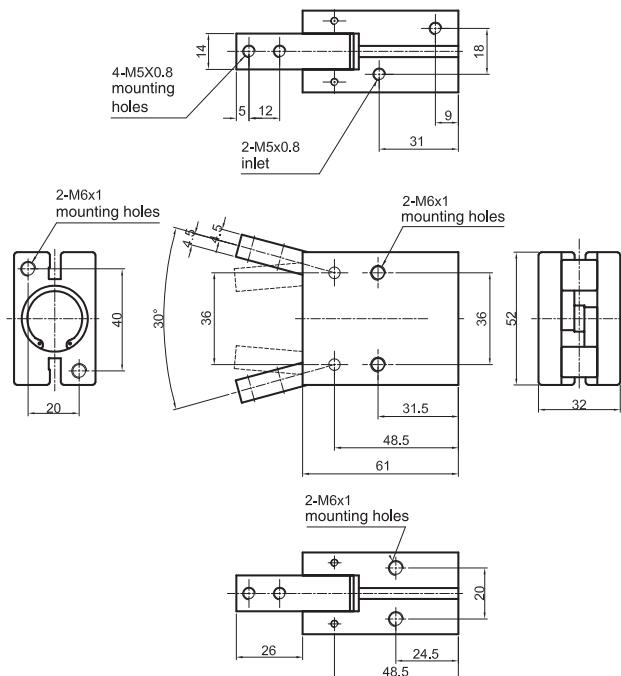
type: 16PAB



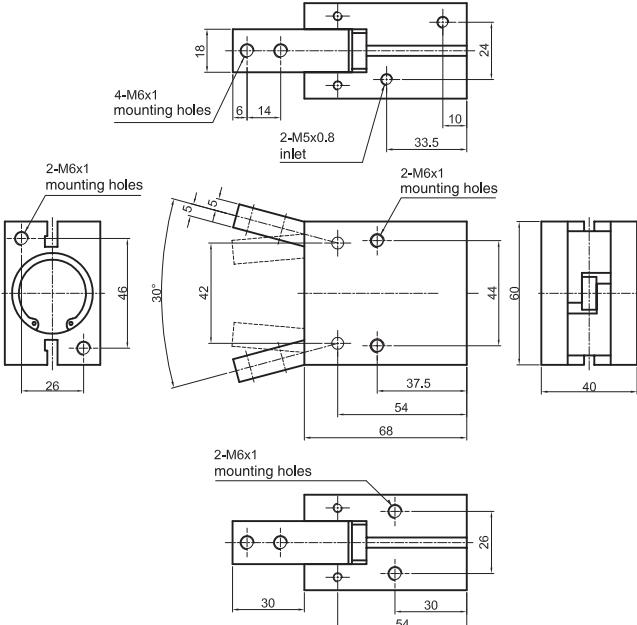
type: 20PAB



type: 25PAB



type: 32PAB





Notes

Angular Hand Grips, 180°

Bores from 16 to 32 mm

Double acting



Executions		
Version	Code	Item
Bore 16 mm	075013	16PAC
Bore 20 mm	075017	20PAC
Bore 25 mm	075024	25PAC
Bore 32 mm	075062	32PAC



1

Series of pneumatic 180° angular hand grips available in 4 different sizes.

They are standard magnetic with grooves on the body allowing the direct mounting of magnetic reed switches.

For magnetic reed switches type ASC see from page 1.110.1.
For mounting accessories see from page 1.80.60.

How to order : 25PAC

25	PAC
Bore	Type

Technical data				
Type	16 PAC	20 PAC	25 PAC	32 PAB
Fluid	Compressed filtered air. Lubrication, if be used, must be continuous.			
Pressure range	1,5 ÷ 7 bar			
Temperature	0 °C ÷ + 80°C			
Max. operation frequency	180 cycle / min.			
Lubrication	Piston : with or without lubrication Levers : lubrication is required on moving parts			
Holding moments M* (Nm)	Closing* 8 x P	17 x P	34 x P	61 x P
	Opening* 11 x P	23 x P	43 x P	81 x P
Effective gripping force F(N)	$F = M / L^{**} \times 0,9$			
Maximum length of gripping point L (mm)	80	100	120	140
Weight (g)	140	240	400	700
Lever open/close angle	- 1° ÷ + 186°			
Ports	M5			

* P = operating pressure (bar)

** L = distance of the gripping point (mm)

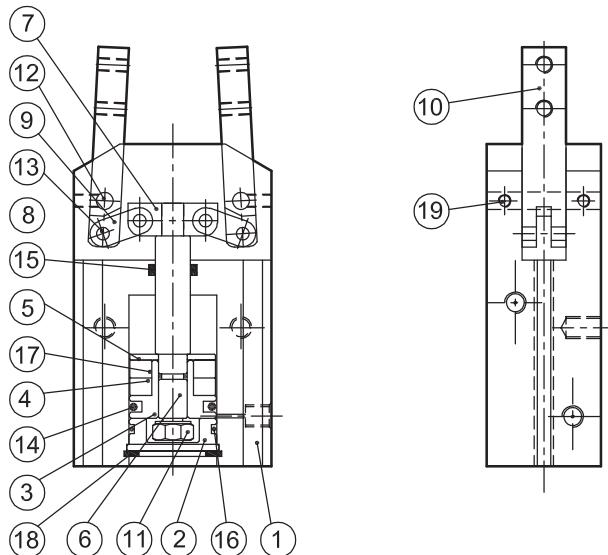
Angular Hand Grips, 180°

Bores from 16 to 32 mm

Double acting

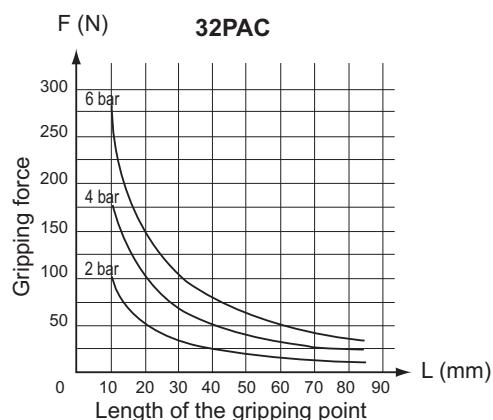
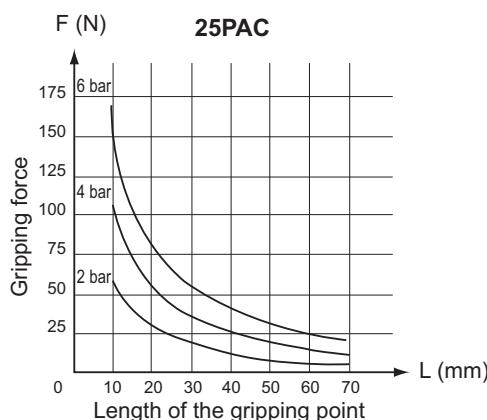
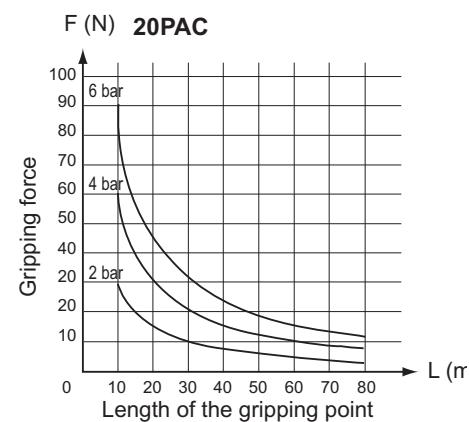
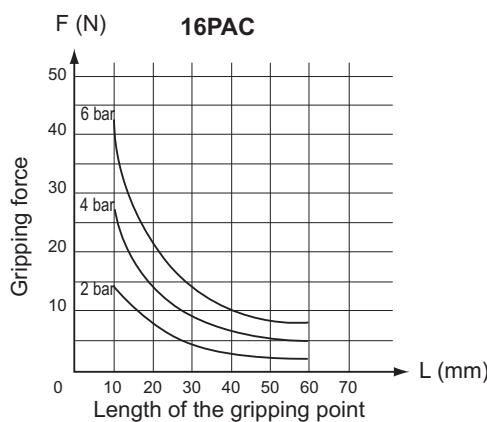


Materials



N.	Component	Material
1	Body	Aluminium
2	End cover	Aluminium
3	Piston	Brass
4	Magnet	Plastic magnet
5	Magnet holder	Brass
6	Piston rod	Stainless steel
7	End piston rod joiner	Steel alloy
8	Piston rod pin	Steel
9	Action lever	Steel alloy
10	Fingers	Steel alloy
11	Nut	Steel
12	Slide pin	Steel
13	Action lever pin	Steel
14	Piston seal	NBR
15	Piston rod seal	NBR
16	End cover O-ring	NBR
17	Piston rod O-ring	NBR
18	Seeger	Steel
19	Hexagonal screw	Steel alloy

Gripping forces



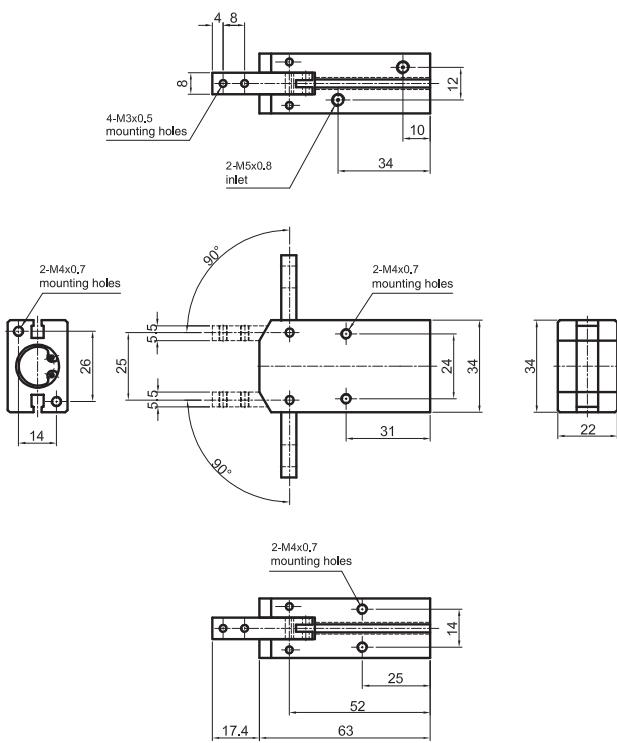
Angular Hand Grips, 180°

Bores from 16 to 32 mm

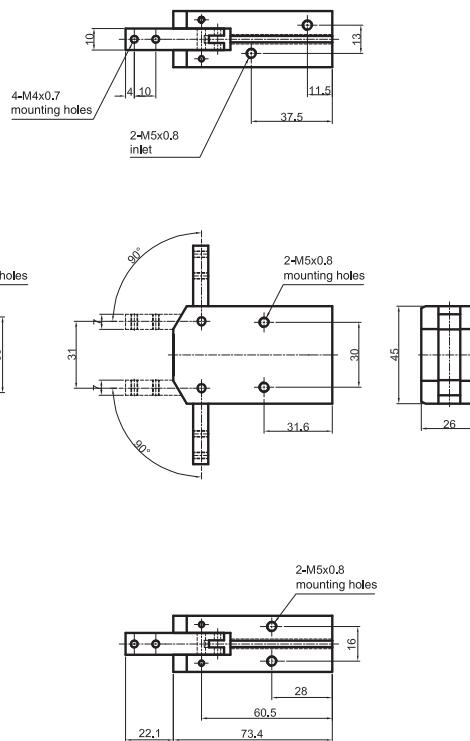
Double acting



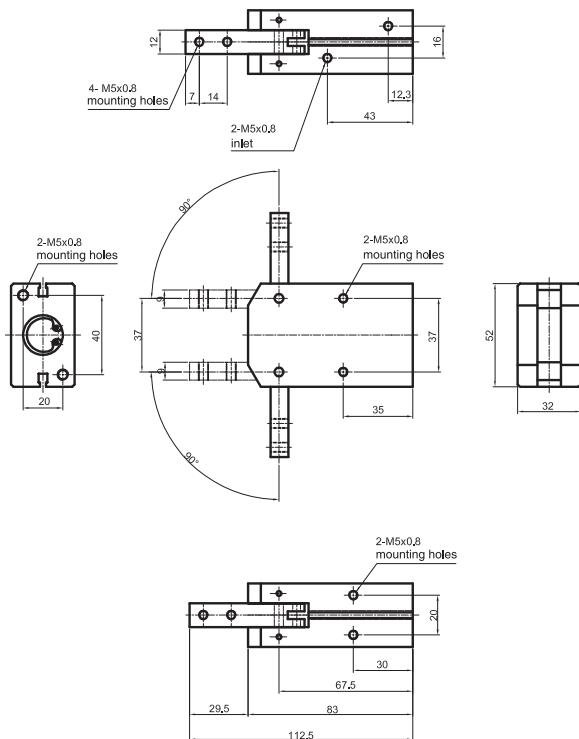
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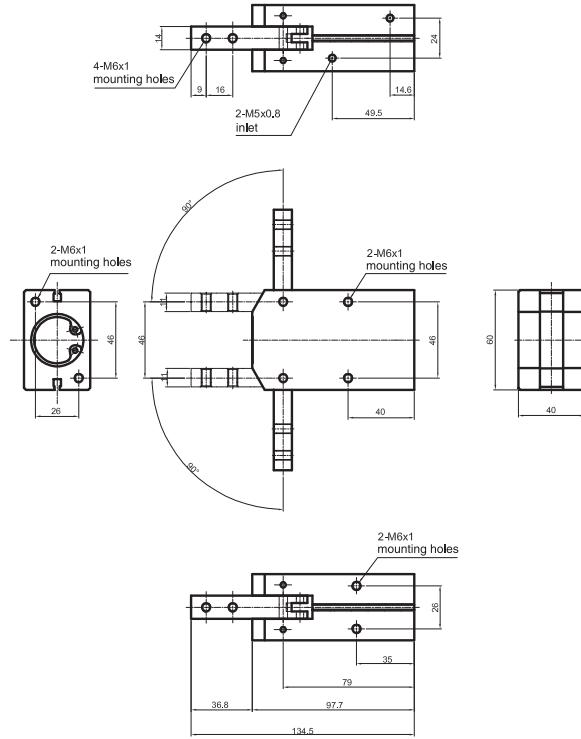
type: 20PAC



type: 25PAC



type: 32PAC





Notes

Parallel Hand Grips

Bores from 10 to 32 mm

Double acting



Executions		
Version	Code	Item
Bore 10 mm	075025	10PPB
Bore 16 mm	075027	16PPB
Bore 20 mm	075063	20PPB
Bore 25 mm	075028	25PPB
Bore 32 mm	075029	32PPB



1

Series of pneumatic parallel hand grips available in 5 different sizes.

They are standard magnetic with grooves on the body allowing the direct mounting of magnetic reed switches.

For magnetic reed switch type ASC see from page 1.110.1.
For mounting accessories see from page 1.80.60.

How to order : 16PPB

16	PPB
Bore	Type

Technical data					
Type	10PPB	16PPB	20PPB	25PPB	32PPB
Fluid	Compressed filtered air. Lubrication, if be used, must be continuous.				
Pressure range	1,5 ÷ 7 bar				
Temperature range	0 °C ÷ + 80°C				
Max. operation frequency	180 cycle / min.				
Lubrication	Piston : with or without lubrication Levers : lubrication is required on moving parts				
Theoretical holding force M* (N)	Closing	5	18	35	60
	Opening	8	24	47	75
Maximum length of gripping point L (mm)		30	40	60	70
Weight (g)		50	140	250	410
Stroke of open/close (mm)		4	8	12	14
Ports	M3			M5	

* Gripping point 30 mm at 5 bar

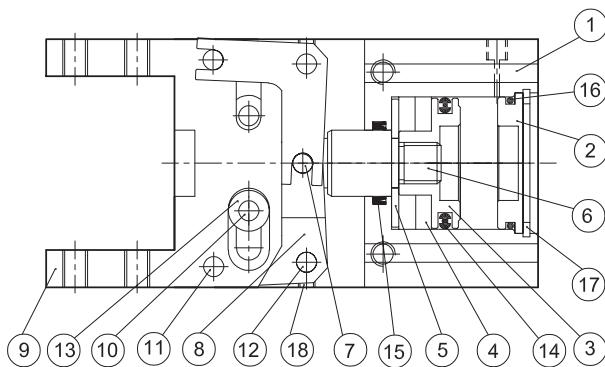
Parallel Hand Grips

Bores from 10 to 32 mm

Double acting

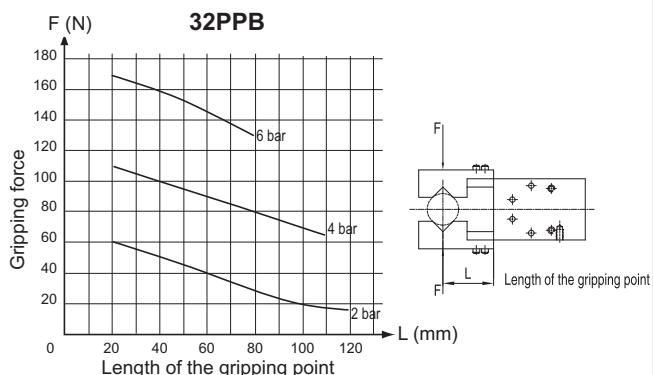
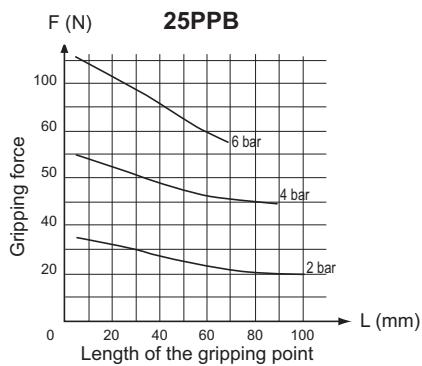
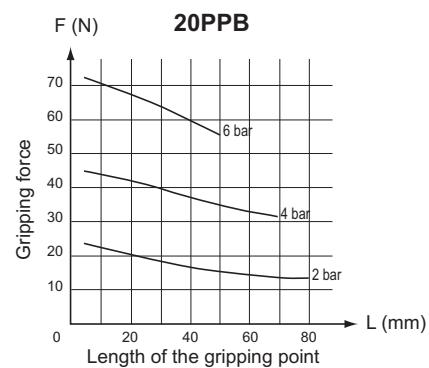
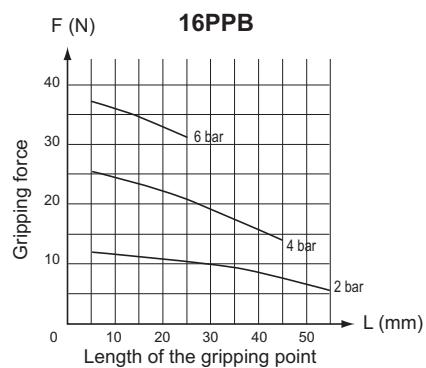
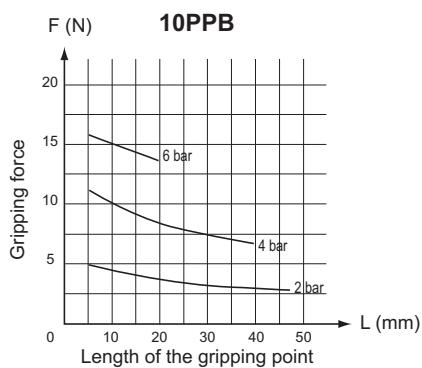


Materials

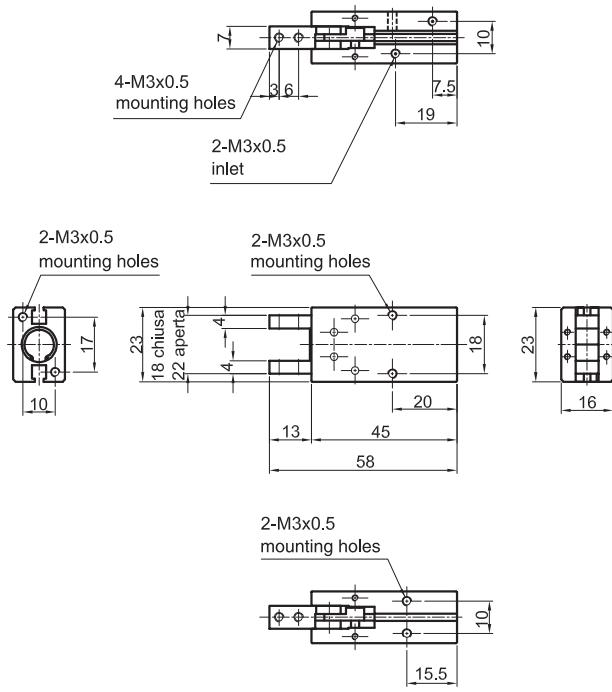


N.	Component	Material
1	Body	Aluminium
2	End cover	Brass
3	Piston	Brass
4	Magnet	Plastic magnet
5	Magnet holder	Brass
6	Piston rod	Stainless steel
7	Piston rod pin	Steel
8	Action lever	Steel alloy
9	Fingers	Steel alloy
10	Slide guide pin	Steel
11	Slide pin	Steel
12	Action lever pin	Steel
13	Ring	Steel alloy
14	Piston seal	NBR
15	Piston rod seal	NBR
16	End cover O-ring	NBR
17	Seeger	Steel
18	Hexagonal screw	Steel alloy

Gripping forces



type: 10PPB



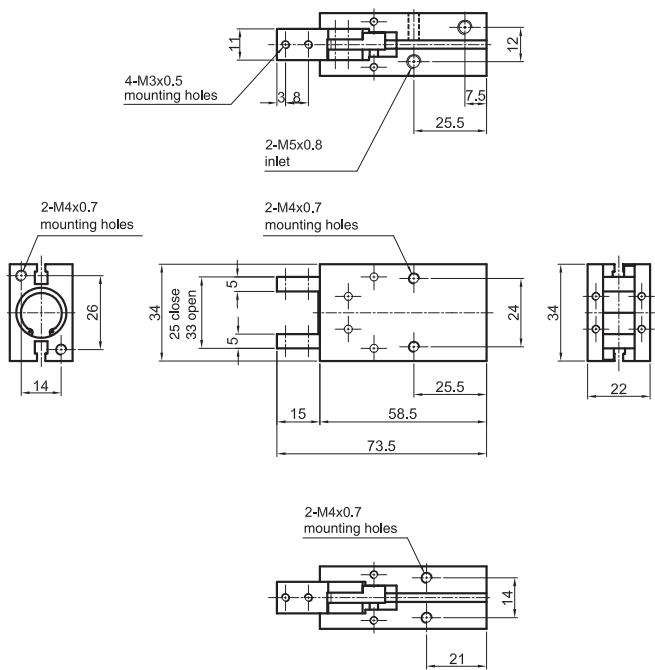
Parallel Hand Grips

Bores from 10 to 32 mm

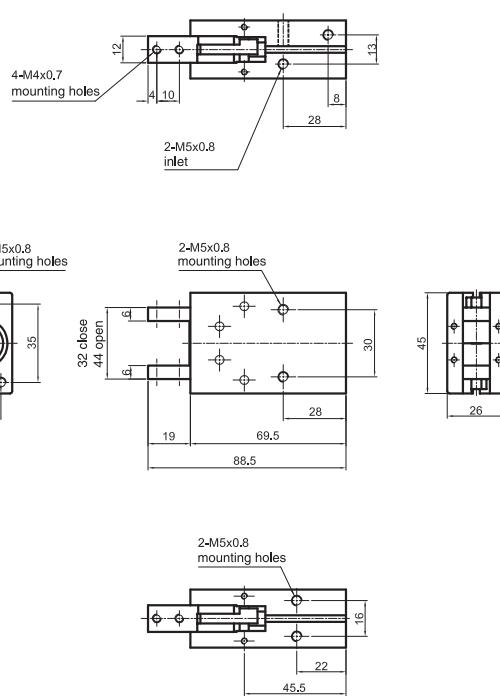
Double acting



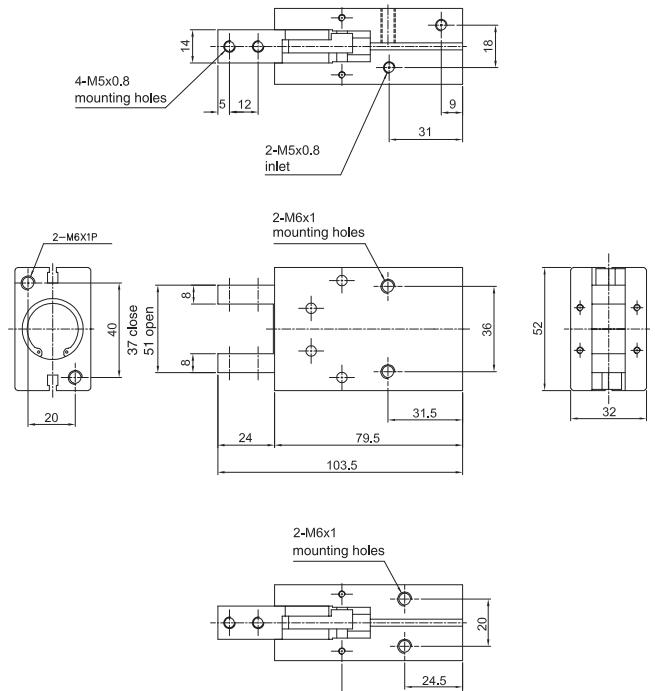
type: 16PPB



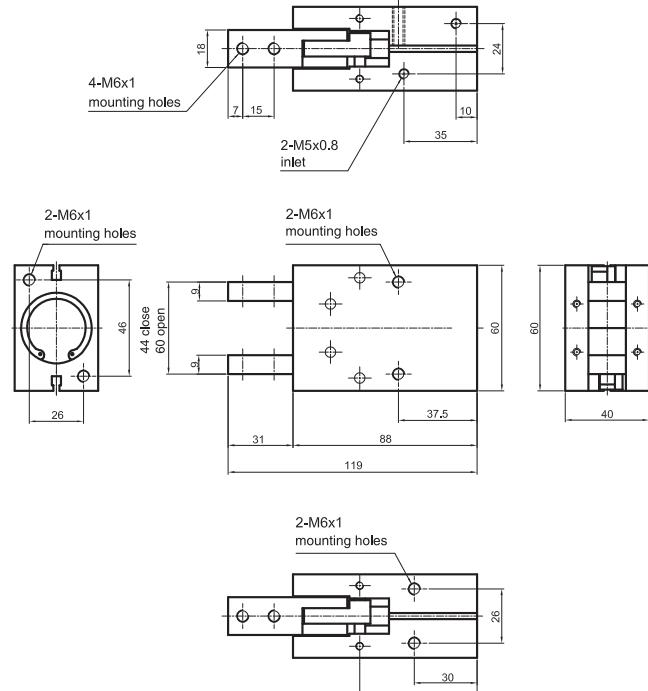
type: 20PPB



type: 25PPB



type: 32PPB



Guided Parallel Hand Grips

Bores from 16 to 32 mm

Double acting



Executions		
Version	Code	Item
Bore 16 mm	075030	16PPC
Bore 20 mm	075031	20PPC
Bore 25 mm	075034	25PPC
Bore 32 mm	075035	32PPC



Series of pneumatic guided parallel hand grips available in 4 different sizes.

They are standard magnetic with grooves on the body allowing the direct mounting of magnetic reed switches.

For magnetic reed switch type ASC see from page 1.110.1.
For mounting accessories see from page 1.80.60.

How to order : 20PPC

20	PPC
Bore	Type

Technical data				
Type	16PPC	20PPC	25PPC	32PPB
Fluid	Compressed filtered air. Lubrication, if be used, must be continuous.			
Pressure range	1,5 ÷ 7 bar			
Temperature range	0 °C ÷ + 80°C			
Max. operation frequency	180 cycle / min.			
Lubrication	Piston : with or without lubrication Levers : lubrication is required on moving parts			
Holding moments M* (N)	Closing	18	35	60
	Opening	24	47	75
Maximum length of gripping point L (mm)		40	60	70
Weight (g)		200	600	800
Stroke of open/close (mm)		6	8	14
Ports	M5			

* P = 5 bar

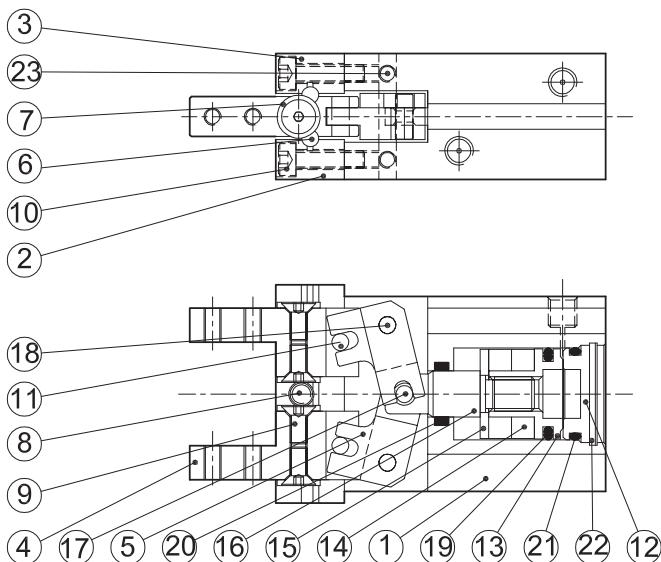
Guided Parallel Hand Grips

Bores from 16 to 32 mm

Double acting

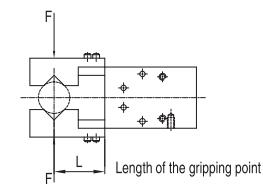
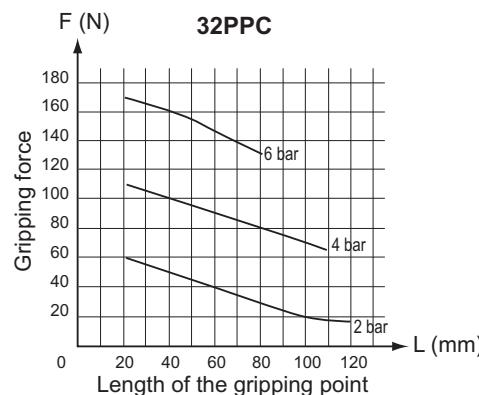
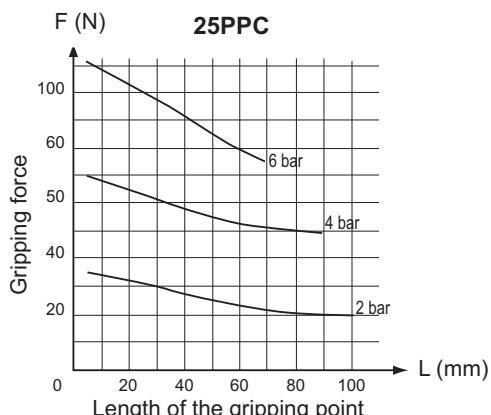
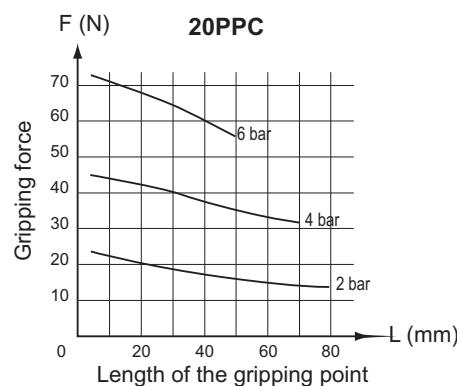
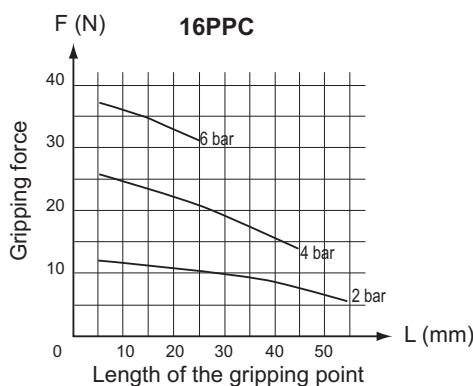


Materials



N.	Component	Material
1	Body	Aluminium
2	Front guide	Steel alloy
3	Rear guide	Steel alloy
4	Fingers	Steel alloy
5	Action lever	Steel alloy
6	Roll ball	Molybdenum chromium steel
7	Side track stopper	Steel
8	Side track screw	Steel alloy
9	Stopper screw	Steel alloy
10	Screw	Aluminium alloy
11	Pin	Steel
12	End cover	Brass
13	Piston	Brass
14	Magnet	Plastic magnet
15	Magnet holder	Brass
16	Piston rod	Stainless steel
17	Guide pin	Steel
18	Pin	Steel
19	Piston seal	NBR
20	Piston rod seal	NBR
21	End cover O-ring	NBR
22	Seeger	Steel
23	Hexagonal screw	Steel alloy

Gripping forces



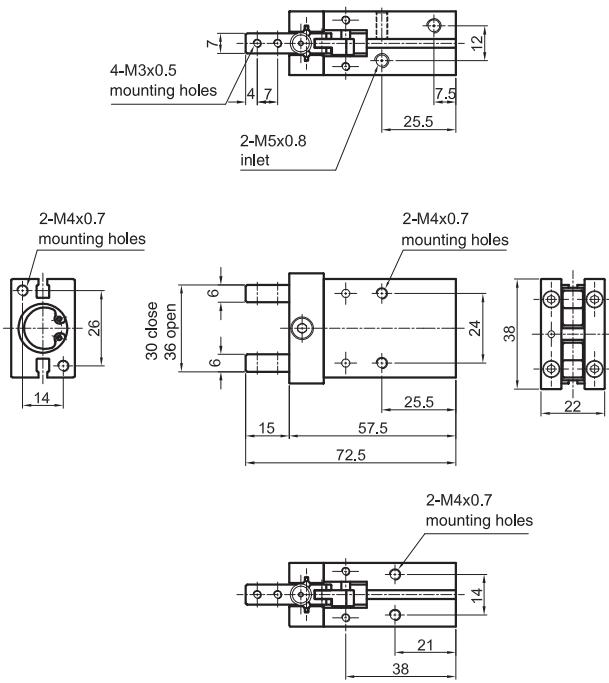
Guided Parallel Hand Grips

Bores from 16 to 32 mm

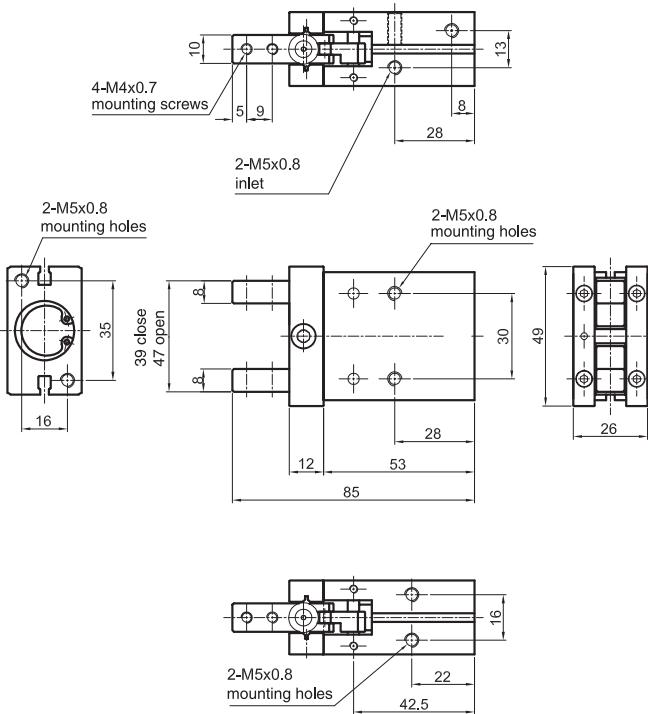
Double acting



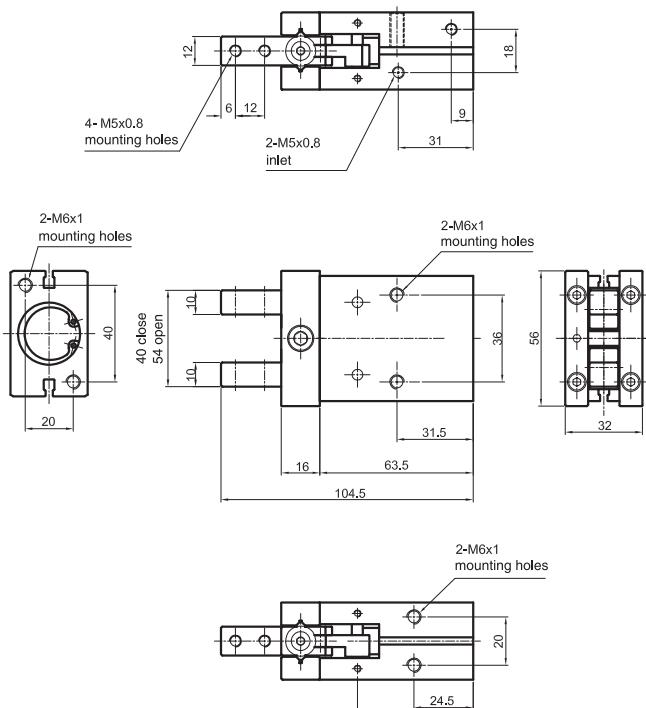
type: 16PPC



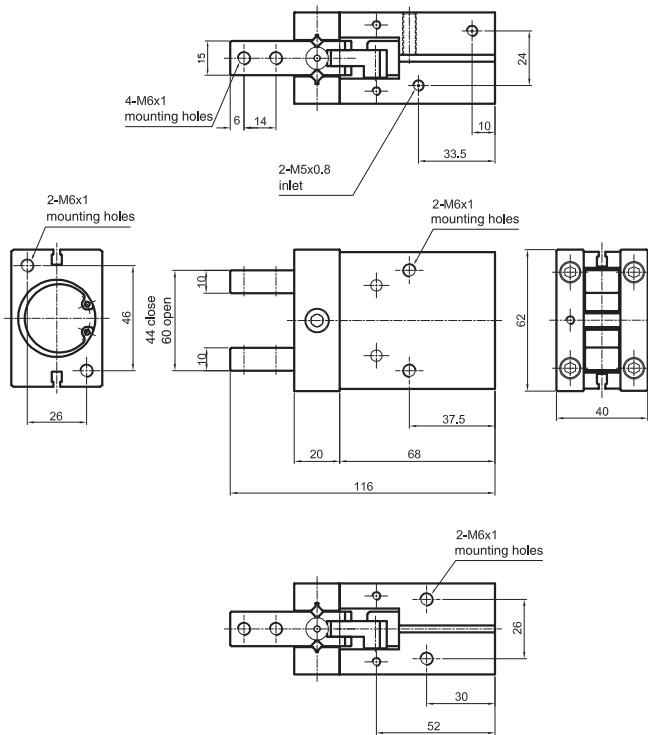
type: 20PPC



type: 25PPC



type: 32PPC



Parallel Hand Grips with long stroke

Bores from 10 to 32 mm

Double acting



Executions		
Version	Code	Item
Bore 10 mm, stroke 20 mm	075037	10/20PPD
Bore 10 mm, stroke 40 mm	075038	10/40PPD
Bore 10 mm, stroke 60 mm	075039	10/60PPD
Bore 16 mm, stroke 30 mm	075040	16/30PPD
Bore 16 mm, stroke 60 mm	075041	16/60PPD
Bore 16 mm, stroke 80 mm	075042	16/80PPD
Bore 20 mm, stroke 40 mm	075044	20/40PPD
Bore 20 mm, stroke 80 mm	075045	20/80PPD
Bore 20 mm, stroke 100 mm	075047	20/100PPD
Bore 25 mm, stroke 50 mm	075048	25/50PPD
Bore 25 mm, stroke 100 mm	075049	25/100PPD
Bore 25 mm, stroke 120 mm	075050	25/120PPD
Bore 32 mm, stroke 70 mm	075051	32/70PPD
Bore 32 mm, stroke 120 mm	075052	32/120PPD
Bore 32 mm, stroke 160 mm	075002	32/160PPD



1

Series of pneumatic parallel hand grips with long stroke available in 5 different sizes.

They are standard magnetic with grooves on the body allowing the direct mounting of magnetic reed switches.

For magnetic reed switch type ASC see from page 1.110.1.

How to order : 25/50PPD

25	/	50	PPD
Bore	/	Stroke	Type

Technical data

Type	10PPD	16PPD	20PPD	25PPD	32PPD
Fluid	Compressed filtered air. Lubrication, if be used, must be continuous.				
Pressure range	1,5 ÷ 7 bar				
Temperature range	0 °C ÷ + 80°C				
Max. operation frequency	40 cycle / min.				
Effective gripping force (N)*	14	44	73	128	191
Maximum length of gripping point L (mm)	40	60	80	90	100
Stroke of open/close (mm)	20,40,60	30,60,80	40,80,100	50,100,120	70,120,160
Ports	M5				1/8"

* Gripping point 30 mm at 5 bar

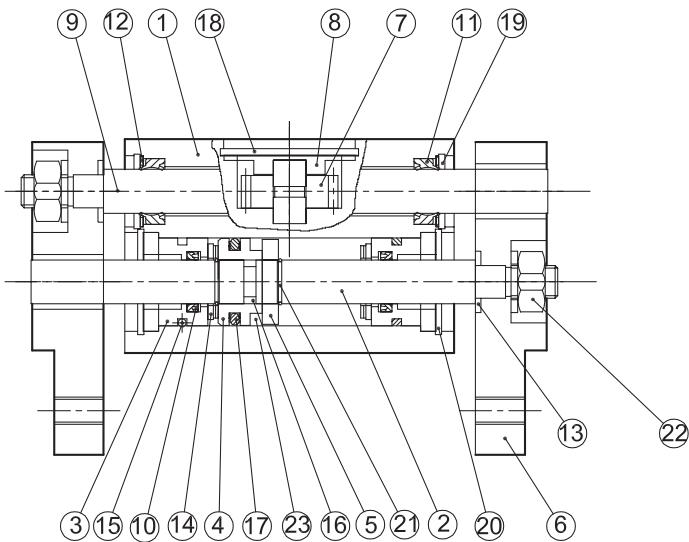
Parallel Hand Grips with long stroke

Bores from 10 to 32 mm

Double acting

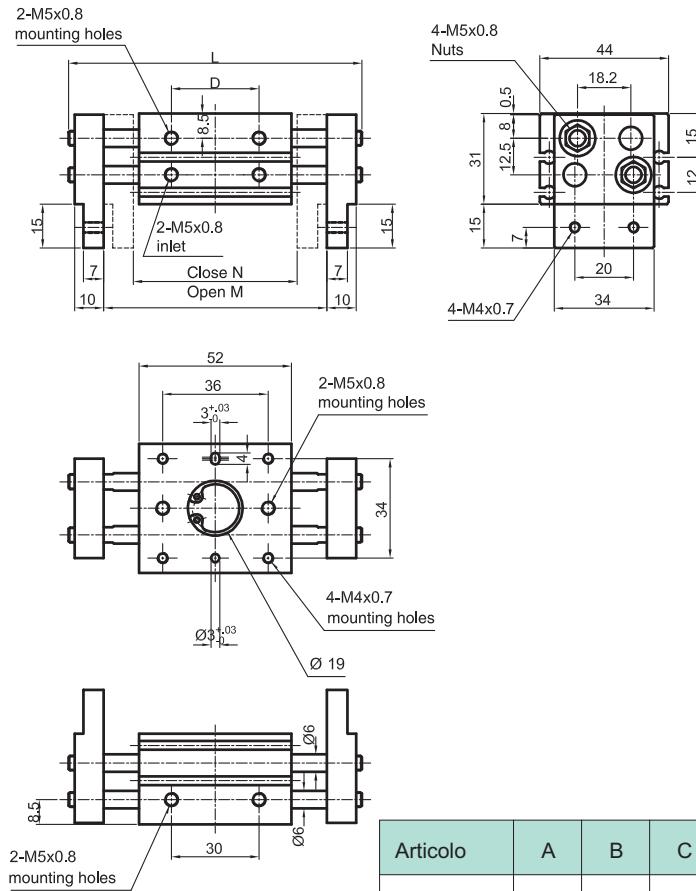


Materials



N.	Component	Material
1	Body	Aluminium
2	Piston rod	Stainless steel
3	End cover	Aluminium
4	Piston	Brass
5	Magnet holder	Brass
6	Fingers	Steel alloy
7	Gear rod	Carbon steel
8	Gear cover	Iron
9	Gear	Stainless steel
10	Piston rod seal	NBR
11	Guide rod seal	NBR
12	Seeger	Iron
13	Cushion distancer	Iron
14	Piston rod cushion	Polyurethane
15	End cover O-ring	NBR
16	Piston seal	NBR
17	Piston O-ring	NBR
18	Seeger	Steel
19	Seeger	Steel
20	Seeger	Steel
21	Seeger	Steel
22	Nut	Steel
23	Magnet	Plastic magnet

type: 10 / .. PPD



Articolo	A	B	C	D	L	M	N
10/20PPD	52	36	30	30	100 (80)	76	56
10/40PPD	68	52	46	46	136 (96)	112	72
10/60PPD	86	70	64	64	174 (114)	150	90

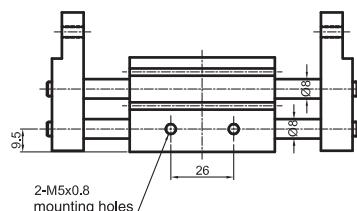
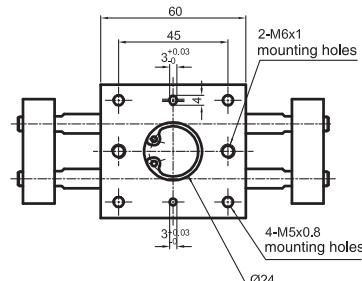
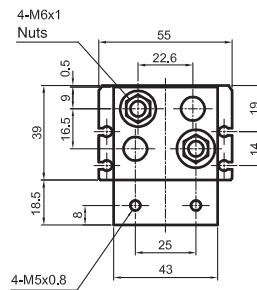
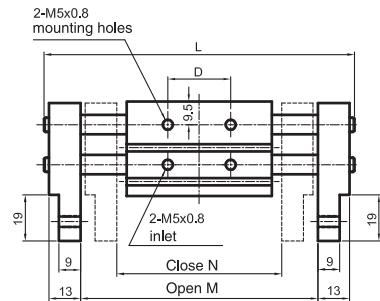
Parallel Hand Grips with long stroke

Bores from 10 to 32 mm

Double acting

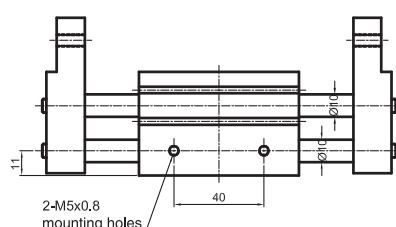
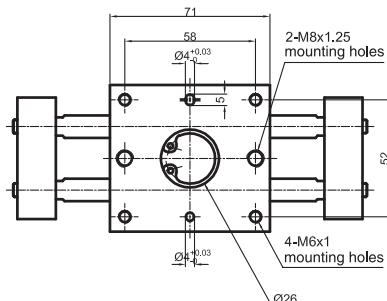
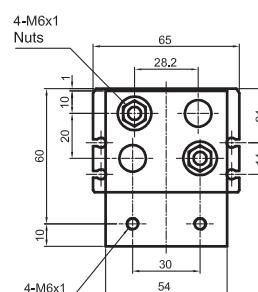
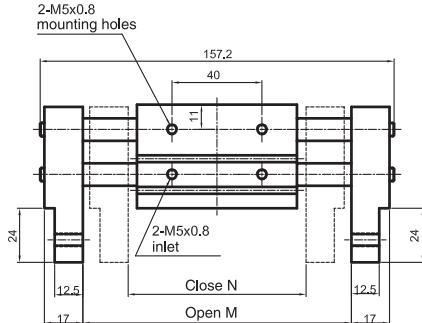


type: 16 / .. PPD



Item	A	B	C	D	L	M	N
16/30PPD	60	45	26	26	128 (98)	98	68
16/60PPD	90	75	56	56	188 (128)	158	98
16/80PPD	110	95	76	76	228 (148)	198	118

type: 20 / .. PPD



Item	A	B	C	D	L	M	N
20/40PPD	71	58	40	40	157 (117)	119	79
20/80PPD	113	100	82	82	239 (159)	201	121
20/100PPD	133	120	102	102	279 (179)	241	141

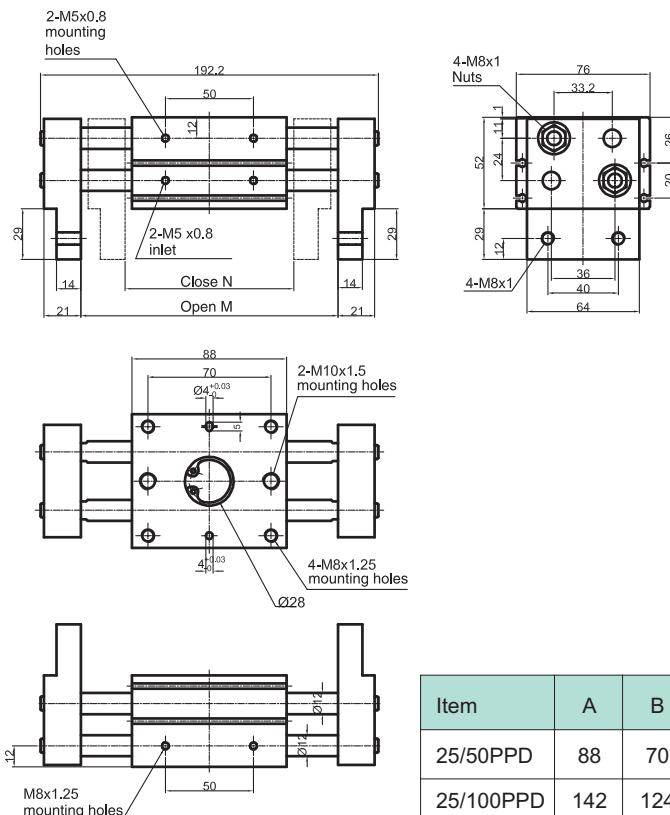
Parallel Hand Grips with long stroke

Bores from 10 to 32 mm

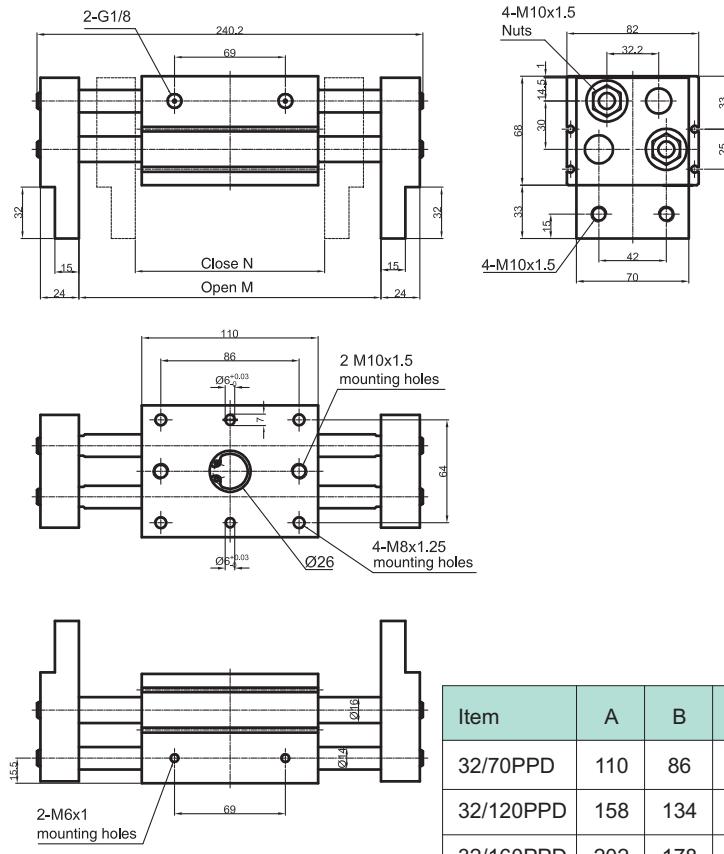
Double acting



type: 25 / .. PPD



type: 32 / .. PPD



Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

Double acting



Executions		
Version	Code	Item
Bore 25 mm	075053	25PPE
Bore 32 mm	075054	32PPE
Bore 40 mm	075055	40PPE
Bore 50 mm	075056	50PPE
Bore 63 mm	075057	63PPE



1

Series of pneumatic parallel hand grips with 3 fingers available in 5 different sizes.

They are standard magnetic with grooves on the body allowing the direct mounting of magnetic reed switches.

For magnetic reed switch type ASC see from page 1.110.1.

How to order : 32PPE

32	PPE
Bore	Type

Technical data					
Type	25PPE	32PPE	40PPE	50PPE	63PPE
Fluid	Compressed filtered air. Lubrication, if be used, must be continuous.				
Pressure range	1,5 ÷ 7 bar				
Temperature range	0 °C ÷ + 80°C				
Max. operation frequency	180 cycle / min.				
Lubrication	Piston : with or without lubrication				
	Levers : lubrication is required on moving parts				
Stroke of open/close (mm)	6	8	8	12	16
Ports	M5				

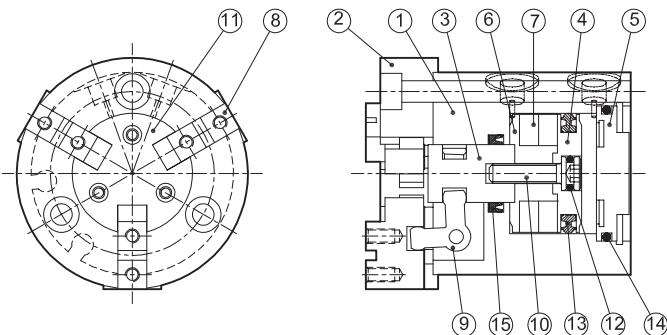
Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

Double acting

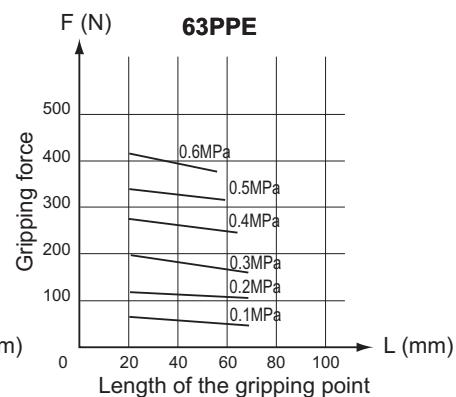
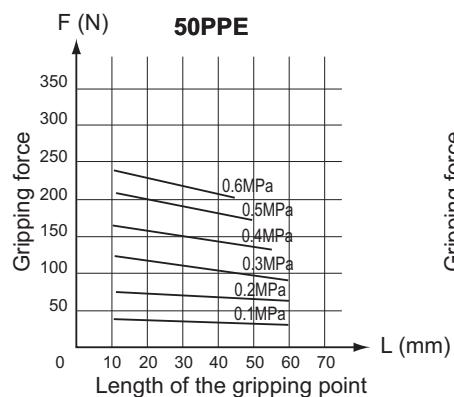
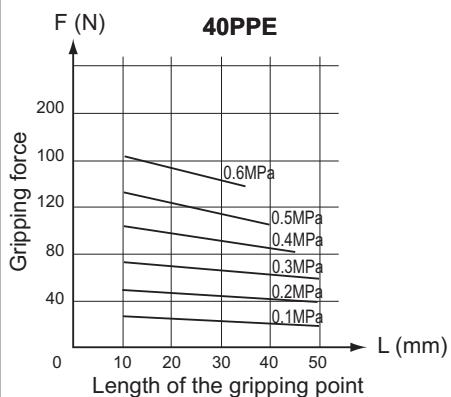
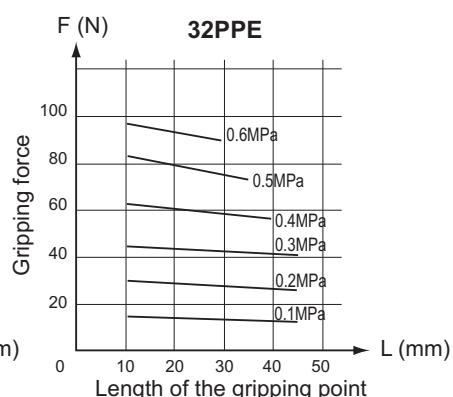
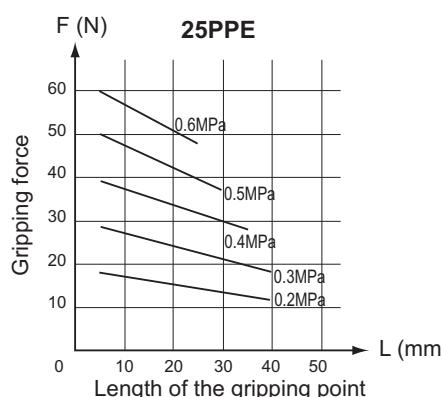
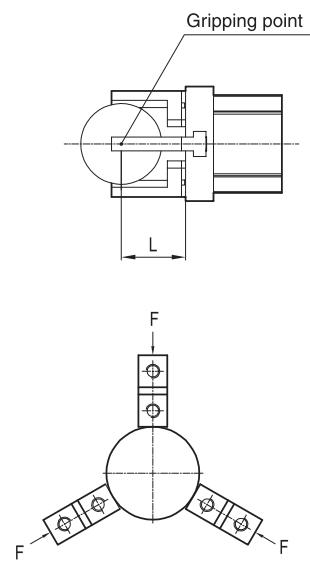


Materials



N.	Component	Material
1	Body	Aluminium
2	Front head	Aluminium
3	Piston rod	Steel
4	Piston	Aluminium
5	End cover	Aluminium
6	Magnet holder	Aluminium
7	Magnet	Plastic magnet
8	Fingers	Steel
9	Action lever	Steel
10	Screw	Stainless steel
11	Finger cover	Stainless steel
12	O-ring	NBR
13	Piston seals	NBR
14	End cover O-ring	NBR
15	Piston rod seals	NBR

Gripping forces



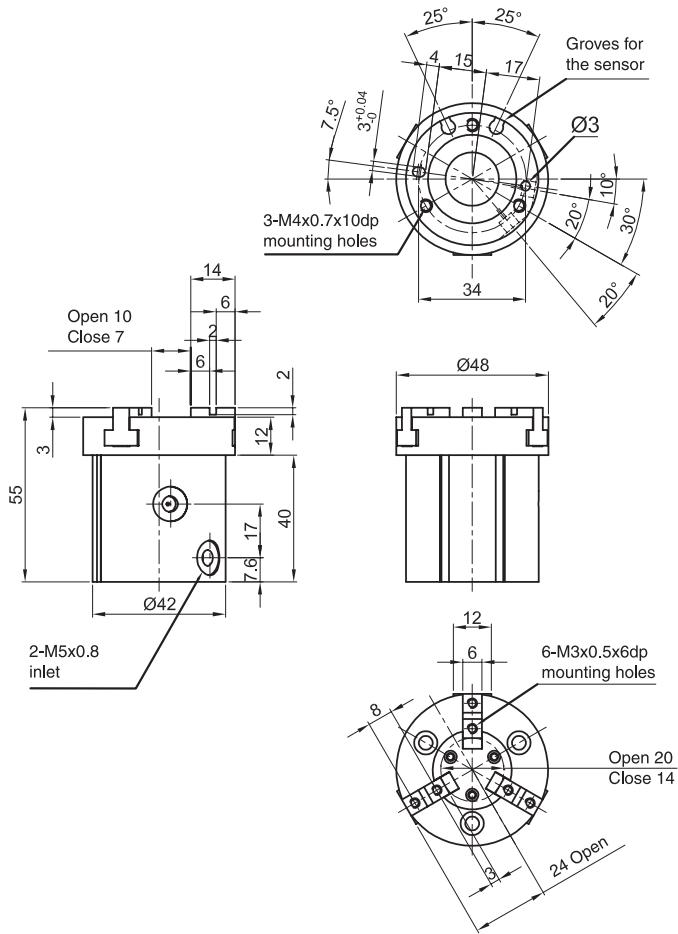
Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

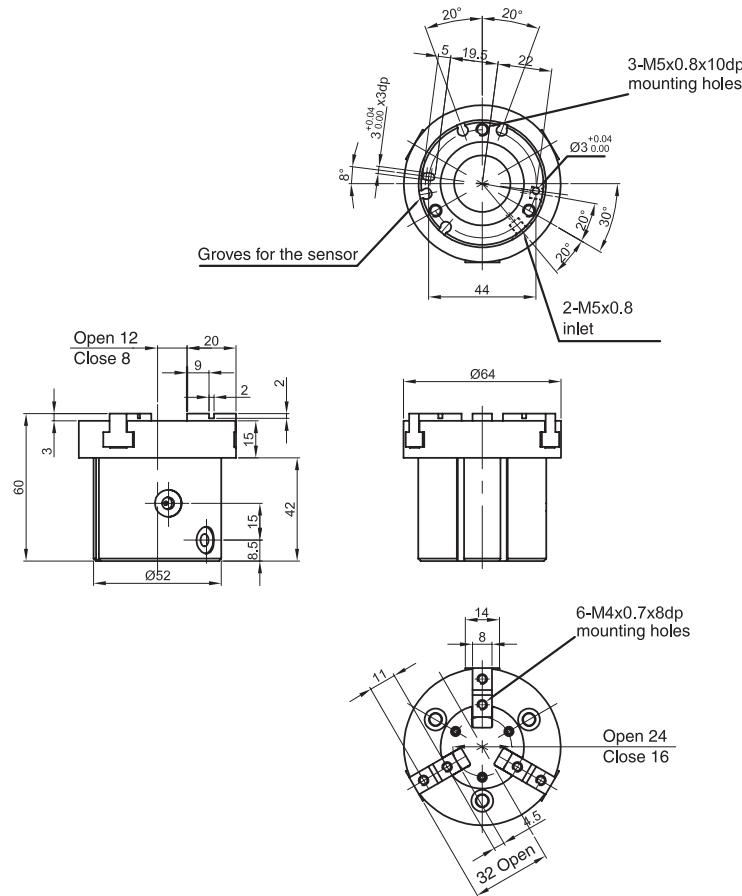
Double acting



type: 25PPE



type: 32PPE



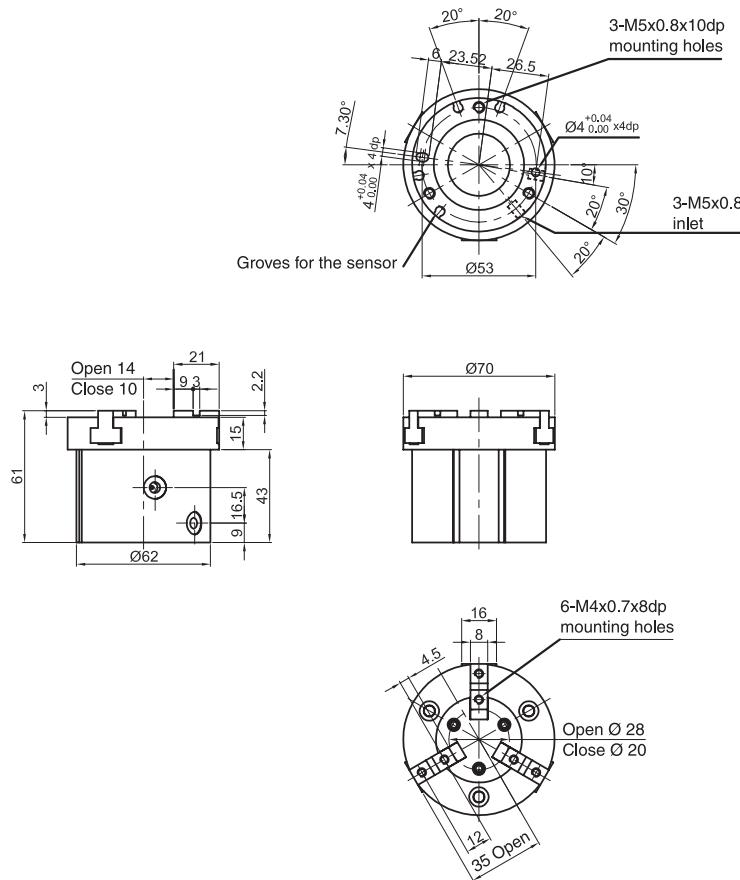
Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

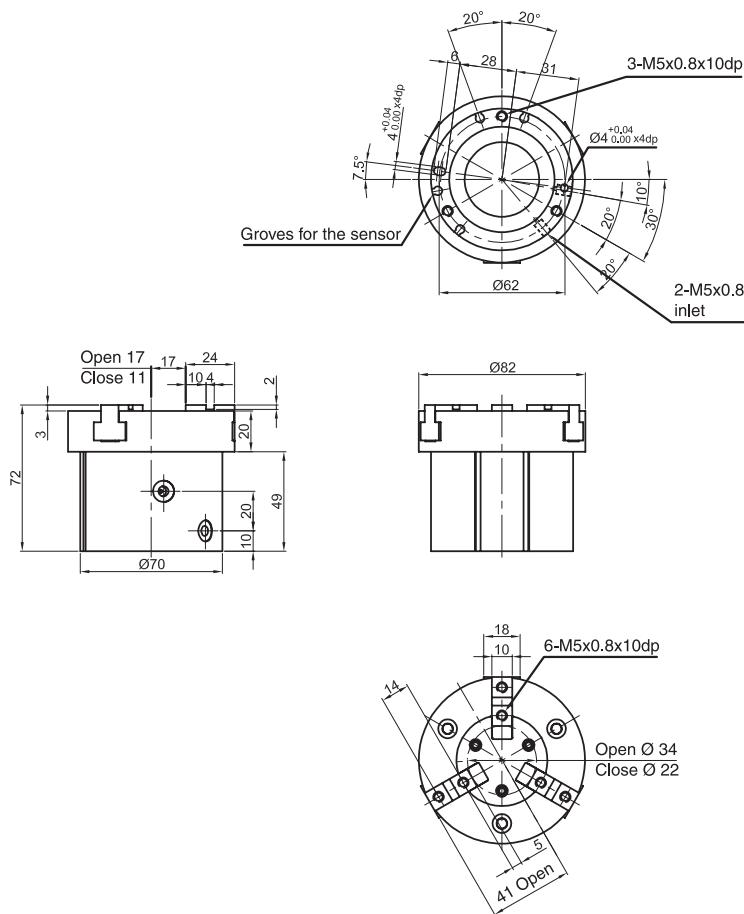
Double acting



type: **40PPE**



type: **50PPE**



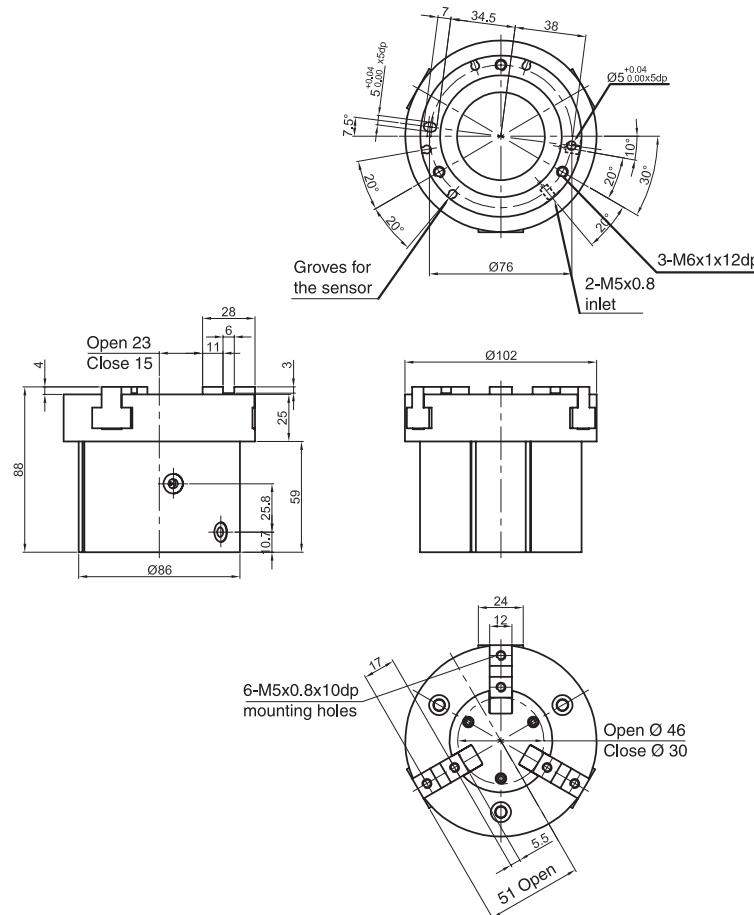
Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

Double acting



type: 63PPE



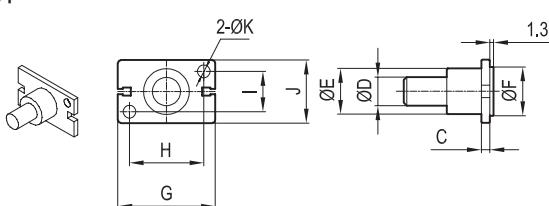
Hand Grippers

Mounting accessories for series PAB - PAC - PPB - PPC



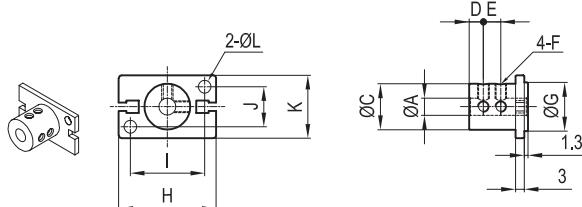
Executions		
Version	Code	Item
Mounting with male thread for hand grip Ø 16	075058	16PM
Mounting with male thread for hand grip Ø 20	075059	20PM
Mounting with male thread for hand grip Ø 25	075064	25PM
Mounting with male thread for hand grip Ø 32	075065	32PM
Mounting with female thread for hand grip Ø 16	075066	16PF
Mounting with female thread for hand grip Ø 20	075067	20PF
Mounting with female thread for hand grip Ø 25	075068	25PF
Mounting with female thread for hand grip Ø 32	075069	32PF

type: PM



Item	A	B	C	D	E	F	G	H	I	J	K
16PM	15	15	3	10	16	17	34	26	14	22	4,5
20PM	15	15	3	10	18	21	45	35	16	26	5,5
25PM	25	17	5	14	26	26	52	40	20	32	6,5
32PM	25	20	6	16	30	34	60	46	26	40	6,6

type: PF



Item	A	B	C	D	E	F	G	H	I	J	K	L
16PF	6	20,5	16	5	6	M4x0,7p	17	34	26	14	22	4,5
20PF	8	25,5	20	7	7	M4x0,7p	21	45	35	16	26	5,5
25PF	10	30,5	25	8	10	M4x0,7p	26	52	40	20	32	6,5
32PF	12	40,5	32	10	15	M4x0,7p	34	60	46	26	40	6,5

Mounting Accessories for Cylinders

Clevis ISO



Standard executions		
Version	Symbol	Type
Female clevis		FFISO



1

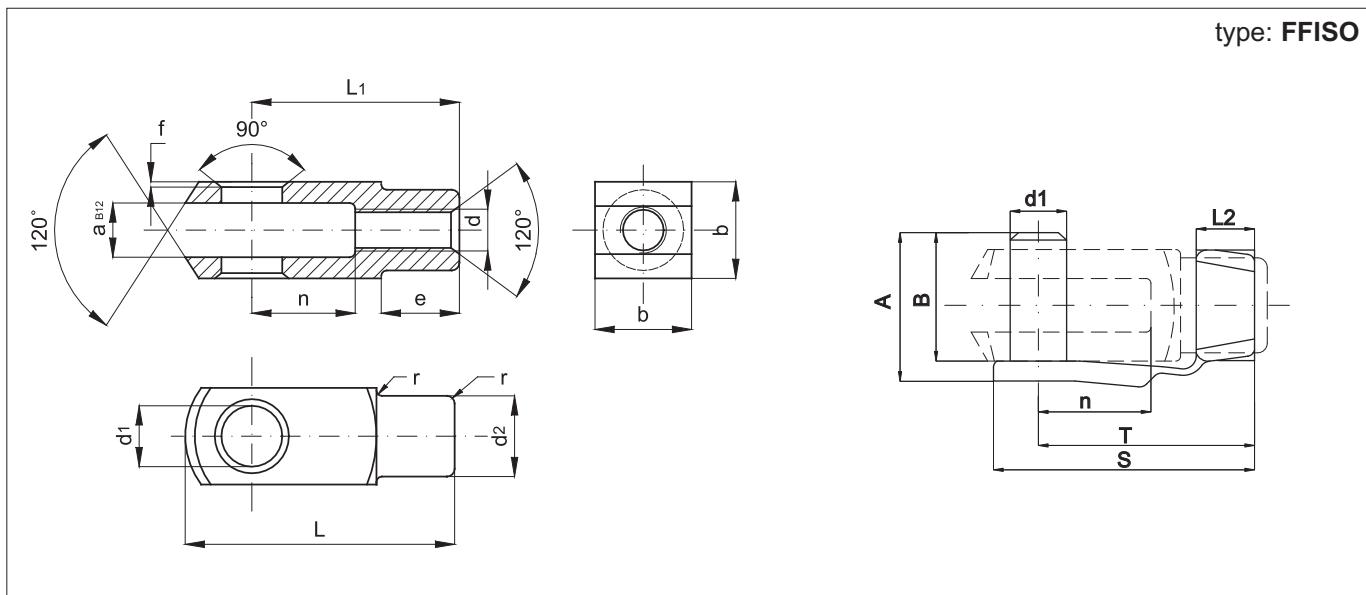
Clevis conforming to ISO 8140 standards.

They are complete with clips in the standard version (the models M27X2 and M36X2 are normally provided with a pin and 2 seegers).

The clevis is mounted on the cylinder rod and allows a swinging movement.

Options	Suffix
With a pin and 2 seegers (M27 and M36 already standard)	P
Special versions on request	/ S

Technical data	
Material	White zinc plated steel



Code	Item	For cylinder ø mm	d	a	A	S	B	b	d ₁	T	L ₂	d ₂	e	f	L	L ₁	n	r	Weight (g)
041001	4FFISO	8-10	M4x0,7	4	11	19	9	8	4	15	5	8	6	0,5	21	16	8	0,5	7
041002	6FFISO	12-16	M6x1	6	16	28	14	12	6	23	6	10	9	0,5	31	24	12	0,5	19
041003	8FFISO	20	M8x1,25	8	22	37	19	16	8	31	8	14	12	0,5	42	32	16	0,5	47
041004	10FFISO	25-32	M10x1,25	10	26	46	23	20	10	39	10	18	15	0,5	52	40	20	0,5	89
041005	12FFISO	40	M12x1,25	12	32	55	28	24	12	47	12	20	18	0,5	62	48	24	0,5	153
041006	16FFISO	50-63	M16x1,5	16	40	72	36	32	16	62	14	26	24	1	83	64	32	1	320
041007	20FFISO	80-100	M20x1,5	20	48	88	44	40	20	72	16	34	30	1	105	80	40	1	680
041008	24FFISO	*	M24x2	25	-	-	-	50	25	-	-	42	36	1	132	100	50	1	1330
041009	27FFISO	125	M27x2	30	-	-	-	55	30	-	-	48	38	1	148	110	54	1	1810
041010	36FFISO	160-200	M36x2	35	-	-	-	70	35	-	-	60	40	1	188	144	72	1	3890
041068	42FFISO	250	M42x2	40	104,3	-	-	85	40	-	-	70	63,5	1	232	168	84	5	5300
041069	48FFISO	320	M48x2	50	117,3	-	-	96	50	-	-	82	73	1	265	192	96	5	7900

* For cylinders not conforming to standards.

Mounting Accessories for Cylinders

Clevis DIN



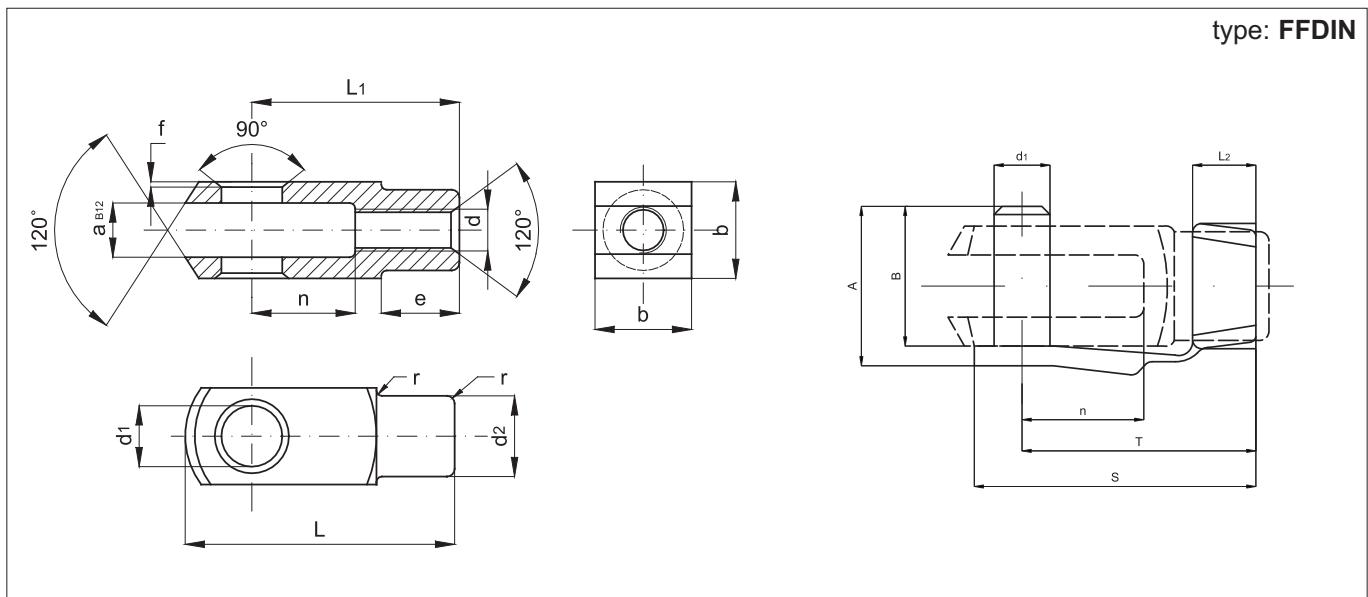
Standard executions		
Version	Symbol	Type
Female clevis		FFDIN



Clevis conforming to UNI 1676 - DIN 71752 standards.
They are complete with clips in the standard version (the model M24X3 is normally provided with a pin and 2 seegers).
The clevis is mounted on the cylinder rod and allows a swinging movement.

Options	Suffix
Special versions on request	/ S

Technical data	
Material	White zinc plated steel



Code	Item	d	a	A	B	b	d ₁	S	T	L ₂	d ₂	e	f	L	L ₁	n	r	Weight (g)
041001	4FFDIN	M4x0,7	4	11	9	8	4	19	15	5	8	6	0,5	21	16	8	0,5	7
041022	5FFDIN	M5x0,8	5	13,5	12	10	5	23	19	6	9	7,5	0,5	26	20	10	0,5	12
041002	6FFDIN	M6x1	6	16	14	12	6	28	23	6	10	9	0,5	31	24	12	0,5	19
041003	8FFDIN	M8x1,25	8	22	19	16	8	37	31	8	14	12	0,5	42	32	16	0,5	47
041025	10FFDIN	M10x1,5	10	26	23	20	10	46	39	10	18	15	0,5	52	40	20	0,5	89
041026	12FFDIN	M12x1,75	12	32	28	24	12	55	47	12	20	18	0,5	62	48	24	0,5	153
041027	14FFDIN	M14x2	14	-	-	27	14	-	-	-	24	22,5	1	72	56	28	1	224
041028	16FFDIN	M16x2	16	40	36	32	16	72	62	14	26	24	1	83	64	32	1	320
041030	20FFDIN	M20x2,5	20	48	44	40	20	88	72	16	34	30	1	105	80	40	1	680
041067	24FFDIN	M24x3	25	-	-	50	25	-	-	-	42	36	1	132	100	50	1	1330

Mounting Accessories for Cylinders

Clevis CNOMO



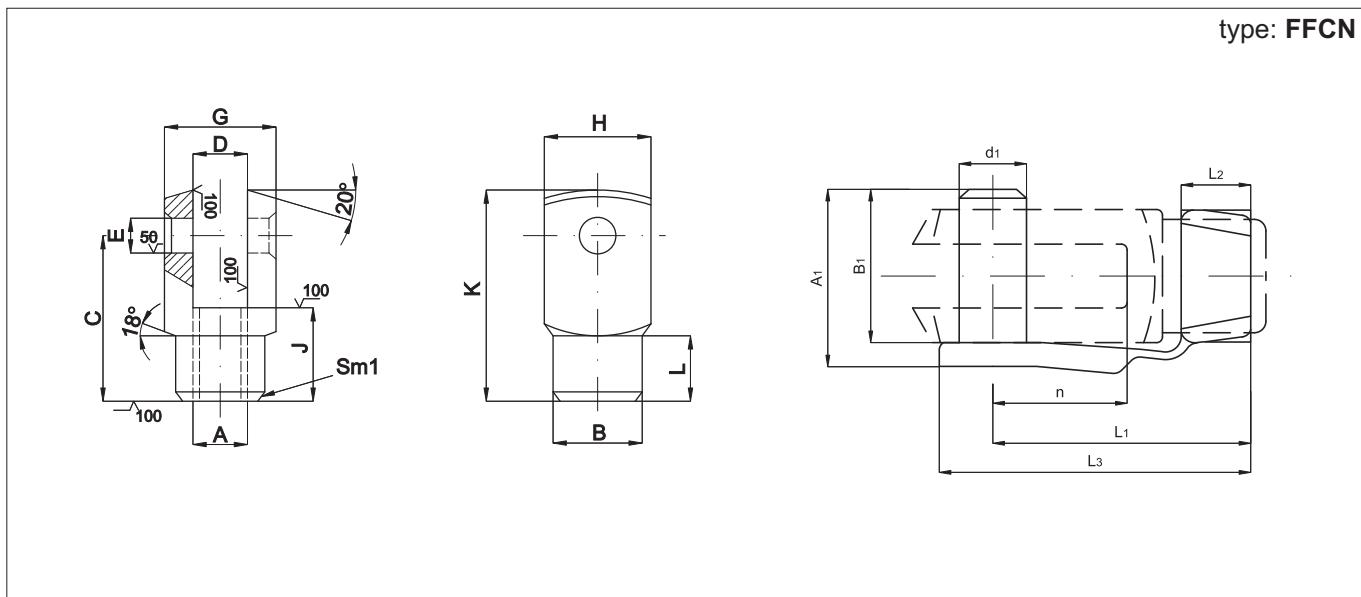
Standard executions		
Version	Symbol	Type
Female clevis		FFCN
Male clevis		FMCN



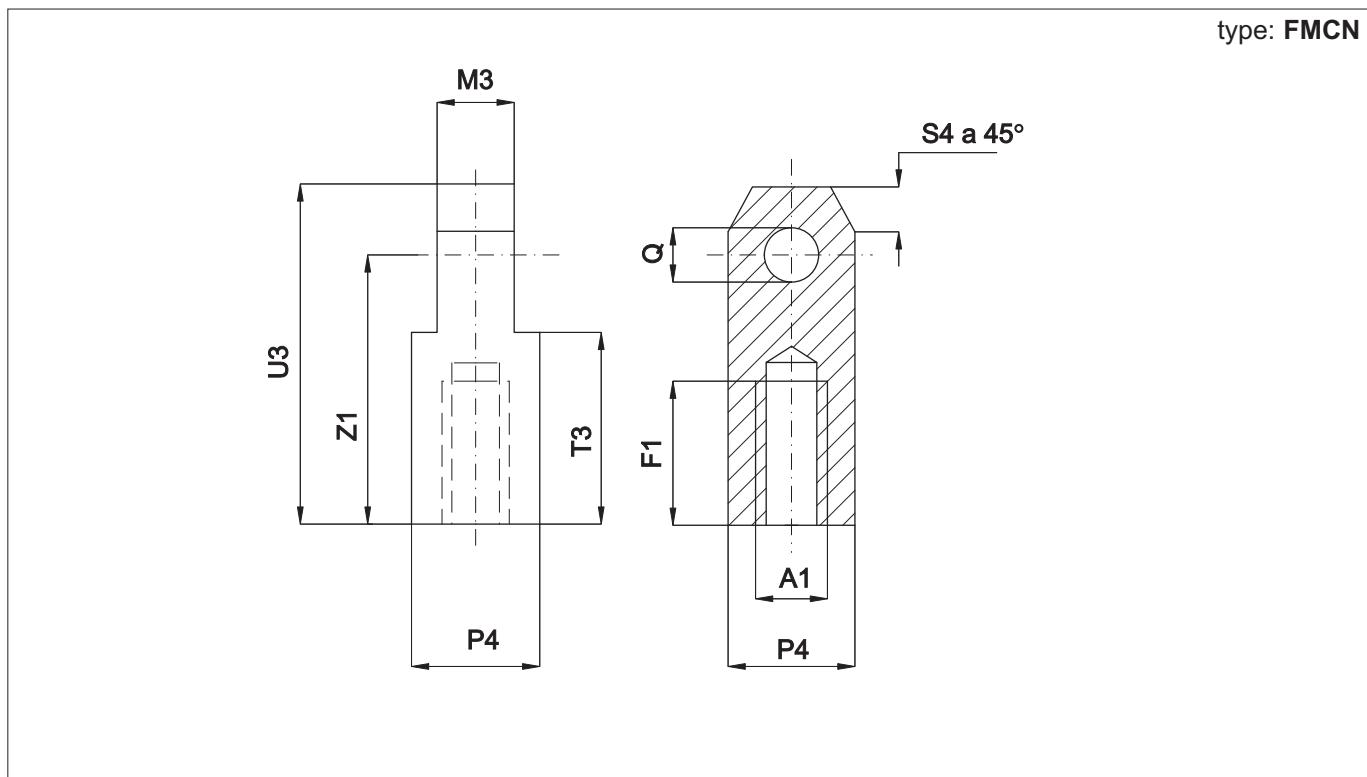
Clevis conforming to CNOMO 06 07 14 standards.
In the standard version the female ones are complete with clips (the model M36X2 is normally provided with a pin and 2 seegers) while the male ones are without pins or clips.
The clevis is mounted on the cylinder rod and allows a swinging movement.

Options	Suffix
Special versions on request	/ S

Technical data	
Material	Yellow zinc plated steel



Code	Item	For cylinder ø mm	A	A ₁	B	B ₁	C	D _{H11}	E _{H8}	G	H	L ₁	J	L ₂	K	L ₃	L	n	Weight (g)
041081	10FFCN	32	M10x1,5	28	18	25	36	11	8	22	22	36	20	10	45	41	14	16	94
041082	16FFCN	40-50	M16x1,5	44	26	40	51	18	12	36	26	50	26	12	64	60	17	25	253
041084	20FFCN	63-80	M20x1,5	53	34	49	63	22	16	45	34	63	30	15	80	74	18,5	33	530
041086	27FFCN	100-125	M27x2	73	42	69	85	30	20	63	42	81	45	19	105	98	30	40	1110
041088	36FFCN	160-200	M36x2	-	50	-	115	40	25	80	50	-	75	-	140	-	45	-	2160



Code	Item	For cylinder ø mm	A ₁	F ₁	M ₃	P ₄	Q _{n8}	S ₄	T ₃	U ₃	Z ₁
041041	10FMCN	32	M10x1,5	20	11	22	8	6	25	45	36
041042	16FMCN	40-50	M16x1,5	30	18	32	12	10	34	64	51
041044	20FMCN	63-80	M20x1,5	36	22	36	16	12	41	80	63
041046	27FMCN	100-125	M27x2	50	30	45	20	17,5	58	105	85
041048	36FMCN	160-200	M36x2	70	40	63	25	20	81	140	115

Mounting Accessories for Cylinders

Clevis with male thread



Standard executions		
Version	Symbol	Type
Female clevis with male thread		FE



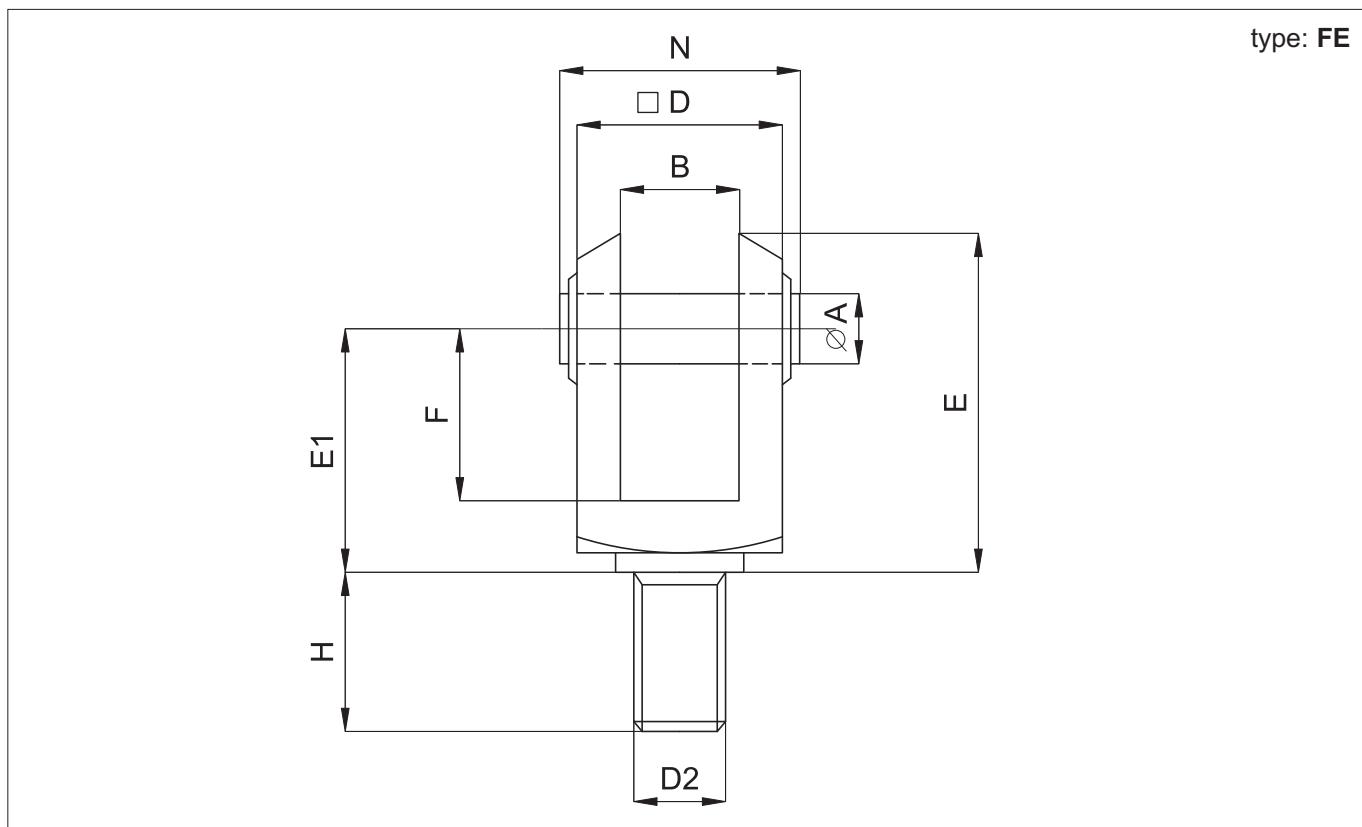
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Female clevis with male thread, complete with a pin and 2 set-screws in the standard version.

The clevis is mounted on the cylinder rod and allows a swinging movement.

Options	Suffix
Special versions on request	/ S

Technical data	
Material	Yellow zinc plated steel



Code	Item	A Ø	B	D	D ₂	E	E ₁	F	H	N
041061	10FE	10	10	20	M10x1,25	39	27	20	22	27
041062	12FE	12	12	24	M12x1,25	46	32	24	24	31
041063	16FE	16	16	32	M16x1,5	61	42	32	32	39
041064	20FE	20	20	40	M20x1,5	77	52	40	40	49
041065	27FE	25	25	50	M27x2	98	66	50	43	59
041066	33FE	28	28	55	M33x2	110	74	56	56	64



Notes

Mounting Accessories for Cylinders

Bearings - Bearing heads



Standard executions		
Version	Symbol	Type
With female thread		RF..SE



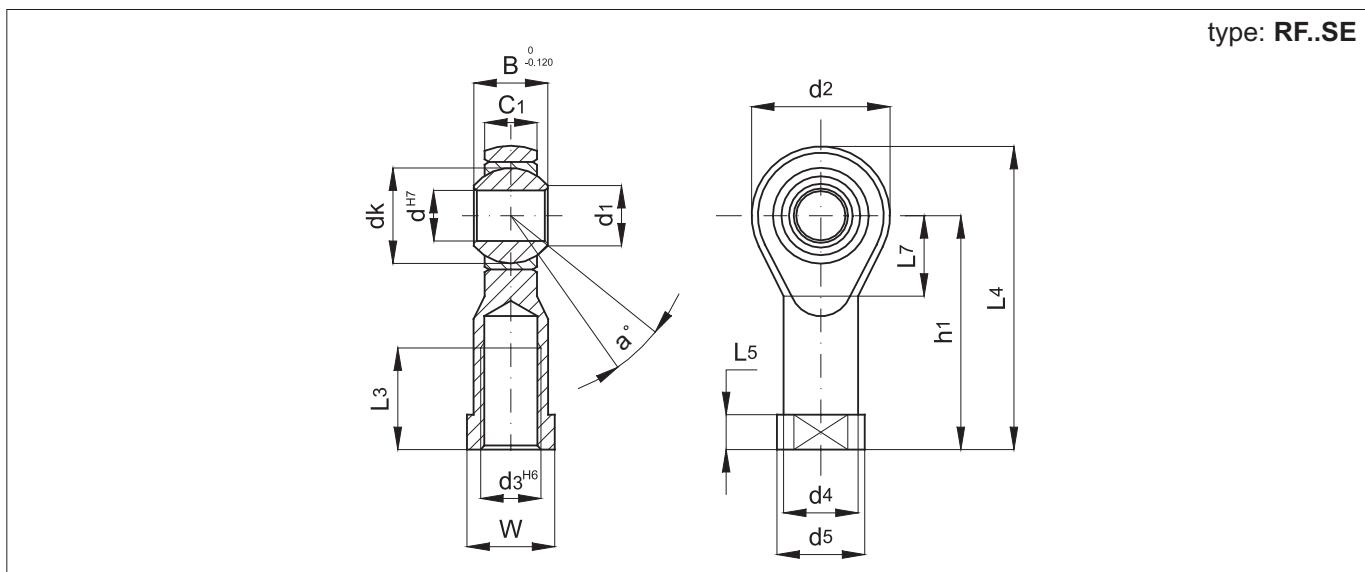
Options	Suffix
With male thread	RM..SE
With female thread (big pitch)	G
With left thread	S

The options can be combined (when this is possible)

Self-lubricating bearing heads servicing-free and conforming to DIN 648-K and ISO 8139 standards.

The bearing head is mounted on the cylinder rod.

Technical data	
Temperature range	-30 °C ÷ +150 °C
Materials	Body: Zinc / nickel plated steel Sphere: Hardened ground polished steel External ring: Self-lubricating brass/ PTFE



Code	Item	For cylin. ISO ø mm	d	d3	B	C1	d1	d2	d4	d5	dk	h1	L3	L4	L5	L7	W	Static load (daN)	a°	Weight (g)
041551	RF4SE	8-10	5	M4	8	6	7,7	18	9	11	11,112	27	10	36	4	10	9	600	13	19
041552	RF6SE	12-16	6	M6	9	6,75	8,9	20	10	13	12,700	30	12	40	5	11	11	700	13	26
041553	RF8SE	20	8	M8	12	9	10,4	24	12,50	16	15,875	36	16	48	5	13	14	1200	14	46
041554	RF10SE	25-32	10	M10x1,25	14	10,50	12,9	28	15	19	19,050	43	20	57	6,5	15	17	1400	13	75
041555	RF12SE	40	12	M12x1,25	16	12	15,4	32	17,50	22	22,225	50	22	66	6,5	17	19	1900	13	112
041557	RF16SE	50-63	16	M16x1,5	21	15	19,3	42	22	27	28,575	64	28	85	8	23	22	4800	15	220
041559	RF20SE	80-100	20	M20x1,5	25	18	24,3	50	27,50	34	34,925	77	33	102	10	27	30	5200	14	406
041562	RF30SE	125	30	M27x2	37	25	34,8	70	40	50	50,800	110	51	145	15	36	41	10800	17	1120
041563	RF35SE	160-200	35	M36x2	43	28	37,7	80	46	58	57,150	125	56	165	17	41	50	12400	19	1595
041571	RF40FE	250	40	M42x2	49	33	45,2	91	53	65	66,670	142	60	187,5	19	45	55		17	
041572	RF50SE	320	50	M48x2	60	45	56,6	117	65	75	82,500	160	65	218,5	23	58	65		12	

Mounting Accessories for Cylinders

Bearings - Self-aligned articulated couplings



Standard executions		
Version	Symbol	Type
Axial		GB



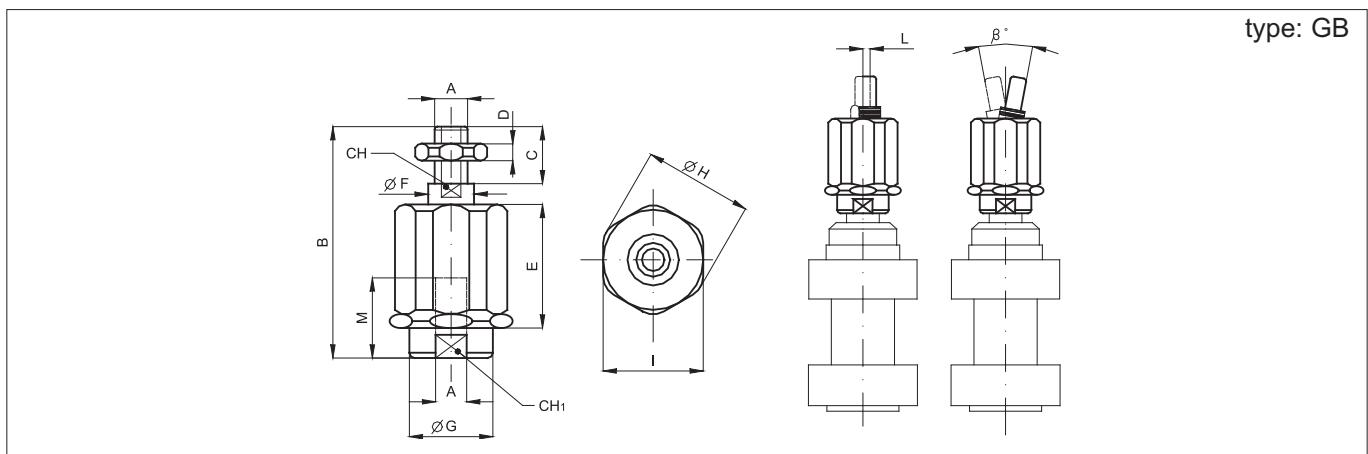
Axial self-aligned articulated couplings mounted on the cylinder rod.

They are fit for applications with high tractions and allow to compensate the angular and parallel misalignments.

They are provided with hexagonal nut in the standard version.

Options	Suffix
Special versions on request	/ S

Technical data	
Material	Zinc plated steel



Code	Item	For cylin. ISO ø mm	A	B	C	D	E	F	G	H	I	L	M	CH	β°	CH ₁	Maximum load (N) in thrust and traction	Weight (g)
041701	GB008	8-10	M4x0,7	33	8	2,2	15,5	6	8,5	14,5	12	1	10	3,2	10	12	750	20
041700	GB005	*	M5x0,8	38,5	13,5	2,5	17,5	6	8,5	14,5	13	1	10	5	10	7	1200	20
041702	GB010	12-16	M6x1	39	12	3,2	17,5	6	8,5	14,5	13	1	10	5	10	7	1200	23
041703	GB020	20	M8x1,25	55	16	4	24,5	8	12,5	19	17	2	20	7	10	10	2500	60
041704	GB040	25-32	M10x1,25	73	20	5	34	14	21	32	30	2	20	12	10	19	5000	230
041705	GB050	*	M10x1,5	73	20	5	34	14	21	32	30	2	20	12	10	19	5000	230
041706	GB060	40	M12x1,25	77	24	6	34	14	21	32	30	2	20	12	10	19	5000	230
041707	GB090	*	M12x1,75	77	24	6	34	14	21	32	30	2	20	12	10	19	5000	230
041708	GB100	50-63	M16x1,5	108	32	8	54	22	33,5	45	41	2	32	19	10	30	10000	650
041709	GB120	80-100	M20x1,5	122	40	9	54	22	33,5	45	41	2	40	19	10	30	10000	710
041711	GB130	125	M27x2	147	54	13,5	71	-	59	60	55	-	40	24	-	32	-	1600
041712	GB160 - 200	160-200	M36x2	241	72	14	125	-	56	80	75	-	40	36	-	50	-	5100
041713	GB250	250	M42x2	271	82	16	148	-	64	98	85	-	40	36	-	60	-	9200
041714	GB320	320	M48x2	271	82	18	-	-	-	-	90	-	40	42	-	60	-	-

* For cylinders not conforming to standards.

Mounting Accessories for Cylinders

Bearings - Axial articulated couplings



Standard executions		
Version	Symbol	Type
Axial		RBI

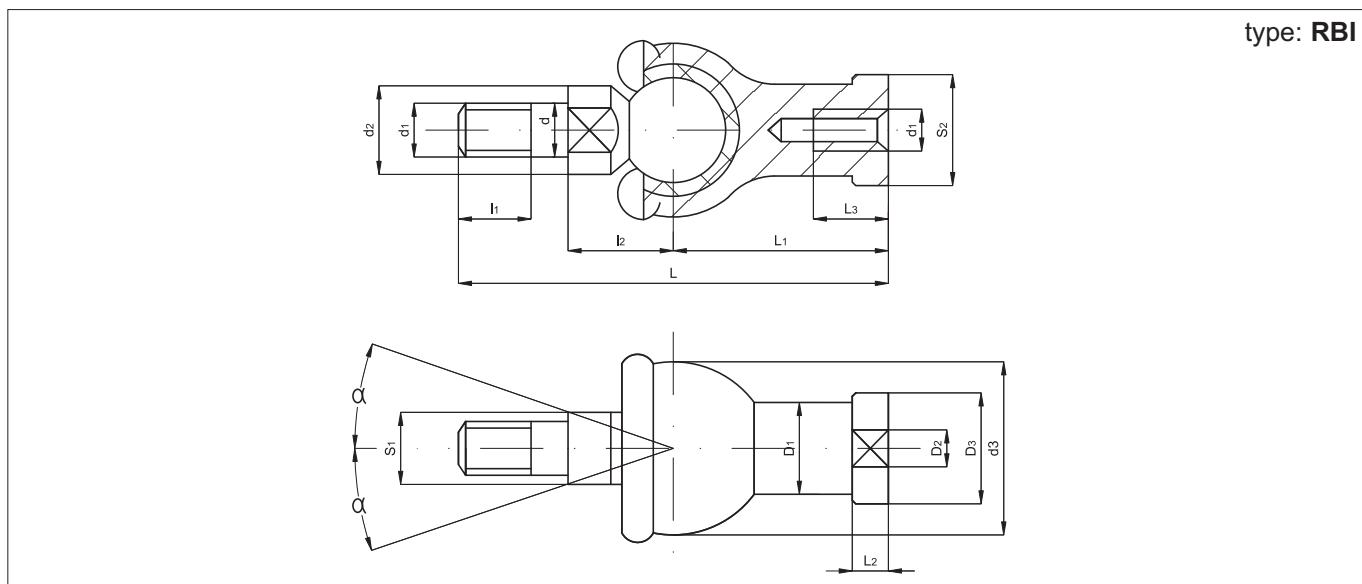


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Axial articulated couplings with bearing.
They are mounted on the cylinder rod and allow to compensate the angular misalignments.

Options	Suffix
Special versions on request	/ S

Technical data	
Temperature range	-20 °C ÷ +80 °C
Materials	Body: Special zinc alloy Pin: Zinc plated steel Seal: Neoprene Pre-lubricated spherical coupling



Code	Item	For cylin. ø mm	d	d ₁	d ₂ min	d ₃ max	l ₁ min	l ₂	S ₁	L max	l ₁ max	l ₂ max	l ₃ min	D ₁ max	D ₂ max	D ₃ max	S ₂	Load (KN) Dynam.	Load (KN) Static	α	Weight (g)
041601	RBI5	*	5	M5x0,8	9	20	8	11	7	46	24	4	12	9	12	17	10	1,7	5,7	15	25
041602	RBI6	12-16	6	M6x1	10	20	11	12,2	8	55,2	28	5	15	10	13	20	10	2,2	7,5	15	40
041603	RBI8	20	8	M8x1,25	12	24	12	16	10	65	32	5	16	12,5	16	24	13	3,3	11	15	75
041604	RBI10	25-32	10	M10x1,25	14	30	15	19,5	11	74,5	35	6,5	18	15	19	28	16	4,8	16	15	121
041605	RBI12	40	12	M12x1,25	19	32	17	21	16	84	40	6,5	20	17,5	22	32	18	6,6	22	15	187
041606	RBI14	*	14	M14x1,5	19	38	22	23,5	16	104,5	45	8	25	20	25	36	21	8,7	29	11	277
041607	RBI16	50-63	16	M16x1,5	22	44	23	25,5	18	112	50	8	27	22	27	40	24	10	33	11	361
041608	RBI18	*	18	M18x1,5	25	45	25	31	21	130,5	58	10	32	25	31	45	27	11	37	11	539
041609	RBI20	80-100	20	M20x1,5	29	50	25	31	24	133	63	10	38	27,5	34	45	30	11	37	7,5	575
041610	RBI22	*	22	M22x1,5	29	52	26	33	24	145	70	12	43	30	37	50	30	14	46	7,5	757

* For cylinders not conforming to standards.

Mounting Accessories for Cylinders

Bearings - Angle articulated couplings



Standard executions		
Version	Symbol	Type
Angular		RBL

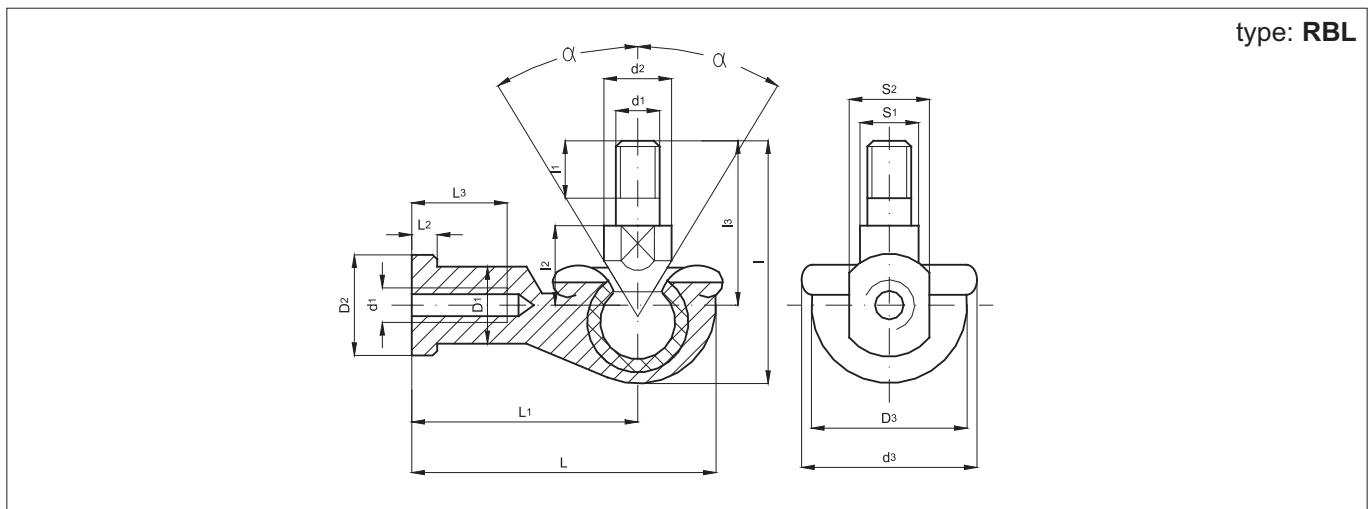


Articulated couplings with bearing and with pin perpendicular to the body.

They are mounted on the cylinder rod and allow to compensate the angular misalignment.

Options	Suffix
Special versions on request	/ S

Technical data	
Temperature range	-20 °C ÷ +80 °C
Materials	Body: Special zinc alloy Pin: Zinc plated steel Seal: Neoprene Pre-lubricated spherical coupling



Code	Item	For cylin. ø mm	d	d ₁ min	d ₂ max	d ₃ max	l max	l ₁ min	l ₂ max	l ₃ max	s ₁	l max	l ₁ max	l ₂ min	l ₃ max	d ₁ max	d ₂ max	d ₃ max	s ₂	Load (KN) Dyn.	Load (KN) Stat.	alpha	Weight (g)
041651	RBL5	*	5	M5x0,8	9	20	30	8	10	21	7	36	27	4	14	9	12	18	10	2,7	9,2	25	26
041652	RBL6	12-16	6	M6x1	10	20	36	11	11	26	8	40,5	30	5	14	10	13	20	10	3,6	12	25	39
041653	RBL8	20	8	M8x1,25	12	24	43,5	12	14	31	10	49	36	5	17	12,5	16	25	13	5,7	19	25	68
041654	RBL10	25-32	10	M10x1,25	14	30	51,5	15	17	37	11	58	43	6,5	24	15	19	29	16	8,2	27	25	112
041655	RBL12	40	12	M12x1,25	19	32	57,5	17	19	42	16	66	50	6,5	25	17,5	22	31	18	11	37	25	164
041656	RBL14	*	14	M14x1,5	19	38	73,5	22	21,5	56	16	75	57	8	26	20	25	35	21	14	48	25	254
041657	RBL16	50-63	16	M16x1,5	22	44	79,5	23	23,5	60	18	84	64	8	32	22	27	39	24	16	53	20	336
041658	RBL18	*	18	M18x1,5	25	45	90	25	26,5	68	21	93	71	10	34	25	31	44	27	18	61	20	464
041659	RBL20	80-100	20	M20x1,5	29	50	90	25	27	68	24	99	77	10	35	27,5	34	44	30	18	61	20	538
041660	RBL22	*	22	M22x1,5	29	52	95	26	28	70	24	109	84	12	41	30	37	50	30	22	75	16	713

* For cylinders not conforming to standards.

Mounting Accessories for Cylinders

Mountings for ISO 6432 in steel

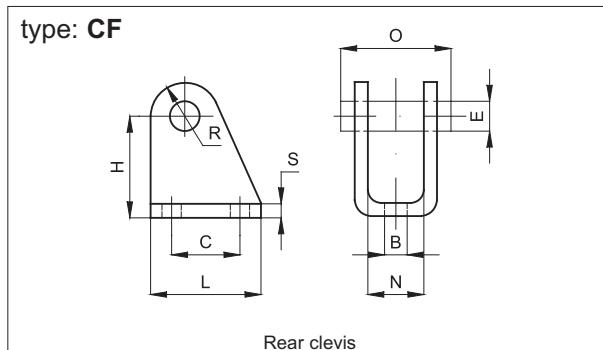


Standard executions		
Version	Symbol	Type
Rear clevis with pin		CF
Foot		P
Flange		F



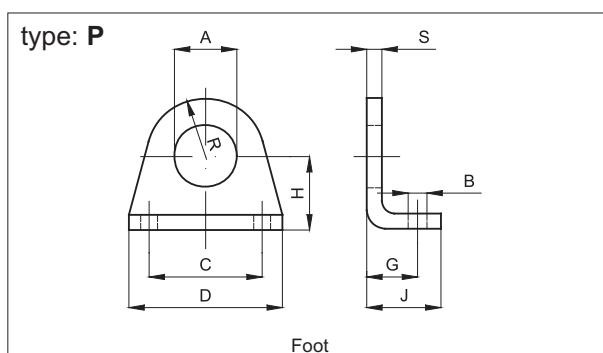
Technical data	
Material	Fe 37, traciato
Treatment	Black cataphoresis

1

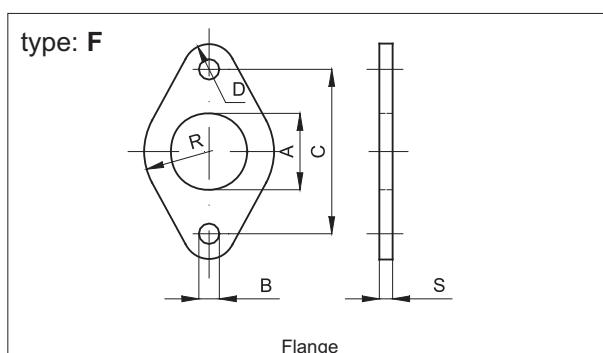


Code	Item	For cyl. ø mm	B	E	C	H	L	N	O	R	S	Weight (g)
040041	CF8-10	8-10	4,5	4	12,5	24	20	8,1	17	5	2,5	20
040042	CF12-16	12-16	5,5	6	15	27	25	12,1	23	7	3	36
040043	CF20-25	20-25	6,6	8	20	30	32	16,1	29,5	10	4	78

Complete with a pin and 2 seegers in the standard version.



Code	Item	For cyl. ø mm	A	B	C	D	G	H	J	R	S	Weight (g)
040021	P8-10	8-10	12	4,5	25	35	11	16	16	10	3	20
040022	P12-16	12-16	16	5,5	32	42	14	20	20	12,5	4	40
040023	P20-25	20-25	22	6,6	40	54	17	25	25	20	5	90



Code	Item	For cyl. ø mm	A	B	C	R	D	S	Weight (g)
040001	F8-10	8-10	12	4,5	30	11	5	3	12
040002	F12-16	12-16	16	5,5	40	15	6	4	26
040003	F20-25	20-25	22	6,6	50	20	8	5	50

Mounting Accessories for Cylinders

Mountings for ISO 15552 in aluminium

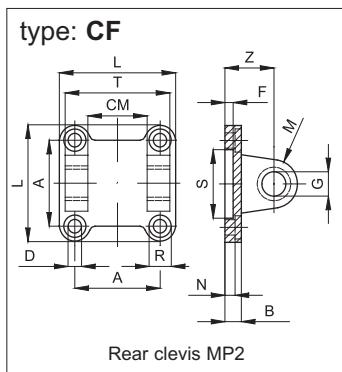


Standard executions		
Version	Symbol	Type
Rear clevis		CF..ALIS
Rear eye		CM..ALIS
Narrow rear clevis		CFS..ALIS
Rear 90° hinge CETOPRP107P		ASV..ALIS
High foot		P..ALIS
Narrow rear eye with bearing DIN 648K		CMS..ALIS
Rear 90° hinge ISO 6431		AS..ALIS



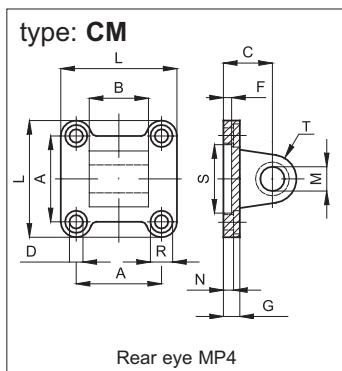
Technical data	
Material	Die-cast aluminium
Treatment	Sifting

Note: The mounting screws are to be ordered separately.
For screws see page 1.101.1 VTCEI - VBTR).

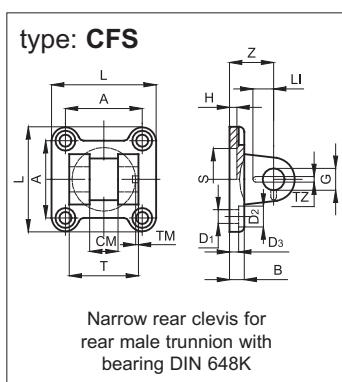


Code	Item	For cyl. ø mm	A	L	D	R	N	B	S	F	Z	G	M	CM	T	Weight (g)
040441	CF32ALIS	32	32,5	45	6,6	11	5,5	9	30	5	22	10	10	26	45	48
040442	CF40ALIS	40	38	52	6,6	11	5,5	9	35	5	25	12	12	28	52	75
040443	CF50ALIS	50	46,5	65	9	15	6,5	11	40	5	27	12	12	32	60	124
040444	CF63ALIS	63	56,5	75	9	15	6,5	11	45	5	32	16	16	40	70	192
040445	CF80ALIS	80	72	95	11	18	10	14	45	5	36	16	16	50	90	380
040446	CF100ALIS	100	89	115	11	18	10	14	55	5	41	20	20	60	110	620
040447	CF125ALIS	125	110	140	14	20	10	20	60	7	50	25	25	70	130	1180
040448	CF160ALIS	160	140	180	18	26	10	20	65	7	55	30	25	90	170	1780
040449	CF200ALIS	200	175	220	18	26	11	25	75	7	60	30	25	90	170	2900
040450	CF250ALIS	250	220	270	22	33	11	25	90	11	70	40	40	110	200	5800

The pin is to be ordered separately: for the pin see page 1.98.2 (SEC..AQIS)



Code	Item	For cyl. ø mm	A	L	D	R	N	G	S	F	C	M	T	B	Weight (g)
040501	CM32ALIS	32	32,5	45	6,6	11	5,5	9	30	5	22	10	10	26	54
040502	CM40ALIS	40	38	52	6,6	11	5,5	9	35	5	25	12	12	28	76
040503	CM50ALIS	50	46,5	65	9	15	6,5	11	40	5	27	12	12	32	124
040504	CM63ALIS	63	56,5	75	9	15	6,5	11	45	5	32	16	16	40	212
040505	CM80ALIS	80	72	95	11	18	10	14	45	5	36	16	16	50	420
040506	CM100ALIS	100	89	115	11	18	10	14	55	5	41	20	20	60	666
040507	CM125ALIS	125	110	140	14	20	10	20	60	7	50	25	25	70	1264
040508	CM160ALIS	160	140	180	18	26	10	20	65	7	55	30	25	90	1846
040509	CM200ALIS	200	175	220	18	26	11	25	75	7	60	30	25	90	2950
040510	CM250ALIS	250	220	270	22	33	11	25	90	11	70	40	40	110	6200

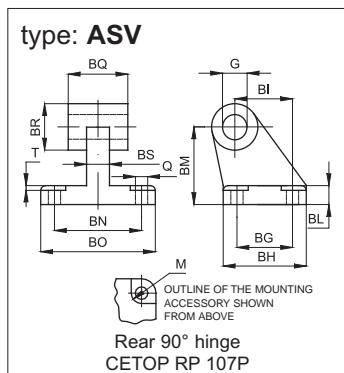


Codice	Articolo	Per cil. ø mm	L	T	CM	A	Z	H	B	D ₃	S	G	MR	D ₁	D ₂	TA	TZ	LI	F	Peso (g)
040451	CFS32ALIS	32	45	34	14	32,5	22	5	9	5,5	30	10	10	6,6	11	3	3,3	11,5	17	42
040452	CFS40ALIS	40	52	40	16	38	25	5	9	5,5	35	12	12	6,6	11	4	4,3	12	20	70
040453	CFS50ALIS	50	65	45	21	46,5	27	5	11	6,5	40	16	14	9	15	4	4,3	14	22	112
040454	CFS63ALIS	63	75	51	21	56,5	32	5	11	6,5	45	16	18	9	15	4	4,3	14	25	194
040455	CFS80ALIS	80	95	65	25	72	36	5	14	10	45	20	20	11	18	4	4,3	16	30	382
040456	CFS100ALIS	100	115	75	25	89	41	5	14	10	55	20	22	11	18	4	6,3	16	32	610
040457	CFS125ALIS	125	140	97	37	110	50	7	20	10	60	30	25	14	20	6	6,3	24	42	1100
040458	CFS160ALIS	160	180	122	43	140	55	7	20	10	65	35	30	18	26	6	6,3	26,5	46	2030
040459	CFS200ALIS	200	220	122	43	175	60	7	25	11	75	35	30	18	26	6	6,3	26,5	49	3400

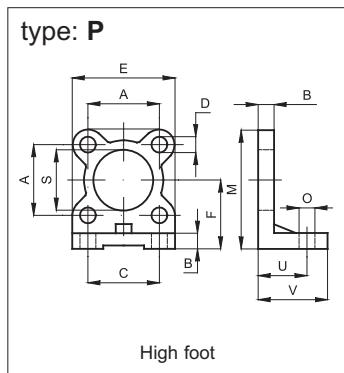
The pin is to be ordered separately: for the pin see page 1.98.3 (SEC..ARAQIS).

Mounting Accessories for Cylinders

Mountings for ISO 15552 in aluminium

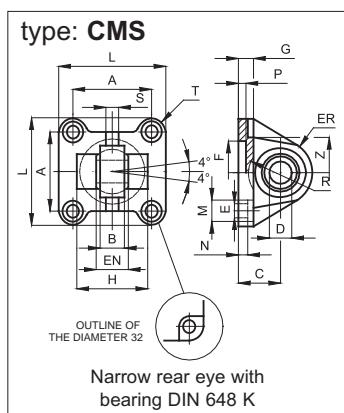


Code	Item	For cyl. ø mm	Q	M	BG	BH	BI	BL	BM	BN	BO	BS	BR	G	T	BQ	Weight (g)
040388	ASV32ALIS	32	6,6	11	18	31	21	8	32	38	51	10	20	10	1,6	26	-0,2 -0,6
040389	ASV40ALIS	40	6,6	11	22	35	24	10	36	41	54	15	22	12	1,6	28	
040390	ASV50ALIS	50	9	15	30	45	33	12	45	50	65	16	26	12	1,6	32	
040391	ASV63ALIS	63	9	15	35	50	37	14	50	52	67	16	30	16	1,6	40	
040392	ASV80ALIS	80	11	18	40	60	47	14	63	66	86	20	30	16	2,5	50	
040393	ASV100ALIS	100	11	18	50	70	55	17	71	76	96	20	38	20	2,5	60	
040394	ASV125ALIS	125	14	20	60	90	70	20	90	94	124	30	45	25	3,2	70	-0,5
040395	ASV160ALIS	160	14	20	88	126	97	25	115	118	156	36	63	30	4	90	-1,2
040396	ASV200ALIS	200	18	26	90	130	105	30	135	122	162	40	63	30	4	90	-

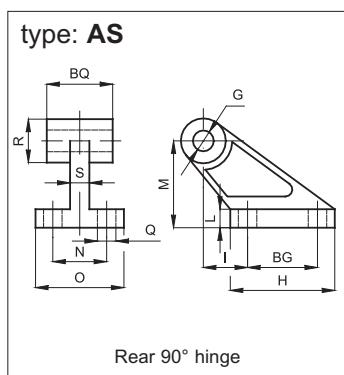


Code	Item	For cyl. ø mm	A	B	C	D	E	F	M	O	S	U	V	Weight (g)
040141	P32ALIS	32	32,5	8	32	7	45	32	54,5	7	30	24	35	46
040142	P40ALIS	40	38	8	36	7	52	36	62	9	35	28	35	66
040143	P50ALIS	50	46,5	10	45	9	65	45	77,5	9	40	32	45	138
040144	P63ALIS	63	56,5	10	50	9	75	50	87,5	9	45	32	45	174
040145	P80ALIS	80	72	12	63	11	95	63	110,5	12	45	41	55	356
040146	P100ALIS	100	89	12	75	11	115	71	128	14	56	41	56	468
040147	P125ALIS	125	110	16	90	14	140	91	161	16	60	45	68	920
040148	P160ALIS	160	140	20	115	18	180	115	205	18	65	60	82	2300
040149	P200ALIS	200	175	20	135	18	220	135	245	22	75	70	90	3200

It is supplied singly.



Code	Item	For cyl. ø mm	A	B	C	D	EN	ER	F	G	E	L	M	N	P	H	R	S	Z	T	Weight (g)
040151	CMS32ALIS	32	32,5	10,5	22	10	14	16	30	9	6,6	45	11	5,5	5	-	-	4	32,5	6,25	62
040152	CMS40ALIS	40	38	12	25	12	16	19	35	9	6,6	52	11	5,5	5	-	-	6	39	7	100
040153	CMS50ALIS	50	46,5	15	27	16	21	21	40	11	9	65	15	6,5	5	51	18	8	47	9,25	180
040154	CMS63ALIS	63	56,5	15	32	16	21	24	45	11	9	75	15	6,5	5	-	-	8	52	9,25	244
040155	CMS80ALIS	80	72	18	36	20	25	28,5	45	14	11	95	18	10	5	72	24	10	67	11,5	476
040156	CMS100ALIS	100	89	18	41	20	25	30	55	14	11	115	18	10	5	-	-	10	77	13	646
040157	CMS125ALIS	125	110	25	50	30	37	40	60	20	13,5	140	20	10	7	-	-	13	98	15	1410
040158	CMS160ALIS	160	140	28	55	35	43	45	65	20	18	180	26	10	7	-	-	14	130	20	2420
040159	CMS200ALIS	200	175	28	60	35	43	48	75	25	18	220	26	11	7	-	-	14	155	22,5	3840



Code	Item	For cyl. ø mm	Q	BG	H	I	L	M	N	O	S	R	BQ	G	Weight (g)
040361	AS32ALIS	32	7	20	37	18	8	32	25	41	9	19	26	10	54
040362	AS40ALIS	40	9	32	54	25	10	45	32	52	14	25,5	28	12	136
040363	AS50ALIS	50	9	32	54	25	10	45	32	52	14	25,5	32	12	140
040364	AS63ALIS	63	11	50	75	32	12	63	40	63	14	32	40	16	295
040365	AS80ALIS	80	11	50	75	32	12	63	40	63	14	32	50	16	313
040366	AS100ALIS	100	14	70	103	40	17	90	50	80	22	42	60	20	710
040367	AS125ALIS	125	14	70	103	40	17	90	50	80	22	46	70	25	820
040368	AS160ALIS	160	18	110	154	50	20	140	63	110	26	53,5	89	30	1974
040369	AS200ALIS	200	18	110	154	50	20	140	63	110	26	53,5	89	30	1974

Mounting Accessories for Cylinders

Mountings for ISO 15552 in steel

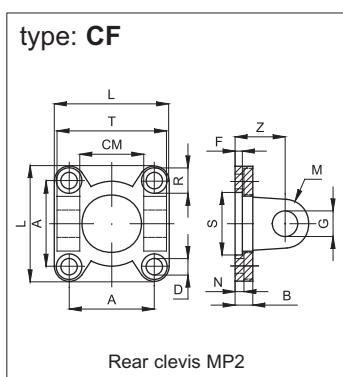


Standard executions		
Version	Sym.	Type
Rear clevis		CF..AQIS
Rear eye		CM..AQIS
Rear 90° hinge CETOP RP 107P		ASV..AQIS
Pin with rear clevis MP2 with seeger		SEC..AQIS
Narrow rear clevis		CFS..AQIS
Narrow rear eye with bearing DIN 648K		CMS..AQIS
Rear 90° hinge with bearing DIN 648K		ASS..AQIS
Anti-rotating pin for narrow rear clevis		SEC..ARAQIS
Flange ISO 6431		FL..AQIS
Flange VDMA		FLV..AQIS
Low foot		PB..AQIS
Round adjustable centre trunnion (tie rod)		CT..AQIS
Centre trunnion (profile barrel)		CTS..AQIS
Support for centre trunnion (tie rod)		ST..AQIS
Front clevis		CFA..AQIS
Centre trunnion (tie rod) for heads		CTA..AQIS



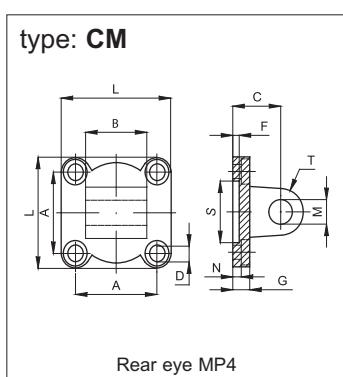
Technical data					
Type	Materials and treatments				
	Steel A105	Steel AVP	Fe 37	Black cataphoresis	White zinking
CF..AQIS	•			•	
CM..AQIS	•			•	
ASV..AQIS	•			•	
SEC..AQIS		•			
CFS..AQIS	•			•	
CMS..AQIS	•			•	
ASS..AQIS	•			•	
SEC..ARAQIS		•			
FL..AQIS			•		•
FLV..AQIS			•		•
PB..AQIS			•		•
CT..AQIS	•				•
CTS..AQIS	•				•
ST..AQIS			•		•
CFA..AQIS	•			•	
CTA..AQIS	•				•

Note: The mounting screws are to be ordered separately.
For screws see page 1.101.1 (VTCEI - VBTR)



Code	Item	For cyl. Ø mm	A	L	D	R	N	B	S	F	Z	G	M	CM	T	Weight (g)
040461	CF32AQIS	32	32,5	45	6,6	11	5,5	10	30	5	22	10	10	26	45	138
040462	CF40AQIS	40	38	55	6,6	11	5,5	10	35	5	25	12	12	28	52	230
040463	CF50AQIS	50	46,5	65	9	15	6,5	10	40	5	27	12	12	32	60	338
040464	CF63AQIS	63	56,5	75	9	15	6,5	12	45	5	32	16	16	40	70	540
040465	CF80AQIS	80	72	95	11	18	10	14	45	-	36	16	16	50	90	1000
040466	CF100AQIS	100	89	115	11	18	10	16	55	-	41	20	20	60	110	1700
040467	CF125AQIS	125	110	140	13,5	20	10	20	60	-	50	25	25	70	130	3350
040468	CF160AQIS	160	140	180	18	26	10	20	65	7	55	30	25	90	170	5750
040469	CF200AQIS	200	175	220	18	26	11	20	75	7	60	30	25	90	170	8900

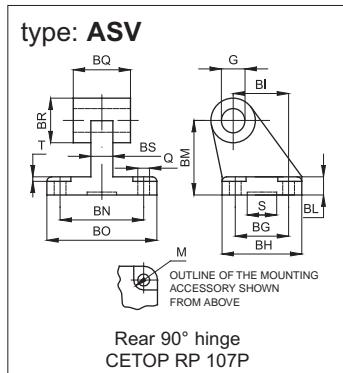
The pin is to be ordered separately: for the pin see page 1.98.2 (SEC..AQIS)



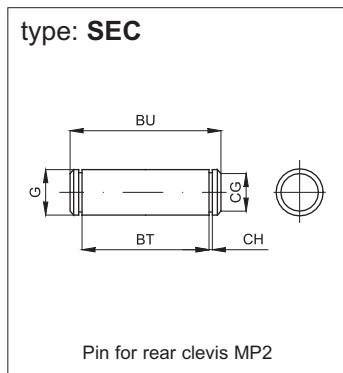
Code	Item	For cyl. Ø mm	A	L	D	R	N	G	S	F	C	M	T	B	Weight (g)
040521	CM32AQIS	32	32,5	45	6,6	11	5,5	10	30	5	22	10	10	26	176
040522	CM40AQIS	40	38	55	6,6	11	5,5	10	35	5	25	12	12	28	274
040523	CM50AQIS	50	46,5	65	9	15	6,5	10	40	5	27	12	12	32	368
040524	CM63AQIS	63	56,5	75	9	15	6,5	12	45	5	32	16	16	40	682
040525	CM80AQIS	80	72	95	11	18	10	14	45	5	36	16	16	50	1196
040526	CM100AQIS	100	89	115	11	18	10	16	55	5	41	20	20	60	2100
040527	CM125AQIS	125	110	140	13,5	20	10	20	60	7	50	25	25	70	3740
040528	CM160AQIS	160	140	180	18	26	10	20	65	7	55	30	25	90	5890
040529	CM200AQIS	200	175	220	18	26	11	20	75	7	60	30	25	90	8470

Mounting Accessories for Cylinders

Mountings for ISO 15552 in steel

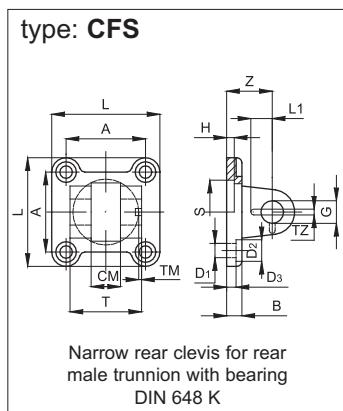


Code	Item	For cyl. Ø mm	Q	M	BG	BH	BI	BL	BM	BN	BO	BS	BR	BQ	G	T	S	Peso (g)
040381	ASV32AQIS	32	6,6	11	18	31	21	8	32	38	51	10	20	26	10	1,6	20	158
040382	ASV40AQIS	40	6,6	11	22	35	24	10	36	41	54	10	22	28	12	1,6	20	238
040383	ASV50AQS	50	9	15	30	45	33	12	45	50	65	14	26	32	12	1,6	20	418
040384	ASV63AQIS	63	9	15	35	50	37	14	50	52	67	14	30	40	16	1,6	20	526
040385	ASV80AQIS	80	11	18	40	60	47	14	63	66	86	18	30	50	16	2,5	20	1055
040386	ASV100AQIS	100	11	18	50	70	55	17	71	76	96	20	38	60	20	2,5	20	1360
040387	ASV125AQIS	125	14	20	60	90	70	20	90	94	124	30	45	70	25	3,2	-	-



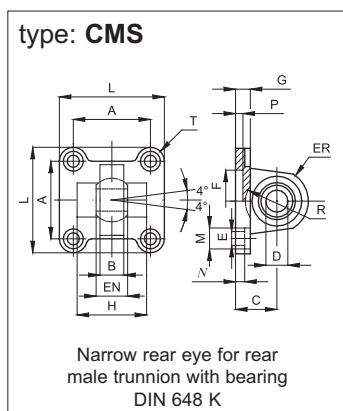
Code	Item	For cyl. Ø mm	G		BT		CG		CH		BU		Weight (g)	
040261	SEC32AQIS	32	10		46		9,6		1,1		53		32	
040262	SEC40AQIS	40	12		53		11,5		1,1		60		52	
040263	SEC50AQIS	50	12		61		11,5		1,1		68		60	
040264	SEC63AQIS	63	16		71		15,2		1,1		78		122	
040265	SEC80AQIS	80	16		91		15,2		1,1		98		152	
040266	SEC100AQIS	100	20		111		19		1,3		118		290	
040267	SEC125AQIS	125	25		132		23,9		1,3		139		530	
040268	SEC160AQIS	160	30		171,5		28,6		1,6		178		978	
040269	SEC200AQIS	200	30		171,5		28,6		1,6		178		978	
040270	SEC250AQIS	250	40		202		37,5		1,6		211		2100	

It is supplied with 2 seegers included.



Code	Item	For cyl. Ø mm	L	T	CM	A	Z	H	B	D ₃	S	G	D ₁	D ₂	TA	TZ	LI	Weight (g)
040491	CFS32AQIS	32	45	34	14	32,5	22	5	10	5,5	30	10	6,6	11	3	3,3	11,5	140
040492	CFS40AQIS	40	55	40	16	38	25	5	10	5,5	35	12	6,6	11	4	4,3	12	230
040493	CFS50AQIS	50	65	45	21	46,5	27	5	10	6,5	40	16	9	15	4	4,3	14	336
040494	CFS63AQIS	63	75	51	21	56,5	32	5	12	6,5	45	16	9	15	4	4,3	14	546
040495	CFS80AQIS	80	95	65	25	72	36	5	16	10	45	20	11	18	4	4,3	16	1190
040496	CFS100AQIS	100	115	75	25	89	41	5	16	10	55	20	11	18	4	6,3	16	1840
040497	CFS125AQIS	125	140	97	37	110	50	7	20	10	60	30	13,5	20	6	6,3	24	3550

The pin is to be ordered separately: for pins see page 1.98.3 (SEC..ARAQIS).



Code	Item	For cyl. Ø mm	A	B	C	D	EN	ER	F	G	E	L	M	N	P	H	R	Weight (g)
040531	CMS32AQIS	32	32,5	10,5	22	10	14	15	30	10	6,6	45	10,5	5,5	5	-	-	152
040532	CMS40AQIS	40	38	12	25	12	16	18	35	10	6,6	55	11	5,5	5	-	-	256
040533	CMS50AQIS	50	46,5	15	27	16	21	20	40	10	9	65	15	6,5	5	51	19	364
040534	CMS63AQIS	63	56,5	15	32	16	21	23	45	12	9	75	15	6,5	5	-	-	595
040535	CMS80AQIS	80	72	18	36	20	25	27	45	14	11	95	18	10	5	-	-	1122
040536	CMS100AQIS	100	89	18	41	20	25	30	55	16	11	115	18	10	5	-	-	1786
040537	CMS125AQIS	125	110	26	50	30	37	40	60	20	13,5	140	20	10	7	-	-	3500

Mounting Accessories for Cylinders

Mountings for ISO 15552 in steel



type: ASS

Rear 90° hinge with bearing
DIN 648 K

Code	Item	For cyl. Ø mm	Q	M	BG	BH	BI	BL	BM	BN	BO	EN	ER	BQ	D	H	S	F	Weight (g)
040551	ASS32AQIS	32	6,6	11	18	31	21	10	32	38	51	14	15	10,5	10	8,5	20	3	178
040552	ASS40AQIS	40	6,6	11	22	35	24	10	36	41	54	16	18	12	12	8,5	20	3	268
040553	ASS50AQS	50	9	15	30	45	33	12	45	50	65	21	20	15	16	10,5	20	3	458
040554	ASS63AQIS	63	9	15	35	50	37	12	50	52	67	21	23	15	16	10,5	20	3	550
040555	ASS80AQIS	80	11	18	40	60	47	14	63	66	86	25	27	18	20	11,5	20	3	970
040556	ASS100AQIS	100	11	18	50	70	55	15	71	76	96	25	30	18	20	12,5	20	3	1326
040557	ASS125AQIS	125	13,5	20	60	90	70	20	90	94	124	37	40	25	30	17	20	3	3000

type: SEC - AR

Anti-rotating pin for narrow
rear clevis

Code	Item	For cyl. Ø mm	A	C	D	E	F	G	H	L	B		Weight (g)
040571	SEC32ARAQIS	32	3	32,5	1,1	10	9,6	4	41	14	4,5		26
040572	SEC40ARAQIS	40	4	38	1,1	12	11,5	4	48	16	6		42
040573	SEC50ARAQIS	50	4	43	1,1	16	15,2	5	54	20	6	0	84
040574	SEC63ARAQIS	63	4	49	101	16	15,2	5	60	20	6	-1	94
040575	SEC80ARAQIS	80	4	63	1,3	20	19	6	75	24	6		184
040576	SEC100ARAQIS	100	4	73	1,3	20	19	6	85	24	6		208
040577	SEC125ARAQIS	125	6	94	1,6	30	28,6	7	110	36	9	0	606
040578	SEC160ARAQIS	160	6	119	1,6	35	33	7	135	41	9	-2	972
040579	SEC200ARAQIS	200	6	119	1,6	35	33	7	135	41	9		972

It is supplied with 1 seeger included.

type: FL

Flange ISO MF1 / MF2

Code	Item	For cyl. Ø mm	A	AP	AO	R	AS	AR	AQ	AT	AV	C	D	Weight (g)
040661	FL32AQIS	32	32,5	7	30	6,5	10	45	32	64	80	10,5	6,5	190
040662	FL40AQIS	40	38	9	35	6,5	10	52	36	72	90	10,5	6,5	246
040663	FL50AQIS	50	46,5	9	40	8,5	12	65	45	90	110	13,5	8,5	478
040664	FL63AQIS	63	56,5	9	45	8,5	12	75	50	100	120	13,5	8,5	622
040665	FL80AQIS	80	72	12	45	10,5	16	95	63	126	150	16,5	10,5	1430
040666	FL100AQIS	100	89	14	55	10,5	16	115	75	150	170	16,5	10,5	1986
040667	FL125AQIS	125	110	16	60	13,5	20	140	90	180	205	20	12,5	3750
040668	FL160AQIS	160	140	18	65	17	20	180	115	230	260	25	16,5	6350
040669	FL200AQIS	200	175	22	75	17	25	220	135	270	300	25	16,5	11350
040670	FL250AQIS	250	220	26	90	22,5	25	280	165	330	390	33	20	20100

type: FLV

Flange VDMA MF1 / MF2

Code	Item	For cyl. Ø mm	A	AP	AO	R	AS	AR	AQ	AT	AV	C	D	Weight (g)
040671	FLV32AQIS	32	32,5	7	30	6,5	10	45	32	64	80	10,5	5	192
040672	FLV40AQIS	40	38	9	35	6,5	10	52	36	72	90	11	5	250
040673	FLV50AQIS	50	46,5	9	40	9	12	65	45	90	110	15	5,5	480
040674	FLV63AQIS	63	56,5	9	45	9	12	75	50	100	120	15	5,5	620
040675	FLV80AQIS	80	72	12	45	11	16	95	63	126	150	18	8	1415
040676	FLV100AQIS	100	89	14	55	11	16	115	75	150	170	18	8	1985
040677	FLV125AQIS	125	110	16	60	13,5	20	140	90	180	205	20	9,5	3750
040678	FLV160AQIS	160	140	18	65	18	20	180	115	230	260	26	10,5	6350
040679	FLV200AQIS	200	175	22	75	18	25	220	135	270	300	26	12,5	11300

Lowered head screws type VBTR (see page 1.101.1) must be used with this mounting accessory.

Mounting Accessories for Cylinders

Mountings for ISO 15552 in steel



type: PB

Low foot MS1

It is supplied singly.

Code	Item	For cyl. ø mm	C	B	D	E	F	G	H	I	S	T	R	U	Z	Weight (g)
040201	PB32AQIS	32	32,5	32	45	35	30	7	15,75	24	4	32	15	11	7	66
040202	PB40AQIS	40	38	36	52	36	30	7	17	28	4	36	17,5	15	9	78
040203	PB50AQIS	50	46,5	45	65	47	36	9	21,75	32	5	45	20	16	9	168
040204	PB63AQIS	63	56,5	50	75	45	35	9	21,75	32	5	50	22,5	18	9	190
040205	PB80AQIS	80	72	63	95	55	47	11	27	41	6	63	22,5	17	12	382
040206	PB100AQIS	100	89	75	115	57	53	11	26,5	41	6	71	27,5	24	14	452
040207	PB125AQIS	125	110	90	140	70	70	14	35	45	8	90	30	-	16	1090
040208	PB160AQIS	160	140	115	180	75	100	18	45	60	9	115	32,5	-	18	1188
040209	PB200AQIS	200	175	135	220	100	100	18	47,5	70	12	135	37,5	-	22	3450

type: CT

Round adjustable centre trunnion (tie rod) MT4

Code	Item	For cyl. ø mm	A	AE	AL	AH e9	AG h14	AF h14	AN	R	M	Q	Z	Weight (g)
040581	CT32AQIS	32	32,5	46	15	12	12	50	37	1	6,25	7	M5	110
040582	CT40AQIS	40	38	59	20	16	16	63	46	1,5	6,25	8	M5	290
040583	CT50AQIS	50	46,5	69	20	16	16	75	56	1,6	8,25	8	M6	330
040584	CT63AQIS	63	56,5	84	25	20	20	90	69	1,6	8,25	12	M6	650
040585	CT80AQIS	80	72	102	25	20	20	110	87	1,6	10,25	12	M8	830
040586	CT100AQIS	100	89	125	30	25	25	132	107	2	10,25	15	M8	1560
040587	CT125AQIS	125	110	155	32	25	25	160	133	2	12,25	15	M10	2450
040588	CT160AQIS	160	140	190	40	32	32	200	170	2,5	16,25	18	M12	4150
040589	CT200AQIS	200	175	240	40	32	32	250	211	2,5	16,25	18	M12	7300

type: CTS

Centre trunnion (profile barrel) MT4 for cylinders AMA

Code	Item	For cyl. ø mm	B	AE	AL	AH e9	AG h14	AF h14	R	L	G	A	M	N	O	Weight (g)
040601	CTS32AQIS	32	33	48,5	18	12	12	50	37	57	M5	11	15,5	7	/	104
040602	CTS40AQIS	40	38	59	20	16	16	63	46	64	M6	11	20	8	/	234
040603	CTS50AQIS	50	48	71	20	16	16	75	56	82	M6	14	22,5	8	/	300
040604	CTS63AQIS	63	58	84	26	20	20	90	69	96	M6	14	30	12	/	577
040605	CTS80AQIS	80	73	105	26	20	20	110	87	119	M6	16	45	12	58	858
040606	CTS100AQIS	100	91	129	32	25	25	132	107	144,5	M8	17	60	15	74	1565
040607	CTS125AQIS	125	116	154	33	25	25	160	133	181	M8	18	85,5	15	104	1932

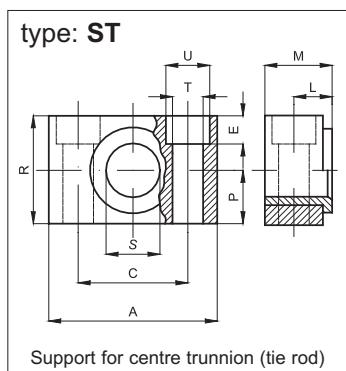
type: CTN

Round centre trunnion not adjustable (threaded) MT4

Code	Item	For cyl. ø mm	A	AE	AL	AH e9	AG h14	AF h14	AN	M	Weight (g)
040052	CNT32AQIS	32	32,5	46	15	12	12	50	37	M6	110
040053	CNT40AQIS	40	38	59	20	16	16	63	46	M6	290
048590	CNT50AQIS	50	46,5	69	20	16	16	75	56	M8	330
040564	CNT63AQIS	63	56,5	84	25	20	20	90	69	M8	650
040096	CNT80AQIS	80	72	102	25	20	20	110	87	M10	830
040097	CNT100AQIS	100	89	125	30	25	25	132	107	M10	1560
040098	CNT125AQIS	125	110	155	32	25	25	160	133	M12	2450
040099	CNT160AQIS	160	140	190	40	32	32	200	170	M16	4150
040100	CNT200AQIS	200	175	240	40	32	32	250	211	M16	7300
040110	CNT250AQIS	250	220	296	50	40	40	320	268	M20	13050

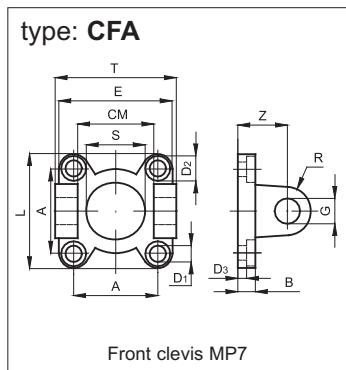
Mounting Accessories for Cylinders

Mountings for ISO 15552 in steel

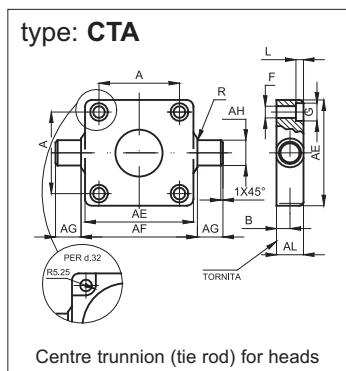


Code	Item	For cyl. ø mm	A	M	R	P	C	S	L	U	T	E	Weight (g)
040681	ST32AQIS	32	46	18	30	15	32	12	10,5	11	6,6	7	100
040682	ST40-50AQIS	40-50	55	21	36	18	36	16	12	15	9	9	150
040684	ST63-80AQIS	63-80	65	23	40	20	42	20	13	18	11	11	234
040686	ST100-125AQIS	100-125	75	28,5	50	25	50	25	16	20	14	13	435
040688	ST160-200AQIS	160-200	92	40	60	30	60	32	22,5	26	18	17	850

It is supplied singly.



Code	Item	For cyl. ø mm	A	E	D ₁	D ₂	D ₃	B	S	Z	G	R	CM	T	Weight (g)
040611	CFA32AQIS	32	32,5	45	6,5	10,5	8	10	30	22	10	10	32	50	125
040612	CFA40AQIS	40	38	55	6,5	10,5	8	10	35	25	12	12	37	58	214
040613	CFA50AQIS	50	46,5	65	8,5	13,5	8	10	40	27	12	12	42	70	298
040614	CFA63AQIS	63	56,5	75	8,5	13,5	10	12	45	32	16	16	47	75	518



Code	Item	For cyl. ø mm	AE	AL	AH	AG	AF	AN	A	B	F	G	L	R	Weight (g)
040591	CTA32AQIS	32	46	14	12	12	50	30	32,5	6,5	6,5	-	6	1	137
040592	CTA40AQIS	40	59	19	16	16	63	35	38	9	6,5	10,5	6	1,6	385
040593	CTA50AQIS	50	69	19	16	16	75	40	46,5	9	8,5	13,5	8	1,6	513
040594	CTA63AQIS	63	84	24	20	20	90	45	56,5	11,5	8,5	13,5	8	1,6	1041
040595	CTA80AQIS	80	102	24	20	20	110	45	72	11,5	10,5	16,5	10	1,6	1567
040596	CTA100AQIS	100	125	29	25	25	132	55	89	14	10,5	16,5	10	2	3000

Mounting Accessories for Cylinders

Mountings for ISO 15552, complete with pin and screws



Version	Code	Item
1xCF32ALIS + 1xPIN + 4xSCREWS	042050	CF+S+V32ALIS
1xCF40ALIS + 1xPIN + 4xSCREWS	042051	CF+S+V40ALIS
1xCF50ALIS + 1xPIN + 4xSCREWS	042052	CF+S+V50ALIS
1xcf63ALIS + 1xPIN + 4xSCREWS	042053	CF+S+V63ALIS
1xCF80ALIS + 1xPIN + 4xSCREWS	042054	CF+S+V80ALIS
1xCF100ALIS + 1xPIN + 4xSCREWS	042055	CF+S+V100ALIS
1xCF125ALIS + 1xPIN + 4xSCREWS	042056	CF+S+V125ALIS



Version	Code	Item
1xCM32ALIS + 4xSCREWS	042061	CM+V32ALIS
1xCM40ALIS + 4xSCREWS	042062	CM+V40ALIS
1xCM50ALIS + 4xSCREWS	042063	CM+V50ALIS
1xCM63ALIS + 4xSCREWS	042064	CM+V63ALIS
1xCM80ALIS + 4xSCREWS	042065	CM+V80ALIS
1xCM100ALIS + 4xSCREWS	042066	CM+V100ALIS



Version	Code	Item
1xASV32ALIS + 4xSCREWS	042081	ASV+V32ALIS
1xASV40ALIS + 4xSCREWS	042082	ASV+V40ALIS
1xASV50ALIS + 4xSCREWS	042083	ASV+V50ALIS
1xASV63ALIS + 4xSCREWS	042084	ASV+V63ALIS
1xASV80ALIS + 4xSCREWS	042085	ASV+V80ALIS
1xASV100ALIS + 4xSCREWS	042086	ASV+V100ALIS
1xASV125ALIS + 4xSCREWS	042087	ASV+V125ALIS



Version	Code	Item
1xFL32AQIS + 4xSCREWS	042119	FL+V32ALIS
1xFL40AQIS + 4xSCREWS	042120	FL+V40ALIS
1xFL50AQIS + 4xSCREWS	042121	FL+V50ALIS
1xFL63AQIS + 4xSCREWS	042122	FL+V63ALIS
1xFL80AQIS + 4xSCREWS	042123	FL+V80ALIS
1xFL100AQIS + 4xSCREWS	042124	FL+V100ALIS



Version	Code	Item
2xPB32AQIS + 4xSCREWS	042129	PB+V32AQIS
2xPB40AQIS + 4xSCREWS	042130	PB+V40AQIS
2xPB50AQIS + 4xSCREWS	042131	PB+V50AQIS
2xPB63AQIS + 4xSCREWS	042132	PB+V63AQIS
2xPB80AQIS + 4xSCREWS	042133	PB+V80AQIS
2xPB100AQIS + 4xSCREWS	042134	PB+V100AQIS
2xPB125AQIS + 4xSCREWS	042135	PB+V125AQIS



Notes

Mounting Accessories for Cylinders

Mountings for CNOMO in aluminium

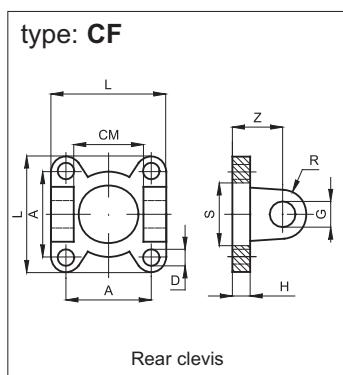


Standard executions		
Version	Symbol	Type
Rear clevis		CF..ALCN
Rear male trunnion		AN..ALCN
Rear 90° hinge		AS..ALCN
High foot		P..ALCN
Wide high foot		PL..ALCN



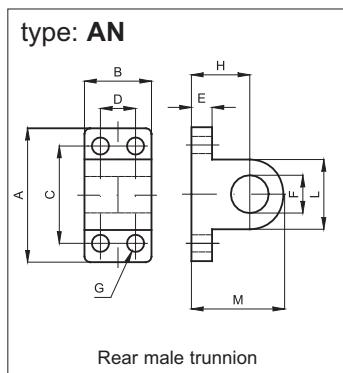
Technical data	
Material	Die-cast aluminium
Treatment	Sifting

Note: The mounting screws are to be ordered separately.
For screws see page 1.101.1 (VTCEI)

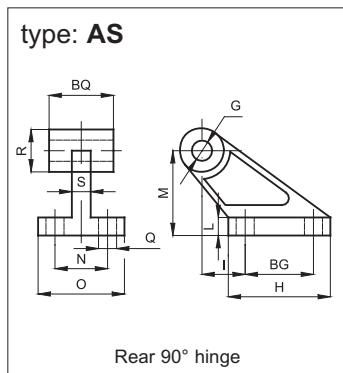


Code	Item	For cyl. ø mm	A	L	D	H	CM	S	R	Z	G	Weight (g)
040401	CF32ALCN	32	33	45	7	8	26	25	8	18	8	38
040402	CF40ALCN	40	40	52	7	8	33	32	12	24	12	58
040403	CF50ALCN	50	49	65	9	10	33	32	12	26	12	118
040404	CF63ALCN	63	59	75	9	10	47	45	16	30	16	146
040405	CF80ALCN	80	75	95	11	12	47	45	16	32	16	324
040406	CF100ALCN	100	90	115	11	12	57	55	20	37	20	492
040407	CF125ALCN	125	110	140	14	16	57	55	21	41	20	978
040408	CF160ALCN	160	140	180	18	20	72	65	25	55	25	1872
040409	CF200ALCN	200	175	220	18	20	72	65	25	55	25	2800

The pin is to be ordered separately: for the pin see page 1.99.50 (SEC..AQCN)



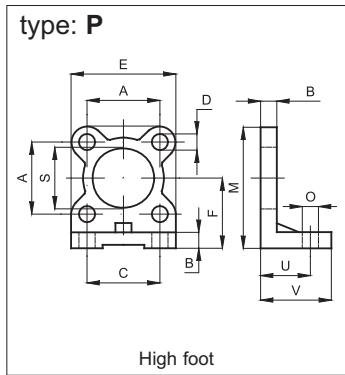
Code	Item	For cyl. ø mm	A	B	C	D	E	F	G	H	L	M	Weight (g)
040281	AN32ALCN	32	40	25	28	-	8	8	7	18	16	26	26
040282	AN40-50ALCN	40-50	52	32	38	16	10	12	9	26	24	38	56
040284	AN63-80ALCN	63-80	75	46	54	25	12	16	11	34	36	52	176
040286	AN100-125ALCN	100-125	115	56	90	32	16	20	14	41	40	61	376
040288	AN160-200ALCN	160-200	180	71	150	43	20	25	18	55	50	80	924



Code	Item	For cyl. ø mm	Q	BG	H	I	L	M	N	O	S	R	BQ	G	Weight (g)
040321	AS32ALCN	32	7	20	37	18	8	32	25	41	9	19,5	25	8	58
040322	AS40-50ALCN	40-50	9	32	54	25	10	45	32	52	14	26	32	12	144
040324	AS63-80ALCN	63-80	11	50	75	32	13	63	40	63	14	32	46	16	300
040326	AS100-125ALCN	100-125	14	70	103	40	17	90	50	80	22	42	56	20	694
040328	AS160-200ALCN	160-200	18	110	154	50	20	140	63	111	26	54	70	25	1922

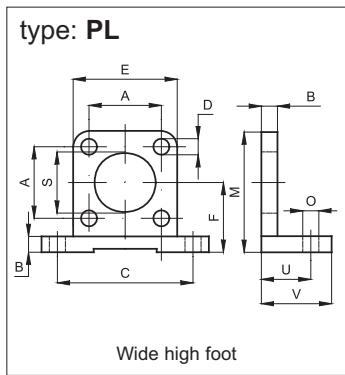
Mounting Accessories for Cylinders

Mountings for CNOMO in aluminium



Code	Item	For cyl. ø mm	A	B	C	D	E	F	M	O	S	U	V	Weight (g)
040101	P32ALCN	32	33	8	28	7	45	32	54	9	25	27	35	54
040102	P40ALCN	40	40	8	36	7	52	36	62	9	32	27	35	70
040103	P50ALCN	50	49	10	45	9	65	45	77	11	32	35	45	150
040104	P63ALCN	63	59	10	55	9	75	50	87	11	45	35	45	170
040105	P80ALCN	80	75	12	70	11	95	63	110	14	45	43	55	354
040106	P100ALCN	100	90	12	90	11	115	73	130	14	55	43	55	470
040107	P125ALCN	125	110	16	110	14	140	91	161	18	55	52	68	918
040108	P160ALCN	160	140	20	130	18	180	115	205	22	65	62	82	2300
040109	P200ALCN	200	175	20	170	18	220	135	245	22	65	62	92	3450

It is supplied singly.



Code	Item	For cyl. ø mm	A	B	C	D	E	F	M	O	S	U	V	Z	Weight (g)
040301	PL32ALCN	32	33	8	65	7	46	32	54	9	25	18	35	82	76
040302	PL40ALCN	40	40	8	72	7	52	36	62	9	32	18	35	90	90
040303	PL50ALCN	50	49	10	90	9	65	45	77	11	32	22	45	110	188
040304	PL63ALCN	63	59	10	100	9	75	50	87	11	45	22	45	120	206
040305	PL80ALCN	80	75	12	126	11	95	63	110	14	45	28	55	154	410
040306	PL100ALCN	100	90	12	148	11	115	73	130	14	55	28	55	180	576
040307	PL125ALCN	125	110	16	180	14	140	91	161	18	55	32	67,5	215	1058
040308	PL160ALCN	160	140	20	230	18	180	115	206	22	65	40	80	275	2350
040309	PL200ALCN	200	175	20	270	18	220	135	246	22	65	40	80	318	3100

It is supplied singly.

Mounting Accessories for Cylinders

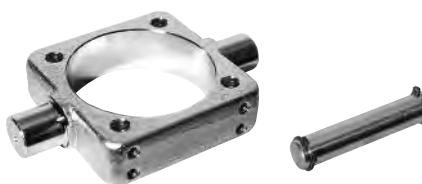
Mountings for CNOMO in steel



Standard executions

Version	Symbol	Type
Flange		FL..AQCN
Low foot		PB..AQCN
Pin for rear clevis with seeger		SEC..AQCN
Round adjustable centre trunnion (tie rod)		CT..AQCN
Centre trunnion (profile barrel) for CNX		CTS..AQIS

STEEL

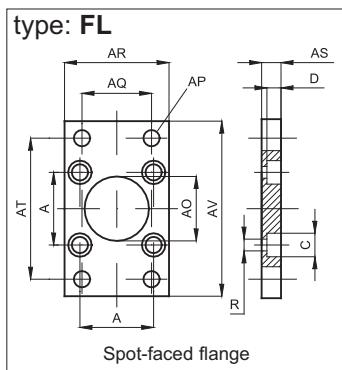


Technical data

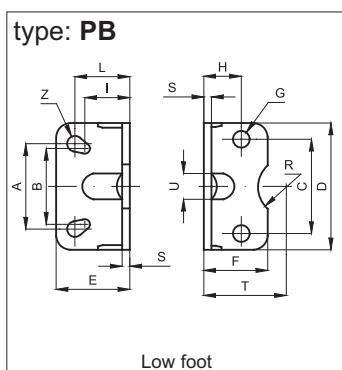
Type	Materials and treatments			
	Steel A105	Steel AVP	Fe 37	White zinking
FL..AQCN			•	•
PB..AQCN			•	•
SEC..AQCN		•		
CT..AQCN	•			•
CTS..AQIS	•			•

Note: The mounting screws are to be ordered separately.

For screws see page 1.101.1 (VTCEI)

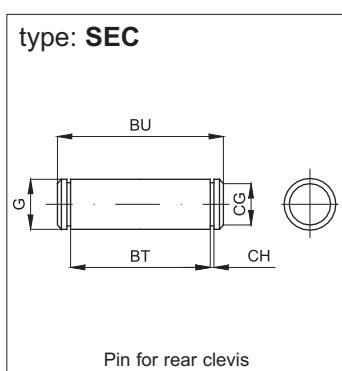


Code	Item	For cyl. ø mm	A	AP	AO	R	AS	AR	AQ	AT	AV	C	D	Weight (g)
040621	FL32AQCN	32	33	9	25	6,5	8	45	33	69	80	10,5	6	158
040622	FL40AQCN	40	40	9	32	6,5	8	52	40	78	90	10,5	6	206
040623	FL50AQCN	50	49	11	32	9	10	65	49	94	110	13,5	8	424
040624	FL63AQCN	63	59	11	45	9	10	75	59	104	120	13,5	8	504
040625	FL80AQCN	80	75	14	45	10,5	12	95	75	130	150	16,5	10	1046
040626	FL100AQCN	100	90	14	55	10,5	12	115	90	150	170	16,5	10	1480
040627	FL125AQCN	125	110	18	55	13,5	16	140	110	180	205	19	12,5	3000
040628	FL160AQCN	160	140	22	65	16,5	20	180	140	228	260	24,5	16,5	6300
040629	FL200AQCN	200	175	22	65	16,5	20	220	175	268	300	24,5	16,5	9300



Code	Item	For cyl. ø mm	A	B	C	D	E	F	G	H	I	L	M	N	R	S	T	U	Weight (g)
040161	PB32AQCN	32	28	32	33	45	35	30	7	15,5	22	27	4,5	3,5	12,5	4	32	11	66
040162	PB40AQCN	40	36	36	40	52	36	30	7	16	26	27	4,5	4,5	16	4	36	15	78
040163	PB50AQCN	50	45	45	49	65	45	36	9	20,5	30	35	505	4,5	16	5	45	16	168
040164	PB63AQCN	63	55	50	59	75	45	35	9	20,5	30	35	5,5	4,5	22,5	5	50	18	190
040165	PB80AQCN	80	70	63	75	95	55	45	11	25,5	37	43	7	5,5	22,5	6	63	17	382
040166	PB100AQCN	100	90	75	90	115	56	44	11	27	37,5	43	7	6,5	27,5	6	73	24	452
040167	PB125AQCN	125	100	-	110	140	70	70	14	36	-	52	9	-	27,5	8	91	-	1090
040168	PB160AQCN	160	130	-	140	180	75	100	18	45	-	62	11	-	32,5	10	115	-	1180
040169	PB200AQCN	200	170	-	175	220	100	100	18	47	-	62	11	-	32,5	12	135	-	3450

It is supplied singly.



Code	Item	For cyl. ø mm	G	BT	CG	CH	BU	Weight (g)
040221	SEC32AQCN	32	8	46	7,6	1,1	53	21
040222	SEC40AQCN	40	12	53	11,5	1,1	60	52
040223	SEC50AQCN	50	12	66	11,5	1,1	73	64
040224	SEC63AQCN	63	16	76	15,2	1,1	83	130
040225	SEC80AQCN	80	16	96	15,2	1,1	103	160
040226	SEC100AQCN	100	20	117	19	1,3	124	304
040227	SEC125AQCN	125	20	142	19	1,3	149	364
040228	SEC160AQCN	160	25	182	23,9	1,3	189	720
040229	SEC200AQCN	200	25	222	23,9	1,3	229	872

It is supplied with 3 seegers included.

Mounting Accessories for Cylinders

Mountings for CNOMO in steel



type: CT

Round threaded center trunnion.
On request available adjustable with screws.

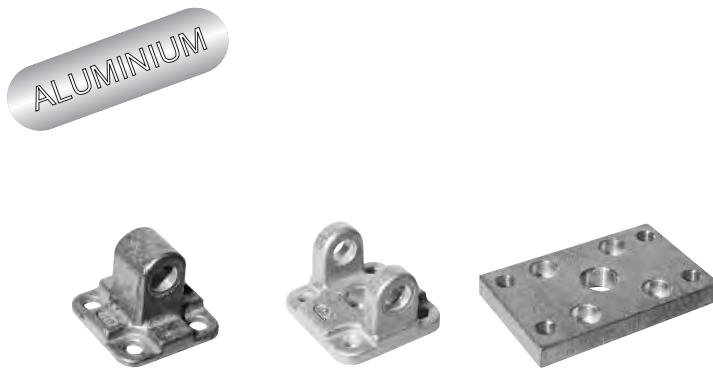
Code	Item	For cyl. ø mm	A	AE	AL	AH	AG	AF	AN	R	M	Weight (g)
040541	CT32AQCN	32	33	46	15	12	12	50	37	1	M6	130
040542	CT40AQCN	40	40	59	20	16	16	63	46	1,5	M6	306
040543	CT50AQCN	50	49	69	20	16	16	73	56	1,6	M8	370
040544	CT63AQCN	63	59	84	25	20	20	90	69	1,6	M8	702
040545	CT80AQCN	80	75	102	25	20	20	108	87	1,6	M10	894
040546	CT100AQCN	100	90	125	30	25	25	131	107	2	M10	1590
040547	CT125AQCN	125	110	155	32	25	25	160	133,5	2	M12	2600
040548	CT160AQCN	160	140	190	40	32	32	200	171	2,5	M16	4300
040549	CT200AQCN	200	175	240	40	32	32	250	211	2,5	M16	7450

Mounting Accessories for Cylinders

Mountings for compact UNITOP in aluminium



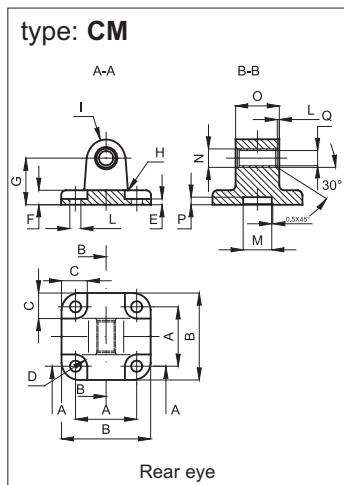
Standard executions		
Version	Symbol	Type
Rear eye		CM..ALUN
Rear clevis		CF..ALUN
Flange		FL..ALUN



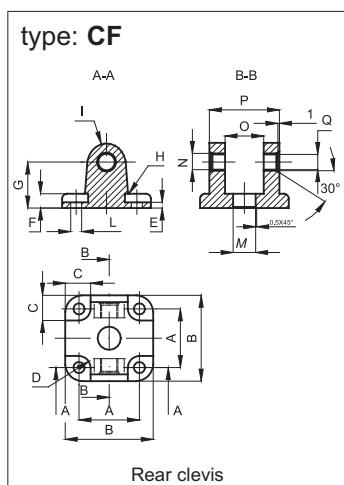
1

Technical data	
Material	Die-cast aluminium
Treatment	Sifting

Note: The mounting screws are to be ordered separately.
For screws see page 1.101.1 (VBU)



Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	Weight (g)
040701	CM12-16ALUN	12-16	18	27	8,5	4,5	2,6	6	16	2	6	4,5	10	8	12	3	6	17
040702	CM20ALUN	20	22	34	11	5	2,6	6	20	2	8	5,5	12	10	16	3	8	21
040703	CM25ALUN	25	26	38	11	5	2,6	6	20	2	8	5,5	12	10	16	3	8	27



Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	Weight (g)
040711	CF32ALUN	32	32	48	13,5	5,5	5,5	9	22	2,5	10	6,6	14	12	26	45	10	60
040712	CF40ALUN	40	42	58	13,5	5,5	5,5	9	25	2,5	12,5	6,6	14	14	28	52	12	104
040713	CF50ALUN	50	50	66	15,5	7,5	6,5	11	27	2,5	12,5	9	18	14	32	60	12	142
040714	CF63ALUN	63	62	83	18	7,5	6,5	11	32	4	15	9	18	18	40	70	16	240
040715	CF80ALUN	80	82	102	19	9	10	13	36	4	15	11	23	18	50	90	16	420
040716	CF100ALUN	100	103	123	19	9	10	15	41	4	20	11	28	23	60	110	20	721

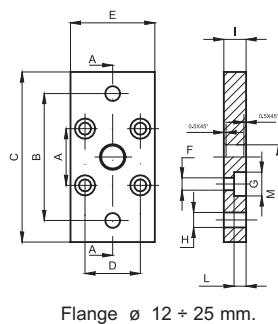
The pin is to be ordered separately: for the pin see page 1.98.2 (SEC..AQIS).

Mounting Accessories for Cylinders

Mountings for compact UNITOP in aluminium

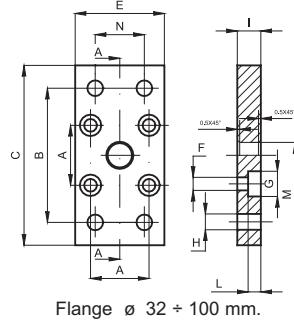


type: **FL**



Code	Item	For cyl. ø mm	A	B	C	D	E	F	G	H	I	L	M	Weight (g)
040721	FL12-16ALUN	12-16	18	43	55	18	29	4,5	9	5,5	10	5,4	10	34
040722	FL20ALUN	20	22	55	70	22	36	5,5	10	6,6	10	5,4	12	55
040723	FL25ALUN	25	26	60	76	26	40	5,5	10	6,6	10	5,4	12	68

type: **FL**



Code	Item	For cyl. ø mm	A	B	C	D	E	F	G	H	I	L	M	N	Weight (g)
040724	FL32ALUN	32	32	65	80	32	50	6,6	11	7	10	6,4	14	32	88
040725	FL40ALUN	40	42	82	102	42	60	6,6	11	9	10	6,4	14	36	143
040726	FL50ALUN	50	50	90	110	50	68	9	15	9	12	8,6	18	45	204
040727	FL63ALUN	63	62	110	130	62	87	9	15	9	15	8,6	18	50	411
040728	FL80ALUN	80	82	135	160	82	107	11	18	12	15	10,6	23	63	616
040729	FL100ALUN	100	103	163	190	103	128	11	18	14	15	10,6	28	75	890

For rear 90° hinge use:

- from bore 12 to 25 mm
- from bore 32 to 100 mm

Rear clevis ISO 6432, type **CF** (see page 1.95.1).

Rear 90° hinge VDMA, type **ASV** (see page 1.97.2).

Mounting Accessories for Cylinders

Mountings for compact UNITOP in steel



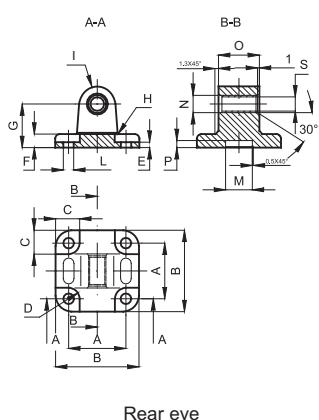
Standard executions

Version	Symbol	Type
Rear eye		CM..AQUN
Rear clevis		CF..AQUN
Flange		FL..AQUN
Low foot		PB..AQUN

STEEL



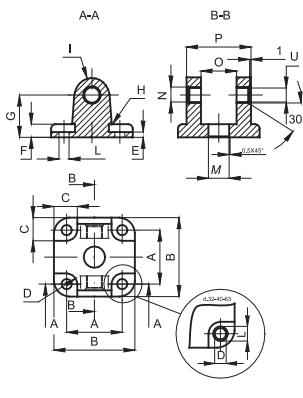
type: CM



Code	Item	For cyl. ø mm	Materials and treatments														
			Type	Steel A105	Fe 37	Black cataphoresis	White zinking										
040732	CM20AQUN	20	•			•											
040733	CM25AQUN	25	•			•											

Note: The mounting screws are to be ordered separately.
For screws see page 1.101.1 (VBU).

type: CF



Code	Item	For cyl. ø mm	Materials and treatments																			
			A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	Weight (g)		
040741	CF32AQUN	32	32	48	-	11	5,5	9	22	2,5	10	6,6	14	12	26	45	1,3	1,5	32	8	10	178
040742	CF40AQUN	40	42	58	-	11	5,5	9	25	2,5	12,5	6,6	14	14	28	52	1,3	1,3	37,5	9	12	313
040743	CF50AQUN	50	50	66	15,5	7,5	6,5	11	27	2,5	12,5	9	18	14	32	60	1,5	1,5	39,5	8	12	431
040744	CF63AQUN	63	62	83	-	15	6,5	11	32	4	15	9	18	18	40	70	1,5	1,5	47	10,5	16	707
040745	CF80AQUN	80	82	102	19	9	10	13	36	4	15	11	23	18	50	90	1,5	1,5	51	10	16	1213
040746	CF100AQUN	100	103	123	19	9	10	15	41	4	20	11	28	23	60	110	1,5	1,5	61	9	20	2200

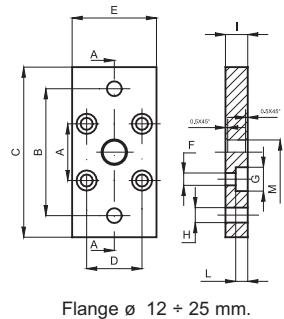
The pin is to be ordered separately: for the pin see page 1.98.2 (SEC..AQIS).

Mounting Accessories for Cylinders

Mountings for compact UNITOP in steel

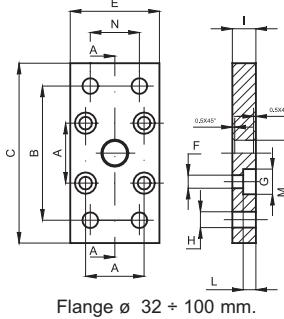


type: FL



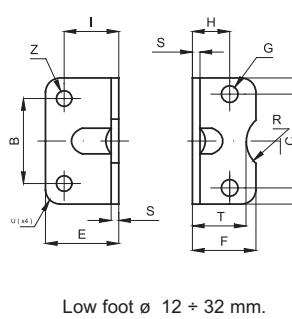
Code	Item	For cyl. \varnothing mm	A	B	C	D	E	F	G	H	I	L	M	Weight (g)
040751	FL12-16AQUN	12-16	18	43	55	18	29	4,5	9	5,5	10	5,4	10	10
040752	FL20AQUN	20	22	55	70	22	36	5,5	10	6,6	10	5,4	12	16
040753	FL25AQUN	25	26	60	76	26	40	5,5	10	6,6	10	5,4	12	20

type: FL



Code	Articolo	For cyl. \varnothing mm	A	B	C	D	E	F	G	H	I	L	M	N	Weight (g)
040754	FL32AQUN	32	32	65	80	32	50	6,6	11	7	10	6,4	14	32	260
040755	FL40AQUN	40	42	82	102	42	60	6,6	11	9	10	6,4	14	36	420
040756	FL50AQUN	50	50	90	110	50	68	9	15	9	12	8,6	18	45	600
040757	FL63AQUN	63	62	110	130	62	87	9	15	9	15	8,6	18	50	1200
040758	FL80AQUN	80	82	135	160	82	107	11	18	12	15	10,6	23	63	1800
040759	FL100AQUN	100	103	163	190	103	128	11	18	14	15	10,6	28	75	2550

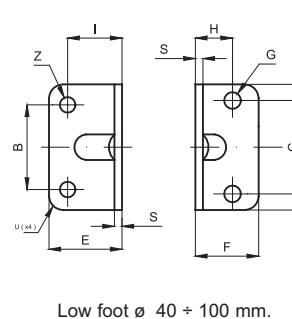
type: PB



Code	Item	For cyl. \varnothing mm	C	B	D	E	F	G	H	I	S	T	R	U	Z	Weight (g)
040761	PB12-16AQUN	12-16	18	18	30	17,5	17,5	4,4	13	13	3	15	9	2	5,5	20
040762	PB20AQUN	20	22	22	36	22	22	5,4	16	16	4	17	10	2	6,6	32
040763	PB25AQUN	25	26	26	40	22	23	5,4	17	16	4	19	11	2	6,6	38
040764	PB32AQUN	32	32	32	50	26	24	6,6	16	18	5	20	12	2	6,6	66

It is supplied singly.

type: PB



Code	Item	For cyl. \varnothing mm	C	B	D	E	F	G	H	I	S	U	Z	Weight (g)
040765	PB40AQUN	40	42	42	60	28	29,5	6,6	21,5	20	5	5	9	100
040766	PB50AQUN	50	50	50	68	32	30	9	22	24	6	5	9	150
040767	PB63AQUN	63	62	62	84	39	39	9	28,5	27	6	5	11	250
040768	PB80AQUN	80	82	82	102	42	36,5	11	24,5	30	8	5	11	380
040769	PB100AQUN	100	103	103	123	45	38,5	11	26,5	33	8	5	13,5	500

It is supplied singly.

Mounting Accessories for Cylinders

Mounting screws and nuts



VTCEI - UNI5931



VBTR - DIN6912



NUTS - UNI5589



GROWER - DIN127B

1

MOUNTING SCREWS FOR CYLINDERS ISO 15552																
Ø Cylind.	Code	Item	Normative	CF	CM	CFS	ASV	P	CMS	AS	FL	FLV	PB	CFA	CTA	
32	880179	VTCEIM6x16	UNI5931								■					
	040771	VTCEIM6x18	UNI5931	■	■	■	■		■	■			■			
	040782	VBTRM6x18	DIN6912									■				
	040691	VTCEIM6x20	UNI5931					■						■	■	
40	880179	VTCEIM6x16	UNI5931								■					
	040771	VTCEIM6x18	UNI5931	■	■	■	■		■	■			■			
	040782	VBTRM6x18	DIN6912									■				
	040691	VTCEIM6x20	UNI5931					■						■	■	
	880174	VTCEIM6x25	UNI5931													■
50	881144	VTCEIM8x16	UNI5931								■			■		
	040772	VTCEIM8x20	UNI5931	■	■	■				■				■		
	040783	VBTRM8x20	DIN6912										■			
	040692	VTCEIM8x25	UNI5931					■	■	■						■
63	881144	VTCEIM8x16	UNI5931									■				
	040772	VTCEIM8x20	UNI5931	■	■	■				■			■			
	040783	VBTRM8x20	DIN6912										■			
	040692	VTCEIM8x25	UNI5931					■	■	■				■		
	880824	VTCEIM8x30	UNI5931													■
80	040773	VTCEIM10x20	UNI5931								■			■		
	040784	VBTRM10x20	DIN6912									■				
	881228	VTCEIM10x25	UNI5931	■	■	■			■	■						
	040693	VTCEIM10x30	UNI5931					■								■
100	040773	VTCEIM10x20	UNI5931									■			■	
	040784	VBTRM10x20	DIN6912										■			
	881228	VTCEIM10x25	UNI5931	■	■	■			■	■						
	040693	VTCEIM10x30	UNI5931					■								
	883537	VTCEIM10x35	UNI5931													■
125	040774	VTCEIM12x20	UNI5931									■			■	
	883538	VTCEIM12x30	UNI5931	■	■	■				■						
	883539	VBTRM12x30	DIN6912										■			
	040694	VTCEIM12x35	UNI5931					■	■	■						
160	881914	VTCEIM16x25	UNI5931									■				
	040775	VTCEIM16x30	UNI5931	■	■	■				■				■		
	883540	VBTRM16x30	DIN6912										■			
	040695	VTCEIM16x40	UNI5931					■	■	■						
200	881914	VTCEIM16x25	UNI5931									■				
	040775	VTCEIM16x30	UNI5931	■	■	■				■						
	883540	VBTRM16x30	DIN6912										■			
	040695	VTCEIM16x40	UNI5931					■	■	■						
250	883541	VTCEIM20x25	UNI5931									■				
	883542	VTCEIM20x35	UNI5931	■	■									■		
	883543	VBTRM20x35	DIN6912													
320	883544	VTCEIM24x40	UNI5931	■	■											
	883545	VBTRM24x40	DIN6912										■			

Mounting Accessories for Cylinders

Mounting screws and nuts



MOUNTING SCREWS FOR CYLINDERS ISO 21287

Ø Cylind.	Code	Item	Normative	CF	CM	CFS	ASV	P	CMS	AS	FL	FLV	PB	CFA	CTA
20/25	880164	VTCEIM5x20	UNI5931		■						■				
32/40	880174	VTCEIM6x25	UNI5931	■	■	■	■	■	■	■	■	■	■	■	■
		VBTRM6x25	UNI6919									■			
50/63	040692	VTCEIM8x25	UNI5931				■			■	■			■	
	880824	VTCEIM8x30	UNI5931	■	■	■		■	■						
		VBTRM8x30	UNI6919								■		■	■	
80/100	040693	VTCEIM10x30	UNI5931	■	■	■	■	■	■	■		■			■
		VBTRM10x30	UNI6919								■				

MOUNTING SCREWS FOR CYLINDERS UNITOP

Ø Cylind.	Code	Item	Normative	CF	CM	CFS	ASV	P	CMS	AS	FL	FLV	PB	CFA	CTA
12/16	880220	VTCEIM4x12	UNI5931		■								■		
	880842	VTCEIM4x16	UNI5931								■				
20/25	880517	VTCEIM5x14	UNI5931		■						■				
	880164	VTCEIM5x20	UNI5931									■			
32/40	880179	VTCEIM6x16	UNI5931								■				
	040771	VTCEIM6x18	UNI5931	■								■			
50	881144	VTCEIM8x16	UNI5931								■				
	040772	VTCEIM8x20	UNI5931	■								■			
63/80 100	881228	VTCEIM10x25	UNI5931	■							■		■		

MOUNTING NUTS AND GROWERS FOR CYLINDERS CNOMO

Ø Cylind.	Code (nut)	Item (nut)	Normative (nut)	Code (grower)	Item (grover)	Normative (grower)	CF	AN	AS	P	PL
25/32 40	041450	D6x1	UNI5589	880166	M6ZB	DIN127B	■	■	■	■	■
50/63	041451	D8x1,25	UNI5589	880066	M8ZB	DIN127B	■	■	■	■	■
80/100	041453	D10x1,5	UNI5589	078384	M10ZB	DIN127B	■	■	■	■	■
125	041460	D12x1,75	UNI5589	880784	M12ZB	DIN127B	■	■	■	■	■
160 200	880207	D16x2	UNI5589	078401	M16ZB	DIN127B	■	■	■	■	■

ROD NUTS FOR CYLINDERS ISO 6432 - ISO 15552 - ISO 21287

Ø Cylind.	Code	Item	Normative
8/10	881397	D4x0,7	UNI5589
12/16	041450	D6x1	UNI5589
20	041451	D8x1,25	UNI5589
25/32	041452	D10x1,25	UNI5589
40	041454	D12x1,25	UNI5589
50/63	041455	D16x1,5	UNI5589
80/100	041456	D20x1,5	UNI5589
125	041458	D27x2	UNI5589
160/200	041459	D26x2	UNI5589
250	041449	D42x2	UNI5589
320	-	D48x2	-

ROD NUTS FOR CYLINDERS CNOMO

Ø Cylind.	Code	Item	Normative
25/32	041453	D10x1,5	UNI5589
40/50	041455	D16x1,5	UNI5589
63/80	041456	D20x1,5	UNI5589
100/125	041458	D27x2	UNI5589
160/200	041459	D36x2	UNI5589

Accessories for Cylinders

Adjustable hydraulic shock absorbers



Standard executions		
Version	Symbol	Type
Without mechanical stopper		DR
With mechanical stopper included		DRF



1

Series of adjustable hydraulic shock absorbers.
They absorb the impact energy on the rod by the displacement of oil from one chamber to another inside the body of the cushioning.

This displacement is controlled by a valve and a throttling mechanism according to the adjustment brought in.

The adjustment is carried out by a nut set in the rear end.

The adjusting field is from 0 to 9 and the nut is provided with a stopper grub screw.

The optimal cushion is obtained:

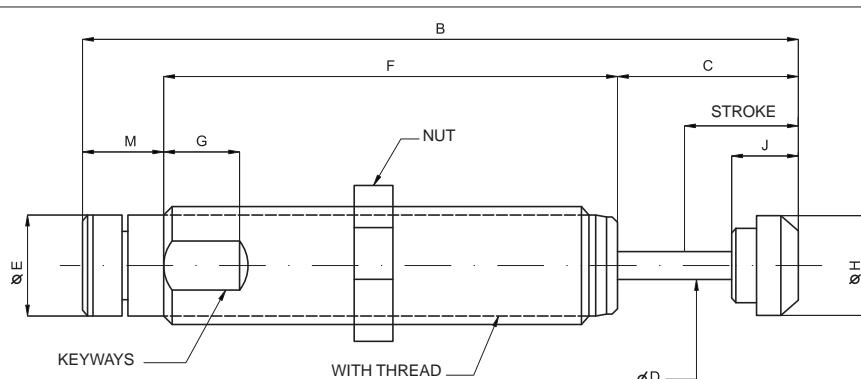
1. If the cushion is too high at the beginning of the stroke, move the nut towards 9.

2. If the cushion is too high near the end of the stroke, move the nut towards 0.

For selection of shock absorbers see page 1.105.2.

In the version without mechanical stopper the cushioning must be provided with an external one (mechanical stopper) set at 0,5 - 1 mm before the end of the stroke.

Technical data	
Temperature range	Type DR: + 5 °C ÷ + 70°C Type DRF: + 12 °C ÷ + 90°C
Materials	Body: Burnished steel Rod: Stainless steel Spring: Steel Seals: Nitrile rubber (NBR) - Polyurethane, Elastomer
Maximum impact velocity	4 m/s



Code	Item	Stroke	A	B	C	D	E	F	G	H	I	J	M	CH	Maximum absorbing capacity (Nm) Per cycle (W3)	Efficiency measurement minimum (Kg.)	Weight (g)	Efficiency measurement maximum (Kg.)	Per hour (W4)
041801	DR1008	8	10x1	66,5	14,5	2,5	8,8	40	-	6	-	6,5	12	13	1,8	3600	0,2	10	26
041802	DR1210	10	12x1	84	18	3,5	10,8	60	-	8	-	8	6	14	4	6000	0,9	57	43
041803	DRF1412	12,5	14x1,5	87	17,5	8	12	61	12	12	12	10	8,5	17	17	35000	0,6	90	60
041804	DRF2019	19,1	20x1,5	117,9	30	4,8	16,8	74,7	12,7	16,8	18	11	13,2	24	25	45000	2,3	226	130
041805	DRF2525	25,4	25x1,5	142,6	36,3	6,3	22,4	89,7	12,7	22,9	23	11	16,6	30	88	68000	9	1360	310
041806	DRF2540	40	25x1,5	189	51,1	6,3	22,4	121,3	12,7	22,9	23	11	16,6	30	100	90000	14	2040	400

FACTORS

Simboli

W_1 = Kinetic energy per cycle	(Nm)
W_2 = Motive energy per cycle	(Nm)
W_3 = Total energy per cycle	(Nm)
W_4 = Total energy per hour	(Nm/h)
F = Motive power	(N)
x = Number of cycles per hour	(1/h)
s = Cushioning length	(m)
v = Mass velocity	(m/s)
m = Cushioned mass	(Kg)
ME = Efficiency measurement	(Kg)

The **shock absorbers** are selected according to their energy absorbing capacity.

The capacity values identify both the mass that can be cushioned and the energy that can be absorbed per cycle and hour.

So the required performances must be compared with the table of the cushionings capacities to make sure that the energy can be absorbed, converted into heat and dissipated in the atmosphere.

Energy

The factors that must be considered at the moment of selection are:

- Kinetic energy (W_1): it is the energy generated by the weight and the velocity of the mass that must be cushioned.
- Motive energy (W_2): it is the work, produced by the motive power acting on the mass that must be cushioned, multiplied by the cushion length.
- Total energy per cycle (W_3): it is the sum of the 2 preceding values and is the energy that must be dissipated every cycle.
- Total energy per hour (W_4): it is the product of the total energy per cycle by the number of cycles per hour; so it is the energy the cushioning must dissipate every hour.
- Efficiency measurement (ME): it is the mass (theoretical), which, without motive power and at the same velocity of the real mass, would have a kinetic energy equal to the total energy per cycle (W_3) of the real application.

It is not the mass that must be cushioned; it doesn't indi-

HOW TO CHOOSE

The choice of the optimal cushioning can be easily made by the procedure shown here.

In any case our technicians are always at your disposal to help you to choose the fittest cushioning, to solve limit applications or study special solutions.

- 1) Precisely determine the data of the problem, that is the calculus factors m , v , F , x , s shown above.
- 2) Calculate the kinetic energy of the mass:

$$W_1 = 0,5 \cdot m \cdot v^2 \text{ (Nm).}$$

Scegliete un deceleratore con una capacità per ciclo superiore al valore calcolato. La corsa scelta va utilizzata al punto 3).

Choose a cushioning with a capacity per cycle higher than the calculated value. The cushion length chosen must be used at point 3).
- 3) If there is an external motive power (hydraulic or pneumatic cylinder, motor, gravity, etc.) calculate the work done:

$$W_2 = F \cdot s \text{ (Nm).}$$
- 4) Calculate the total energy that must be dissipated per cycle.

$$W_3 = W_1 + W_2 \text{ (Nm).}$$

Check that the value obtained is within the capacity limits of the chosen cushioning.

Otherwise you must consider a cushioning with higher cushion length or diameter and in case calculate W_2 and W_3 again.

It can be necessary to compare cushionings with different cushion lengths and do the calculus again each time.
- 5) It is better to choose a cushioning with a capacity 25 per cent higher than the required one in order to:
 - a) Let following possible increases of the impact energy.
 - b) Work with safe margins when velocities are not easily valuable.
 - c) Make sure that the cushioning lasts long, especially when working in dusty or contaminated environments.

- 6) Calculate the efficiency measurement:

$$ME = \frac{W_3 \cdot 2}{V_2} \text{ (Kg)}$$

Check that the value obtained is within the limits indicated for the chosen cushioning and this to get a linear and progressive cushion.

- 7) Were the "ME" out of the limits, you should choose a cushioning with a different capacity of efficiency measurement. Varying the cushion length you can change the "ME"; however, at each variation of the cushion length you must remember to calculate the propelling energy of the point 3 again.
- 8) Check whether the cushioning is condition to dissipate the energy generated by work frequency per hour into heat:

$$W_4 = W_3 \cdot X \text{ (Nm/h)}$$

- 9) Were the cushioning not in condition to dissipate it, you should choose among:
 - a) Use of a cushioning with a higher capacity per hour taking care of calculating the point 3 again (were the cushion length different).
 - b) Use of a system with recirculation or external air/oil tank, both characterised by a higher capacity per hour
 - c) Cooling of the cushioning by air blow or another refrigerating fluid.

Switches and Brackets

Magnetic switches ASV



Version	Circuit	Code	Item
Reed, 2 poles, with flying lead flexible cable 2,5 mt.		070946	ASV1C525
Reed, 2 poles, with flying lead flexible cable 5 mt.		071863	ASV1C550
Reed, 2 poles, with flying lead flexible cable 10 mt.		071864	ASV1C51K
Reed PNP, 3 poles, with M8 connector		070246	ASV4D2M8
Reed-Hall PNP, 3 poles, with M8 connector		070247	ASV7N2M8
Reed-Hall NPN, 3 poles, with M8 connector		070372	ASV7M2M8
Reed, NC, 2 poles, with flying lead flexible cable 2,5 mt.		072918	ASV1H525

For ATEX switches see
page 1.110.10



The magnetic reed switches are magnetic sensors responding to the presence of a magnetic field.

When mounted on a cylinder tube they detect the presence of the magnetic field generated by the magnet set on the piston and so of the piston itself.

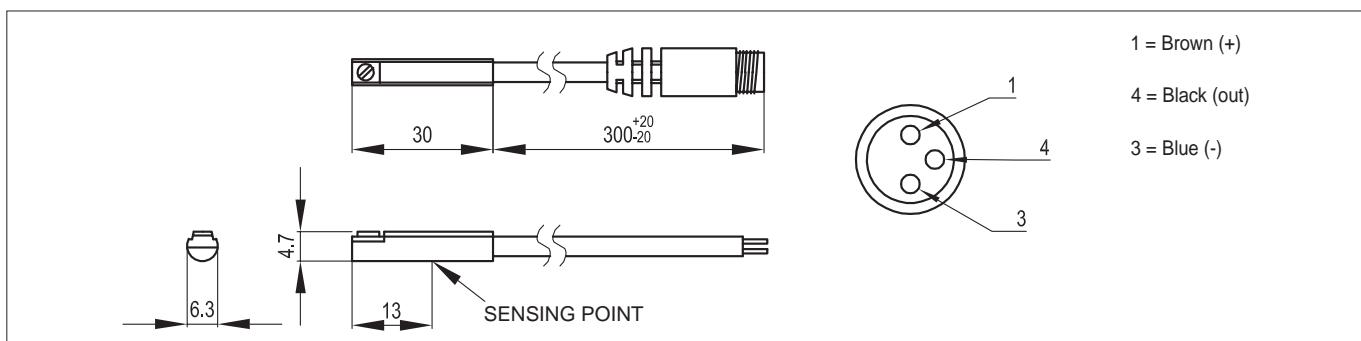
This information is used to signal electrical circuits as required.

The sensor ASV can be applied directly to the hollows of the cylinder tube from above.

For cables with M8 connector see page 1.110.3

For fixing brackets see page 1.120.1

For cylinder/reed switches/brackets table see page 1.120.5



Technical data

Circuit	Reed, 2 poles	Reed, PNP, 3 poles	Reed-Hall, PNP, 3 poles	Reed-Hall, NPN, 3 poles
Switching	Normally open			Normally open, solid state output
Voltage	5 ÷ 240 V DC/AC			10 ÷ 30 V DC
Switching current	100 mA max			
Contact rating	10 W	3 W max		
Voltage drop	3 V max	0.1 V max	2 V max	
LED	Red	Yellow	Yellow	Red
Cable	\varnothing 3,3 PU			
Temperature range	-10 °C ÷ +70 °C			
Protection class	IEC 529 IP67			
Electrical protection	-			

Switches and Brackets

Magnetic switches ASC



Standard executions			
Version	Circuit	Code	Item
Reed, 2 poles, with flying lead flexible cable 2,5 mt.		070248	ASC1C525
Reed-Hall PNP, 3 poles, with M8 connector		070249	ASC7N2M8
Reed-Hall NPN, 3 poles, with M8 connector		070382	ASC7M2M8



The magnetic reed switches are magnetic sensors responding to the presence of a magnetic field.

When mounted on a cylinder tube they detect the presence of the magnetic field generated by the magnet set on the piston and so of the piston itself.

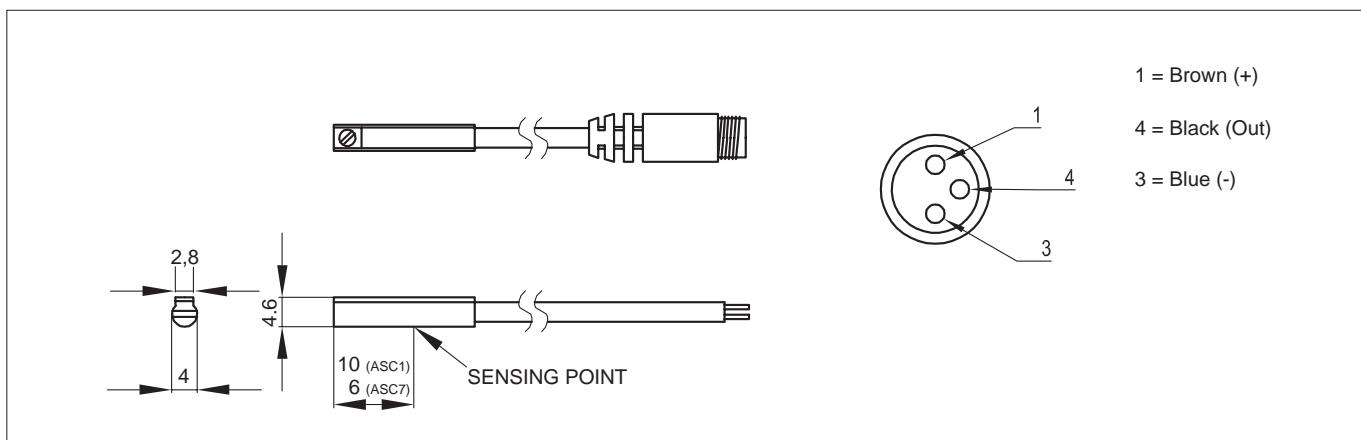
This information is used to signal electrical circuits as required.

The sensor ASC can be applied directly to the grooves of the cylinder tube without further brackets.

For cables with M8 connector see page 1.110.3

For fixing brackets see page 1.120.1

For cylinder/reed switches/brackets table see page 1.120.5



Technical data					
Circuit	Reed, 2 poles	Reed-Hall, PNP, 3 poles	Reed-Hall, NPN, 3 poles		
Switching	Normally open - SPST				
Voltage	5 ÷ 120 V DC/AC				
Switching current	100 mA max				
Contact rating	6 W max	3 W max			
Voltage drop	3.5 V max	0,5 V max (50 mA)			
LED	Red	Green	Red		
Cable	Ø 2,8 Grey	Ø 2,8 Black			
Temperature range	-10 °C ÷ +70 °C				
Protection class	IEC 529 IP67				
Electric protection	-	Reverse polarity -Source suppression			

Switches and Brackets

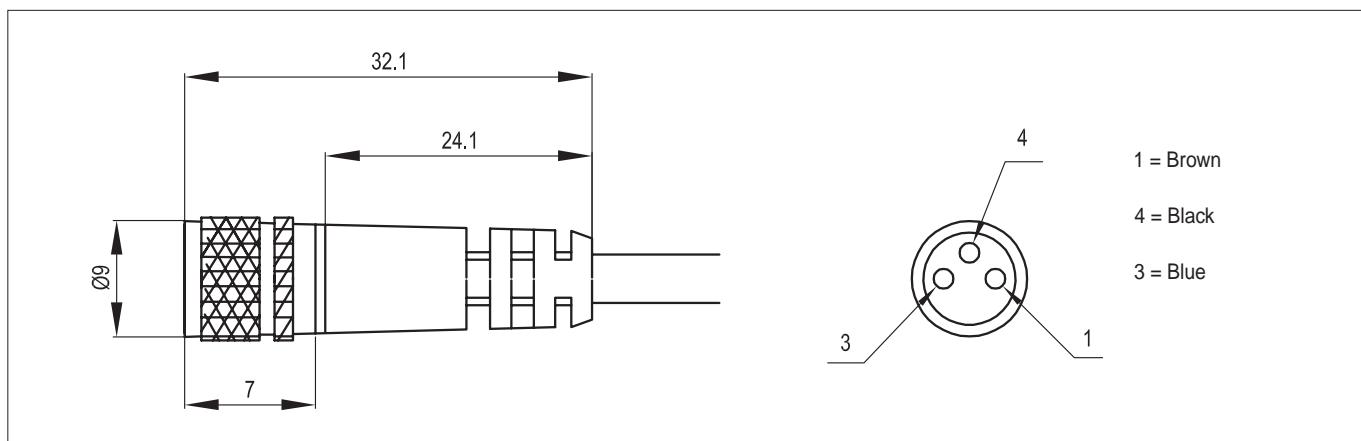
Cables with M8 connector



Standard executions		
Version	Code	Item
Cable mt. 2 with M8 connector	070269	CAV20M8
Cable mt. 5 with M8 connector	070250	CAV50M8
Cable mt. 10 with M8 connector	070298	CAV1KM8



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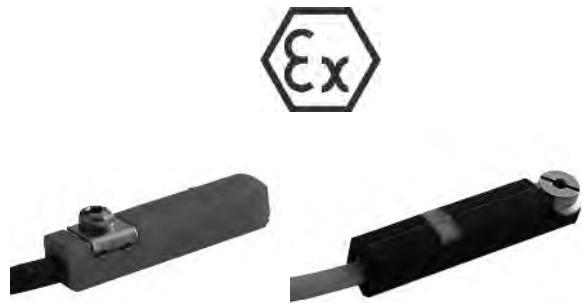
Technical data	
Material of the cable	PVC black
Material of the connector	Body : Polipropilene
	Contacts: Gilded brass
	Nut: Nickel plated brass
Cable data	3 x 24 AWG / 0,22 mm ² flexible, spatter resistant, oil resistant, insulation 300 V
Temperature	- 20 °C ÷ + 80 °C
Protection	IP 67

Switches ATEX

Directive 94/9/CE



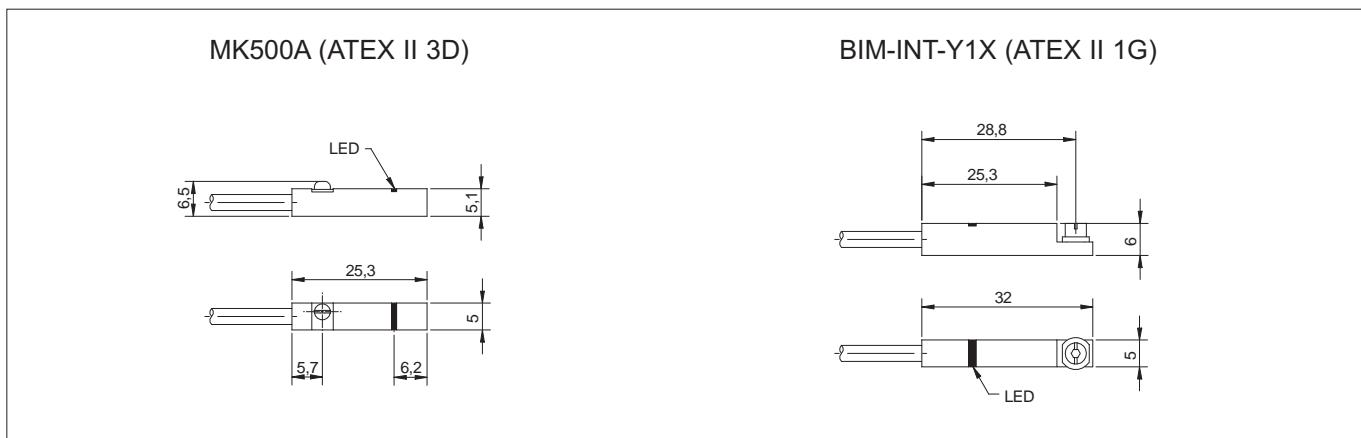
Standard executions				
Version	Circuit	ATEX	Code	Item
Electronic, 3 poles, with flying lead flexible cable 2 mt.		II3D	071120	MK500A
NAMUR 2 poles, with flying lead flexible cable 2 mt.		II1G	071108	BIM-INT-Y1X



Series of magnetic switches conforming to Directive 94/9/EC ATEX

For fixing brackets see page 1.120.1

For cylinder/reed switches/brackets table see page 1.120.5



Technical data		
Item	MK500A	BIM-INT-Y1X
Circuit	Reed-Hall, PNP, 3 poles	NAMUR, 2 poles
Switching	Normally Open, solid state output	-
Voltage	10 ÷ 30 V DC	8,2 V DC
Switching current	100 mA max	≥ 2,1 mA
Contact rating	-	-
Voltage drop	> 2,5 V	-
LED	Yellow	
Cable	Ø 3mm	
Temperature range	-25 °C ÷ +60 °C	-25 °C ÷ +70 °C
Protection class		IP67
ATEX certification	II 2D Ex tD A22 IP67 T80°C X	II 1G Ex ia IIC T6

Switches and Brackets

Brackets for magnetic switches



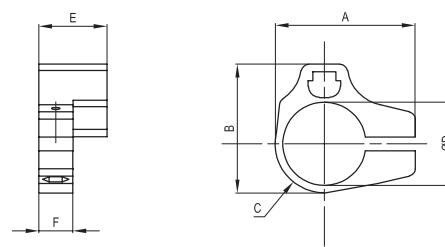
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Standard executions		
Version	Code	Item
Locking band for cylinder ISO 6432 ø 8 mm	072901	AFM8
Locking band for cylinder ISO 6432 ø 10 mm	072902	AFM10
Locking band for cylinder ISO 6432 ø 12 mm	072903	AFM12
Locking band for cylinder ISO 6432 ø 16 mm	072904	AFM16
Locking band for cylinder ISO 6432 ø 20 mm	072905	AFM20
Locking band for cylinder ISO 6432 ø 25 mm	072906	AFM25
Locking band for round cylinders 10 ÷ 63 mm	072907	AFR1063
Bracket for AMB cylinders ø 32 and 40 mm	072908	AS101
Bracket for AMB cylinders ø 50 and 63 mm	072909	AS102
Bracket for AMB cylinders ø 80 and 100 mm	072910	AS103
Bracket for AMB cylinder ø125 mm	072911	AS104
Bracket for tie rod cylinders ø 32 and 40 mm	072912	AS105
Bracket for tie rod cylinders ø 50 and 63 mm	072913	AS106
Bracket for tie rod cylinders ø 80 and 100 mm	072914	AS107
Bracket for tie rod cylinders ø 125 mm	072909	AS102
Bracket for cylinders ø 160 e 200 mm	072910	AS103
Bracket for short stroke cylinders	072915	AS108
Bracket for rodless cylinders	072916	AS109



Series of brackets used to fix the different types of magnetic reed switches for the different types of existing cylinders.
For the cylinders/reed switches/brackets table see page 1.120.5

Locking bands for cylinders ISO 6432						
Material: Polyamide		Mounting screw included in the Kit				
Code	Item	A	B	C	Ø D	E
072901	AFM8	21,4	18,9	6,45	9,3	18
072902	AFM10	23,4	20,9	7,45	11,3	18
072903	AFM12	25,4	22,9	8,45	13,3	18
072904	AFM16	29,4	26,9	10,45	17,3	18
072905	AFM20	33,4	30,9	12,45	21,3	18
072906	AFM25	38,4	35,9	14,95	26,3	18



Switches and Brackets

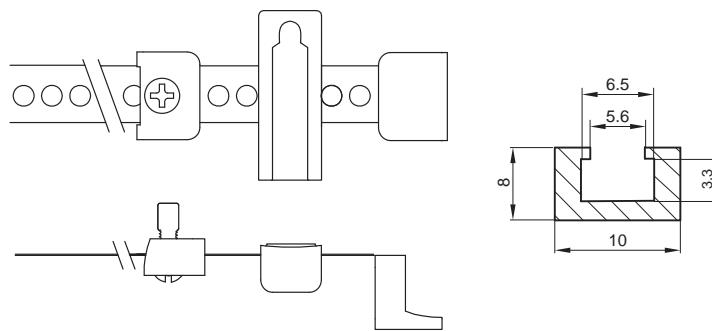
Brackets for magnetic switches



Locking bands for round cylinders Ø 10-63

Metal bracket, screw and adaptor included in the Kit

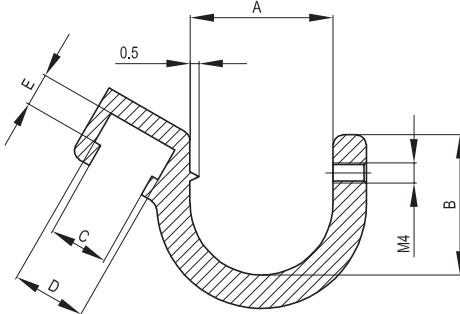
Code	Item
072907	AFR1063



Brackets for cylinders ISO 15552

Material: Aluminium Mounting screw included in the Kit

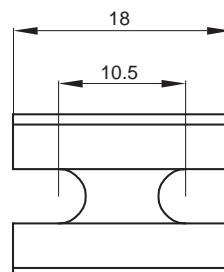
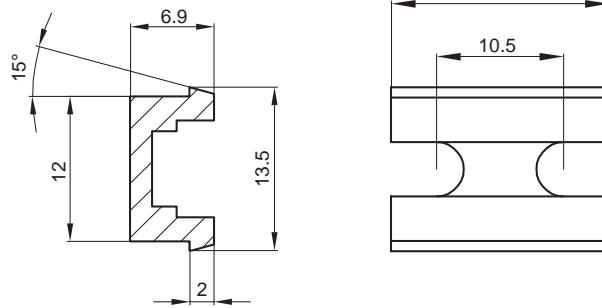
Code	Item	A	B	C	D	E
072908	AS101	11,4	11,3	5,4	6,7	3,4
072909	AS102	14,5	13,7	5,4	6,7	3,4
072910	AS103	16,99	19,11	5,4	6,7	3,4
072911	AS104	17,8	26,0	5,4	6,7	3,4
072912	AS105	6,5	7,29	5,4	6,7	3,4
072913	AS106	8,42	9,76	5,4	6,7	3,4
072914	AS107	10,31	10,79	5,4	6,7	3,4



Brackets for short stroke cylinders

Material: Polyamide

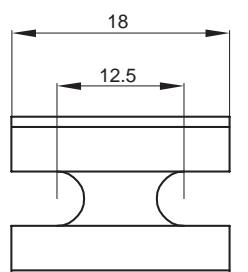
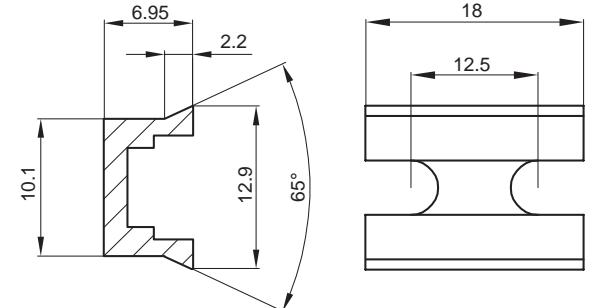
Code	Item
072915	AS108



Brackets for rodless cylinders

Material: Polyamide

Code	Item
072916	AS109



Switches and Brackets

Table of coupling cylinders/hand grips/brackets/reed switches



Cylinder type	Locking bands for cylinder switches		Brackets for cylinder switches		Switches for cylinders		Switches ATEX	
	Ø 8 ÷ 25 mm. see page 1.120.1	Ø 10 ÷ 63 mm vedi pag. 1.120.1	Tiranti Ø 5 ÷ 16 Camicia estrusa Ø32÷125 see page 1.120.1	Corsa breve see page 1.20.1	see page 1.110.1	see page 1.110.1	see page 1.110.10	see page 1.110.10
	AFM8 ÷ AFM25	AFR1063	AS10	AS108	ASC	ASV	MK500A	BIM-INT-Y1X
MSM-MDM-MDMA	• (STANDARD)	• (ATEX)				•		•
AMA/AMG						•	•	•
AMT			•			•	•	•
REDM		•				•		•
CX-CM			•			•		
CIS-CI-CIN CS-CD-CDN						•	•	•
BSM-BDM BDMN-BDMP				•		•		
BDM (125-160-200)			•			•		
GEDB-GEDS					•			
S1-S2-S S4-S5-S6						•		
CR-CRF CRR-CRRF			•			•		
MDMX	•					•		•
AMX			•			•	•	•
PAB-PAC-PPB PPC-PPD-PPE					•			
ARC-ARP					•			