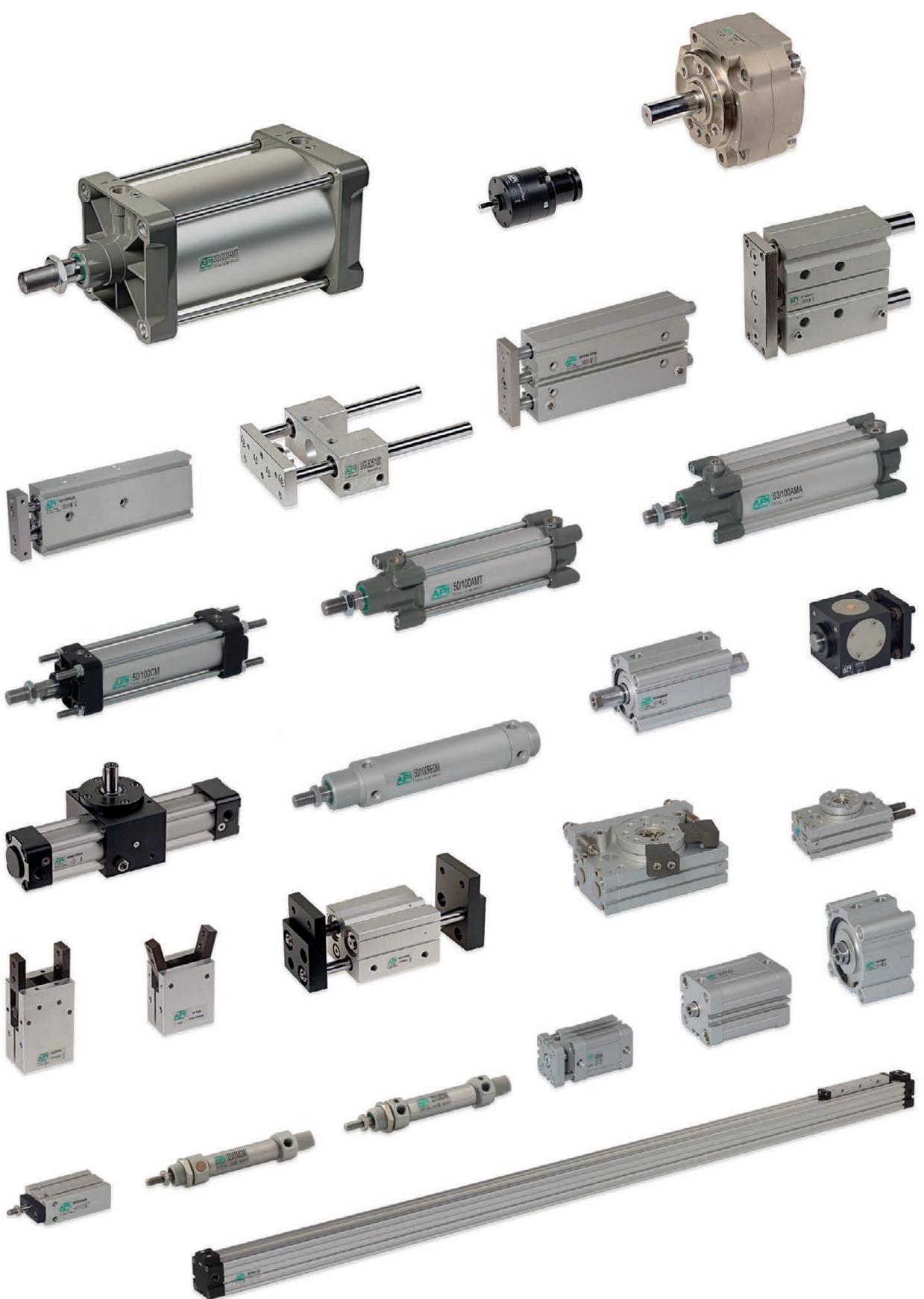
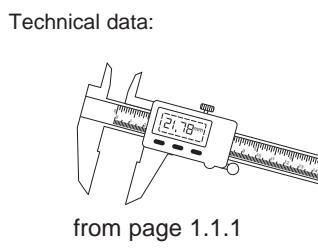


Cylinders and their accessories



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 P_m and the discharge value P_s 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 P_m and the pushing surface, and to a counter-pressure force F_s proportional to the pressure P_s and the section upon which it acts, both of which are constant. The load reaction F_c 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 - F_s - F_a = F_c Where F_s is the counter-pressure force and F_a is a force that bears in mind the friction and reduction of the operating power, to which F_t is linked, which does not reach the static network pressure, as can be seen in the graph.

During the transitory acceleration period, the force F_s 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 F_s increases until the state of equilibrium is reached.

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

The theoretical force F_t must be at least 30% greater. Let's assume that F_t = 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 F = 63 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:

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

Where:

Q	= air consumption [nl/min]
F	= 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 mm; c = 300 mm; t = 0,45 s; p = 6 bar

$$Q = 3,14 \times 25 \times 102/4 \times (60 \times 3 \times 102/0,45) \times 7 \times 10^{-3} \times 10^{-3} = 550 [\text{nl/min}]$$

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):

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

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

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 to 2014/34/EU - ATEX

Options	Suffix
Through rod from bore 16 to 25 mm.	P
Rear spring from bore 16 to 25 mm.	T
Seals FKM -20°C ÷ +150°C	V
Extended rod in hardened and chrome plated steel* suitable for static piston rod brake from bore 12 to 25 mm.	B
Antirotation exagonal rod from bore 16 to 25 mm.	Q
Special versions on request	/ S

The options can be combined (when this is possible)

* In Stainless Steel AISI 304 for ATEX versions

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

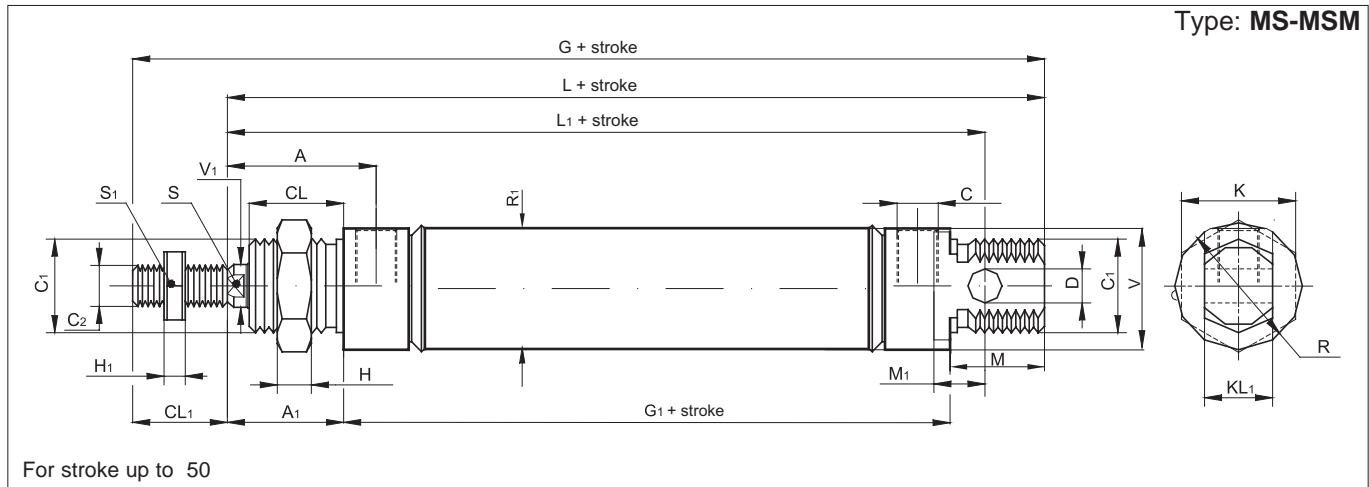
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.					
Pressure	max 10 bar					
Temperature range	-30°C ÷ +80°C (standard)				-20°C ÷ +150°C (V)	
Materials	Heads: Anodised aluminium Tube: Stainless steel AISI 304 Rod: Stainless steel AISI 304 Seals: Polyurethane Piston: Brass					

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Thrust force at 6 bar (N)	Traction force of the spring (N)					
				Stroke 10		Stroke 25		Stroke 50	
				min.	max	min.	max	min.	max
8	10, 25, 50	50	20	4,8	5,3	4	5,3	3,2	5,3
10			35	4,8	5,3	4	5,3	3,2	5,3
12			50	6,3	6,9	5,4	6,9	3,9	6,9
16			90	13,1	14	11,8	14	9,7	14
20			148	18,1	19,4	16,4	19,4	13,4	19,4
25			250	22,9	23,9	21,1	23,9	17,7	23,9

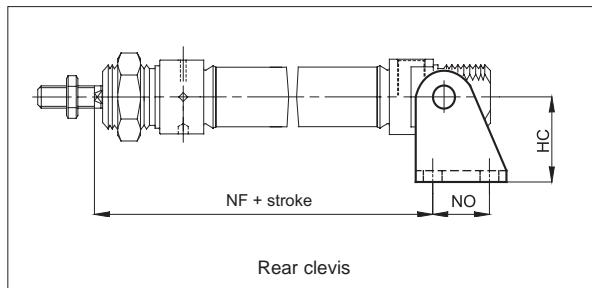
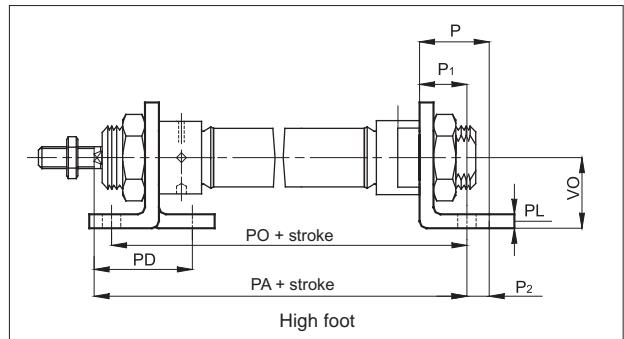
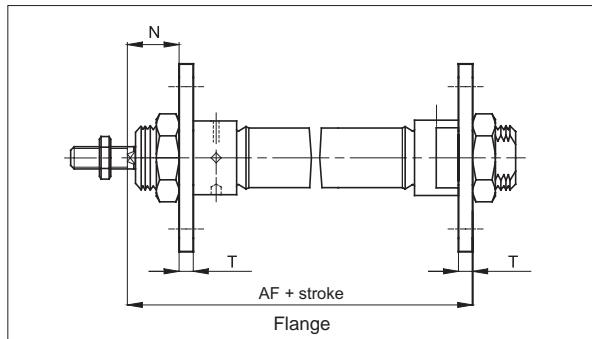
Cylinders ISO 6432

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	7	3	7
10	M4	4	M12x1,25	16	8	11,27	15	4	12	64	74	12	46	16	12	21	6	/	M5	86	19	7	3	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	8	3,5	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	8	3,5	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	6	5	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	6	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 from bore 10 to 25 mm.		MD
Magnetic from bore 8 to 25 mm.		MDM
Magnetic with cushionings from bore 16 to 25 mm.		MDMA



II 2Gc IIC T5
II 2Dc T100°C

On request, they can be supplied
according to 2014/34/EU - ATEX

Options	Suffix
Through rod from bore 16 to 25 mm.	P
Seals FKM -20°C ÷ +150°C	V
Extended rod in hardened and chrome plated steel* suitable for static piston rod brake from bore 12 to 25 mm.	B
Antirotation exagonal rod from bore 16 to 25 mm.	Q
Special versions on request	/ S

The options can be combined (when this is possible)

* In Stainless Steel AISI 304 for ATEX versions



Series of cylinders conforming to ISO 6432 standards

The heads are connected with the body through rolling; this guarantees perfect tightening.

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 started, must be continued.		
Pressure	max 10 bar		
Temperature range	-30°C ÷ +80°C (standard)		-20°C ÷ +150°C (V)
Materials	Heads: Anodised aluminium Tube: Stainless steel AISI 304 Rod: Stainless steel AISI 304 Seals: Polyurethane Piston: Brass		

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Deceleration stroke (mm)
8	10, 25, 50, 80 100, 125, 160 200, 250, 320, 400, 500	200	—
10		200	—
12		320	—
16		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.

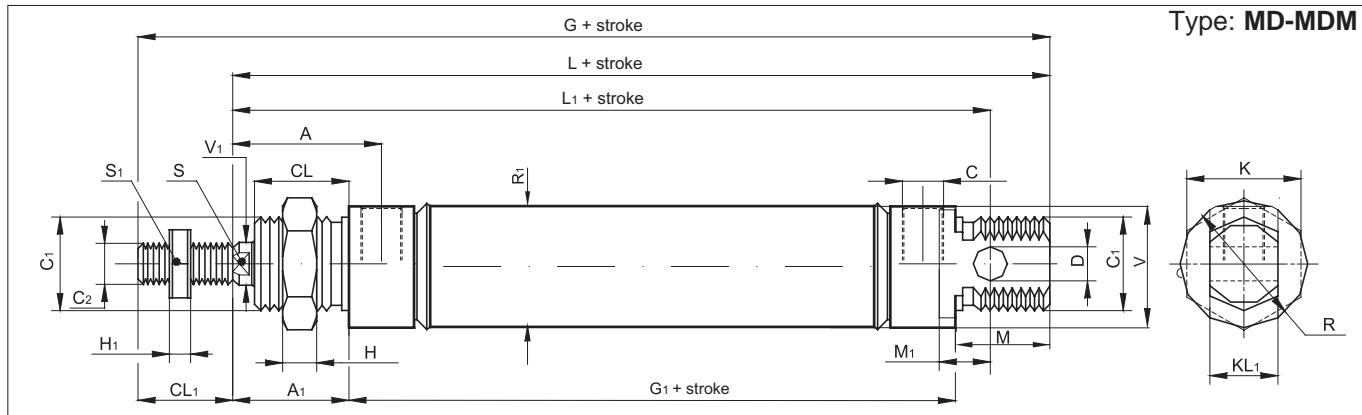
See page 1.1.3 to calculate the cylinder force.

Seal kits not available for these cylinders.

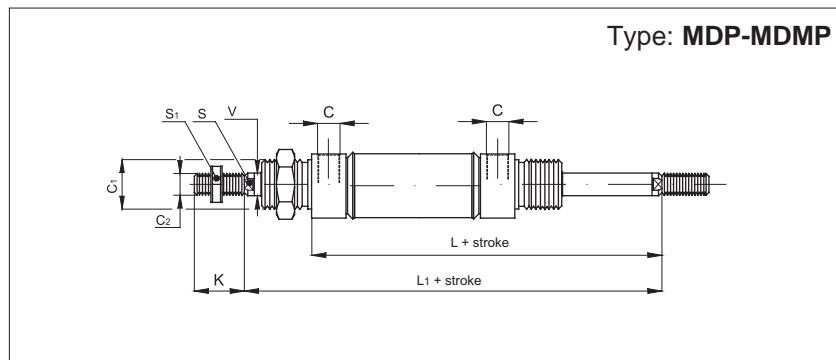
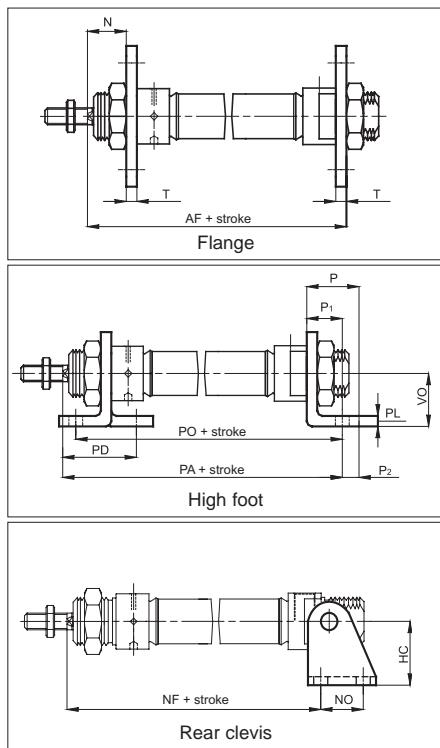
Cylinders ISO 6432

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	7	3	7
10	M4	4	M12x1,25	16	8	11,27	15	4	12	64	74	12	46	16	12	21	6	/	M5	86	19	7	3	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	8	3,5	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	8	3,5	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	6	5	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	6	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

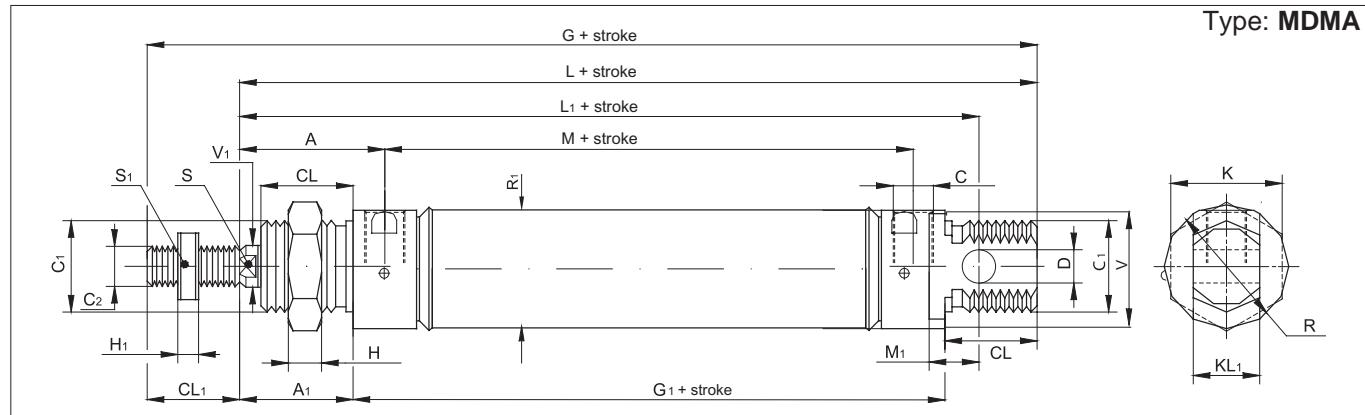
\varnothing mm	AF	HC	P	P_1	P_2	PA	PD	PL	PO	T	VO	N	NF	NO
8	65	24	16	11	5	73	24	3	68	3	16	13	62,5	12,5
10	65	24	16	11	5	73	24	3	68	3	16	13	62,5	12,5
12	77	27	20	14	6	87	32	4	79	4	20	18	73	15
16	84	27	20	14	6	94	32	4	86	4	20	18	80	15
20	88	30	25	17	8	100	36	5	93	5	25	19	91	20
25	97	30	25	17	8	109	40	5	98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

For dimensions and codes of the accessories see page 1.95.1.

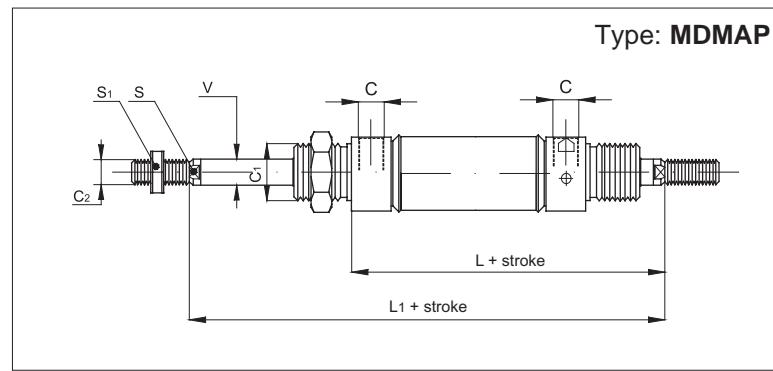
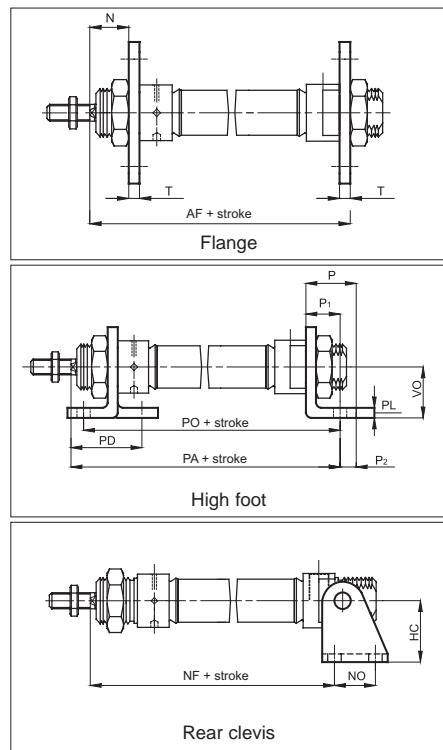
Cylinders ISO 6432

Bores from 8 to 25 mm

Double acting



\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	8	3,5	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	6	5	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	6	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.

Notes

Standard executions			
Version	Profile Tube	Symbol	Type
Magnetic Standard			AMA
			AMT

For the magnetic reed switches type ASV and ASC 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 to 2014/34/EU - ATEX

New series of cylinders conforming to ISO 15552 standards. These can be supplied with two different shapes of the barrel: AMA type with "T" and "C" grooves allowing to use the flush-mounted magnetic switch and the AMT type round with tie-rods.

Two different shapes of switches can be applied on opposite sides of AMA tube, to interchange with most competitors. The main features of this cylinder are the "clean" modern design and the attention to details.

Options	Suffix
Through rod	P
Rod in stainless steel AISI 304	K
Extended rod in hardened and chrome plated steel* for the application of the static piston rod brake	B
Extended rod in hardened and chrome plated steel* for the application of the dynamic piston rod brake	B1
Seals FKM -20°C ÷ +150°C	V
Scraper ring only FKM -20°C ÷ +80°C	V1
Low temperature seals -40°C ÷ +80°C	BT
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
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	F
With bellows for protection of the rod (in this case the dimension WH will be extended according the stroke of the cylinder)	Z
NBR seals	H
Piston rod scraping ring in nitrile rubber NBR	H1
Brass rod scraper (with V, V1, H and H1 options only)	Y
Stainless steel AISI 316L profile tube (with AMT type only)	TX
Special on request	/S

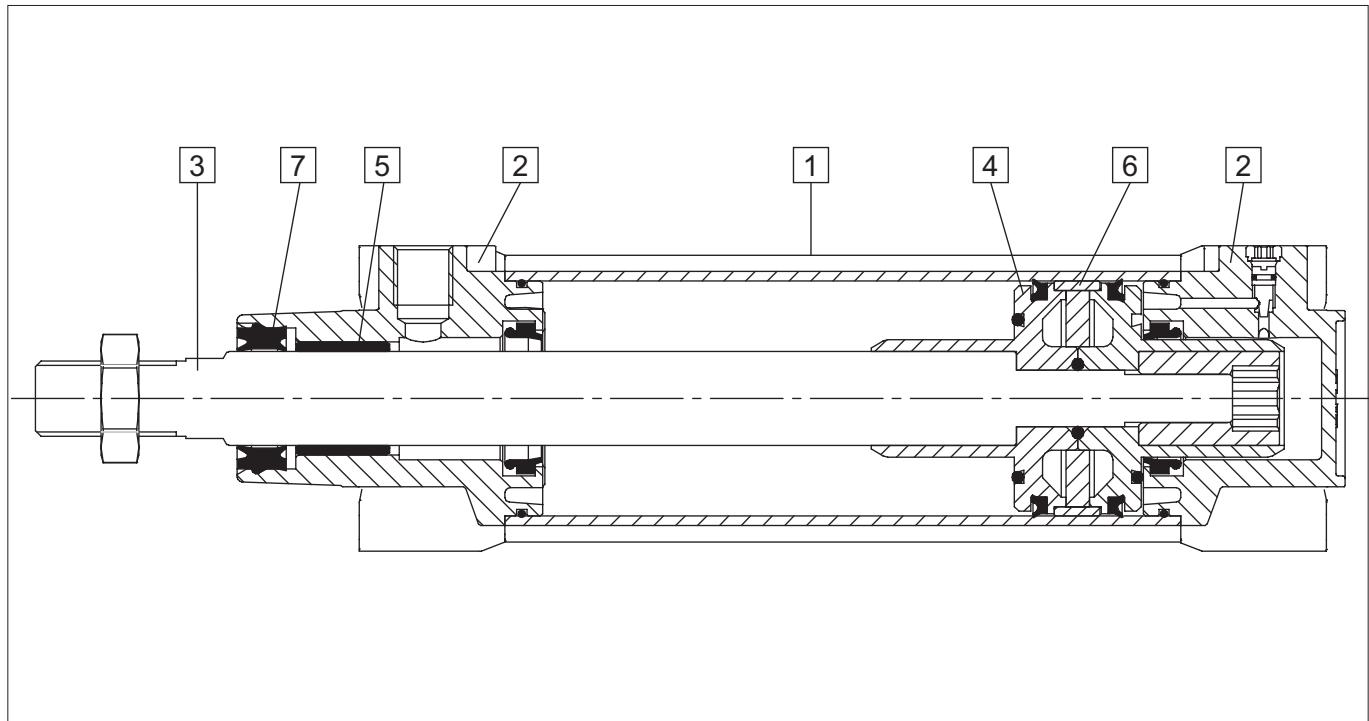
The options can be combined (when this is possible).

* In Stainless Steel AISI 304 for ATEX versions

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)

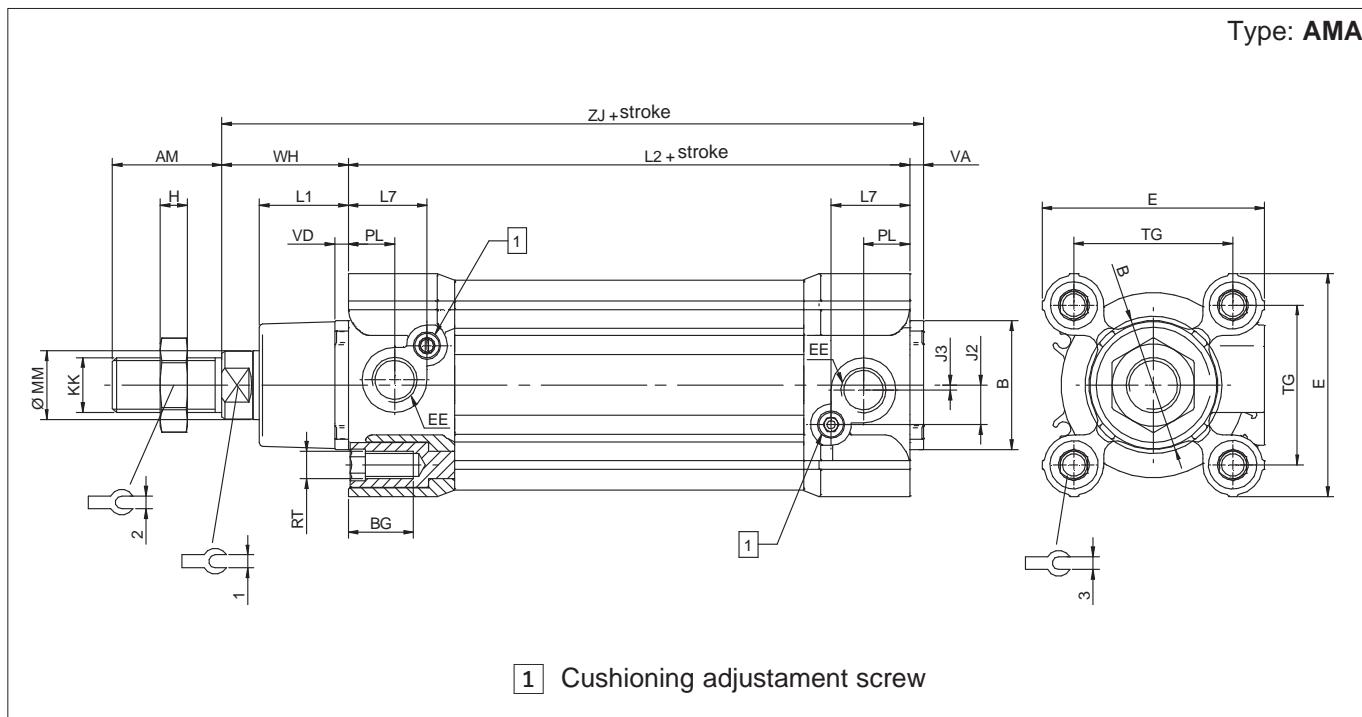
1	Tube	Anodised aluminium
2	Heads	Die-cast painted aluminium
3	Rod	Chrome-plated steel C45
4	Piston	Die-cast aluminium
5	Bushing	Self-lubricating sintered bronze
6	Guide ring	Natural Delrin
7	Rod seals	Polyurethane
	Other seals	Nitrile rubber NBR/polyurethane

Technical data

Bore (mm)	32	40	50	63	80	100	125
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.						
Pressure	1 ÷ 10 bar						
Temperature range	-20°C ÷ +80°C (standard / V1)		-20°C ÷ +150°C (V)			-40°C ÷ +80°C (BT)	
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)	470	690	1145	1483	2381	3181
	Additional 10 mm stroke (g)	21	29	44	47	69	80
							119

Type: AMA

1



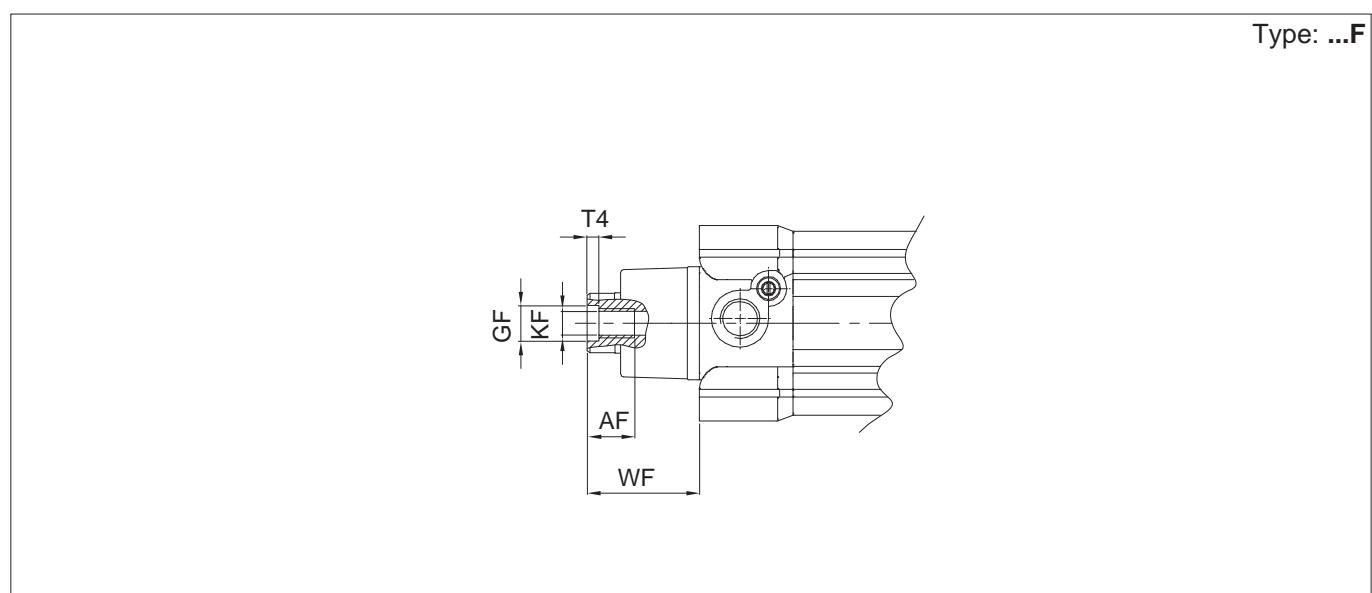
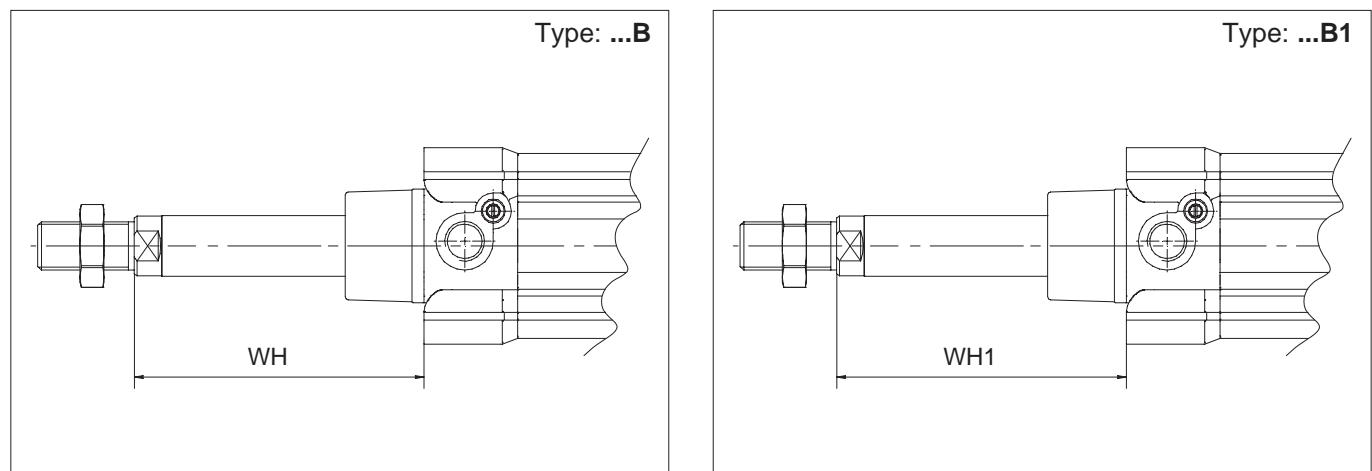
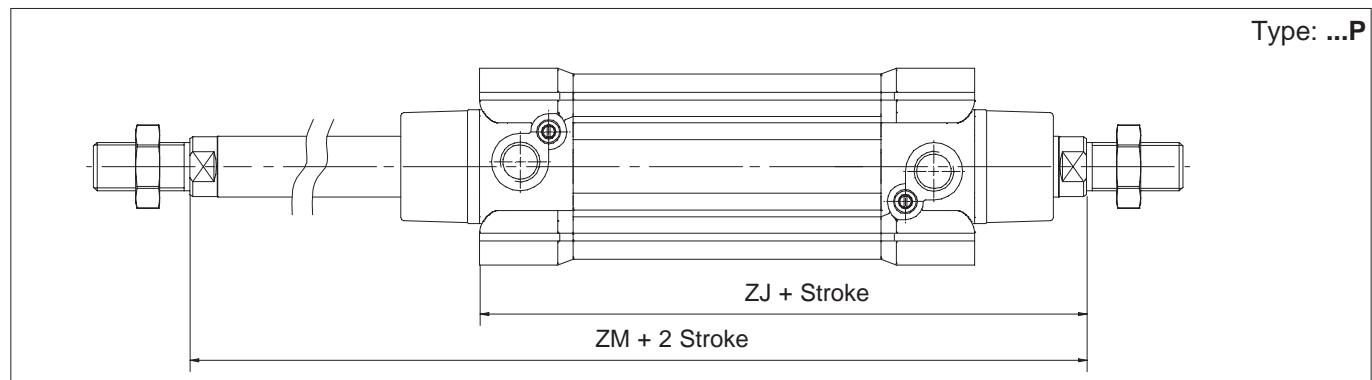
\varnothing (mm)	AM	B \varnothing d11	BG	E	EE	J2	J3	KK	L1	L2	H
32	22	30	15	47	1/8"	7	3,5	M10x1,25	20	94	6
40	24	35	15	52	1/4"	7,5	4	M12x1,25	22	105	7
50	32	40	16	65	1/4"	11,5	1,5	M16x1,5	26	106	8
63	32	45	16	75	3/8"	13,5	1	M16x1,5	25	121	8
80	40	45	17	95	3/8"	13	1	M20x1,5	32	128	9
100	40	55	17	115	1/2"	15	6	M20x1,5	38	138	9
125	54	60	21	140	1/2"	17	8	M27x2	40	160	12

\varnothing (mm)	L7	MM \varnothing f7	PL	RT	TG	VA	VD	WH	ZJ	=C1	=C2	=C3
32	19,4	12	8,5	M6	32,5	4	4	26	124	10	17	6
40	23	16	10	M6	38	4	4	30	139	13	19	6
50	23	20	13,5	M8	46,5	4	4	37	147	17	24	8
63	23	20	15	M8	56,5	4	4	37	162	17	24	8
80	30	25	21	M10	72	4	4	46	178	22	30	10
100	30,5	25	24	M10	89	4	4	51	193	22	30	10
125	27,5	32	23	M12	110	5	5	65	230	27	41	12

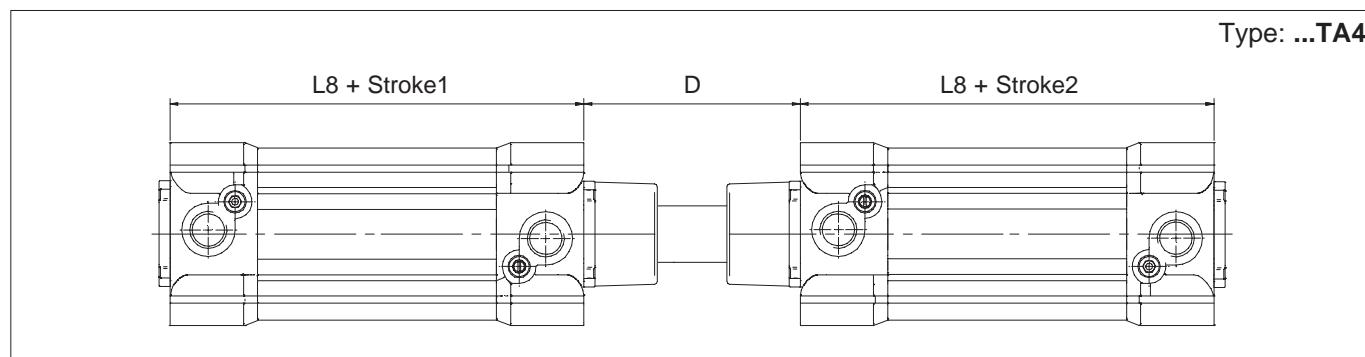
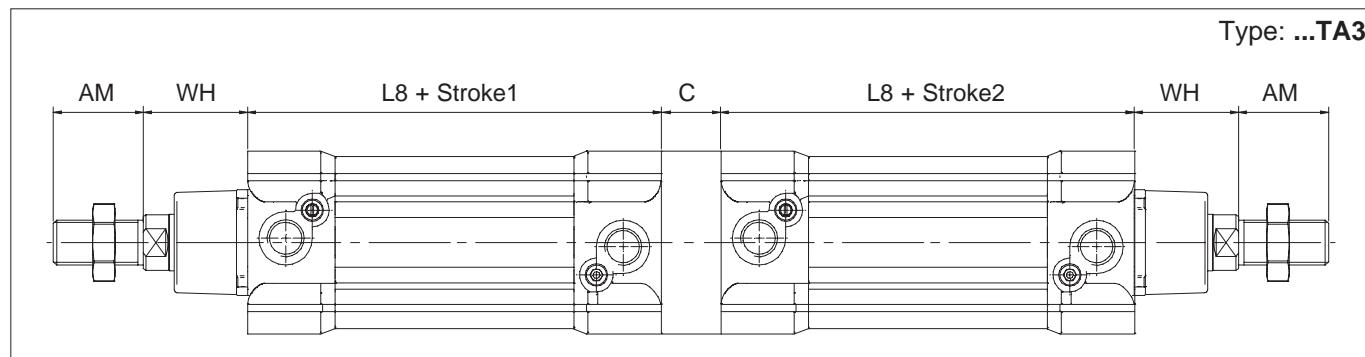
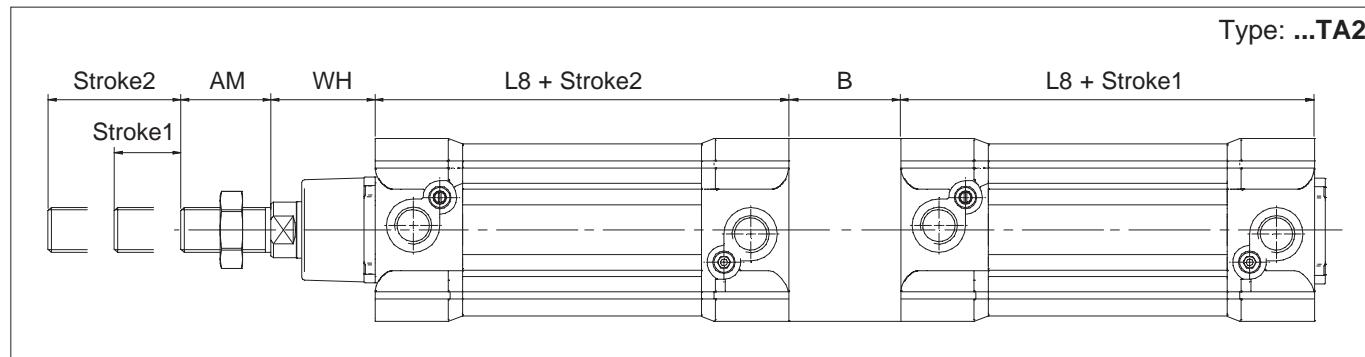
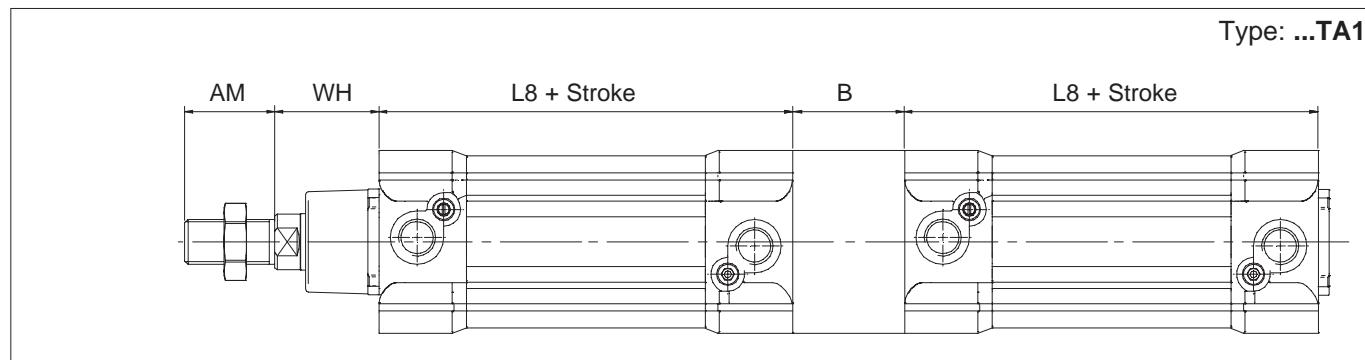
Seals kits	
n. 1	Rod seal
n. 2	Cushioning seal
n. 2	Piston lip-seal
n. 1	Linear rubber ring for piston (damper)
n. 2	Tube O-ring
n. 1	Piston guiding ring
n. 2	O-ring for cushioning screw
n. 1	O-ring to seal two semi-pistons

How to order: 63 / SG / AM

63	/	SG	/	AM
Bore	/	Seal kit	/	Type



\varnothing mm	AF	GF	KF	T4	WF	WH	WH1	ZJ	ZM
32	12	8	M6	2,6	26	74	99	120	146
40	12	10	M8	3,3	30	85	106	135	165
50	16	12	M10	4,7	37	107	127	143	180
63	16	12	M10	4,7	37	107	129	158	195
80	20	14	M12	6,1	46	136	156	174	220
100	20	14	M12	6,1	51	143	181	189	240
125	32	18	M16	8	65	187	-	225	290

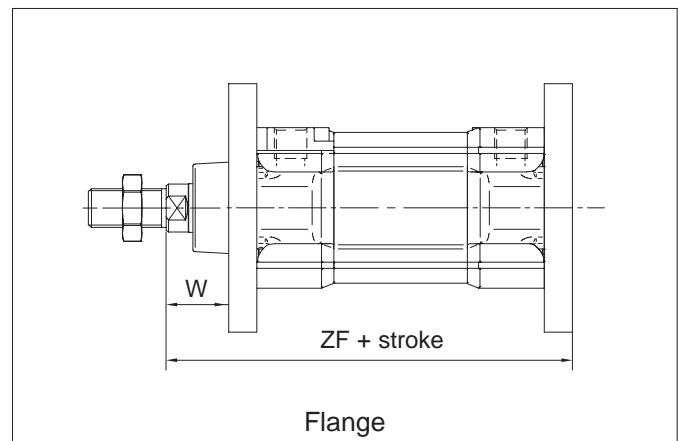
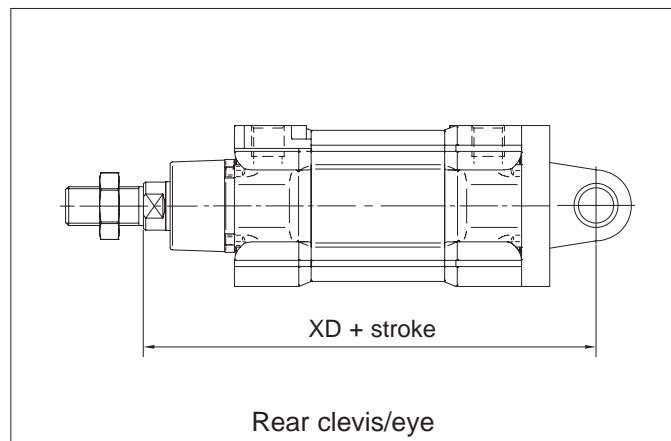


\varnothing mm	AM	B	C	D	L8	WH
32	22	40	12	48	94	26
40	24	44	12	54	105	30
50	32	52	16	69	106	37
63	32	50	16	69	121	37
80	40	64	20	86	128	46
100	40	76	20	91	138	51
125	54	80	35	120	160	65

Cylinders ISO 15552

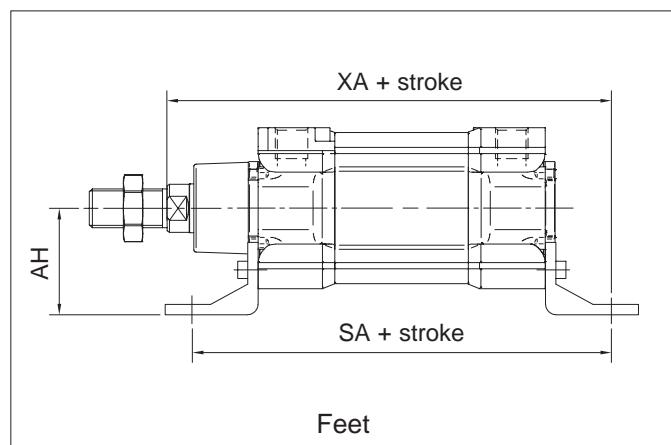
Bores from 32 to 125 mm

Mounting accessories ISO

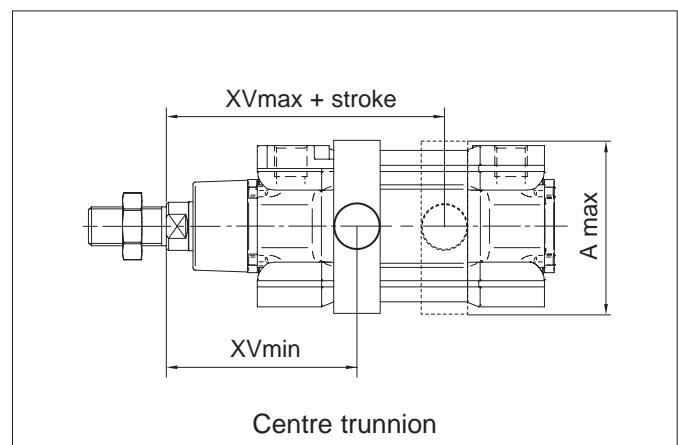


Rear clevis/eye

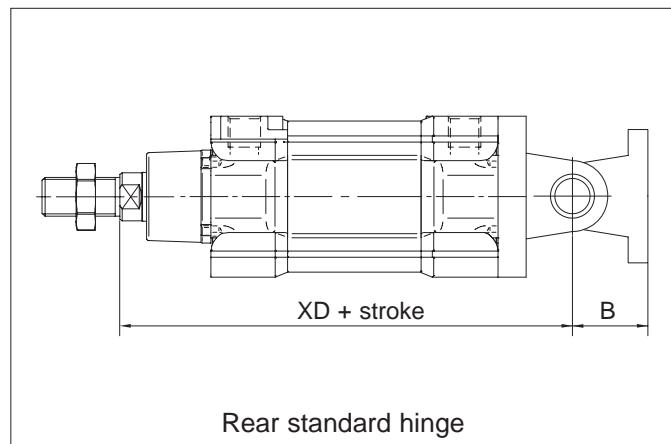
Flange



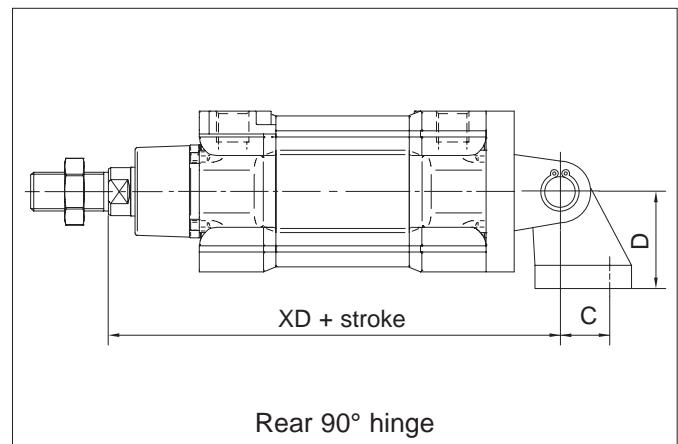
Feet



Centre trunnion



Rear standard hinge



Rear 90° hinge

\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	Profile Tube	Symbol	Type
Magnetic Standard			BMA
			BMT

- For the magnetic reed switches type ASV and ASC 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 to 2014/34/EU - ATEX



Series of cylinders conforming to ISO 15552 standards, that can be supplied with two different shapes of the barrel: BMA type with "T" and "C" grooves allowing to use the flush-mounted magnetic switch, and the BMT type with round tube and tie-rods.

The main features of this cylinder are heavy duty flat heads, clean design and the attention to details.

A particular attention has been given to the manufacture of the end caps without external casting cavities thus to eliminate contamination traps.

Options	Suffix
Through rod	P
Rod in stainless steel AISI 304	K
Extended rod in hardened and chrome plated steel for the application of the static piston rod brake	B
Extended rod in hardened and chrome plated steel for the application of the dynamic piston rod brake	B1
Seals FKM -20°C ÷ +150°C	V
Scraper ring only FKM -20°C ÷ +80°C	V1
Low temperature seals -40°C ÷ +80°C	BT
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
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	F
With bellows for protection of the rod (in this case the dimension WH will be extended according the stroke of the cylinder)	Z
NBR seals	H
Piston rod scraping ring in nitrile rubber NBR	H1
Brass rod scraper (with V, V1 and H options only)	Y
Stainless steel AISI 316L profile tube (with BMT type only)	TX
Special on request	/S

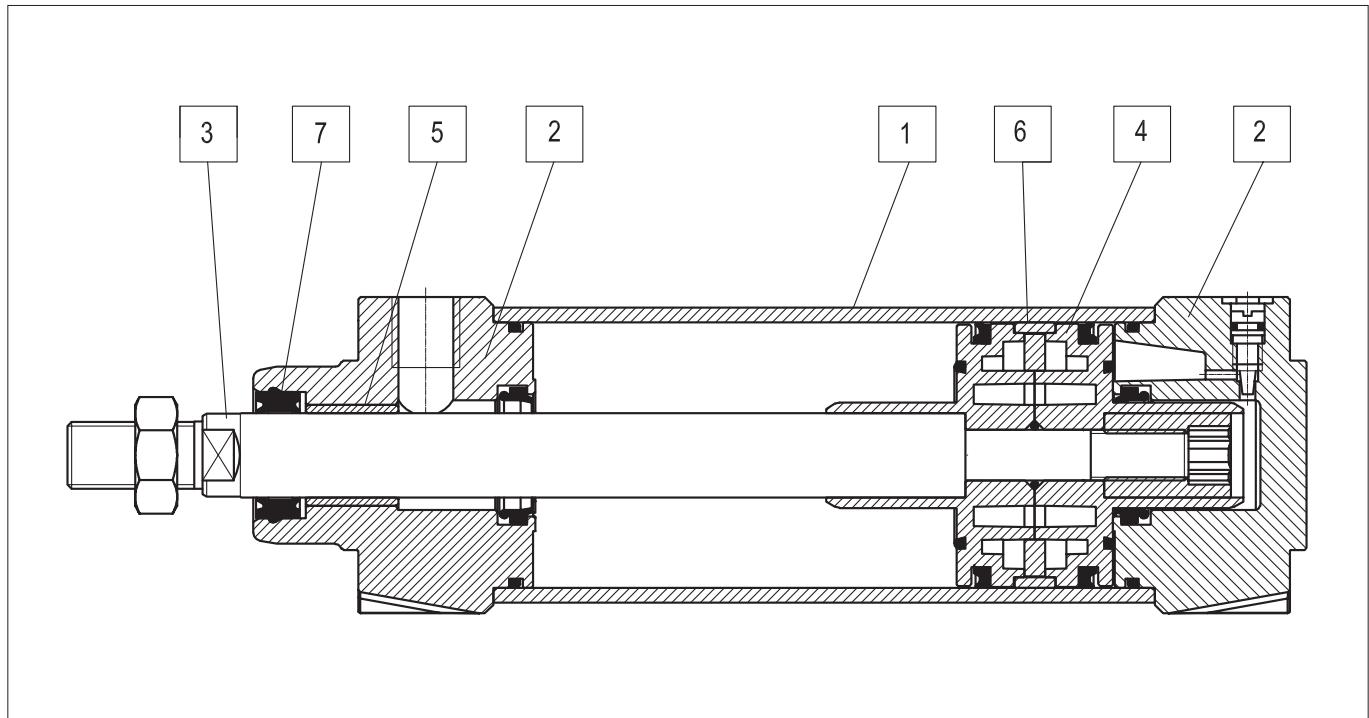
The options can be combined (when this is possible).

* In Stainless Steel AISI 304 for ATEX versions

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 BMAKVR-M12x1,25

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

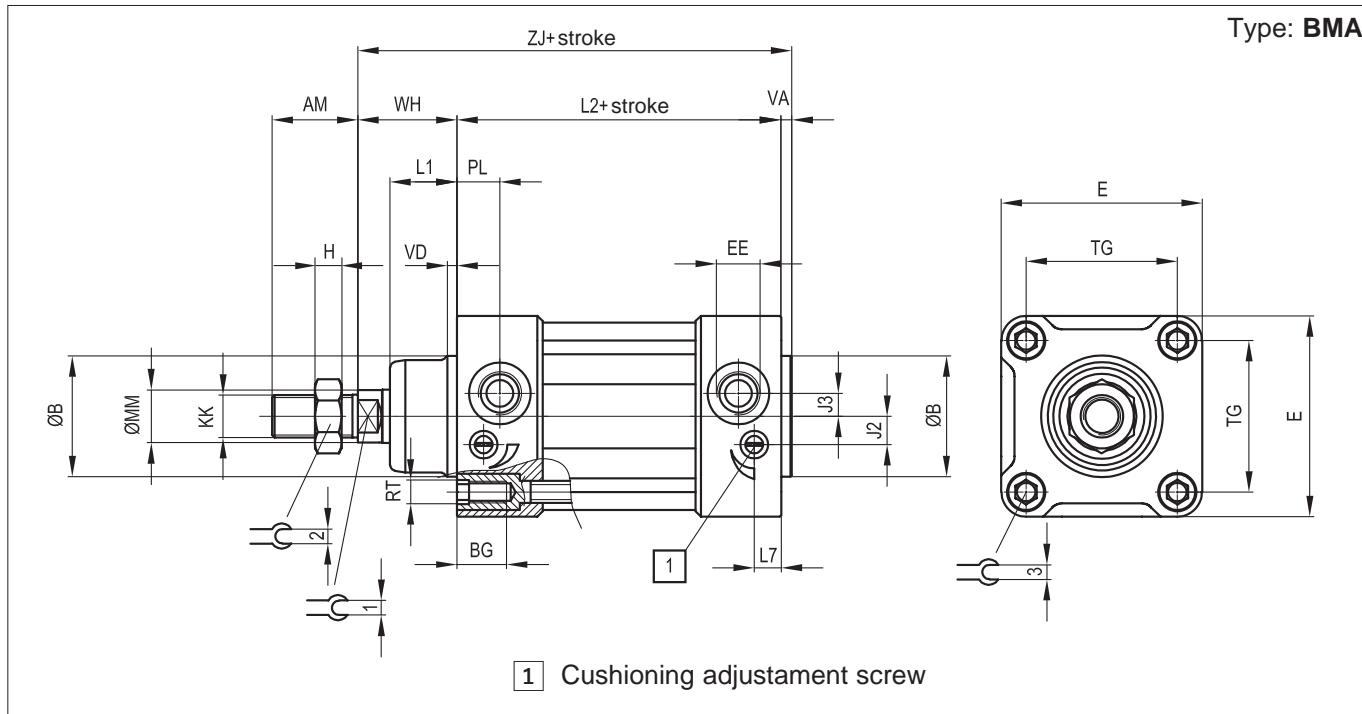


Materials (standard types)

[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 started, must be continued.						
Pressure	1 ÷ 10 bar						
Temperature range	-20°C ÷ +80°C (standard /V1)		-20°C ÷ +150°C (V)			-40°C ÷ +80°C (BT)	
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)	593	944	1452	1975	3230	4540
	Additional 10 mm stroke (g)	21	29	44	47	69	80
							119



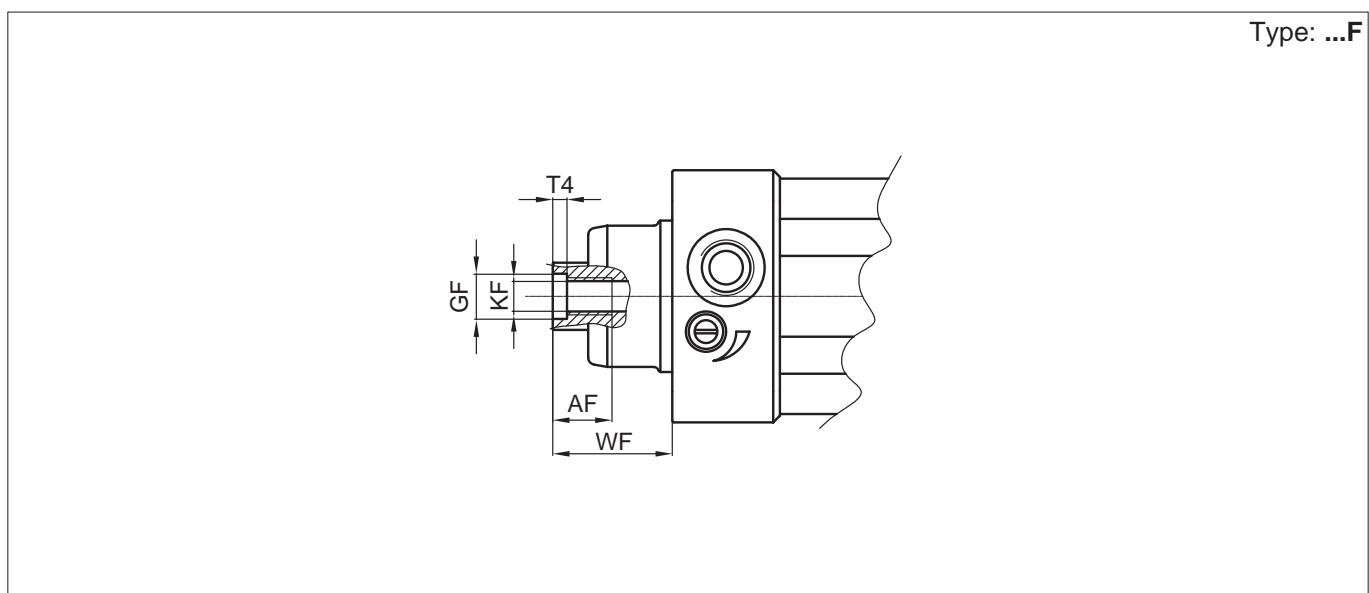
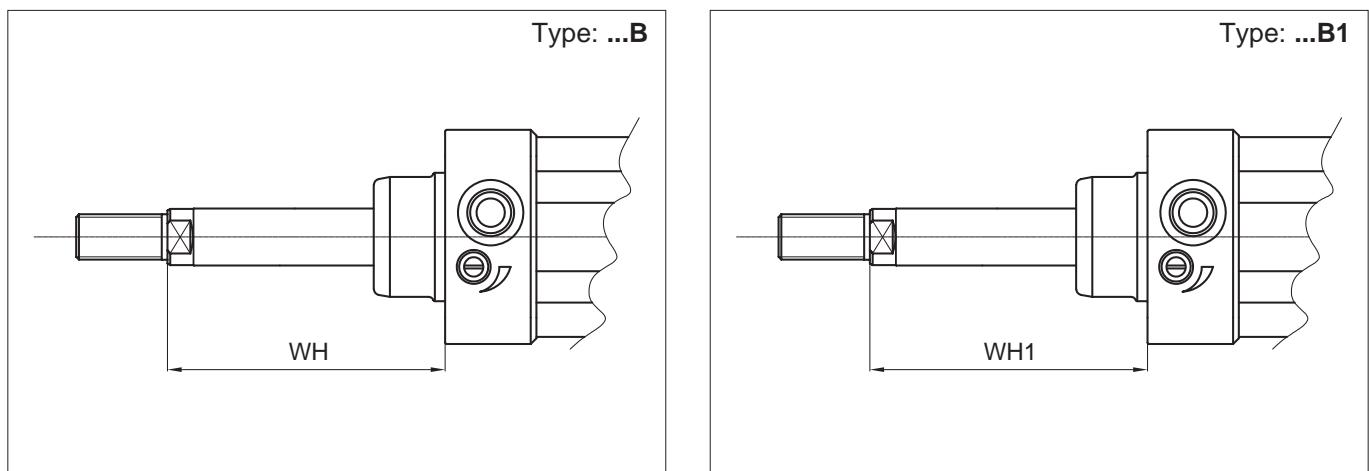
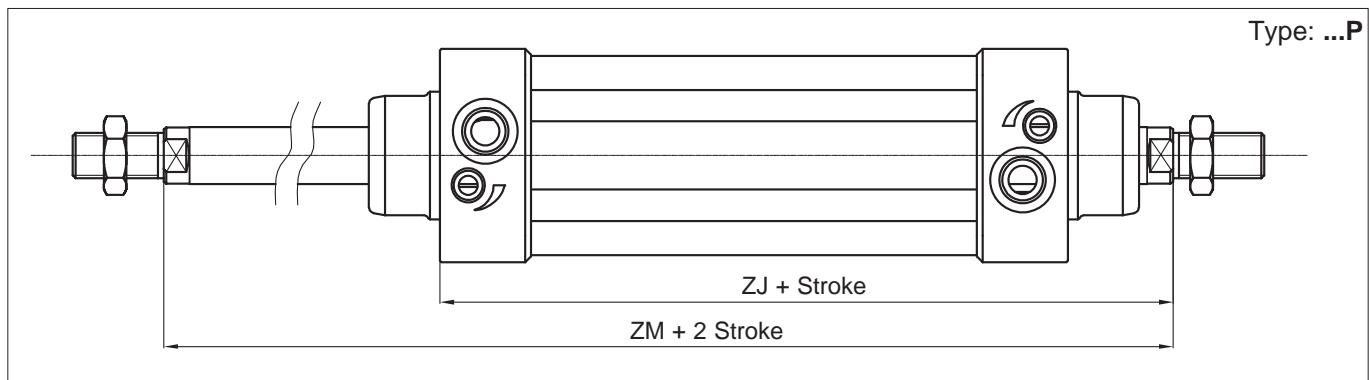
\varnothing (mm)	AM	B \varnothing d11	BG	E	EE	J2	J3	KK	L1	L2	H
32	22	30	15	47	1/8"	5,75	5,25	M10x1,25	20	94	6
40	24	35	15	52	1/4"	8	6	M12x1,25	22	105	7
50	32	40	16	65	1/4"	10,5	6	M16x1,5	26	106	8
63	32	45	16	75	3/8"	10,5	8,5	M16x1,5	25	121	8
80	40	45	17	95	3/8"	14	9,5	M20x1,5	32	128	9
100	40	55	17	115	1/2"	15	10	M20x1,5	38	138	9
125	54	60	21	140	1/2"	20	10	M27x2	40	160	12

\varnothing (mm)	L7	MM \varnothing f7	PL	RT	TG	VA	VD	WH	ZJ			
32	18	12	11	M6	32,5	4	4	26	124	10	17	6
40	20	16	14	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	30	32	25	M12	110	5	5	65	230	27	41	12

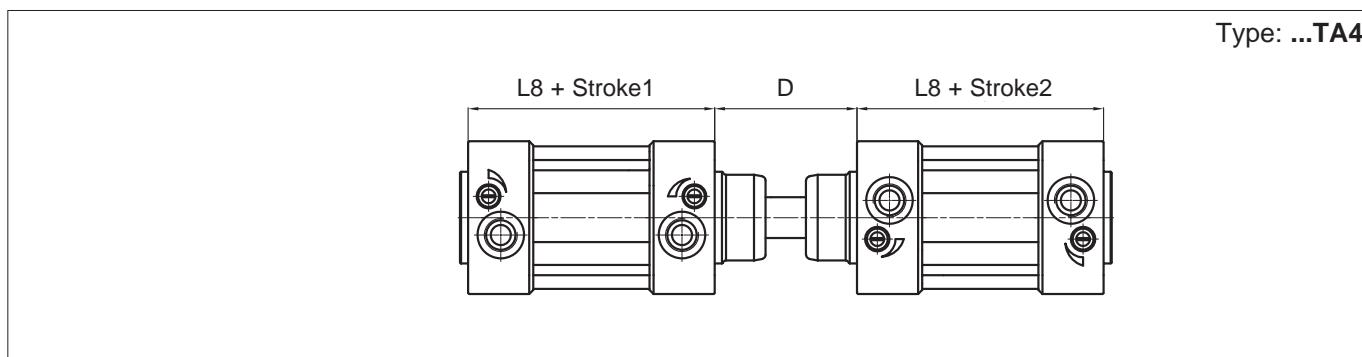
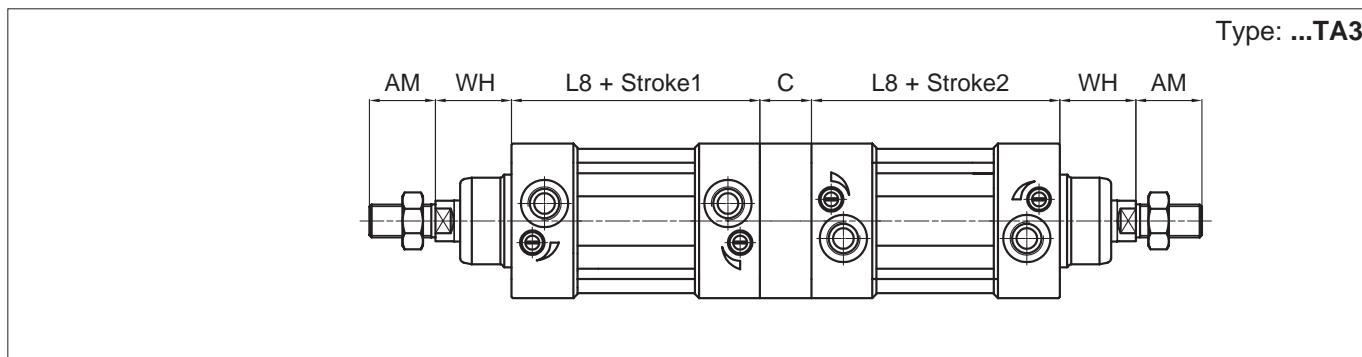
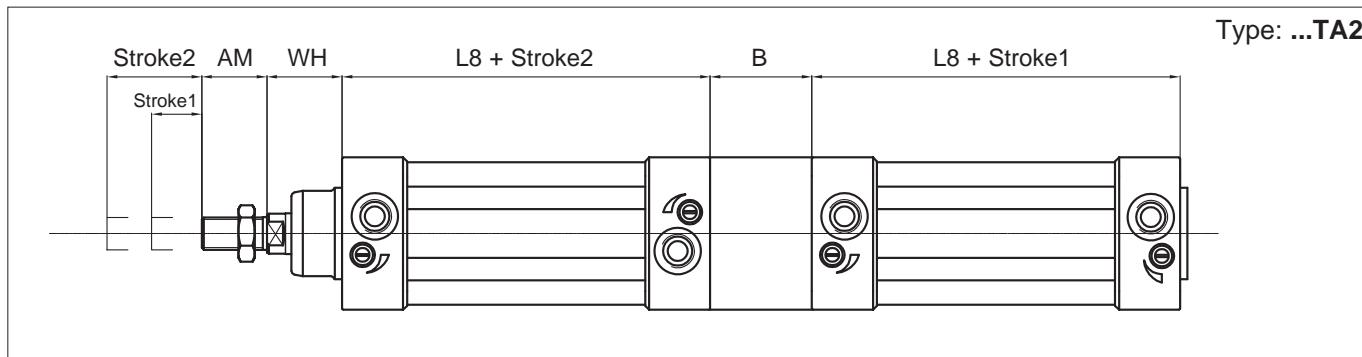
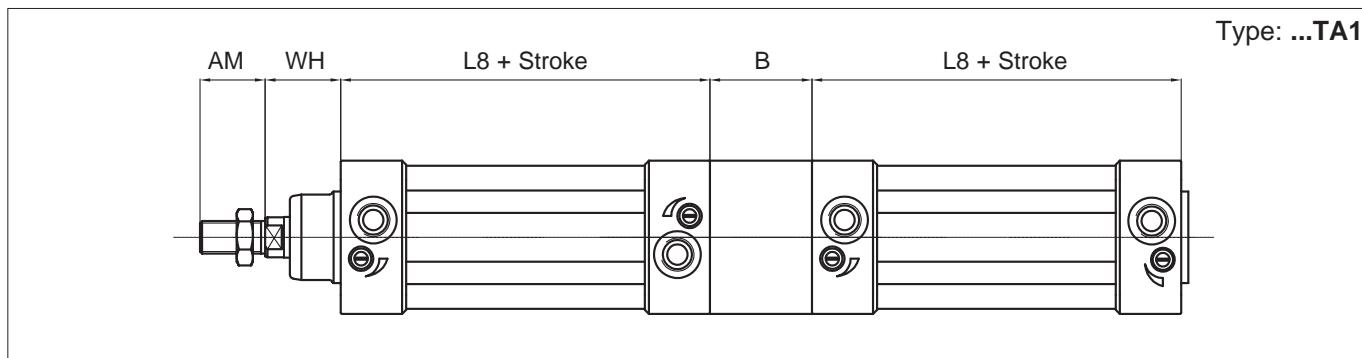
Seals kits	
n. 1	Rod seal
n. 2	Cushioning seal
n. 2	Piston lip-seal
n. 1	Linear rubber ring for piston (damper)
n. 2	Tube O-ring
n. 1	Piston guiding ring
n. 2	O-ring for cushioning screw
n. 1	O-ring to seal two semi-pistons

How to order: 63 / SG / AM

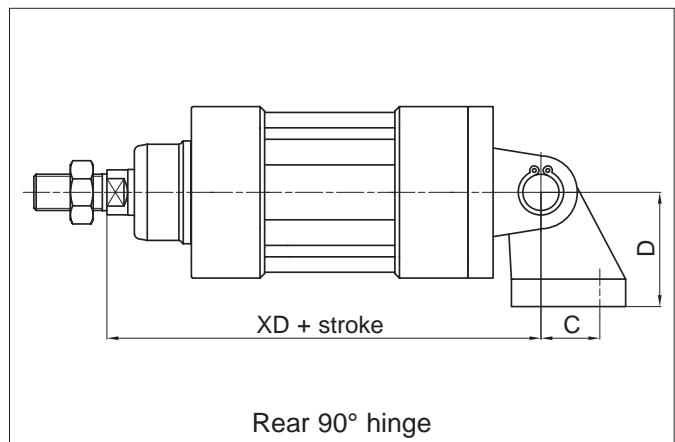
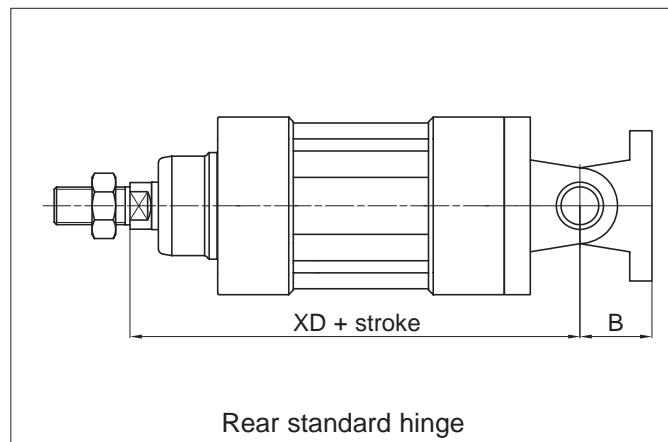
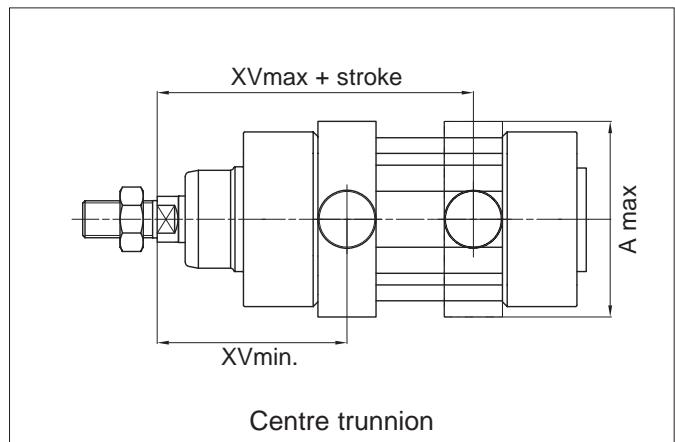
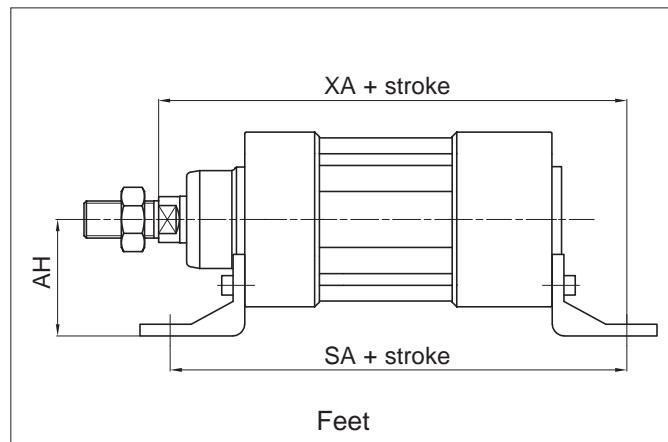
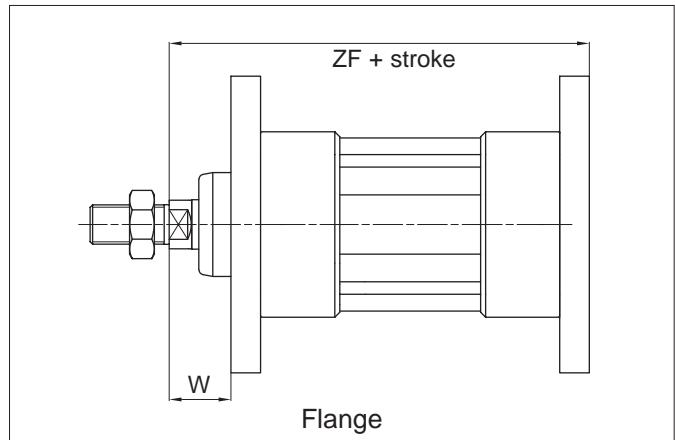
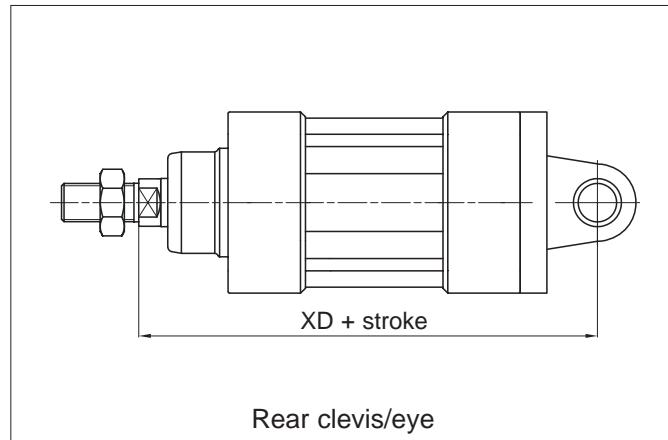
63	/	SG	/	AM
Bore	/	Seal kit	/	Type



\varnothing mm	AF	GF	KF	T4	WF	WH	WH1	ZJ	ZM
32	12	8	M6	2,6	26	74	99	120	146
40	12	10	M8	3,3	30	85	106	135	165
50	16	12	M10	4,7	37	107	127	143	180
63	16	12	M10	4,7	37	107	129	158	195
80	20	14	M12	6,1	46	136	156	174	220
100	20	14	M12	6,1	51	143	181	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



\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 to 2014/34/EU - ATEX

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.

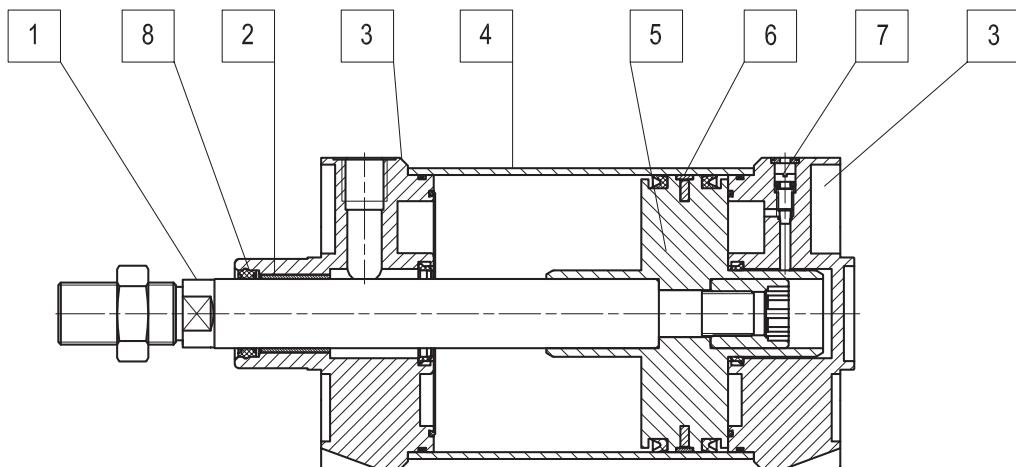
Options	Suffix
Through rod (page 1.8.4)	P
Rod in stainless steel AISI 304	K
Seals FKM -20°C ÷ +150°C	V
Scraper ring only FKM -20°C ÷ +80°C	V1
Low temperature seals -40°C ÷ +80°C	BT
Tandem forward movement piston rods coupled together (page 1.8.5)	TA1
Tandem forward movement piston rods independent (page 1.8.5)	TA2
Tandem back to back (page 1.8.5)	TA3
Tandem front to front (page 1.8.5)	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 1.8.4	F
With bellows for protection of the rod (in this case the dimension WH will be extended according the stroke of the cylinder)	Z
NBR seals	H
Piston rod tightness in nitrile rubber NBR with retainer ring	H1
Brass rod scraper (with V, V1 and H options only)	Y
Stainless steel AISI 316L profile tube	TX
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

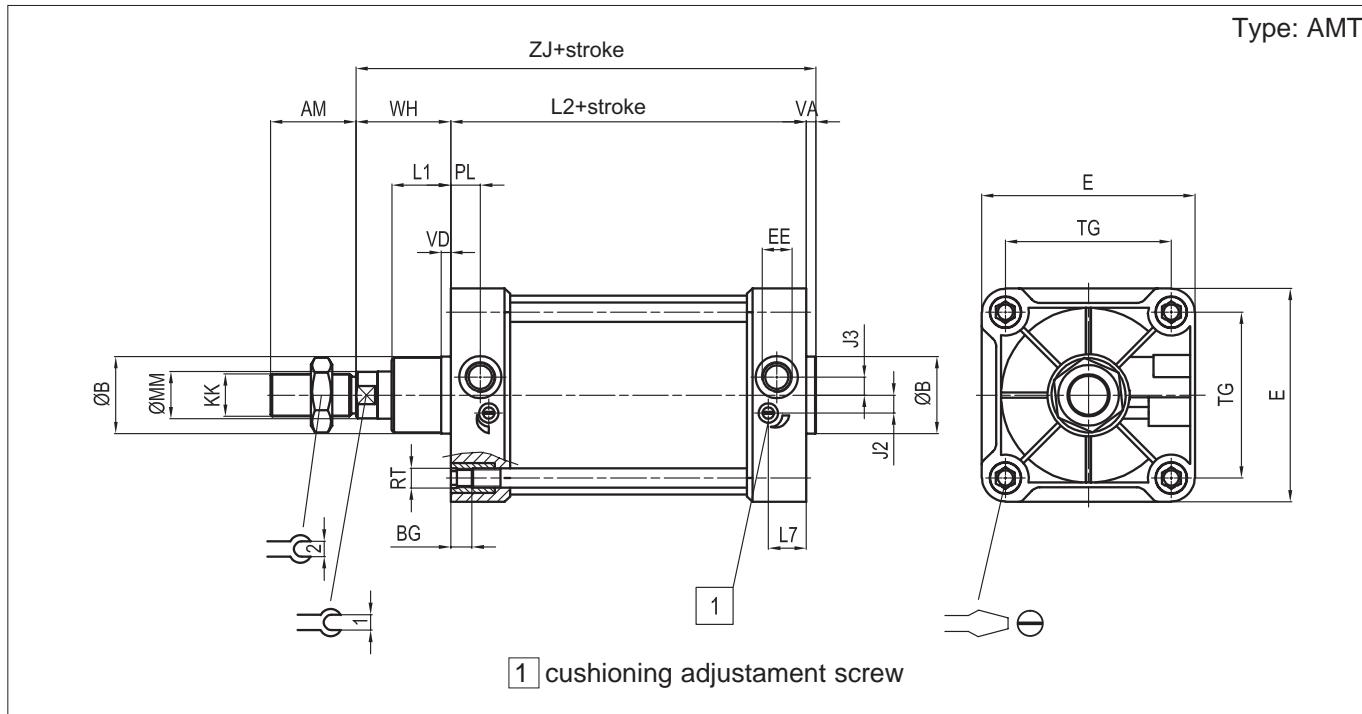


Materials (standard types)

[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 started, must be continued.			
Pressure	1 ÷ 10 bar			
Temperature range	-20°C ÷ +80°C (standard / V1)	-20°C ÷ +150°C (V)	-40°C ÷ +80°C (BT)	
Stroke	from 10 mm to 2500 mm			
Cushion lenght	46	47	40	40
Ports	3/4"		1"	
Rod thread	M36 x 2		M42 x 2	M48 x 2
Weight	Stroke zero (g)	11507	14532	26811
	Additional 10 mm stroke (g)	234	250	384
				597



\varnothing (mm)	AM	B \varnothing d11	BG	E	EE	J2	J3	KK	L1	L2	H
160	72	65	24	180	3/4"	15	15	M36x2	50	180	14
200	72	75	24	220	3/4"	15	15	M36x2	65	180	14
250	84	90	25	270	1"	25	25	M42x2	75	200	20
320	96	110	30	350	1"	35	35	M48x2	90	220	17

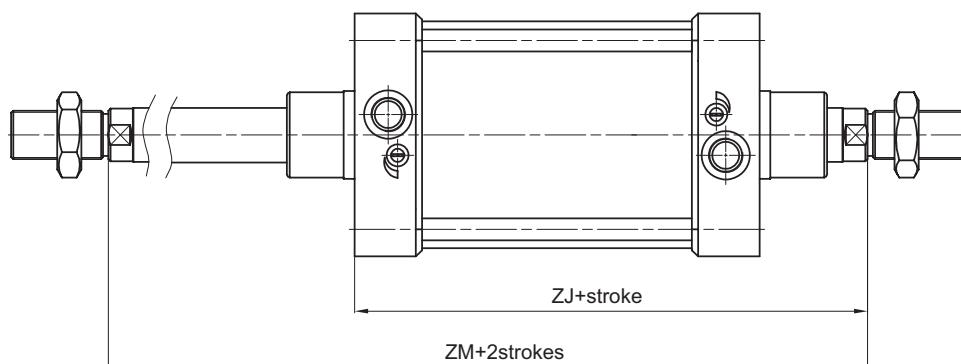
\varnothing (mm)	L7	MM \varnothing f7	PL	RT	TG	VA	VD	WH	ZJ	$\text{---} \odot 1$	$\text{---} \odot 2$	$\text{---} \odot \Theta$
160	32	40	25	M16	140	6	8	80	266	36	55	$^{25}_{3,7}$
200	34	40	25	M16	175	6	25	95	281	36	55	$^{25}_{3,7}$
250	40	50	30	M20	220	8	25	105	313	46	65	$^{32}_{5,5}$
320	45	63	30	M24	270	10	25	120	350	55	75	$^{36}_{5,5}$

Seals 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

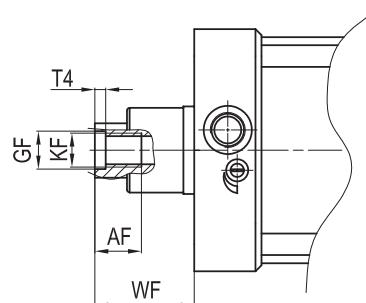
How to order: 200 / SG / AMT

200	/	SG	/	AMT
Bore	/	Seal kit	/	Type

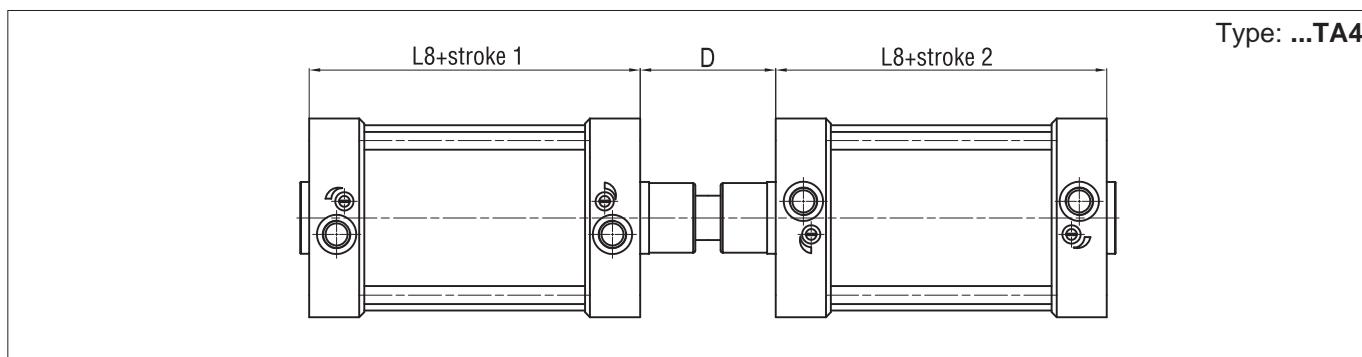
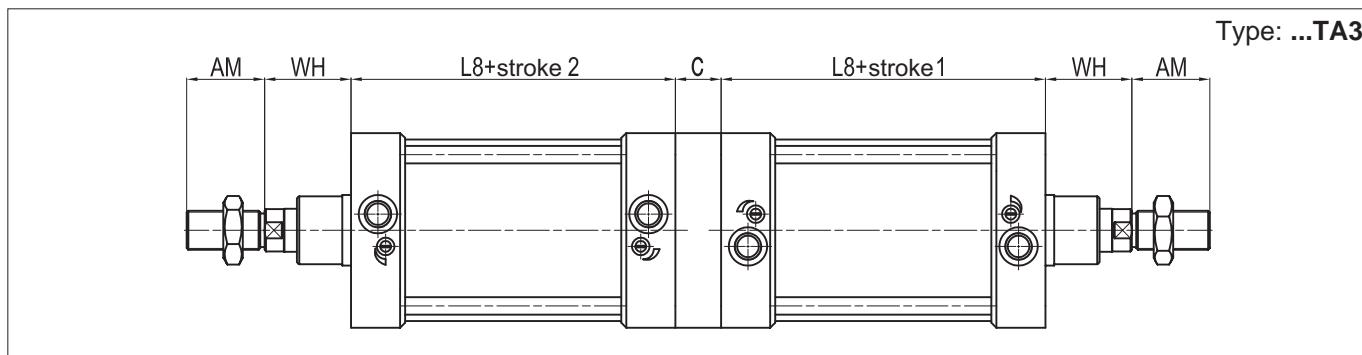
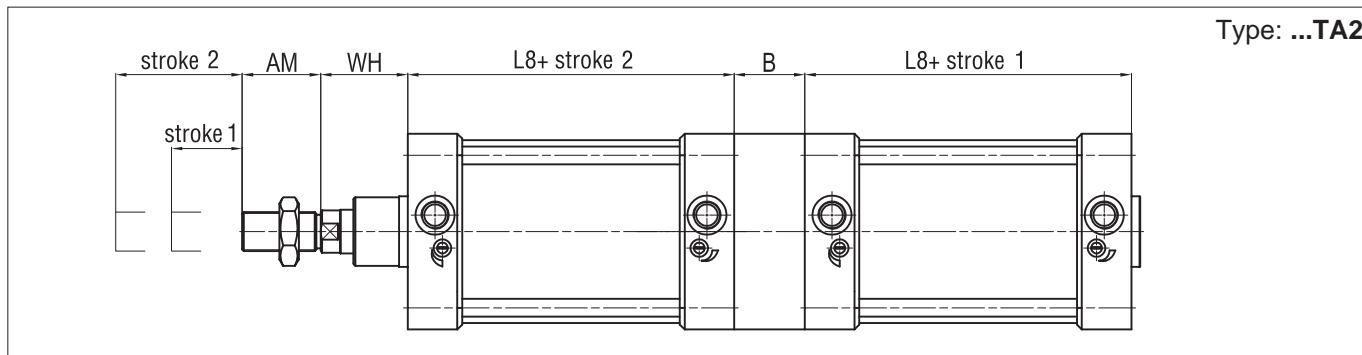
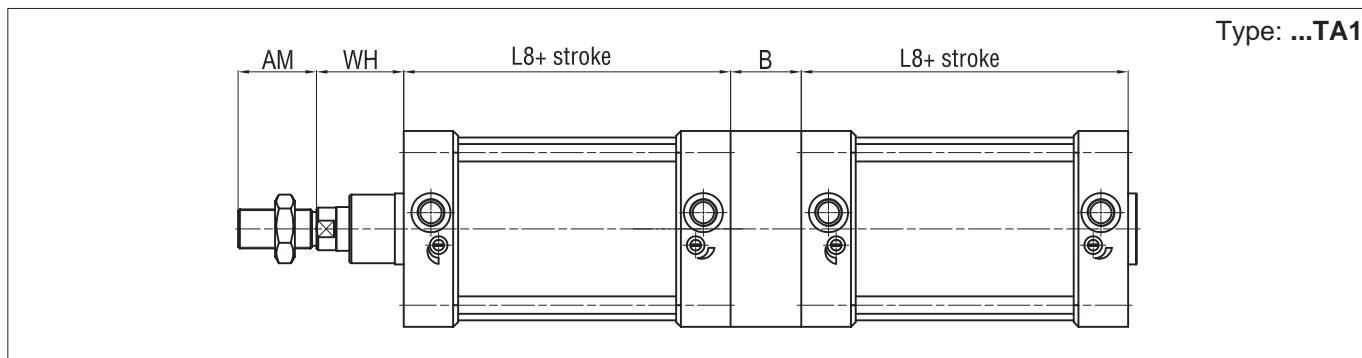
Type: ...P



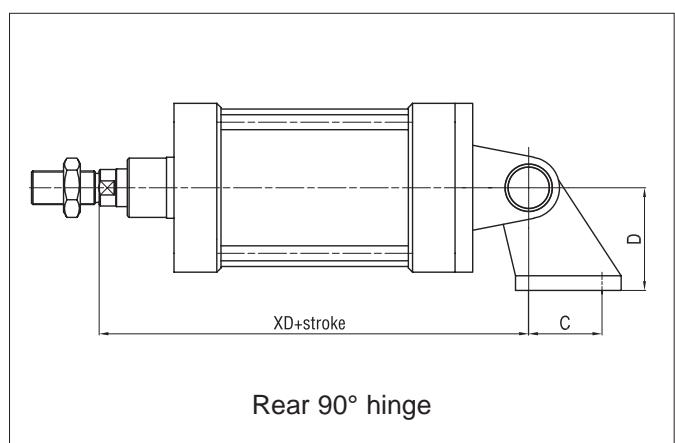
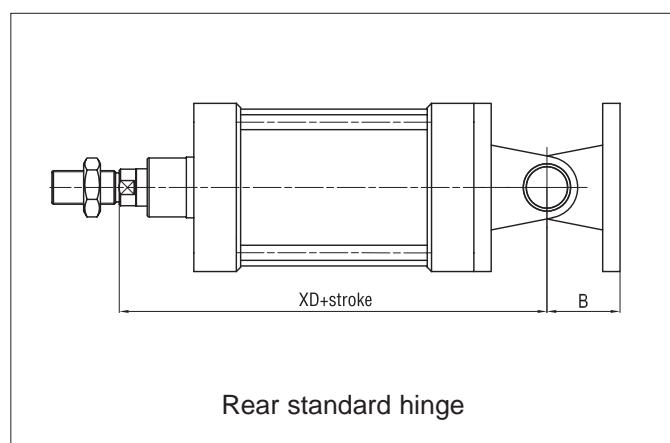
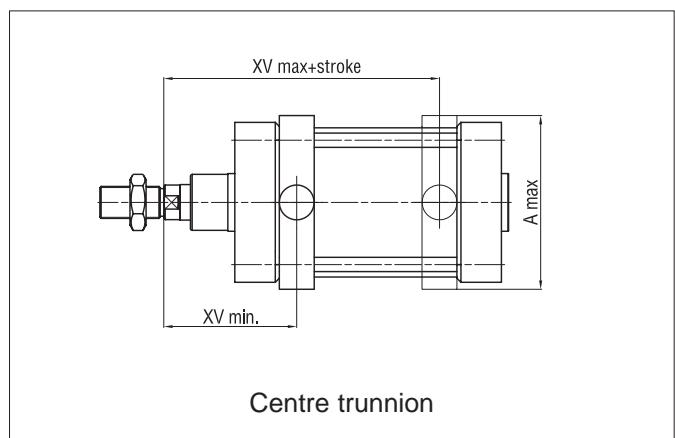
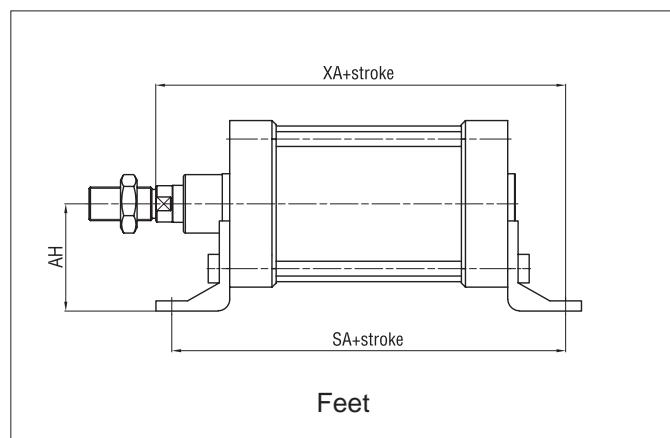
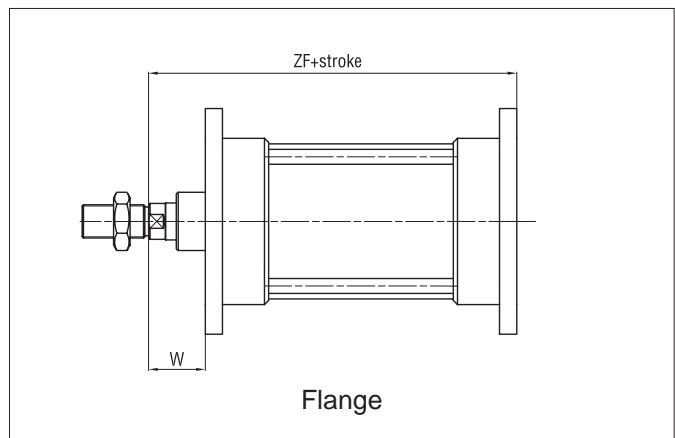
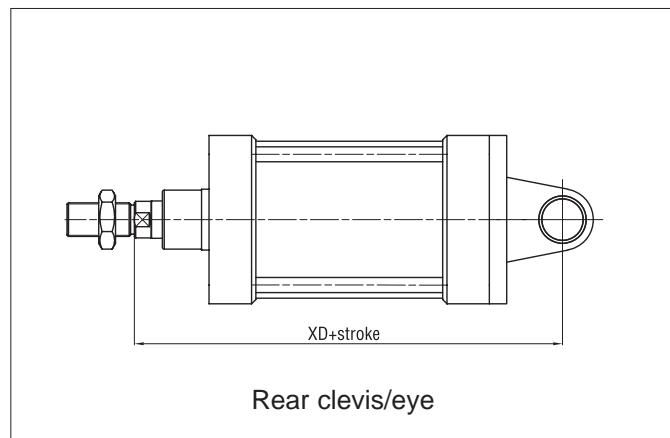
Type: ...F



\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



\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



\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

Round Cylinders

Bores from 32 to 63 mm, with stainless steel tube

Single and double acting



Standard executions		
Version	Symbol	Type
Single acting		RS
Double acting		RD
Double acting magnetic		RDM
Double acting magnetic with cushionings		RDMA

Options	Suffix
Through rod	P
Rear spring	T
Seals FKM -20°C ÷ +150°C	V
Low temperature seals -40°C ÷ +80°C	BT
Low friction	L
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 rolling: this guarantees perfect tightening.
Dumpers are in nitrile rubber to cushion the impact of the piston.
RDMA type are provided with adjustable cushionings at both ends.
The standard cylinders are provided with rod nut.

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

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

For mounting accessories see from page 1.96.1.

For rod accessories see from page 1.85.5.

How to order: 40 / 50 RDMP

40	/	50	RDM	P
Bore	/	Stroke	Type	Option



On request, they can be supplied according to 2014/34/EU - ATEX

Technical data

Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.			
Pressure	max 10 bar			
Temperature range	-30°C ÷ +80°C (standard)		-20°C ÷ +150°C (V)	-40°C ÷ +80°C (BT)
Materials	Heads: Anodised aluminium Tube: Stainless Steel AISI 304 Rod: Stainless Steel AISI 303 Piston: Aluminium Seals: Polyurethane			

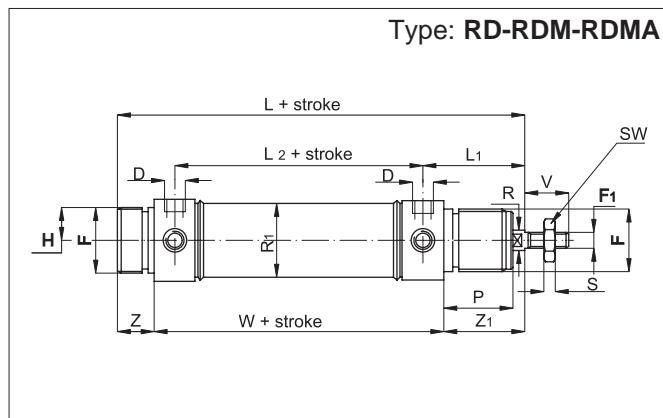
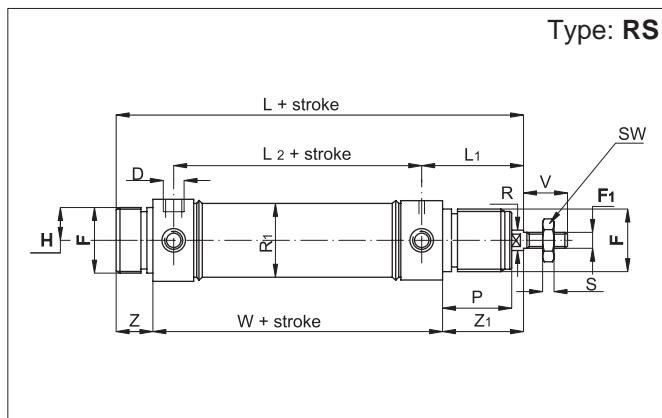
Single acting

Bore (mm)	Standard strokes (mm)	Max stroke (mm)	Thrust force at 6 bar (N)	Thrust force of the spring (N)			
				Stroke 10		Stroke 25	
				min.	max	min.	max
32	10, 25, 50	50	482	57	62	51	62
40			754	98	105	86	105
50			1178	147	158	130	158
63			1869	147	158	130	158

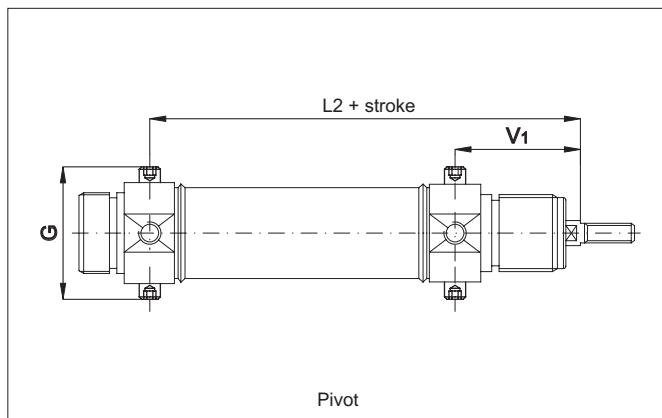
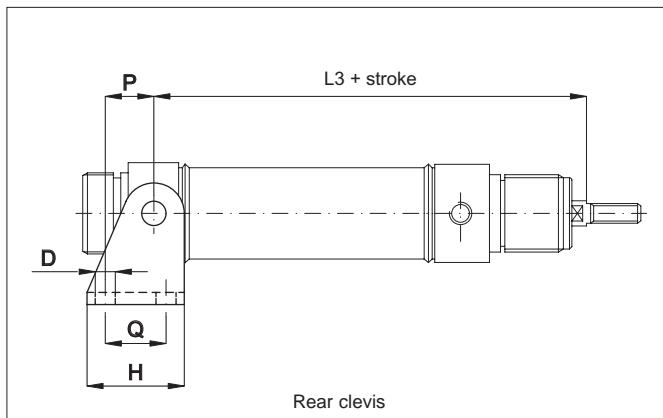
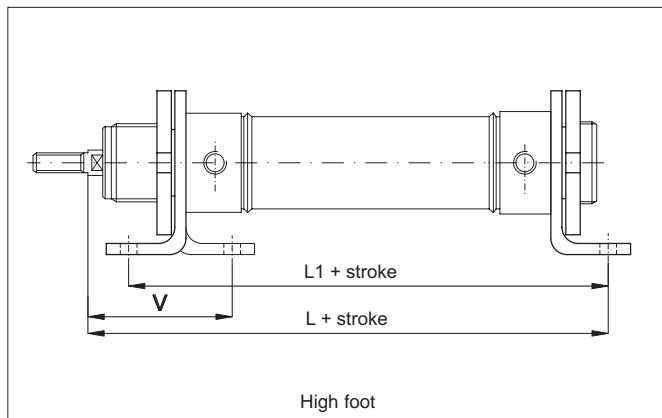
Double acting

Bore (mm)	Standard strokes (mm)	Max stroke (mm)
32	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	1000
40		
50		
63		

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



\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	M30x1,5	30	1/8"	M10x1,5	12	78	14	38	96	47	148	33,6	17,5	6	17
40	24	M38x1,5	35	1/4"	M12x1,75	16	89	16	45	113	57	174	41,6	21	7	19
50	32	M45x1,5	38	1/4"	M16x2	20	96	18	50	120	62	188	52,4	26,5	8	24
63	32	M45x1,5	38	3/8"	M16x2	20	98	18	50	124	63	192	65,4	32,5	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	153	153	146	146	60	57	27	50	30	61	9
50	160	160	158	158	64	62	30	54	34	75	9
63	164	164	161	161	65	63	34	65	35	92	9

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



On request, they can be supplied according to 2014/34/EU - ATEX

Options	Suffix
Through rod	P
Seals FKM (for RED type only)	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 tightening.

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 1.96.1.

For rod accessories see from page 1.85.5.

How to order: 40 / 50 REDMP

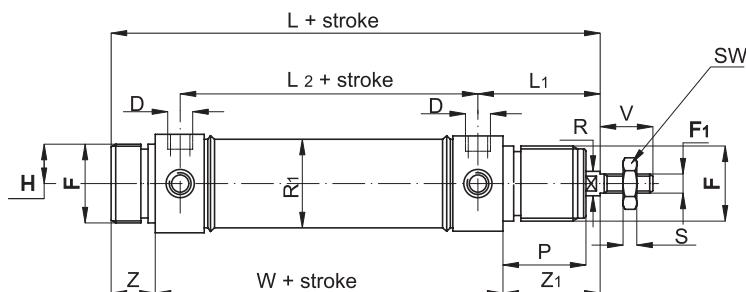
40	/	50	REDM	P
Bore	/	Stroke	Type	Option

Technical data				
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.			
Pressure	max 10 bar			
Temperature range	-30°C ÷ +80°C (standard)		-20°C ÷ +150°C (V)	
Materials	Heads:	Anodised aluminium		
	Tube:	Anodised aluminium		
	Rod:	Chrome-plated steel C45		
	Seals:	Polyurethane - NBR		

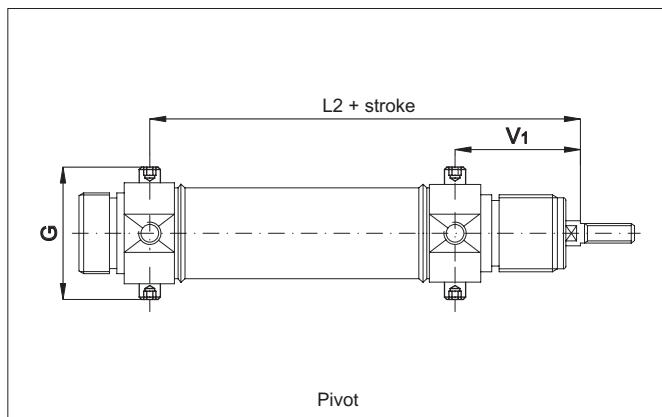
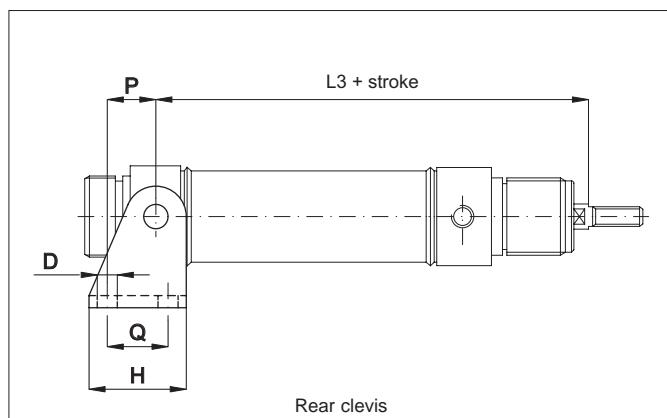
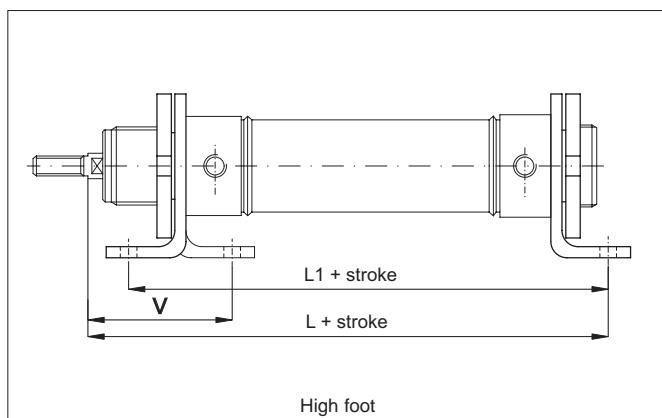
Bore (mm)	Standard strokes (mm)	Max stroke (mm)
32	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	
40		1000
50		

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

Standard executions		
Version	Symbol	Type
Non magnetic bore from 32 to 100		CX
Magnetic bore from 25 to 200		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.



On request, they can be supplied
according to 2014/34/EU - ATEX



Series of cylinders conforming to CNOMO standards.
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
Stainless Steel AISI 304 rod	K
Seals FKM -20°C ÷ +150°C (for CM type only)	V
Scraper ring only FKM -20°C ÷ +80°C	V1
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 length of front tie-rods (indicate the requested length. Ex: T1 = 25). The thread will remain standard	T1
Special length of rear tie-rods (indicate the requested length. Ex: T2 = 25). The thread will remain standard	T2
Special on request	/S
Without adjustable cushionings	D
Adjustable rear cushioning only	D1
Adjustable front cushioning only	D2

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: 50/200CMV

50	/	200	CM	V
Bore	/	Stroke	Type	Option

How to order: 50 / SG / CX

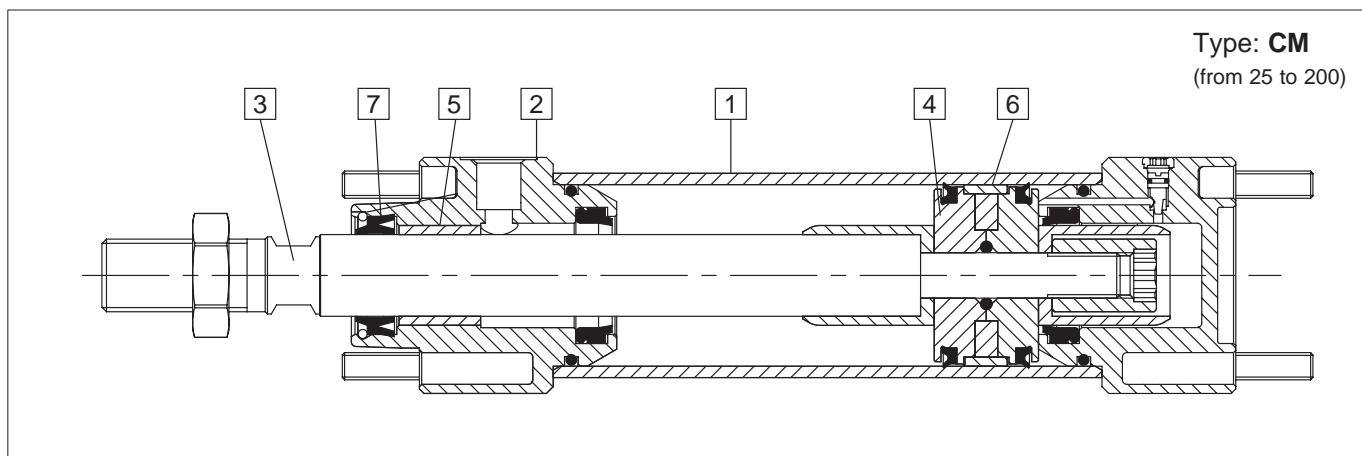
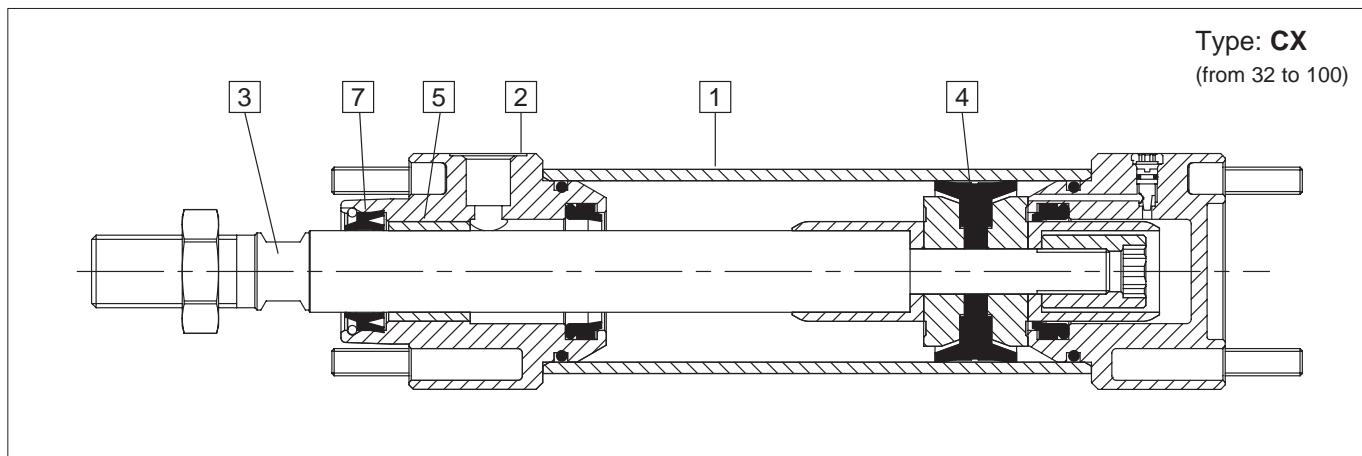
50	/	SG	/	CX
Bore	/	Seal kit	/	Type

How to order: 50 / SG / CM

50	/	SG	/	CM
Bore	/	Seal kit	/	Type

Seals 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

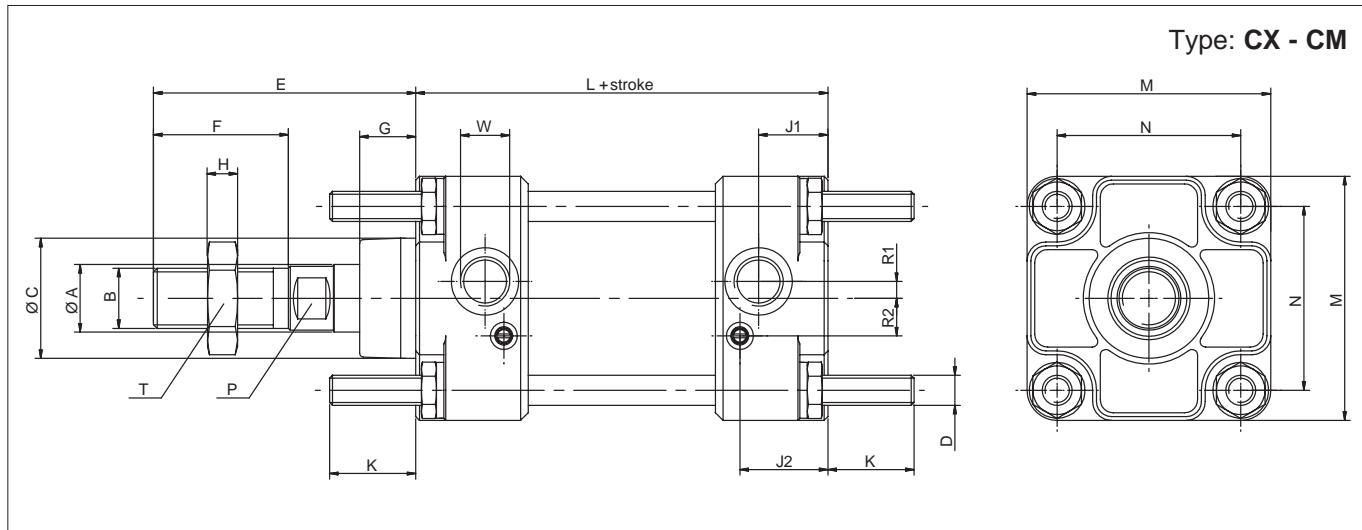
Seals kits	
n. 1	Rod seal
n. 2	Cushioning seal
n. 2	Piston lip-seal
n. 2	Tube O-ring
n. 1	Piston guiding ring
n. 2	O-ring for cushioning screw
n. 2	O-ring to seal two semi-pistons



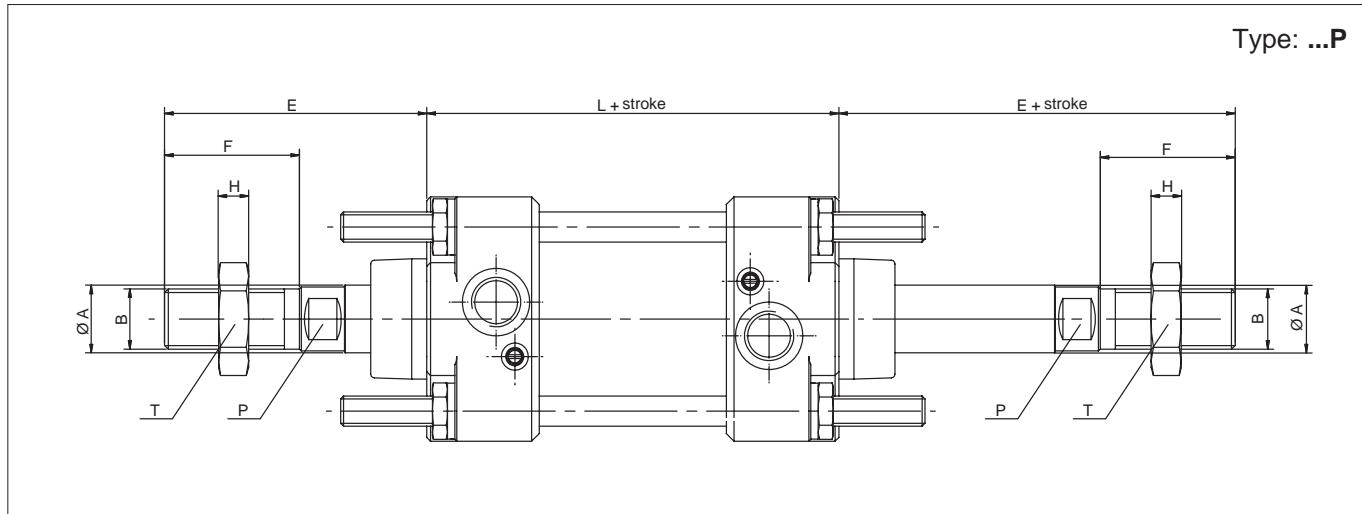
See page 1.1.3 to calculate the cylinder force.

Materials (standard types)	
1 Tube	Anodised aluminium
2 Heads	Die-cast painted aluminium
3 Rod	Chrome-plated steel C45
4 Piston	CX: Monobloc (from 32 to 100) - CM: Aluminium (from 25 to 200)
5 Bushing	Self-lubricating sintered bronze
6 Guide ring	Natural Delrin (CM)
7 Rod seals	NBR
Other seals	Nitrile rubber NBR/polyurethane

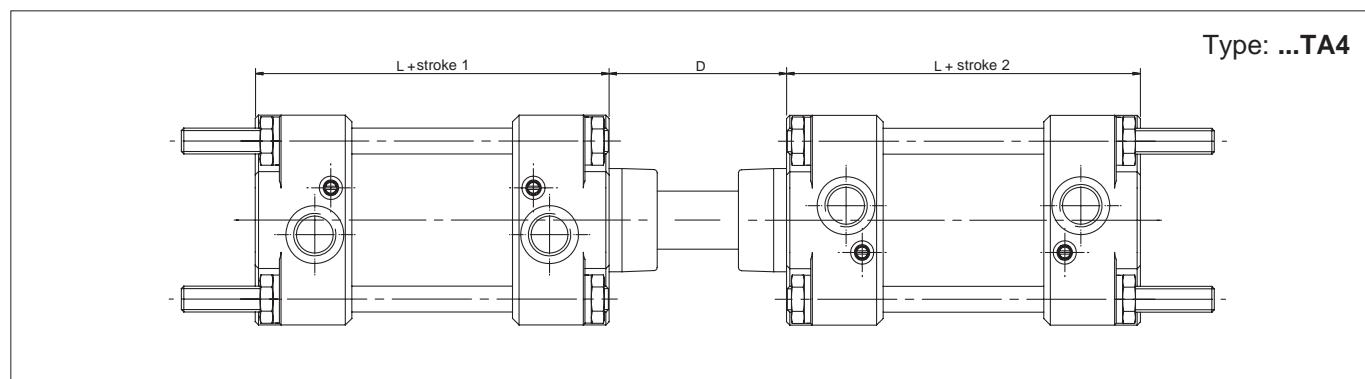
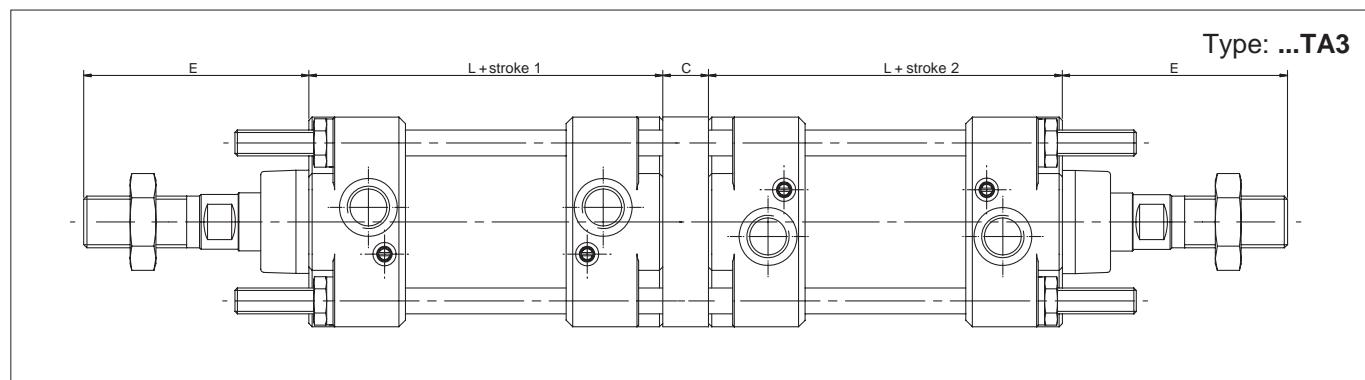
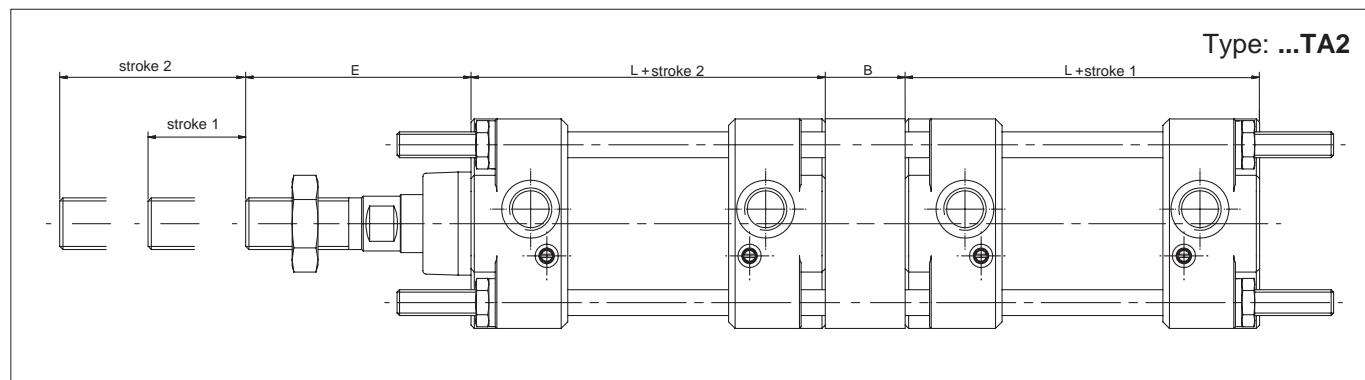
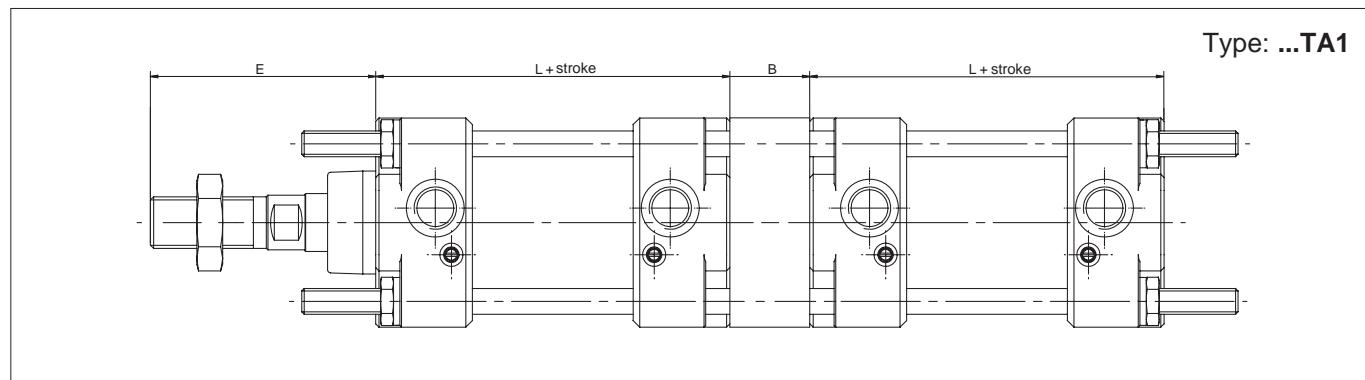
Technical data											
Bore (mm)	25	32	40	50	63	80	100	125	160	200	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.										
Pressure	1 ÷ 10 bar										
Temperature range	-20°C ÷ +80°C (standard / V1)					-20°C ÷ +150°C (V)					
Stroke	from 10 mm to 2500 mm										
Cushion lenght	21	21	28	28	34	34	38	27	40	40	
Weight	Stroke zero (g)	377	453	842	1231	1962	2867	4772	6146	12846	16175
	Additional 10 mm stroke (g)	22	24	35	50	60	76	107	135	232	249



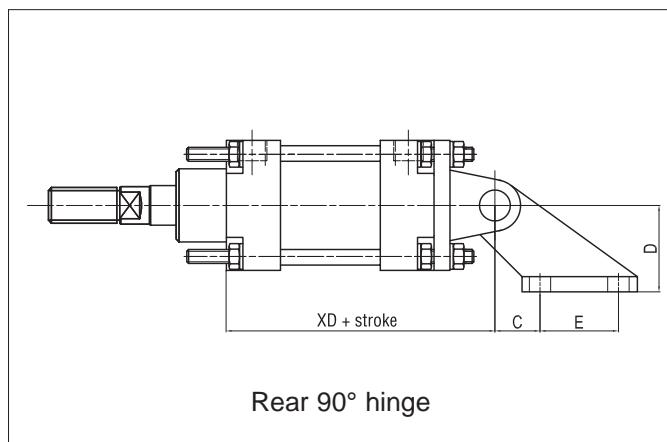
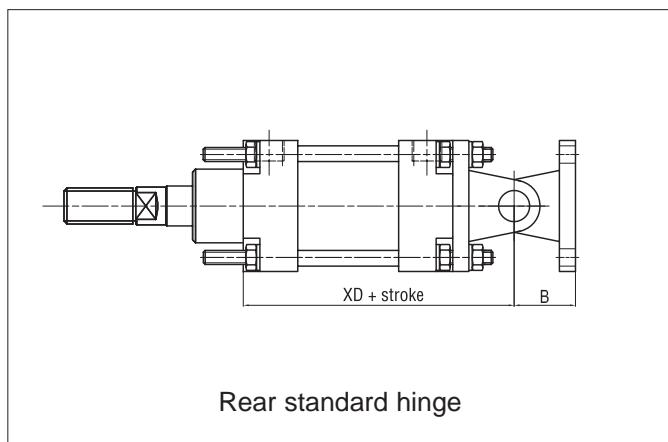
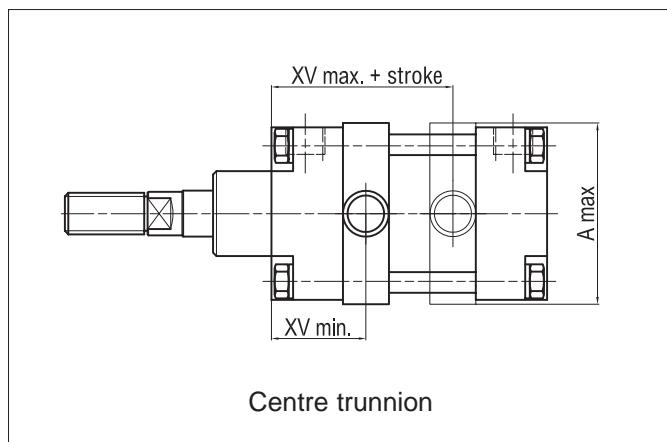
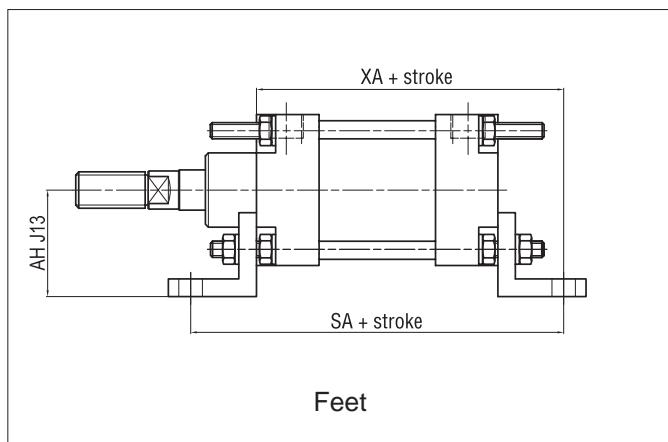
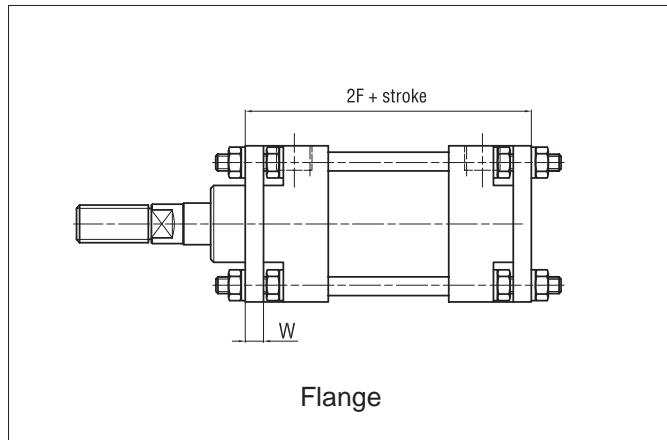
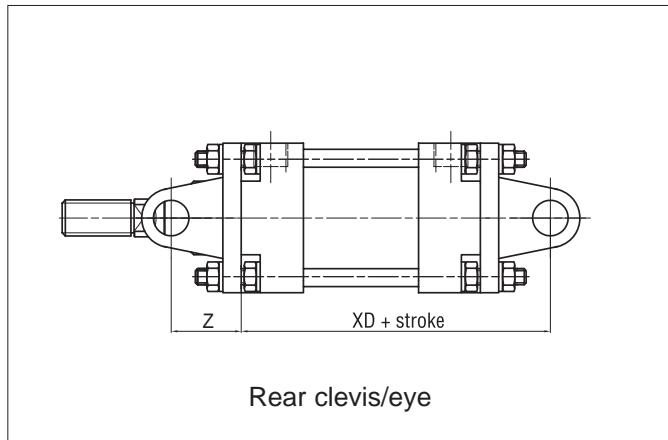
\emptyset (mm)	\emptyset A f7	B	\emptyset C e9	E	F	G	L ± 1	P	T	H	D	K	W	M	N	J1	J2	R1	R2
25	12	M10x1,5	25	45	20	15	80	8	17	6	M6	17	1/8"	40	28	7	11	0.75	7,5
32	12	M10x1,5	25	45	20	15	80	8	17	6	M6	17	1/8"	45	33	15	16,5	6	8
40	18	M16x1,5	32	70	36	15	110	13	24	8	M6	17	1/4"	52	40	17,5	23	3	11
50	18	M16x1,5	32	70	36	15	110	13	24	8	M8	23	1/4"	65	49	18,5	23,5	4,5	10
63	22	M20x1,5	45	85	46	20	125	17	30	9	M8	23	3/8"	75	59	19	23	4,5	14
80	22	M20x1,5	45	85	46	20	125	17	30	9	M10	28	3/8"	95	75	22	25	8	13
100	30	M27x2	55	110	63	20	145	22	41	12	M10	28	1/2"	115	90	26	31	12	10
125	30	M27x2	55	110	63	20	145	22	41	12	M12	34	1/2"	140	110	-	-	-	-
160	40	M36x2	65	135	85	25	180	32	55	14	M16	42	3/4"	180	140	-	-	-	-
200	40	M36x2	65	135	85	25	180	32	55	14	M16	42	3/4"	220	175	-	-	-	-



\emptyset (mm)	\emptyset A f7	B	E	F	L ± 1	P	T	H
25	12	M10x1,5	45	20	90	8	17	6
32	12	M10x1,5	45	20	90	8	17	6
40	18	M16x1,5	70	36	129	13	24	8
50	18	M16x1,5	70	36	129	13	24	8
63	22	M20x1,5	85	46	143	17	30	9
80	22	M20x1,5	85	46	143	17	30	9
100	30	M27x2	110	63	164	22	41	12
125	30	M27x2	110	63	164	22	41	12
160	40	M36x2	135	85	200	32	54	14
200	40	M36x2	135	85	200	32	54	14



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



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	Z
32	46	32	18	18	32	20	134	8	107	98	32,5	47,5	96	18
40	58	36	26	25	45	32	164	8	137	134	41	69	126	24
50	68	45	26	25	45	32	180	10	145	138	45	65	130	26
63	84	45	34	32	63	50	195	10	160	155	52,5	72,5	145	35
80	102	63	34	32	63	50	211	12	168	157	52,5	72,5	149	32
100	124	73	41	40	90	70	231	12	188	182	57	88	169	34
125	152	91	41	40	90	70	249	15	197	186	58	87	175	41
160	190	115	55	50	140	110	304	20	242	235	67	113	220	55
200	250	135	55	50	140	110	304	20	242	235	68	112	220	55

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
Single acting magnetic anti-rotating bores from 16 to 100		CISN
Double acting magnetic anti-rotating bores from 16 to 100		CIN



For the magnetic reed switches type ASV see from page 1.110.1

For mounting accessories see from page 1.97.1

For rod mountings see from page 1.85.1



On request, they can be supplied according to 2014/34/EU - ATEX

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
Rod in stainless steel AISI 304	K
Seals FKM -20°C ÷ +150°C	V
Scraper ring only FKM -20°C ÷ +80°C	V1
Low temperature seals -40°C ÷ +80°C	BT
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 male thread (indicate the requested thread. E.g. : R-M 10x1,5).	R-M..
The dimension AM of the special thread will be the same as the standard. The cylinder will be supplied without rod nut.	
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

How to order: 32 / SG / CIP

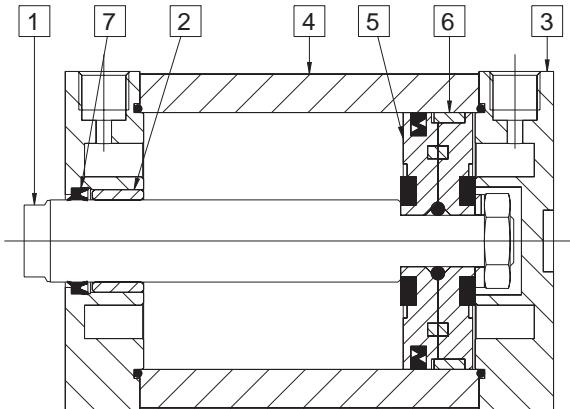
Seal kits	
n. 1	Rod seal
n. 2	Tube O-ring
n. 1	Piston lip-seal

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

Compact Cylinders ISO 21287

Bores from 16 to 125 mm

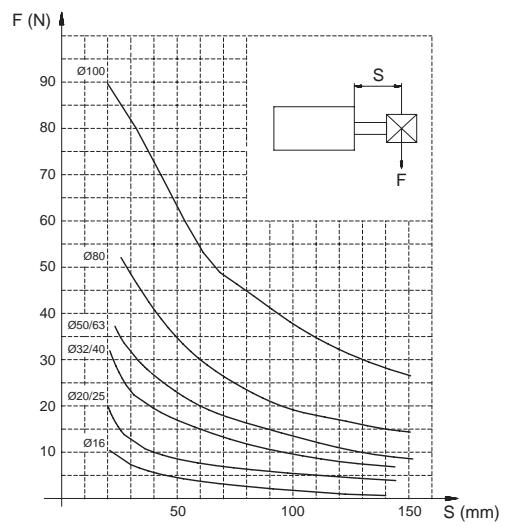
Technical data



Materials (standard types)

1 Rod	Stainless steel AISI 304 (\varnothing 16 - 25) Chrome-plated steel C45 (\varnothing 32 - 125)
2 Bushing	Stainless steel, sintered bronze, PTFE
3 Heads	Anodised aluminium
4 Tube	Anodised aluminium
5 Piston	PTFE (\varnothing 16) Aluminium (\varnothing 25 - 125)
6 Guide ring	PTFE
7 Rod seals	Polyurethane
Other seals	Nitrilic rubber NBR

Maximum radial load diagram



Technical data

Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.		
Pressure	Single acting: 2 ÷ 10 bar	Double acting: 1 ÷ 10 bar	
Temperature range	-20°C ÷ +80°C (standard / V1)	-20°C ÷ +150°C (V)	-40°C ÷ +80°C (BT)

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

Compact Cylinders ISO 21287

Bores from 16 to 125 mm

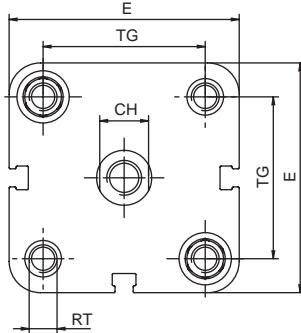
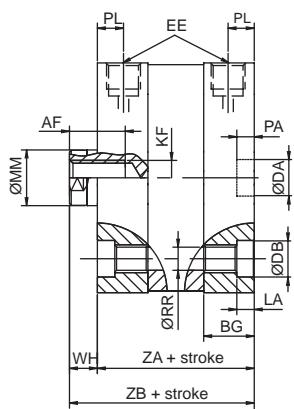
Standard dimensions



Type: CI - CIS

Bore: 16 - 20 - 25

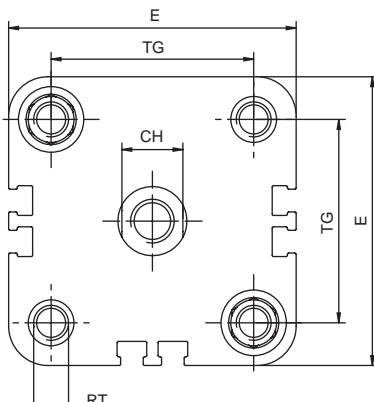
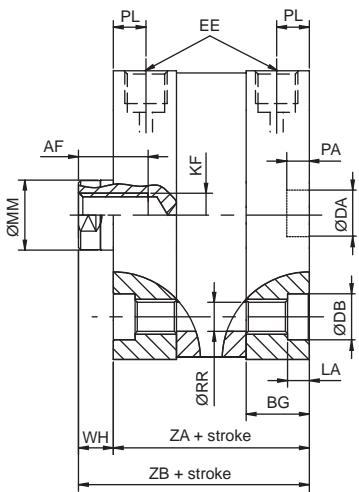
1



\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	6	8	7	9	2,1
20	10	10	6	37	43	M6	M5	15	4,1	22	36	M5	4,1	7,5	6	8	9	2,1
25	10	10	6	39	45	M6	M5	15	4,1	26	40	M5	4,1	7,5	5	8	9	2,1

Type: CI - CIS

Bore: 32 - 40 - 50 - 63

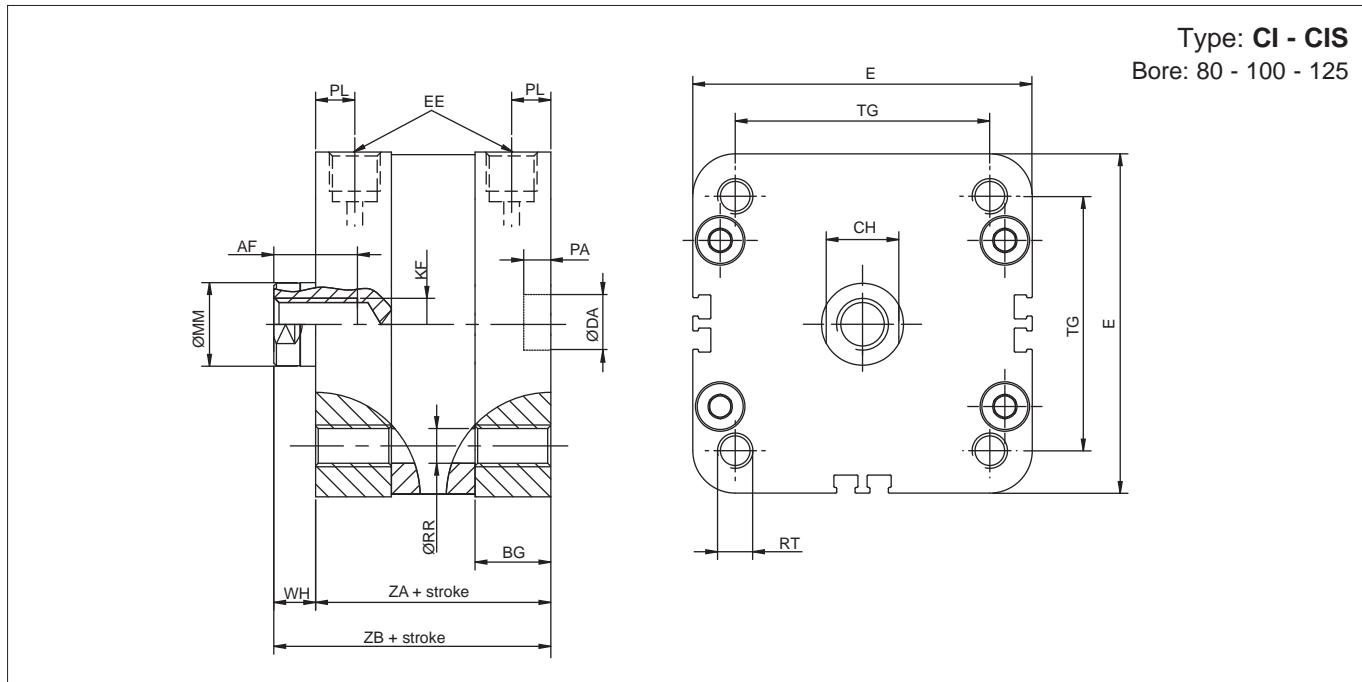


\varnothing (mm)	\varnothing MM f7	AF	WH	ZA	ZB	KF	EE	BG	RR	TG	E	RT	LA	\varnothing DB	PL	CH	\varnothing DA H9	PA +0.1
32	12	12	7	44	51	M8	1/8"	16	5,1	32,5	47,5	M6	5,1	8,5	7	10	9	2,1
40	12	12	7	45	52	M8	1/8"	16	5,1	38	55	M6	5,1	8,5	7,5	10	9	2,1
50	16	16	8	45	53	M10	1/8"	16	6,4	46,5	66	M8	6,1	10,5	7,5	14	12	2,6
63	16	16	8	49	57	M10	1/8"	16	6,4	56,5	78	M8	6,1	10,5	7	14	12	2,6

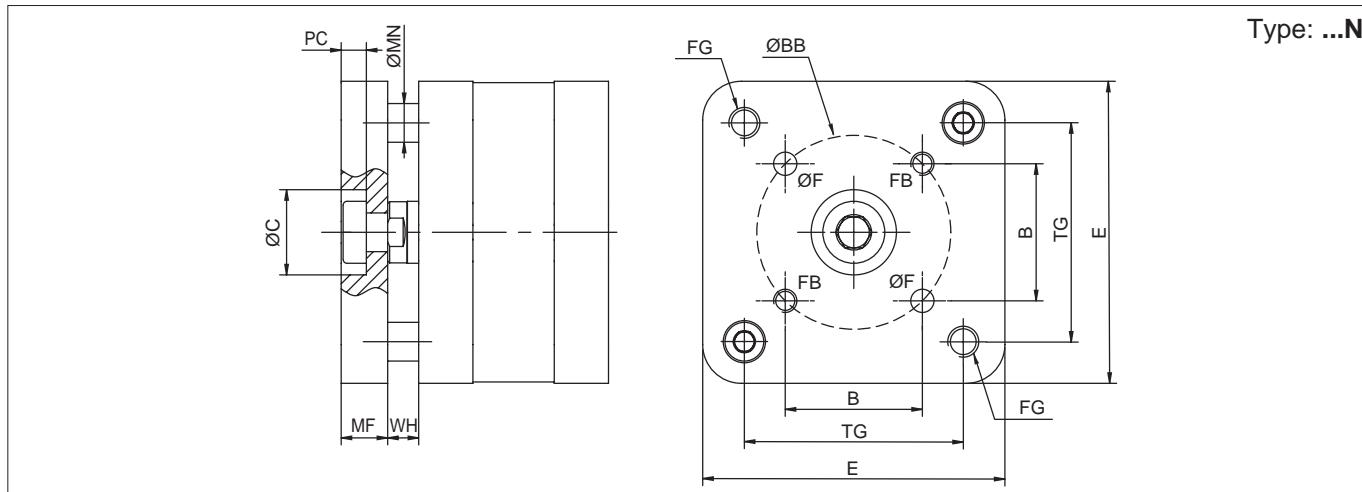
Compact Cylinders ISO 21287

Bores from 16 to 125 mm

Standard dimensions

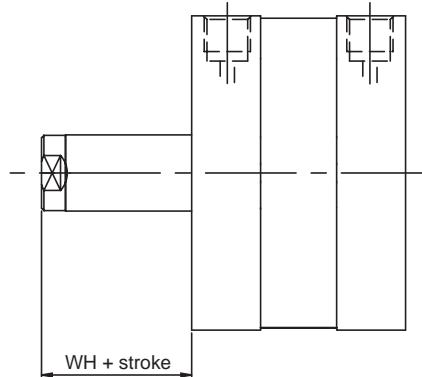


\varnothing (mm)	$\varnothing MM$ f7	AF	WH	ZA	ZB	KF	EE	BG	RR	TG	E	RT	PL	CH	$\varnothing DA$ H9	PA +0.1
80	20	20	10	54	64	M12	1/8"	17	8,4	72	96	M10	8	17	12	2,6
100	20	20	10	67	77	M12	1/8"	17	8,4	89	116	M10	8,5	17	12	2,6
125	25	24	11	81	92	M16	1/4"	20	10,2	110	135	M12	10	21	12	2,6



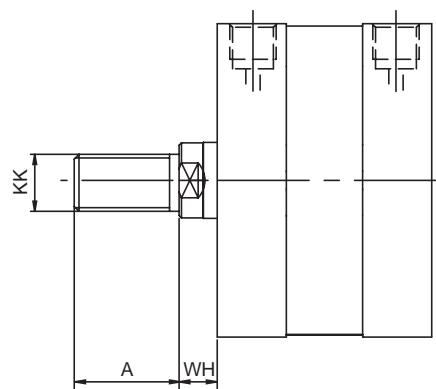
\varnothing (mm)	WH	MF +0,1	E	TG	B	FG	$\varnothing BB$ $\pm 0,1$	$\varnothing F$ +0,1	FB	$\varnothing C$ H9	PC	$\varnothing MN$ f7
16	4,5	6	29	18	9,9	M4	14	3	M3	7,5	4,5	6
20	6	8	36	22	12	M5	17	4	M4	10,5	4,5	6
25	6	8	40	26	15,6	M5	22	5	M5	14	4,5	6
32	7	10	47,5	32,5	19,8	M6	28	5	M5	17	5,5	8
40	7	10	55	38	23,3	M6	33	5	M5	17	5,5	8
50	8	12	66	46,5	29,7	M8	42	6	M6	22	6,5	10
63	8	12	78	56,5	35,4	M8	50	6	M6	22	6,5	10
80	10	14	96	72	46	M10	65	8	M8	24	7,5	10
100	10	14	116	89	56,6	M10	80	10	M10	24	7,5	12

Type: ...T

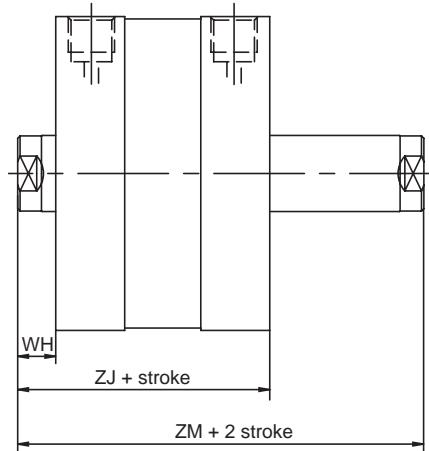


Available stroke: 1÷25

Type: ...M



Type: ...P

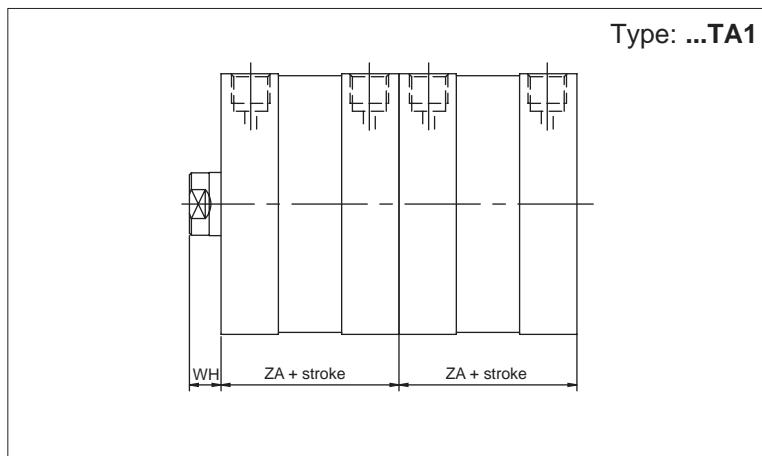


\varnothing (mm)	A	KK	WH	ZJ	ZM
16	12	M6	4,5	-	-
20	16	M8x1,25	6	43	49
25	16	M8x1,25	6	45	51
32	19	M10x1,25	7	51	58
40	19	M10x1,25	7	52	59
50	22	M12x1,25	8	53	61
63	22	M12x1,25	8	57	65
80	28	M16x1,5	10	64	74
100	28	M16x1,5	10	77	87
125	40	M20x1,5	11	92	103

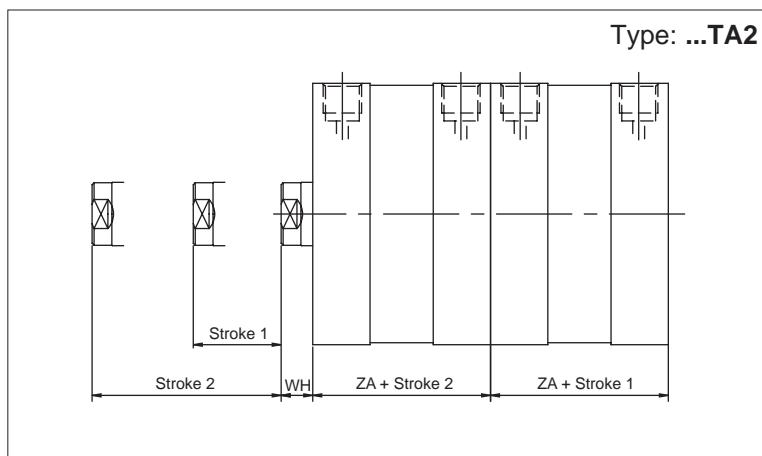
Compact Cylinders ISO 21287

Bores from 16 to 125 mm

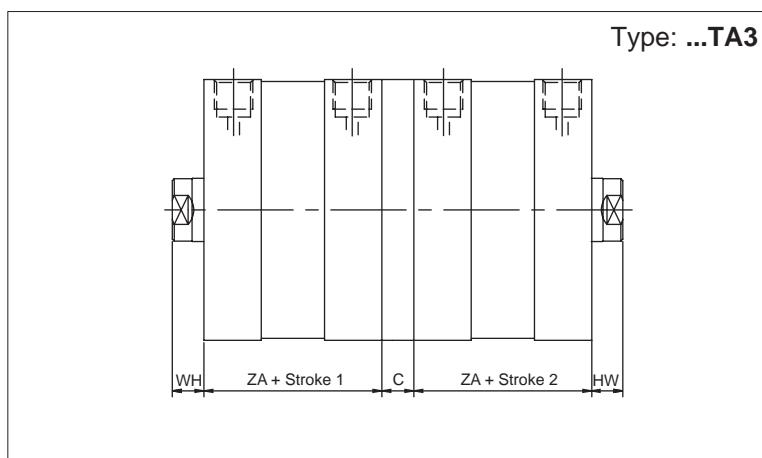
Options



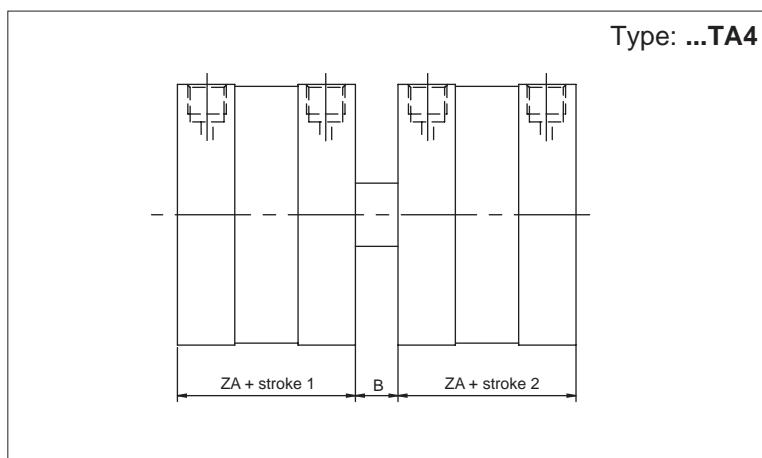
\varnothing (mm)	ZA	WH
25	39	6
40	45	7
63	49	8



\varnothing (mm)	ZA	WH
25	39	6
40	45	7
63	49	8



\varnothing (mm)	ZA	WH	C
20	37	6	13
25	39	6	13
32	44	7	15
40	45	7	15
50	45	8	15
63	49	8	15
80	54	10	17
100	67	10	19,5
125	81	11	19,5



\varnothing (mm)	ZA	WH
20	37	9
25	39	11
32	44	12
40	45	13
50	45	15
63	49	15
80	54	16
100	67	20

Standard executions		
Version	Symbol	Type
Magnetic		CS



On request, they can be supplied according to 2014/34/EU - ATEX

Options	Suffix
Rear spring	T
Seals FKM -20°C ÷ +150°C	V
Piston rod with male thread	M
Through rod	P
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

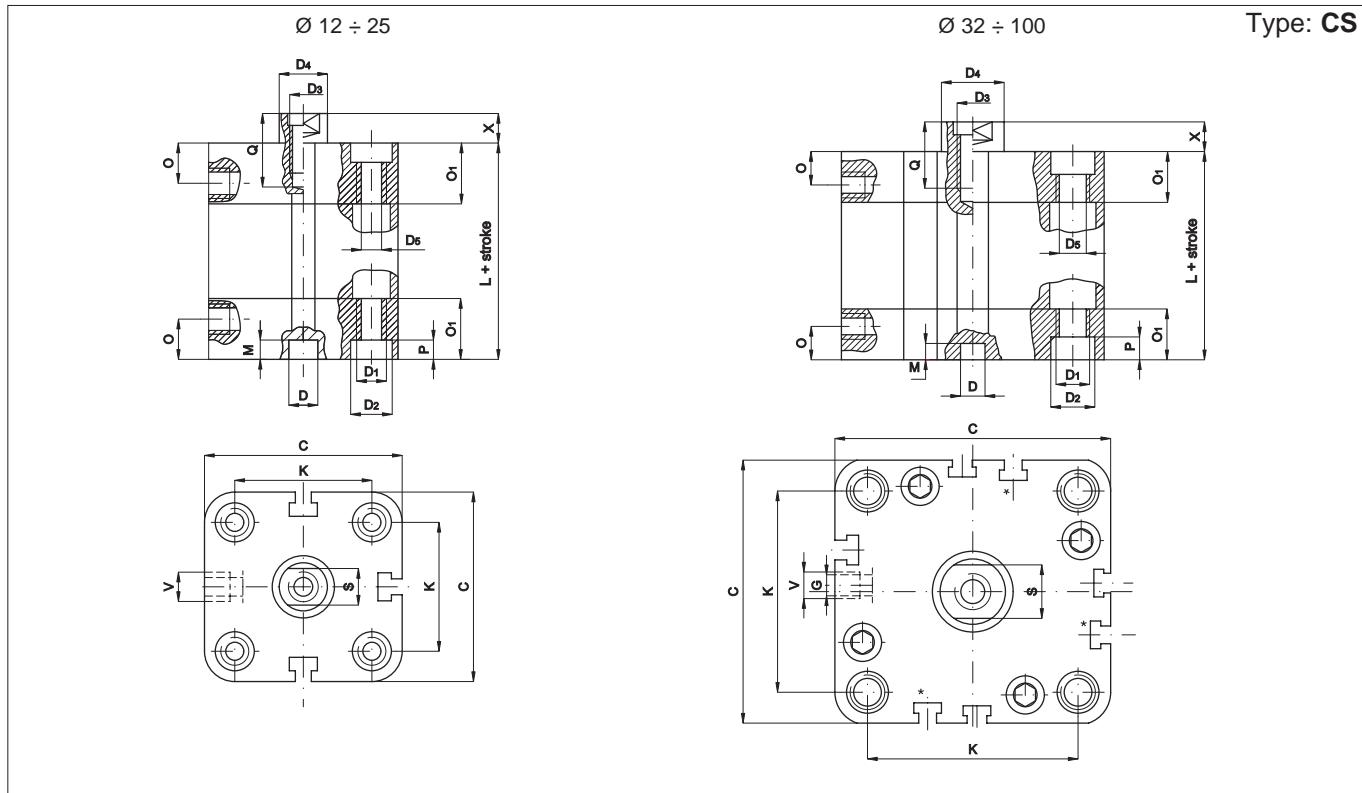
32	/	50	CST	T
Bore	/	Stroke	Type	Option

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.

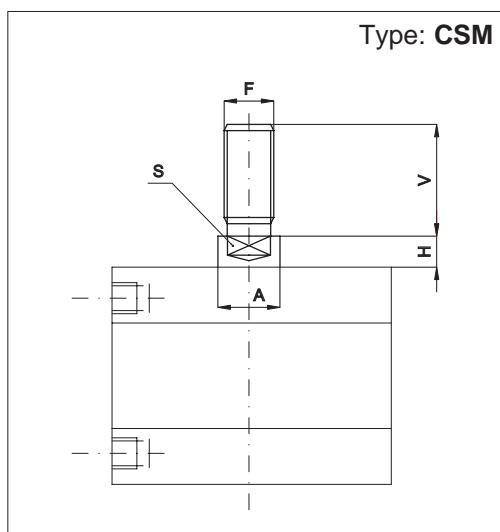
Technical data		
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.	
Pressure	2 ÷ 10 bar	
Temperature range	-30°C ÷ +80°C (standard) -20°C ÷ +150°C (V)	
Materials	Heads: Anodised aluminium Tube: Anodised aluminium Rod: Stainless steel AISI 303 Seals: 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	



Ø mm.	C	D Ø	D ₁ Ø	D ₂ Ø	D ₃ Ø	D ₄ Ø	D ₅ Ø	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 Ø 12-16-20, 20 mm for Ø 25-32-40-50-63, 30 mm for Ø 80-100.



Ø 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	•
Tube o-ring	2	•
Lip seal	2	•

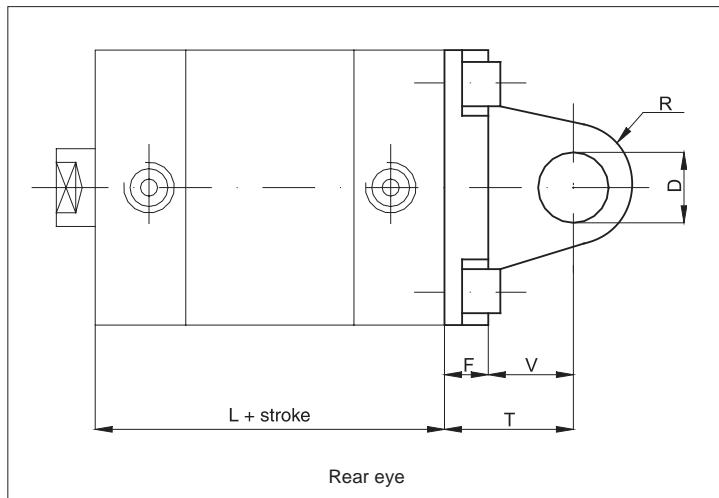
The magnetic ring to be ordered separately.

How to order: 32 / SG / CSV

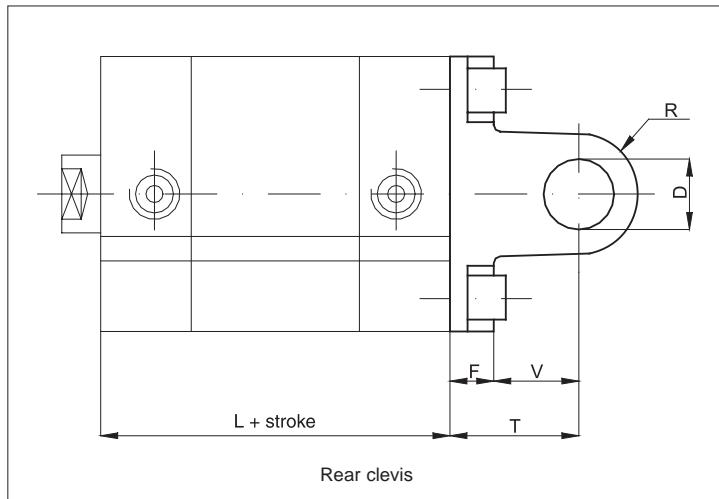
32	/	SG	/	CS	V
Bore	/	Seal kit	/	Type	Option

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

1

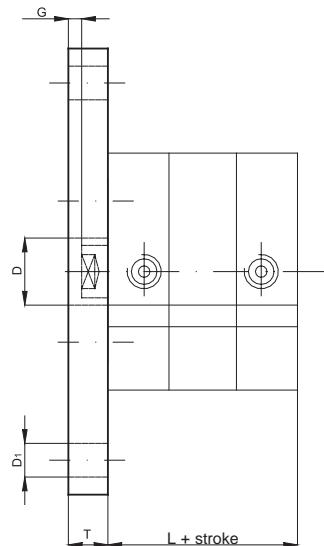


Ø mm	F	V	T	D	R	L
12	6	10	16	6	6	38
16	6	10	16	6	6	38
20	6	14	20	8	8	38
25	6	14	20	8	8	39,5



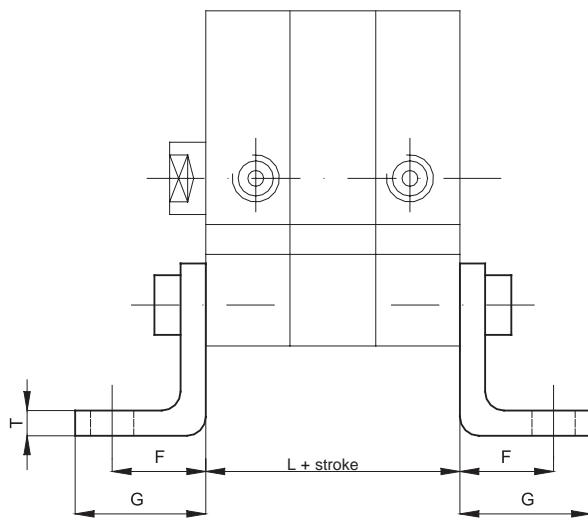
Ø mm	F	V	T	D	R	L
32	9	13	22	10	10	44,5
40	9	16	25	12	12,5	45,5
50	11	16	27	12	12,5	45,5
63	11	21	32	16	15	50
80	13	23	36	16	15	56
100	15	26	41	20	20	66,5

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.

Compact Cylinders UNITOP

Bores from 12 to 100 mm

Double acting



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



On request, they can be supplied according to 2014/34/EU - ATEX

Options	Suffix
Through rod	P
Seals FKM	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

see from page 1.100.1.

For mounting accessories see from page 1.85.1.

For rod accessories

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

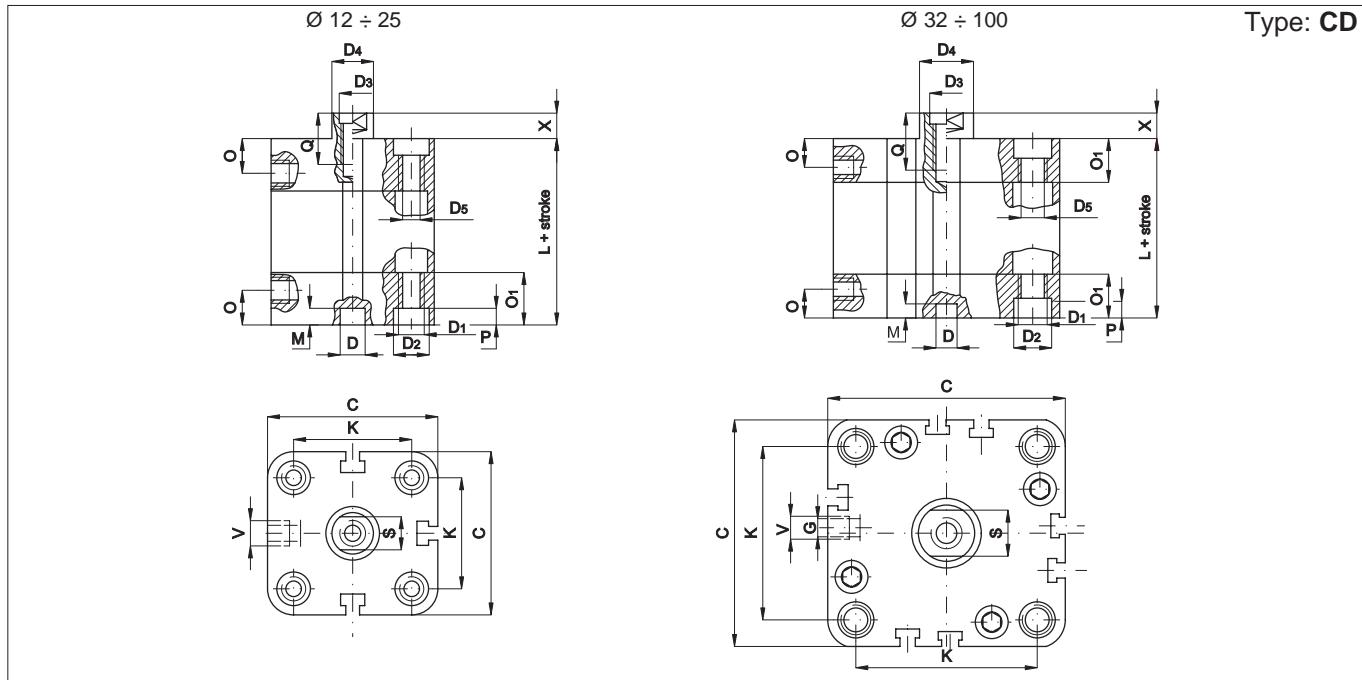
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.		
Pressure	2 ÷ 10 bar		
Temperature range	-30°C ÷ +80°C (standard)	-20°C ÷ +150°C (V)	
Materials	Heads: Tube: Rod: Anti-rotating plate: Seals:	Anodised aluminium Anodised aluminium Stainless steel AISI303 Anodised aluminium 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 stroke	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 dis-tancer).
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, 160	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160			
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			
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			

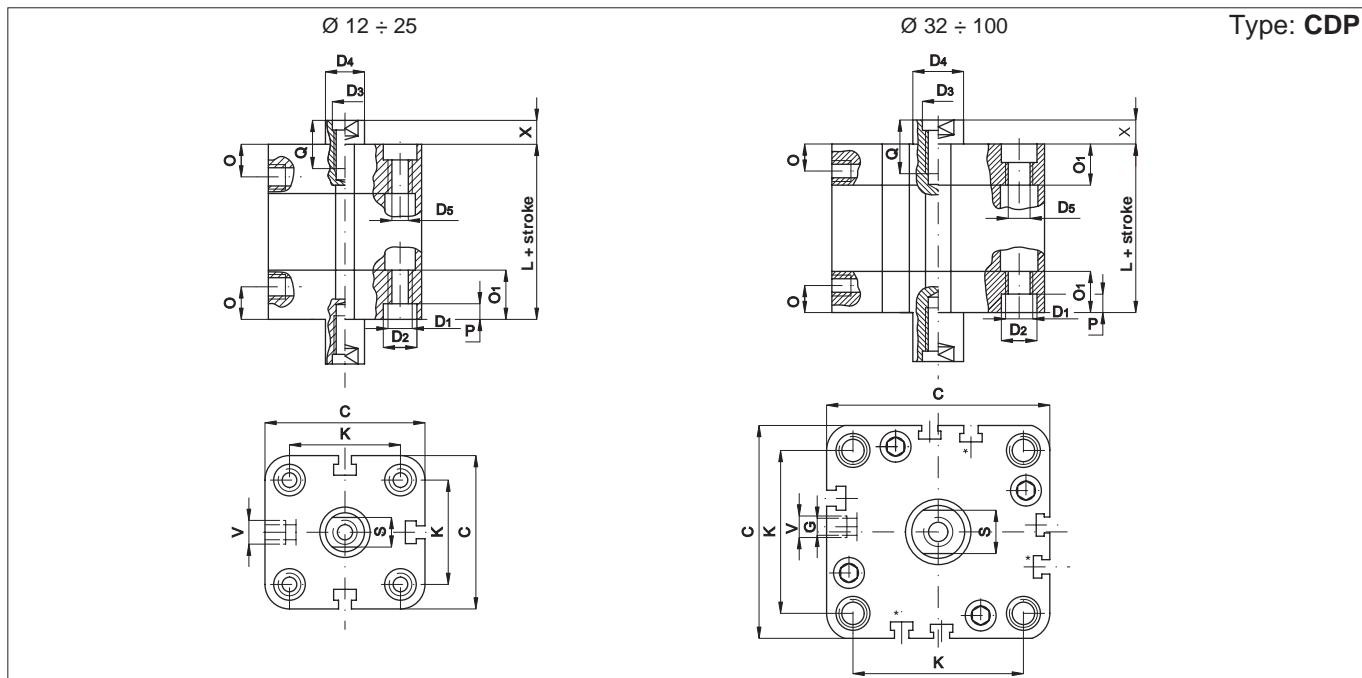
Compact Cylinders UNITOP

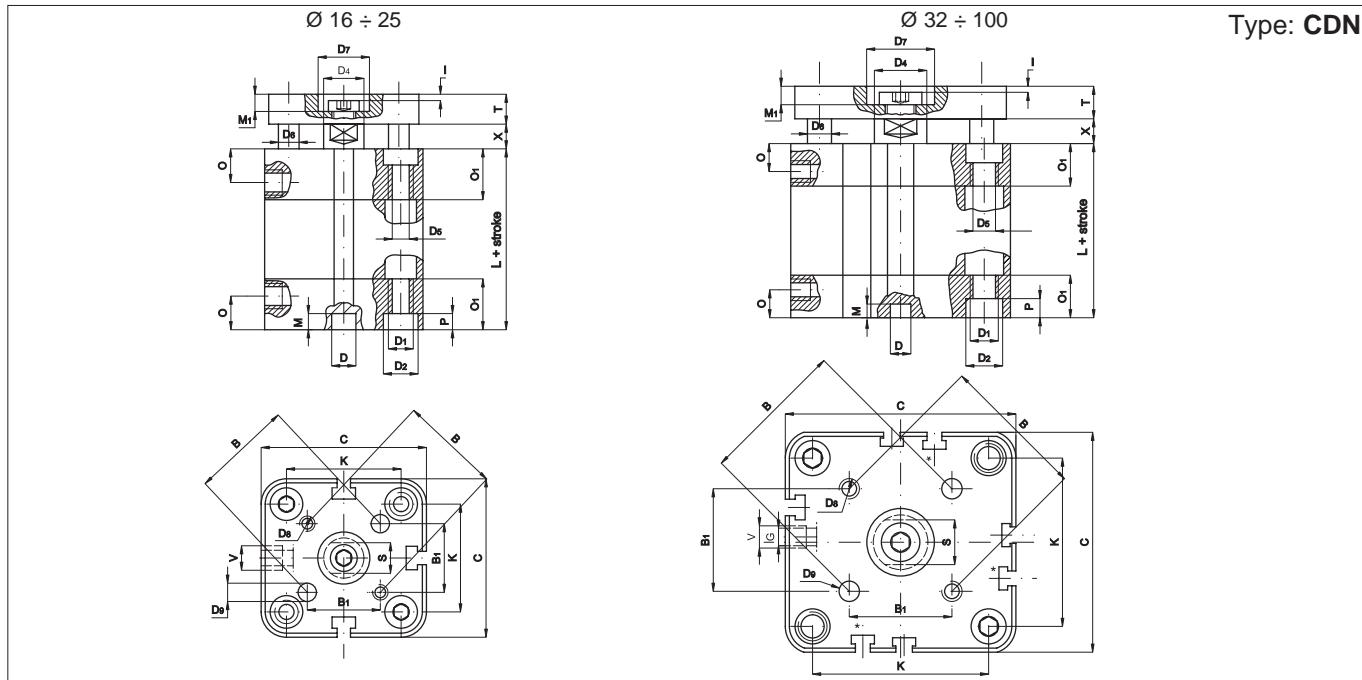
Bores from 12 to 100 mm

Double acting

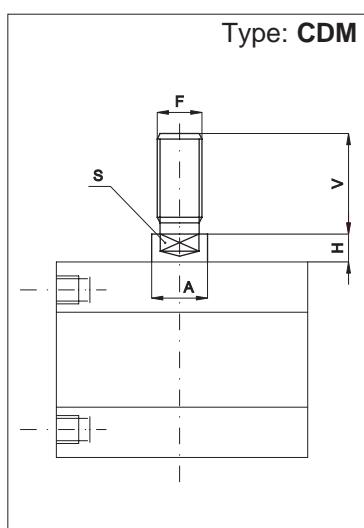


\varnothing mm.	C	D \varnothing	D_1 \varnothing	D_2 \varnothing	D_3 \varnothing	D_4 \varnothing	D_5 \varnothing	G	V	O	O_1	K	S	P	M	Q	X	L
12	29	6	M4	6	M3	6	3,3	0	M5	8	12,25	18	5	3,5	4	6	4,5	38
16	29	6	M4	6	M4	8	3,3	0	M5	8	12,25	18	6	3,5	4	8	4,5	38
20	36	6	M5	7,5	M5	10	4,2	0	M5	8	12,25	22	8	4,5	4	10	4,5	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	D_1 \varnothing	D_2 \varnothing	D_4 \varnothing	D_5 \varnothing	D_6 \varnothing	D_7 \varnothing	D_8 \varnothing	D_9 \varnothing	G	V	O	O_1	K	B	B_1	S	P	M	M_1	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	•	•
Tube O-ring	2	•	•
Lip seal	2	•	•

The magnetic ring to be ordered separately.

How to order: 32 / SG / CDP

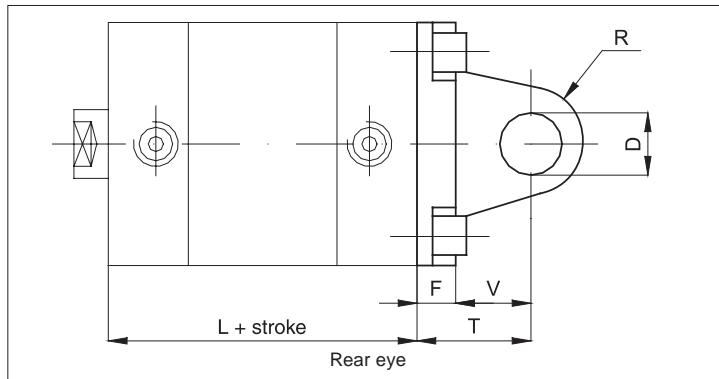
32	/	SG	/	CD	P
Bore	/	Series of seal	/	Type	Option

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

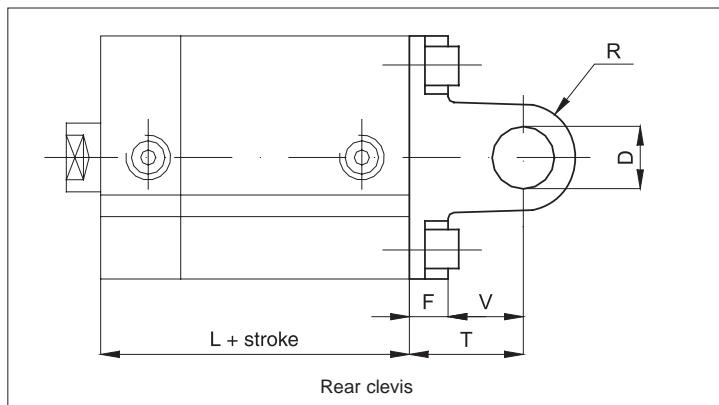
Compact Cylinders UNITOP

Bores from 12 to 100 mm

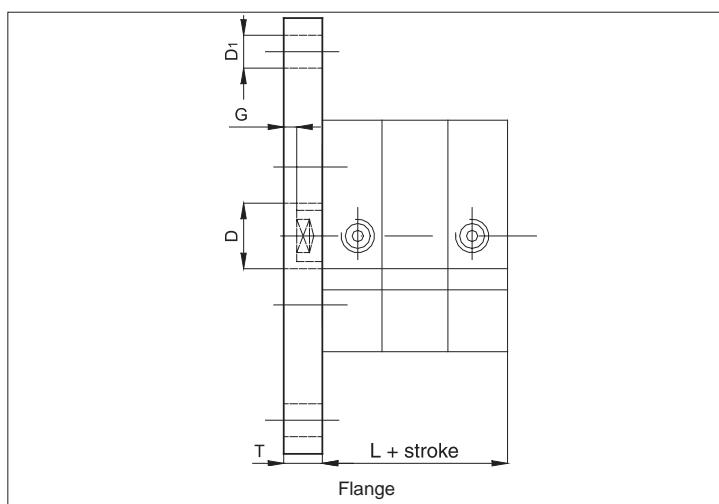
Double acting



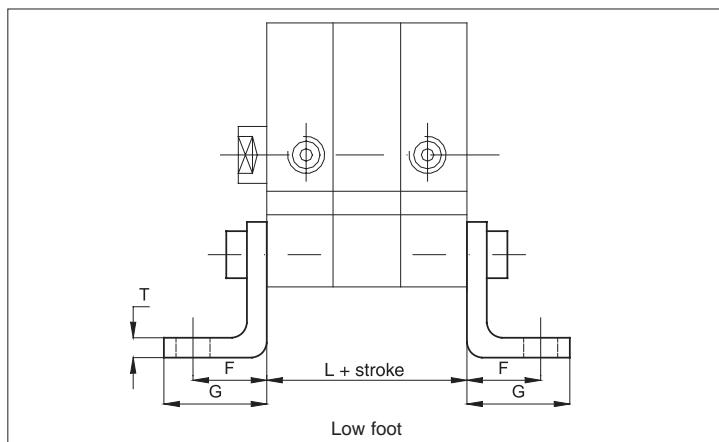
\varnothing mm	F	V	T	D	R	L
12	6	10	16	6	6	38
16	6	10	16	6	6	38
20	6	14	20	8	8	38
25	6	14	20	8	8	39,5



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

For dimensions and codes of the accessories see page 1.100.1.

Compact Cylinders

Bores from 6 to 32 mm

Double acting



Standard executions		
Version	Symbol	Type
Double acting, not magnetic		DU
Double acting, magnetic		DUM
Double acting, not magnetic, anti-rotating		DUN
Double acting, magnetic, anti-rotating		DUNM



Series of compact cylinders double acting.

The barrel with grooves allow the mounting of the magnetic reed switches directly in the tube without brackets; the magnetic reed switches will not protrude out the barrel profile. One or more magnetic reed switches can be mounted on the cylinder.

Six sides of this cylinder can be attached unto objects for space-saving purpose.

For the magnetic reed switches type ASC see from page 1.110.2.
For rod mountings see from page 1.85.1.

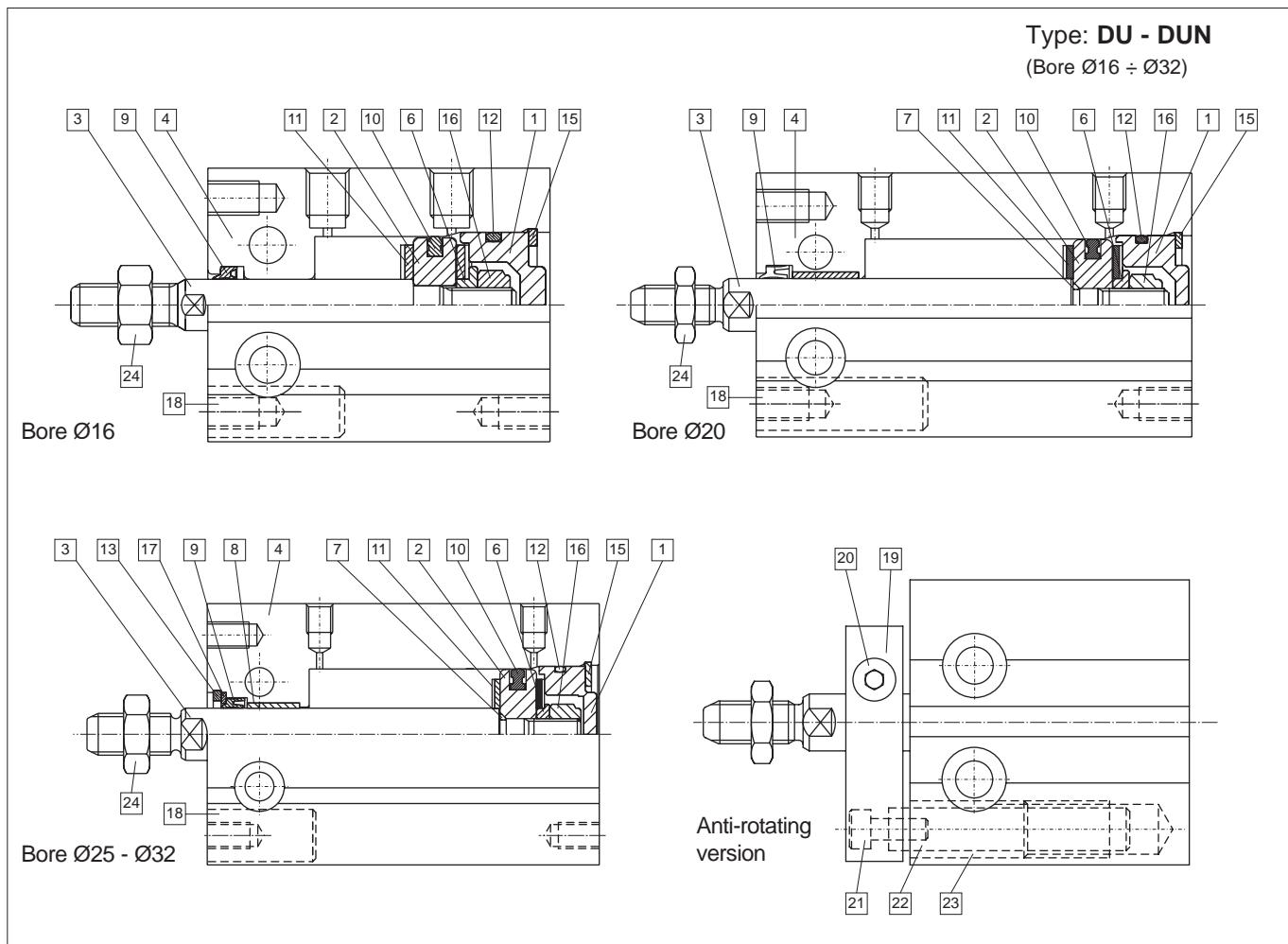
Options	Suffix
Special on request	/ S

How to order: 20/30 DUM

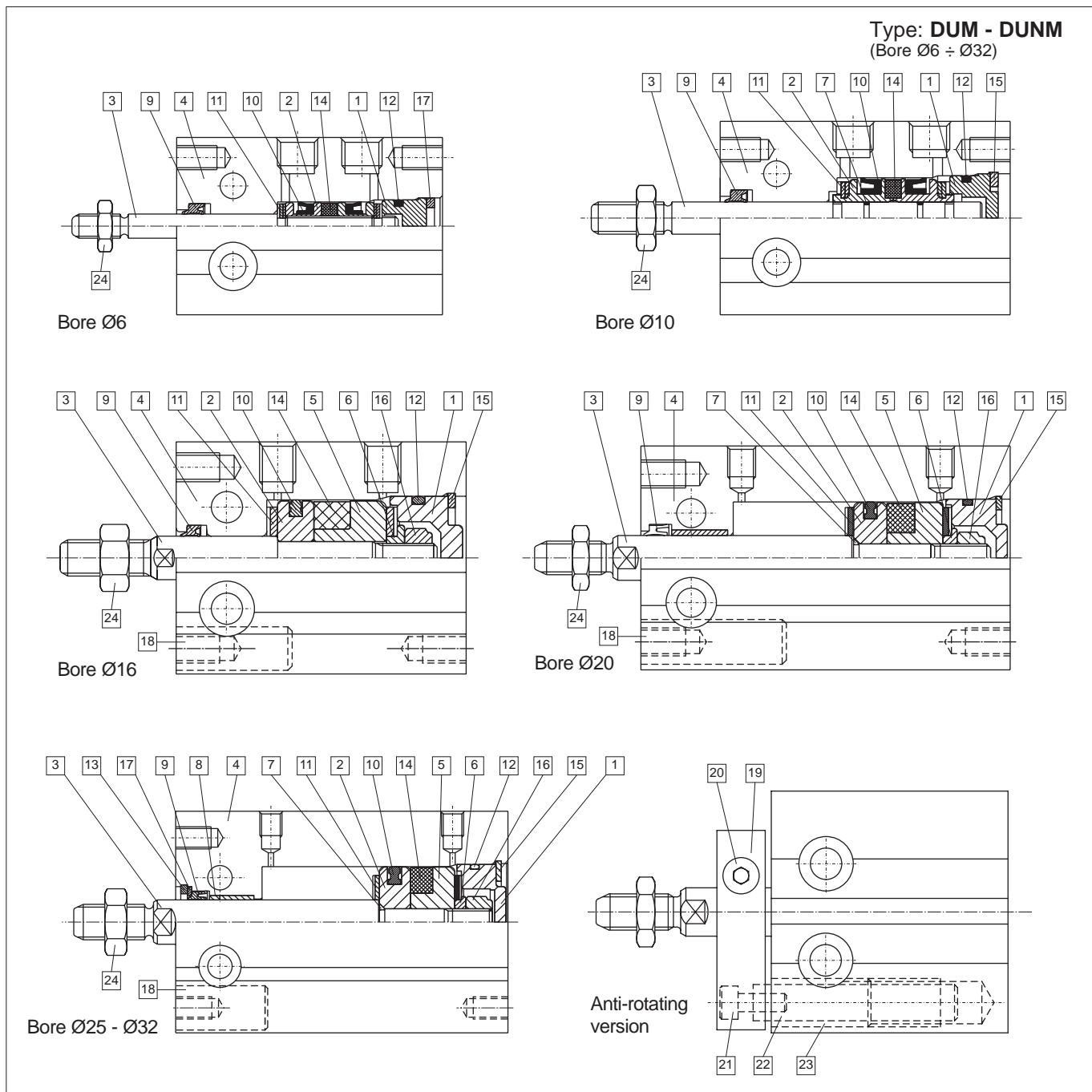
20	/	30	DUM	
Bore	/	Stroke	Type	Option

Technical data						
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.					
Bore	Ø 6	Ø 10	Ø 16	Ø 20	Ø 25	Ø 32
Pressure range	3 ÷ 7 bar 1,5 ÷ 7 bar 1 ÷ 7 bar					
Temperature range	-10 °C ÷ + 60°C					

Bore (mm)	Standard stroke DU	Standard stroke DUM	Standard stroke DUN	Standard stroke DUNM
6	-	5, 10, 15, 20, 25, 30	-	5, 10, 15, 20, 25, 30
10	-	5, 10, 15, 20, 25, 30	-	5, 10, 15, 20, 25, 30
16	5, 10, 15, 20, 25, 30	5, 10, 15, 20, 25, 30	5, 10, 15, 20, 25, 30	5, 10, 15, 20, 25, 30
20	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50
25	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50
32	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50	5, 10, 15, 20, 25, 30, 40, 50



Materials			
[1] End cover	Hard anodised aluminium alloy	[13] Retaining ring	Carbon steel nickel plating
[2] Piston	Brass (Ø6 ÷ Ø10) Hard anodised aluminium (Ø16 ÷ Ø32)	[14] Magnet	Magnetic material
[3] Piston rod	Stainless steel (Ø6 ÷ Ø16) - Carbon steel (Ø20 ÷ Ø32)	[15] Retaining ring	Carbon steel nickel plating
[4] Cylinder tube	Hard anodised aluminium alloy	[16] Piston nut	Carbon steel galvanized
[5] Magnet holder	Hard anodised aluminium alloy	[17] Rod washer	Stainless steel
[6] T-washer	Carbon steel nickel plating	[18] Screw plug	Hard anodised aluminium alloy
[7] O-ring	Nitrile rubber NBR	[19] Guide plate	Hard anodised aluminium alloy
[8] Oilless bearing	Oil-impregnated sintered alloy	[20] Screw	Carbon steel nickel plating
[9] Rod packing	PU (Ø6 ÷ Ø16) - Nitrile rubber NBR (Ø20 ÷ Ø32)	[21] Screw	Carbon steel nickel plating
[10] Piston packing	Nitrile rubber NBR	[22] Guide stem	Carbon steel
[11] Rubber lining	Nitrile rubber NBR	[23] Oilless bearing	Oil-impregnated sintered alloy
[12] Cylinder gasket	Nitrile rubber NBR	[24] Rod end nut	Stainless steel (Ø6 ÷ Ø10) Carbon steel nickel plating (Ø16 ÷ Ø32)



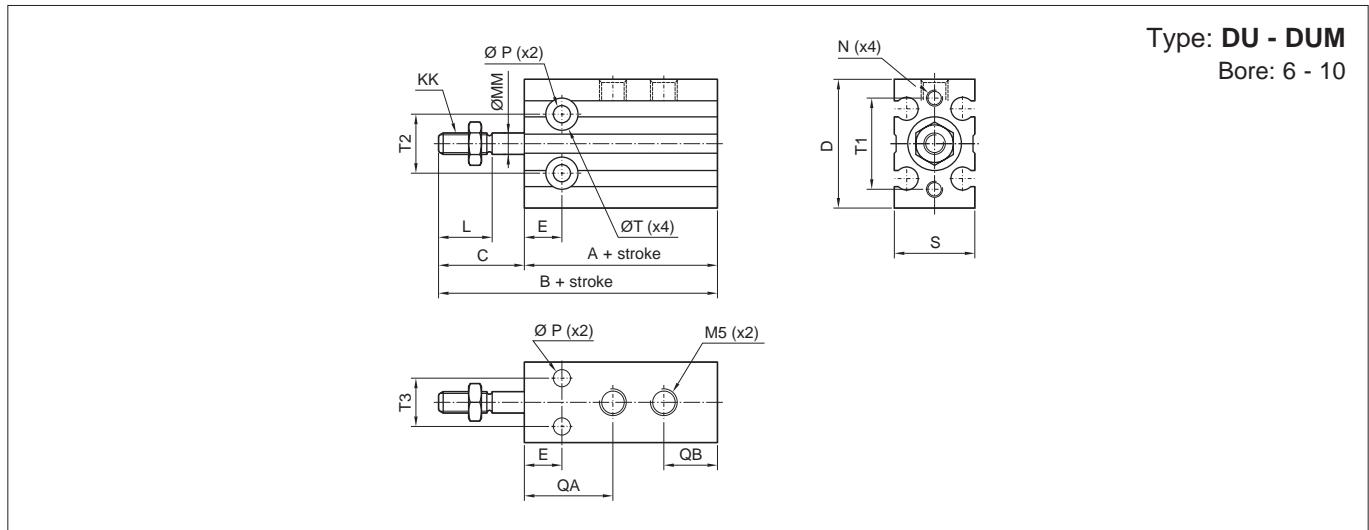
Materials

[1] End cover	Hard anodised aluminium alloy	[13] Retaining ring	Carbon steel nickel plating
[2] Piston	Brass ($\varnothing 6 \div \varnothing 10$) Hard anodised aluminium ($\varnothing 16 \div \varnothing 32$)	[14] Magnet	Magnetic material
[3] Piston rod	Stainless steel ($\varnothing 6 \div \varnothing 16$) - Carbon steel ($\varnothing 20 \div \varnothing 32$)	[15] Retaining ring	Carbon steel nickel plating
[4] Cylinder tube	Hard anodised aluminium alloy	[16] Piston nut	Galvanized carbon steel
[5] Magnet holder	Hard anodised aluminium alloy	[17] Rod washer	Stainless steel
[6] T-washer	Carbon steel nickel plating	[18] Screw plug	Hard anodised aluminium alloy
[7] O-ring	Nitrile rubber NBR	[19] Guide plate	Hard anodised aluminium alloy
[8] Oilless bearing	Oil-impregnated sintered alloy	[20] Screw	Carbon steel nickel plating
[9] Rod packing	PU ($\varnothing 6 \div \varnothing 16$) - Nitrile rubber NBR ($\varnothing 20 \div \varnothing 32$)	[21] Screw	Carbon steel nickel plating
[10] Piston packing	Nitrile rubber NBR	[22] Guide stem	Carbon steel
[11] Rubber lining	Nitrile rubber NBR	[23] Oilless bearing	Oil-impregnated sintered alloy
[12] Cylinder gasket	Nitrile rubber NBR	[24] Rod end nut	Stainless steel ($\varnothing 6 \div \varnothing 10$) Carbon steel nickel plating ($\varnothing 16 \div \varnothing 32$)

Compact Cylinders

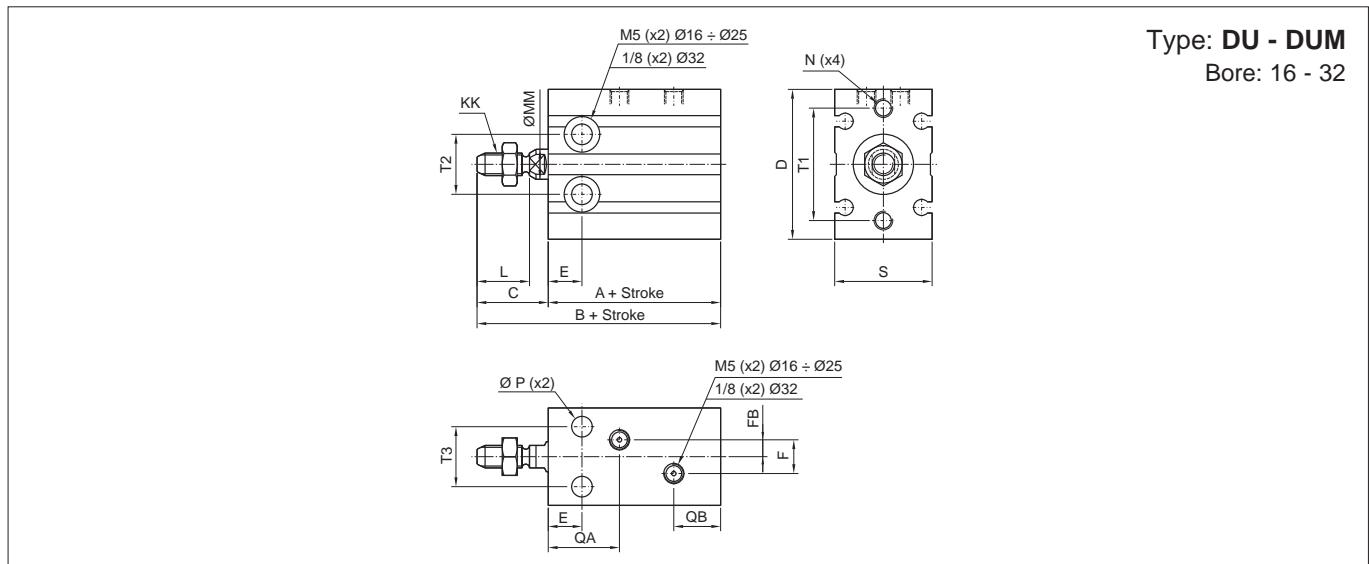
Bores from 6 to 32 mm

Standard dimensions



\varnothing (mm)	A	B	A	B	C	D	E	F	FB	L	KK	MM	N	P	QA	QB	S
	DU	DUM															
6	-	-	33	46	13	22	7	-	-	7	M3	3	M3	3,2	15	10	13
10	-	-	36	52	16	24	7	-	-	10	M4	4	M3	3,2	15	11	18

\varnothing (mm)	T	T1	T2	T3													
6	\varnothing 6 depth 4.8	17	10	7													
10	\varnothing 6 depth 5	17	10	7													



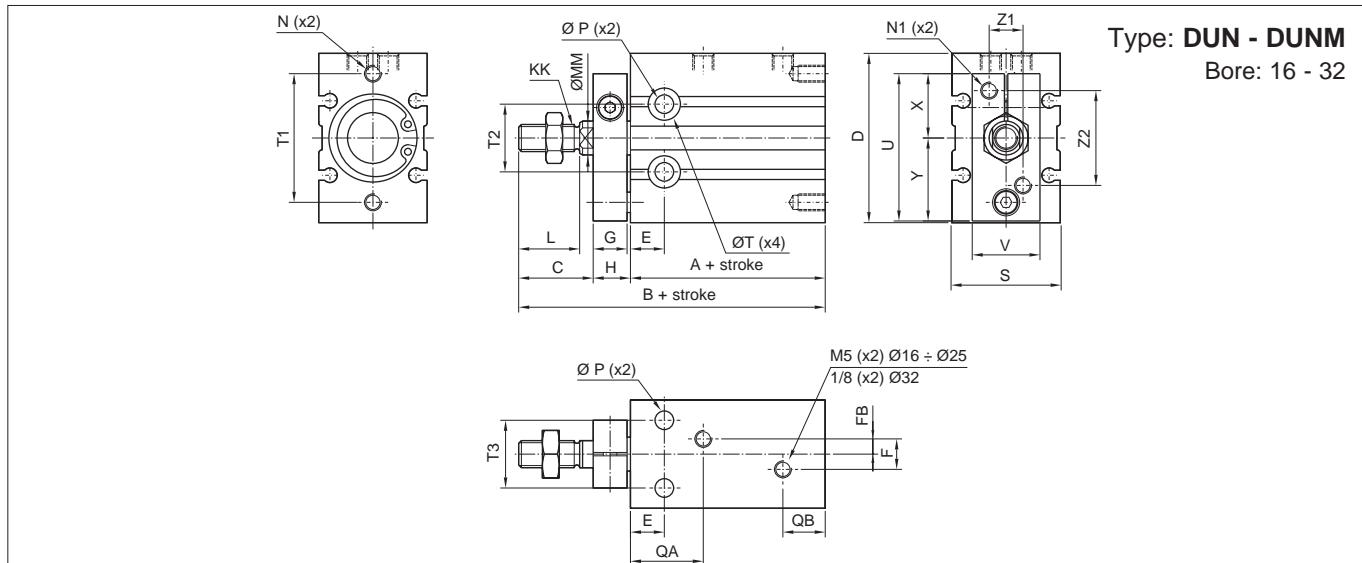
\varnothing (mm)	A	B	A	B	C	D	E	F	FB	L	KK	MM	N	P	QA	QB	S
	DU	DUM															
16	30	46	40	56	16	32	7	4	2	12,5	M5	6	M4	4,3	14	11,5	20
20	36	55	46	65	19	40	9	9	4,5	14	M6	8	M5	5,2	18	12,5	26
25	40	63	50	73	23	50	10	9	4,5	18	M8	10	M5	5,5	21,5	12,5	32
32	42	69	52	79	27	62	11	13,5	4,5	22	M10	12	M6	6,6	23	13	40

\varnothing (mm)	T	T1	T2	T3													
16	\varnothing 7,6 depth 6,5	25	14	12													
20	\varnothing 9 depth 7,6	30	16	16													
25	\varnothing 9,5 depth 9	38	20	20													
32	\varnothing 11 depth 11	48	24	24													

Compact Cylinders

Bores from 6 to 32 mm

Standard dimensions



\varnothing (mm)	A	B	A	B	C	D	E	F	FB	G	H	L	KK	MM	N	N1	P
	DU		DUM														
16	30	56	40	66	17	32	7	4	2	8	9	12,5	M5	6	M4	M4	4,3
20	36	65	46	75	20	40	9	9	4,5	8	9	14	M6	8	M5	M4	5,2
25	40	73	50	83	22	50	10	9	4,5	10	11	18	M8	10	M5	M5	5,5
32	42	84	52	94	29	62	11	13,5	4,5	12	13	22	M10	12	M6	M5	6,5

\varnothing (mm)	T	T1	T2	T3	QA	QB	S	U	V	X	Y	Z1	Z2			
16	$\varnothing 7,6$ depth 6,5	25	14	12	14	11,5	20	28	13	12,5	15,5	6	18			
20	$\varnothing 9$ depth 7,6	30	16	16	18	12,5	26	33	16	13,5	19,5	8	20			
25	$\varnothing 9,5$ depth 9	38	20	20	21,5	12,5	32	43,5	20	19	24,5	10	28			
32	$\varnothing 11$ depth 11	48	24	24	23	13	40	51,5	24	21	30,5	12	32			

Notes

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 to 2014/34/EU - ATEX

Options	Suffix
Rear spring from bore 12 to 63 mm.	T
Seals FKM -20°C ÷ +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

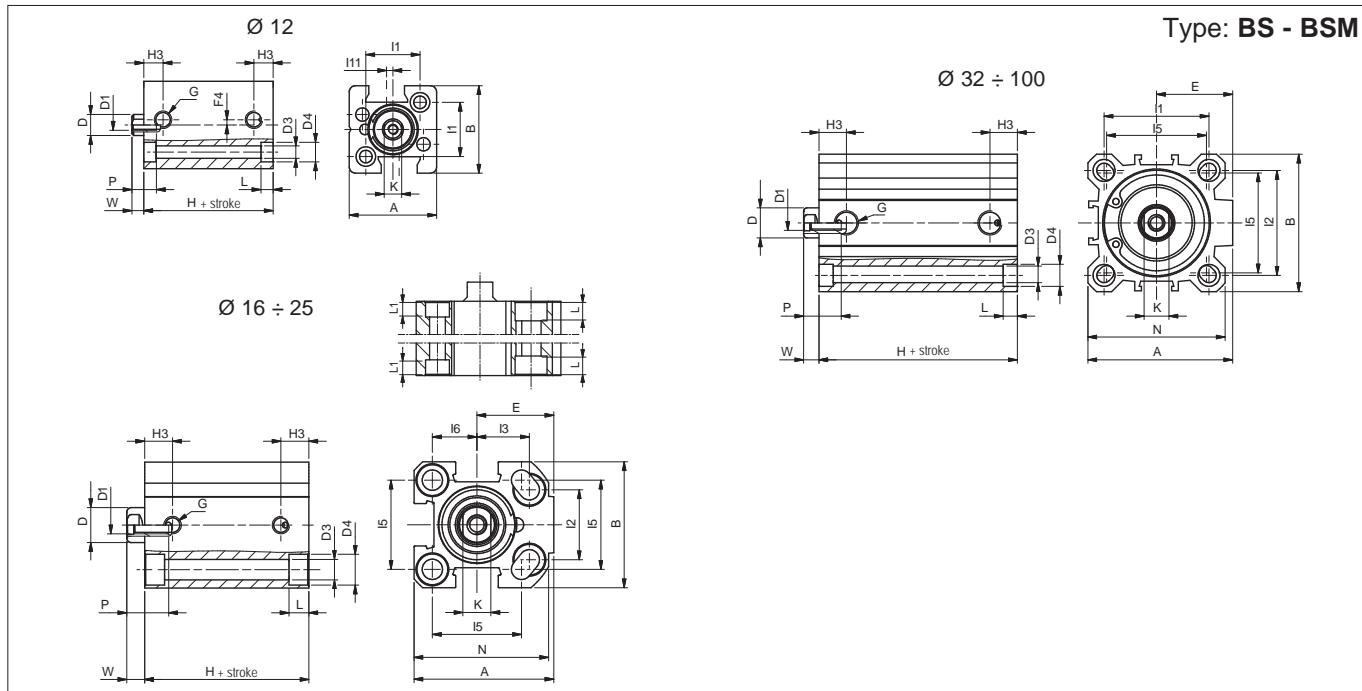
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.					
Pressure	2 ÷ 10 bar					
Temperature range	-20°C ÷ +80°C (standard)		-20°C ÷ +150°C (V)			
Materials	Heads: from 12 to 25 mm.: Brass from 32 to 100 mm.: Aluminium Tube: Anodised aluminium Rod: 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, 15, 20, 25	25	51	5
16			106	6
20			170	6
25			258	13
32	5, 10, 15, 20, 25, 30, 40, 50	50	441	18
40			729	20
50			1070	40
63			1720	49
80			2880	76
100			4400	131

Short Stroke Cylinders

Bores from 12 to 100 mm

Single acting



Type: BS

mm Ø	A	B	D Ø	D1	D3 Ø	D4 Ø	E	G	H	H3	I1	I2	I3	I5	I6	K	L	L1	N	P	W
12	25	25	6	M3	3,7	5,6	-	M5	17*	5,5	15,5	-	-	-	-	5	3,5	-	-	6	3,5
16	34	30	8	M4	4,7	7,5	19	M5	27	8	-	18	12	20	10	6	4,6	3,5	32	8	4,5
20	40	36	10	M5	5,8	9	22	M5	27	8	-	20	15	25,5	12,7	8	5,7	5,7	38,5	10	5
25	44,5	40	10	M5	5,8	9	24,5	1/8"	28,5	10,5	-	26	15,5	28	14	8	5,7	5,7	42	10	5,5
32	51	46	12	M6	5,8	9	27	1/8"	29,5*	11,5	36	32	-	34	-	10	5,7	-	48	12	6
40	58	55	12	M6	5,8	9	30,5	1/8"	29,5*	11	42	42	-	40	-	10	5,7	-	55	12	6
50	70	65	16	M8	6,8	11	37,5	1/8"	34,5*	11,5	50	50	-	50	-	13	6,8	-	65	12	7,5
63	89	80	16	M8	9	14	46	1/8"	37*	11	62	62	-	60	-	13	8,8	-	80	14	7
80	105	100	20	M10	9	14	55	1/4"	46*	14	82	82	-	77	-	17	9	-	100	15	8
100	131	124	25	M12	11	17,2	69	1/4"	56*	16	103	103	-	94	-	22	11	-	124	20	10

* for strokes 40 - 50: Ø 32-40-50-63-80-100 add +10 mm

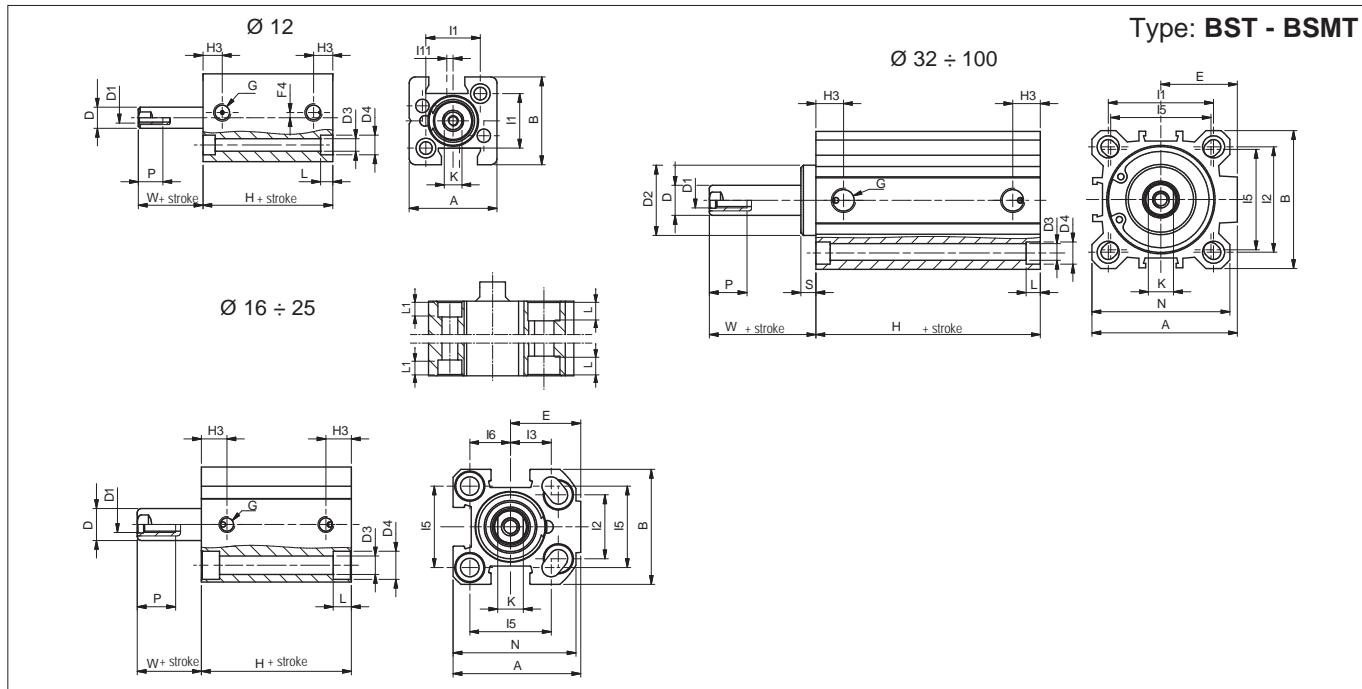
* for strokes 15 - 20 - 25: Ø 12 add +5 mm

Type: BSM

mm Ø	A	B	D Ø	D1	D3 Ø	D4 Ø	E	G	H	H3	I1	I2	I3	I5	I6	K	L	L1	N	P	W
12	25	25	6	M3	3,7	5,6	-	M5	27	5,5	15,5	-	-	-	-	5	3,5	-	-	6	3,5
16	34	30	8	M4	4,7	7,5	19	M5	32*	8	-	18	12	20	10	6	4,6	3,5	32	8	4,5
20	40	36	10	M5	5,8	9	22	M5	32*	8	-	20	15	25,5	12,7	8	5,7	5,7	38,5	10	4,5
25	44,5	40	10	M5	5,8	9	24,5	1/8"	38,5*	10,5	-	26	15,5	28	14	8	5,7	5,7	42	10	5,5
32	51	46	12	M6	5,8	9	27	1/8"	39,5*	11,5	36	32	-	34	-	10	5,7	-	48	12	5,5
40	58	55	12	M6	5,8	9	30,5	1/8"	39,5*	11	42	42	-	40	-	10	5,7	-	55	12	6,5
50	70	65	16	M8	6,8	11	37,5	1/8"	39,5*	11,5	50	50	-	50	-	13	6,8	-	65	12	7,5
63	89	80	16	M8	9	14	46	1/8"	42*	11	62	62	-	60	-	13	8,8	-	80	14	6,5
80	105	100	20	M10	9	14	55	1/4"	46*	14	82	82	-	77	-	17	9	-	100	15	8
100	131	124	25	M12	11	17,2	69	1/4"	56*	16	103	103	-	94	-	22	11	-	124	20	10

* for strokes 25: Ø 16-20 add +6 mm // Ø 25 add +1 mm

* for stroke 40-50: Ø 32-40-50-63-80-100 add +10 mm



mm \varnothing	A	B	D \varnothing	D1	D2 \varnothing	D3 \varnothing	D4 \varnothing	E	G	H	H3	I1	I2	I3	I5	I6	K	L	L1	N	P	S	W
12	25	25	6	M3	-	3,7	5,6	-	M5	**	5,5	15,5	-	-	-	-	5	3,5	-	-	6	-	3,5
16	34	30	8	M4	-	4,7	7,5	19	M5	32*	8	-	18	12	20	10	6	4,6	3,5	32	8	-	4,5
20	40	36	10	M5	-	5,8	9	22	M5	32*	8	-	20	15	25,5	12,7	8	5,7	5,7	38,5	10	-	4,5
25	44,5	40	10	M5	-	5,8	9	24,5	1/8"	38,5*	10,5	-	26	15,5	28	14	8	5,7	5,7	42	10	-	5,5
32	51	46	12	M6	24,5	5,8	9	27	1/8"	39,5	11,5	36	32	-	34	-	10	5,7	-	48	12	5	11
40	58	55	12	M6	28	5,8	9	30,5	1/8"	39,5	11	42	42	-	40	-	10	5,7	-	55	12	6	12,5
50	70	65	16	M8	34	6,8	11	37,5	1/8"	39,5	11,5	50	50	-	50	-	13	6,8	-	65	12	6	13,5
63	89	80	16	M8	38,5	9	14	46	1/8"	42	11	62	62	-	60	-	13	8,8	-	80	14	8	15

* for strokes 20-25: Ø 20 add +11 mm // Ø 25 add +6 mm // Ø 32 add +5 mm

* for stroke 30: Ø 32 add +10 mm

* BST: H= 17 // BSMT: H= 27

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



II 2Gc IIC T5
II 2Dc T100°C

On request, they can be supplied according to 2014/34/EU - ATEX

Options	Suffix
Through rod from bore 16 to 100 mm.	P
Seals FKM -20°C ÷ +150°C from bore 12 to 100 mm.	V
Special male thread (indicate the requested thread. E.g.: R-M10x1,5). The dimension AM of the special thread will be the same as the standard. The cylinder will be supplied without rod nut.	R-M...
Special versions on request	/ S

The options can be combined (when this is possible)

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.

see page 1.120.1

For the bracket type AS108 see from page 1.20.20.

For mounting accessories see 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.

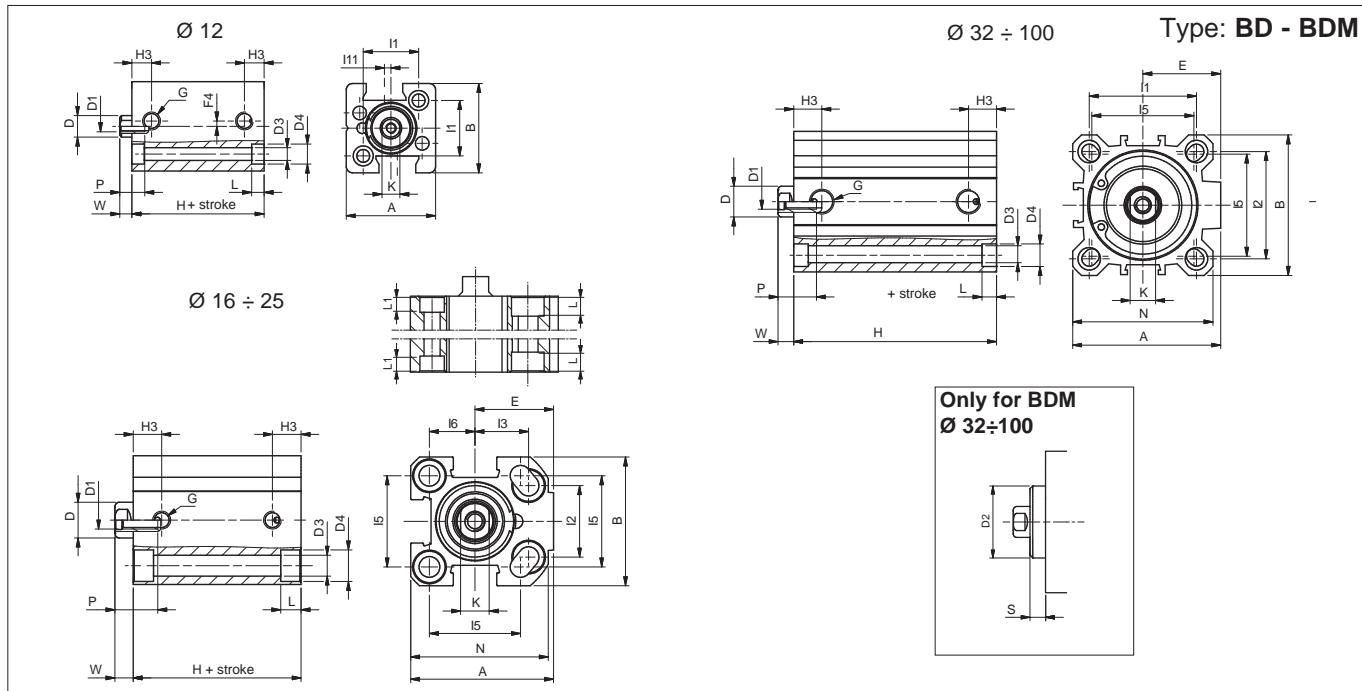
How to order: 40 / 50 BDP

40	/	50	BD	P
Bore	/	Stroke	Type	Option

Technical data

Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.		
Pressure	2 ÷ 10 bar		
Temperature range	-20°C ÷ + 80°C (standard)	-20°C ÷ +150°C (V)	
Materials	Heads: Tube: Rod: Seals: Piston:	from 12 to 25 mm.: Brass from 32 to 100 mm.: Aluminium Anodised aluminium Stainless steel AISI 303 NBR 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 stroke (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	-	40	40	-	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	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125	50	125	125	
25					160		
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, 200	10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125	100	200	125	
40						250	
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, 160, 200				
63	10, 15, 20, 25, 30, 40, 50, 60, 80, 100,	10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125, 160, 200	10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 125, 160, 200				
80						250	
100		25, 50, 75, 100, 125, 160, 200, 250	25, 50, 75, 100, 125, 160, 200, 250	-	250	-	
125							
160							
200							



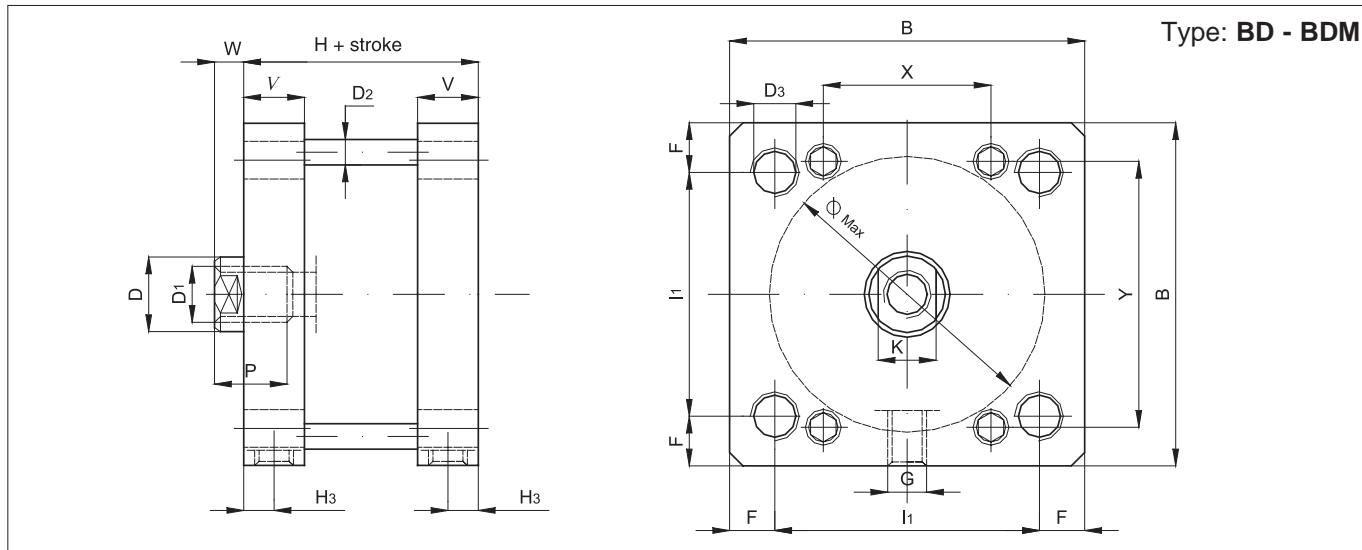
Type: BD																					
mm Ø	A	B	D Ø	D1	D3 Ø	D4 Ø	E	G	H	H3	I1	I2	I3	I5	I6	K	L	L1	N	P	W
12	25	25	6	M3	3,7	5,6	-	M5	17	5,5	15,5	-	-	-	-	5	3,5	-	-	6	3,5
16	34	30	8	M4	4,7	7,5	19	M5	27*	8	-	18	12	20	10	6	4,6	3,5	32	8	4,5
20	40	36	10	M5	5,8	9	22	M5	27*	8	-	20	15	25,5	12,7	8	5,7	5,7	38,5	10	5
25	44,5	40	10	M5	5,8	9	24,5	1/8"	28,5*	10,5	-	26	15,5	28	14	8	5,7	5,7	42	10	5,5
32	51	46	12	M6	5,8	9	27	1/8"	29,5	11,5	36	32	-	34	-	10	5,7	-	48	12	6
40	58	55	12	M6	5,8	9	30,5	1/8"	29,5	11	42	42	-	40	-	10	5,7	-	55	12	6
50	70	65	16	M8	6,8	11	37,5	1/8"	34,5	11,5	50	50	-	50	-	13	6,8	-	65	12	7,5
63	89	80	16	M8	9	14	46	1/8"	37	11	62	62	-	60	-	13	8,8	-	80	14	7
80	105	100	20	M10	9	14	55	1/4"	46	14	82	82	-	77	-	17	9	-	100	15	8
100	131	124	25	M12	11	17,2	69	1/4"	56	16	103	103	-	94	-	22	11	-	124	20	10

* for strokes 30 - 40 - 50: Ø 16 - 20 add +1 mm

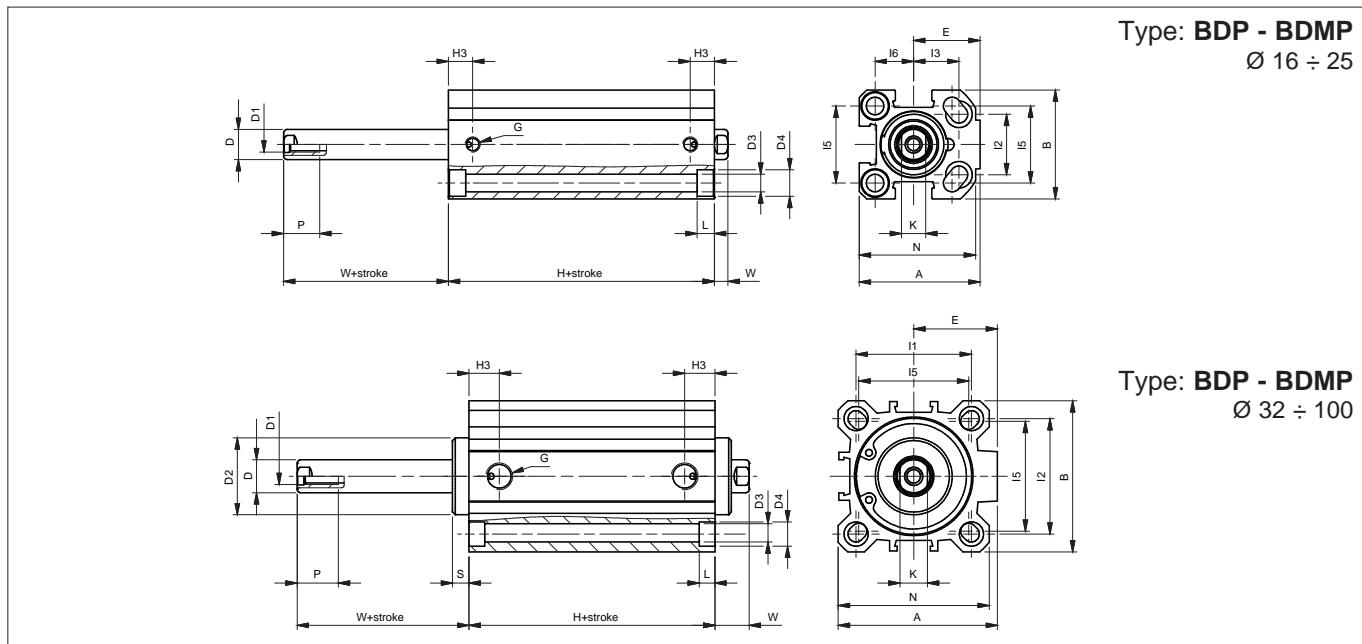
* for strokes 40 - 50: Ø 25 add +1 mm

Type: BDM																							
mm Ø	A	B	D Ø	D1	D2 Ø	D3 Ø	D4 Ø	E	G	H	H3	I1	I2	I3	I5	I6	K	L	L1	N	P	S	W
12	25	25	6	M3	-	3,7	5,6	-	M5	27	5,5	15,5	-	-	-	-	5	3,5	-	-	6	-	3,5
16	34	30	8	M4	-	4,7	7,5	19	M5	32*	8	-	18	12	20	10	6	4,6	3,5	32	8	-	4,5
20	40	36	10	M5	-	5,8	9	22	M5	32*	8	-	20	15	25,5	12,7	8	5,7	5,7	38,5	10	-	4,5
25	44,5	40	10	M5	-	5,8	9	24,5	1/8"	38,5*	10,5	-	26	15,5	28	14	8	5,7	5,7	42	10	-	5,5
32	51	46	12	M6	24,5	5,8	9	27	1/8"	39,5	11,5	36	32	-	34	-	10	5,7	-	48	12	5	5,5
40	58	55	12	M6	28	5,8	9	30,5	1/8"	39,5	11	42	42	-	40	-	10	5,7	-	55	12	6	6,5
50	70	65	16	M8	34	6,8	11	37,5	1/8"	39,5	11,5	50	50	-	50	-	13	6,8	-	65	12	6	7,5
63	89	80	16	M8	38,5	9	14	46	1/8"	42	11	62	62	-	60	-	13	8,8	-	80	14	8	6,5
80	105	100	20	M10	44	9	14	55	1/4"	46	14	82	82	-	77	-	17	9	-	100	15	10	8
100	131	124	25	M12	56	11	17,2	69	1/4"	56	16	103	103	-	94	-	22	11	-	124	20	10,5	10

* for strokes ≥ 25: Ø 16-20 add +6 mm // Ø 25 add +1 mm

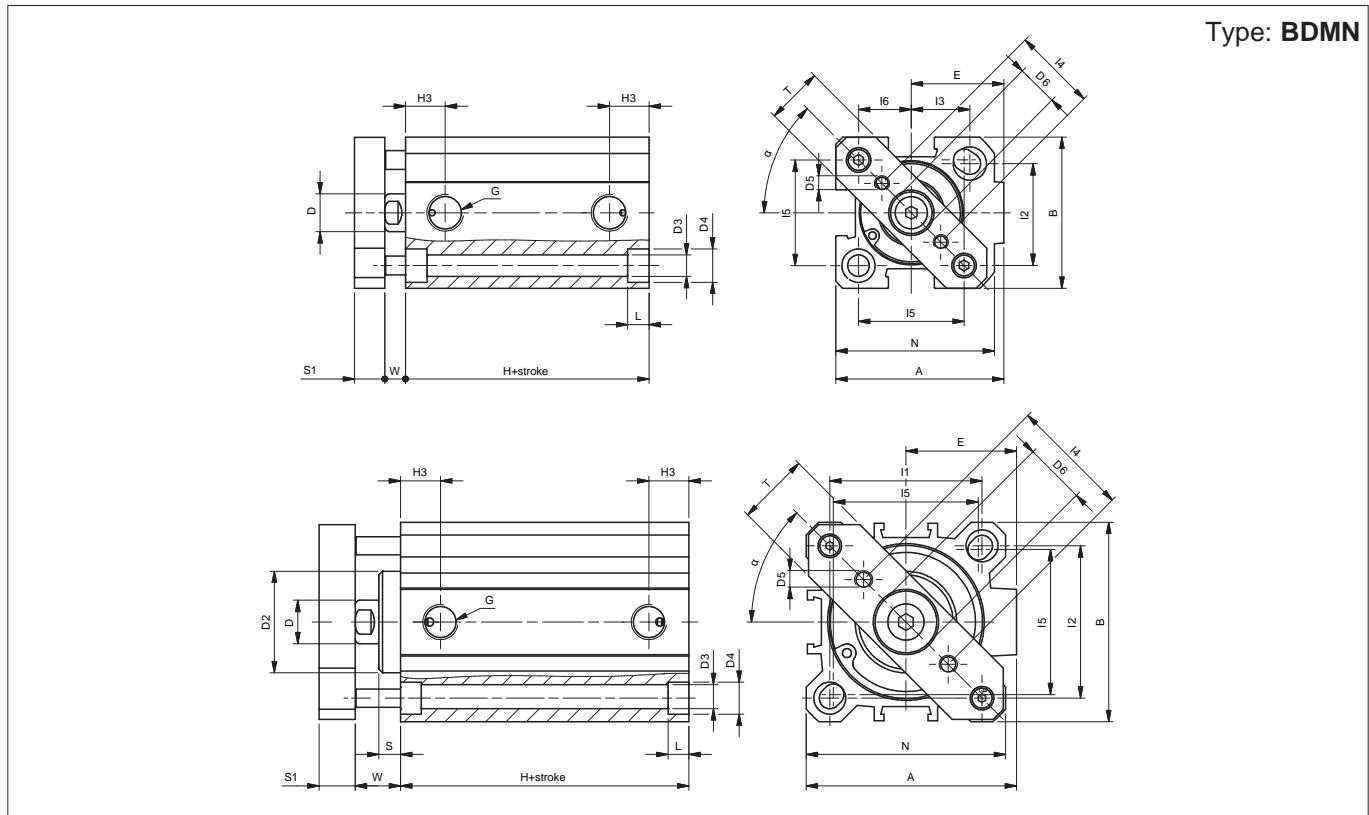


\varnothing mm	B	D \varnothing	D ₁ \varnothing	D ₂ \varnothing	D ₃ \varnothing	F	G	H ₃	I ₁	K	P	V	W	X	Y	\varnothing est. max.	H (NBR)	H (VITON)
125	140	30	M14	10	M12	15	1/4"	10	110	28	25	22	10	77	123	132	78	83
160	180	40	M20	12	M16	20	3/8"	12	140	36	30	26	12	94	157	168	87	91
200	220	40	M20	14	M16	22,5	3/8"	12	175	36	30	26	12	126	193	210	87	105



mm \varnothing	A	B	D \varnothing	D ₁	D ₂	D ₃	E	G	H	H ₃	I ₁	I ₂	I ₃	I ₅	I ₆	K	L	L ₁	N	P	S	W	
16	34	30	8	M4	-	4,7	7,5	19	M5	32*	8	-	18	12	20	10	6	4,6	3,5	32	8	-	4,5
20	40	36	10	M5	-	5,8	9	22	M5	32*	8	-	20	15	25,5	12,7	8	5,7	5,7	38,5	10	-	4,5
25	44,5	40	10	M5	-	5,8	9	24,5	1/8"	38,5*	10,5	-	26	15,5	28	14	8	5,7	5,7	42	10	-	5,5
32	51	46	12	M6	24,5	5,8	9	27	1/8"	39,5	11,5	36	32	-	34	-	10	5,7	-	48	12	5	11
40	58	55	12	M6	28	5,8	9	30,5	1/8"	39,5	11	42	42	-	40	-	10	5,7	-	55	12	6	12,5
50	70	65	16	M8	34	6,8	11	37,5	1/8"	39,5	11,5	50	50	-	50	-	13	6,8	-	65	12	6	13,5
63	89	80	16	M8	38,5	9	14	46	1/8"	42	11	62	62	-	60	-	13	8,8	-	80	14	8	15
80	105	100	20	M10	44	9	14	55	1/4"	46	14	82	82	-	77	-	17	9	-	100	15	10	18
100	131	124	25	M12	56	11	17,2	69	1/4"	56	16	103	103	-	94	-	22	11	-	124	20	10,5	20,5

* for strokes ≥ 25 : $\varnothing 16 - 20$ add +6 mm // $\varnothing 25$ add +1 mm



\varnothing mm	A	B	α	D \varnothing	D ₂ \varnothing	D ₃ \varnothing	D ₄ \varnothing	D ₅ \varnothing	D ₆ \varnothing	E	G	H	H ₃	I ₁	I ₂	I ₃	I ₄	I ₅	I ₆	K	L	L ₁	N	S	S ₁	T	W
20	40	36	45°	10	-	5,8	9	M4	11	22	M5	32*	8	-	20	15	20	25,5	12,7	8	5,7	5,7	38,5	-	8	15	4,5
25	44,5	40	45°	10	-	5,8	9	M4	11	24,5	1/8"	38,5*	10,5	-	26	15,5	22	28	14	8	5,7	5,7	42	-	8	15	5,5
32	51	46	41,5°	12	24,5	5,8	9	M5	17	27	1/8"	39,5	11,5	36	32	-	28	34	-	10	5,7	-	48	5	10	20	11
40	58	55	45°	12	28	5,8	9	M5	17	30,5	1/8"	39,5	11	42	42	-	33	40	-	10	5,7	-	55	6	10	20	12,5
50	70	65	45°	16	34	6,8	11	M6	22	37,5	1/8"	39,5	11,5	50	50	-	42	50	-	13	6,8	-	65	6	12	30	13,5
63	89	80	45°	16	38,5	9	14	M6	22	46	1/8"	42	11	62	62	-	50	60	-	13	8,8	-	80	8	12	30	15
80	105	100	45°	20	44	9	14	M8	28	56	1/4"	46	14	82	82	-	65	77	-	17	9	-	100	10	14	50	18
100	131	124	45°	25	56	11	17,2	M10	30	69	1/4"	56	16	103	103	-	80	94	-	22	11	-	124	10,5	14	50	20,5

* for strokes ≥ 25 : $\varnothing 20$ add +6 mm // $\varnothing 25$ add +1 mm

Seal kit.

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

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

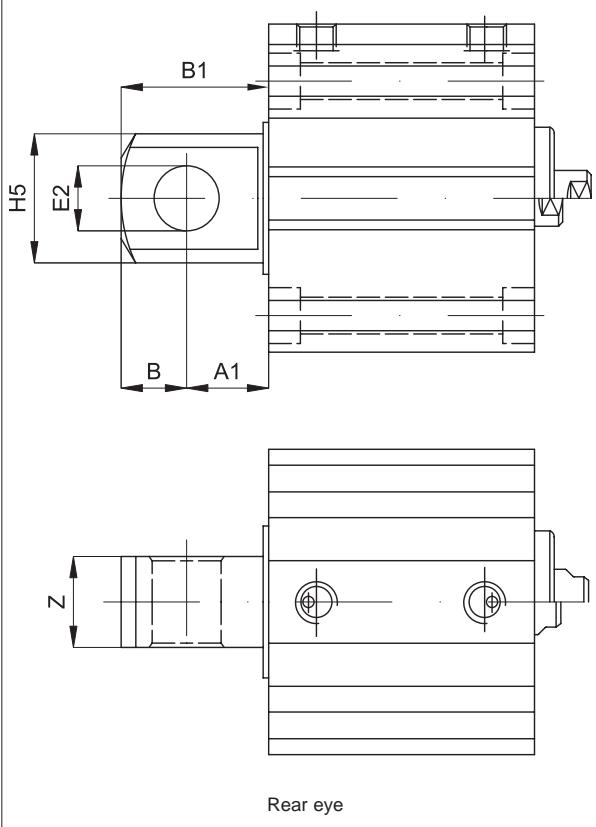
The magnetic ring to be ordered separately.

How to order: 50 / SG / BDP

50	/	SG	/	BD	P
Bore	/	Seal kit	/	Type	Option

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

Type: CM

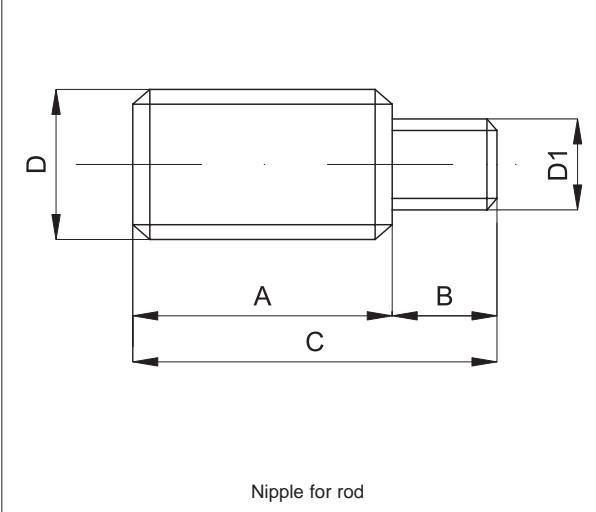


Code	Item	\varnothing mm	A ₁	B	E ₂ \varnothing (H8)	H ₅ \varnothing	Z	B ₁
040070	CM16ALB	16	8	6	6	12	7	14
040071	CM20ALB	20	10	8	8	16	9	18
040072	CM25ALB	25	10	8	8	16	9	18
040073	CM32ALB	32	13	10	10	20	14	23
040074	CM40ALB	40	15	12	12	24	16	27
040075	CM50ALB	50	15	12	12	24	17	27
040076	CM63ALB	63	19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

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

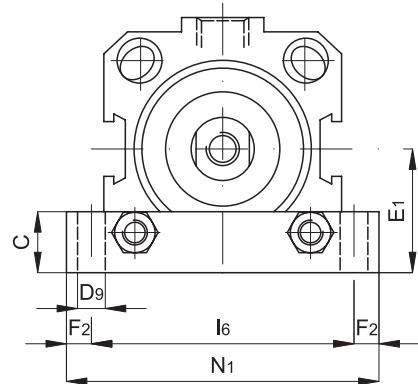
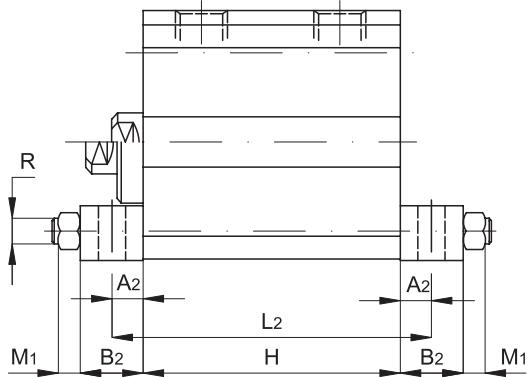
Type: N



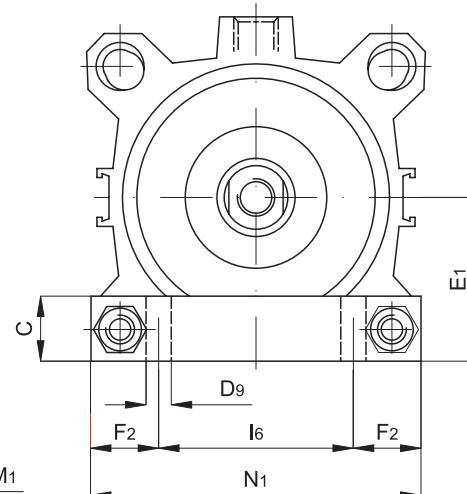
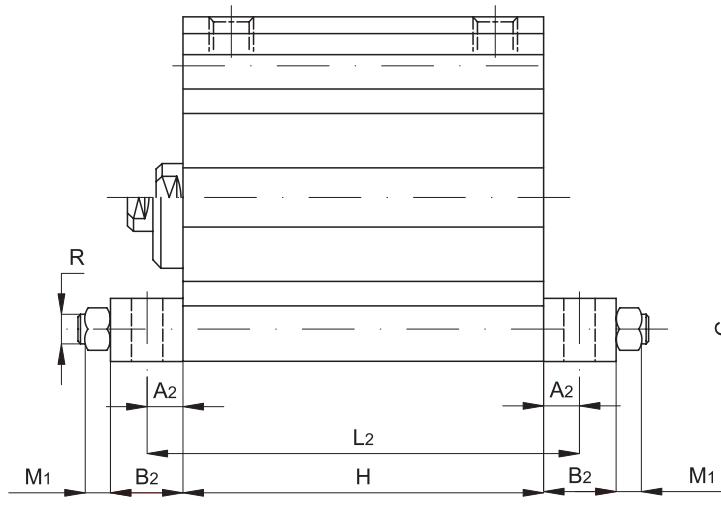
Code	Item	\varnothing mm	D	D ₁	A	B	C
040079	N6-3AQB	12	M6x1	M3x0,5	16	6,5	22,5
040080	N6-4AQB	16	M6x1	M4x0,7	15	8	23
040081	N8-5AQB	20-25	M8x1,25	M5x0,8	20	10	30
040082	N10-6AQB	32-40	M10x1,25	M6x1	22	12	34
040083	N12-8AQB	50-63	M12x1,25	M8x1,25	24	14	38
040084	N16-8AQB	50-63	M16x1,5	M8x1,25	32	14	46
040085	N16-10AQB	80	M16x1,5	M10x1,5	32	15	47
040086	N20-12AQB	100	M20x1,5	M12x1,75	40	20	60

Material: Zinc plated steel

Type: P



High foot Ø 16 ÷ 63



High foot Ø 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

Notes

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 to 2014/34/EU - ATEX

Options	Suffix
Seals FKM -20°C ÷ +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 started, must be continued.			
Pressure	1,5 ÷ 9 bar			
Temperature range	-10°C ÷ +70°C (standard)			-20°C ÷ +150°C (V)
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		
	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).

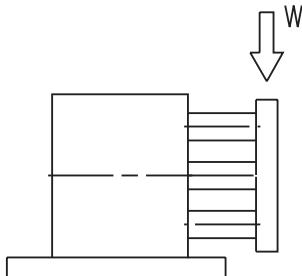
Compact Guided Cylinders

Bores from 10 to 63 mm

Loads



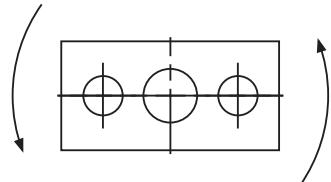
Admissible transverse load



Bore mm	Type	Stroke mm							Unit: Kg.
		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.

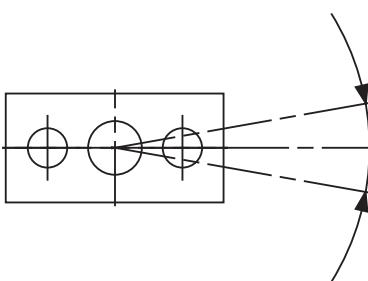
Maximum admissible torque



Bore mm	Type	Stroke mm							Unit: N
		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 v
$\varnothing 10$ $\varnothing 16$	$\pm 0,18$
$\varnothing 20$ $\varnothing 25$	$\pm 0,17$
$\varnothing 32$ $\varnothing 40$	$\pm 0,16$
$\varnothing 50$ $\varnothing 63$	$\pm 0,15$

Compact Guided Cylinders

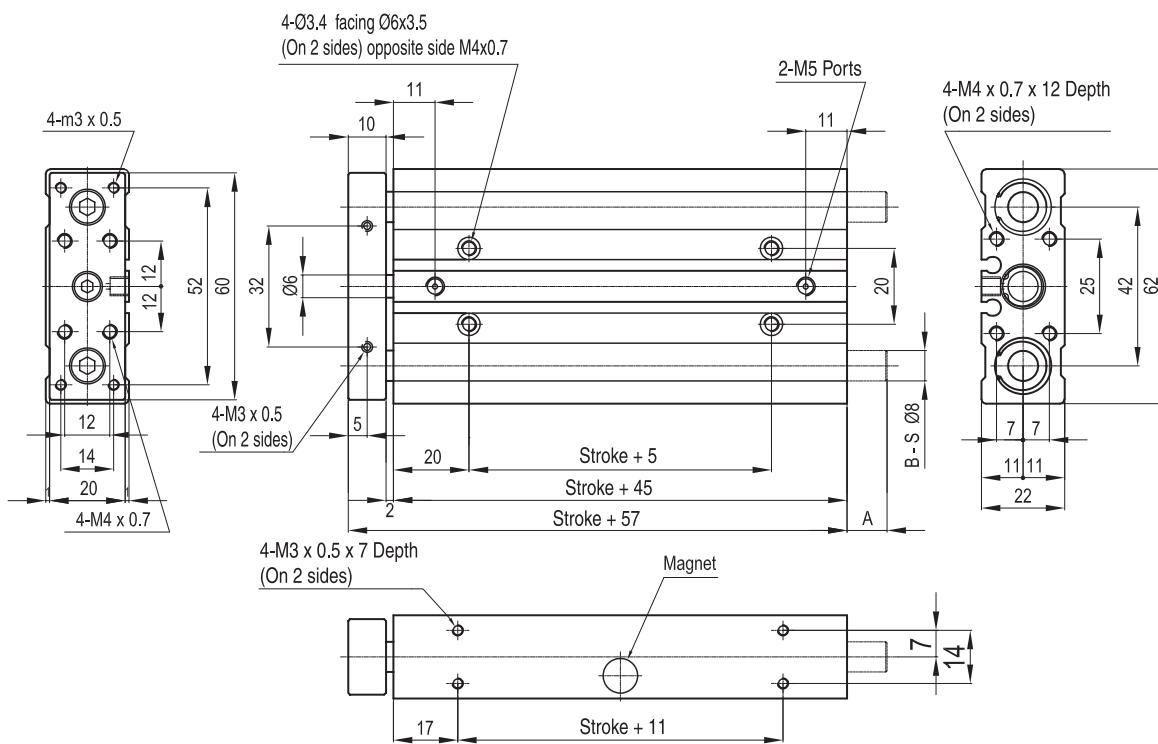
Bores from 10 to 63 mm

$\varnothing 10 - \varnothing 16$

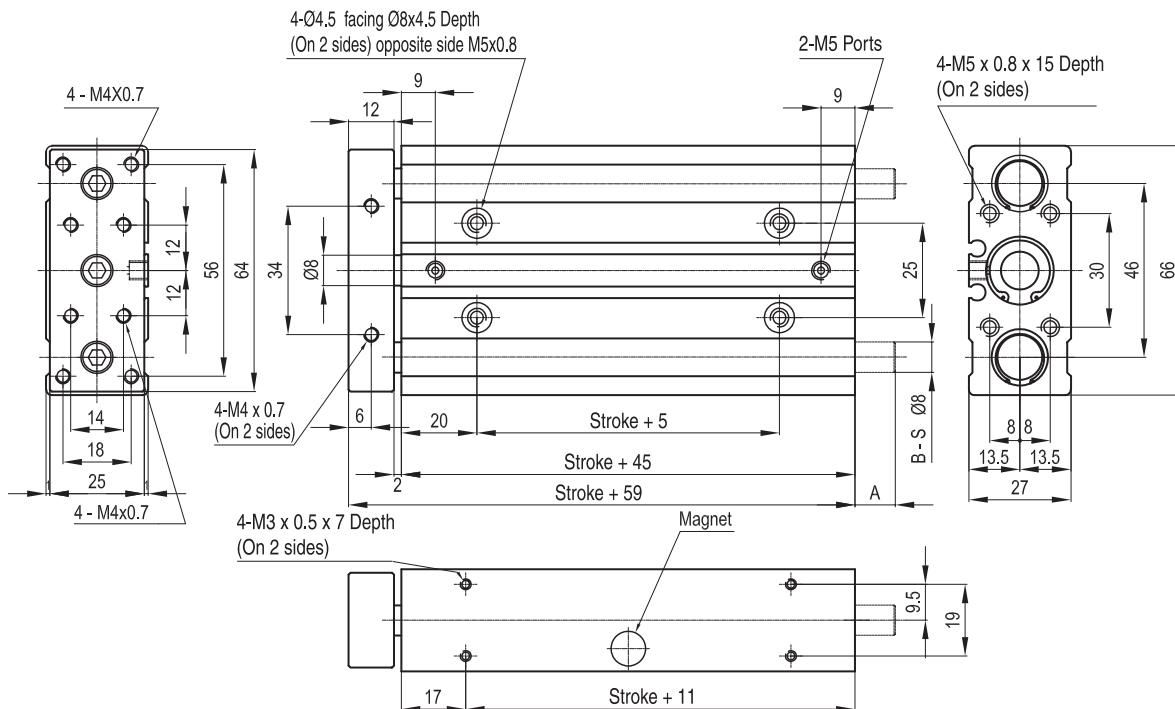


$\varnothing 10$

1



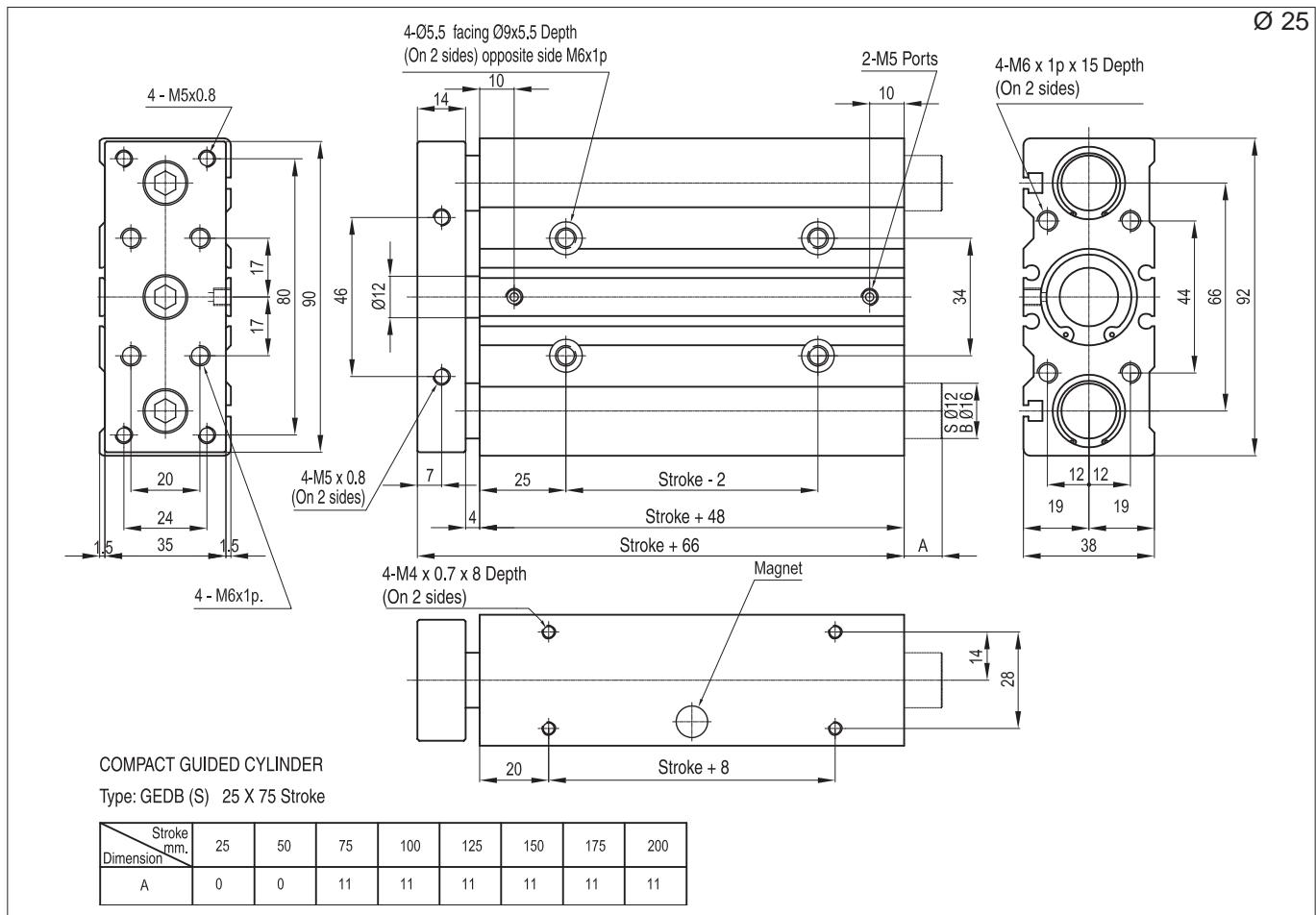
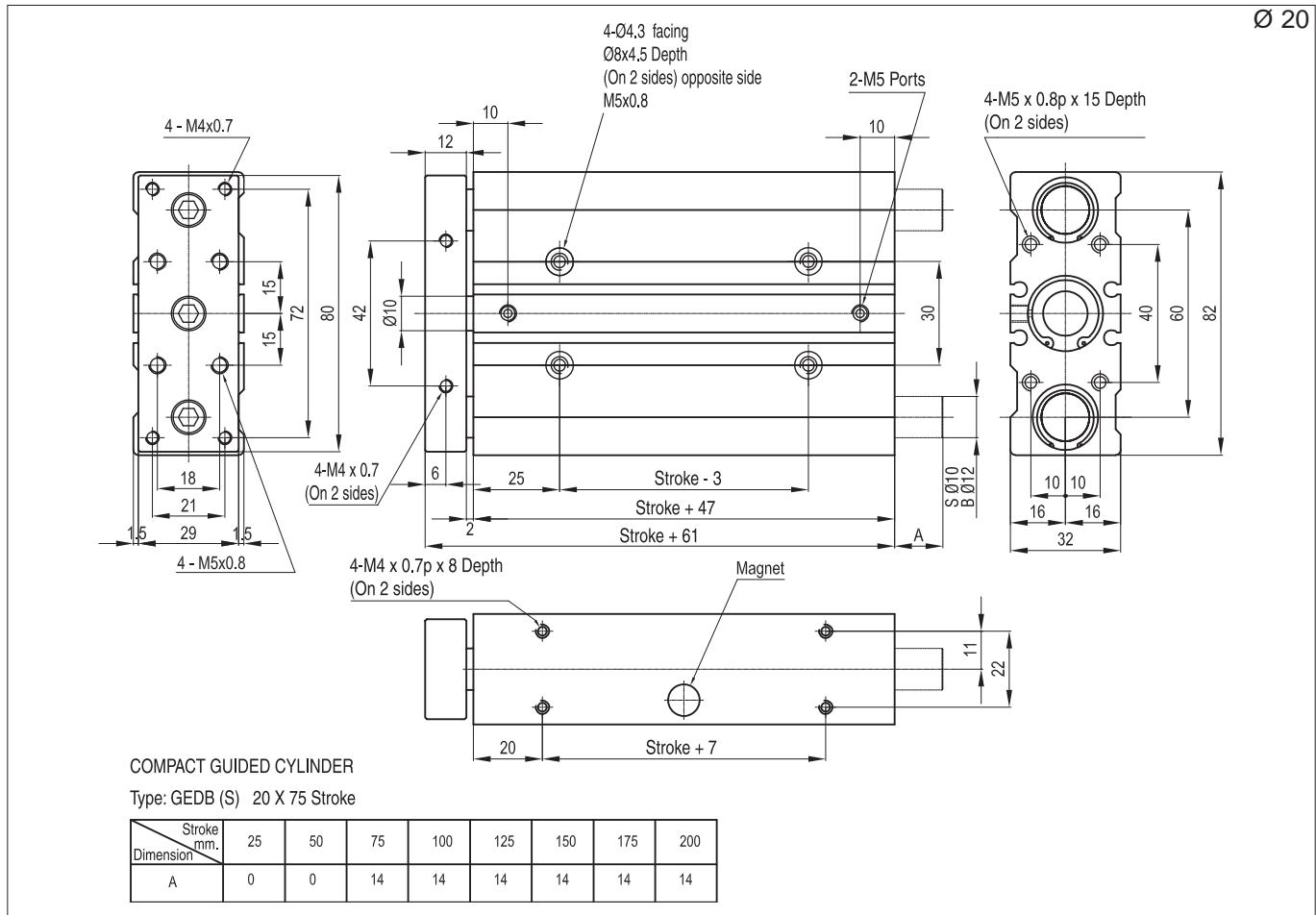
$\varnothing 16$



Compact Guided Cylinders

Bores from 10 to 63 mm

$\varnothing 20 - \varnothing 25$



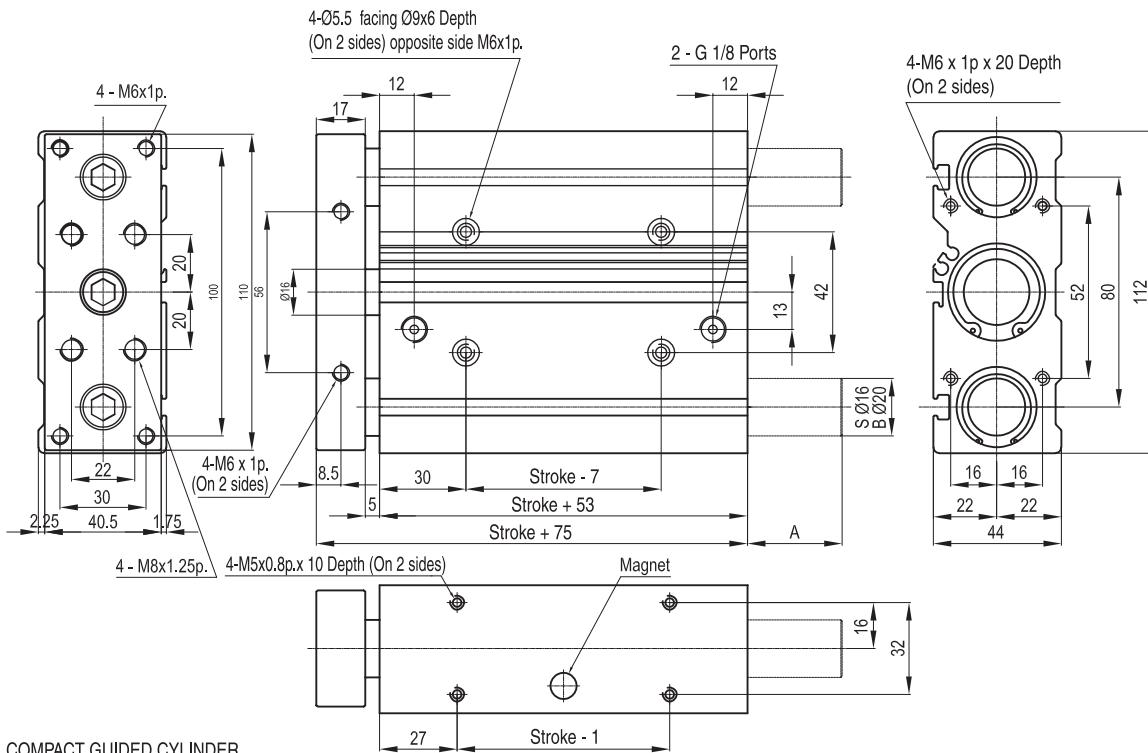
Compact Guided Cylinders

Bores from 10 to 63 mm

$\varnothing 32 - \varnothing 40$

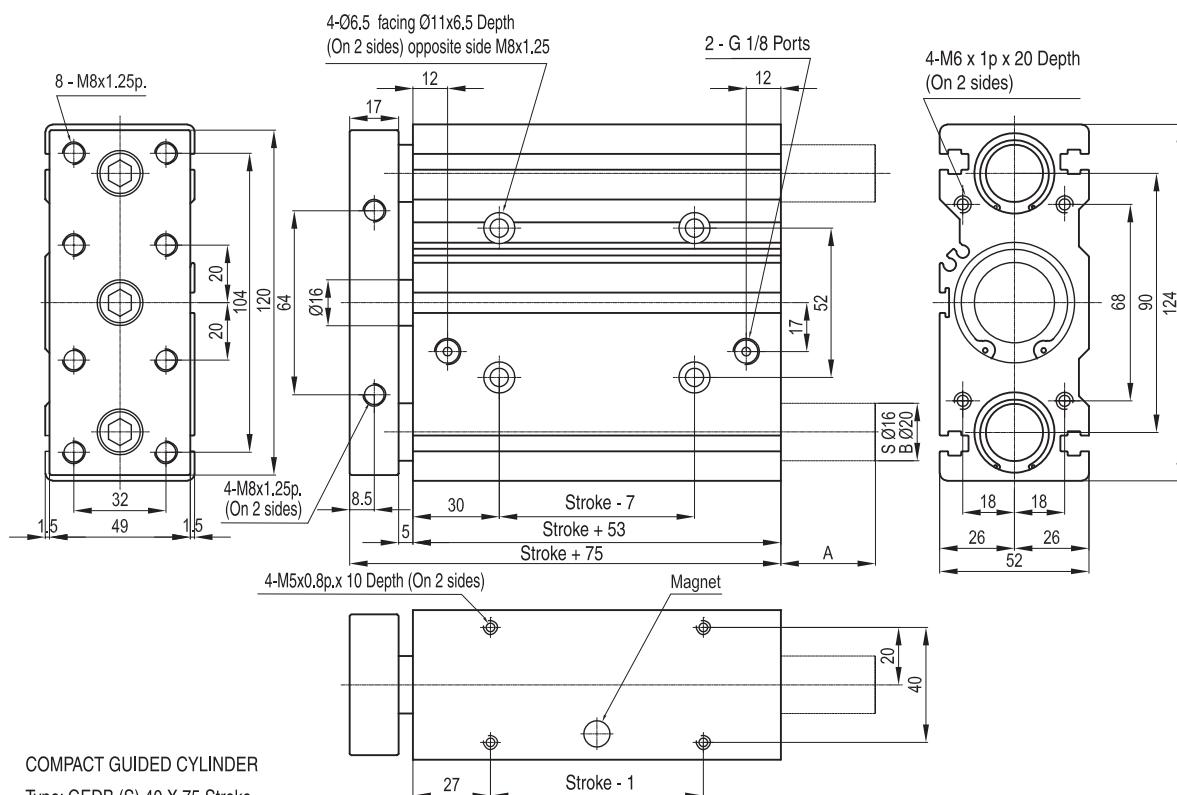


$\varnothing 32$



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

$\varnothing 40$

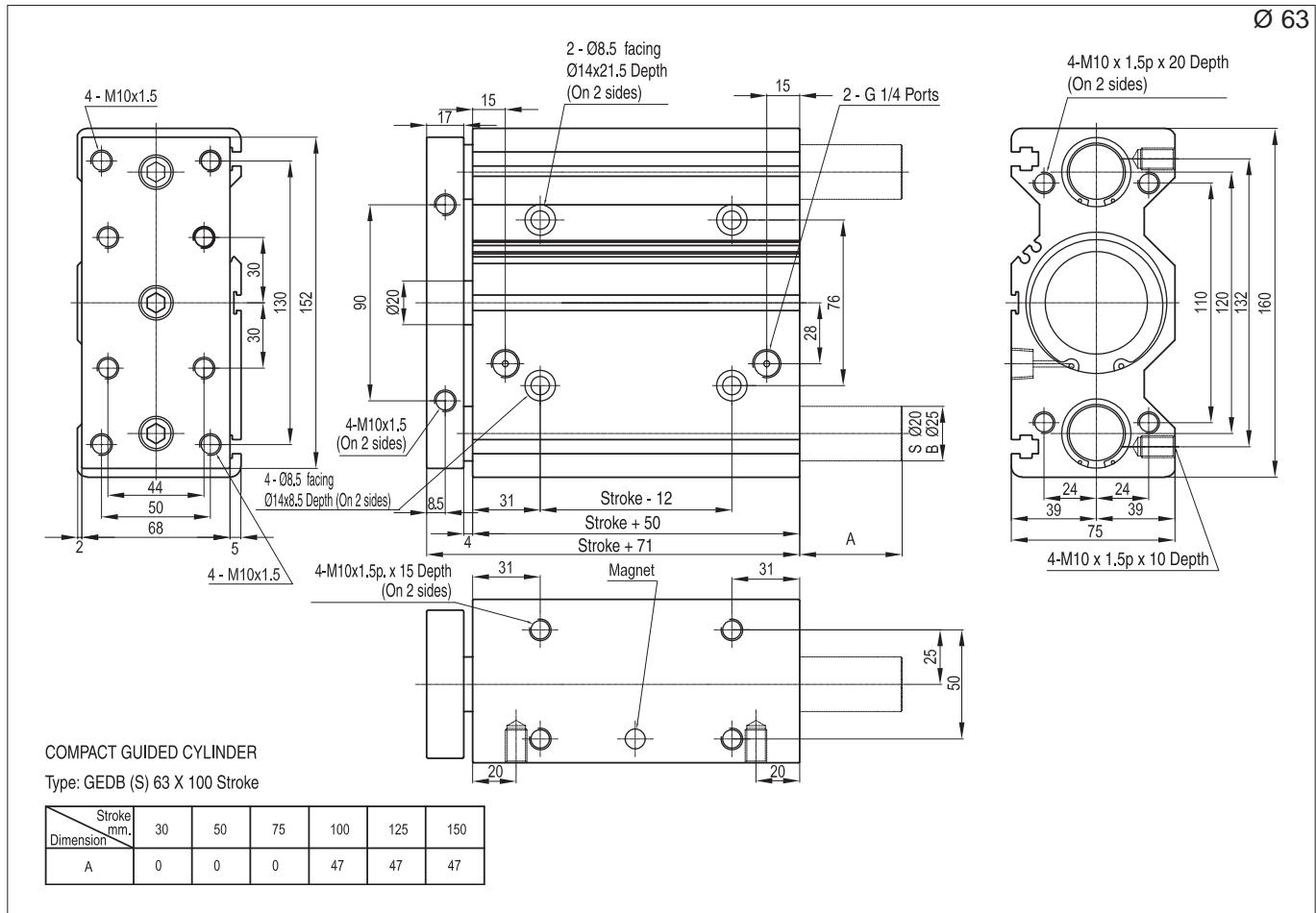
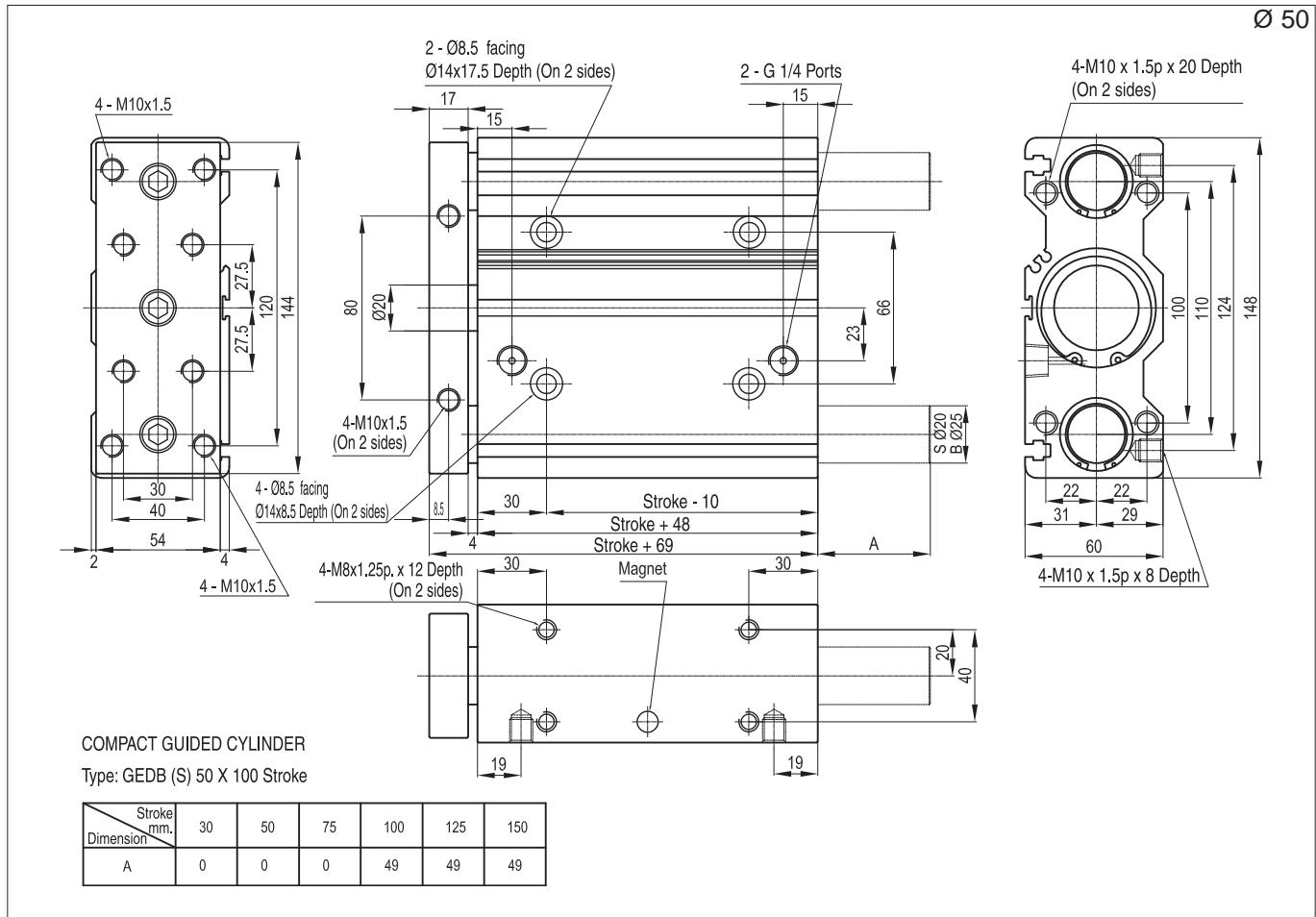


Dimension	30	50	75	100	125	150	175	200	250
A	0	0	33	33	33	33	33	33	33

Compact Guided Cylinders

Bores from 10 to 63 mm

$\varnothing 50 - \varnothing 63$



Standard executions		
Version	Symbol	Type
Double acting, magnetic self lubricating bushings		GPB
Double acting, magnetic spherical bushings		GPS



Series of guiding and stopper cylinders, magnetic as standard. This cylinder are made of uni-body aluminium alloy with high anti-rotation, torsion and side load features. Piston with magnet is standard and the body, a one piece, 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 1.110.2.

Options	Suffix
Special on request	/ S

How to order: 20/30 GPB

20	/	30	GPB	
Bore	/	Stroke	Type	Option

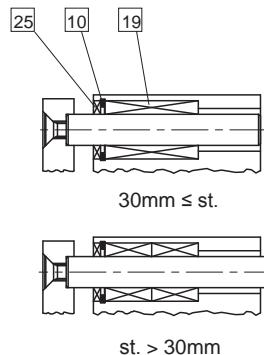
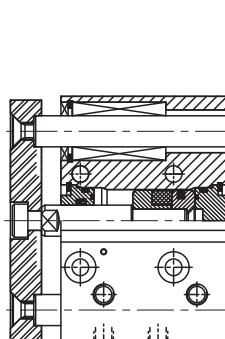
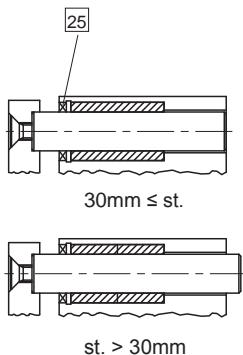
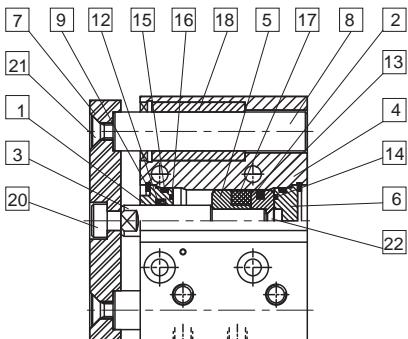
Technical data							
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.						
Bore	Ø 12	Ø 16	Ø 20	Ø 20	Ø 32	Ø 40	Ø 50
Pressure range	2 ÷ 7 bar						
Temperature range	- 10 °C ÷ + 60°C						

Bore (mm)	Standard stroke GPB	Standard stroke GPS
12	10, 20, 30, 40, 50, 75, 100	10, 20, 30, 40, 50, 75, 100
16	10, 20, 30, 40, 50, 75, 100	10, 20, 30, 40, 50, 75, 100
20	20, 30, 40, 50, 75, 100, 125, 150, 175	20, 30, 40, 50, 75, 100, 125, 150, 175
25	20, 30, 40, 50, 75, 100, 125, 150, 175	20, 30, 40, 50, 75, 100, 125, 150, 175
32	25, 50, 75, 100, 125, 150	25, 50, 75, 100, 125, 150
40	25, 50, 75, 100, 125, 150	25, 50, 75, 100, 125, 150
50	25, 50, 75, 100, 125, 150	25, 50, 75, 100, 125, 150
63	25, 50, 75, 100, 125, 150	25, 50, 75, 100, 125, 150

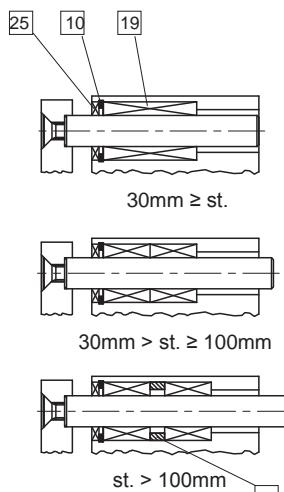
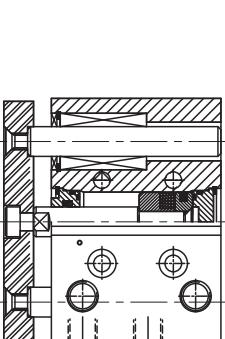
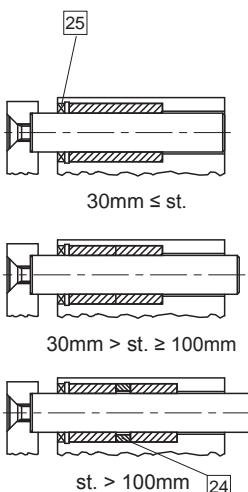
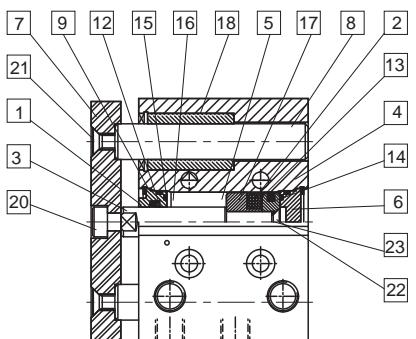
Type: GPB - GPS

(Bores Ø12 ÷ Ø25)

GPB Ø12 ÷ Ø16

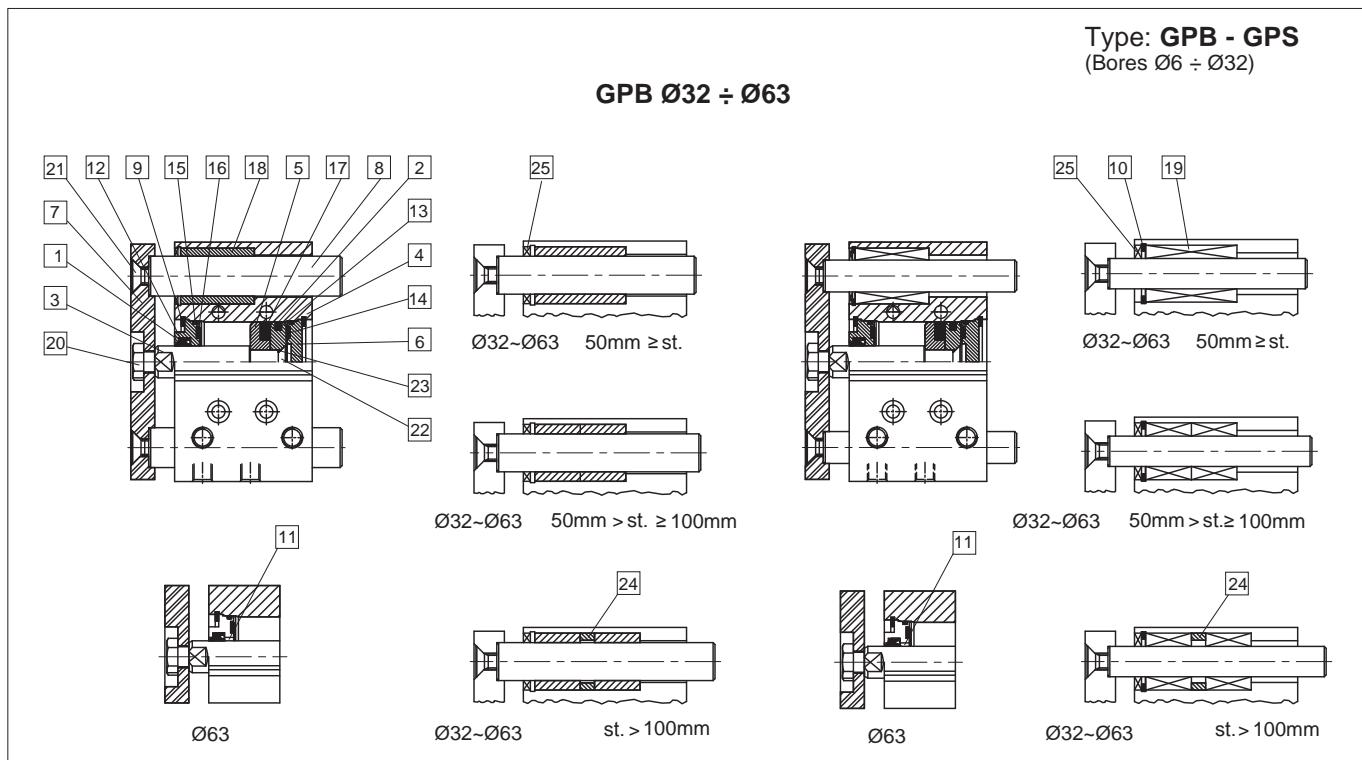


GPB Ø20 ÷ Ø25



Materials

[1] Rod cover	Brass (Ø12) - Hard anodised aluminium alloy (Ø16÷Ø25)	[14] Rubber lining	Nitrile rubber NBR
[2] Piston	Hard anodised aluminium alloy	[15] Cylinder gasket	Nitrile rubber NBR
[3] Piston rod	Stainless steel (Ø12) - Carbon steel (Ø16÷Ø32)	[16] Rubber lining	Nitrile rubber NBR
[4] Cylinder tube	Hard anodised aluminium alloy	[17] Magnet	Magnetic material
[5] Magnet holder	Hard anodised aluminium alloy	[18] Oilless bearing	Oil-impregnated sintered alloy
[6] Head cover	Hard anodised aluminium alloy	[19] Linear bearing	Special steel
[7] Guide plate	Carbon steel nickel plating	[20] Hexagon socket head screw	Carbon steel nickel plating
[8] Guide stem	Carbon steel (GPB) - Special steel (GPS)	[21] Screw	Carbon steel nickel plating
[9] Retaining ring	Carbon steel nickel plating	[22] Screw	Carbon steel nickel plating
[10] Retaining ring	Carbon steel nickel plating	[23] O-ring	Nitrile rubber NBR
[11] Oilless bearing	Oil-impregnated sintered alloy	[24] Stroke pad	Hard anodised aluminium alloy
[12] Rod packing	Nitrile rubber NBR	[25] Dust cover	Aluminium alloy (Ø12÷Ø16) Carbon steel - NBR (Ø20÷Ø25)
[13] Piston packing	Nitrile rubber NBR		



Materials

[1] Rod cover	Brass (Ø12) - Hard anodised aluminium alloy (Ø16÷Ø25)	[14] Rubber lining	Nitrile rubber NBR
[2] Piston	Hard anodised aluminium alloy	[15] Cylinder gasket	Nitrile rubber NBR
[3] Piston rod	Stainless steel (Ø12) - Carbon steel (Ø16÷Ø32)	[16] Rubber lining	Nitrile rubber NBR
[4] Cylinder tube	Hard anodised aluminium alloy	[17] Magnet	Magnetic material
[5] Magnet holder	Hard anodised aluminium alloy	[18] Oilless bearing	Oil-impregnated sintered alloy
[6] Head cover	Hard anodised aluminium alloy	[19] Linear bearing	Special steel
[7] Guide plate	Carbon steel nickel plating	[20] Hexagon socket head screw	Carbon steel nickel plating
[8] Guide stem	Carbon steel (GPB) - Special steel (GPS)	[21] Screw	Carbon steel nickel plating
[9] Retaining ring	Carbon steel nickel plating	[22] Screw	Carbon steel nickel plating
[10] Retaining ring	Carbon steel nickel plating	[23] O-ring	Nitrile rubber NBR
[11] Oilless bearing	Oil-impregnated sintered alloy	[24] Stroke pad	Hard anodised aluminium alloy
[12] Rod packing	Nitrile rubber NBR	[25] Dust cover	Carbon steel - NBR
[13] Piston packing	Nitrile rubber NBR		

Guiding and stopper cylinders

Bores from 12 to 63 mm

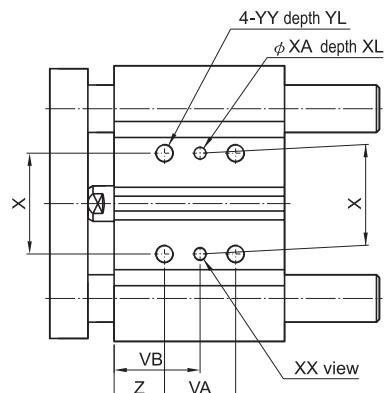
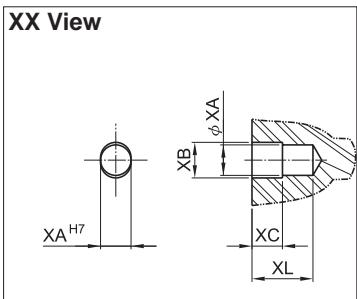
Standard dimensions



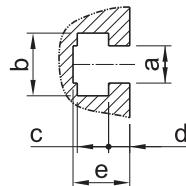
Type: GPB - GPS

(Bores Ø12 ÷ Ø25)

XX View

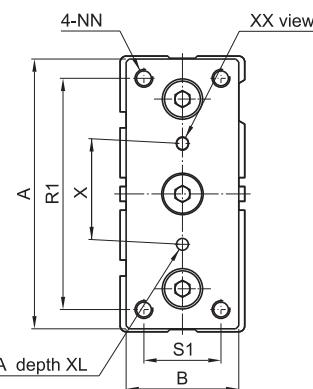
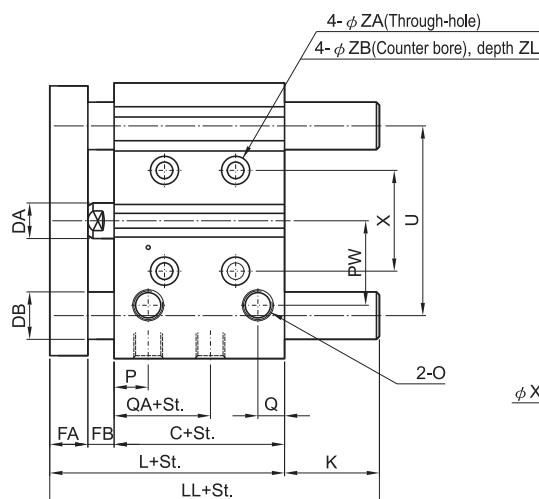
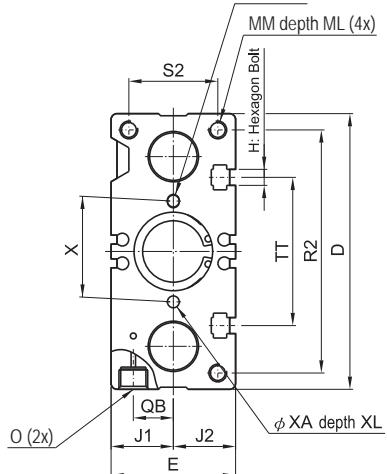


Groove dimensions



Bore	a	b	c	d	e
Ø12	4,4	7,4	3,7	2	6,2
Ø16	4,4	7,4	3,7	2,5	6,7
Ø20	5,4	8,4	4,5	2,3	7,3
Ø25	5,4	8,4	4,5	3	8,2

XX view



Ø mm	Stroke	A	B	C	D	DA	DB		E	FA	FB	H	J1	J2	L	MM	ML	NN	O	P	Q
							GPB	GPS													
12	10-100	56	22	29	58	6	8	6	26	8	5	M4	13	13	42	M4	10	M4	M5	11	7,5
16		62	25	33	64	8	10	8	30	8	5	M4	15	15	46	M5	12	M5	M5	11	8
20	20-175	81	30	37	83	10	12	10	36	10	6	M5	18	18	53	M5	13	M5	1/8"	11.5	9
25		91	38	37.5	93	12	16	12	42	10	6	M5	21	21	53.5	M6	15	M6	1/8"	11.5	9

Ø mm	Stroke	QA	QB	PW	TT	U	VA			VB			S1	S2	R1	R2	X ± 0,02	XA H7	XB	VC
							st. ≤ 30	30 < st. ≤ 100	st. > 100	st. ≤ 30	30 < st. ≤ 100	st. > 100								
12	10-100	12	7,5	18	37	41	20	40	-	15	25	-	14	18	48	50	23	3	3,5	3
16		14	10	19	38	46	24	44	-	17	27	-	16	22	54	56	24	3	3,5	3
20	20-175	12,5	11,5	25	44	54	24	44	120	29	39	77	18	24	70	72	28	3	3,5	3
25		12,5	13,5	28,5	50	64	24	44	120	29	39	77	26	30	78	82	34	4	4,5	3

Ø mm	Stroke	XL	YY	YL	Z	ZA	ZB	ZL	GPB				GPS					
									K		LL		K		LL			
									st. ≤ 50	st. > 50	st. ≤ 50	st. > 50	st. ≤ 30	30 < st. ≤ 100	st. > 100	st. ≤ 30	30 < st. ≤ 100	st. > 100
12	10-100	6	M5	10	5	4,3	8	4,5	0	15	42	57	0	15	-	42	57	-
16		6	M5	10	5	4,3	8	4,5	0	22	46	68	0	22	-	46	68	-
20	20-175	6	M6	12	17	5,6	9,5	5	0	28	53	81	0	28	52	53	81	105
25		6	M6	12	17	5,6	9,5	5,5	0	29	53,5	82,5	0	31	50	53,5	84,5	103,5

Guiding and stopper cylinders

Bores from 12 to 63 mm

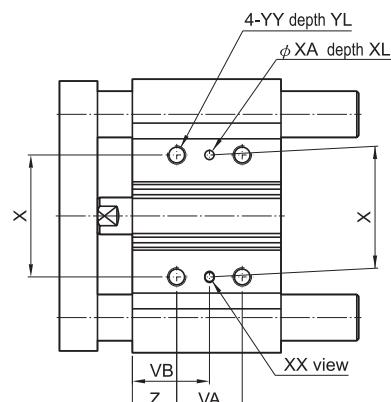
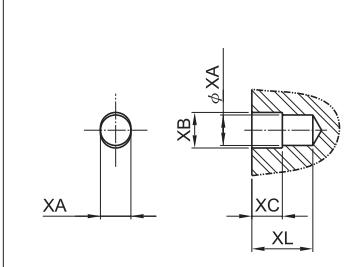
Standard dimensions



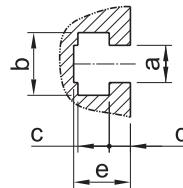
Type: GPB - GPS

(Bores Ø32 ÷ Ø63)

XX View



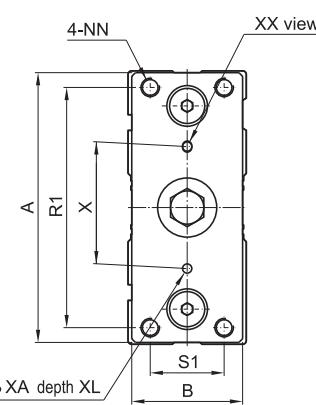
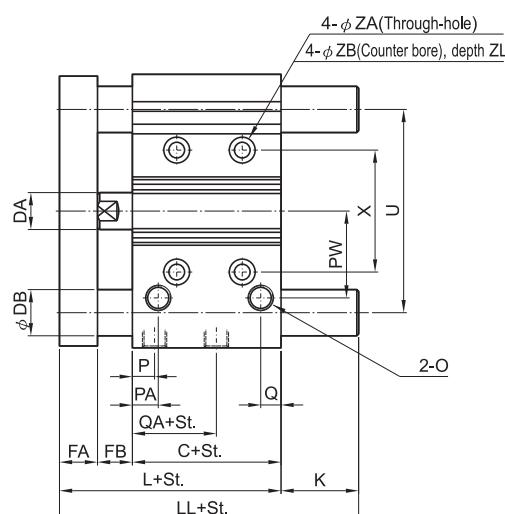
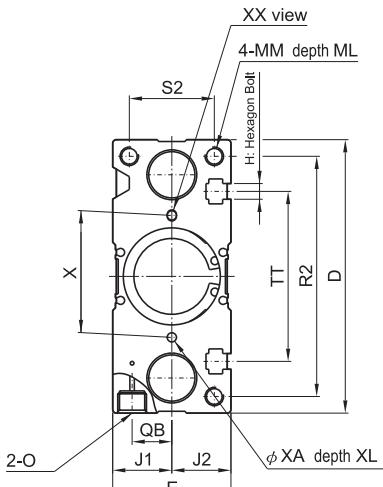
Groove dimensions



Bore	a	b	c	d	e
Ø32	6.5	10.5	5.35	3.5	9.5
Ø40	6.5	10.5	5.35	4	11
Ø50	8.5	13.5	7.5	4.5	13.5
Ø63	11	17.8	10	7	18.5

XX view

4-MM depth ML



Ø mm	Stroke	A	B	C	D	DA	DB		E	FA	FB	H	J1	J2	L	MM	ML	NN	O	P	Q
							GPB	GPS													
32	25, 50, 75, 100, 125, 150	110	44	37.5	112	16	20	16	48	12	10	M6	24	24	59.5	M8	20	M8	1/8"	11.5	10
40		118	44	44	120	16	20	16	54	12	10	M6	27	27	66	M8	20	M8	1/8"	14	11
50		146	60	44	148	20	25	20	64	16	12	M8	32	32	72	M10	22	M10	1/4"	12	11
63		158	70	49	162	20	25	20	78	16	12	M10	39	39	77	M10	22	M10	1/4"	16.5	13

Ø mm	Stroke	QA	QB	PA	PW	TT	U	VA			VB			S1	S2	R1	R2	X ± 0.02	XA H7	XB
								25	50-100	st. > 100	25	50-100	st. > 100							
32	25, 50, 75, 100, 125, 150	5	16.5	11.5	34	63	78	24	48	124	33	45	83	30	34	96	98	42	4	4.5
40		11	18	14	38	72	86	24	48	124	34	46	84	30	40	104	106	50	4	4.5
50		9	21.5	14	47	92	110	24	48	124	36	48	86	40	46	130	130	66	5	6
63		14	28	16.5	55	110	124	28	52	128	38	50	88	50	58	130	142	80	5	6

Ø mm	Stroke	XC	XL	YY	YL	Z	ZA	ZB	ZL	GPB			GPS						
										K 25, 50	LL st. > 50	K 25, 50	LL st. > 50	K 25, 50	LL st. > 100				
32	25, 50, 75, 100, 125, 150	3	6	M8	16	21	6.5	11	7.5	8	45	67.5	104.5	8	45	65	67.5	104.5	124.5
40		3	6	M8	16	22	6.5	11	7.5	1.5	38.5	67.5	104.5	1.5	38.5	58.5	67.5	104.5	124.5
50		4	8	M10	20	24	8.5	14	9	6.5	48.5	78.5	120.5	6.5	48.5	68.5	78.5	120.5	140.5
63		4	8	M10	20	24	8.5	14	9	1.5	43.5	78.5	120.5	1.5	43.5	63.5	78.5	120.5	140.5

Notes

Standard executions		
Version	Symbol	Type
Double acting, magnetic self lubricating bushings		GSB
Double acting, magnetic spherical bushings		GSS



Series of twin-rod cylinders magnetic as standard.
This cylinder is of two-axle mode with double thrust force and smooth and precise operation.
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 ASV see from page 1.110.1.

How to order: 20/30 GSB

Options	Suffix
Special on request	/ S

20	/	30	GSB	
Bore	/	Stroke	Type	Option

Technical data												
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.											
Bore	Ø 6	Ø 10	Ø 16	Ø 20	Ø 25	Ø 32						
Pressure range	1.5 ÷ 7 bar		1 ÷ 7 bar		0.5 ÷ 7 bar							
Speed range	30÷300 mm/sec.		30÷500 mm/sec.									
Adjustable stroke	0 ÷ -5 mm											
Temperature range	- 10 °C ÷ + 60°C											

Bore (mm)	Standard stroke GSB	Standard stroke GSS
6	10, 20, 30, 40, 50	10, 20, 30, 40, 50
10	10, 15, 20, 25, 30, 35, 40, 45, 50	10, 15, 20, 25, 30, 35, 40, 45, 50
16	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 125, 150	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 125, 150
20	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 125, 150	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 125, 150
25	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 125, 150	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 125, 150
32	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 125, 150	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100, 125, 150

Twin rod compact guided cylinders

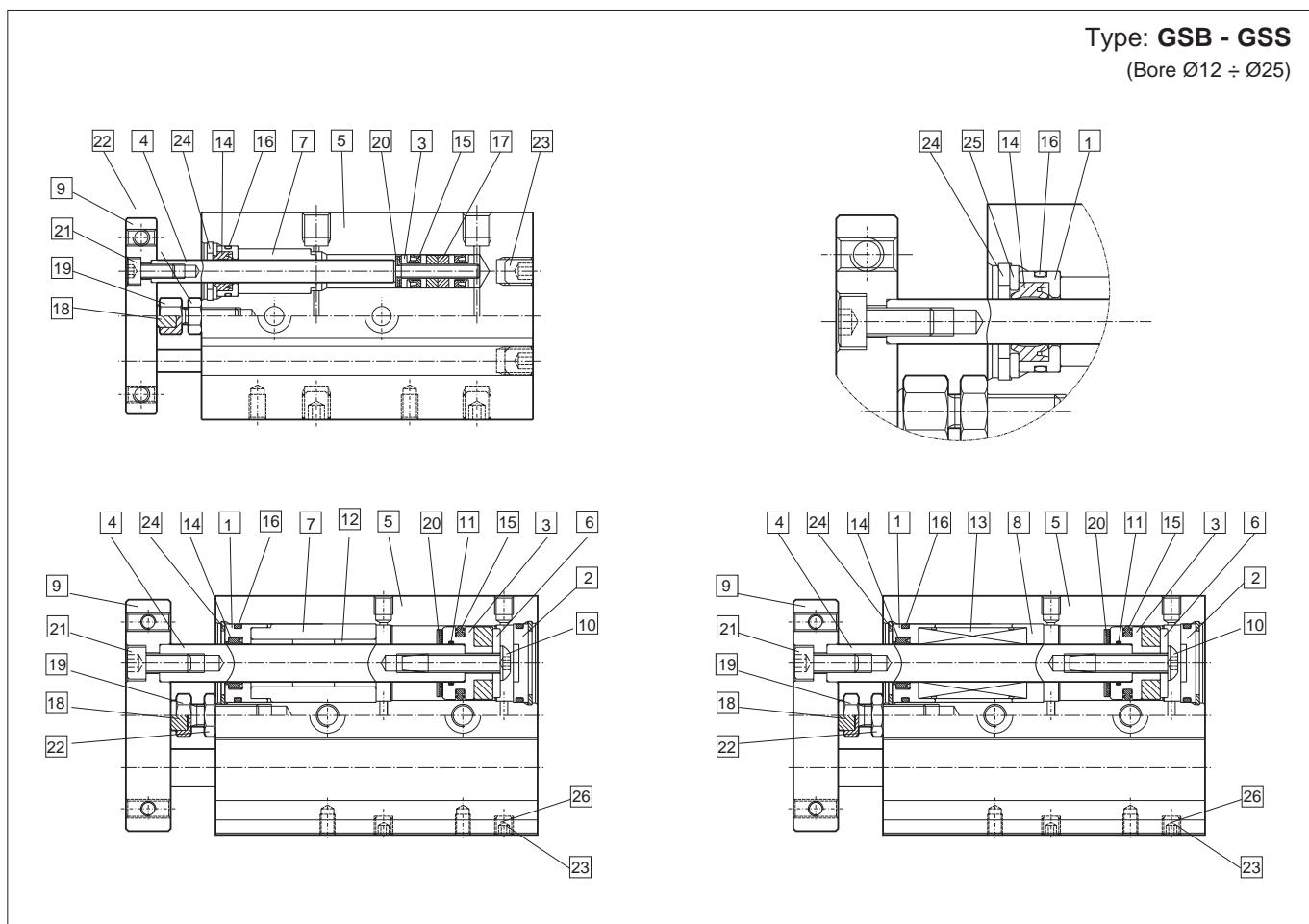
Bores from 6 to 32 mm

Materials



Type: GSB - GSS

(Bore Ø12 ÷ Ø25)



Materials

[1] Rod cover	Hard anodised aluminium alloy	[14] Rod packing	PU
[2] Head cover	Hard anodised aluminium alloy	[15] Piston packing	Nitrile rubber NBR
[3] Piston	Brass (Ø6) - Aluminium alloy (Ø10 ÷ Ø32)	[16] Cylinder gasket	Nitrile rubber NBR
[4] Piston rod	Stainless steel (GSB Ø6 ÷ Ø10) Carbon steel (GSB Ø16 ÷ Ø32) Special steel (GSS)	[17] Magnet	Magnetic material
[5] Cylinder tube	Hard anodised aluminium alloy	[18] Rubber pillar	Nitrile rubber NBR
[6] Magnet holder	Stainless steel	[19] Adjusting screw	Stainless steel
[7] Bearing holder	Brass (Ø6) - Aluminium alloy (Ø10 ÷ Ø32)	[20] Rubber lining	Nitrile rubber NBR
[8] Bearing holder	Aluminium alloy (Ø10 ÷ Ø32)	[21] Screw	Carbon steel nickel plating
[9] Guide plate	Hard anodised aluminium alloy	[22] Lock nut	Carbon steel nickel plating
[10] Nut	Carbon steel nickel plating	[23] Set screw	Carbon steel
[11] O-ring	Nitrile rubber NBR	[24] Retaining ring	Carbon steel nickel plating
[12] Oilless bearing	Oil-impregnated sintered alloy	[25] Steel pad	Stainless steel
[13] Linear bearing	Special steel	[26] Port gasket	Nitrile rubber NBR

Twin rod compact guided cylinders

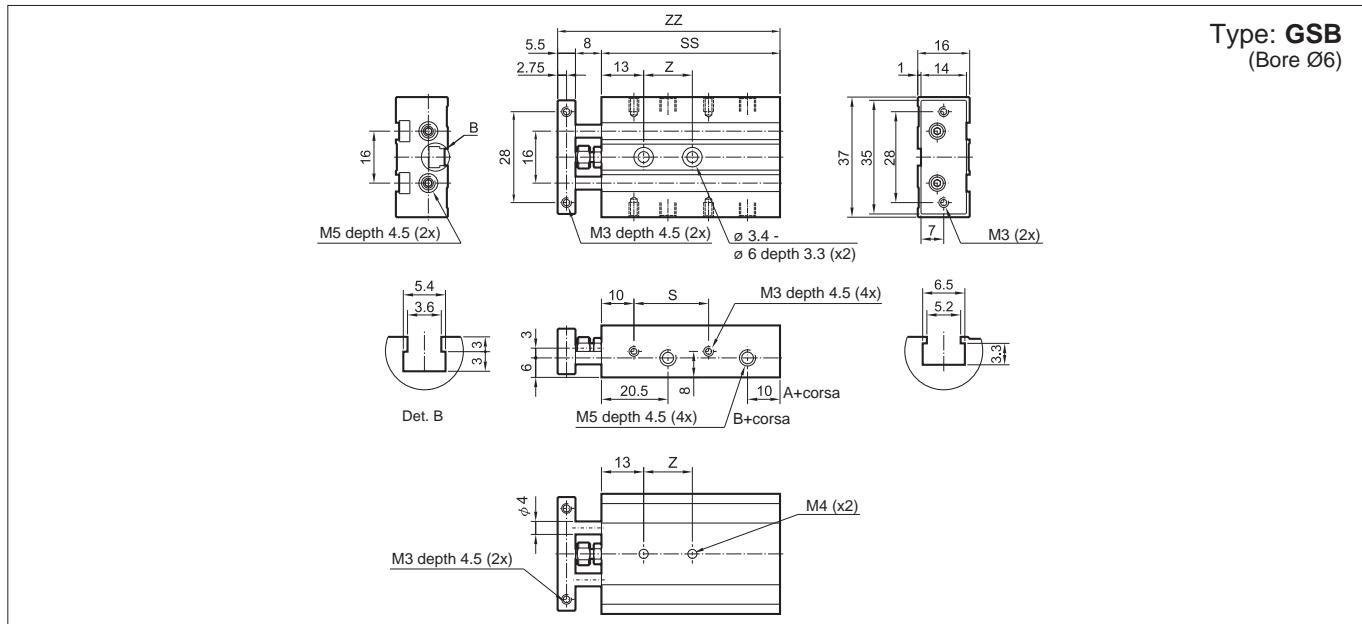
Bores from 6 to 32 mm

Standard dimensions

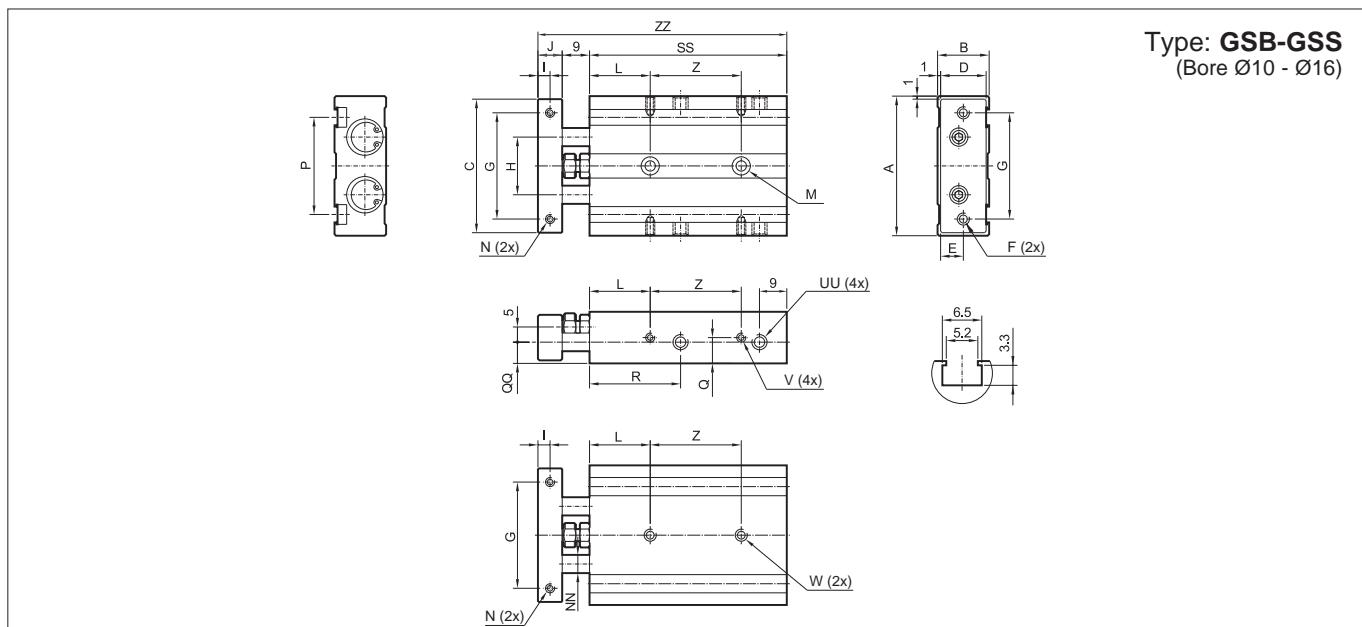


Type: **GSB**
(Bore Ø6)

1



\varnothing mm	Stroke = 10				Stroke = 20				Stroke = 30				Stroke = 40				Stroke = 50			
	S	Z	SS	ZZ																
6	23	15	55	68,5	33	20	65	78,5	43	25	75	88,5	53	30	85	98,5	63	35	95	108,5



\varnothing mm	A	B	C	D	E	F	G	H	I	J	L	M	N	NN	P	Q	QQ	R	W	V
	10	46	17	44	15	7.5	M4	35	19	4	8	20	\varnothing 3.4 - Ø 6 depth 3.3	M3 depth 5	Ø 6	32	8.5	7	30	M4 depth 8
16	58	20	56	18	9	M5	45	24	5	10	30	\varnothing 4.3 - Ø 8 depth 4.4	M4 depth 6	Ø 8	47	10	10	36	M5 depth 9	M4 depth 5

\varnothing mm	UU		Stroke = 10				Stroke = 15				Stroke = 20				Stroke = 25				Stroke = 30				Stroke = 35				Stroke = 40				Stroke = 45				Stroke = 50			
			SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ						
10	M5 depth 4.5	65	30	82	70	30	87	75	30	92	80	30	97	85	40	102	90	40	107	95	40	112	100	40	117	105	40	122										
16	M5 depth 5.5	70	25	89	75	25	94	80	25	99	85	25	104	90	35	109	95	35	114	100	35	119	105	35	124	110	35	129										

\varnothing mm	Stroke = 60				Stroke = 70				Stroke = 75				Stroke = 80				Stroke = 90				Stroke = 100				Stroke = 125				Stroke = 150			
	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ		
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
16	120	45	139	130	45	149	135	45	154	140	45	159	150	55	169	160	55	179	185	80	204	210	80	229								

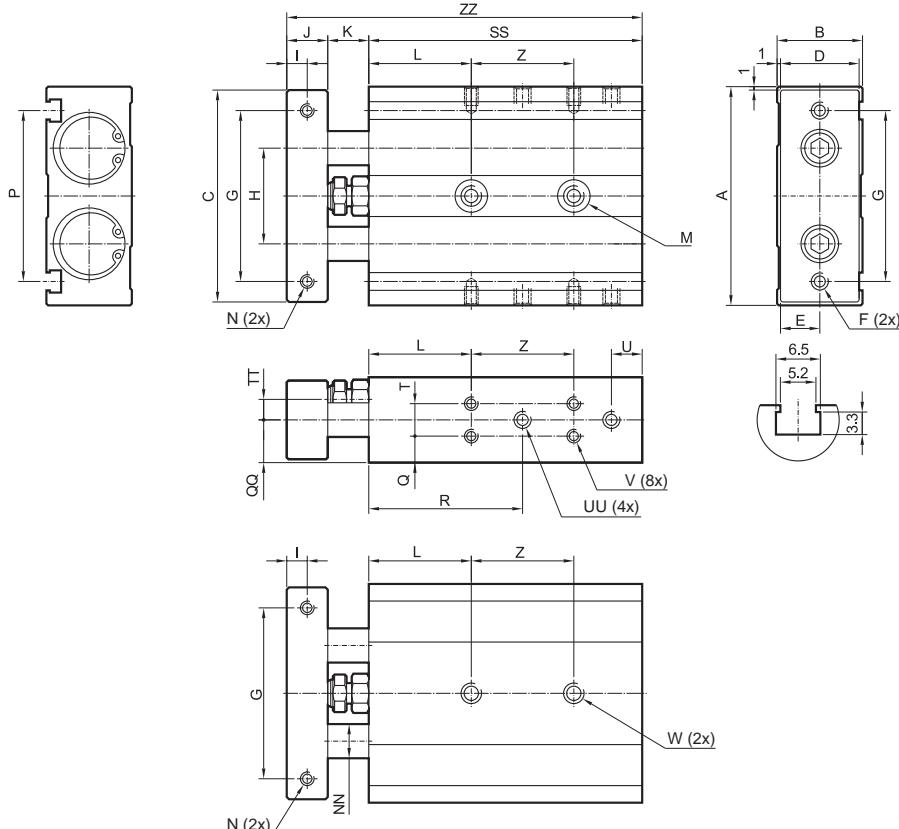
Twin rod compact guided cylinders

Bores from 6 to 32 mm

Standard dimensions



Type: GSB - GSS
(Bore Ø20 - Ø32)



\varnothing mm	A	B	C	D	E	F	G	H	I	J	K	L	M	N	NN (Ø)	P	Q	QQ	R	T	TT	U
20	64	25	62	23	11.5	M5	50	28	6	12	12	30	\varnothing 5.5 - \varnothing 9.5 depth 5.4	M4 depth 7.5dp	10	50	7.75	12.5	45	9.5	6	9
25	80	30	78	28	14	M6	60	35	6	12	12	30	\varnothing 6.8 - \varnothing 11 depth 6.3	M5 depth 7.5dp	12	60	8.5	15	44.5	13	9	10
32	98	38	96	36	18	M6	75	44	8	16	14	30	\varnothing 6.8 - \varnothing 11 depth 6.3	M5 depth 10dp	16	74	9	19	52.5	20	11	12

\varnothing mm	UU	V	W	Stroke = 10			Stroke = 15			Stroke = 20			Stroke = 25			Stroke = 30			Stroke = 35			Stroke = 40		
				SS	Z	ZZ																		
20	M5	M4 depth 5.5	M6 depth 10dp	80	30	104	85	30	109	90	30	114	95	30	119	100	40	124	105	40	129	110	40	134
25	1/8 gas	M5 depth 7.5	M8 depth 16dp	82	30	106	87	30	111	92	30	116	97	30	121	102	40	126	107	40	131	112	40	136
32	1/8 gas	M5 depth 7.5	M8 depth 16dp	92	40	122	97	40	127	102	40	132	107	40	137	112	50	142	117	50	147	122	50	152

\varnothing mm	Stroke = 45			Stroke = 50			Stroke = 60			Stroke = 70			Stroke = 75			Stroke = 80			Stroke = 90			Stroke = 100			Stroke = 125			Stroke = 150		
	SS	Z	ZZ	SS	Z	ZZ	SS	Z	ZZ																					
20	115	40	139	120	40	144	130	60	154	140	60	164	145	60	169	150	60	174	160	60	184	170	60	194	195	85	219	220	85	244
25	117	40	141	122	40	146	132	60	156	142	60	166	147	60	171	152	60	176	162	60	186	172	60	196	197	85	221	222	85	246
32	127	50	157	132	50	162	142	70	172	152	70	182	157	70	187	162	70	192	172	70	202	182	70	212	207	95	237	232	95	262

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



1

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

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

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

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 switches can be fixed by a bracket or directly in the tube; the reed switch will not protrude out the barrel profile.

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.

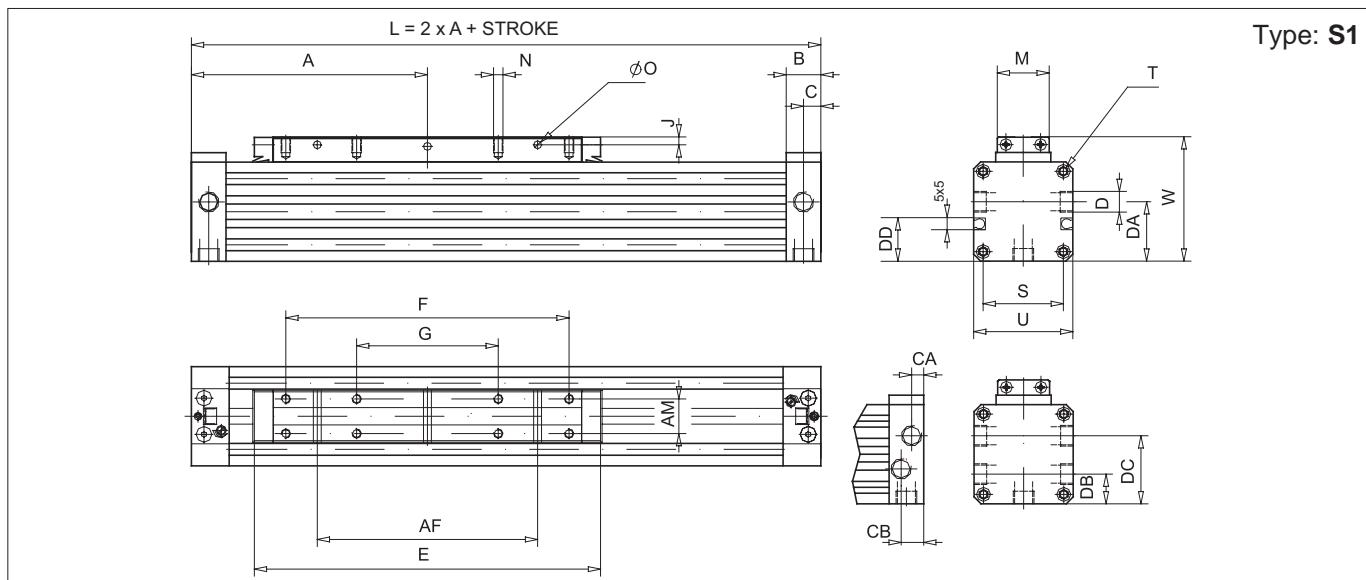
For the magnetic reed switches ASV-ASC see page 1.26.40.
For mounting accessories see from page 1.26.28.

How to order: 32 / 1000 S1U

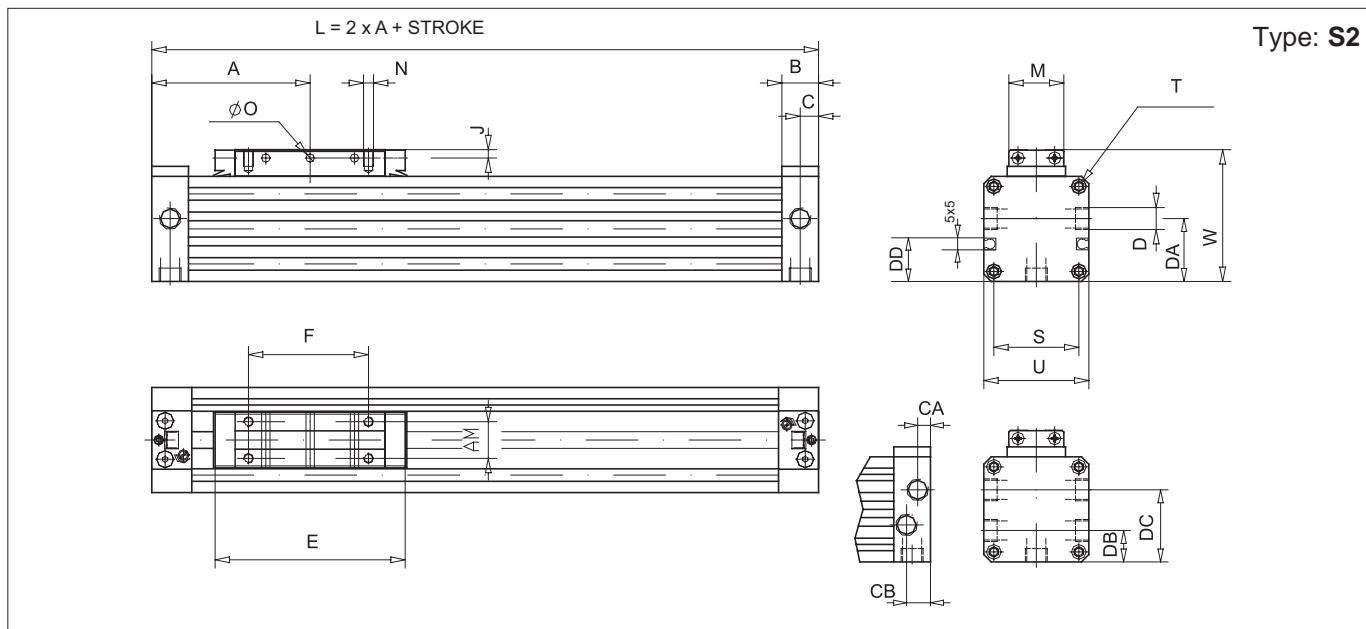
32	/	1000	S1	U
Bore	/	Stroke	Type	Option

Technical data				
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.			
Pressure	1,5 ÷ 9 bar			
Temperature range	-10 °C ÷ + 70°C			
Materials	Heads: Tube: Seals: Internal strip: External strip: Raschiapolvere:	Anodised aluminium Anodised aluminium Polyurethane - Piston: monobloc/yoke: Aluminium Nylon Stainless steel AISI 304 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	from 10 to 6000	9000	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



\varnothing mm	A	AF	AM	B	C	CA	CB	D	DA	DB	DC	DD	E	F	FE	G	J	M	N	\varnothing O	\square S	T	\square U	W
18	80	50	10	16,5	6,5	-	-	M7x1/6	15,5	-	-	-	103	75	90	-	3	15,5	M3x6	3,5	23,5	M3x7	30	39
25	100	70	13	20	8,5	7	13	G1/8x8	25,5	14	28	18,5	131	100	116	50	3,5	20	M4x7	4,5	33	M4x9	42	53
32	120	100	16	20	8,5	7	13	G1/8x8	32	16	34,5	21	171	140	156	70	4,5	25	M5x9	5,5	41	M5x10	52	65
40	150	140	22	23	13	11	14,5	G1/4x12	37,5	18,5	41	29,5	220	180	200	90	5	33	M6x10	7	51	M6x12	63	79
50	180	180	29	23	13	12	14	G1/4x12	47,5	22,5	47,5	37	280	220	260	110	6,5	42	M8x12,5	7	63	M8x12	78	96
63	215	230	40	29	13	12,5	15,5	G3/8x12	59,5	24,5	59,5	44,5	333	280	313	140	8	54	M8 x 15	9	78	M8x12	93	113,5



\varnothing mm	A	AF	AM	B	C	CA	CB	D	DA	DB	DC	DD	E	F	FE	G	J	M	N	\varnothing O	\square S	T	\square U	W
18	57,5	15	10	16,5	6,5	-	-	M7x1/6	17,5	-	-	-	58	30	45	3	15,5	M3x6	3,5	23,5	M3x7	30	39	
25	67,5	19	13	20	8,5	7	13	G1/8x8	25,5	14	28	18,5	66	35	51	3,5	20	M4x7	4,5	33	M4x9	42	53	
32	77,5	35	16	20	8,5	7	13	G1/8x8	32	17,5	34,5	21	86	55	71	4,5	25	M5x9	5,5	41	M5x10	52	65	
40	95	50	22	23	13	9,5	14,5	G1/4x12	37,5	20	42	29,5	110	70	90	5	33	M6x10	7	51	M6x12	63	79	
50	105	46	29	23	13	9,5	14,5	G1/4x12	47,5	26	52	37	130	70	110	6,5	42	M8x12,5	7	63	M8x12	78	96	
63	125	70	40	29	13	11	18,5	G3/8x12,5	59,5	30	62	44,5	153	100	133	8	54	M8x15	9	78	M8x12	93	113,5	

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



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).

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

For seal kits see from page 1.26.21.

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 switches can be fixed by a bracket or directly in the tube; the reed switch will not protrude out the barrel profile. 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.

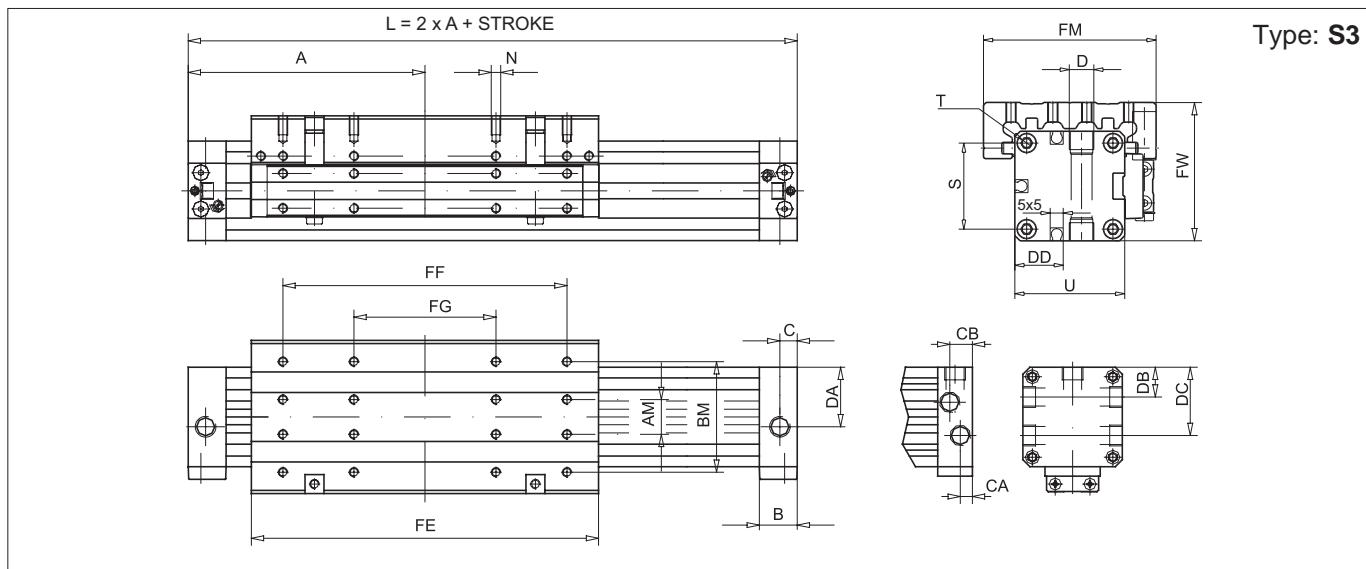
For the magnetic reed switches ASV-ASC see page 1.26.40.
For mounting accessories see from page 1.26.28.

How to order: 50 / 1000 S6U

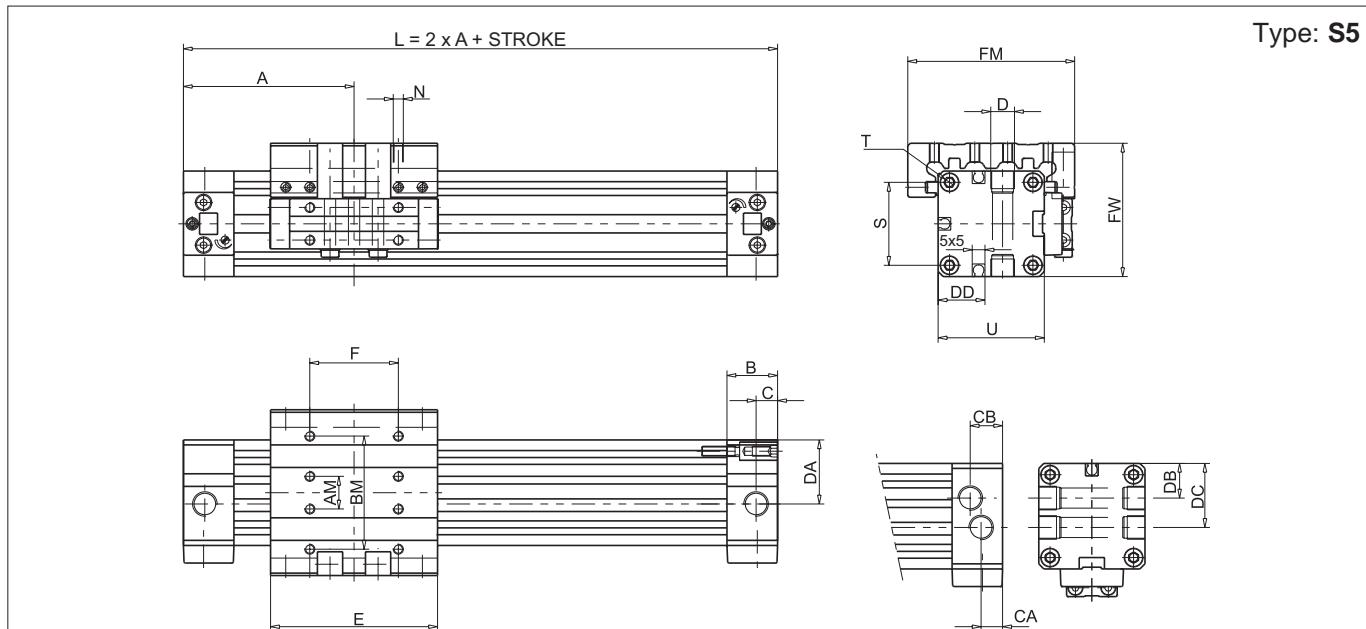
50	/	1000	S6	U
Bore	/	Stroke	Type	Option

Technical data	
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.
Pressure	2 ÷ 8 bar
Temperature range	-20 °C ÷ + 80°C
Materials	Heads: Anodised aluminium Tube: 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 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

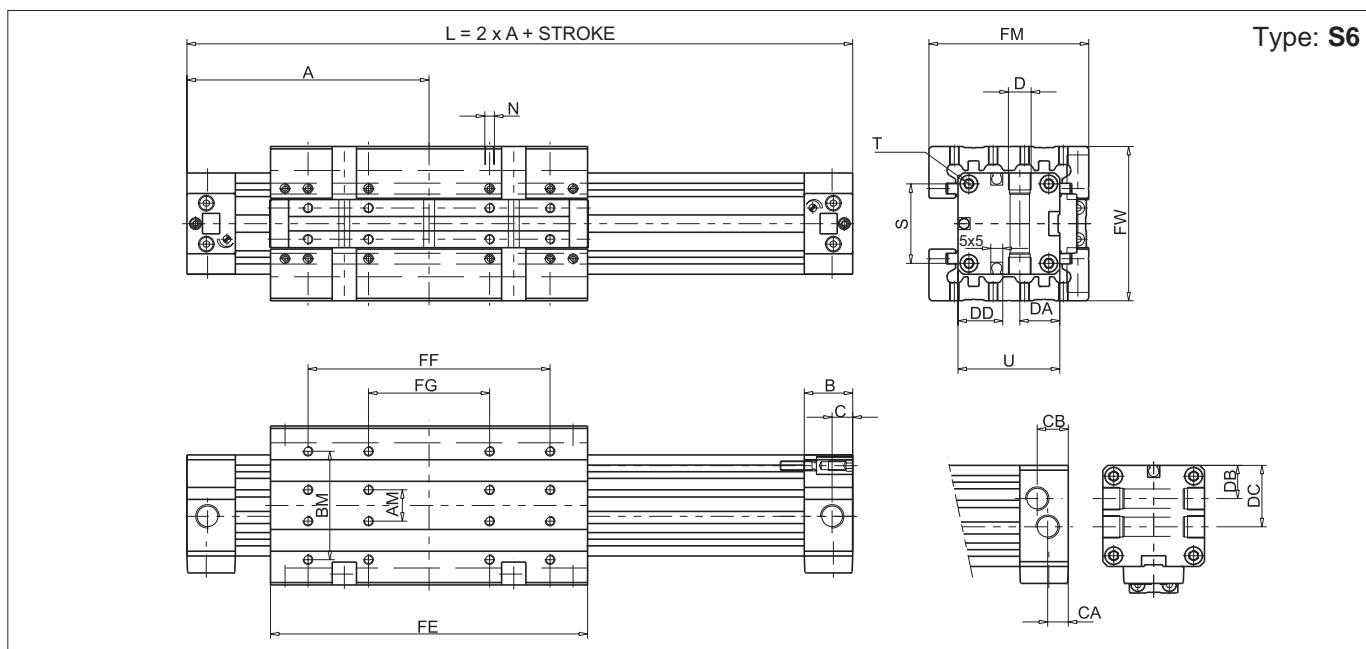


\varnothing mm	A	AM	B	BM	C	CA	CB	D	DA	DB	DC	DD	FE	FF	FG	FM	FW	N	\square S	T	\square U
18	80	10	16,5	35	6,5	-	-	M7x1/6	17,5	-	-	-	103	75	-	50	39	M4x7,5	23,5	M3x7	30
25	100	13	20	45	8,5	7	13	G1/8x8	25,5	14	28	18,5	131	100	50	66	53	M4x8	33	M4x9	42
32	120	16	20	55	8,5	7	13	G1/8x8	32	17,5	34,5	21	171	140	70	80	65	M5x10	41	M5x10	52
40	150	22	24	70	13	9,5	14,5	G1/4x12	37,5	20	42	29,5	220	180	90	97	79	M6x12	51	M6x12	63
50	180	29	24	85	13	9,5	14,5	G1/4x12	47,5	26	52	37	280	220	110	116	96	M8x16	63	M8x12	78
63	215	40	30	105	13	11	18,5	G3/8x12	59,5	30	62	44,5	333	280	140	136	113,5	M8x16	78	M8x12	93

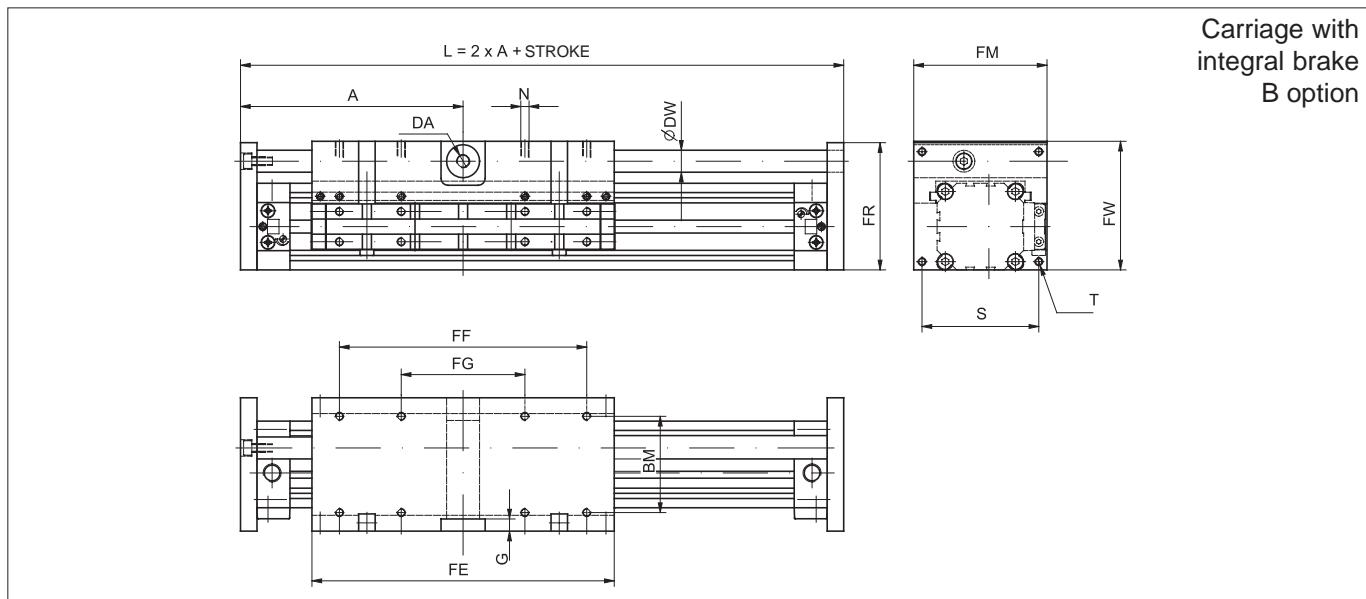


\varnothing mm	A	AM	B	BM	C	CA	CB	D	DA	DB	DC	DD	E	F	FM	FW	N	\square S	T	\square U
18	57,5	10	16,5	35	6,5	-	-	M7x1/6	17,5	-	-	15	58	30	50	39	M4x7,5	23,5	M3x7	30
25	67,5	13	20	45	8,5	7	13	G1/8x8	25,5	14	28	21	66	35	66	53	M4x8	33	M4x9	42
32	77,5	16	20	55	8,5	7	13	G1/8x8	32	17,5	34,5	26	86	55	80	65	M5x10	41	M5x10	52
40	95	22	24	70	13	9,5	14,5	G1/4x12	37,5	20	42	31,5	110	70	97	79	M6x12	51	M6x12	63
50	105	29	24	85	13	9,5	14,5	G1/4x12	47,5	26	52	39	130	70	116	96	M8x16	63	M8x12	78
63	125	40	30	105	13	11	18,5	G3/8x12,5	59,5	30	62	46,5	153	100	136	113,5	M8x16	78	M8x12	93

Type: S6



\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	-	-	M7x1/6	17,5	-	-	-	103	75	--	50	48	M4x7,5	23,5	M3x7	30
25	100	13	20	45	8,5	7	13	G1/8x8	25,5	14	28	18,5	131	100	50	66	64	M4x8	33	M4x9	42
32	120	16	20	55	8,5	7	13	G1/8x8	32	17,5	34,5	21	171	140	70	80	78	M5x10	41	M5x10	52
40	150	22	24	70	13	9,5	14,5	G1/4x12	37,5	20	42	29,5	220	180	90	97	95	M6x12	51	M6x12	63
50	180	29	24	85	13	9,5	14,5	G1/4x12	47,5	26	52	37	280	220	110	116	114	M8x16	63	M8x12	78
63	215	40	30	105	13	11	18,5	G3/8x12	59,5	30	62	44,5	333	280	140	136	134	M8x16	78	M8x12	93



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

Notes

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



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 switches can be fixed by a bracket or directly in the tube; the reed switch will not protrude out the barrel profile.
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.

Options	Suffix
Special versions on request	/ S

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

For seal kits see from page 1.26.21.

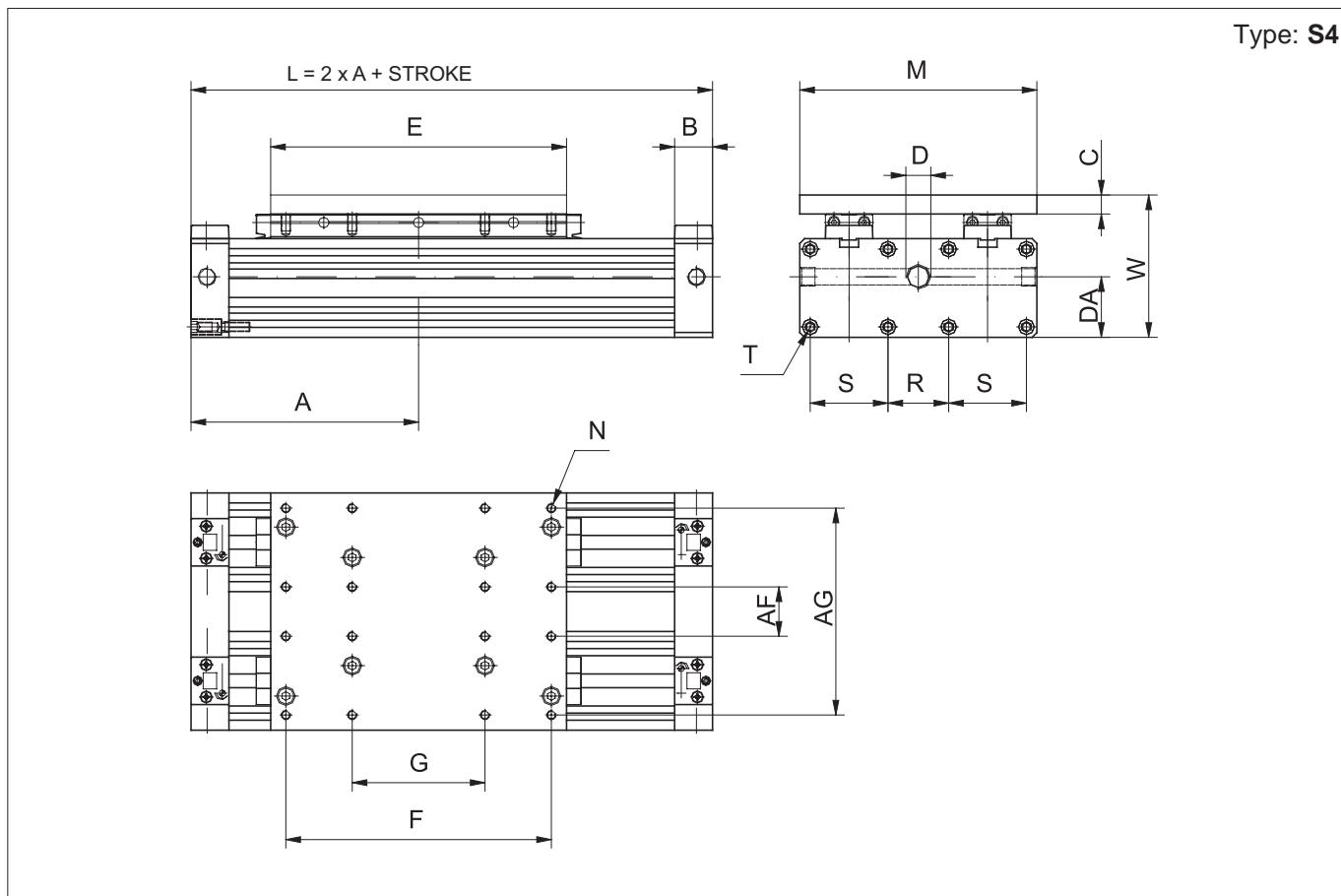
For the magnetic reed switches ASV-ASC see page 1.26.40.
For mounting accessories see from page 1.26.28.

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 started, must be continued.
Pressure	2 ÷ 8 bar
Temperature range	-20 °C ÷ + 80°C
Materials	Heads: Anodised aluminium Tube: 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



\varnothing mm	A	B	C	D	DA	E	F	G	AF	AG	M	N	R	S	T	W
25	100	20	8	G1/4–11,7	25,5	116	100	50	21	79	92	M4	17	33x33	M4x9	61
32	120	20	10	G1/4–11,7	40	156	140	70	26	109	125	M5	32	41x41	M5x10	75
40	150	24	12	G3/8–11,7	47	200	180	90	35	133	153	M6	45	51x51	M6x12	91
50	180	24	15	G3/8–11,7	59	260	220	110	44	164	184	M8	43	63x63	M8x12	111
63	215	30	15	G1/2–13	71	313	280	140	55	195	218	M8	47	78x78	M8x12	128,5

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	•	•	•	•	•	•
Lateral wiper rings	2	•	•	•	•	•	•
Piston seals	2	•	•	•	•	•	•
Cushionings seals	2	•	•	•	•	•	•
Heads O-ring	2	•	•	•	•	•	•
Cushioning pin O-ring	2	•	•	•	•	•	•
▲ Internal strip	1	•	•	•	•	•	•
▲ External strip	1	•	•	•	•	•	•
▲ Internal seals (between the strip and the tube)	2	•	•	•	•	•	•
Teflon slides for guide	2			•		I	•

* 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	/	Stroke cylinder	/	Seal kit	/	Type	Option

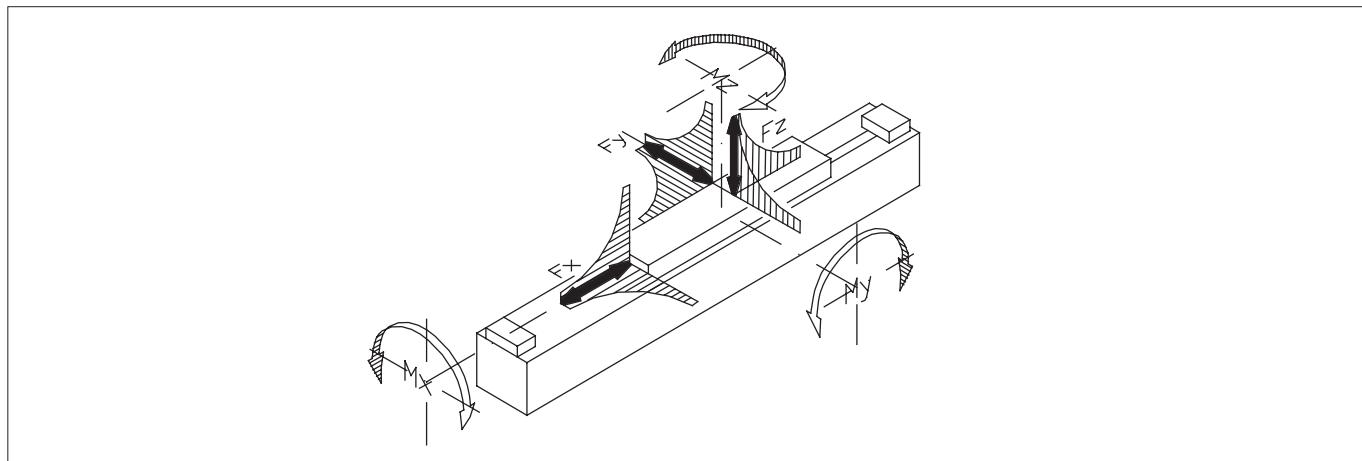
▲ The length is according to the stroke of the cylinder.

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.

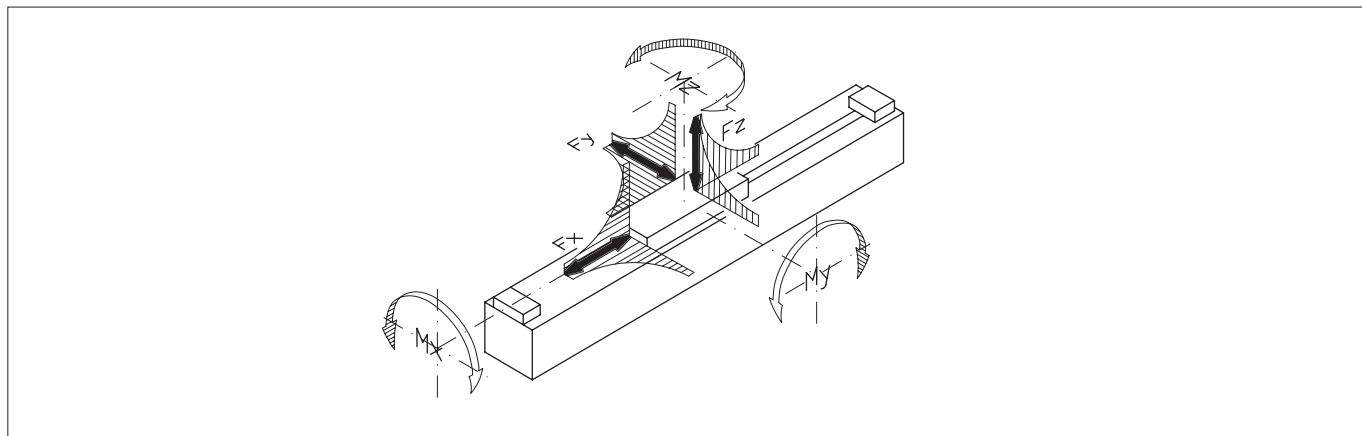
Higher speeds reduce the admissible forces.

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.



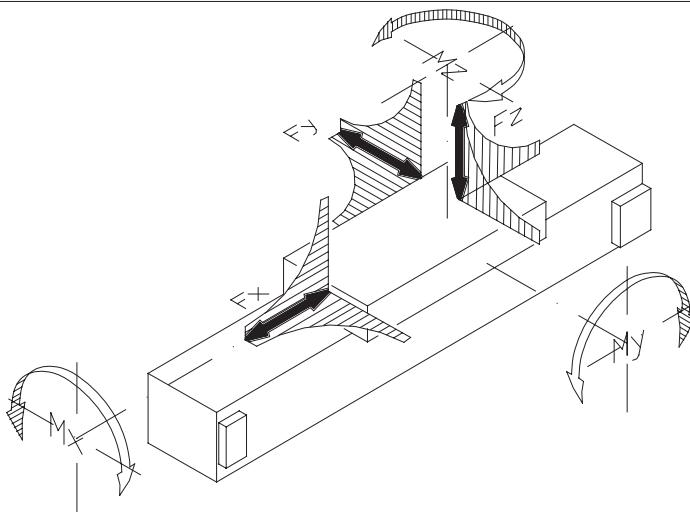
Type: S1

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



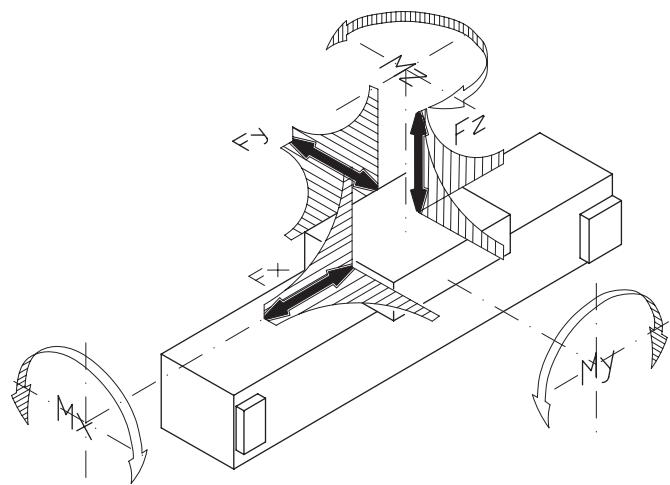
Type: S2

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



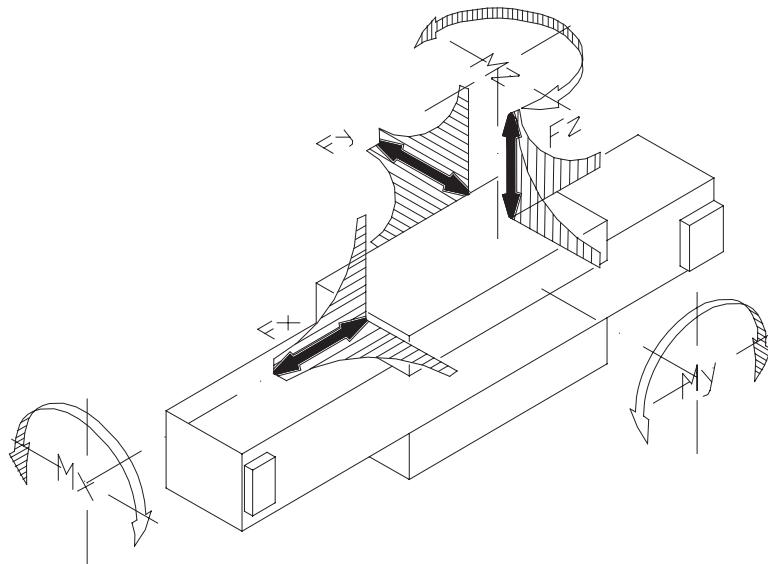
Type: S3

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	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



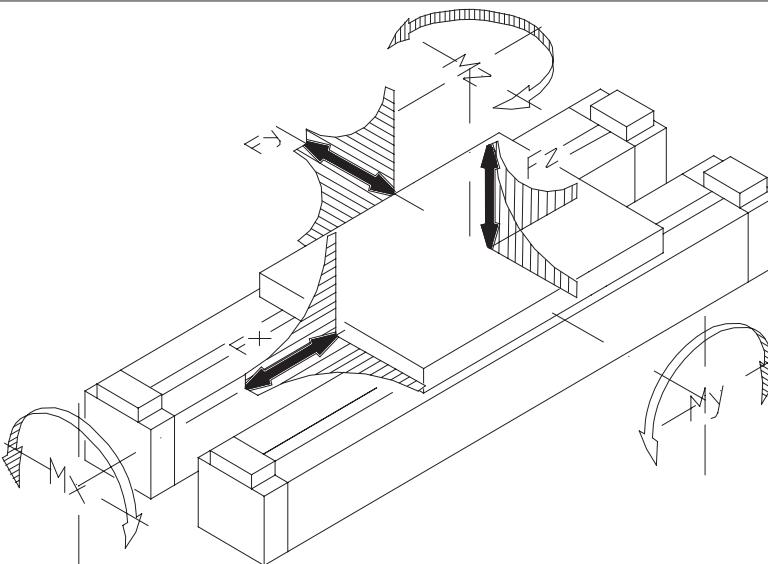
Type: S5

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	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



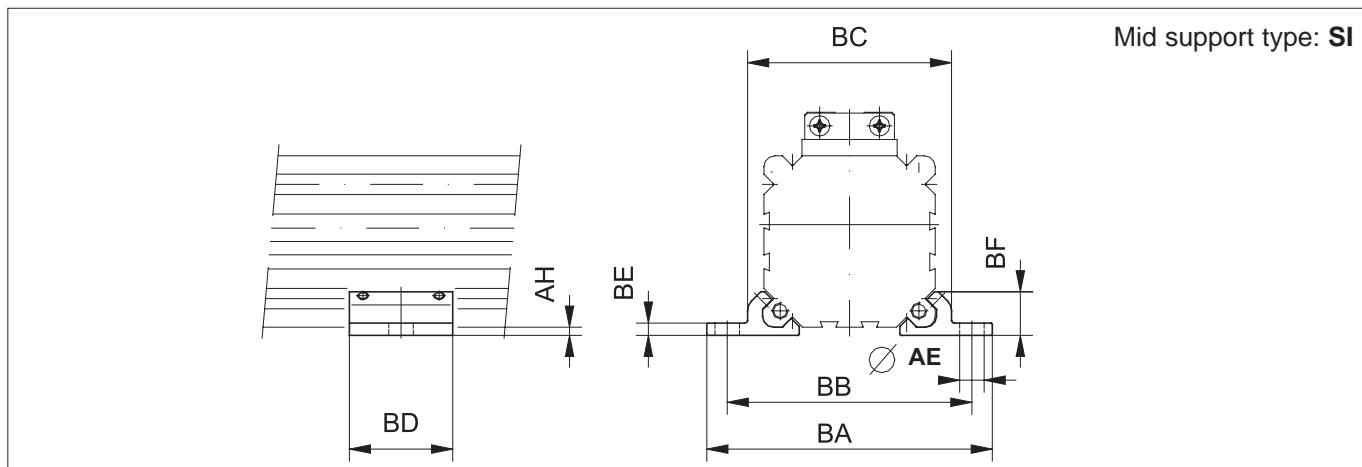
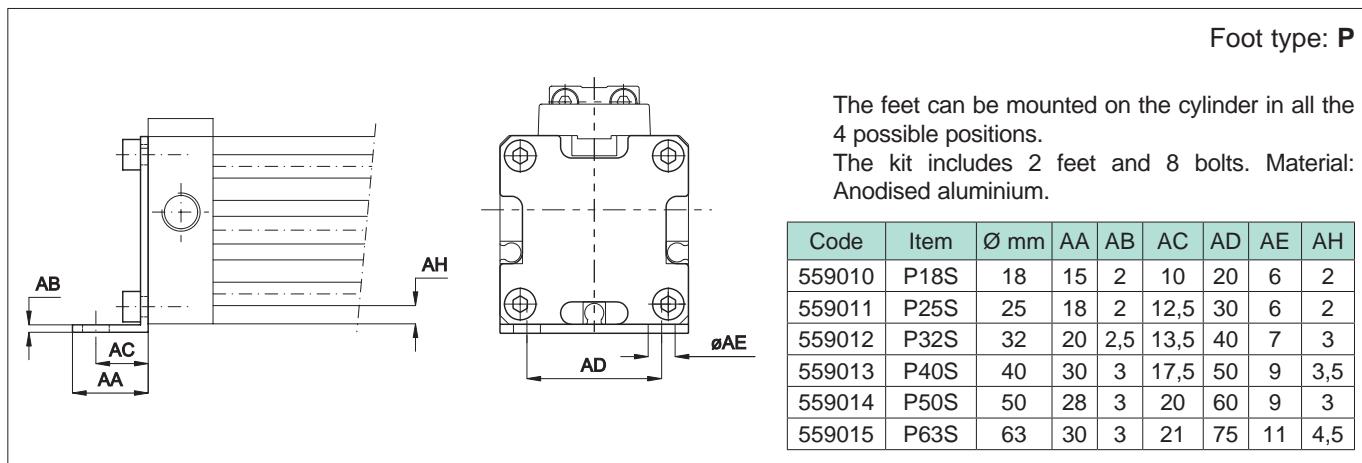
Type: S6

∅ 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



The mid support must be used in case of deflection of the cylinder (see page 1.26.40).

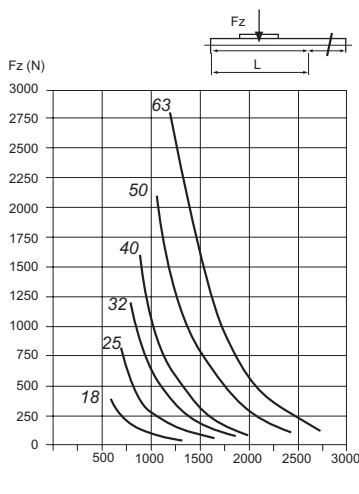
The mid support can be used instead of the foot. It is advisable to install it at the end of the cylinder and to secure it against any sideways drift of the cylinder by means of 2 bolts with washers that are screwed in at the front.

The kit includes 2 mid supports and 8 bolts. Material: Anodised aluminium.

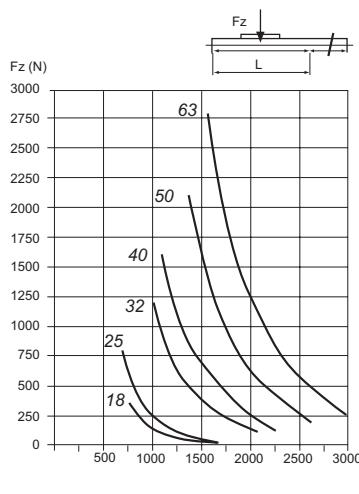
Code	Item	Ø mm	AE Ø	AH	BA	BB	BC	BD	BE	BF
559020	SI18S	18	6	2	56	46	36,5	23	2,5	8,25
559021	SI25S	25	6	2	70	60	50	28	3,5	11
559022	SI32S	32	7	3	85	73	61,5	33	4	13,8
559023	SI40S	40	9	3	105	90	75	38	4,5	16
559024	SI50S	50	9	3	122	106	91	43	5	19
559025	SI63S	63	11	4,5	144	125	107	48	6	22

Maximum admissible deflections

Fz at deflection of 0,5 mm.



Fz at deflection of 1 mm.

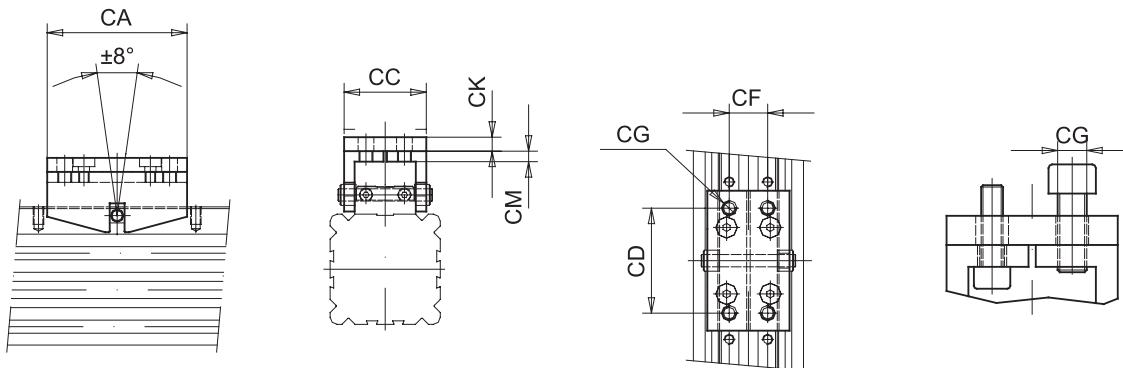


With cylinders of long strokes or heavy loads, you should pay attention to the tube deflection.
One or more mid supports can be used according to the amount of deflection.

Example:

When applying a force Fz 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).

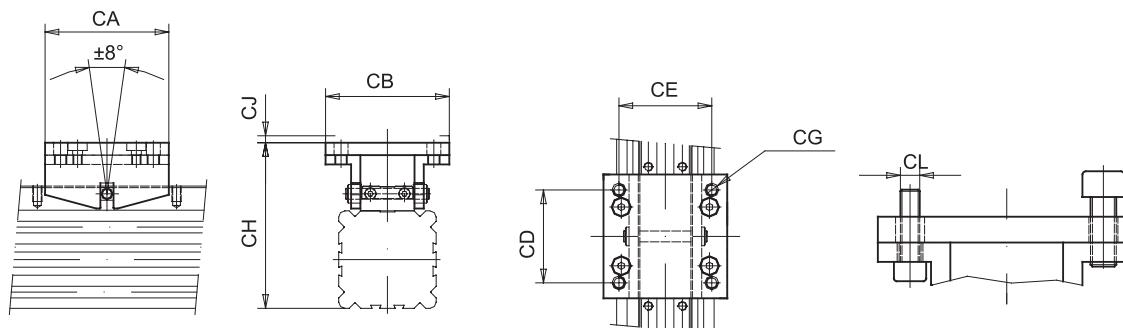
Light flexible coupling type: CL



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.

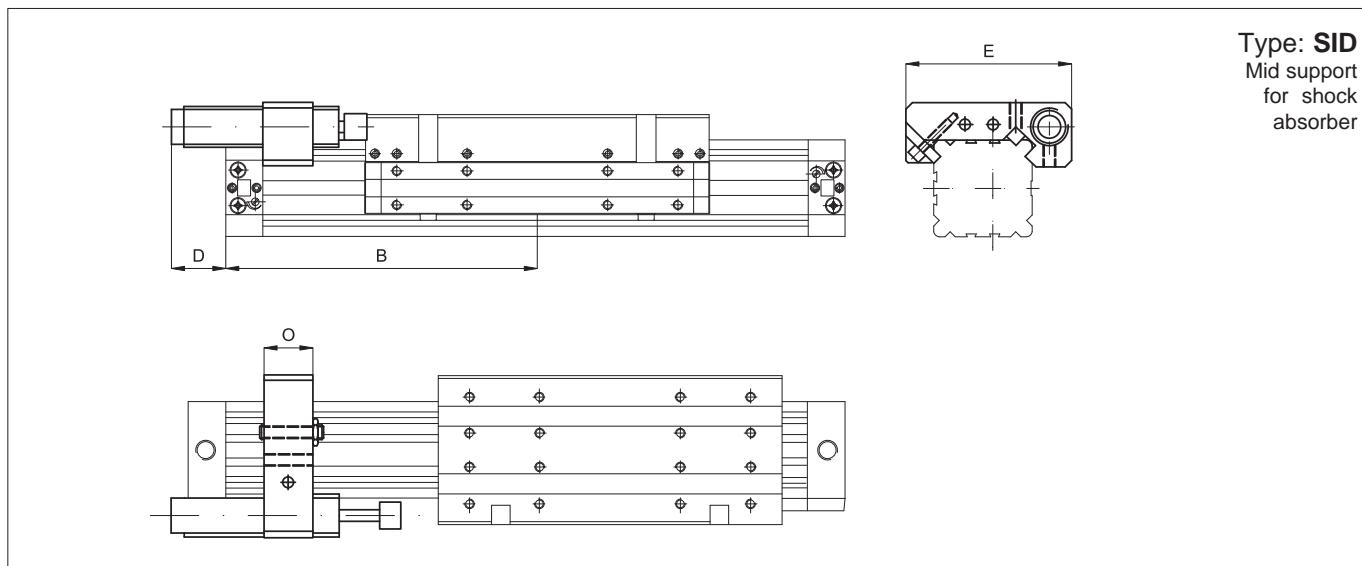
Code	Item	\varnothing mm	CA	CC	CD	CF	CG	CK	CM
559038	CL18S	18	50	25,5	30	9	M5	4	4
559037	CL25S	25	60	30	40	14	M5	4	4
559032	CL32S	32	70	37	50	16	M6	6	6
559033	CL40S	40	80	47	60	22	M8	8	8
559034	CL50S	50	90	56	70	30	M8	8	8
559035	CL63S	63	100	73	80	40	M10	8	8

Heavy flexible coupling type: C

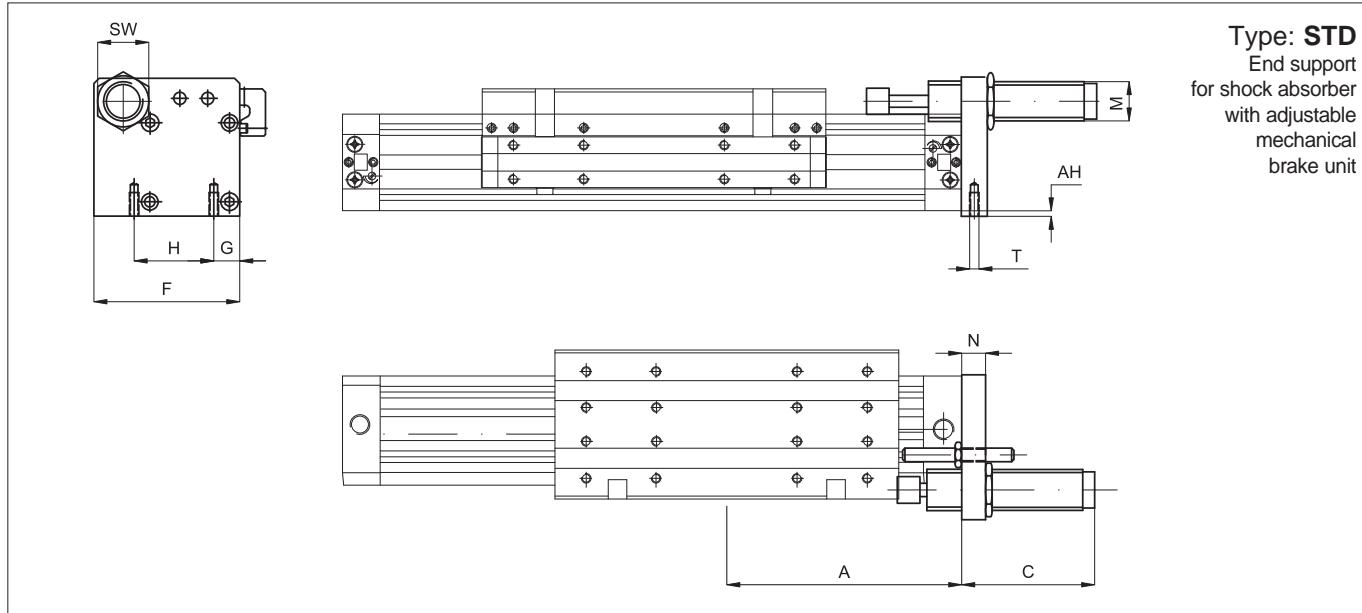


The heavy flexible coupling works as the light ones but can be used with higher forces.
The kit includes 1 flexible coupling, 1 pin, 1 seeger, 2 distancers. Material: Anodised aluminium.

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

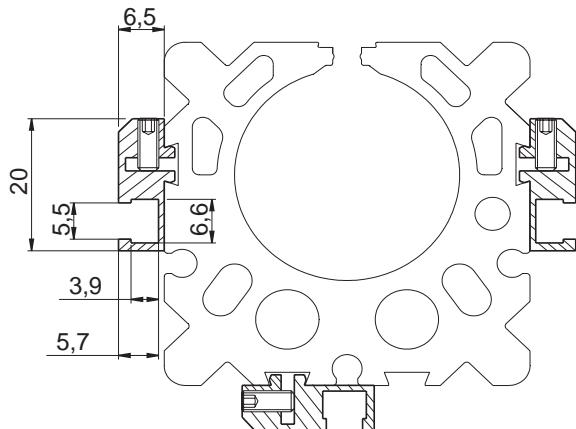


Code	Item	\varnothing mm	B		AH	D max	E	M	O
			S_3	S_5					
559060	SID18S	18	113	90,5	2	25	57	M10x1	15
559061	SID25S	25	117,5	85	2	40	72	M14x1,5	20
559062	SID32S	32	135,5	90	3	30	84	M14x1,5	20
559063	SID40S	40	165	110	3	50	105	M25x1,5	30
559064	SID50S	50	195	140	3	65	126	M25x1,5	30
559065	SID63S	63	250	160	4,5	75	140	M25x1,5	40

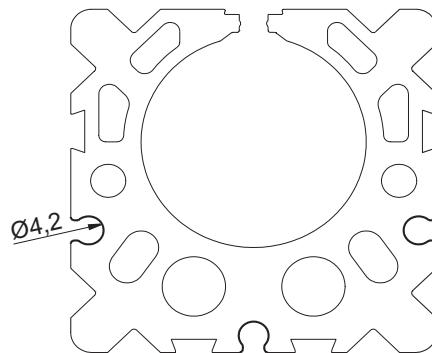


Code	Item	\varnothing mm	A		AH	C	F	G	H	N	SW	T
			S_3	S_5								
559070	STD18S	18	80	57,5	2	32	43,5	8	23,5	8	13	M3x10
559071	STD25S	25	100	67,5	2	37	57	12,5	33	10	17	M4x10
559072	STD32S	32	120	77,5	3	70	70	14,5	41	12	17	M5x12
559073	STD40S	40	150	95	3	65	93	16	51	15	32	M6x15
559074	STD50S	50	180	105	3	80	102	22,5	63	15	32	M8x20
559075	STD63S	63	215	125	4,5	80	118,5	20	78	15	32	M8x20

Magnetic switch fixing



For magnetic switches type ASV
(see page 1.110.1)
use bracket AS109 (cod. 072916).



For magnetic switches type ASC
(see page 1.110.2)
direct mounting in the slot made in the tube.

Notes

Standard executions		
Version	Symbol	Type
Male pivot gear		CRTH
Double male pivot gear		CRTHD
Female pivot gear		CRTF



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.

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

How to order: 63 / 90° CRTH

Options	Suffix
Special versions on request	/ S

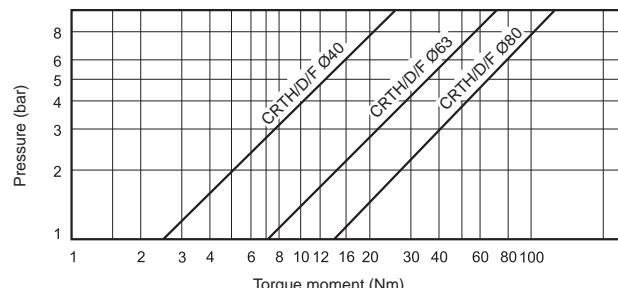
63	/	90°	CRTH	
Bores	/	Angles of rotation	Type	Option

Technical data					
Bores (mm)	40	63	80		
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous				
Angle of rotation	90° - 180°				
Adjustable angle	± 5°				
Rotating shaft diameter	16	24	28		
Pressure range	1.3 ÷ 7 bar				
Max allowable axial trust (max)	10	12	20		
Cushion angle	74°	75°	80°		
Temperature range	-10 °C ÷ + 60°C				
Weight (g)	CRTH	90°	3000	5400	9750
		180°	3100	5800	10300
	CRTHD	90°	3050	5550	9990
		180°	3150	5950	10540
	CRTF	90°	2840	5070	9990
		180°	2940	5470	9740

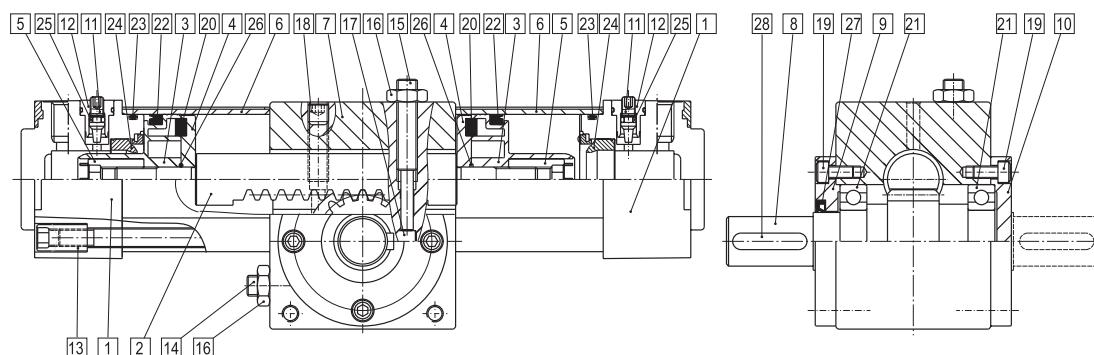
Air consumption for a complete cycle (litres/cycle)

Size	Rotation	Operating pressure (bar)									
		1	2	3	4	5	6	7	8	9	10
40	90°	0,1571	0,2352	0,3133	0,3915	0,4696	0,5477	0,6259	0,7040	0,7821	0,8603
	180°	0,3141	0,4704	0,6267	0,7829	0,9392	1,0955	1,2517	1,4080	1,5643	1,7205
63	90°	0,4383	0,6564	0,8744	1,0925	1,3105	1,5286	1,7466	1,9647	2,1828	2,4008
	180°	0,8766	1,3127	1,7488	2,1850	2,6211	3,0572	3,4933	3,9294	4,3655	4,8016
80	90°	0,8480	1,2698	1,6917	2,1135	2,5354	2,9572	3,3791	3,8009	4,2228	4,6447
	180°	1,6959	2,5396	3,3834	4,2271	5,0708	5,9145	6,7582	7,6019	8,4456	9,2893

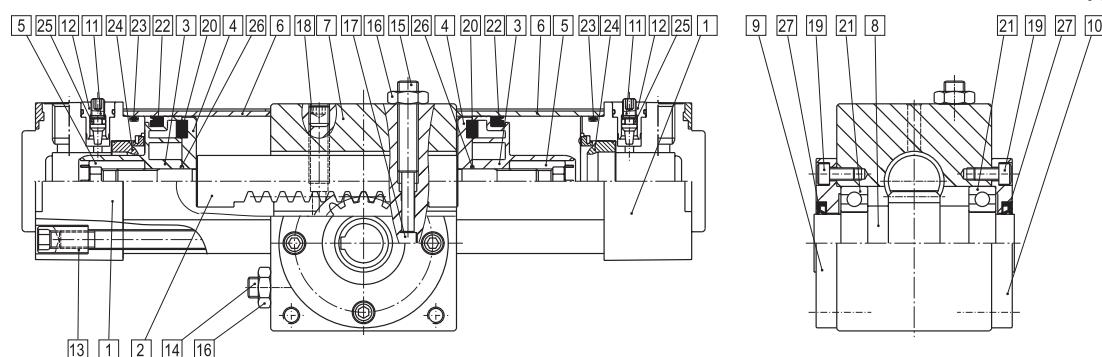
Output torque table



Type: CRTH - CRTHD

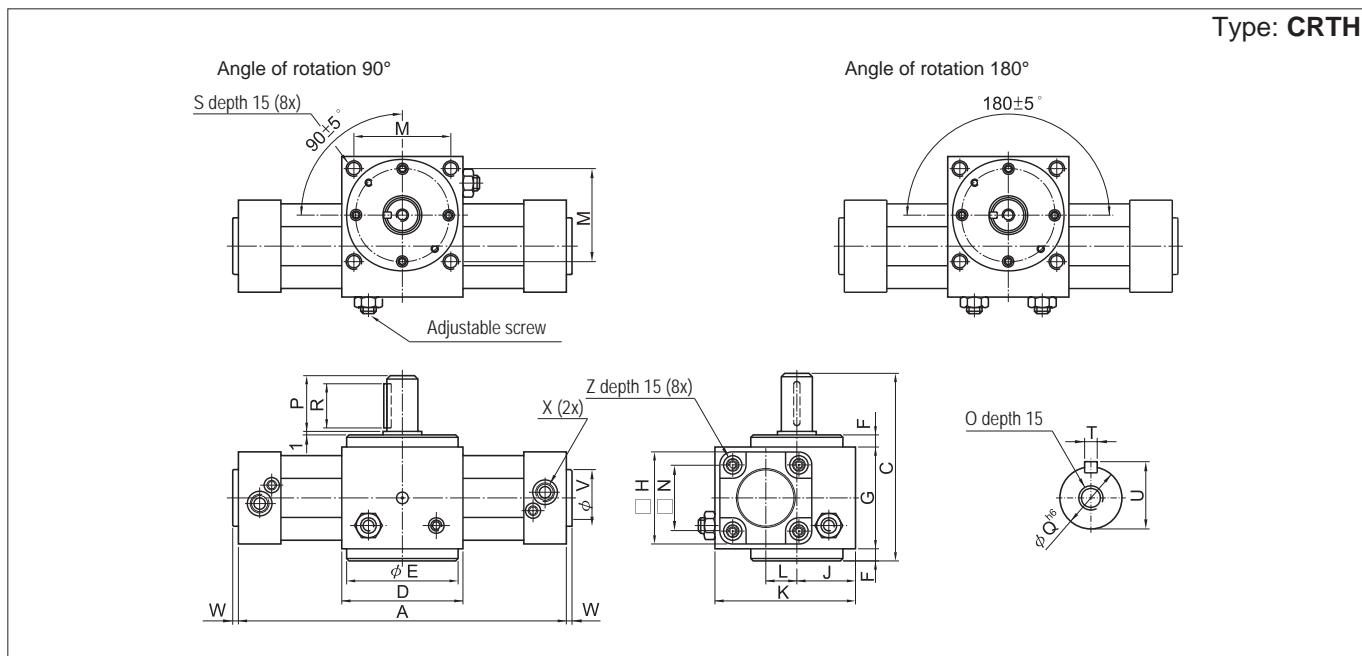


Type: CRTF

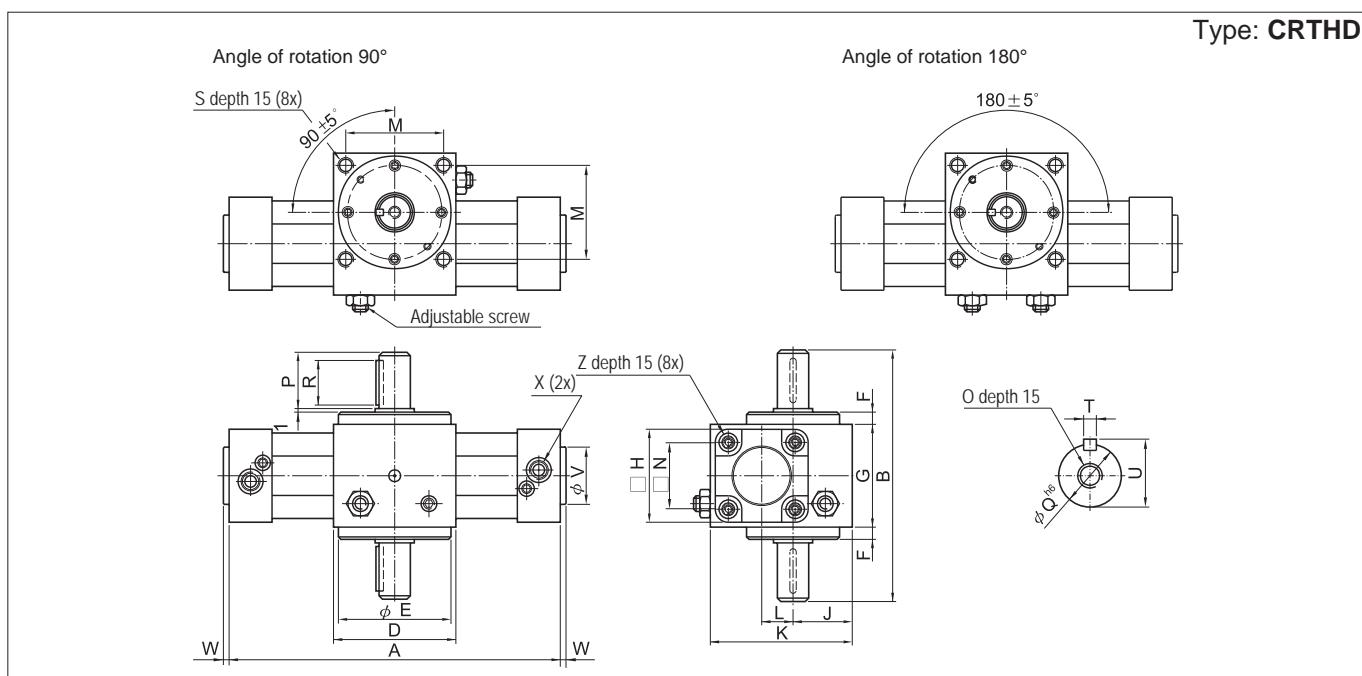


Materials (standard types)

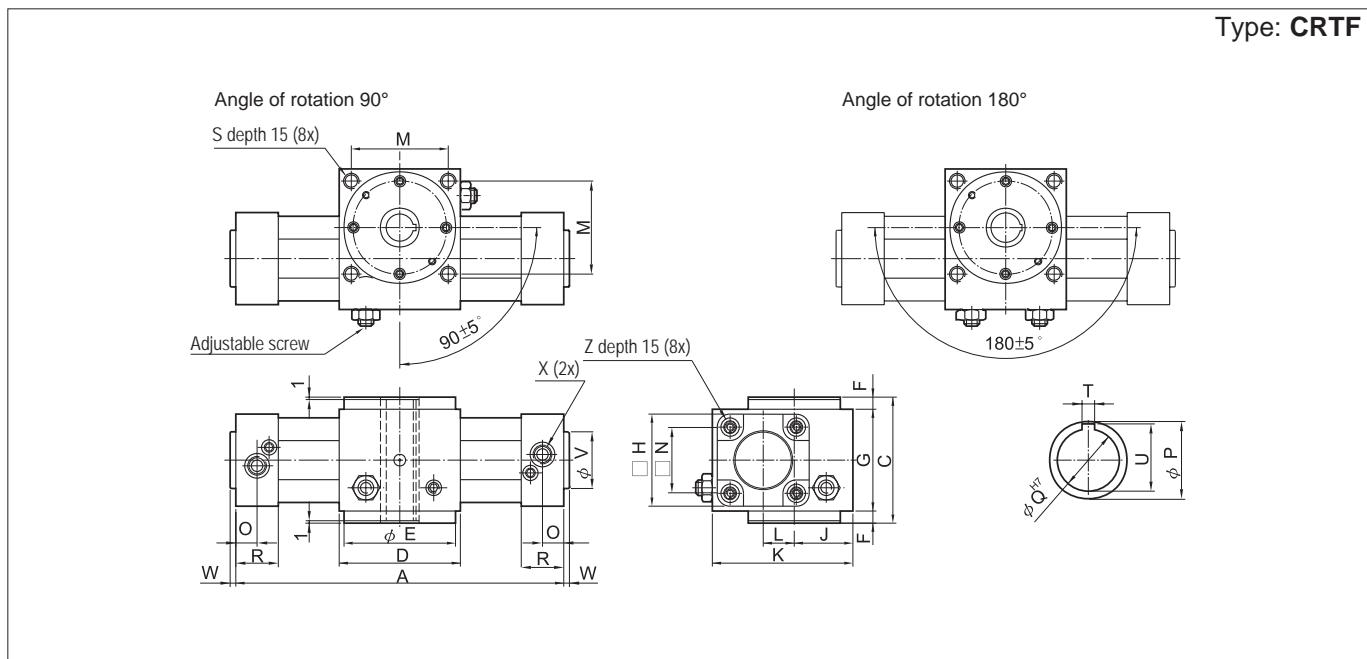
1 End cap	Hard anodised aluminium alloy	15 Adjusting screw	Carbon steel blackening
2 Rack	Carbon steel	16 Lock nut	Carbon steel
3 Piston	POM	17 Stopper pin	Carbon steel
4 Magnet holder	Hard anodised aluminium alloy	18 Set screw	Carbon steel blackening
5 Piston nut	Carbon steel	19 Screw	Carbon steel nickel plated
6 Cylinder tube	Hard anodised aluminium alloy	20 Magnet	Magnetic material
7 Housing	Hard anodised aluminium alloy	21 Ball bearing	Carbon steel
8 Pinion shaft	Carbon steel	22 Piston packing	NBR
9 End cover	Hard anodised aluminium alloy	23 Cylinder gasket	NBR
10 End cover	Hard anodised aluminium alloy	24 Cushion packing	NBR
11 Cushion needle	Stainless steel	25 O-ring	NBR
12 Cushion plug	Brass nickel plated	26 Piston gasket	NBR
13 Tie bolt	Carbon steel galvanized	27 Rod packing	NBR
14 Adjusting screw	Carbon steel blackening	28 Key	Carbon steel



Size	A		C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z
	90°	180°																						
40	263	326	112	75	72	8	65	53	37,5	93	27,5	60	38	M5	30	16	25	M6	5	18	35	4	1/4"	M6
63	306	377	138	90	82	10	75	75	42,5	110	30	70	56,5	M8	42	24	36	M8	8	27	45	5	3/8"	M8
80	343	428	170	105	96	12	95	95	51,5	135	36	82	72	M8	50	28	45	M10	8	31	45	6	3/8"	M10

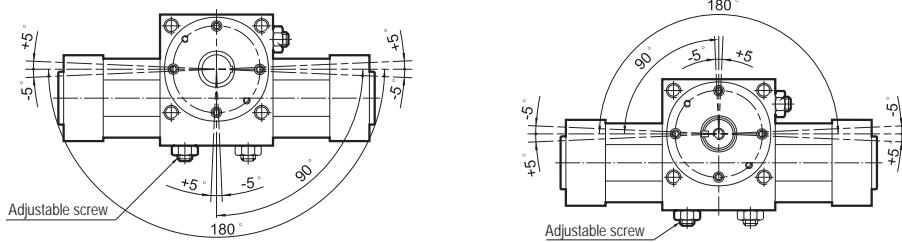


Size	A		B	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z
	90°	180°																						
40	263	326	143	75	72	8	65	53	37,5	93	27,5	60	38	M5	30	16	25	M6	5	18	35	4	1/4"	M6
63	306	377	181	90	82	10	75	75	42,5	110	30	70	56,5	M8	42	24	36	M8	8	27	45	5	3/8"	M8
80	343	428	221	105	96	12	95	95	51,5	135	36	82	72	M8	50	28	45	M10	8	31	45	6	3/8"	M10



Size	A		C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z
	90°	180°																						
40	263	326	81	75	72	8	65	53	37,5	93	27,5	60	38	15	25	14	30	M6	5	16,5	35	4	1/4"	M6
63	306	377	95	90	82	10	75	75	42,5	110	30	70	56,5	16	30	19	32	M8	6	22	45	5	3/8"	M8
80	343	428	119	105	96	12	95	95	51,5	135	36	82	72	19	35	24	38	M10	6	27,5	45	6	3/8"	M10

Rotating direction and adjustable angle



Standard executions		
Version	Symbol	Type
Standard		ARTM
Flanged		ARTMF
Magnetic		ARTMC
Flanged magnetic		ARTMFC
Standard with adjustable angle		ARTML
Flanged with adjustable angle		ARTMFL
Magnetic with adjustable angle		ARTMLC
Flanged magnetic with adjustable angle		ARTMFLC



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.

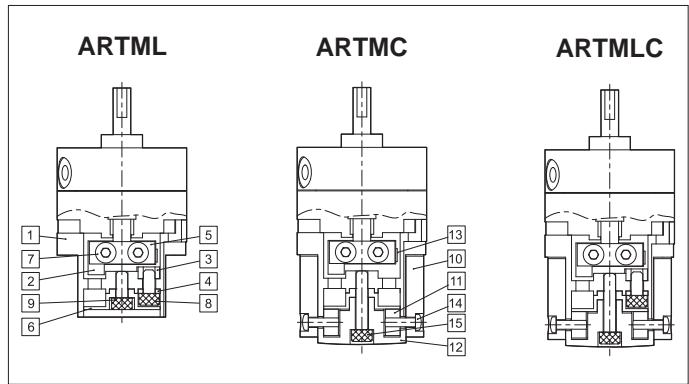
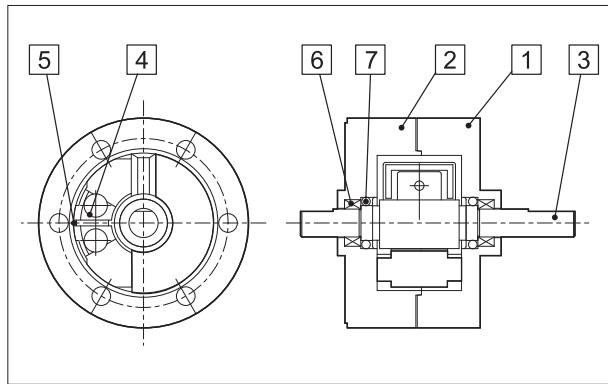
For the magnetic reed switches type ASC see from page 1.110.2.

How to order: 15 / 90° ARTML

Options	Suffix
Special versions on request	/ S

15	/	90°	ARTML
Size	/	Rotation	Type

Technical data					
Size	10	15	20	30	40
Bores	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10
Fluid	Compressed filtered air with or without lubrication. Lubrication, if be used, must be continuous				
Pressure range	1,5 ÷ 7 bar				
Temperature range	0° C ÷ + 50° C				
Rotation angle	90° - 180° - 270°				
Torque moment (Nm) at 6 bar	0,14	0,38	0,78	1,8	3,8
Ports	M5				
Weight (g)	ARTM-ARTML	28	48	112	200
	ARTMF-ARTMFL	41	70	138	268
	ARTMC-ARTMLC	78	116	240	390
	ARTMFC-ARTMFLC	91	138	266	468
					700



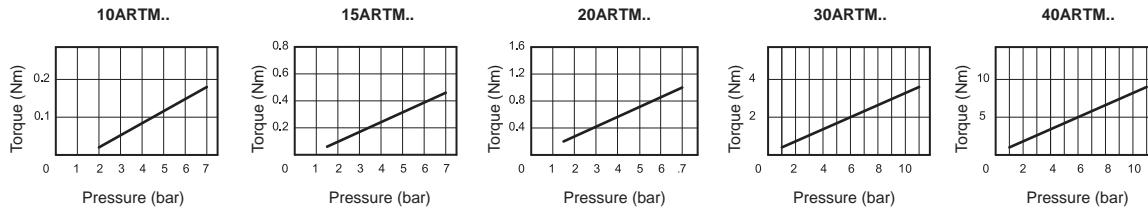
Materials (standard types)

[1] Front cover	Aluminium alloy
[2] End cover	Aluminium alloy
[3] Rod	Steel alloy
[4] Stopper	Plastic - Steel
[5] O-ring	Nitrilic rubber NBR
[6] Bearing	Steel
[7] O-ring	Nitrilic rubber NBR

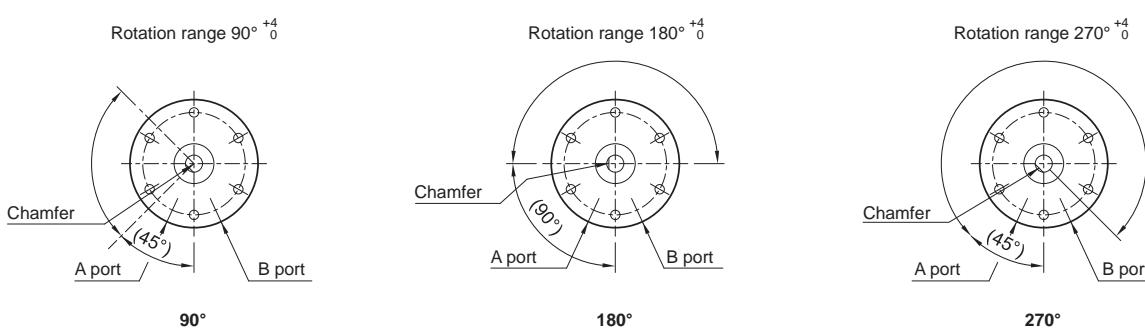
Materials (standard types)

[1] Position base	Zinc alloy
[2] Position lump	Stainless steel
[3] Angle location lump	Steel
[4] Angle location slice	Steel
[5] Lump	Stainless steel
[6] End cover	Aluminium
[7] Screw	Steel alloy
[8] Screw	Steel alloy
[9] Screw	Steel alloy
[10] Mounting base	Aluminium alloy
[11] Base and lump	Aluminium alloy
[12] End cover	Aluminium alloy
[13] Magnet	TME
[14] Screw	Steel alloy
[15] Screw	Steel alloy

Output torque table



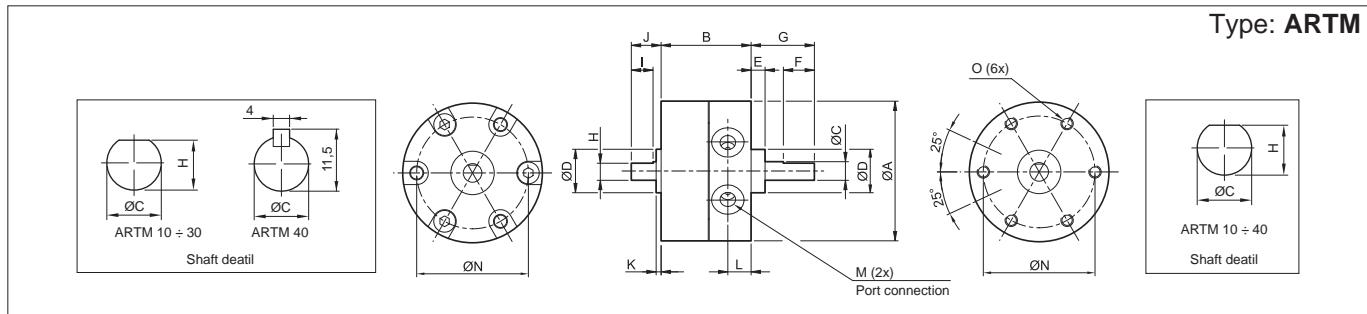
Rotation angle



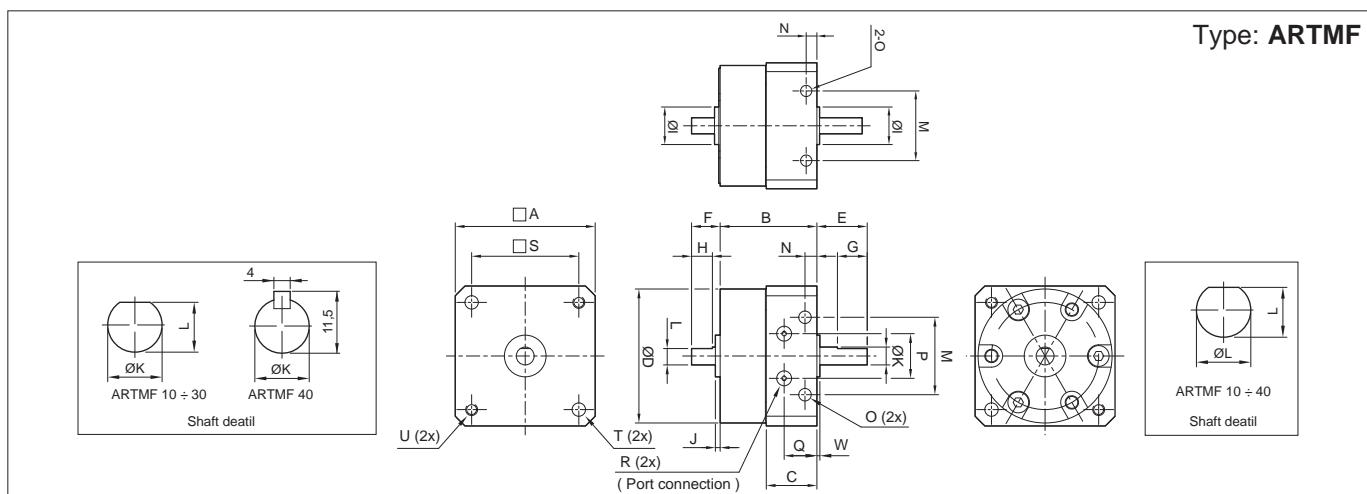
Hi-Rotary Cylinders

Bores 4, 5, 6, 8, 10 mm

Standard dimensions



Item	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
10/90ARTM															
10/180ARTM	30	17	4	9	3	9	14	3,5	5	8	1	4,2	M5x0,8p	24	M3x0,5p
10/270ARTM															
15/90ARTM															
15/180ARTM	35	20,1	5	12	4	10	18	4,5	6	9	1,5	5	M5x0,8p	29	M3x0,5p
15/270ARTM															
20/90ARTM															
20/180ARTM	44	29,1	6	14	4,5	10	20,3	5,5	7	9,6	1,6	8,5	M5x0,8p	36	M3x0,5p
20/270ARTM															
30/90ARTM															
30/180ARTM	51	40	8	16	5	12	22	7,5	8	13	2	11	M5x0,8p	43	M3x0,5p
30/270ARTM															
40/90ARTM															
40/180ARTM	64	45	10	25	6,5	22	30	9	9	15	4,5	9,5	M5x0,8p	56	M3x0,5p
40/270ARTM															

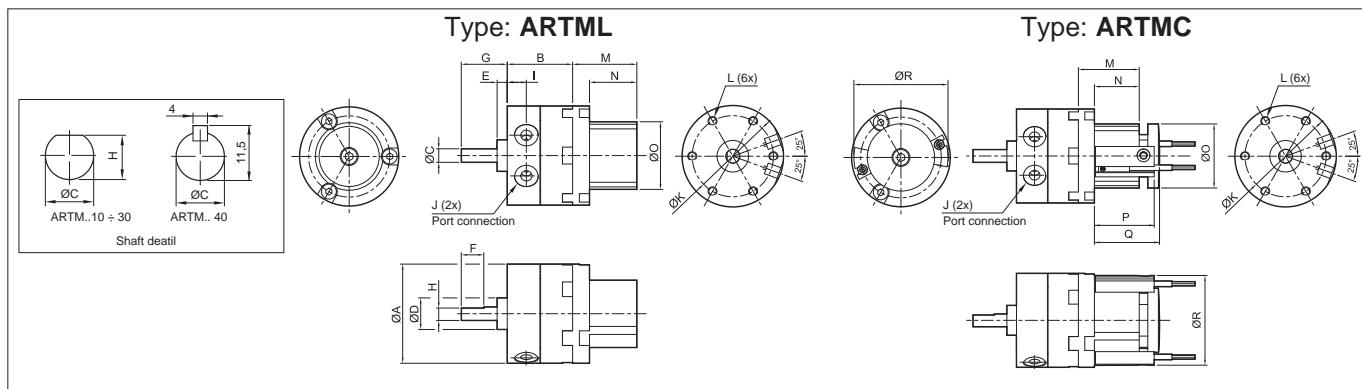


Item	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
10/90ARTMF																							
10/180ARTMF	31	22	13,3	30	14	8	9	5	9	1	4	3,5	17	3	3,5	10,5	9,2	M5x0,8p	25	3,5	M3x0,5p	24	1
10/270ARTMF																							
15/90ARTMF																							
15/180ARTMF	36	25,7	15,5	35	18	9	10	6	12	1,5	5	4,5	21	3	3,5	10,5	10,5	M5x0,8p	29	3,5	M3x0,5p	29	1,5
15/270ARTMF																							
20/90ARTMF																							
20/180ARTMF	44	33,6	19	44	20	10	10	7	14	1,6	6	5,5	26	4	4,2	15	13	M5x0,8p	36	4,5	M3x0,5p	36	1
20/270ARTMF																							
30/90ARTMF																							
30/180ARTMF	52	47,5	27,2	51	22	13	12	8	16	2	8	7,5	29	4,5	5,5	13,5	18,5	M5x0,8p	42	5,5	M3x0,5p	43	2
30/270ARTMF																							
40/90ARTMF																							
40/180ARTMF	64	53	30,4	64	30	15	22	9	25	4,5	10	9	38	5	5,5	19	14	M5x0,8p	52	5,5	M3x0,5p	56	3
40/270ARTMF																							

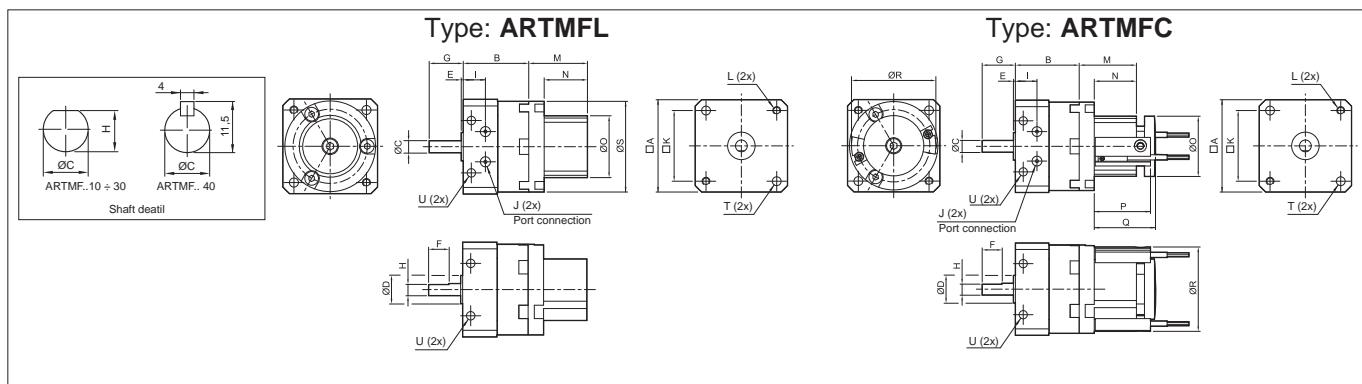
Hi-Rotary Cylinders

Bores 4, 5, 6, 8, 10 mm

Standard dimensions



Item		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
10/90ARTML	10/90ARTMC																		
10/180ARTML	10/180ARTMC	30	17	4	9	3	9	14	3,5	4,2	M5x0,8p	24	M3x0,5p	24	18	18	23,3	24	29
10/270ARTML	10/270ARTMC																		
15/90ARTML	15/90ARTMC																		
15/180ARTML	15/180ARTMC	35	20,1	5	12	4	10	18	4,5	5	M5x0,8p	29	M3x0,5p	28	22	24	27,3	29,5	34
15/270ARTML	15/270ARTMC																		
20/90ARTML	20/90ARTMC																		
20/180ARTML	20/180ARTMC	44	29,1	6	14	4,5	10	20,3	5,5	8,5	M5x0,8p	36	M3x0,5p	28,5	21	30	28	30,5	42
20/270ARTML	20/270ARTMC																		
30/90ARTML	30/90ARTMC																		
30/180ARTML	30/180ARTMC	51	40	8	16	5	12	22	7,5	11	M5x0,8p	43	M3x0,5p	32,5	24	34	30,8	34	47
30/270ARTML	30/270ARTMC																		
40/90ARTML	40/90ARTMC																		
40/180ARTML	40/180ARTMC	64	45	10	25	6,5	22	30	-	9,5	M5x0,8p	56	M3x0,5p	34,5	26	34	33	36	47
40/270ARTML	40/270ARTMC																		



Item		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
10/90ARTMFL	10/90ARTMFC																					
10/180ARTMFL	10/180ARTMFC	31	22	4	9	1	9	14	3,5	9,2	M5x0,8p	25	M3x0,5p	24	18	18	23,3	24	29	30	3,5	3,5
10/270ARTMFL	10/270ARTMFC																					
15/90ARTMFL	15/90ARTMFC																					
15/180ARTMFL	15/180ARTMFC	36	25,7	5	12	1,5	10	18	4,5	10,5	M5x0,8p	29	M3x0,5p	28	22	24	27,3	29,5	34	35	3,5	3,5
15/270ARTMFL	15/270ARTMFC																					
20/90ARTMFL	20/90ARTMFC																					
20/180ARTMFL	20/180ARTMFC	44	33,6	6	14	1	10	20	5,5	13	M5x0,8p	36	M3x0,5p	28,5	21	30	28	30,5	42	44	4,5	4,2
20/270ARTMFL	20/270ARTMFC																					
30/90ARTMFL	30/90ARTMFC																					
30/180ARTMFL	30/180ARTMFC	52	47,5	8	16	2	12	22	7,5	18,5	M5x0,8p	42	M3x0,5p	32,5	24	34	30,8	34	47	51	5,5	5,5
30/270ARTMFL	30/270ARTMFC																					
40/90ARTMFL	40/90ARTMFC																					
40/180ARTMFL	40/180ARTMFC	64	53	10	25	3	22	30	-	14	M5x0,8p	52	M3x0,5p	34,5	26	34	33	36	47	64	5,5	5,5
40/270ARTMFL	40/270ARTMFC																					

Esecuzioni standard		
Version	Symbol	Type
Standard		ARTM
Magnetic		ARTMC
Standard adjustable angle		ARTML
Magnetic adjustable angle		ARTMLC



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.
For mounting accessories see from page 1.50.10.

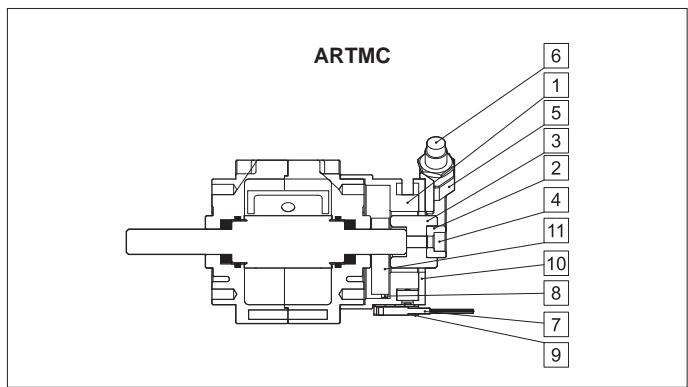
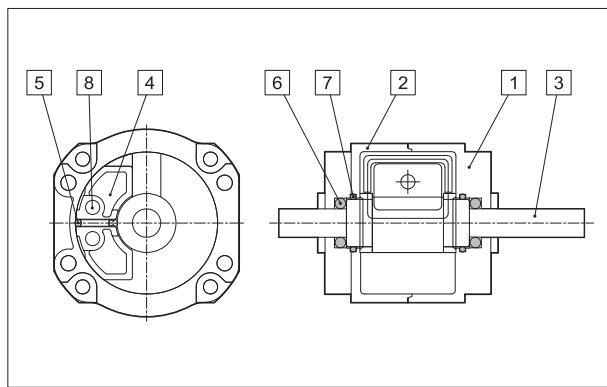
For the magnetic reed switches type ASC see from page 1.110.2.

How to order: 50 / 90° ARTML

Options	Suffix
With shock absorber	D
Special versions on request	/ S

50	/	90°	ARTML
Size	/	Rotation	Type

Technical data				
Size	50	63	80	100
Bores	Ø 12	Ø 15	Ø 17	Ø 25
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.			
Pressure range	1,5 ÷ 7 bar			
Temperature range	0° C ÷ + 50° C			
Rotation angle	90° - 180° - 270°			
Torque moment (Nm) at 6 bar	5	10	18	35
Ports	1/8"		1/4"	
Weight (g)	ARTM-ARTML	760	1290	1920
	ARTMC-ARTMLC	1100	1150	2300
				3560
				3900



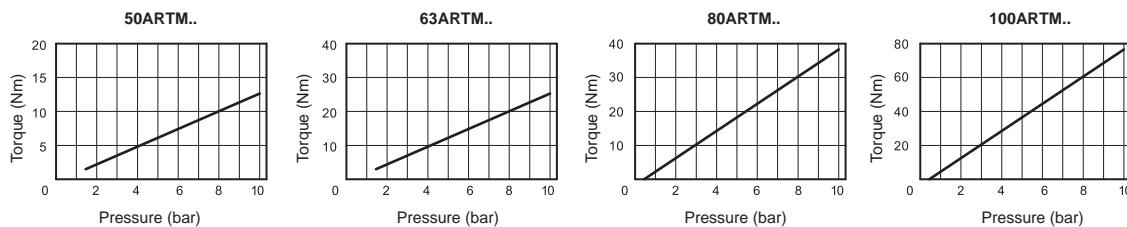
Materials (standard types)

[1] Front body	Aluminium alloy
[2] End body	Aluminium alloy
[3] Rod	Steel alloy
[4] Position block	Aluminium alloy
[5] O-ring	Nitrilic rubber NBR
[6] Bearing	Steel
[7] O-ring	Nitrilic rubber NBR
[8] Position pin	Steel

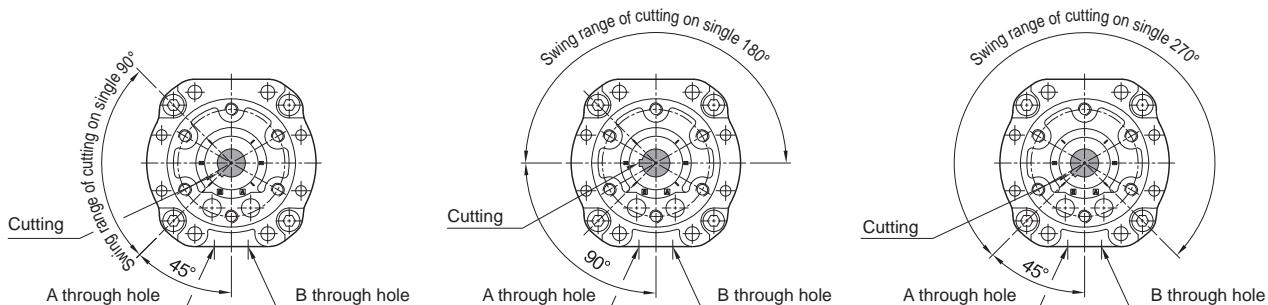
Materials (standard types)

[1] Position base	Aluminium alloy
[2] Rocker arm	Stainless steel
[3] Rocker arm seat	Stainless steel
[4] Screw	Steel alloy
[5] Angle adjustment	Aluminium alloy
[6] Shock absorber	-
[7] Sensor switch	-
[8] Magnet	Rare earth materials
[9] Mounting base	Aluminium alloy
[10] End cover	Aluminium alloy
[11] Magnet seat	Aluminium alloy

Output torque table



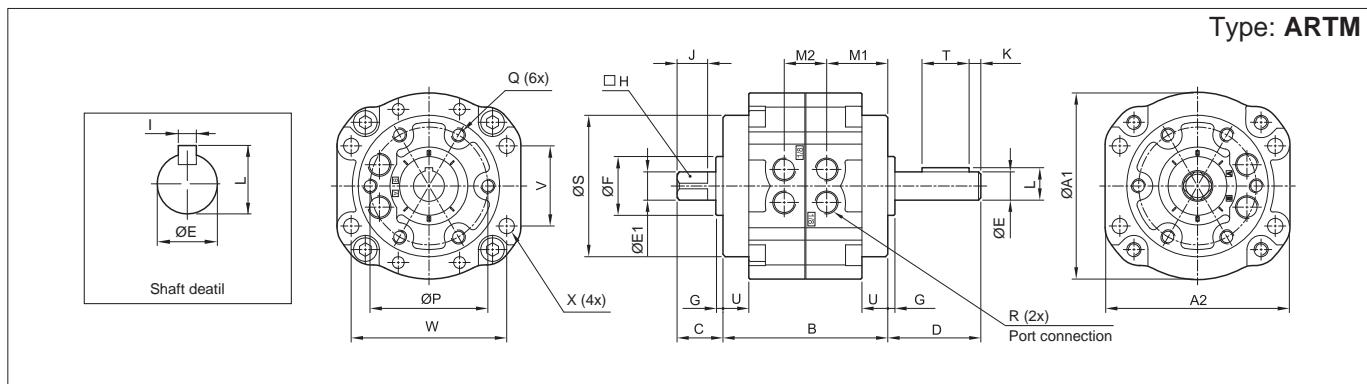
Rotation angle



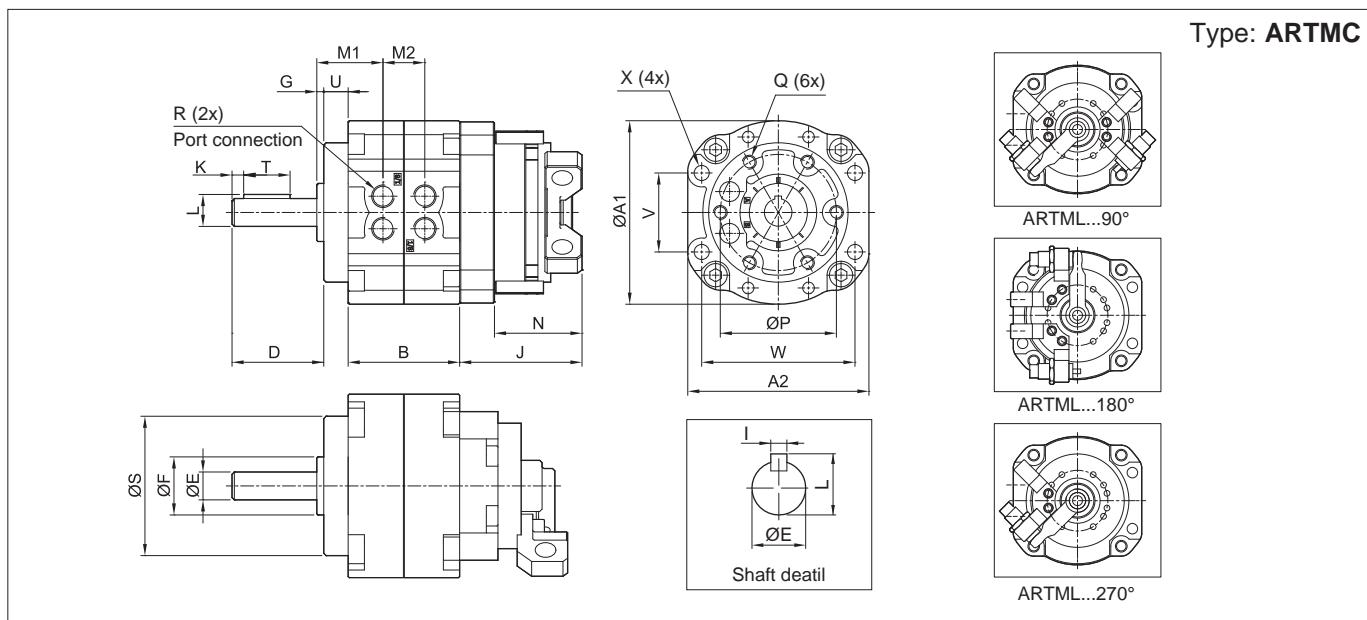
Hi-Rotary Cylinders

Bores 12, 15, 17, 25 mm

Standard dimensions



Item	A1	A2	B	C	D	E	F	G	H	I	J	K	L	M1	M2	P	Q	R	S	T	U	V	W	ØX	
50/90ARTM																									
50/180ARTM	79	78	70	19,5	39,5	12	25	3	10	4	13	5	13,5	26	18,2	50	M6x1,0p	RC1/8"	60	20	11	34	66	6,5	
50/270ARTM																									
63/90ARTM																									
63/180ARTM	98	98	80	21	45	15	28	3	12	5	14	5	17	28,9	22,2	60	M8x1,25p	RC1/8"	75	25	14	39	83	9	
63/270ARTM																									
80/90ARTM																									
80/180ARTM	110	110	90	23,5	53,5	17	30	3	13	5	16	5	19	30	30,2	70	M8x1,25p	RC1/4"	88	41	15	48	94	9	
80/270ARTM																									
100/90ARTM																									
100/180ARTM	140	140	103	30	65	25	45	4	19	7	22	5	28	35,4	32,2	80	M10x1,5p	RC1/4"	108	40	11,5	60	120	11	
100/270ARTM																									



Item	A1	A2	B	D	E	F	G	I	J	K	L	M1	M2	N	P	Q	R	S	T	U	V	W	ØX		
50/90ARTMC																									
50/180ARTMC	79	78	48	50,5	12	25	3	4	52,7	5	13,5	29	18	37,7	50	M6x1,0p	RC1/8"	60	20	11	34	66	6,5		
50/270ARTMC																									
63/90ARTMC																									
63/180ARTMC	98	98	52	59	15	28	3	5	56,4	5	17	31,9	22,2	37,7	60	M8x1,25p	RC1/8"	75	25	14	39	83	9		
63/270ARTMC																									
80/90ARTMC																									
80/180ARTMC	110	110	60	68,5	17	30	3	5	58,9	5	19	33	30	39,2	70	M8x1,25p	RC1/4"	88	36	15	48	94	9		
80/270ARTMC																									
100/90ARTMC																									
100/180ARTMC	140	140	80	76,5	25	45	4	7	62,9	5	28	39,4	32,2	39,2	90	M10x1,5p	RC1/4"	108	40	11,5	60	120	11		
100/270ARTMC																									

Notes

Rotary actuators series ARC

Bores from 10 to 63 mm

Double acting



Standard executions

Version	Code	Item
Bore 10 mm (x2)	075581	10ARC
Bore 12 mm (x2)	075582	12ARC
Bore 15 mm (x2)	073063	15ARC
Bore 18 mm (x2)	073064	18ARC
Bore 20 mm (x2)	073065	20ARC
Bore 25 mm (x2)	073066	25ARC
Bore 28 mm (x2)	075583	28ARC
Bore 32 mm (x2)	075584 <i>New</i>	32ARC
Bore 40 mm (x2)	075585 <i>New</i>	40ARC
Bore 50 mm (x2)	075586 <i>New</i>	50ARC
Bore 63 mm (x2)	075587 <i>New</i>	63ARC



1

Options	Suffix
With hydraulic shock absorbers	D

How to choose the shock absorber

Rotary actuator	Cushioning capability max (kgf.m)
15ARC	3
18ARC	6
20ARC	6
25ARC	20
28ARC	59
32ARC	59
40ARC	147
50ARC	147
63ARC	147

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

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.

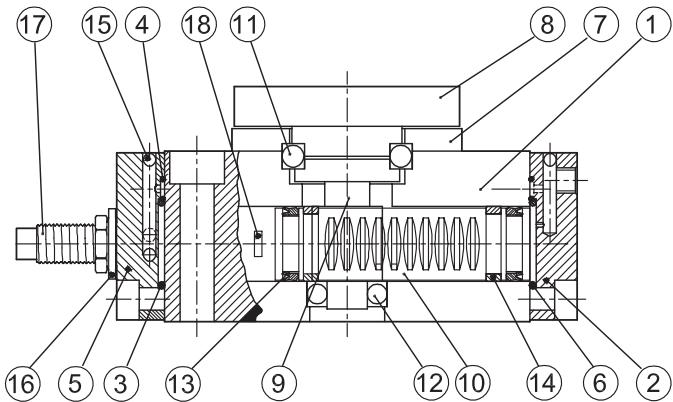
For the magnetic reed switches type ASC see from page 1.110.1

How to order: 20ARCD

20	ARC	D
Bore	Item	Option

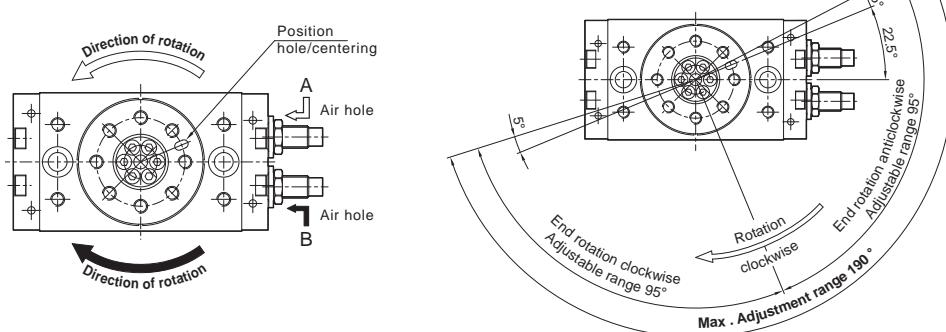
Technical data											
Type	10	12	15	18	20	25	28	32	40	50	63
Bore	Ø 10	Ø 12	Ø 15	Ø 18	Ø 20	Ø 25	Ø 28	Ø 32	Ø 40	Ø 50	Ø 63
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.										
Pressure range	1,5 ÷ 7 bar										
Temperature range	0° C ÷ + 50° C										
Rotation angle	180°										
Adjustment angle	0° ÷ 190°										
Rotation moments (Nm) at 6 bar	0,3	0,6	1,5	2,2	3,2	5,5	7,5	9,8	19	31	45
Ports	M3			M5			1/8"				
Weight (g)	150	250	530	990	1290	2100	2890	4100	7650	8960	11170

Materials

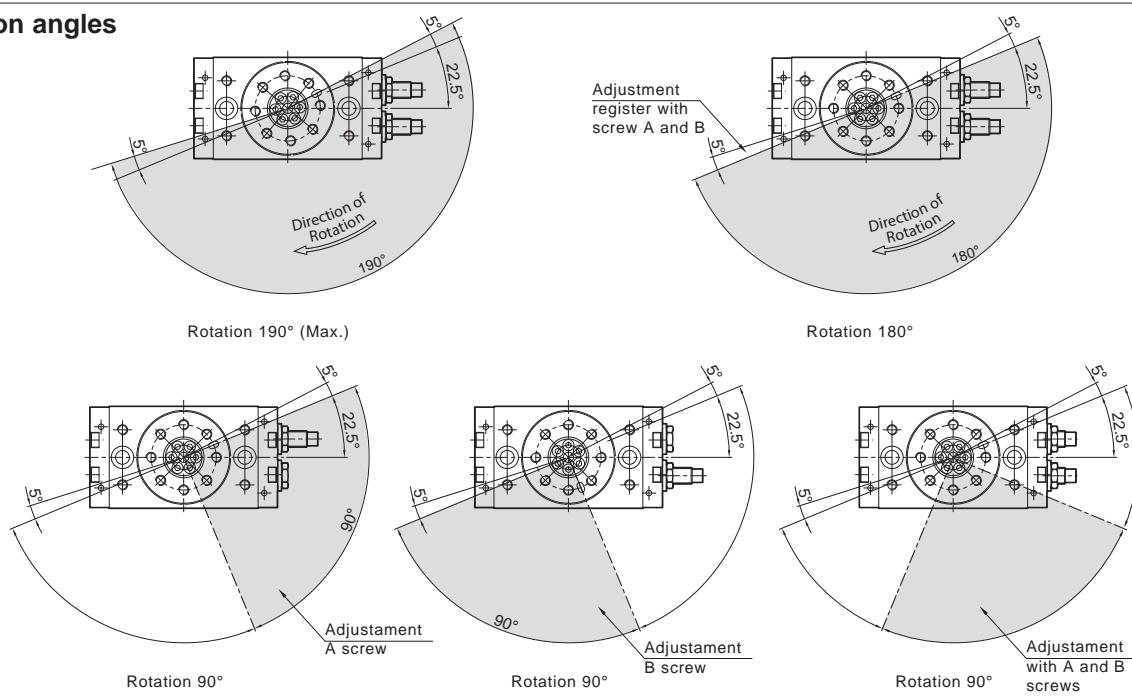


N.	Component	Material
1	Body	Anodised aluminium
2	Front head	Anodised aluminium
3	O-Ring	NBR
4	O-Ring	NBR
5	Rear head	Anodised aluminium
6	O-Ring	NBR
7	Bearings cover	Anodised aluminium
8	Rotating plate	Anodised aluminium
9	Piston rod	Hardened steel
10	Rack	Stainless steel
11	Spherical bearing	Steel
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



Rotary actuators series ARC

Bores from 10 to 63 mm

Standard dimensions

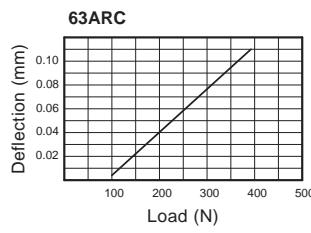
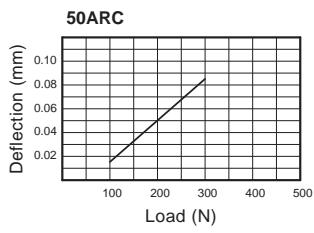
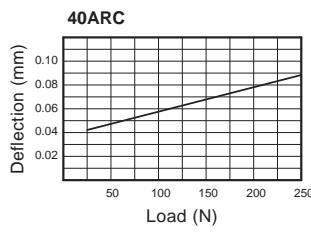
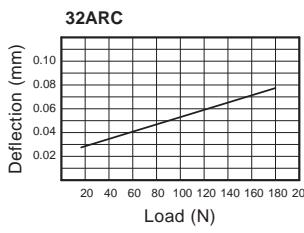
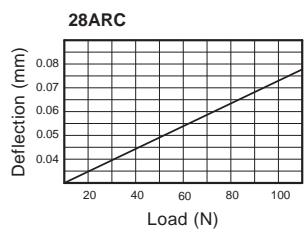
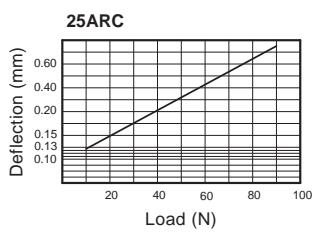
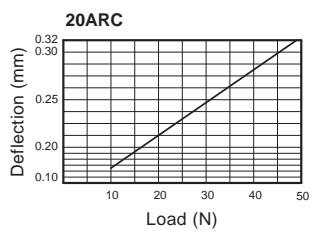
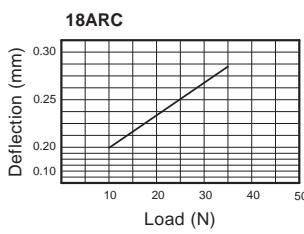
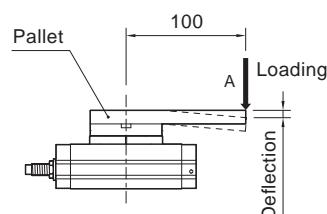
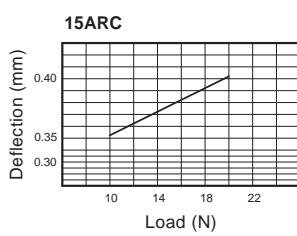
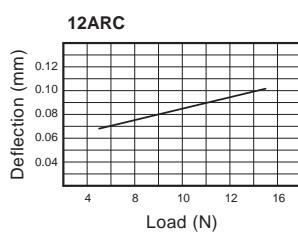
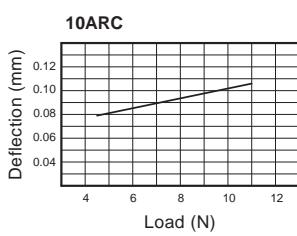


Possible loads

Type	Kind of loads	Side (N)	Top (N)		Torque moment (N)
			(a)	(b)	
10ARC		33	48	48	1,1
12ARC		54	71	71	1,5
15ARC		70	78	74	2
18ARC		140	130	130	3,5
20ARC		185	188	358	4,8
25ARC		300	285	442	9
28ARC		333	296	476	12
32ARC		390	493	706	18
40ARC		543	740	1009	25
50ARC		850	950	1500	30
63ARC		1200	1400	2100	38

1

Transverse load and Deflection



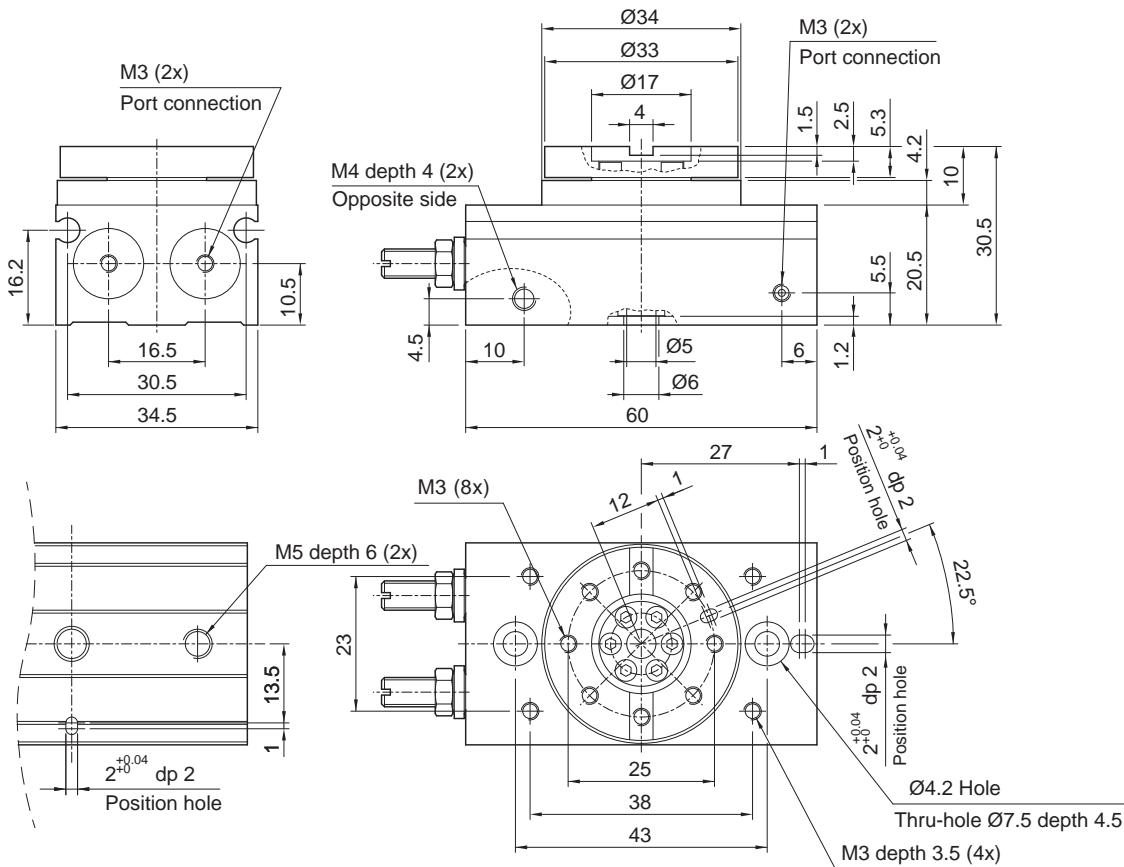
Rotary actuators series ARC

Bores from 10 to 63 mm

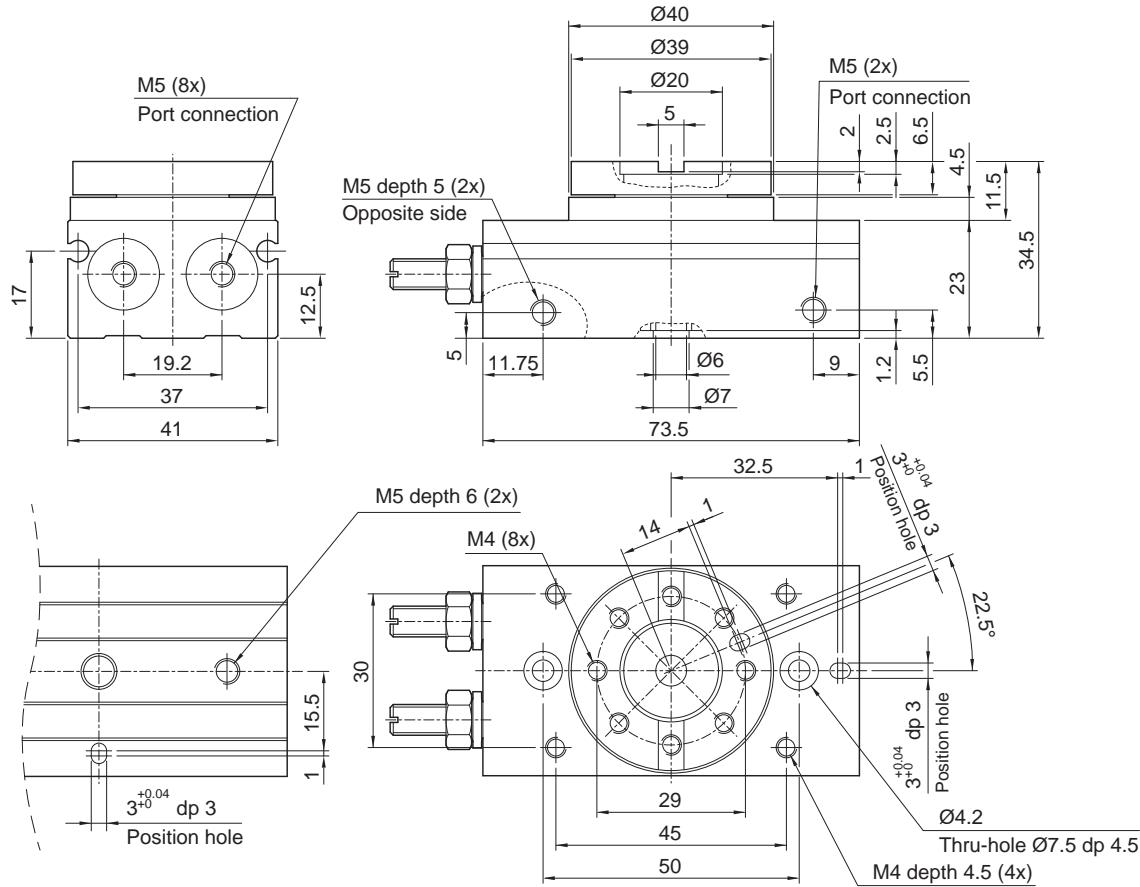
Standard dimensions



Type: 10ARC



Type: 12ARC



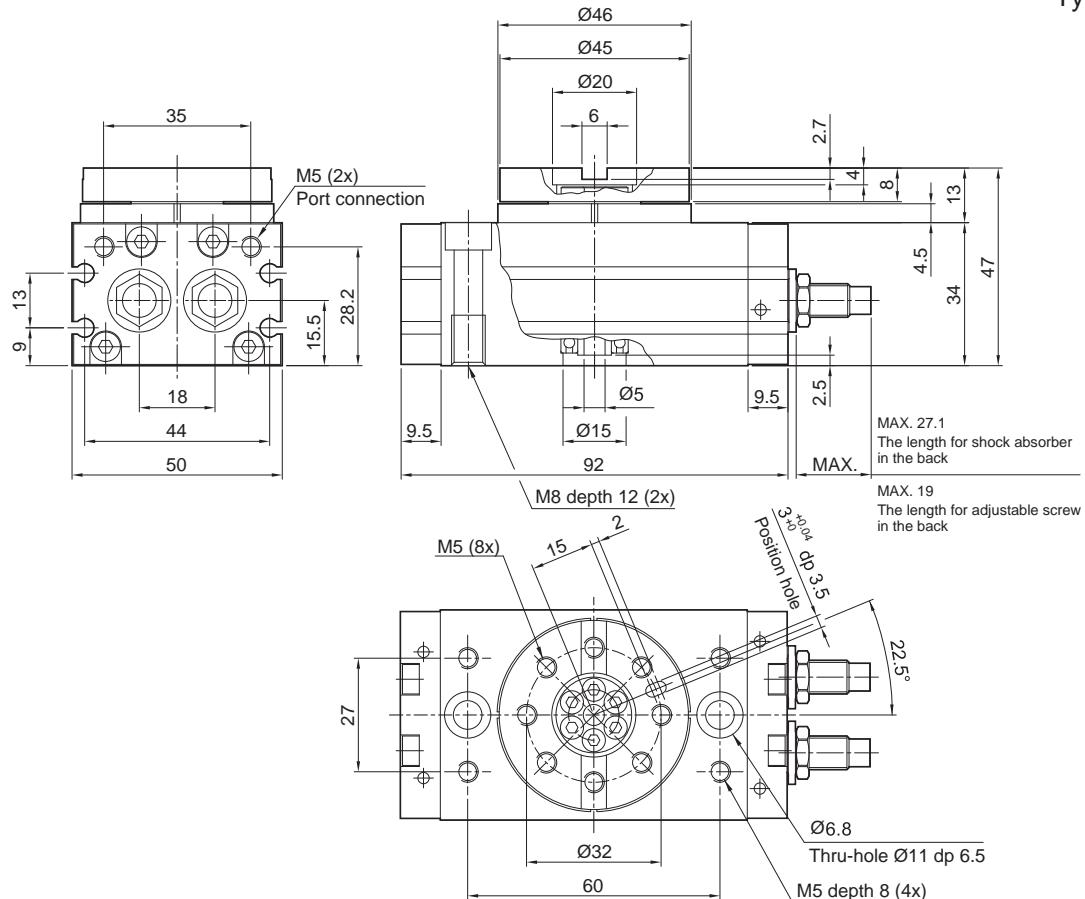
Rotary actuators series ARC

Bores from 10 to 63 mm

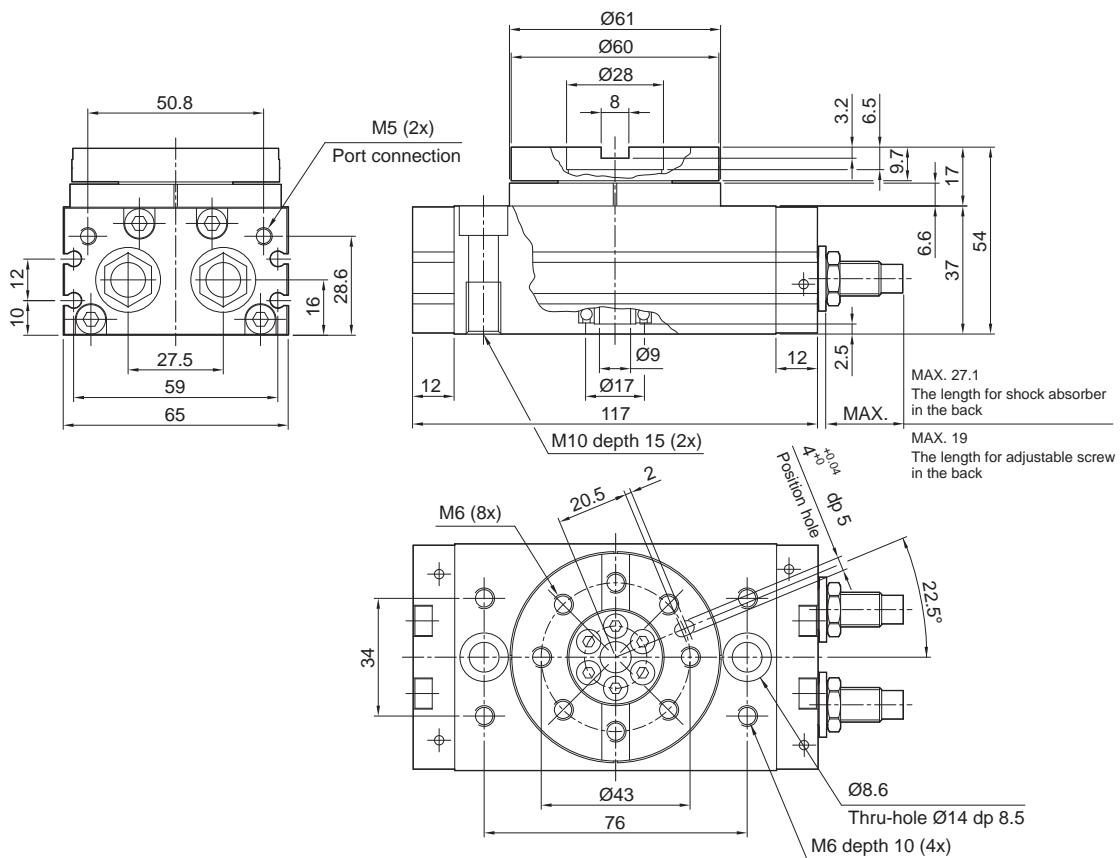
Standard dimensions



Type: 15ARC



Type: 18ARC



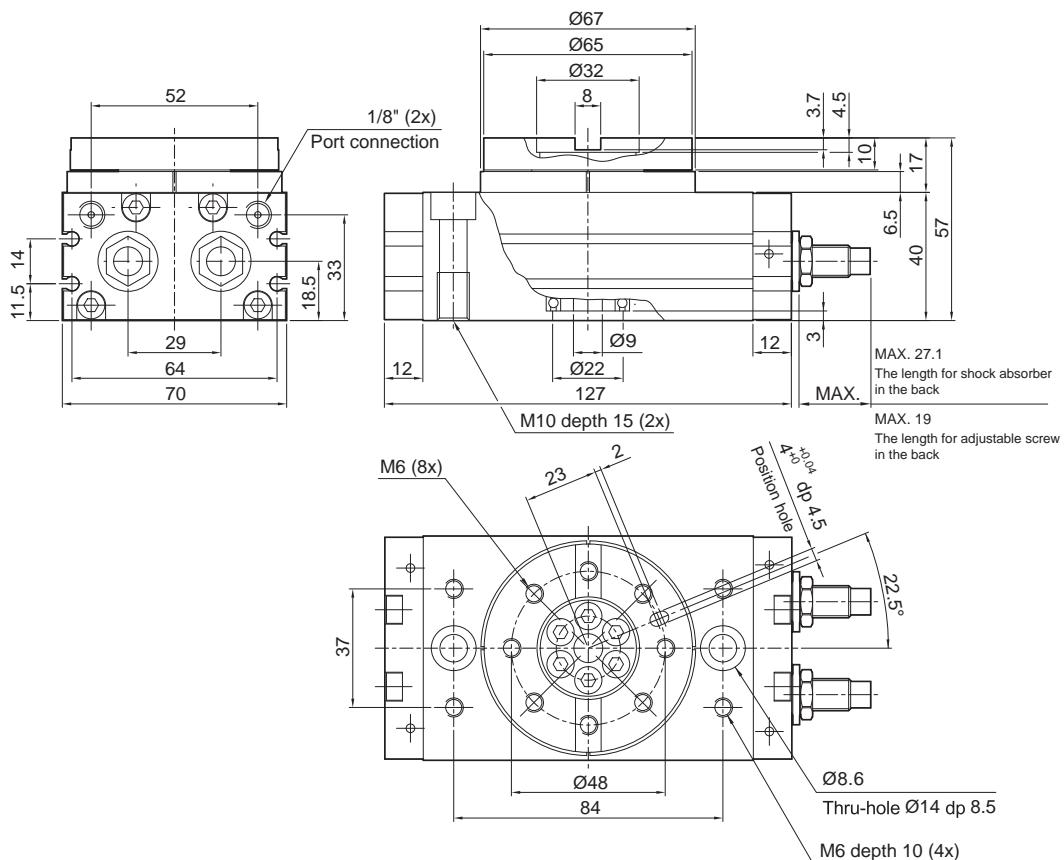
Rotary actuators series ARC

Bores from 10 to 63 mm

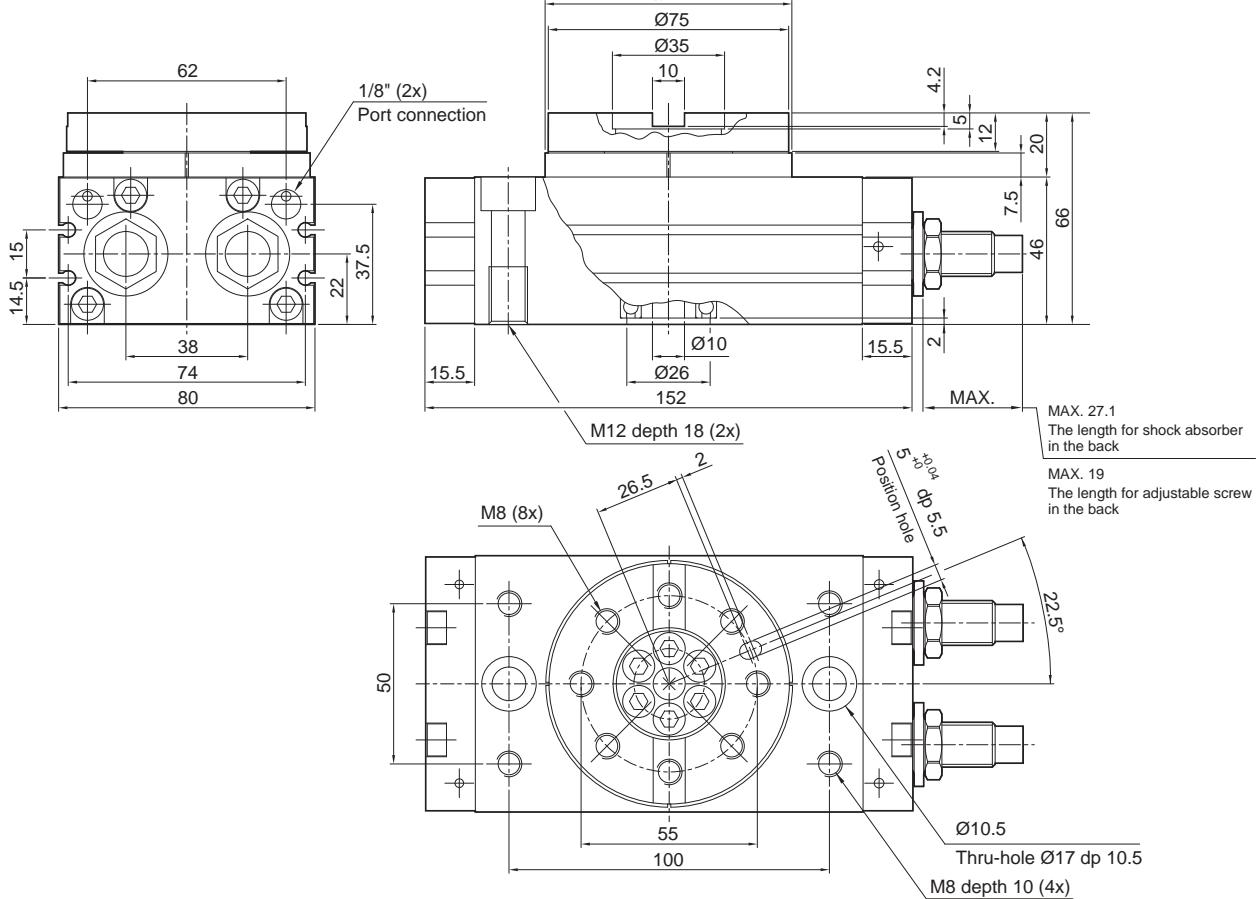
Standard dimensions



Type: 20ARC



Type: 25ARC



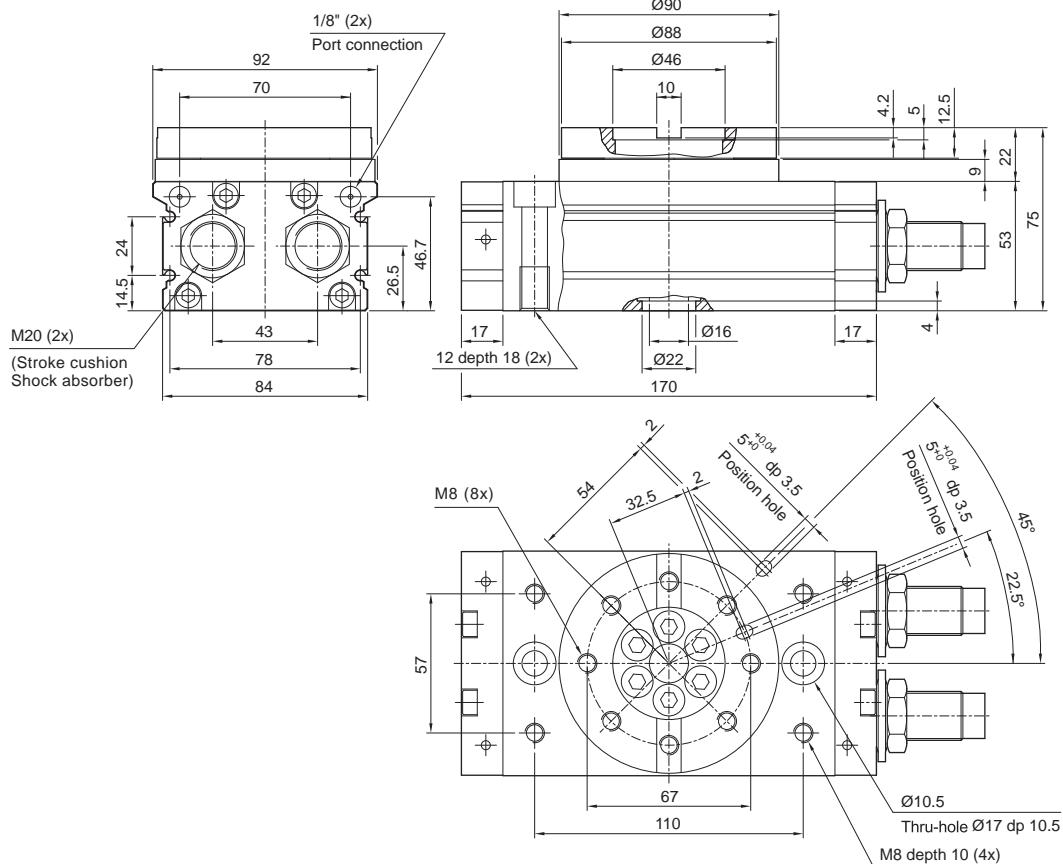
Rotary actuators series ARC

Bores from 10 to 63 mm

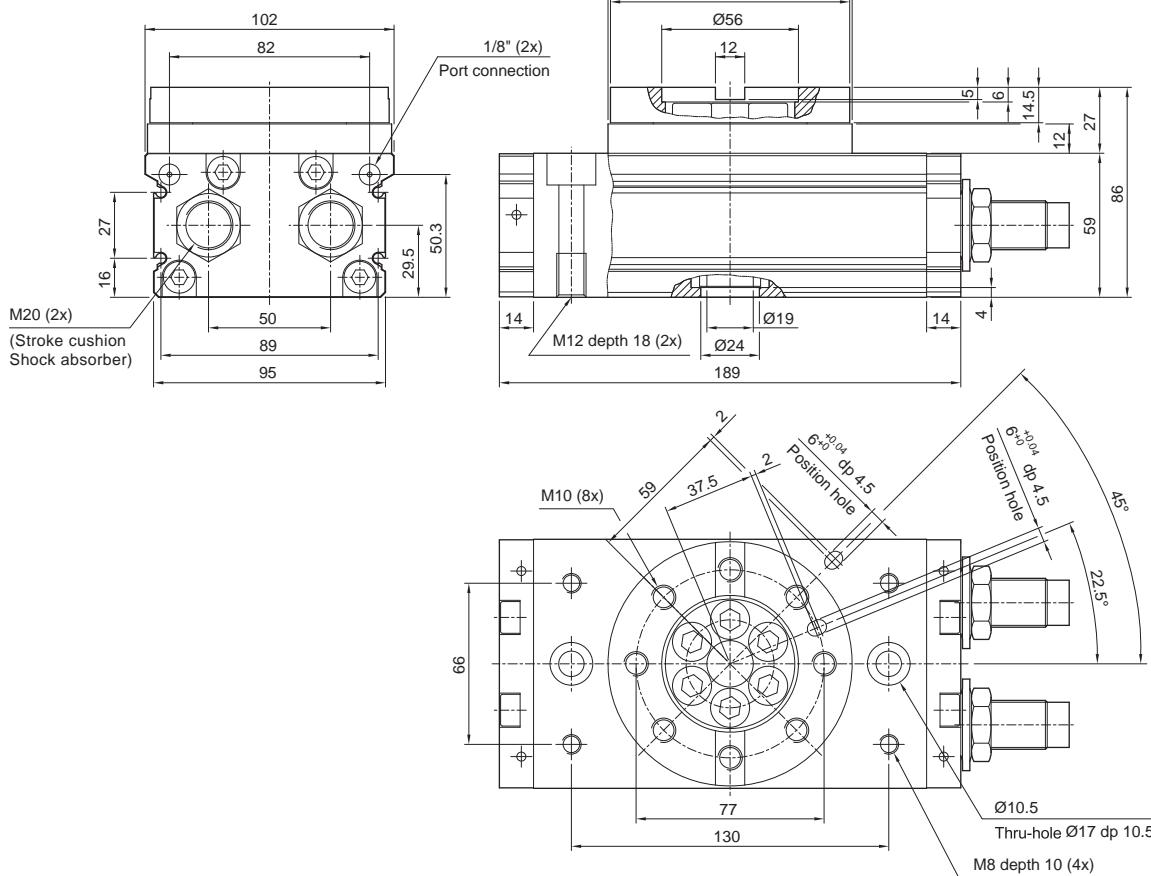
Standard dimensions



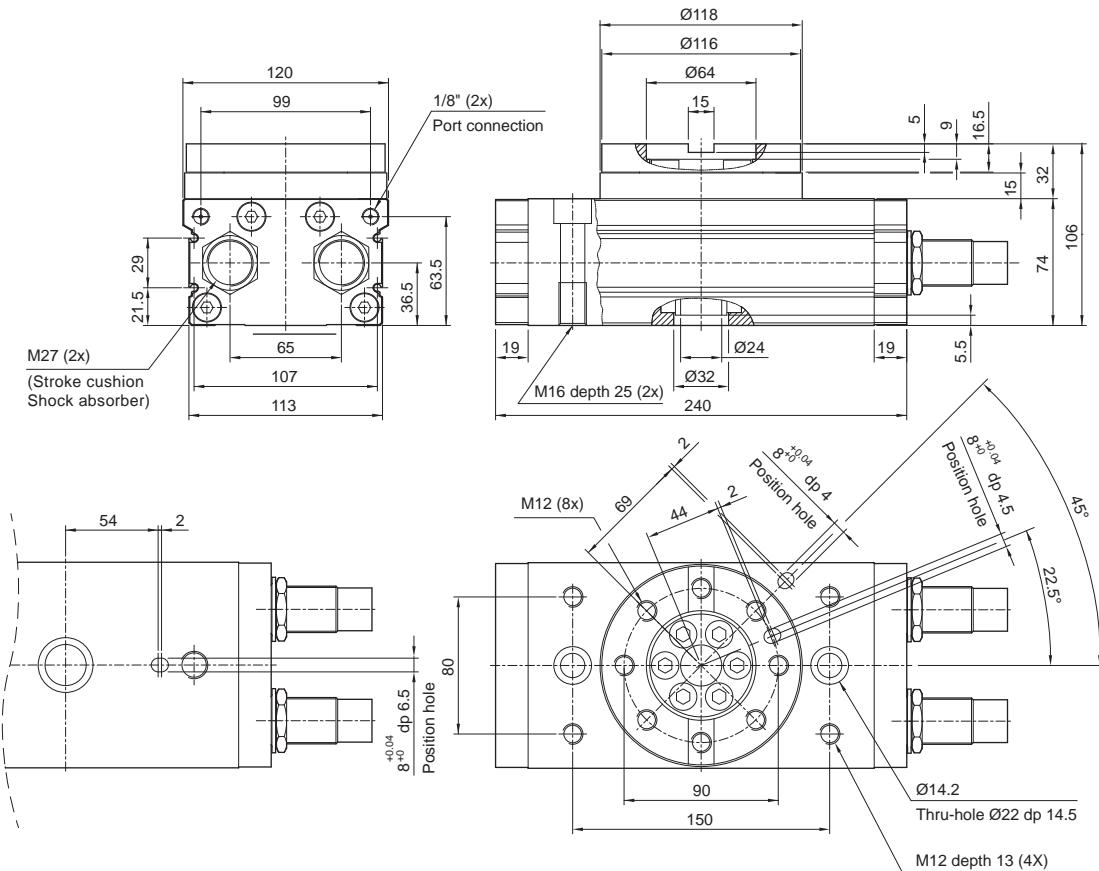
Type: 28ARC



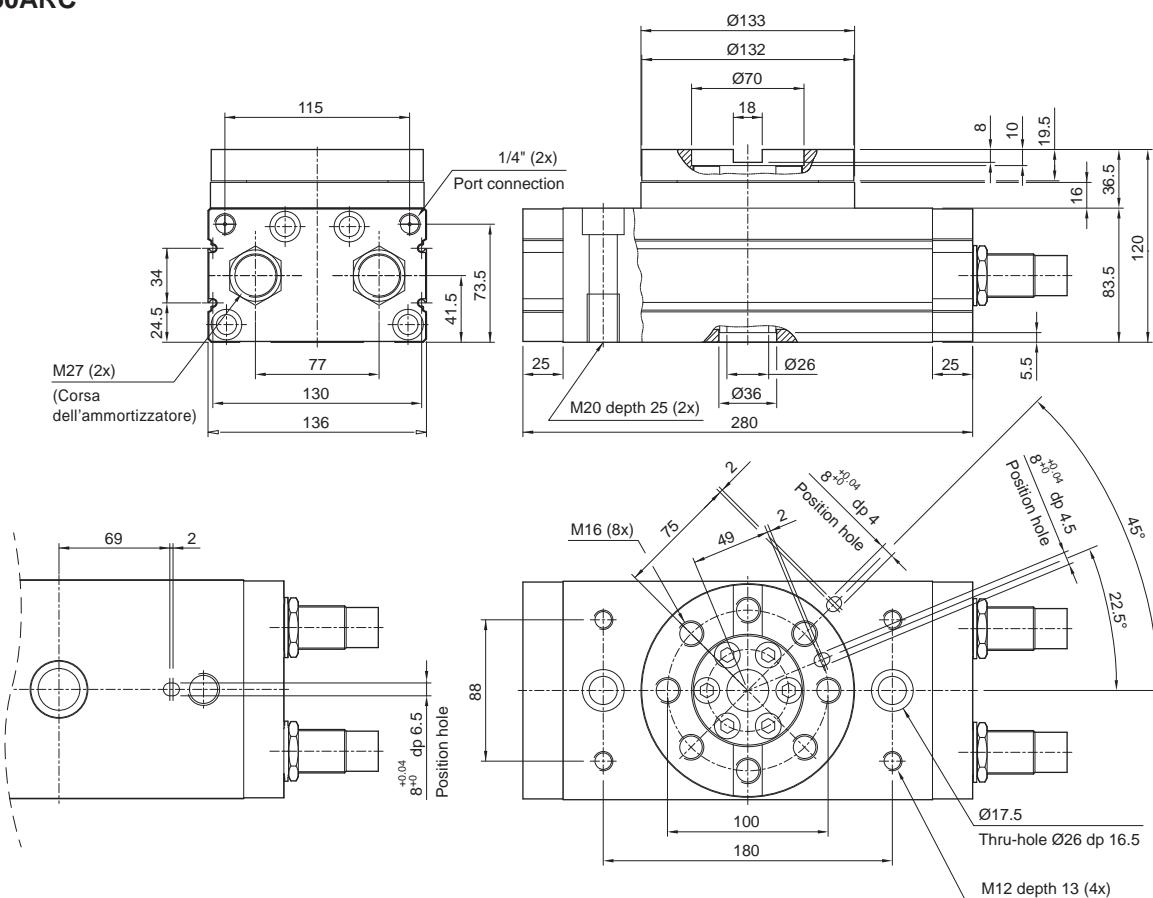
Type: 32ARC



Type: 40ARC



Type: 50ARC



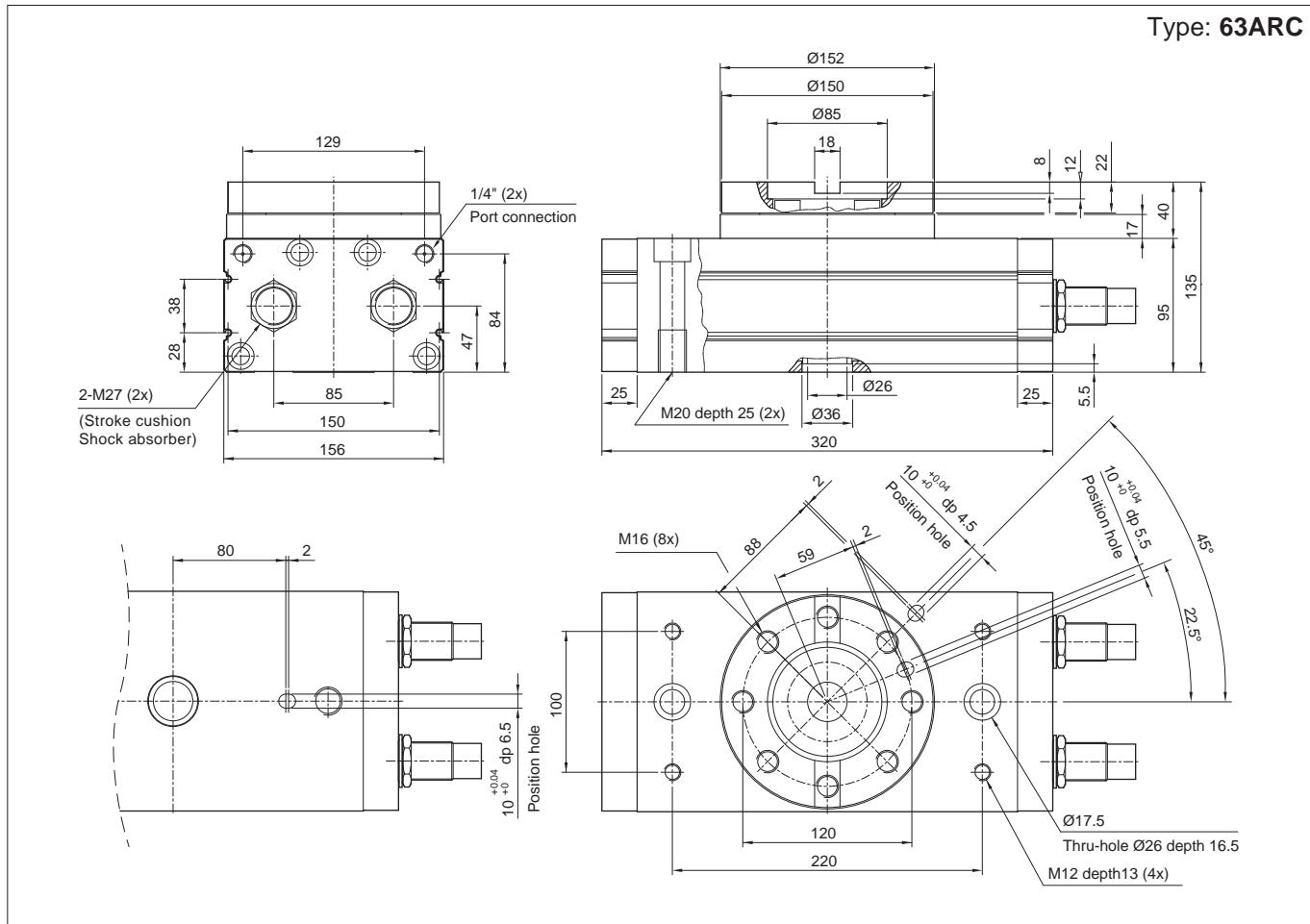
Rotary actuators series ARC

Bores from 10 to 63 mm

Standard dimensions



Type: 63ARC



Notes

Rotary actuators series ARP

Bores from 15 to 32 mm

Double acting



Standard executions

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 28 mm (x2), 90°	075588 <i>New</i>	28/90ARP
Bore 32 mm (x2), 90°	075589 <i>New</i>	32/90ARP
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
Bore 28 mm (x2), 180°	075590 <i>New</i>	28/180ARP
Bore 32 mm (x2), 180°	075591 <i>New</i>	32/180ARP



1

Options	Suffix
With hydraulic shock absorbers	D

How to choose the shock absorber

Rotary actuator	Cushioning capability max (kgf.m)
15ARP	3
18ARP	6
20ARP	6
25ARP	20
28ARP	59
32ARP	59

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.

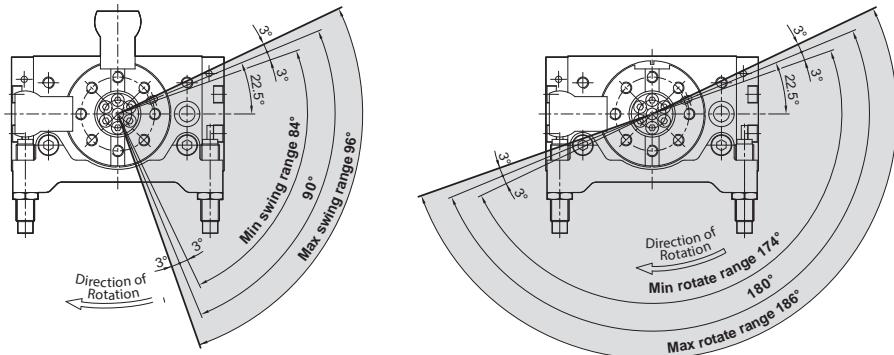
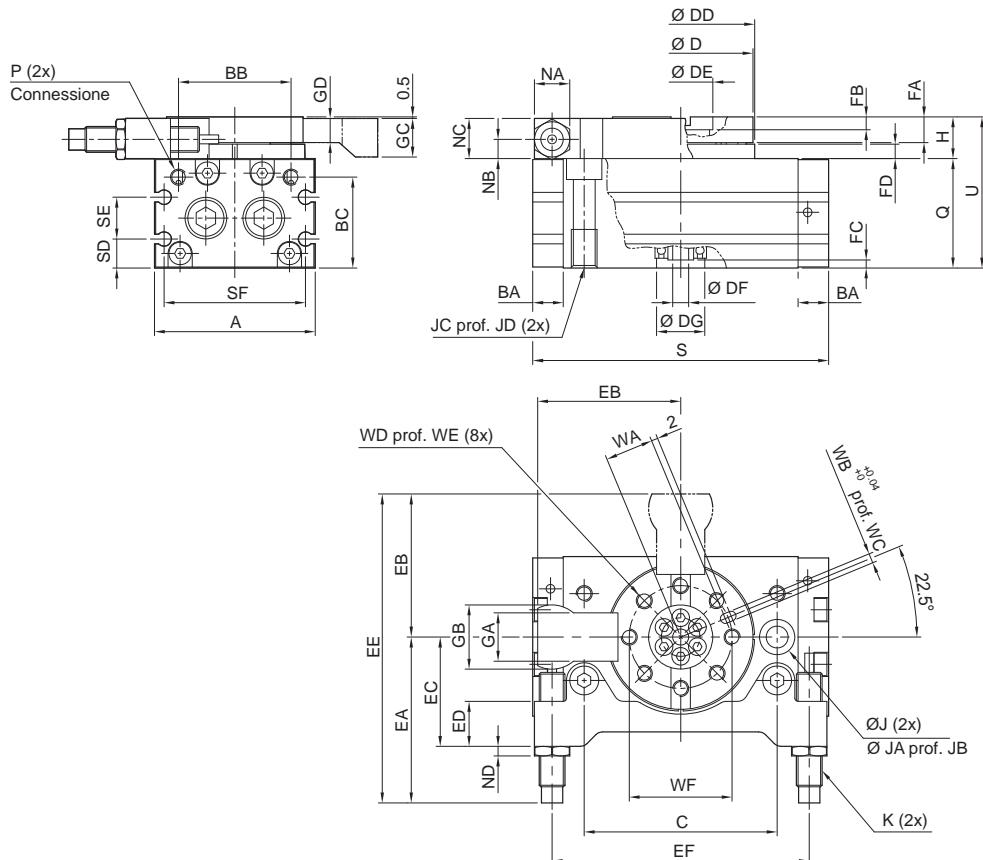
The mechanical stoppers are standard; the hydraulic shock absorbers can be supplied on request.

For the magnetic reed switches type ASC see from page 1.110.1

How to order: 20ARCD

20	/	90	ARP	D
Bore	/	Rotation	Item	Option

Technical data						
Type	15	18	20	25	28	32
Bore	Ø 15	Ø 18	Ø 20	Ø 25	Ø 28	Ø 32
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.					
Pressure range	1,5 ÷ 7 bar					
Temperature range	0° C ÷ + 50° C					
Rotation angle	90° - 180°					
Adjustment angle	10°					
Rotation moments (Nm) at 6 bar	1,5	2,2	3,2	5,5	7,5	9,8
Ports	M5					
Weight (g)	90°	630	1200	1520	2480	3390
	180°	600	1140	1450	2370	3210
				1/8"		

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	28,6	76	60	61	28	9	17	56	57	43	18	113	101	9,7	6,5	2,5	6,6	19	25	9	9,2	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	9,5	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
28ARP	92	17	70	46,7	110	88	90	46	16	22	86	81	55,5	35	167	141	12,5	5	4	9	28	38	19,5	11,5	22
32ARP	102	14	82	50,3	130	98	100	56	19	24	94	92,5	60	35	186,5	163	14,5	6	4	12	33	42	24,5	13,5	27

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	6,8	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	5	RC 1/8	46	152	14,5	15	74	66	26,5	5	5,5	M8x1,25	10	55
28ARP	10,5	17	10,5	M12x1,75	18	M14x1,5	19	10	21,5	5	RC 1/8	53	170	14,5	24	78	75	32,5	5	5,5	M8x1,25	12,5	67
32ARP	10,5	17	10,5	M12x1,75	18	M20x1,5	26	11,5	26	7	RC 1/8	59	189	16	27	89	86	37,5	6	6,5	M10x1,5	14,5	77

Cartridge Cylinders

Bores from 6 to 16 mm

Single acting



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



1

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 started, must be continued.
Pressure	2 ÷ 7 bar
Temperature range	-20 °C ÷ + 80°C
Materials	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	0,10
10		42	3,9	3,4	2,9	0,15
16		109	9,9	8,7	7,4	0,20

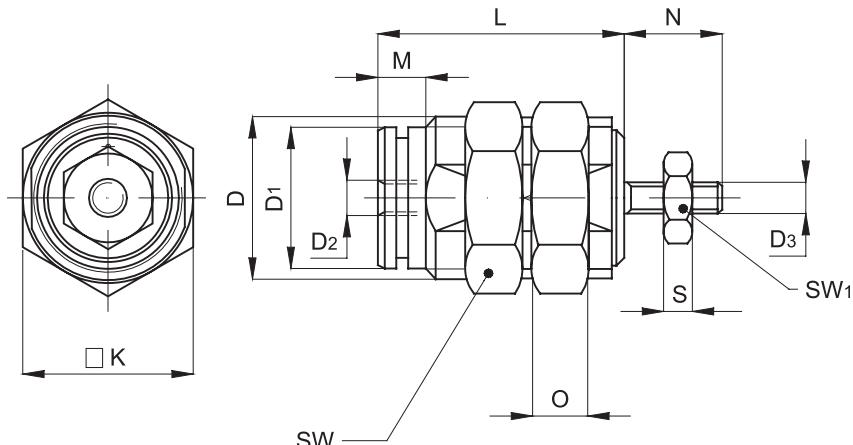
Cartridge Cylinders

Bores from 6 to 16 mm

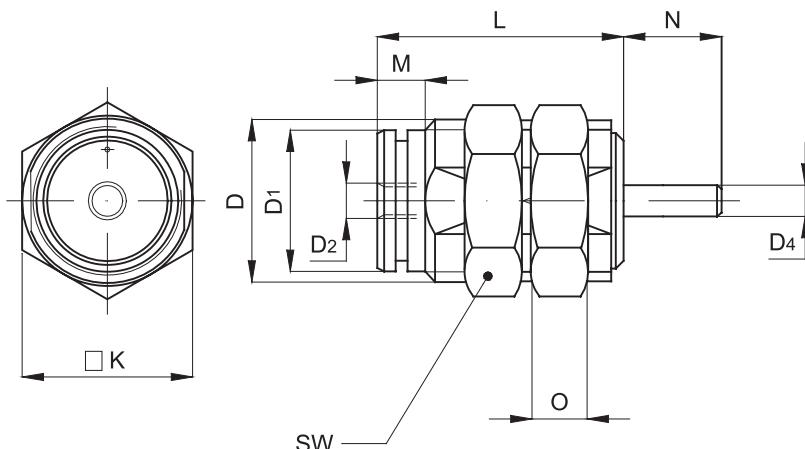
Single acting



Type: **MCF**



Type: **MCN**



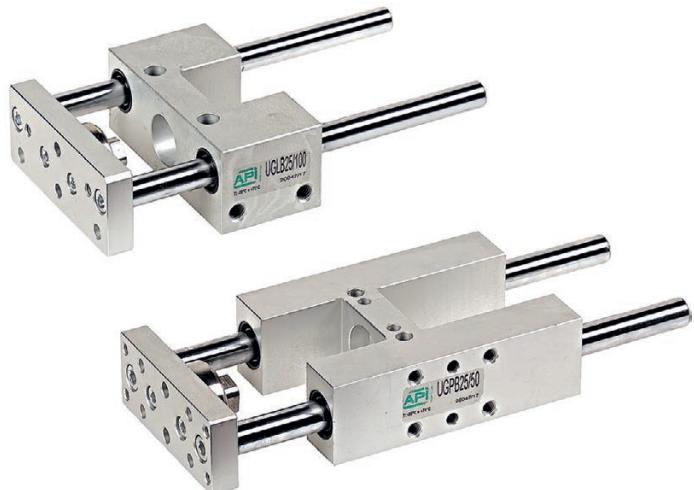
\varnothing mm	D	D ₁	D ₂	D ₃	D ₄	K	M	L (with the stroke included)			N	O	SW	S	SW ₁
								5	10	15					
6	M10x1	8,5	M5	M3	3	9	5	19,5	26,5	33,5	8	3	14	2,4	5,5
10	M15x1,5	12	M5	M4	4	19	7	23	29,5	36,5	10,5	4	19	2	7
16	M22x1,5	19	M5	M5	5	20	6	27	32	37	13	5	27	4	8

Slide Units for Cylinders ISO 6432

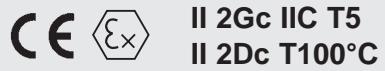
Bores from 12 to 25 mm



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



1



On request, they can be supplied according to 2014/34/EU - ATEX

Options	Suffix
Rods in stainless steel AISI 304 (UGPB type only)	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

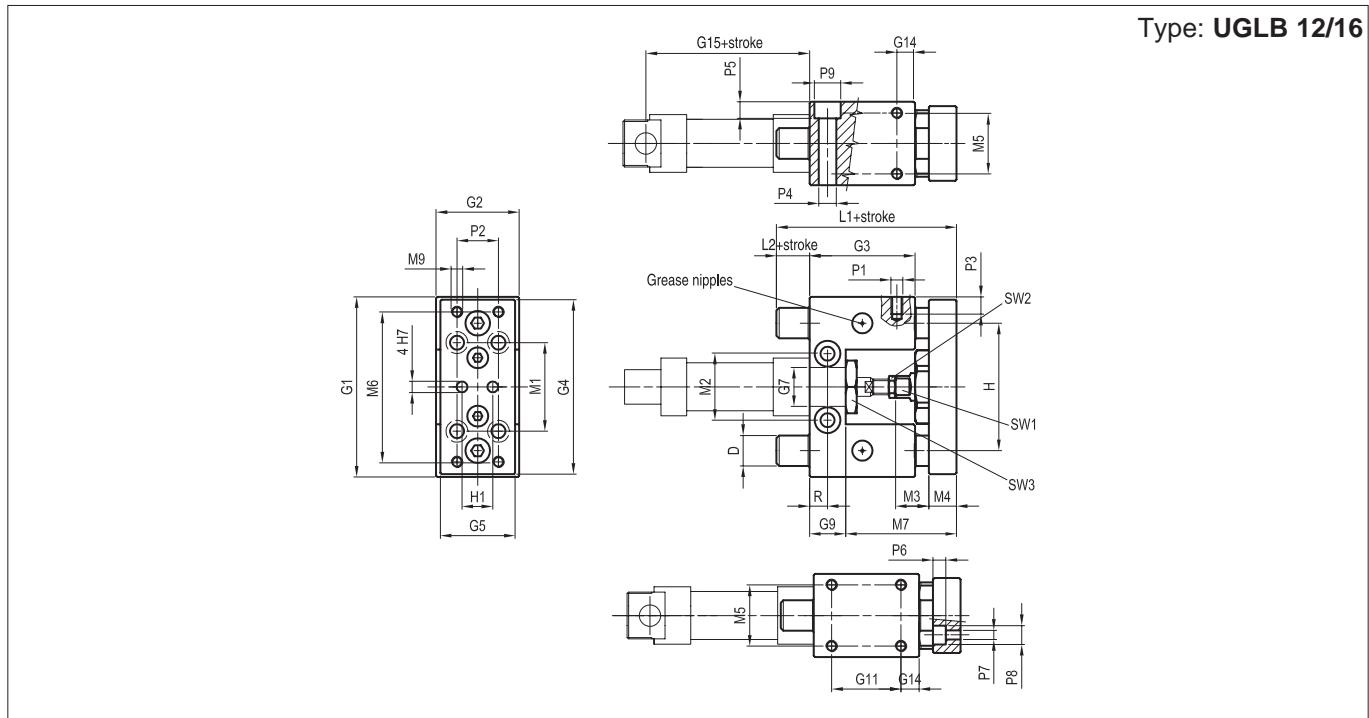
Technical data	
Temperature range	-20 °C ÷ +70° C
Materials	<p>Body: Anodised aluminium</p> <p>Plate: Anodised aluminium</p> <p>Seals: Polyurethane - Bronze</p> <p>Bushings: UGLB - UGPB: Sintered bronze UGPS: Spherical bearings</p> <p>Rods: UGLB - UGPB: Chrome plated steel C45 UGPS: Hardened and chrome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

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

Seal kits not available.

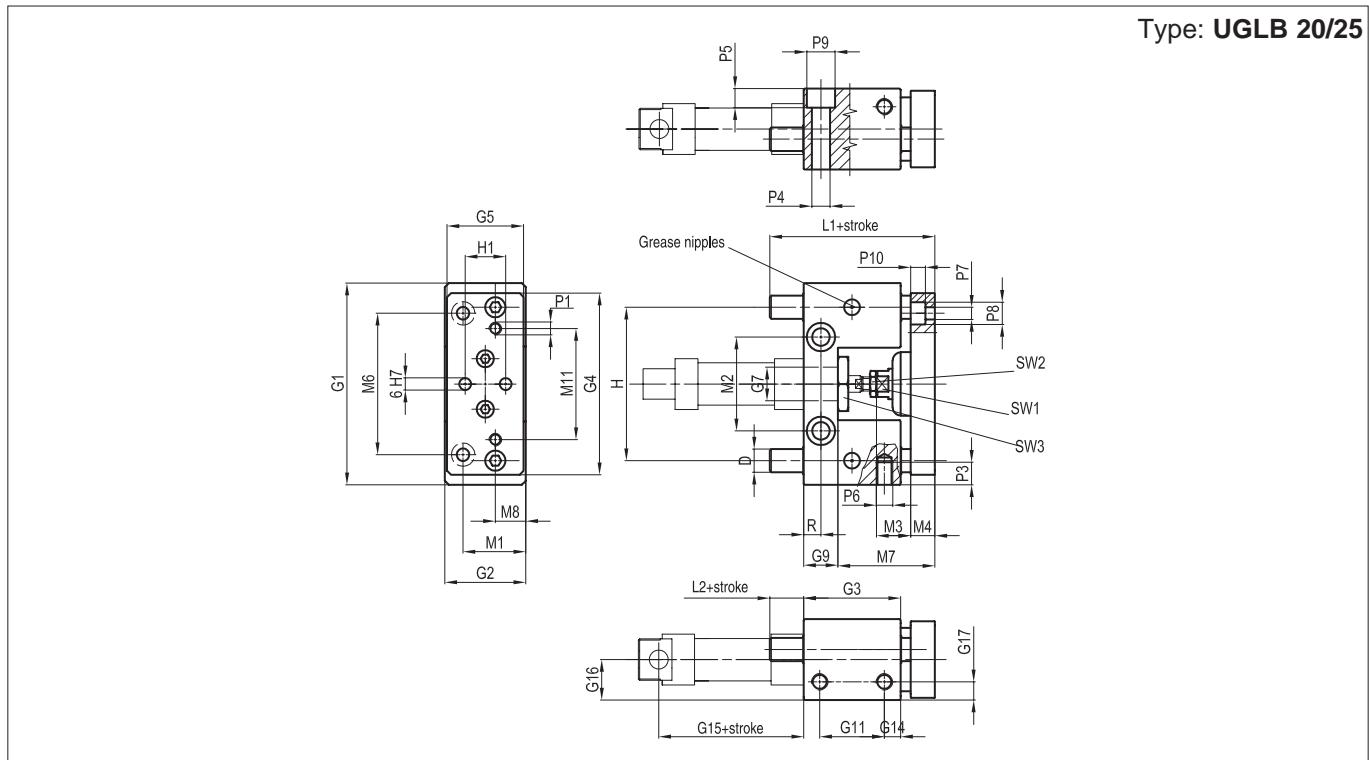
Slide Units for Cylinders ISO 6432

Bores from 12 to 25 mm



\emptyset mm	D	G ₁	G ₂	G ₃	G ₄	G ₅	G ₆	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	

\emptyset 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



\emptyset mm	D	G ₁	G ₂	G ₃	G ₄	G ₅	\emptyset 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

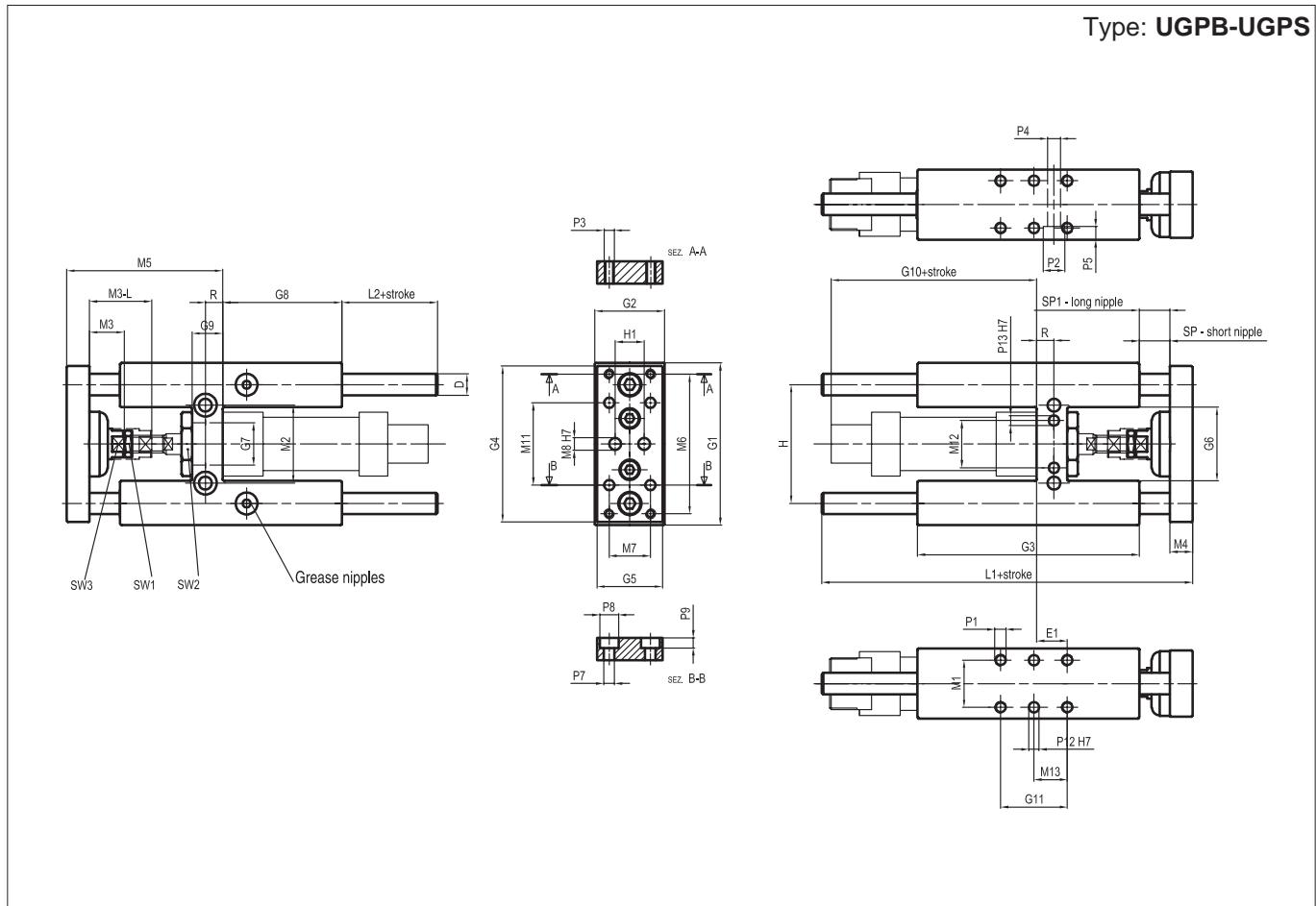
\emptyset mm	M ₄	M ₆	M ₇	M ₈	M ₁₁	L ₁	L ₂	\emptyset P ₁	P ₃	\emptyset P ₄	P ₅	\emptyset P ₆	\emptyset P ₇	\emptyset P ₈	\emptyset P ₉	P ₁₀	SW ₁	SW ₂	SW ₃
20	12	70	48	15	55	75	12	M6	15	9	9	M8	6,5	11	14	7	13	13	27
25	12	70	54	15	55	83	12	M6	15	9	9	M8	6,5	11	14	7	13	17	27

Slide Units for Cylinders ISO 6432

Bores from 12 to 25 mm



Type: UGPB-UGPS



1

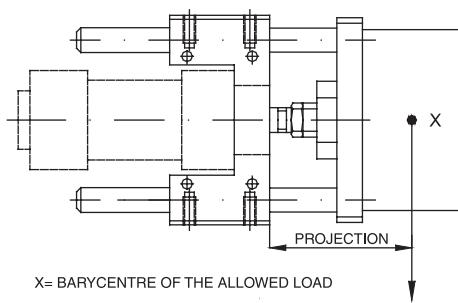
\varnothing mm	D	E ₁	G ₁	G ₂	G ₃	G ₄	G ₅	G ₆	G ₇	G ₈	G ₉	G ₁₀	G ₁₁	H	H ₁
12	10	11	65	30	75	63	27	27	16	37	13	66	32,5	46	15
16	10	11	65	30	75	63	27	27	16	37	13	71	32,5	46	15
20	12	15	79	34	108	76	32	36	22	58	15	87	32,5	58	20
25	12	15	79	34	108	76	32	36	22	58	15	90	32,5	58	20

\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

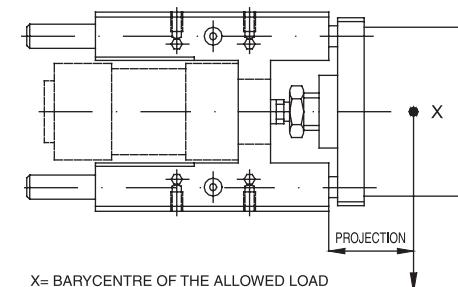
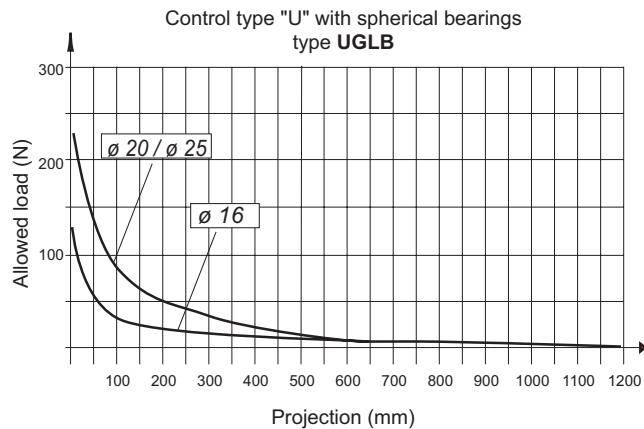
\varnothing mm	P ₂	P ₃	P ₄	P ₅	P ₇	P ₈	P ₉	P ₁₃	P ₂	R	SP	SP ₁	SW ₁	SW ₂	SW ₃
12	8,5	M4	5,5	5,5	4,5	7	4,5	/	/	6,5	3	3	10	19	8
16	8,5	M4	5,5	5,5	4,5	7	4,5	/	/	6,5	3	3	10	19	8
20	10,5	M5	6,5	7	5,5	9	6	5	5	8,5	3	22	13	27	13
25	10,5	M5	6,5	7	5,5	9	6	5	5	8,5	3	22	17	27	13

Slide Units for Cylinders ISO 6432

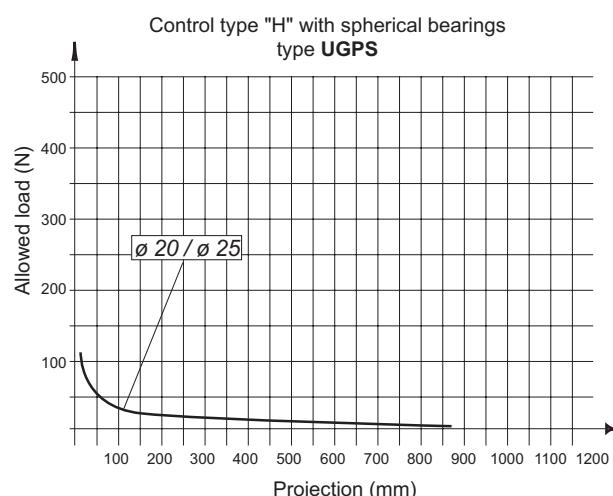
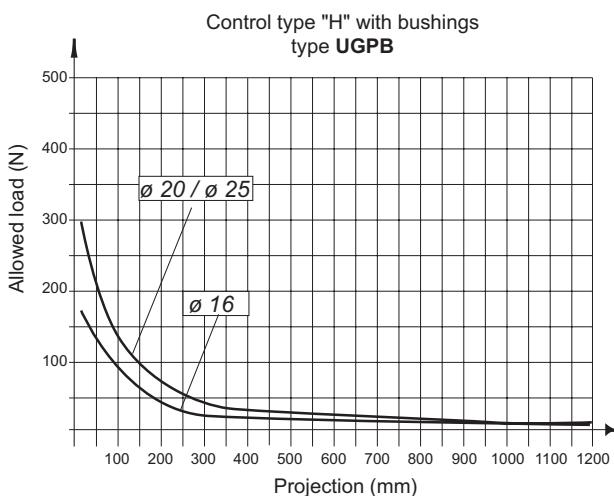
Bores from 12 to 25 mm



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)



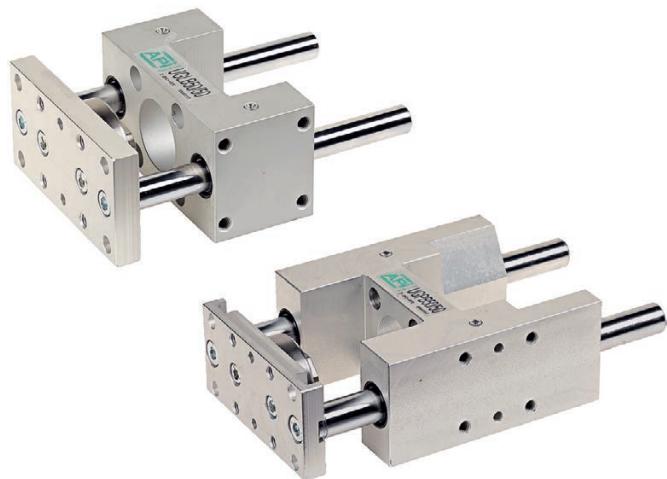
Slide Units for Cylinders ISO 15552

Bores from 32 to 100 mm



1

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 to 2014/34/EU - ATEX

Options	Suffix
Rods in stainless steel AISI 316 (UGPB type only)	K
Special versions on request	/ S

The options can be combined (when this is possible)

Series of linear slide units for cylinders ISO 15552 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: UGBS40/200K

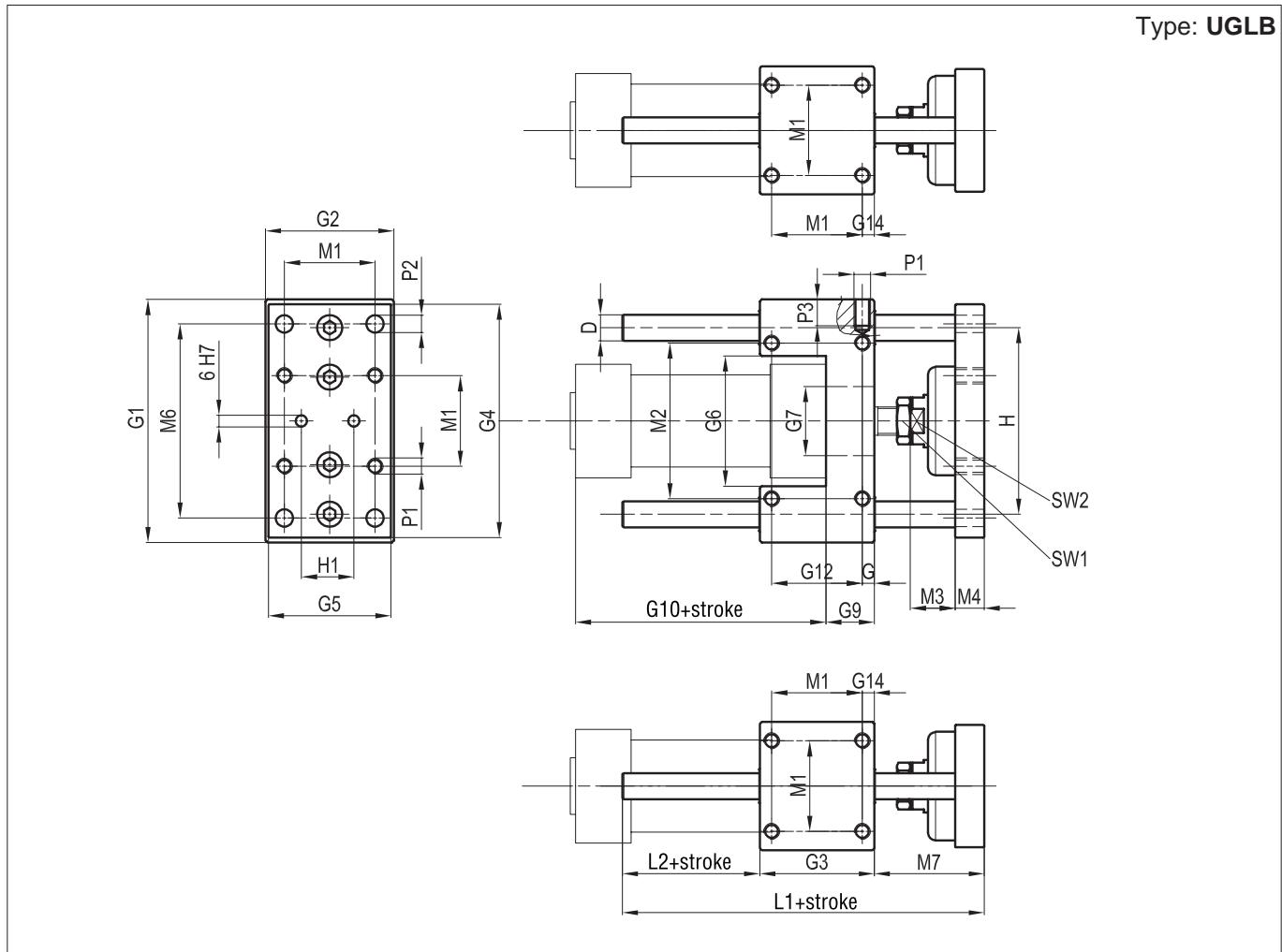
UGPB	40	/	200	K
Type	Cylinder bore	/	Cylinder stroke	Option

Technical data	
Temperature range	-20 °C ÷ +70° C
Materials	<p>Body: Anodised aluminium</p> <p>Plate: Anodised aluminium</p> <p>Seals: Polyurethane - Bronze</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.E. (mm)	Maximum stroke of cylinders D.E. (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 ISO 15552

Bores from 32 to 100 mm



\varnothing mm	D	G	G ₁	G ₂	G ₃	G ₄	G ₅	G ₆	\varnothing G ₇	G ₉	G ₁₀	G ₁₂	G ₁₄	H	H ₁
32	12	7,8	100	48	48	95	45	48	30	17	94	32,5	7,8	74	31
40	12	10	106	56	58	101	53	64	35	21	105	38	10	80	36
50	16	6,3	125	66	59	120	63	67	40	25	106	46,5	6,3	96	45
63	16	9,8	132	76	76	127	73	76	45	25	121	56,5	9,8	104	45
80	20	20	165	98	90	160	95	97	45	34	128	50	9	130	56
100	20	20	185	118	110	180	115	117	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	17	17
40	38	64	23	15	84	52	120	10	M6	6,5	12	19	17
50	46,5	80	24	15	100	65	130	6	M8	8,5	15	24	24
63	56,5	95	24	15	105	65	145	4	M8	8,5	15	24	24
80	72	130	28,5	16	130	71	170	9	M10	11	18	30	27
100	89	150	30	18	150	71	190	9	M10	11	18	30	27

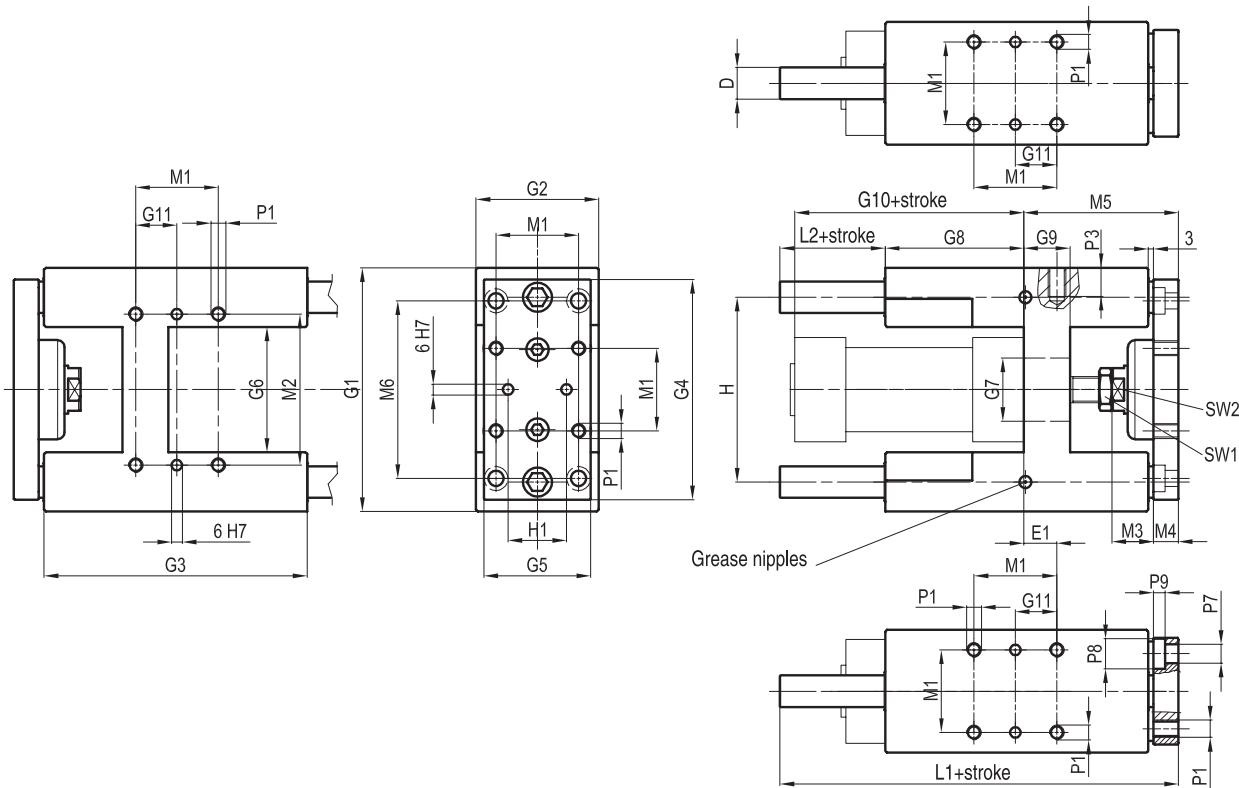
Slide Units for Cylinders ISO 15552

Bores from 32 to 100 mm



1

Type: UGPB-UGPS

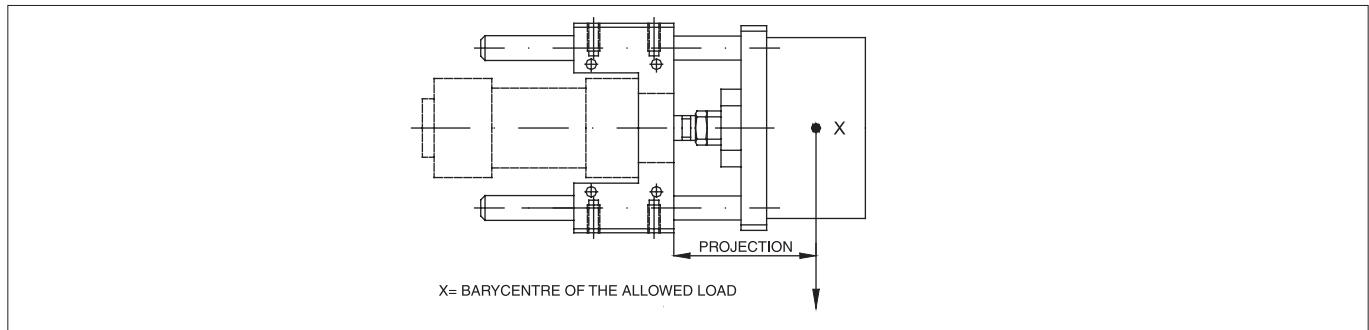


\varnothing mm	D	E ₁	G ₁	G ₂	G ₃	G ₄	G ₅	G ₆	\varnothing G ₇	G ₈	G ₉	G ₁₀	G ₁₁	H	H ₁
32	12	4,3	97	49	125	90	45	50,2	30	76	17	94	16,25	74	31
40	16	11	115	58	139	110	54	58,2	35	81	21	105	19	87	36
50	20	18,8	137	69	148	124	60	70,2	40	78	26	106	23,25	104	45
63	20	15,3	152	85	178	145	79	85,2	45	107	26	121	28,25	119	45
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

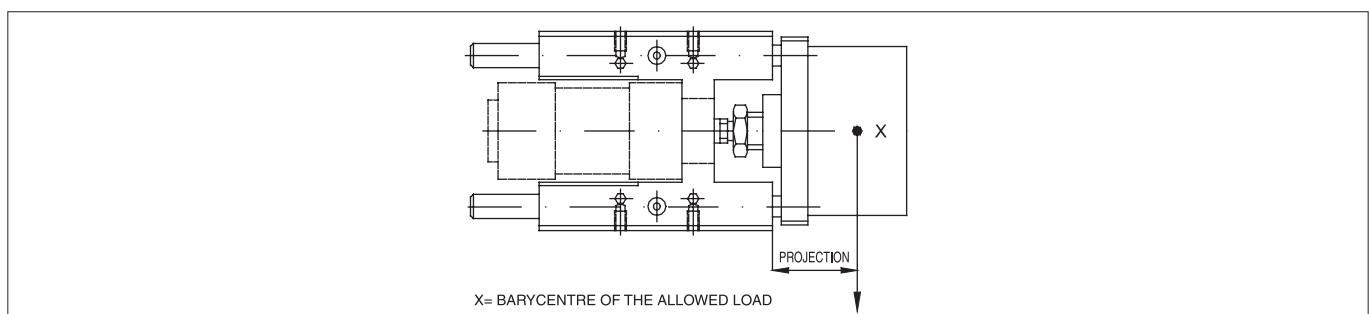
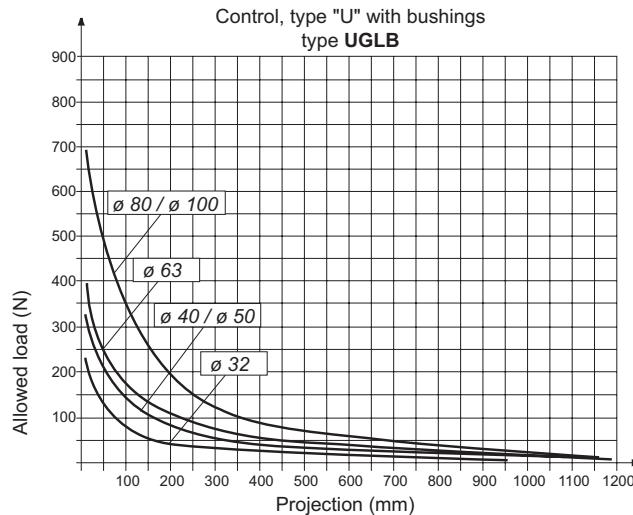
\varnothing mm	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	L ₁	L ₂	\varnothing P ₁	P ₃	\varnothing P ₇	\varnothing P ₈	P ₉	SW ₁	SW ₂
32	32,5	61	23	11	63	78	177	38	M6	10	6,5	10,5	6,5	15	17
40	38	69	23	15	76	84	192	35	M6	10	6,5	10,5	6,5	15	17
50	46,5	85	24	14	87	100	204	39	M8	16	8,5	13,5	9	22	24
63	56,5	100	24	15	89	105	237	41	M8	16	8,5	13,5	9	22	24
80	72	130	30	20	110	130	280	42	M10	18	11	18	11	27	27
100	89	150	30	20	115	150	280	37	M10	18	11	18	11	27	27

Slide Units for Cylinders ISO 15552

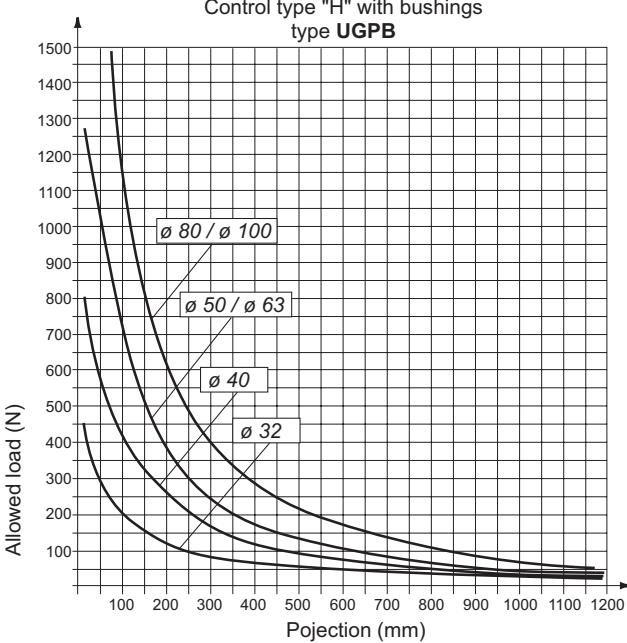
Bores from 32 to 100 mm



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

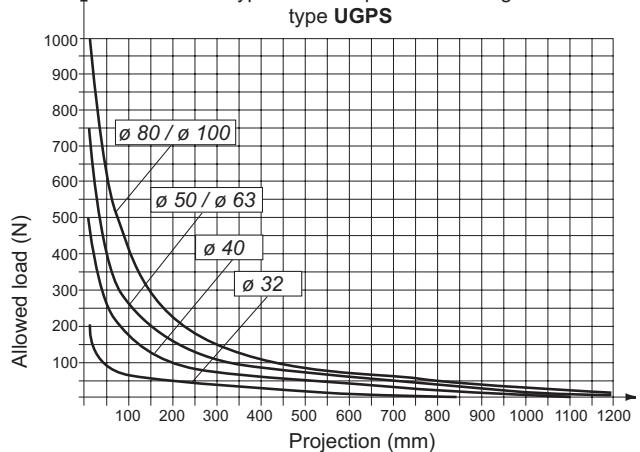


Control type "H" with bushings
type UGPB



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

Control type "H" with spherical bearings
type UGPS



Slide Units for Cylinders ISO 15552

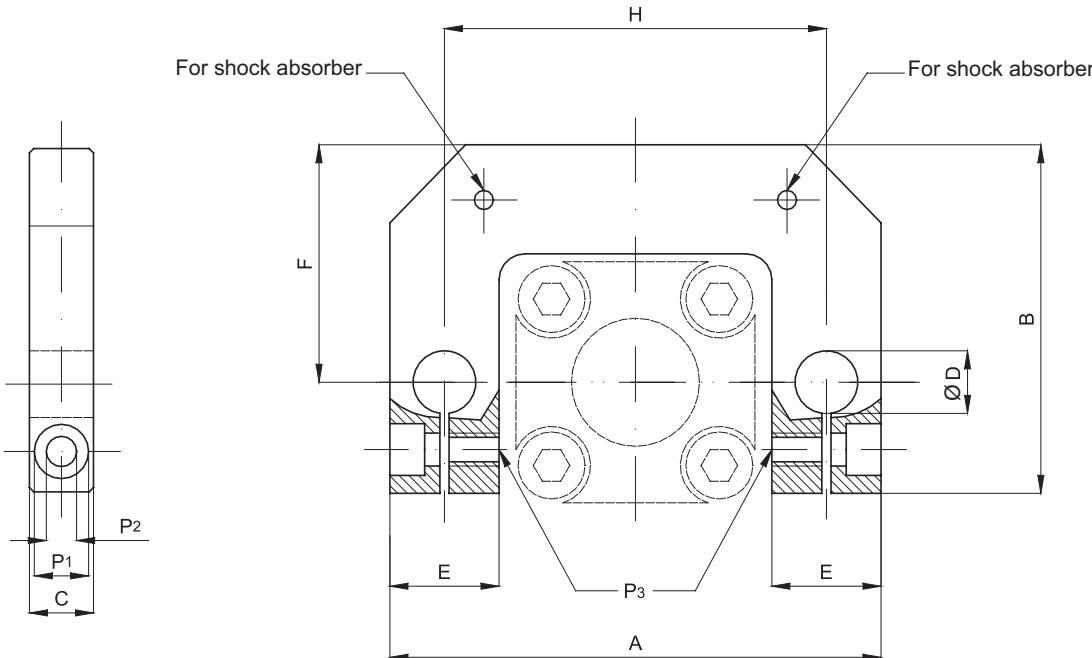
Bores from 32 to 100 mm



Connecting bracket for rods

Type: **SCSG**

1



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	16	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

Static piston-rod brake for Cylinders ISO 6432

Bores from 20 to 25 mm



Standard executions			
Version	Symbol	Code	Item
Normally closed		042022	ABS 020CRD
		042023	ABS 025CRD
Normally open		042032	ABS 020ARD
		042033	ABS 025ARD



1

Series of static locking-rod units for cylinders ISO6432. The piston-rod brakes series ABS can be supplied normally closed or normally open.

The main applications are the locking of the piston-rod in the event of a pressure lack or failure or in all those cases where a stop for a machining or handling is necessary.

The clamping forces are suitable for a working pressure of the cylinder equal to 8 bar and act in both directions.

For the application of the piston-rod brake ABS to a cylinder ISO6432 is necessary to order the cylinder with the rod predisposed for this (the extended one in hardened steel, option B, see page 1.5.1).

How to order: ABS020CRD

ABS	020	CRD
Type	Bores	Option

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

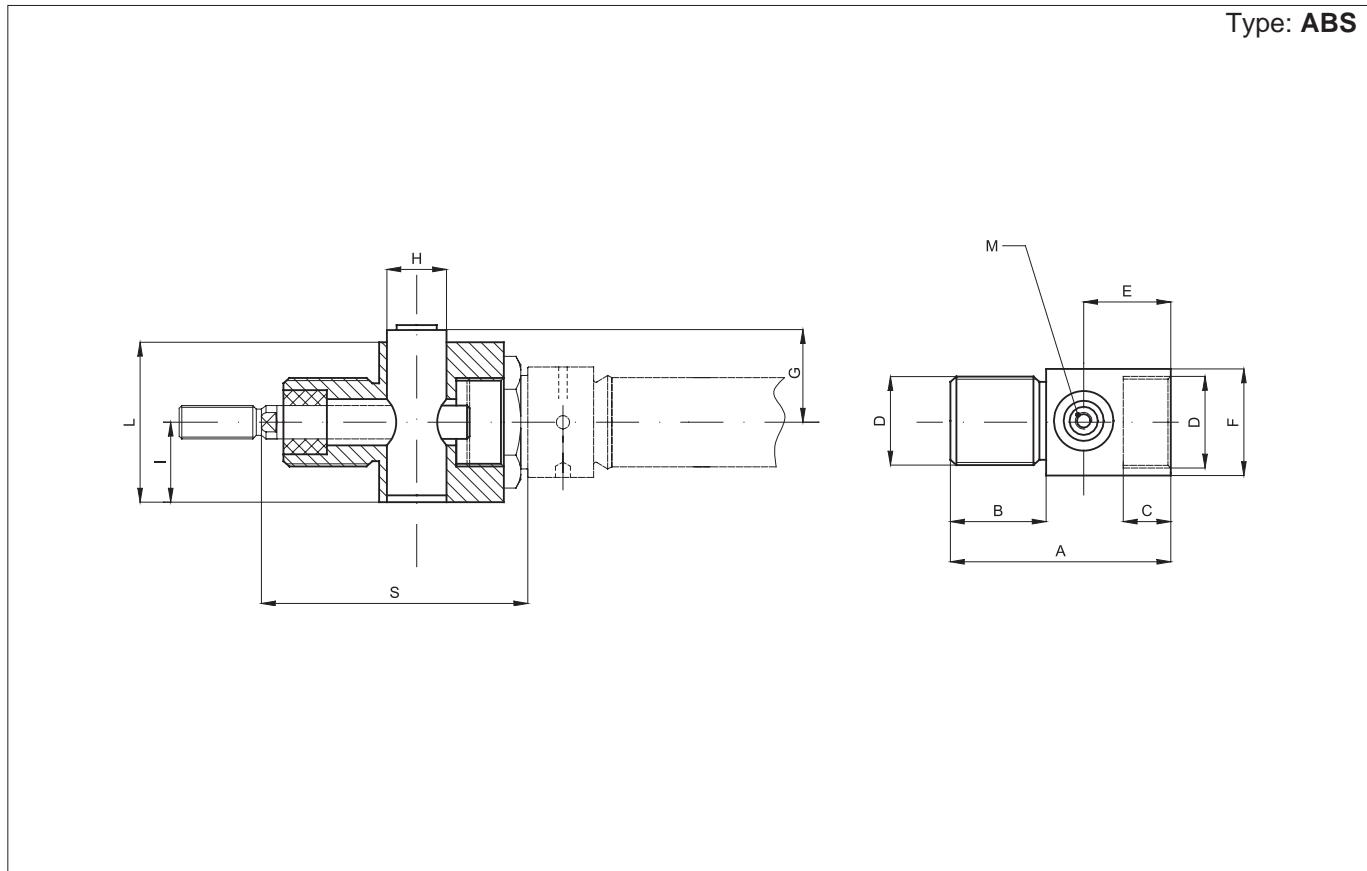
Seal kits not available.

Technical data		
Bores (mm)	20	25
Fluid	Compressed filtered air with or without lubrication.	
Pressure	4 ÷ 8 bar	
Locking force (N)	300	400
Temperature range	-10 °C ÷ +80° C	
Materials	Body: Anodised aluminium Jaws: Brass Seals: Nitrile rubber (NBR) Locking cylinder: Anodised aluminium	

WARNING: working of piston rod-brake type ABS is static: before clamping is necessary to arrest the rod, is not usable for reducing the speed of the rod while moving.

The locking-rod unit must only be unlocked when the pressures of both chambers of the cylinder are balanced, or the rod of the cylinder could move with non-uniform motion, causing problems to the application.

Static piston-rod brake for Cylinders ISO 6432
Bores from 20 to 25 mm



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

Static piston-rod brake for Cylinders ISO 15552

Bores from 32 to 125 mm



Standard executions			
Version	Symbol	Code	Item
Normally closed		042001	ABS 032CRD
		042002	ABS 040CRD
		042003	ABS 050CRD
		042004	ABS 063CRD
		042005	ABS 080CRD
		042006	ABS 100CRD
		042007	ABS 125CRD
Normally open		042011	ABS 032ARD
		042012	ABS 040ARD
		042013	ABS 050ARD
		042014	ABS 063ARD
		042015	ABS 080ARD
		042016	ABS 100ARD
		042017	ABS 125ARD



1

Series of static locking-rod units for cylinders ISO15552. The piston-rod brakes series ABS can be supplied normally closed or normally open.

The main applications are the locking of the piston-rod in the event of a pressure lack or failure or in all those cases where a stop for a machining or handling is necessary.

The clamping forces are suitable for a working pressure of the cylinder equal to 8 bar and act in both directions.

For the application of the piston-rod brake ABS to a cylinder ISO15552 is necessary to order the cylinder with the rod predisposed for this (the extended one in hardened steel, option B, see page 1.5.1).

How to order: ABS050CRD

ABS	050	CRD
Type	Bores	Option

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

Seal kits not available.

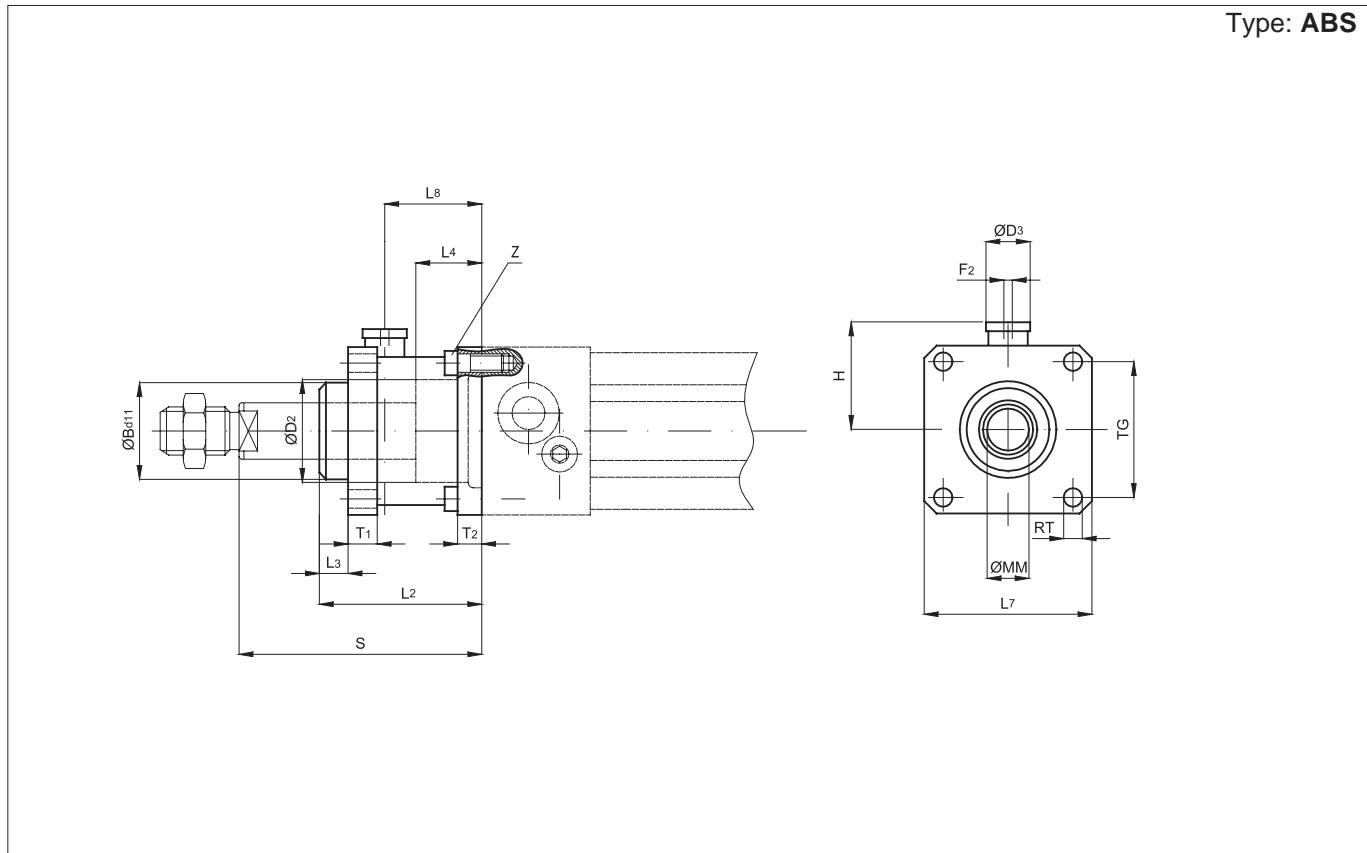
Technical data

Bores (mm)	32	40	50	63	80	100	125
Fluid	Compressed filtered air with or without lubrication						
Pressure	4 ÷ 8 bar						
Locking force (N)	650	1100	1600	2500	4000	6300	8700
Temperature range	-10 °C ÷ +80° C						
Materials	Body: Anodised aluminium						
	Jaws: Brass						
	Seals: Nitrile rubber (NBR)						
	Locking cylinder: Anodised aluminium						

WARNING: working of piston rod-brake type ABS is static: before clamping is necessary to arrest the rod, is not usable for reducing the speed of the rod while moving.

The locking-rod unit must only be unlocked when the pressures of both chambers of the cylinder are balanced, or the rod of the cylinder could move with non-uniform motion, causing problems to the application.

Static piston-rod brake for Cylinders ISO 15552
Bores from 32 to 125 mm



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 \varnothing	MM	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

Standard executions			
Version	Symbol	Code	Item
Normally closed		042035	ABK32
		042036	ABK40
		042037	ABK50
		042038	ABK63
		042039	ABK80
		042040	ABK100



Series of dynamic locking-rod units for cylinders ISO15552. The piston-rod brakes series ABK can be supplied normally closed. The peculiarity of this series is to lock the cylinder piston-rod while moving and to hold it still even in presence of pressure in the chamber.

A special feature of the series ABK is the absolute absence of axial movement and rotation of the cylinder piston-rod.

For the application of the piston-rod brake ABK to a cylinder ISO15552 is necessary to order the cylinder with the rod predisposed for this (the extended one in hardened steel, option B1, see page 1.5.1).

How to order: ABK050

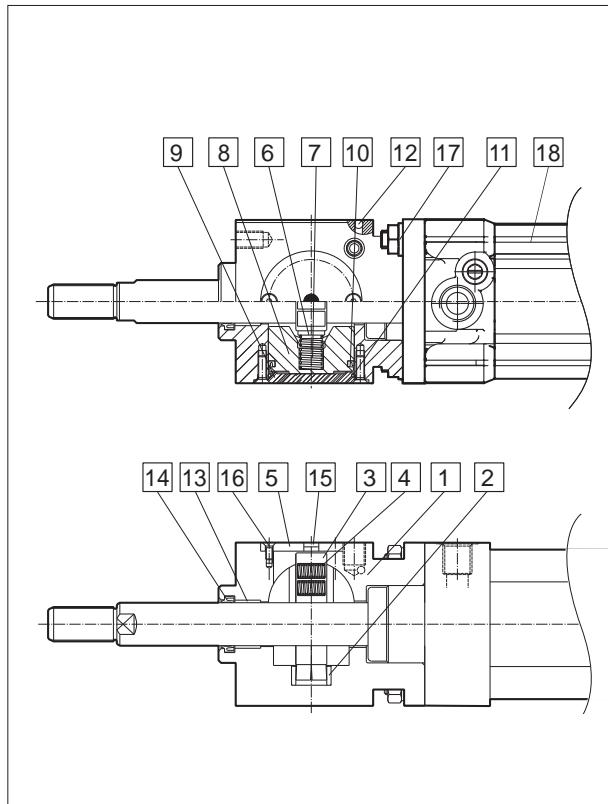
ABK	050	
Type	Cylinder bore	Option

Seal kits not available.

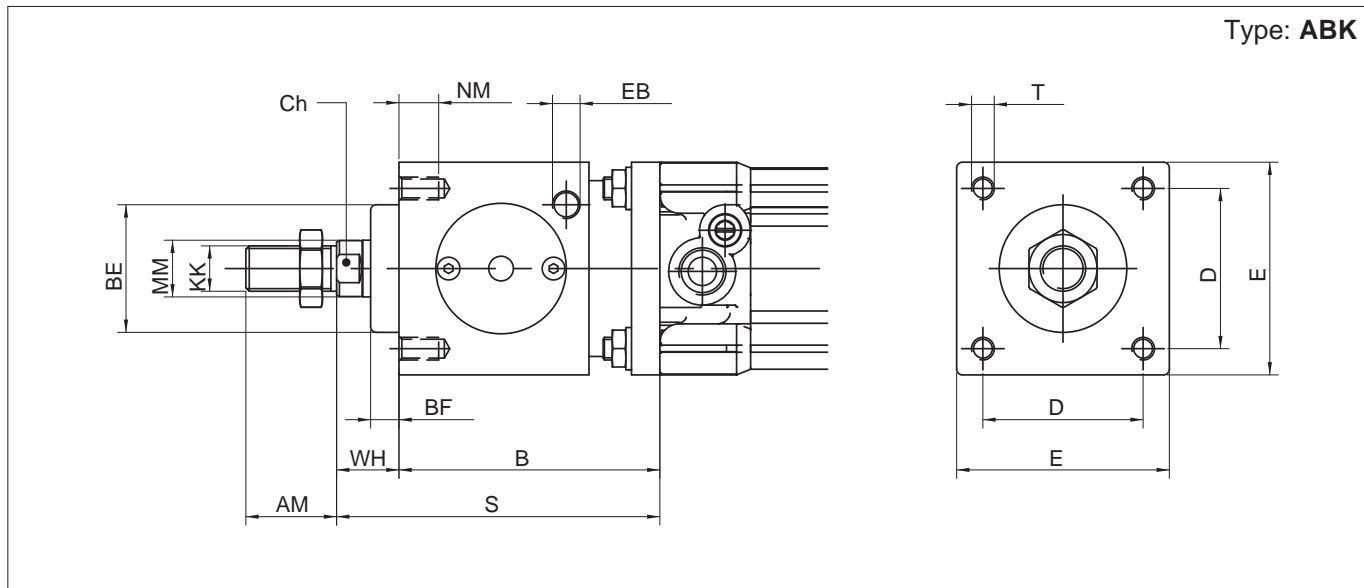
Technical data							
Bores (mm)	32	40	50	63	80	100	
Fluid	Compressed filtered air with or without lubrication						
Pressure range	4 ÷ 6.5 bar						
Min. working pressure (bar)	4.0	4.0	3.5	3.5	3.0	3.0	
Locking model	Secure locking of piston rod in any position						
Locking force (N)	510	860	1275	2060	3300	4620	
Lock braking precision (mm)	V (mm/sec)	(Horizontal axis) operate with a load ratio of 70% or less, (Vertical axis) Operate with a load ratio of 35% or less					
	50 (mm/sec)	±0.7	±0.8	±0.9	±0.8	±0.8	±1
	100 (mm/sec)	±1	±1	±1	±1	±1.2	±1.4
	200 (mm/sec)	±1.3	±1.6	±1.4	±1.8	±2.1	±2.4
Allowable energy (max) J(N • m) J(E _{k=1/2} mv ²)	0.84	1.41	2.2	3.31	4.98	7.57	
Temperature range	-10 °C ÷ +60° C						

Dynamic piston-rod brake for Cylinders ISO 15552
 Bores from 32 to 100 mm

Technical data

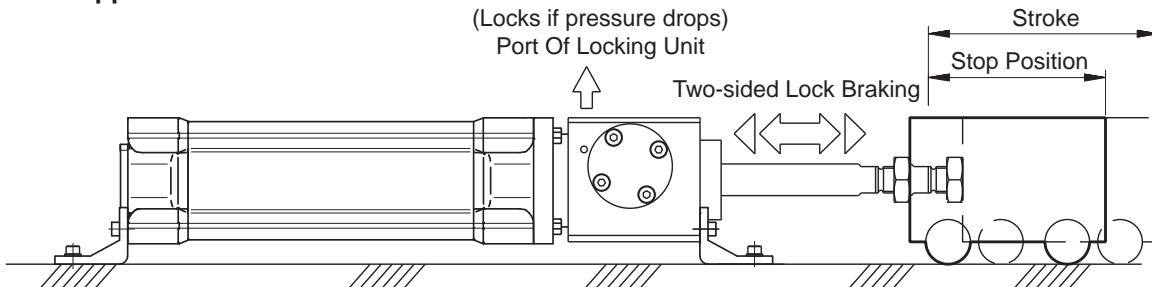


Materials (standard types)	
1 Body	Hard anodised aluminium alloy
2 Slide bush	Carbon steel
3 Locking unit	Brass
4 Spring	SWPA
5 Dust cover	Hard anodised aluminium alloy
6 Spring holder	POM
7 Spring	SWPA
8 Piston	POM
9 End cover	Hard anodised aluminium alloy
10 Piston packing	PU
11 O-ring	NBR
12 Steel ball	Carbon steel
13 Oilless bearing	Sintered bronze
14 Rod packing	NBR
15 Silencer	Cooper
16 Tie bolt	Carbon steel nickel plated
17 Tie bolt	Carbon steel blackening
18 Cylinder	-

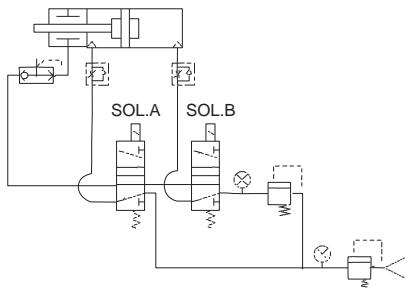


For cylinder Ø mm	AM	B	BE	BF	Ch	D	E	EB	KK	MM Ø f7	NM	S	T	WH
32	22	73	30	8	10	32.5	47	1/8"	M10x1.25	12	12	99	M6	26
40	24	76	35	8	13	38	53	1/8"	M12x1.25	16	12	106	M6	30
50	32	90	40	8	17	46.5	65	1/8"	M16x1.5	20	14	127	M8	37
63	32	92	45	10	17	56.5	75	1/8"	M16x1.5	20	14	129	M8	37
80	40	110	45	10	22	72	95	1/4"	M20x1.5	25	16	156	M10	46
100	40	130	55	10	27	89	115	1/4"	M20x1.5	25	16	181	M10	51

Horizontal application

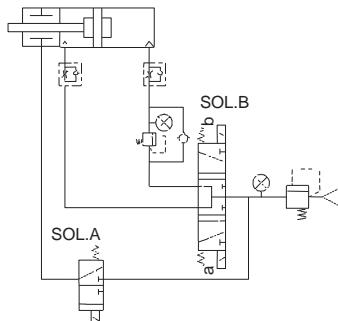


EXAMPLE 1



SOL. A	SOL. B	ACTION STATE
ON	OFF	extended
OFF	OFF	stop
ON	OFF	extended
OFF	ON	retract
OFF	OFF	stop
OFF	ON	retract

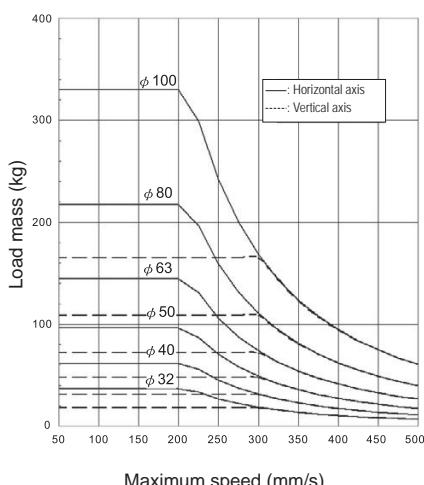
EXAMPLE 2



SOL. A	SOL. B		ACTION STATE
	a	b	
ON	OFF	ON	extended
OFF	OFF	OFF	stop
ON	OFF	ON	extended
ON	ON	OFF	retract
OFF	OFF	OFF	stop
ON	ON	OFF	retract

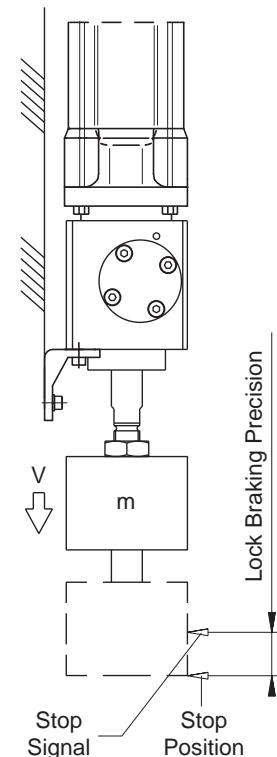
Vertical application

Allowable kinetic energy



$$E_k = \frac{1}{2} m v^2$$

E_k: Kinetic energy (J)
v: Speed (m/s)
m: Weight (kg)



Notes

Angular Hand Grips

Bores from 10 to 32 mm

Double acting



Standard 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.

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

Option	Suffix
Single acting	(to Ø 25) / SE

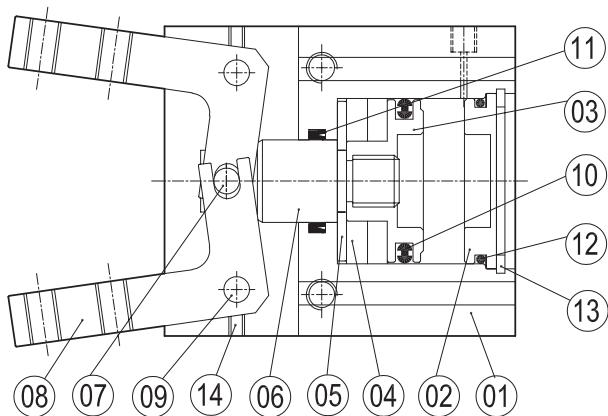
20	PAB	/SE
Bore	Type	Option

Technical data					
Type	10PAB	16PAB	20PAB	25PAB	32 PAB
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.				
Pressure	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* Opening*	1,6 x P 2,6 x P	8 x P 11 x P	17 x P 23 x P	34 x P 43 x P
Effective gripping force F (N)	$F = M / L^{**} \times 0,85$				
Maximum length of gripping point L (mm)	30				
Weight (g)	40				
Lever open/close angle	- 10° ÷ + 30°				
Ports	M3				
	M5				

* P = operating pressure (bar)

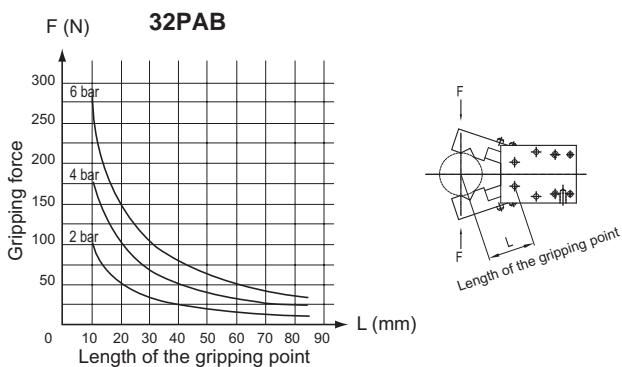
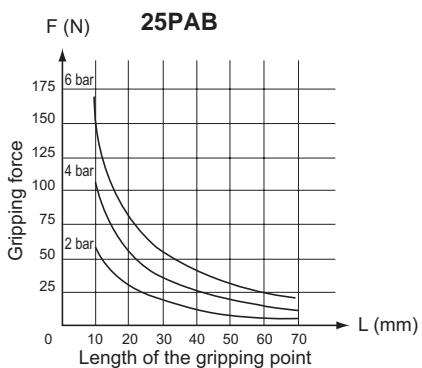
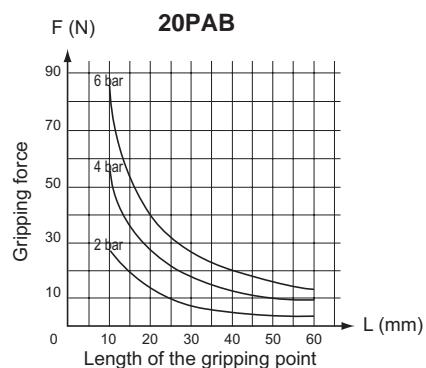
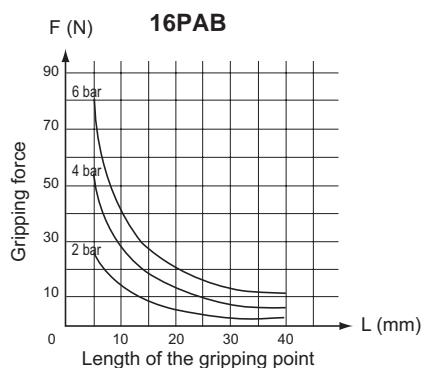
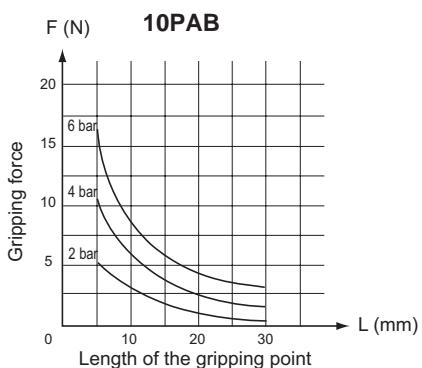
** L = distance of the gripping point (mm)

Materials

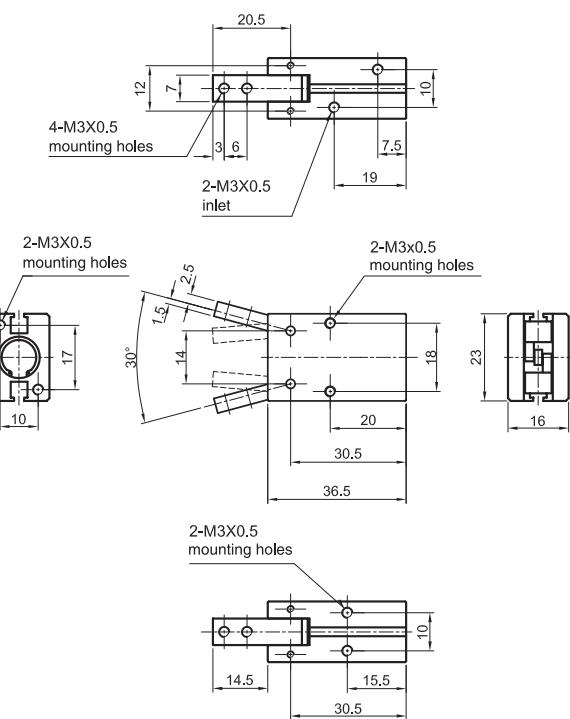


N.	Component	Material
1	Body	Aluminium
2	End cover	Brass
3	Piston	Brass
4	Magnet	Plastic magnet
5	Magnet holder	Brass
6	Piston rod	Stainless steel
7	Piston rod pin	Steel
8	Fingers	Steel alloy
9	Slide pin	Steel
10	Piston seal	NBR
11	Piston rod seal	NBR
12	End cover O-ring	NBR
13	Seeger	Steel
14	Hexagonal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

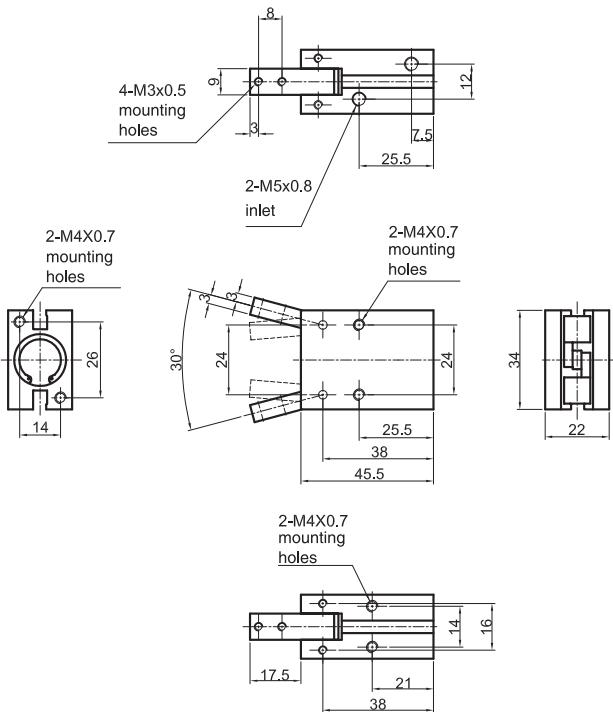
Gripping forces



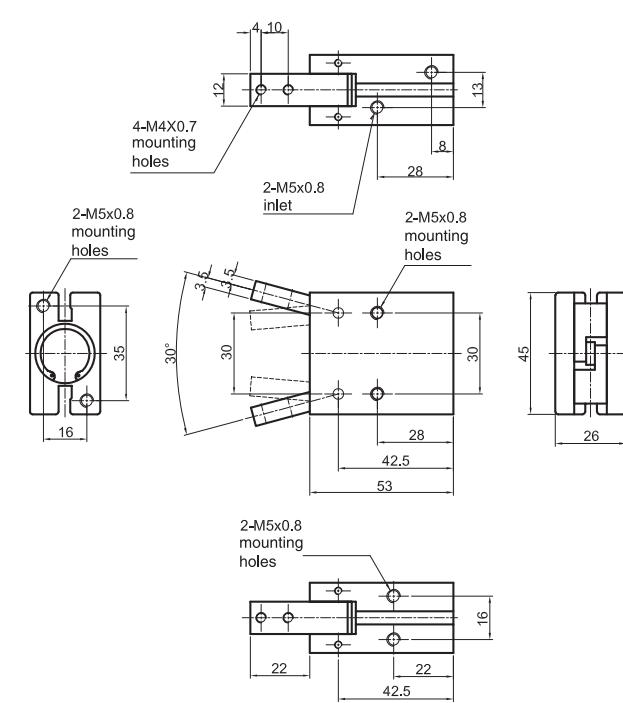
Type: 10PAB



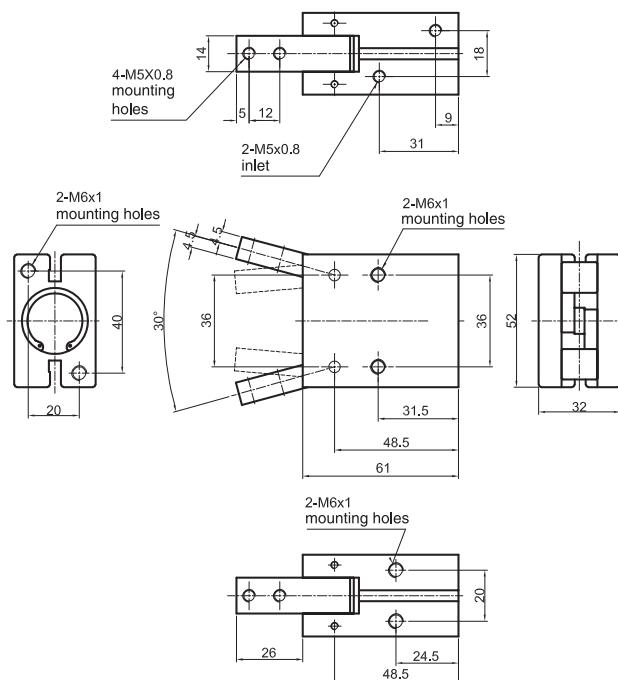
Type: 16PAB



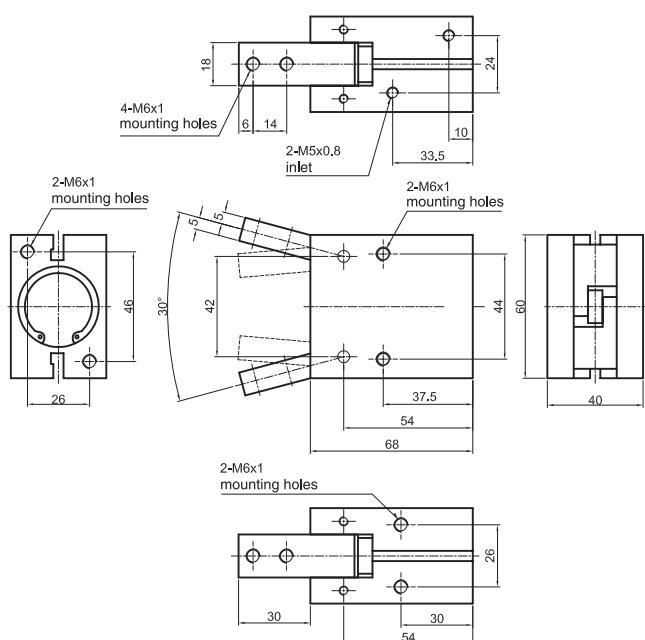
Type: 20PAB



Type: 25PAB



Type: 32PAB



Notes _____

Angular Hand Grips, 180°

Bores from 16 to 32 mm

Double acting



Standard 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

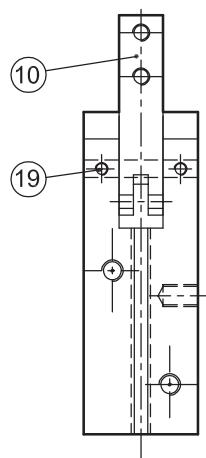
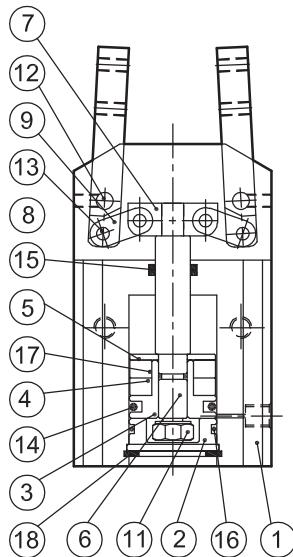
Technical data

Type	16PAC	20PAC	25PAC	32PAB
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.			
Pressure	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* Opening*	8 x P 11 x P	17 x P 23 x P	34 x P 43 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)

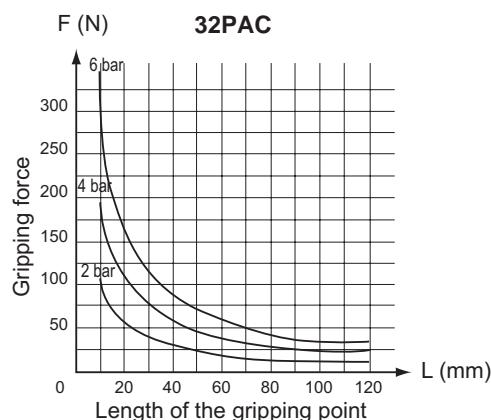
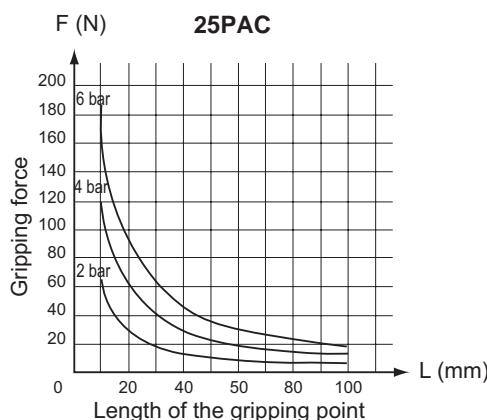
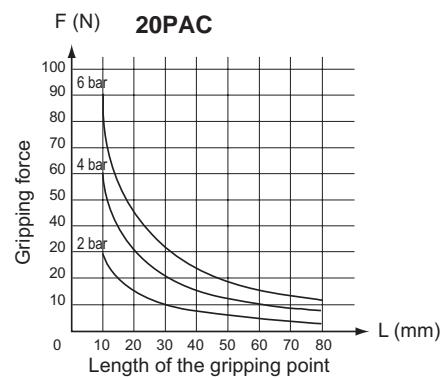
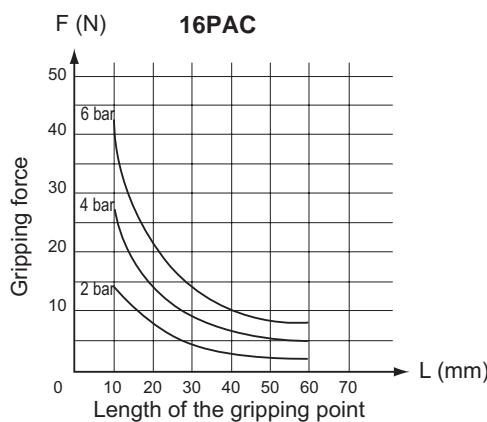
** L = distance of the gripping point (mm)

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



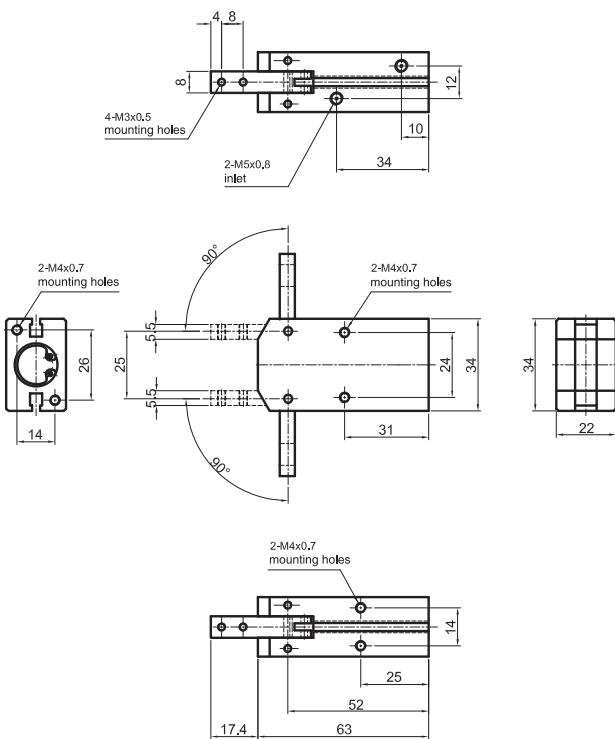
Angular Hand Grips, 180°

Bores from 16 to 32 mm

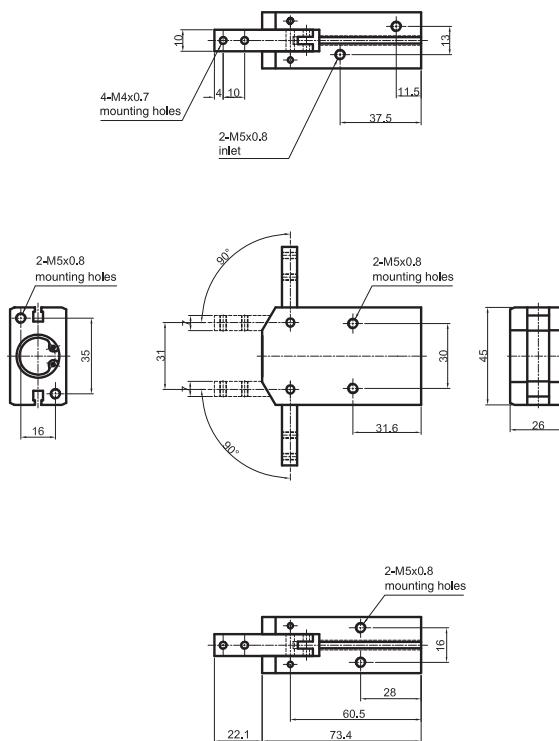
Double acting



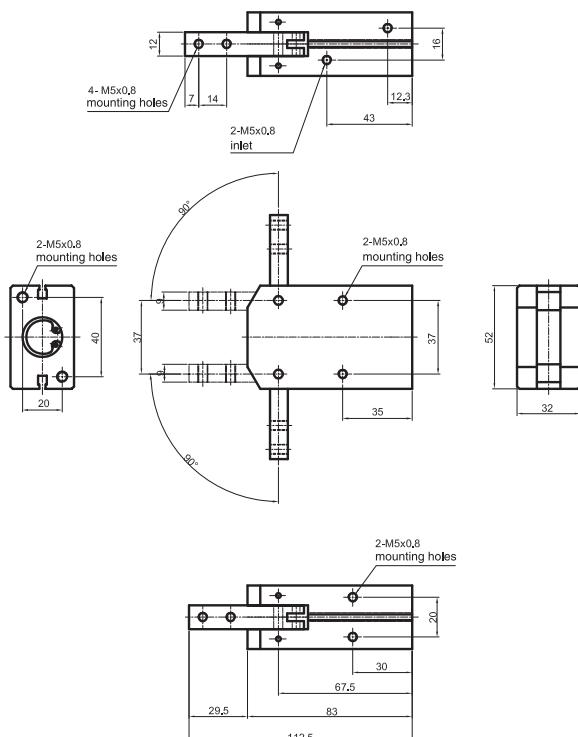
Type: 16PAC



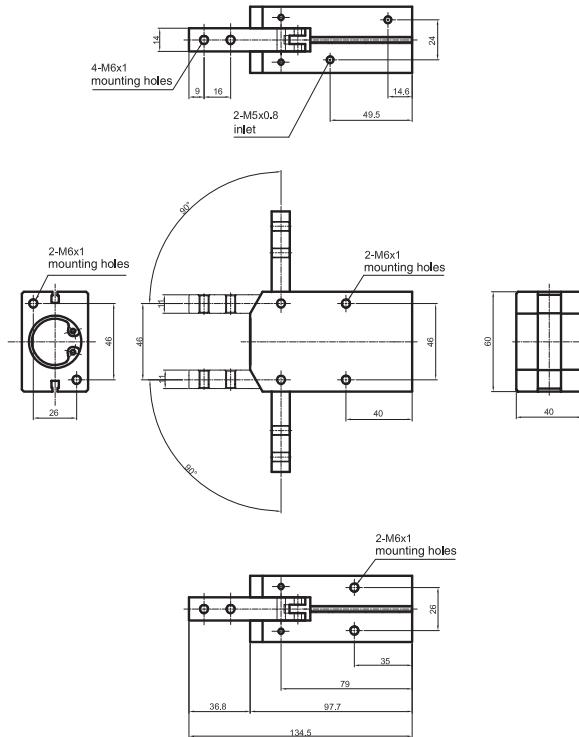
Type: 20PAC



Type: 25PAC



Type: 32PAC



Notes

Parallel Hand Grips

Bores from 10 to 32 mm

Double acting



Standard 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.

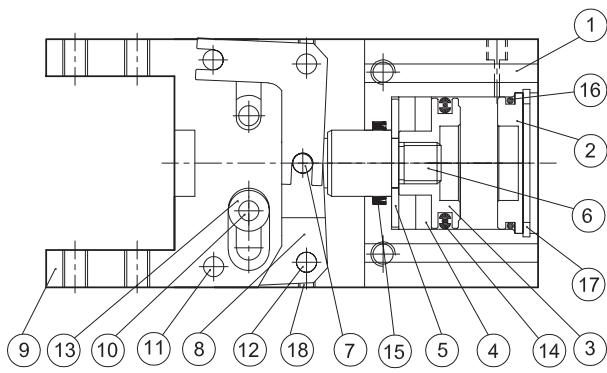
How to order : 16PPB

16	PPB
Bore	Type

Technical data					
Type	10PPB	16PPB	20PPB	25PPB	32PPB
Fluid	Compressed filtered air with or without lubrication. Lubrication, if started, must be continued.				
Pressure	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* Opening*	5 8	18 24	35 47	60 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	

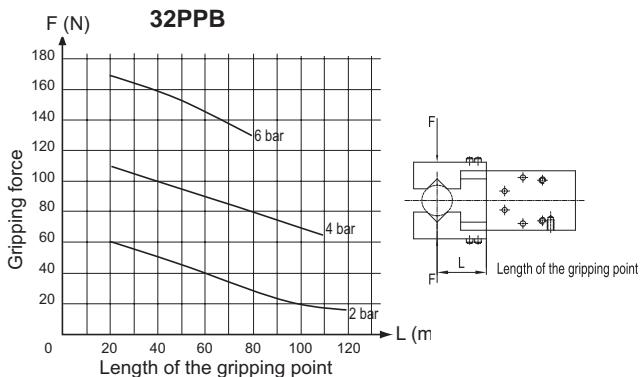
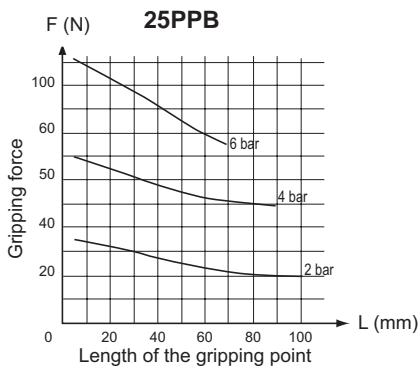
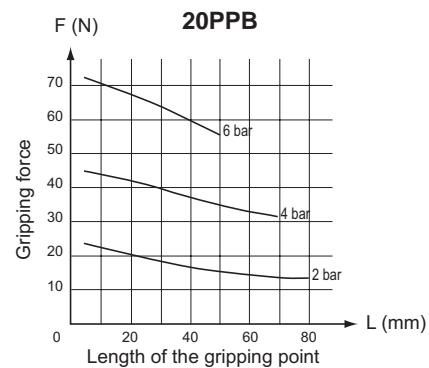
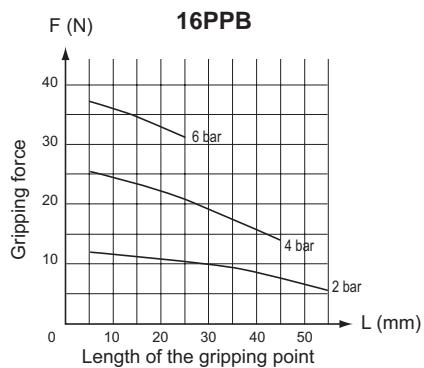
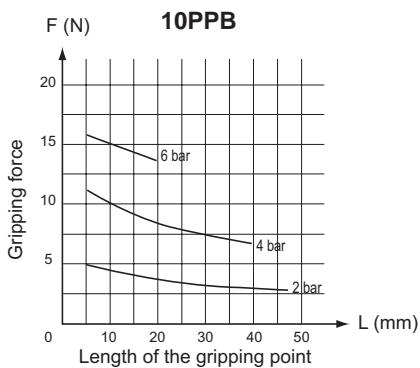
* Gripping point 30 mm at 5 bar

Materials

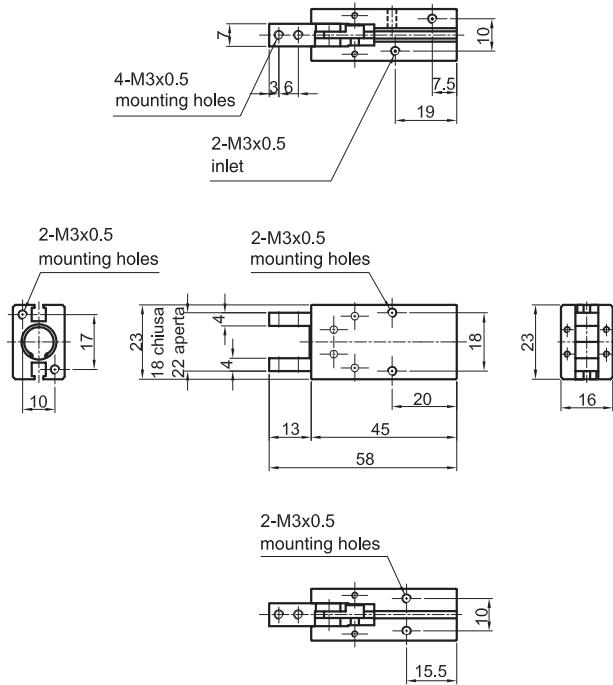


N.	Component	Material
1	Body	Aluminium
2	End cover	Brass
3	Piston	Brass
4	Magnet	Plastic magnet
5	Magnet holder	Brass
6	Piston rod	Stainless steel
7	Piston rod pin	Steel
8	Action lever	Steel alloy
9	Fingers	Steel alloy
10	Slide guide pin	Steel
11	Slide pin	Steel
12	Action lever pin	Steel
13	Ring	Steel 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



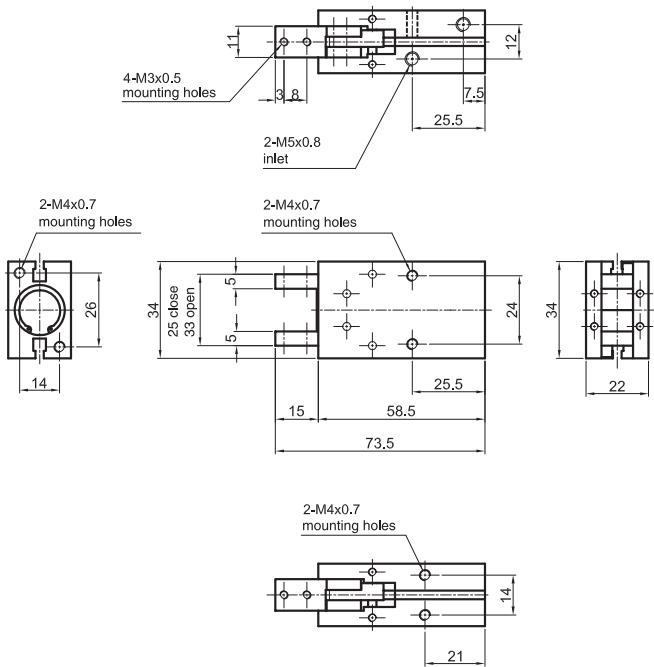
Parallel Hand Grips

Bores from 10 to 32 mm

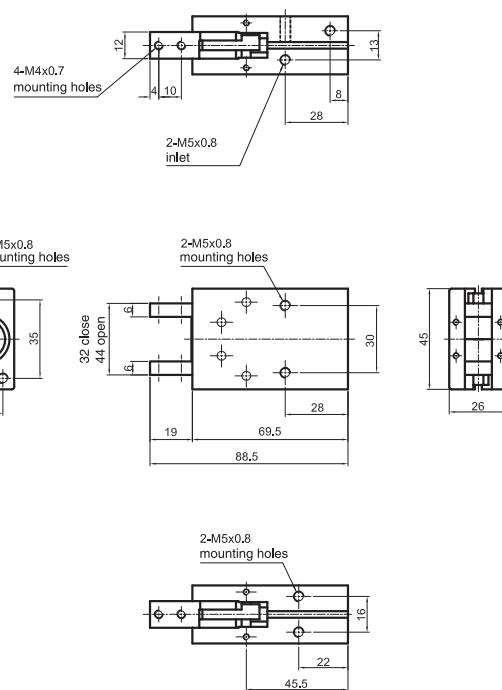
Double acting



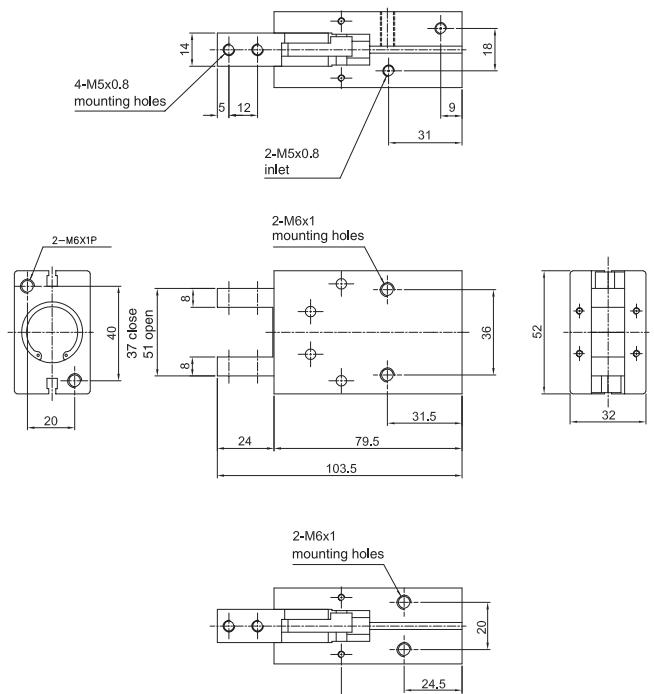
Type: 16PPB



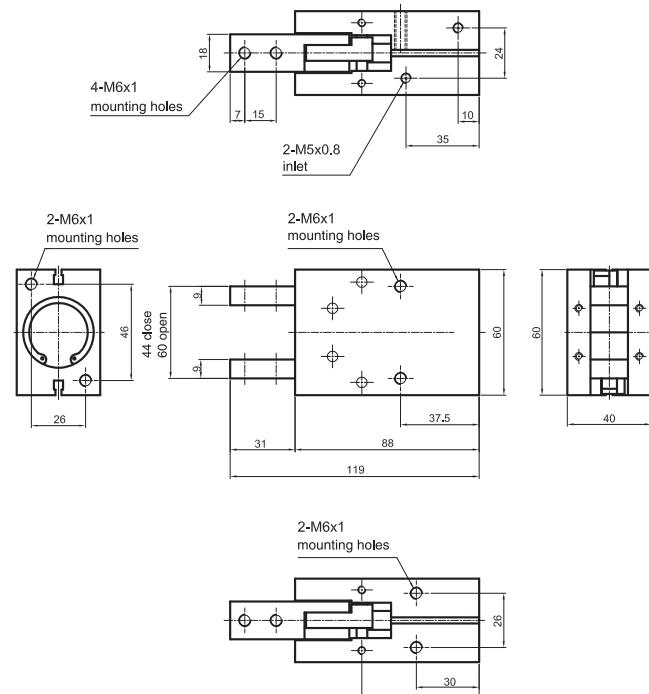
Type: 20PPB



Type: 25PPB



Type: 32PPB



Guided Parallel Hand Grips

Bores from 16 to 32 mm

Double acting



Standard 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 with or without lubrication. Lubrication, if started, must be continued.				
Pressure	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*: 18 Opening*: 24	35	60	85	
Maximum length of gripping point L (mm)	40	60	70	85	
Weight (g)	200	600	800	1300	
Stroke of open/close (mm)	6	8	14	16	
Ports		M5			

* P = 5 bar

Guided Parallel Hand Grips

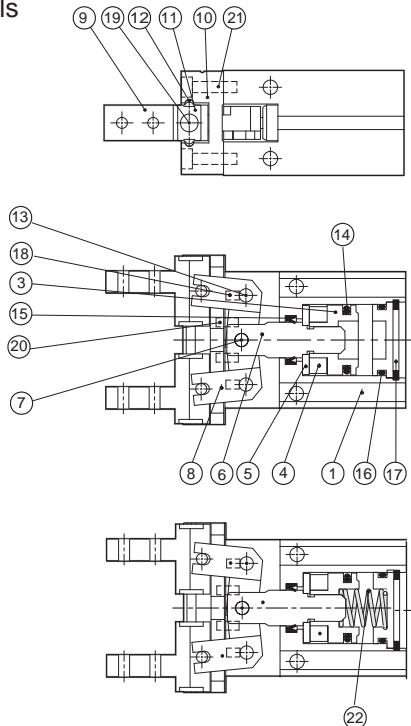
Bores from 16 to 32 mm

Double acting



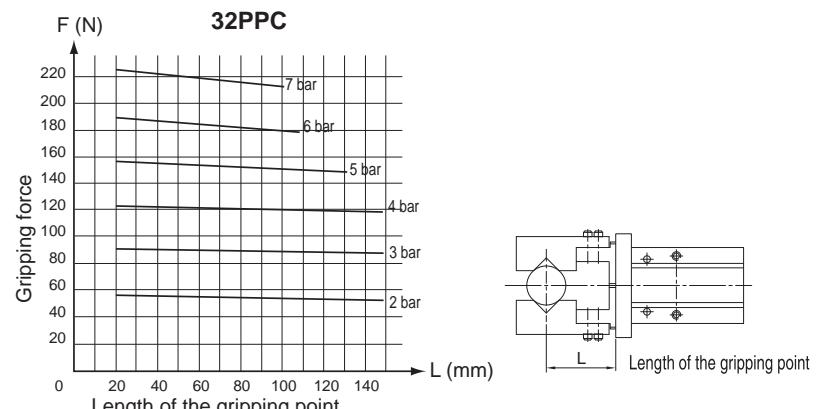
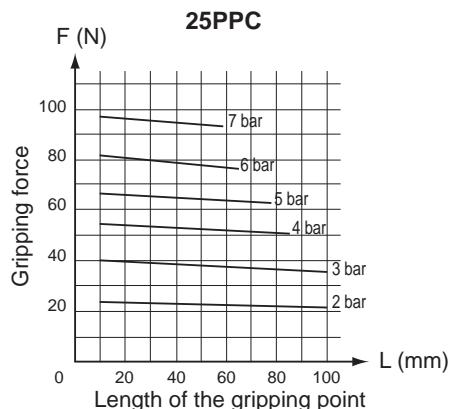
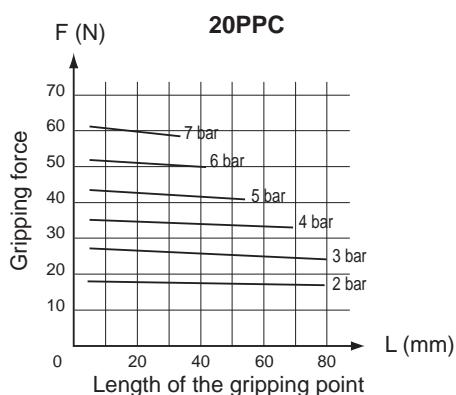
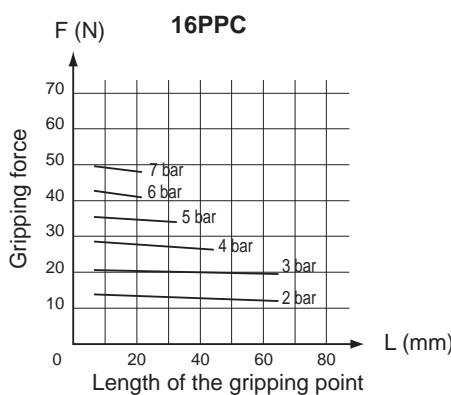
1

Materials



N.	Component	Material
1	Body	Aluminium alloy
2	End cover	Aluminium alloy
3	Piston	Copper
4	Magnet	Plastic
5	Magnet cover	Copper
6	Piston rod	Stainless steel
7	Rod pin	Steel
8	Action lever	Stainless steel
9	Finger	Stainless steel
10	Finger base	Stainless steel
11	Ball stopper	Stainless steel
12	Ball	Steel
13	Action lever pin	Stainless steel
14	Piston packing	NBR
15	Rod packing	NBR
16	End cover O-ring	NBR
17	Snapping	Alloy steel
18	Screw	Alloy steel
19	Screw	Alloy steel
20	Pin	Steel
21	Mounting screw	Alloy steel
22	Spring	Stainless steel

Gripping forces



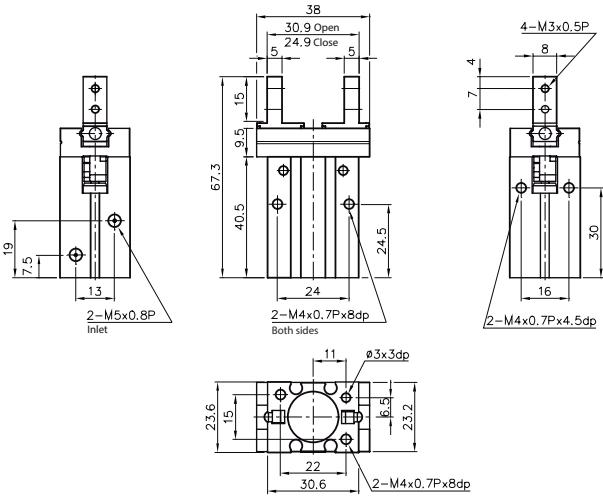
Guided Parallel Hand Grips

Bores from 16 to 32 mm

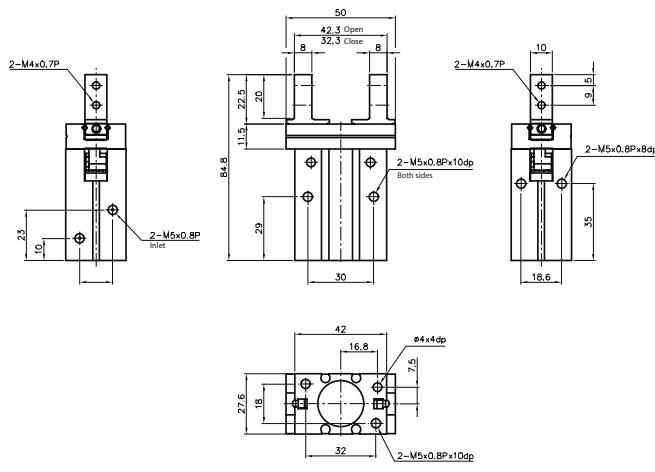
Double acting



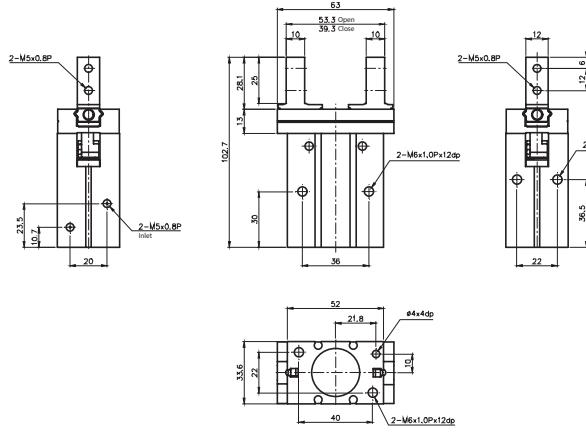
Type: 16PPC



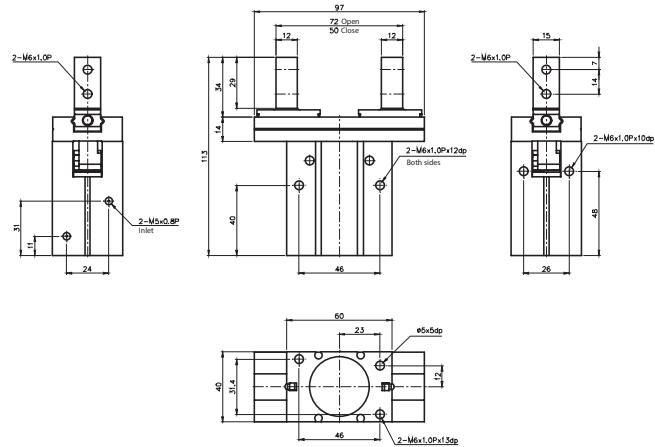
Type: 20PPC



Type: 25PPC



Type: 32PPC



Parallel Hand Grips with long stroke

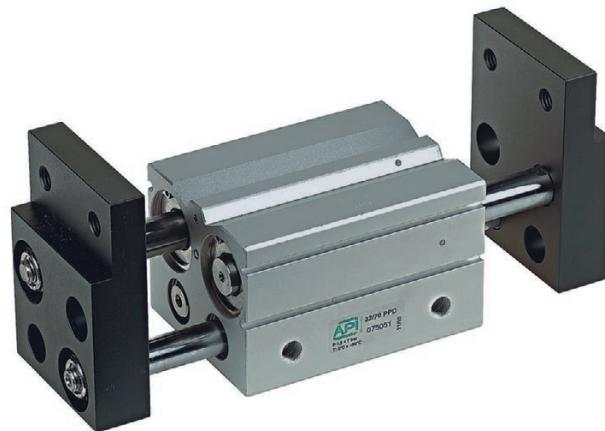
Bores from 10 to 32 mm

Double acting



Standard 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 with or without lubrication. Lubrication, if started, must be continued.				
Pressure	1,5 ÷ 7 bar				
Temperature range	0 °C ÷ +80° C				
Max. operation frequency	40 cycle / min.				
Lubrication	Piston: with or without lubrication				
	Levers: lubrication is required on moving parts				
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

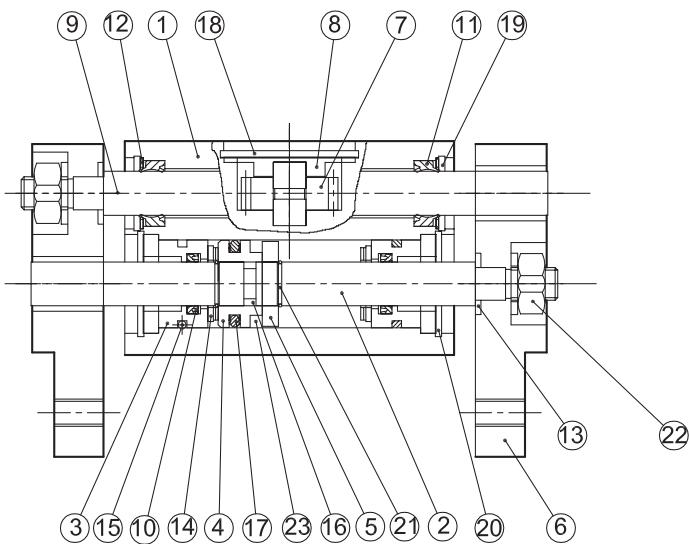
Parallel Hand Grips with long stroke

Bores from 10 to 32 mm

Double acting

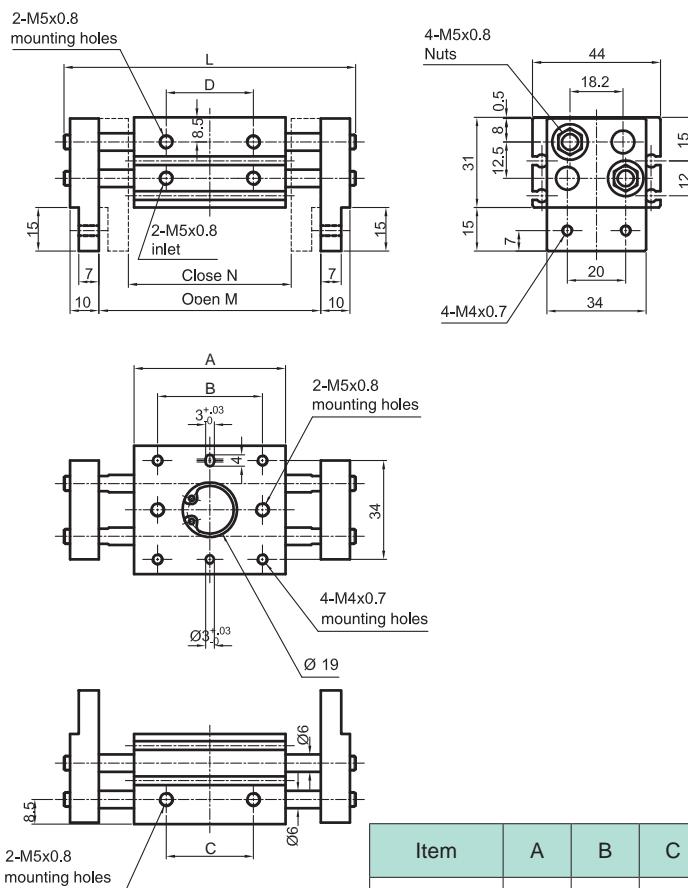


Materials



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



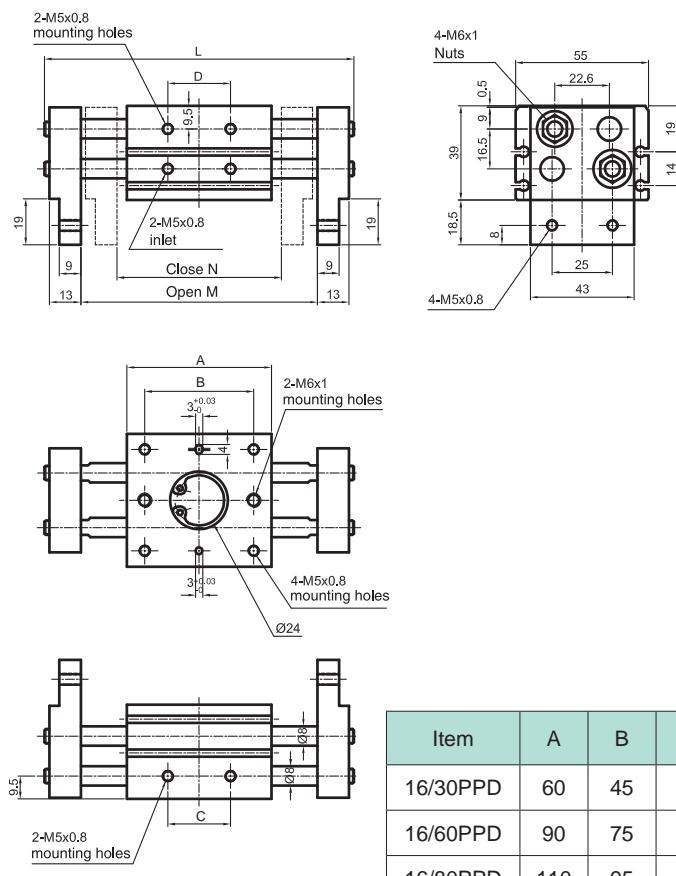
Parallel Hand Grips with long stroke

Bores from 10 to 32 mm

Double acting

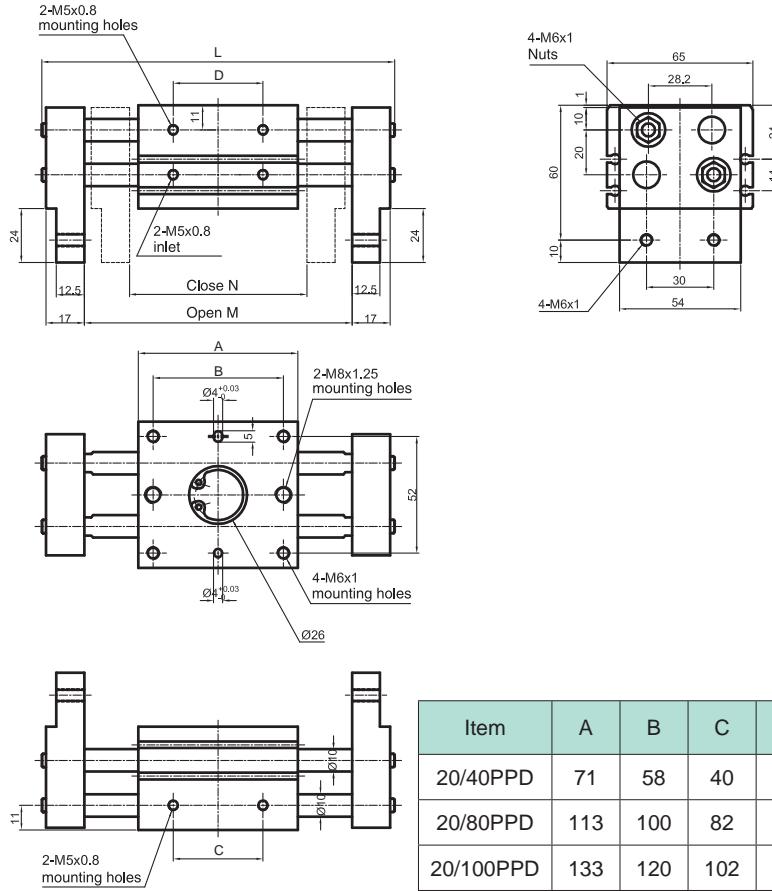


Type: 16 / .. PPD



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

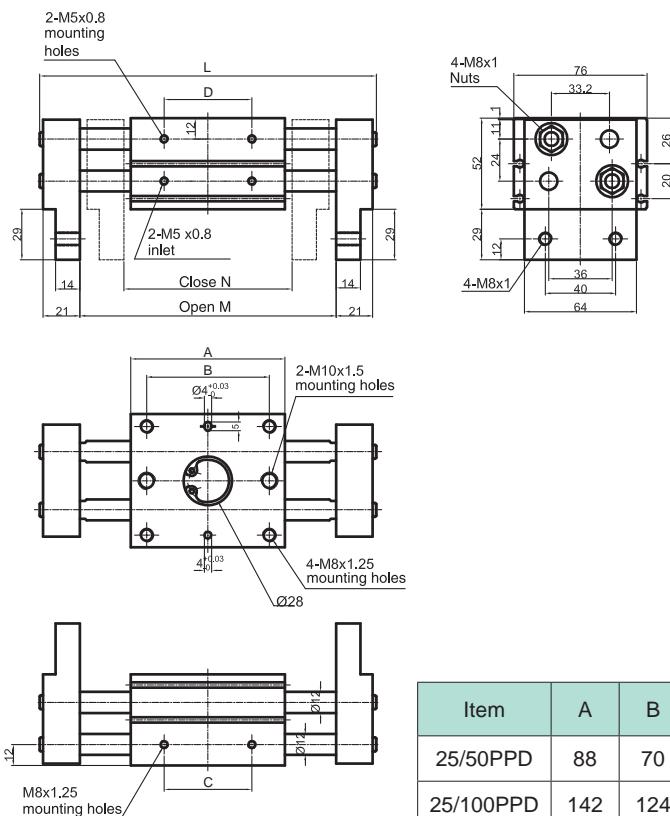
Parallel Hand Grips with long stroke

Bores from 10 to 32 mm

Double acting

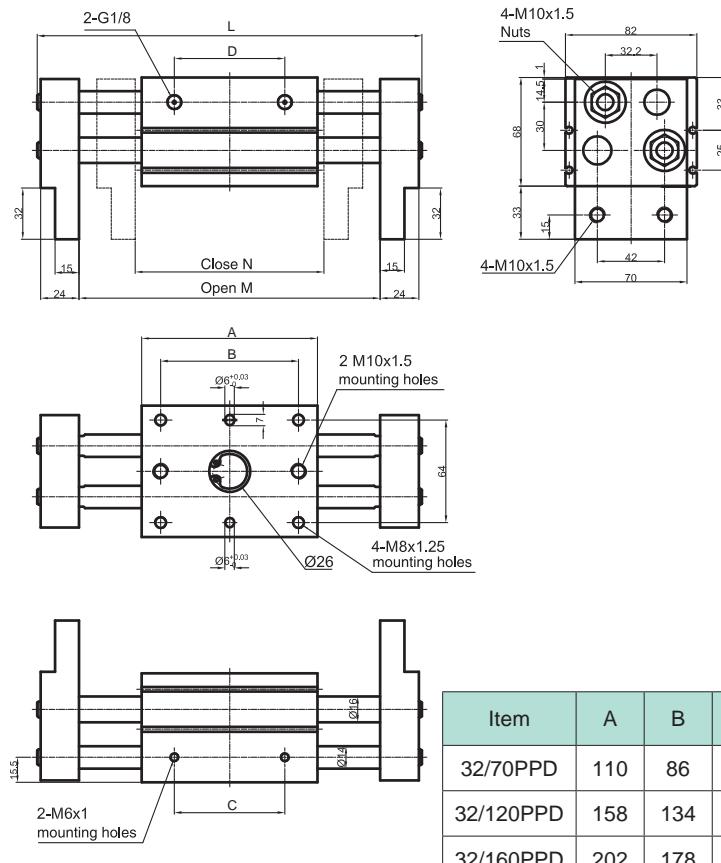


Type: 25 / .. PPD



Item	A	B	C	D	L	M	N
25/50PPD	88	70	50	50	192 (142)	146	96
25/100PPD	142	124	104	104	296 (196)	250	150
25/120PPD	160	142	122	122	334 (214)	288	168

Type: 32 / .. PPD



Item	A	B	C	D	L	M	N
32/70PPD	110	86	69	69	240 (170)	188	118
32/120PPD	158	134	117	117	338 (218)	286	166
32/160PPD	202	178	161	161	422 (262)	370	210

Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

Double acting



Standard 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 with or without lubrication. Lubrication, if be used, must be continuous				
Pressure	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				

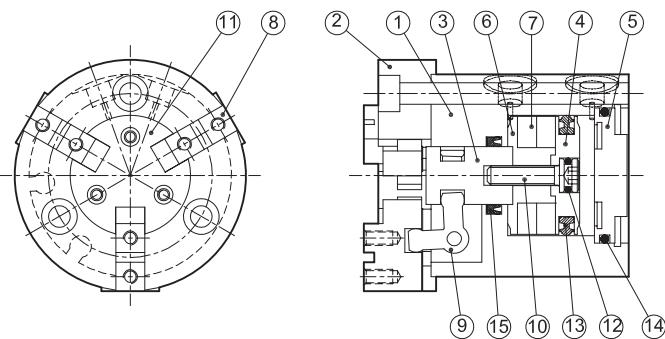
Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

Double acting

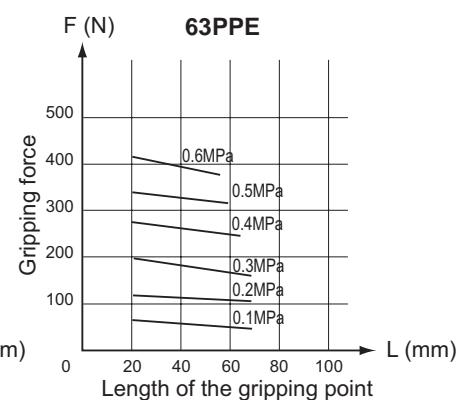
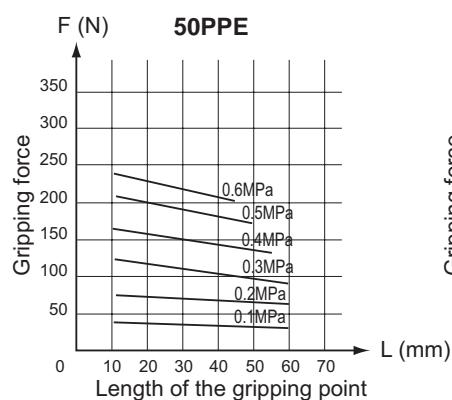
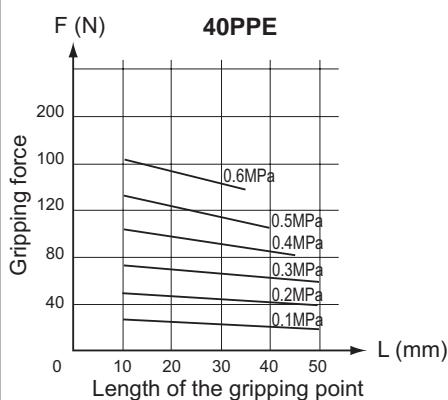
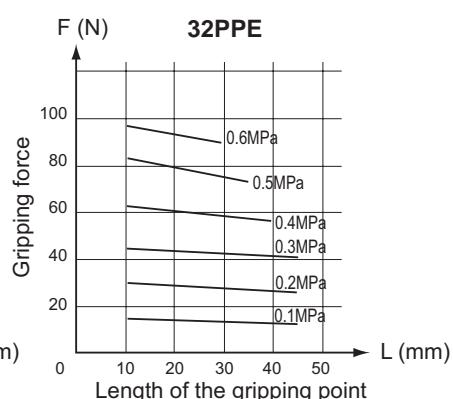
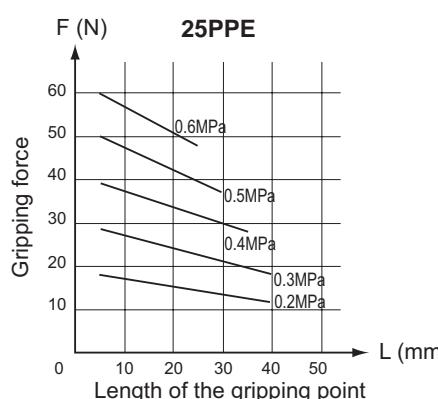
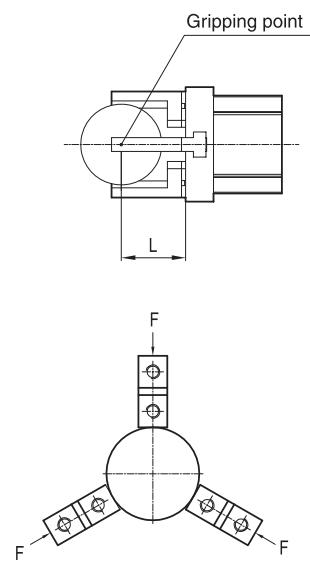


Materials



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



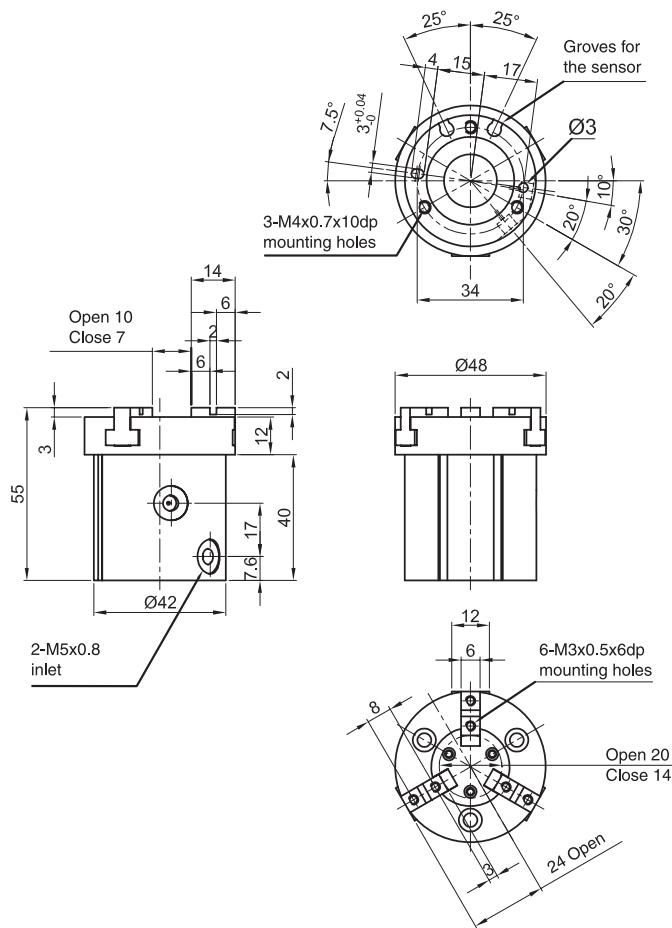
Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

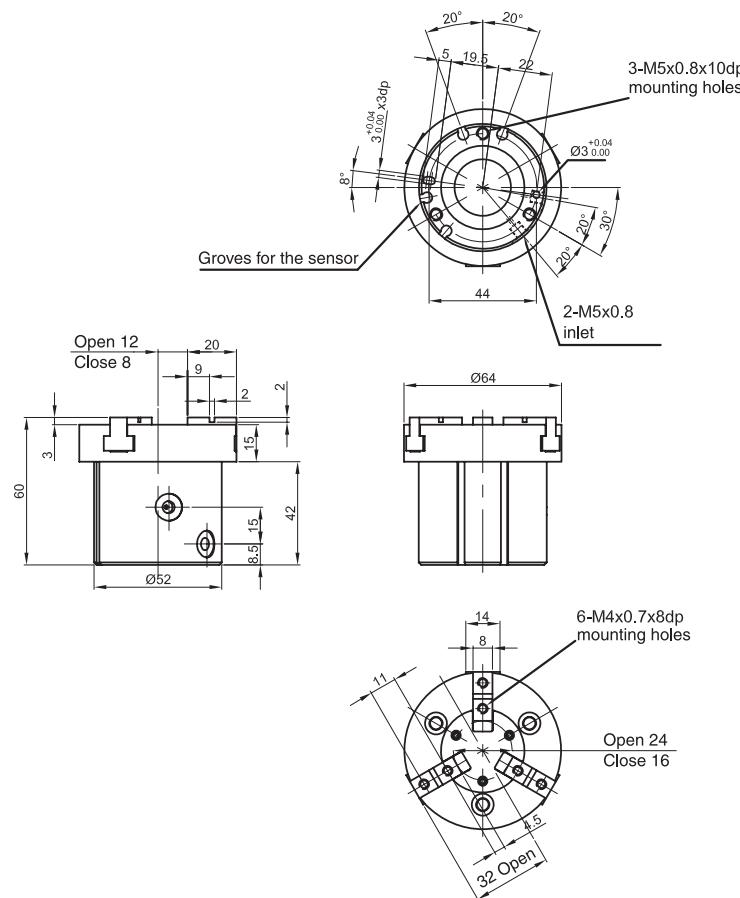
Double acting



Type: 25PPE



Type: 32PPE



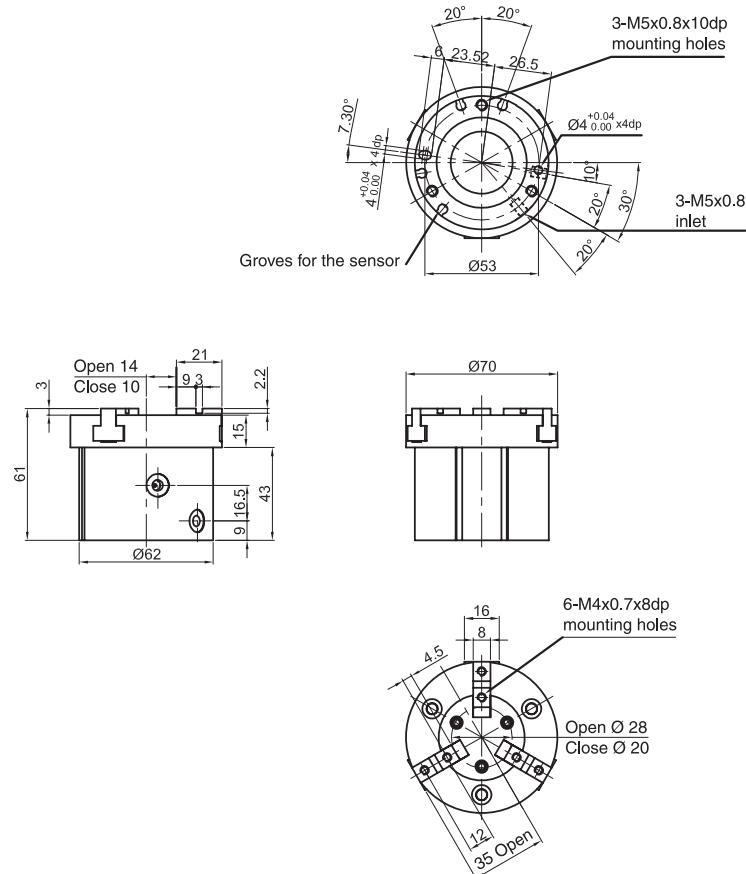
Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

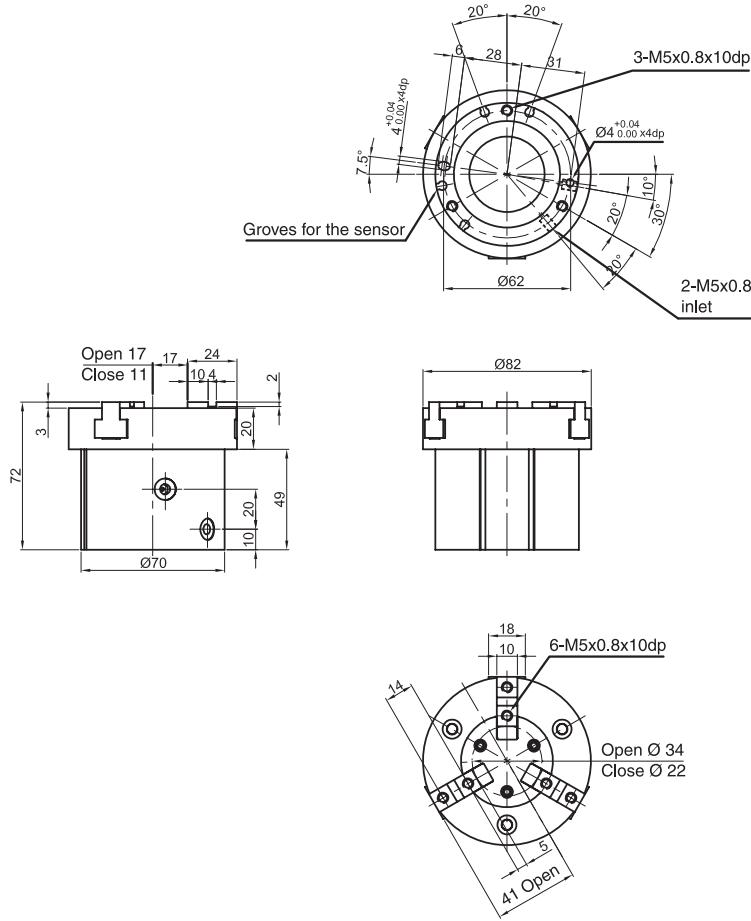
Double acting



Type: 40PPE



Type: 50PPE



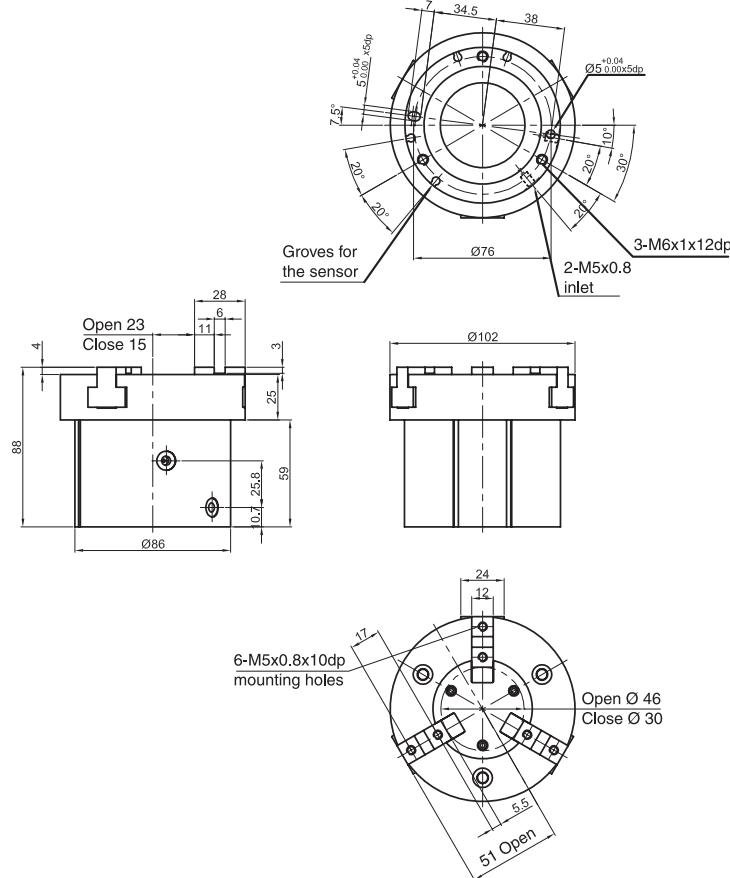
Parallel Hand Grips with 3 fingers

Bores from 25 to 63 mm

Double acting



Type: 63PPE



Hand Grippers

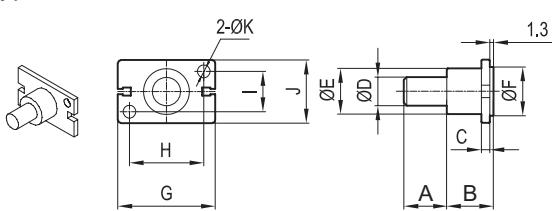
Mounting accessories for series PAB - PAC - PPB - PPC



Standard executions

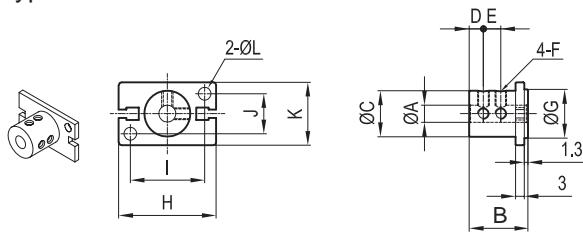
Version	Code	Item
Mounting with male thread for hand grip Ø 16	075058	16PM
Mounting with male thread for hand grip Ø 20	075059	20PM
Mounting with male thread for hand grip Ø 25	075064	25PM
Mounting with male thread for hand grip Ø 32	075065	32PM
Mounting with female thread for hand grip Ø 16	075066	16PF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



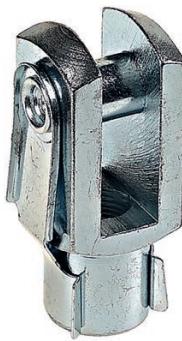
Item	A	B	C	D	E	F	G	H	I	J	K	L
16PF	6	20,5	16	5	6	M4x0,7p	17	34	26	14	22	4,5
20PF	8	25,5	20	7	7	M4x0,7p	21	45	35	16	26	5,5
25PF	10	30,5	25	8	10	M4x0,7p	26	52	40	20	32	6,5
32PF	12	40,5	32	10	15	M4x0,7p	34	60	46	26	40	6,5

Mounting Accessories for Cylinders

Clevis ISO



Standard executions		
Version	Symbol	Type
Female clevis with clip		FF..ISO
Female clevis with pin and seeger		FFP..ISO
Female clevis body only		FFN..ISO



1

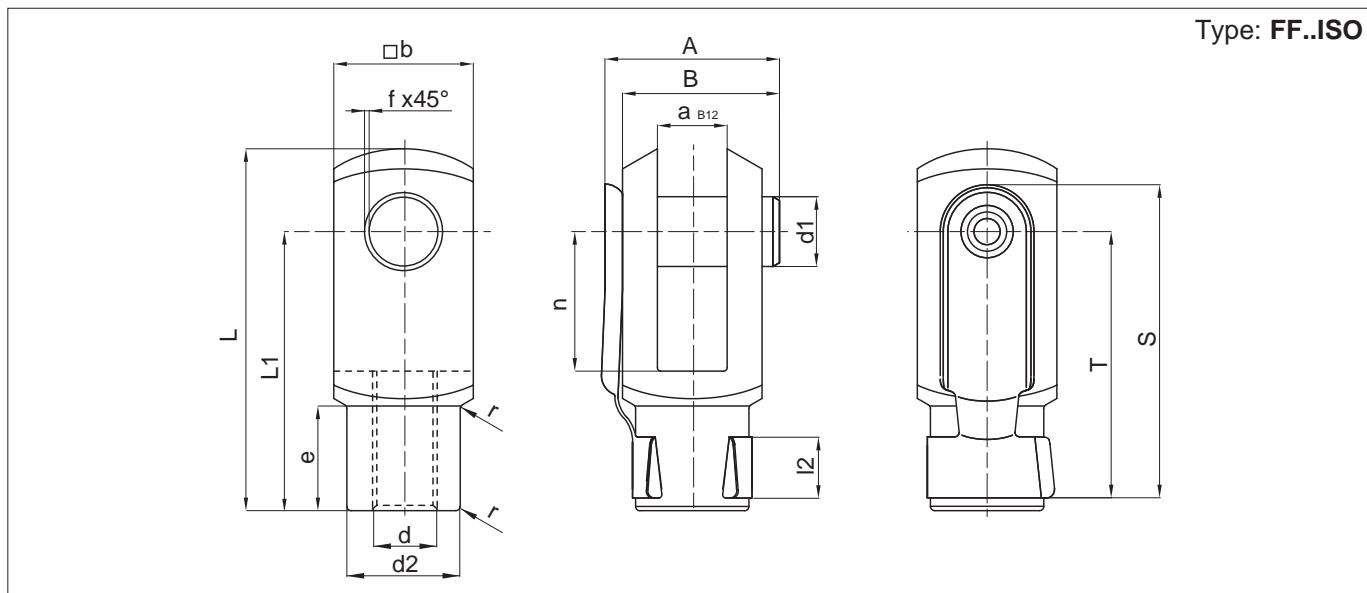
Clevis conforming to ISO 8140 standards.

The FF..ISO version is provided complete with clips, the FFP..ISO version is provided with a pin and 2 seegers, while for the FFN..ISO version is provided only the clevis body.

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	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	FF04ISO/DIN	8-10	M4x0,7	4	11	19	9	8	4	15	5	8	6	0,5	21	16	8	0,5	7
041002	FF06ISO/DIN	12-16	M6x1	6	16	28	14	12	6	23	6	10	9	0,5	31	24	12	0,5	19
041003	FF08ISO/DIN	20	M8x1,25	8	22	37	19	16	8	31	8	14	12	0,5	42	32	16	0,5	47
041004	FF10ISO	25-32	M10x1,25	10	26	46	23	20	10	39	10	18	15	0,5	52	40	20	0,5	89
041005	FF12ISO	40	M12x1,25	12	32	55	28	24	12	47	12	20	18	0,5	62	48	24	0,5	153
041006	FF16ISO	50-63	M16x1,5	16	40	72	36	32	16	62	14	26	24	1	83	64	32	1	320
041007	FF20ISO	80-100	M20x1,5	20	48	88	44	40	20	72	16	34	30	1	105	80	40	1	680
041008	FFP24ISO	*	M24x2	25	-	-	-	50	25	-	-	42	36	1	132	100	50	1	1330
041009	FFP27ISO	125	M27x2	30	-	-	-	55	30	-	-	48	38	1	148	110	54	1	1810
041010	FFP36ISO	160-200	M36x2	35	-	-	-	70	35	-	-	60	40	1	188	144	72	1	3890
041068	FFP42ISO	250	M42x2	40	104,3	-	-	85	40	-	-	70	63,5	1	232	168	84	5	5300
041069	FFP48ISO	320	M48x2	50	117,3	-	-	96	50	-	-	82	73	1	265	192	96	5	7900

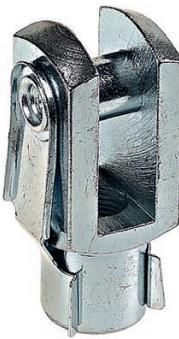
* For cylinders not conforming to standards.

Mounting Accessories for Cylinders

Clevis DIN



Standard executions		
Version	Symbol	Type
Female clevis with clip		FF..DIN
Female clevis with pin and seeger		FFP..DIN
Female clevis body only		FFN..DIN



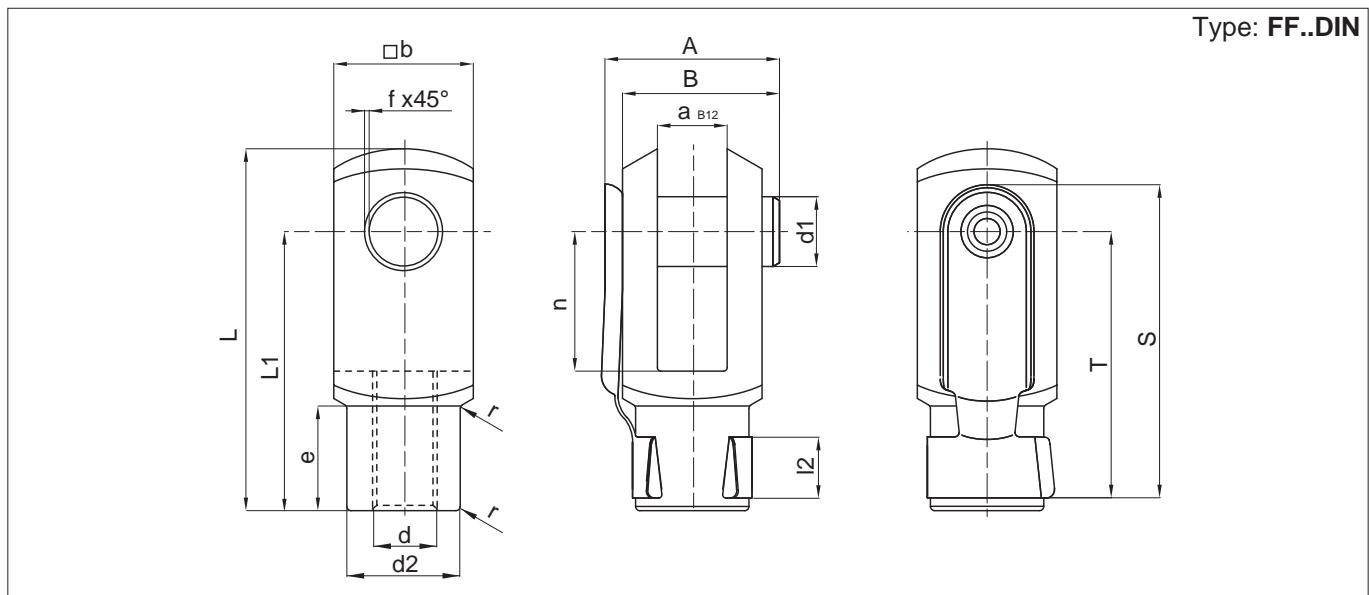
Clevis conforming to UNI 1676 - DIN 71752 standards.

The FF..DIN version is provided complete with clips, the FFP..DIN version is provided with a pin and 2 seegers, while for the FFN..DIN version is provided only the clevis body.

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	d1	S	T	L ₂	d ₂	e	f	L	L ₁	n	r	Weight (g)
041001	FF04ISO/DIN	M4x0,7	4	11	9	8	4	19	15	5	8	6	0,5	21	16	8	0,5	7
041022	FF05DIN	M5x0,8	5	13,5	12	10	5	23	19	6	9	7,5	0,5	26	20	10	0,5	12
041002	FF06ISO/DIN	M6x1	6	16	14	12	6	28	23	6	10	9	0,5	31	24	12	0,5	19
041003	FF08ISO/DIN	M8x1,25	8	22	19	16	8	37	31	8	14	12	0,5	42	32	16	0,5	47
041025	FF10DIN	M10x1,5	10	26	23	20	10	46	39	10	18	15	0,5	52	40	20	0,5	89
041026	FF12DIN	M12x1,75	12	32	28	24	12	55	47	12	20	18	0,5	62	48	24	0,5	153
041027	FF14DIN	M14x2	14	-	-	27	14	-	-	-	24	22,5	1	72	56	28	1	224
041028	FF16DIN	M16x2	16	40	36	32	16	72	62	14	26	24	1	83	64	32	1	320
041030	FF20DIN	M20x2,5	20	48	44	40	20	88	72	16	34	30	1	105	80	40	1	680
041067	FFP24DIN	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 with clip		FF..CN
Female clevis with pin and seeger		FFP..CN
Female clevis body only		FFN..CN
Male clevis with pin and seeger		FM..CN
Male clevis body only		FMN..CN



1

Clevis conforming to CNOMO standards.

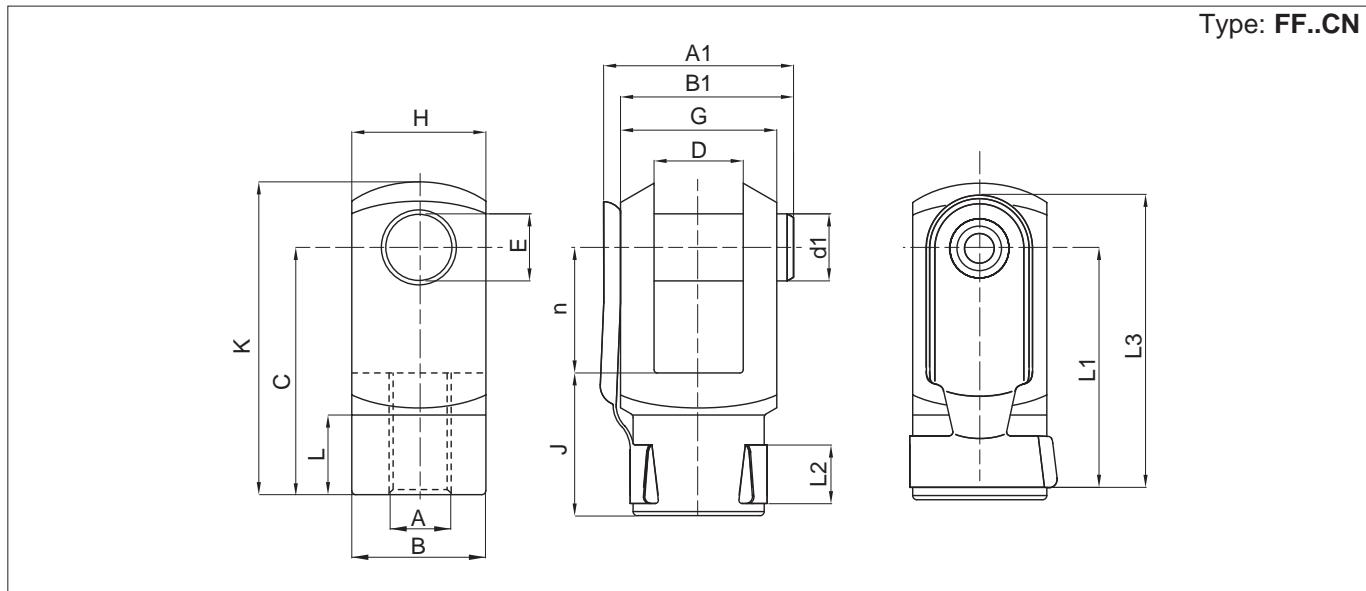
The female clevis FF..CN version is provided complete with clips, the FFP..CN version is provided with a pin and 2 seegers, while the FFN..CN version is provided only the clevis body.

The male clevis FM..CN version is provided complete with a pin and 2 seegers, while the FMN..CN version is provided only the clevis body.

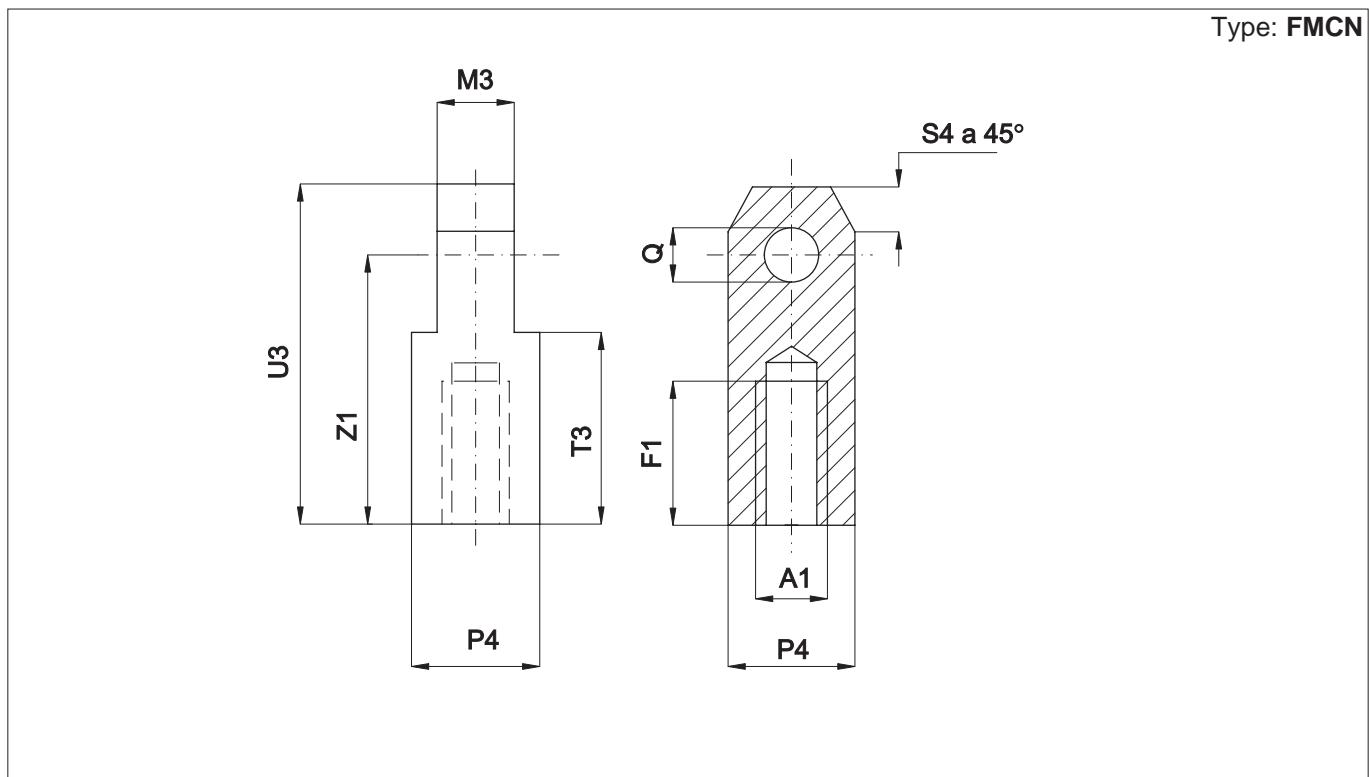
The clevis is mounted on the cylinder rod and allows a swinging movement.

Options	Suffix
Special versions on request	/ S

Technical data	
Material	White zinc plated steel



Code	Item	For cylinder Ø mm	A	A ₁	B	B ₁	C	D _{H11}	d _{1 h11}	E _{H8}	G	H	L ₁	J	L ₂	K	L ₃	L	n	Weight (g)
041081	FF10CN	25-32	M10x1,5	28	18	25	36	11	8	8	22	22	36	20	10	45	41	14	16	94
041082	FF16CN	40-50	M16x1,5	44	26	40	51	18	12	12	36	26	50	26	12	64	60	17	25	253
041084	FF20CN	63-80	M20x1,5	53	34	49	63	22	16	16	45	34	63	30	15	80	74	18,5	33	530
041086	FF27CN	100-125	M27x2	73	42	69	85	30	20	20	63	42	81	45	19	105	98	30	40	1110
041088	FFP36CN	160-200	M36x2	-	50	-	115	40	25	25	80	50	-	75	-	140	-	45	-	2160



Code	Item	For cylinder \varnothing mm	A_1	F_1	M_3	P_4	Q_{h8}	S_4	T_3	U_3	Z_1
041041	FM10CN	25-32	M10x1,5	20	11	22	8	6	25	45	36
041042	FM16CN	40-50	M16x1,5	30	18	32	12	10	34	64	51
041044	FM16CN	63-80	M20x1,5	36	22	36	16	12	41	80	63
041046	FM27CN	100-125	M27x2	50	30	45	20	17,5	58	105	85
041048	FM36CN	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		FEM..



1

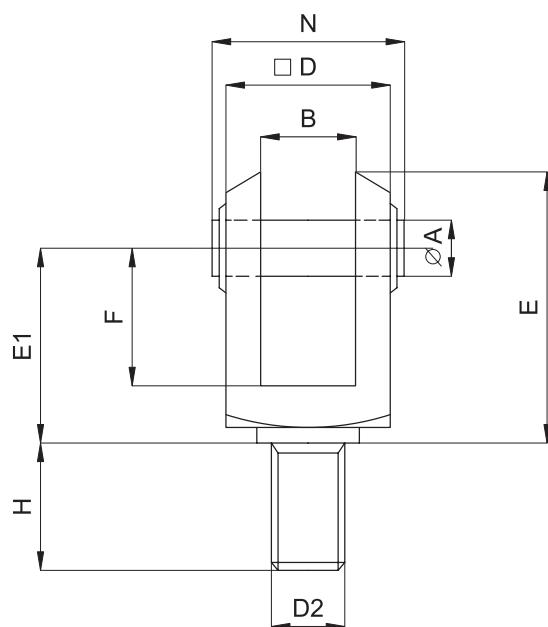
Female clevis with male thread, complete with a pin and 2 seegers in the standard version.

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

Type: **FE**



Code	Item	A \varnothing	B	D	D ₂	E	E ₁	F	H	N
041061	FEM10	10	10	20	M10x1,25	39	27	20	22	27
041062	FEM12	12	12	24	M12x1,25	46	32	24	24	31
041063	FEM16	16	16	32	M16x1,5	61	42	32	32	39
041064	FEM20	20	20	40	M20x1,5	77	52	40	40	49
041065	FEM27	25	25	50	M27x2	98	66	50	43	59
041066	FEM33	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

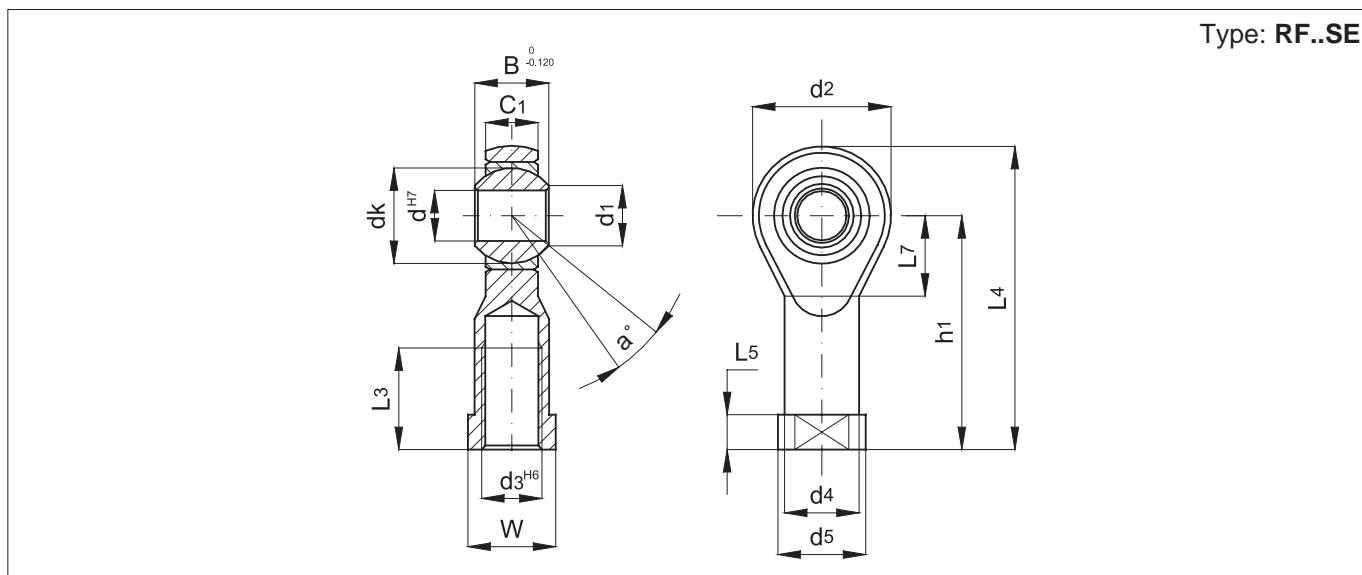


Options	Suffix
With male thread	RM..SE
With female thread (big pitch)	G
With left thread	S

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	d ₃	B	C ₁	d ₁	d ₂	d ₄	d ₅	dk	h ₁	L ₃	L ₄	L ₅	L ₇	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	RF40SE	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-aligning articulated couplings



Standard executions		
Version	Symbol	Type
Axial		GB



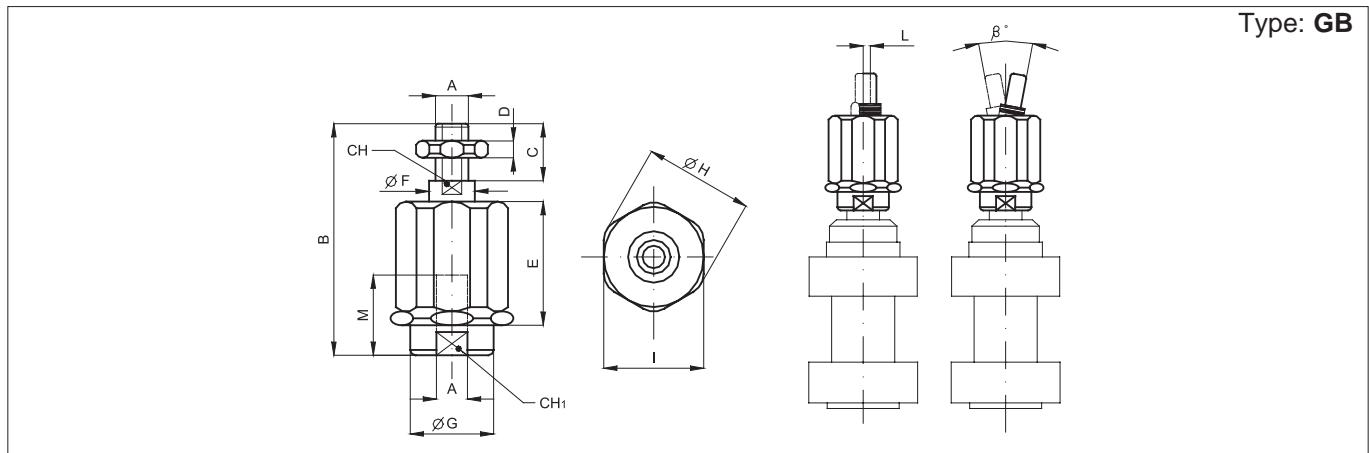
Axial self-aligning articulated couplings mounted on the cylinder rod.

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°	CH1	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

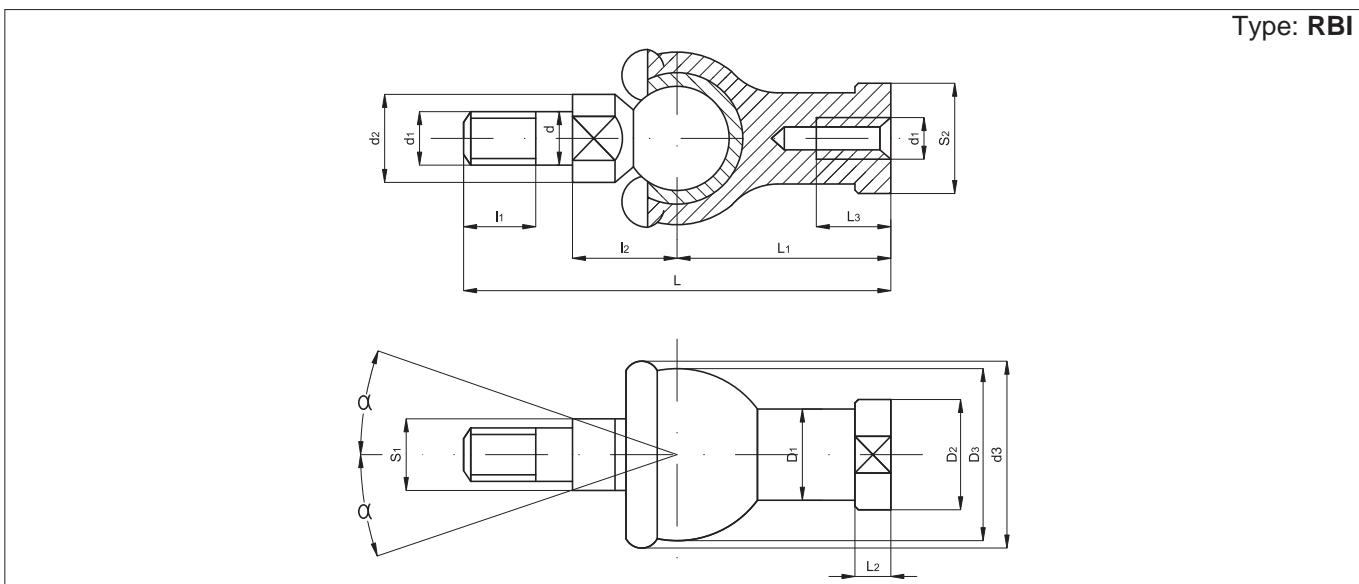


1

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	d ₃	l ₁	l ₂	S ₁	L	L ₁	L ₂	L ₃	D ₁	D ₂	D ₃	S ₂	Load (kN)		α	Weight (g)
																		Dynam.	Static		
041601	RBI5	*	5	M5x0,8	9	20	8	11	7	46	24	4	12	9	11	17	9	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	11	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	14	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	17	4,8	16	15	121
041605	RBI12	40	12	M12x1,25	17	32	17	21	15	84	40	6,5	20	17,5	22	32	19	6,6	22	15	187
041606	RBI14	*	14	M14x1,5	19	38	22	23,5	17	104,5	45	8	25	20	25	36	22	8,7	29	11	277
041607	RBI16	50-63	16	M16x1,5	22	44	23	25,5	19	112	50	8	27	22	27	40	22	10	33	11	361
041608	RBI18	*	18	M18x1,5	23	45	25	31	20	130,5	58	10	32	25	31	45	27	11	37	11	539
041609	RBI20	80-100	20	M20x1,5	27	50	25	29	24	133	63	10	38	27,5	34	45	30	11	37	7,5	575
041610	RBI22	*	22	M22x1,5	27	52	26	33	24	145	70	12	43	30	37	50	32	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

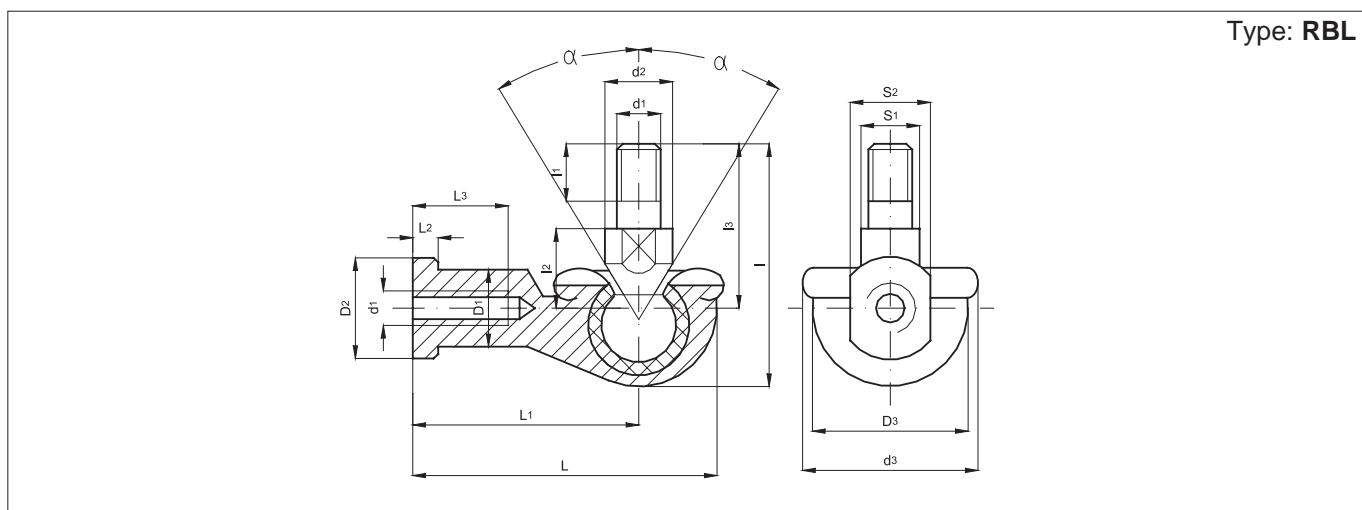


Articulated couplings with bearing and with pin perpendicular to the body.

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	Dimensions				Shaft length				Shaft diameter				Shaft width				Load (KN)		α	Weight (g)
				d ₁	d ₂ min	d ₃ max	I _{max}	l ₁ min	l ₂	l ₃ max	S ₁	L _{max}	L ₁	L ₂ max	L ₃ min	D ₁ max	D ₂ max	D ₃ max	S ₂	Dyn.	Stat.		
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

Self-aligning articulated couplings



Standard executions		
Version	Symbol	Type
Self-aligned articulated couplings		GC

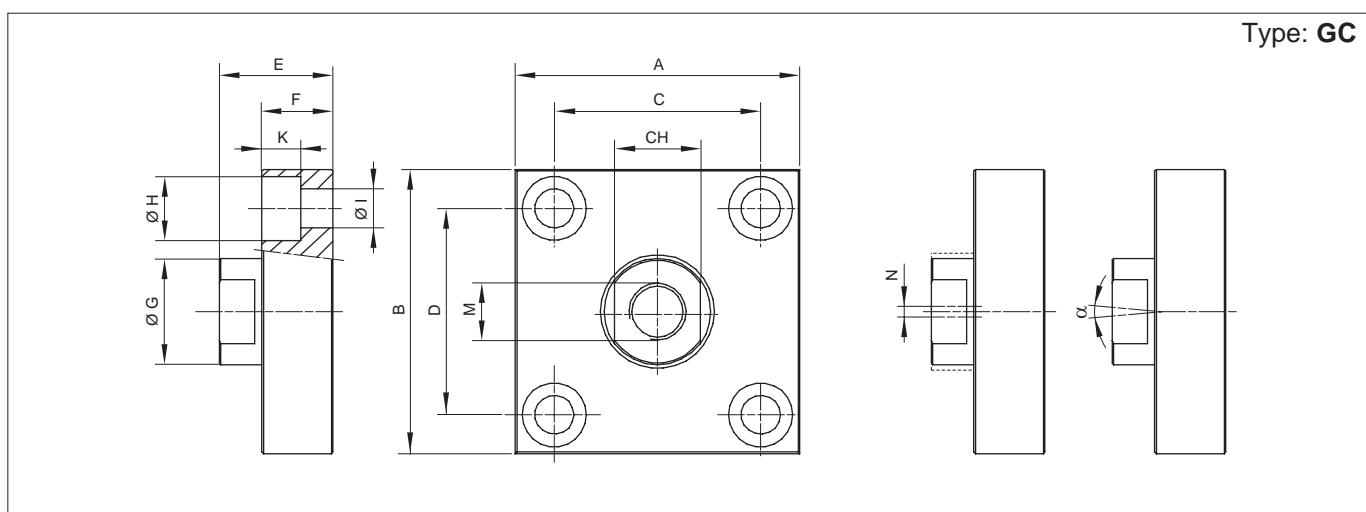


1

Options	Suffix
Special versions on request	/ S

Axial self-aligning articulated couplings mounted on the cylinder rod.
They are suitable for applications with high tractions and allow to compensate the angular and parallel misalignments.

Technical data	
Material	Zinc plated steel



Code	Item	A	B	C	D	CH	E	F	Ø G	Ø H	Ø I	K	M	N	α	Weight (g)
041722	GCM10x1,25	60	37	$36 \pm 0,15$	$23 \pm 0,15$	17	24	15	20	11	6,6	7	M10x1,25	2	0,4÷0,8	0,3
041723	GCM12x1,25	60	56	$42 \pm 0,2$	$38 \pm 0,2$	19	30	20	25	15	9	9	M12x1,25	2	0,4÷0,8	0,4
041724	GCM16x1,5	80	80	$58 \pm 0,2$	$58 \pm 0,2$	24	32	20	30	18	11	11	M16x1,5	2	0,4÷0,8	0,9
041725	GCM20x1,5	90	90	$65 \pm 0,2$	$65 \pm 0,2$	36	35	20	40	20	14	13	M20x1,5	2	0,4÷0,8	1,1
041726	GCM27x2	90	90	$65 \pm 0,2$	$65 \pm 0,2$	36	35	20	40	20	14	13	M27x2	2	0,4÷0,8	1,1
041727	GCM36x2	125	125	$90 \pm 0,2$	$90 \pm 0,2$	50	55	30	60	26	18	17	M36x2	3	0,4÷0,95	3,4

Mounting Accessories for Cylinders

Mounting for ISO 6432 in steel



Standard executions

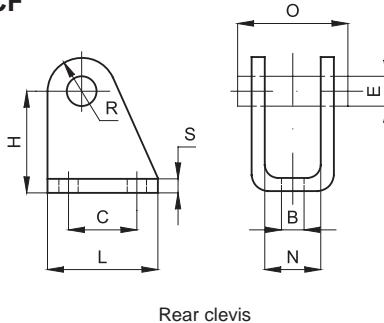
Version	Symbol	Type
Rear clevis (with pin)		CF
High foot		P
Flange		F



Technical data

Material	Zinc plated steel
Treatment	White zinking

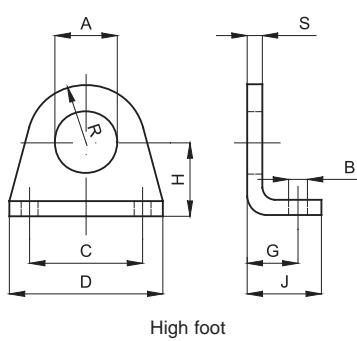
Type: CF



Code	Item	For cyl. Ø mm	B	E	C	H	L	N	O	R	S	Weight (g)
040048	CF8-10	8-10	4,5	4	12,5	24	20	8,1	17	5	2,5	20
040049	CF12-16	12-16	5,5	6	15	27	25	12,1	23	7	3	36
040050	CF20-25	20-25	6,6	8	20	30	32	16,1	29,5	10	4	78

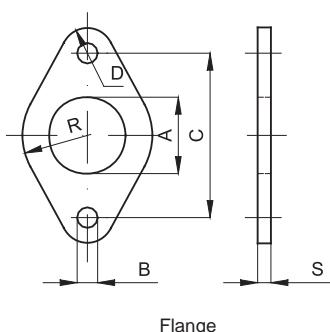
Complete with a pin and 2 seegers in the standard version.

Type: P



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

Type: F



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

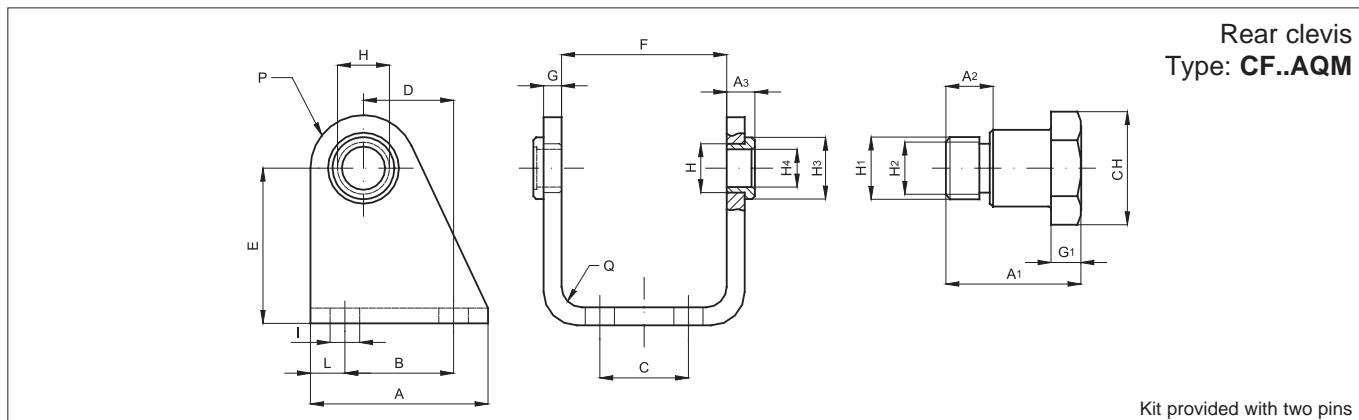
Mounting for round cylinders in steel



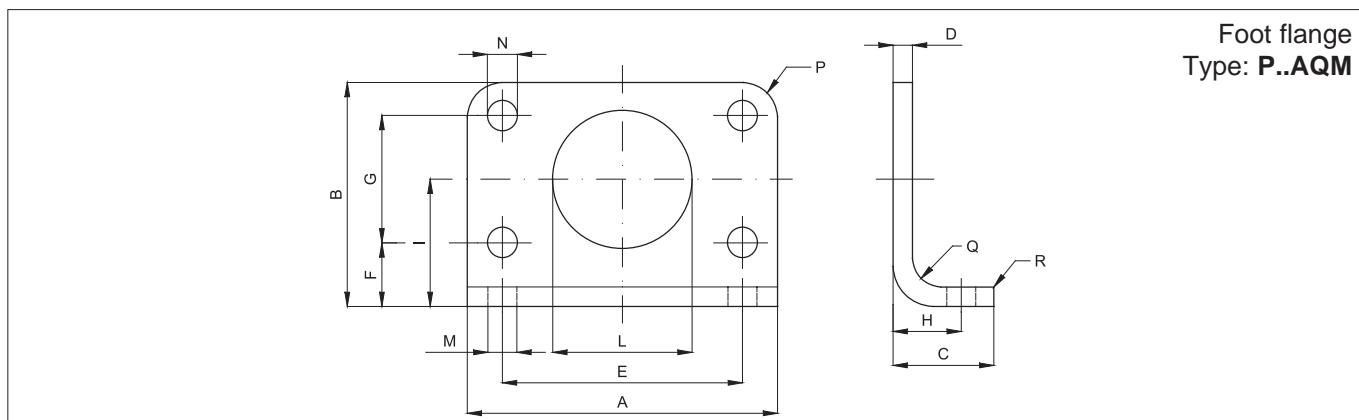
Standard executions		
Version	Symbol	Type
Rear clevis (with pin)		CF..AQM
Foot flange		P..AQM
Foot hinge		CP..AQM
Heads nut		GH..AQM
Pins		SEC..AQM



Technical data	
Material	Zinc plated steel
Treatment	White zinking



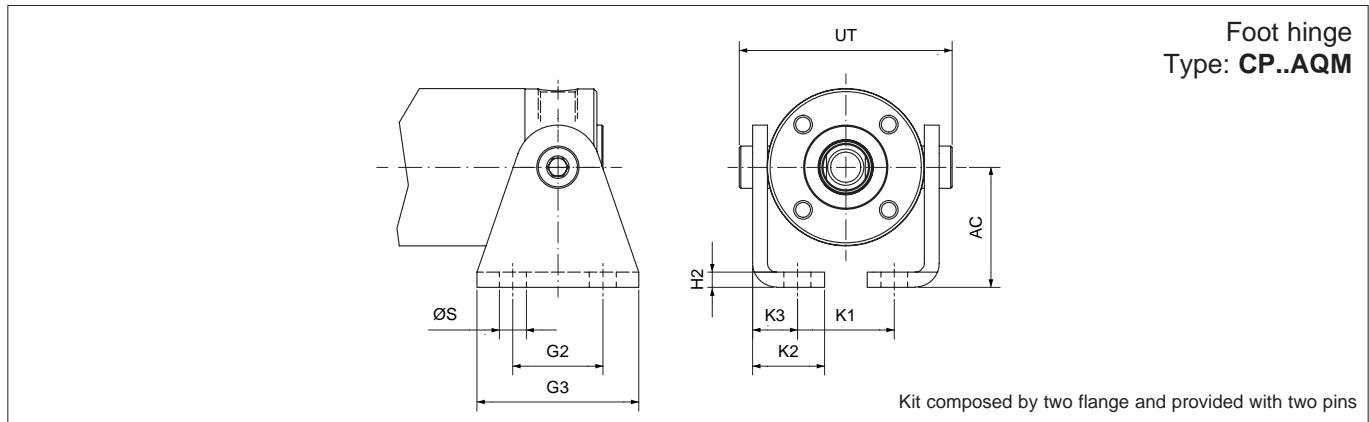
Code	Item	\varnothing mm	A	A ₁	A ₂	A ₃	B	C	D	E	F	G	G ₁	H	H ₁	H ₂	H ₃	H ₄	CH	I	L	P	Q
040058	CF032AQM	32	40	18	6	6	24	20	20	35	38,1	4	4	12	10	M8x1	12	10	13	7	8	12	4
040059	CF040AQM	40	50	21,6	7	7	30	28	27	40	46,1	5	5	15	12	M10x1	15	12	17	9	10	13	5
040060	CF050AQM	50	54	26,4	9	8,5	34	36	30	45	57,1	6	6	18	14	M12x1,5	20	14	19	9	10	14	6
040061	CF063AQM	63	65	33,5	13	8,5	35	42	34	50	70,1	6	6	20	16	M14x1,5	23	16	19	9	15	16	6



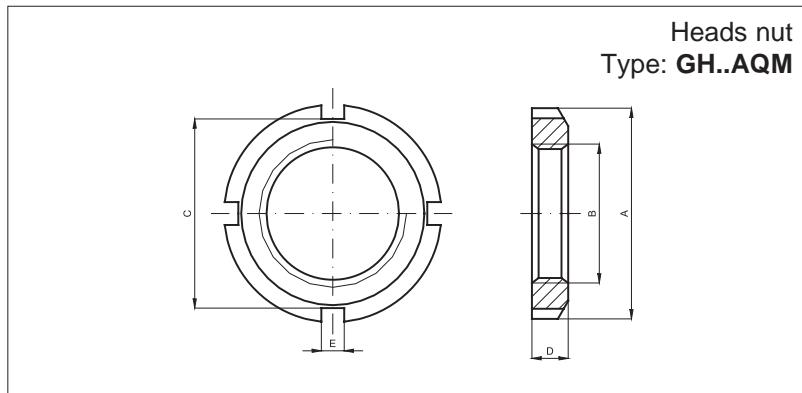
Code	Item	\varnothing mm	A	B	C	D	E	F	G	H	I	\varnothing L	\varnothing M	\varnothing N	P	Q	R
040054	P032AQM	32	66	49	21	4	52	14	28	14	28	30	7	7	7	4	2
040055	P040AQM	40	80	58	30	5	60	18	30	20	33	38	9	9	10	5	2
040056	P050AQM	50	90	70	30	6	70	20	40	20	40	45	9	9	10	6	2
040057	P063AQM	63	96	80	30	6	76	20	50	20	45	45	9	9	10	6	2

Mounting Accessories for Cylinders

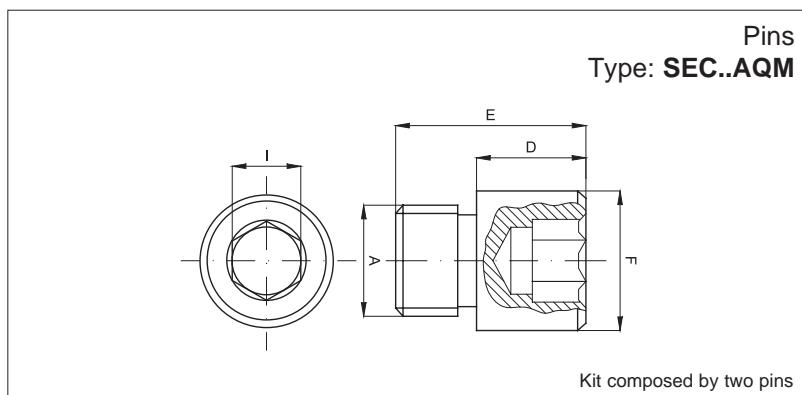
Mounting for round cylinders in steel



Code	Item	\varnothing mm	\varnothing S	G2	G3	H2	K1	K2	K3	AC	UT
040170	CP032AQM	32	7	20	35	4	15,5	20	13	25	47
040171	CP040AQM	40	7	28	42	4	23,5	20	13	28	57
040172	CP050AQM	50	9	30	54	5	32,3	24	15	40	71
040173	CP063AQM	63	9	40	64	5	40,5	26,5	17,5	47	84



Code	Item	\varnothing mm	A	B	C	D	E
040066	GH032AQM	32	\varnothing 45	M30x1,5	40	7	5
040067	GH040AQM	40	\varnothing 50	M38x1,5	46	8	5
040068	GH050/063AQM	50-63	\varnothing 58	M45x1,5	53	9	6



Code	Item	\varnothing mm	A	D	E	F	I
040062	SEC032AQM	32	M8x1	8	14	\varnothing 10	5
040063	SEC040AQM	40	M10x1	9,5	16,5	\varnothing 12	6
040064	SEC050AQM	50	M12x1,5	11	20	\varnothing 14	6
040065	SEC063AQM	63	M14x1,5	13	28	\varnothing 16	8

Mounting Accessories for Cylinders

Mounting for ISO 15552 in aluminium



Standard executions		
Version	Symbol	Type
Rear female clevis		CF..ALIS
Rear male eye		CM..ALIS
Narrow rear female clevis		CFS..ALIS
Front female clevis		CFA..ALIS
Narrow rear eye with bearing DIN 648K		CMS..ALIS
VDMA Flange MF1 / MF2		FLV..ALIS
Rear 90° hinge CETOPRP107P		ASV..ALIS
Rear 90° hinge ISO 6431		AS..ALIS



1

Technical data

Material Die-cast aluminium

Treatment Sifting

Note: Types ..ALIS+VP supplied with pin and mounting screws.
Types ..ALIS+V supplied with mounting screws.
For screws (if not supplied) see page 1.101.1

Type: CF
 Rear female clevis MP2

Code	Item	For cyl. Ø mm	A	L	D	R	N	B	S	F	Z	G	M	CM	T	Weight (g)
042050	CF032ALIS+VP	32	32,5	45	6,6	11	5,5	9	30	5	22	10	10	26	45	48
042051	CF040ALIS+VP	40	38	52	6,6	11	5,5	9	35	5	25	12	12	28	52	75
042052	CF050ALIS+VP	50	46,5	65	9	15	6,5	11	40	5	27	12	12	32	60	124
042053	CF063ALIS+VP	63	56,5	75	9	15	6,5	11	45	5	32	16	16	40	70	192
042054	CF080ALIS+VP	80	72	95	11	18	10	14	45	5	36	16	16	50	90	380
042055	CF100ALIS+VP	100	89	115	11	18	10	14	55	5	41	20	20	60	110	620
042056	CF125ALIS+VP	125	110	140	14	20	10	20	60	7	50	25	25	70	130	1180
042057	CF160ALIS+VP	160	140	180	18	26	10	20	65	7	55	30	25	90	170	1780
042058	CF200ALIS+VP	200	175	220	18	26	11	25	75	7	60	30	25	90	170	2900
042059	CF250ALIS+VP	250	220	270	22	33	11	25	90	11	70	40	40	110	200	5800
042060	CF300ALIS+VP	320	270	350	26	39	15	30	110	11	80	45	45	120	220	-

Code	Item	For cyl. Ø mm	A	L	D	R	N	B	S	F	Z	G	M	CM	T	Weight (g)
040441	CF032ALIS+V	32	32,5	45	6,6	11	5,5	9	30	5	22	10	10	26	45	48
040442	CF040ALIS+V	40	38	52	6,6	11	5,5	9	35	5	25	12	12	28	52	75
040443	CF050ALIS+V	50	46,5	65	9	15	6,5	11	40	5	27	12	12	32	60	124
040444	CF063ALIS+V	63	56,5	75	9	15	6,5	11	45	5	32	16	16	40	70	192
040445	CF080ALIS+V	80	72	95	11	18	10	14	45	5	36	16	16	50	90	380
040446	CF100ALIS+V	100	89	115	11	18	10	14	55	5	41	20	20	60	110	620
040447	CF125ALIS+V	125	110	140	14	20	10	20	60	7	50	25	25	70	130	1180
040448	CF160ALIS+V	160	140	180	18	26	10	20	65	7	55	30	25	90	170	1780
040449	CF200ALIS+V	200	175	220	18	26	11	25	75	7	60	30	25	90	170	2900
040450	CF250ALIS+V	250	220	270	22	33	11	25	90	11	70	40	40	110	200	5800
040459	CF300ALIS+V	320	270	350	26	39	15	30	110	11	80	45	45	120	220	-

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

Type: CM
 Rear male eye MP4

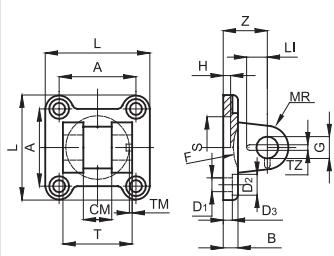
Code	Item	For cyl. Ø mm	A	L	D	R	N	G	S	F	C	M	T	B	Weight (g)
042061	CM032ALIS+V	32	32,5	45	6,6	11	5,5	9	30	5	22	10	10	26	54
042062	CM040ALIS+V	40	38	52	6,6	11	5,5	9	35	5	25	12	12	28	76
042063	CM050ALIS+V	50	46,5	65	9	15	6,5	11	40	5	27	12	12	32	-0,2
042064	CM063ALIS+V	63	56,5	75	9	15	6,5	11	45	5	32	16	16	40	-0,6
042065	CM080ALIS+V	80	72	95	11	18	10	14	45	5	36	16	16	50	420
042066	CM100ALIS+V	100	89	115	11	18	10	14	55	5	41	20	20	60	666
042067	CM125ALIS+V	125	110	140	14	20	10	20	60	7	50	25	25	70	1264
042068	CM160ALIS+V	160	140	180	18	26	10	20	65	7	55	30	25	90	1846
042069	CM200ALIS+V	200	175	220	18	26	11	25	75	7	60	30	25	90	-0,5
042070	CM250ALIS+V	250	220	270	22	33	11	25	90	11	70	40	40	110	2950
042071	CM300ALIS+V	320	270	350	26	39	15	30	110	11	80	50	45	120	6200
															-

Mounting Accessories for Cylinders

Mounting for ISO 15552 in aluminium



Type: CFS



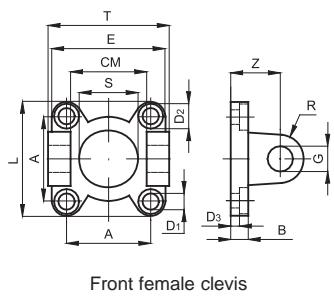
Narrow rear female clevis
for rear male trunnion with
bearing DIN 648K

Code	Item	For cyl. Ø mm	L	T	CM	A	Z	H	B	D ₃	S	G	MR	D ₁	D ₂	TM	TZ	LI	F	Weight (g)
042110	CFS032ALIS+VP	32	45	34	14	32,5	22	5	9	5,5	30	10	10	6,6	11	3	3,3	11,5	17	42
042111	CFS040ALIS+VP	40	52	40	16	38	25	5	9	5,5	35	12	12	6,6	11	4	4,3	12	20	70
042112	CFS050ALIS+VP	50	65	45	21	46,5	27	5	11	6,5	40	16	14	9	15	4	4,3	14	22	112
042113	CFS063ALIS+VP	63	75	51	21	56,5	32	5	11	6,5	45	16	18	9	15	4	4,3	14	25	194
042114	CFS080ALIS+VP	80	95	65	25	72	36	5	14	10	45	20	20	11	18	4	4,3	16	30	382
042115	CFS100ALIS+VP	100	115	75	25	89	41	5	14	10	55	20	22	11	18	4	6,3	16	32	610
042116	CFS125ALIS+VP	125	140	97	37	110	50	7	20	10	60	30	25	14	20	6	6,3	24	42	1100
042117	CFS160ALIS+VP	160	180	122	43	140	55	7	20	10	65	35	30	18	26	6	6,3	26,5	46	2030
042118	CFS200ALIS+VP	200	220	122	43	175	60	7	25	11	75	35	30	18	26	6	6,3	26,5	49	3400

Code	Item	For cyl. Ø mm	L	T	CM	A	Z	H	B	D ₃	S	G	MR	D ₁	D ₂	TM	TZ	LI	F	Weight (g)
040451	CFS032ALIS+V	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	CFS040ALIS+V	40	52	40	16	38	25	5	9	5,5	35	12	12	6,6	11	4	4,3	12	20	70
040453	CFS050ALIS+V	50	65	45	21	46,5	27	5	11	6,5	40	16	14	9	15	4	4,3	14	22	112
040454	CFS063ALIS+V	63	75	51	21	56,5	32	5	11	6,5	45	16	18	9	15	4	4,3	14	25	194
040455	CFS080ALIS+V	80	95	65	25	72	36	5	14	10	45	20	20	11	18	4	4,3	16	30	382
040456	CFS100ALIS+V	100	115	75	25	89	41	5	14	10	55	20	22	11	18	4	6,3	16	32	610
040457	CFS125ALIS+V	125	140	97	37	110	50	7	20	10	60	30	25	14	20	6	6,3	24	42	1100
040458	CFS160ALIS+V	160	180	122	43	140	55	7	20	10	65	35	30	18	26	6	6,3	26,5	46	2030
040498	CFS200ALIS+V	200	220	122	43	175	60	7	25	11	75	35	30	18	26	6	6,3	26,5	49	3400

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

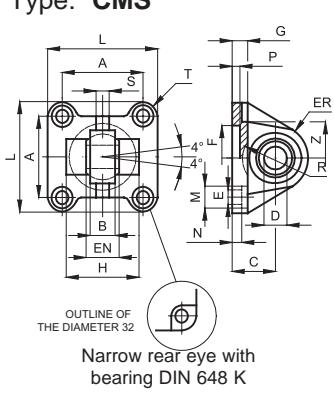
Type: CFA



Front female clevis

Code	Item	For cyl. Ø mm	A	E	D ₁	D ₂	D ₃	B	S	Z	G	R	CM	T	Weight (g)
040473	CFA032ALIS+V	32	32,5	45	6,6	11	9	10	30	22	10	10	26	45	48
040474	CFA040ALIS+V	40	38	52	6,6	11	9	10	35	25	12	12	28	52	75
040017	CFA050ALIS+V	50	46,5	65	9	15	11	12	40	27	12	12	32	60	124
040471	CFA063ALIS+V	63	56,5	75	9	15	11	12	45	32	16	16	40	70	192
040051	CFA080ALIS+V	80	72	95	11	18	14	16	45	36	16	16	50	90	380
040478	CFA100ALIS+V	100	89	115	11	18	14	16	55	41	20	20	60	110	620
040475	CFA125ALIS+V	125	110	140	14	20	20	22	60	50	25	25	70	130	1180
040477	CFA160ALIS+V	160	140	180	18	26	20	22	65	55	30	25	90	170	1780
040479	CFA200ALIS+V	200	175	220	18	26	25	28	75	60	30	25	9'	170	2900

Type: CMS



OUTLINE OF
THE DIAMETER 32
Narrow rear eye with
bearing DIN 648 K

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)
042101	CMS032ALIS+V	32	32,5	10,5	22	10	14	16	30	9	6,6	45	11	5,5	5	-	-	4	32,5	6,25	62
042102	CMS040ALIS+V	40	38	12	25	12	16	19	35	9	6,6	52	11	5,5	5	-	-	6	39	7	100
042103	CMS050ALIS+V	50	46,5	15	27	16	21	21	40	11	9	65	15	6,5	5	51	18	8	47	9,25	180
042104	CMS063ALIS+V	63	56,5	15	32	16	21	24	45	11	9	75	15	6,5	5	-	-	8	52	9,25	244
042105	CMS080ALIS+V	80	72	18	36	20	25	28,5	45	14	11	95	18	10	5	72	24	10	67	11,5	476
042106	CMS100ALIS+V	100	89	18	41	20	25	30	55	14	11	115	18	10	5	-	-	10	77	13	646
042107	CMS125ALIS+V	125	110	25	50	30	37	40	60	20	13,5	140	20	10	7	-	-	13	98	15	1410
042108	CMS160ALIS+V	160	140	28	55	35	43	45	65	20	18	180	26	10	7	-	-	14	130	20	2420
042109	CMS200ALIS+V	200	175	28	60	35	43	48	75	25	18	220	26	11	7	-	-	14	155	22,5	3840
040160	CMS250ALIS+V	250	220	33	70	40	49	52	90	25	22	270	33	11	11	-	-	19	205	25	5850

Mounting Accessories for Cylinders

Mounting for ISO 15552 in aluminium



Type: FLV	

Code	Item	For cyl. Ø mm	A	AP Ø	AO	R	AS	AR	AQ	AT	AV	C	D	Weight (g)
042150	FLV032ALIS+V	32	32,5	7	30	6,5	10	45	32	64	80	10,5	6,5	-
042151	FLV040ALIS+V	40	38	9	35	6,5	10	52	36	72	90	10,5	6,5	-
042152	FLV050ALIS+V	50	46,5	9	40	8,5	12	65	45	90	110	13,5	8,5	-
042153	FLV063ALIS+V	63	56,5	9	45	8,5	12	75	50	100	120	13,5	8,5	-
042154	FLV080ALIS+V	80	72	12	45	10,5	16	95	63	126	150	16,5	10,5	-
042155	FLV100ALIS+V	100	89	14	55	10,5	16	115	75	150	170	16,5	10,5	-
042156	FLV125ALIS+V	125	110	16	60	13,5	20	140	90	180	205	20	12,5	-
042157	FLV160ALIS+V	160	140	18	65	17	20	180	115	230	260	25	16,5	-
042158	FLV200ALIS+V	200	175	22	75	17	25	220	135	270	300	25	16,5	-

Type: ASV	

Code	Item	For cyl. Ø mm	Q	M	BG	BH	BI	BL	BM	BN	BO	BS	BR	G	T	BQ	Weight (g)
042081	ASV032ALIS+V	32	6,6	11	18	31	21	8	32	38	51	10	20	10	1,6	26	56
042082	ASV040ALIS+V	40	6,6	11	22	35	24	10	36	41	54	15	22	12	1,6	28	139
042083	ASV050ALIS+V	50	9	15	30	45	33	12	45	50	65	16	26	12	1,6	32	-0,2
042084	ASV063ALIS+V	63	9	15	35	50	37	14	50	52	67	16	30	16	1,6	40	-0,6
042085	ASV080ALIS+V	80	11	18	40	60	47	14	63	66	86	20	30	16	2,5	50	200
042086	ASV100ALIS+V	100	11	18	50	70	55	17	71	76	96	20	38	20	2,5	60	656
042087	ASV125ALIS+V	125	14	20	60	90	70	20	90	94	124	30	45	25	3,2	70	826
042088	ASV160ALIS+V	160	14	20	88	126	97	25	115	118	156	36	63	30	4	90	-
042089	ASV200ALIS+V	200	18	26	90	130	105	30	135	122	162	40	63	35	4	90	-0,5
042090	ASV250ALIS+V	250	22	33	110	160	128	35	165	150	200	45	80	42	4,5	90	-1,2
042091	ASV300ALIS+V	320	26	38	130	190	154	40	195	185	250	50	95	55	4,5	90	-

Type: AS	

Code	Item	For cyl. Ø mm	Q	BG	H	I	L	M	N	O	S	R	BQ	G	Weight (g)
040361	AS032ALIS	32	7	20	37	18	8	32	25	41	9	19	26	10	54
040362	AS040ALIS	40	9	32	54	25	10	45	32	52	14	25,5	28	12	136
040363	AS050ALIS	50	9	32	54	25	10	45	32	52	14	25,5	32	12	140
040364	AS063ALIS	63	11	50	75	32	12	63	40	63	14	32	40	16	295
040365	AS080ALIS	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

Notes

Mounting Accessories for Cylinders

Mounting 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 VDMA		FLV..AQIS
Low foot		PB..AQIS
Round adjustable centre trunnion (tie rod)		CT..AQIS
Centre trunnion (profile barrel)		CTS..AQIS
Round centre trunnion not adjustable (threaded)		CTN..AQIS
Support for centre trunnion (tie rod)		ST..AQIS
Centre trunnion (tie rod) for heads		CTA..AQIS



1

Technical data

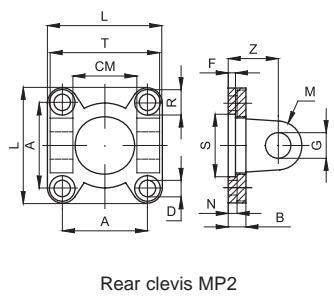
Type	Materials and treatments				
	Steel A105	Steel AVP	Fe 37	Black Cataphoresis	White zinking
CF..AQIS	•			•	
CM..AQIS	•			•	
ASV..AQIS	•			•	
SEC..AQIS		•			
CFS..AQIS	•			•	
CMS..AQIS	•			•	
ASS..AQIS	•			•	
SEC..ARAQIS		•			
FLV..AQIS			•		•
PB..AQIS			•		•
CT..AQIS	•				•
CTS..AQIS	•				•
ST..AQIS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

Note: Types ..AQIS+V supplied with mounting screws.

Types ..AQIS+GR supplied with grains.

For screws (if not supplied) see page 1.101.1

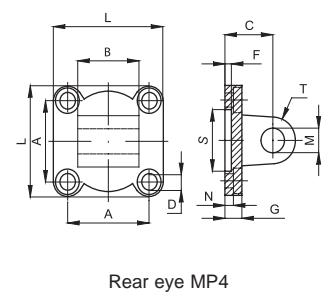
Type: CF



Code	Item	For cyl. Ø mm	A	L	D	R	N	B	S	F	Z	G	M	CM	T	Weight (g)
040461	CF032AQIS+V	32	32,5	45	6,6	11	5,5	10	30	5	22	10	10	26	45	138
040462	CF040AQIS+V	40	38	55	6,6	11	5,5	10	35	5	25	12	12	28	52	230
040463	CF050AQIS+V	50	46,5	65	9	15	6,5	10	40	5	27	12	12	32	60	338
040464	CF063AQIS+V	63	56,5	75	9	15	6,5	12	45	5	32	16	16	40	70	540
040465	CF080AQIS+V	80	72	95	11	18	10	14	45	-	36	16	16	50	90	1000
040466	CF100AQIS+V	100	89	115	11	18	10	16	55	-	41	20	20	60	110	1700
040467	CF125AQIS+V	125	110	140	13,5	20	10	20	60	-	50	25	25	70	130	3350
040468	CF160AQIS+V	160	140	180	18	26	10	20	65	7	55	30	25	90	170	5750
040469	CF200AQIS+V	200	175	220	18	26	11	20	75	7	60	30	25	90	170	8900

Perno da ordinare separatamente: per perno vedi pag. 1.98.2 (SEC..AQIS)

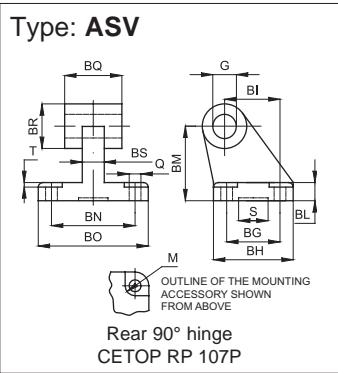
Type: CM



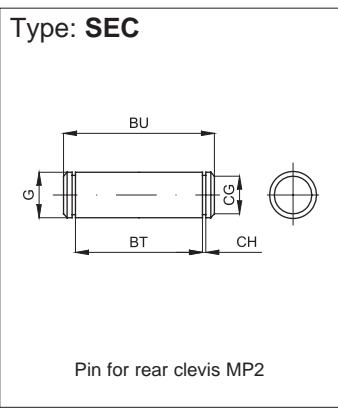
Code	Item	For cyl. Ø mm	A	L	D	R	N	G	S	F	C	M	T	B	Weight (g)
040521	CM032AQIS+V	32	32,5	45	6,6	11	5,5	10	30	5	22	10	10	26	176
040522	CM040AQIS+V	40	38	55	6,6	11	5,5	10	35	5	25	12	12	28	274
040523	CM050AQIS+V	50	46,5	65	9	15	6,5	10	40	5	27	12	12	32	368
040524	CM063AQIS+V	63	56,5	75	9	15	6,5	12	45	5	32	16	16	40	682
040525	CM080AQIS+V	80	72	95	11	18	10	14	45	5	36	16	16	50	1196
040526	CM100AQIS+V	100	89	115	11	18	10	16	55	5	41	20	20	60	2100
040527	CM125AQIS+V	125	110	140	13,5	20	10	20	60	7	50	25	25	70	3740
040528	CM160AQIS+V	160	140	180	18	26	10	20	65	7	55	30	25	90	5890
040529	CM200AQIS+V	200	175	220	18	26	11	20	75	7	60	30	25	90	8470

Mounting Accessories for Cylinders

Mounting for ISO 15552 in steel

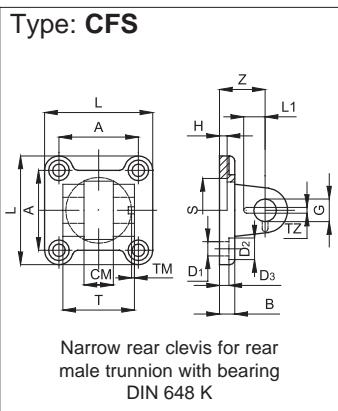


Code	Item	For cyl. Ø mm	Q	M	BG	BH	BI	BL	BM	BN	BO	BS	BR	BQ	G	T	S	Weight (g)
040381	ASV032AQIS	32	6,6	11	18	31	21	8	32	38	51	10	20	26	10	1,6	20	158
040382	ASV040AQIS	40	6,6	11	22	35	24	10	36	41	54	10	22	28	12	1,6	20	238
040383	ASV050AQS	50	9	15	30	45	33	12	45	50	65	14	26	32	12	1,6	20	418
040384	ASV063AQIS	63	9	15	35	50	37	14	50	52	67	14	30	40	16	1,6	20	526
040385	ASV080AQIS	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	-	-



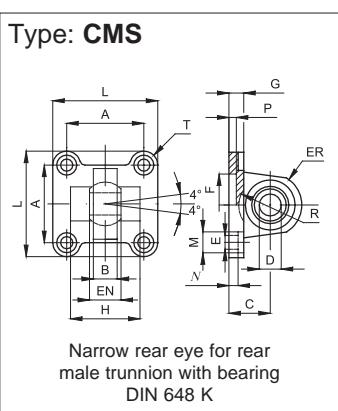
Code	Item	For cyl. Ø mm	G		BT		CG		CH		BU		Weight (g)	
040261	SEC032AQIS	32	10		46		9,6		1,1		53		32	
040262	SEC040AQIS	40	12		53		11,5		1,1		60		52	
040263	SEC050AQIS	50	12		61		11,5		1,1		68		60	
040264	SEC063AQIS	63	16		71		15,2		1,1		78		122	
040265	SEC080AQIS	80	16		91		15,2		1,1		98		152	
040266	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		1,85		211		2100	
040460	SEC320AQIS	320	45		222		42,5		1,85		236		2950	

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	CFS032AQIS+V	32	45	34	14	32,5	22	5	10	5,5	30	10	6,6	11	3	3,3	11,5	140
040492	CFS040AQIS+V	40	55	40	16	38	25	5	10	5,5	35	12	6,6	11	4	4,3	12	230
040493	CFS050AQIS+V	50	65	45	21	46,5	27	5	10	6,5	40	16	9	15	4	4,3	14	336
040494	CFS063AQIS+V	63	75	51	21	56,5	32	5	12	6,5	45	16	9	15	4	4,3	14	546
040495	CFS080AQIS+V	80	95	65	25	72	36	5	16	10	45	20	11	18	4	4,3	16	1190
040496	CFS100AQIS+V	100	115	75	25	89	41	5	16	10	55	20	11	18	4	6,3	16	1840
040497	CFS125AQIS+V	125	140	97	37	110	50	7	20	10	60	30	13,5	20	6	6,3	24	3550

The pin is has 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	CMS032AQIS+V	32	32,5	10,5	22	10	14	15	30	10	6,6	45	10,5	5,5	5	-	-	152
040532	CMS040AQIS+V	40	38	12	25	12	16	18	35	10	6,6	55	11	5,5	5	-	-	256
040533	CMS050AQIS+V	50	46,5	15	27	16	21	20	40	10	9	65	15	6,5	5	51	19	364
040534	CMS063AQIS+V	63	56,5	15	32	16	21	23	45	12	9	75	15	6,5	5	-	-	595
040535	CMS080AQIS+V	80	72	18	36	20	25	27	45	14	11	95	18	10	5	-	-	1122
040536	CMS100AQIS+V	100	89	18	41	20	25	30	55	16	11	115	18	10	5	-	-	1786
040537	CMS125AQIS+V	125	110	26	50	30	37	40	60	20	13,5	140	20	10	7	-	-	3500

Mounting Accessories for Cylinders

Mounting for ISO 15552 in steel



Type: ASS	
<p>Rear 90° hinge with bearing DIN 648 K</p>	

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	ASS032AQIS	32	6,6	11	18	31	21	10	32	38	51	14	15	10,5	10	8,5	20	3	178
040552	ASS040AQIS	40	6,6	11	22	35	24	10	36	41	54	16	18	12	12	8,5	20	3	268
040553	ASS050AQS	50	9	15	30	45	33	12	45	50	65	21	20	15	16	10,5	20	3	458
040554	ASS063AQIS	63	9	15	35	50	37	12	50	52	67	21	23	15	16	10,5	20	3	550
040555	ASS080AQIS	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	
<p>Anti-rotating pin for narrow rear clevis</p>	

Code	Item	For cyl. Ø mm	A	C	D	E	F	G	H	L	B		Weight (g)
040571	SEC032ARAQIS	32	3	32,5	1,1	10	9,6	4	41	14	4,5		26
040572	SEC040ARAQIS	40	4	38	1,1	12	11,5	4	48	16	6		42
040573	SEC050ARAQIS	50	4	43	1,1	16	15,2	5	54	20	6	0	84
040574	SEC063ARAQIS	63	4	49	101	16	15,2	5	60	20	6	-1	94
040575	SEC080ARAQIS	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: FLV	
<p>Flange VDMA MF1 / MF2</p>	

Code	Item	For cyl. Ø mm	A	AP Ø	AO	R	AS	AR	AQ	AT	AV	C	D	Weight (g)
042119	FLV032AQIS+V	32	32,5	7	30	6,6	10	45	32	64	80	10,5	5	192
042120	FLV040AQIS+V	40	38	9	35	6,6	10	52	36	72	90	11	5	250
042121	FLV050AQIS+V	50	46,5	9	40	9	12	65	45	90	110	15	5,5	480
042122	FLV063AQIS+V	63	56,5	9	45	9	12	75	50	100	120	15	5,5	620
042123	FLV080AQIS+V	80	72	12	45	11	16	95	63	126	150	18	8	1415
042124	FLV100AQIS+V	100	89	14	55	11	16	115	75	150	170	18	8	1985
042125	FLV125AQIS+V	125	110	16	60	13,5	20	140	90	180	205	20	9,5	3750
042126	FLV160AQIS+V	160	140	18	65	18	20	180	115	230	260	26	10,5	6350
042127	FLV200AQIS+V	200	175	22	75	18	25	220	135	270	300	26	12,5	11300
042128	FLV250AQIS+V	250	220	26	90	22	25	285	165	330	400	33	14,5	20150
040683	FLV320AQIS+V	320	270	33	110	26	30	350	200	400	470	39	15	34550

Type: PB	
<p>Low foot MS1</p>	

Code	Item	For cyl. Ø mm	C	B	D	E	F	G	H	I	S	T	R	U	Z	Weight (g)
042129	PB032AQIS+V	32	32,5	32	45	35	30	7	15,75	24	4	32	15	11	7	66
042130	PB040AQIS+V	40	38	36	52	36	30	7	17	28	4	36	17,5	15	9	78
042131	PB050AQIS+V	50	46,5	45	65	47	36	9	21,75	32	5	45	20	16	9	168
042132	PB063AQIS+V	63	56,5	50	75	45	35	9	21,75	32	5	50	22,5	18	9	190
042133	PB080AQIS+V	80	72	63	95	55	47	11	27	41	6	63	22,5	17	12	382
042134	PB100AQIS+V	100	89	75	115	57	53	11	26,5	41	6	71	27,5	24	14	452
042135	PB125AQIS+V	125	110	90	140	70	70	14	35	45	8	90	30	-	16	1090
042136	PB160AQIS+V	160	140	115	180	75	100	18	45	60	9	115	32,5	-	18	1188
042137	PB200AQIS+V	200	175	135	220	100	100	18	47,5	70	12	135	37,5	-	22	3450
042138	PB250AQIS+V	250	220	165	270	100	150	22	55	75	14	165	45	-	26	3800
042139	PB320AQIS+V	320	250	195	320	100	150	22	55	80	18	195	50	-	30	6600

It is supplied singly.

Mounting Accessories for Cylinders

Mounting for ISO 15552 in steel



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	CT032AQIS+GR	32	32,5	46	15	12	12	50	37	1	6,25	7	M5	110
040582	CT040AQIS+GR	40	38	59	20	16	16	63	46	1,5	6,25	8	M5	290
040583	CT050AQIS+GR	50	46,5	69	20	16	16	75	56	1,6	8,25	8	M6	330
040584	CT063AQIS+GR	63	56,5	84	25	20	20	90	69	1,6	8,25	12	M6	650
040585	CT080AQIS+GR	80	72	102	25	20	20	110	87	1,6	10,25	12	M8	830
040586	CT100AQIS+GR	100	89	125	30	25	25	132	107	2	10,25	15	M8	1560
040587	CT125AQIS+GR	125	110	155	32	25	25	160	133	2	12,25	15	M10	2450
040588	CT160AQIS+GR	160	140	190	40	32	32	200	170	2,5	16,25	18	M12	4150
040589	CT200AQIS+GR	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	CTS032AQIS+GR	32	33	48,5	18	12	12	50	37	57	M5	11	15,5	7	/	104
040602	CTS040AQIS+GR	40	38	59	20	16	16	63	46	64	M6	11	20	8	/	234
040603	CTS050AQIS+GR	50	48	71	20	16	16	75	56	82	M6	14	22,5	8	/	300
040604	CTS063AQIS+GR	63	58	84	26	20	20	90	69	96	M6	14	30	12	/	577
040605	CTS080AQIS+GR	80	73	105	26	20	20	110	87	119	M6	16	45	12	58	858
040606	CTS100AQIS+GR	100	91	129	32	25	25	132	107	144,5	M8	17	60	15	74	1565
040607	CTS125AQIS+GR	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	CTN032AQIS+GR	32	32,5	46	15	12	12	50	37	M6	110
040053	CTN040AQIS+GR	40	38	59	20	16	16	63	46	M6	290
048590	CTN050AQIS+GR	50	46,5	69	20	16	16	75	56	M8	330
040564	CTN063AQIS+GR	63	56,5	84	25	20	20	90	69	M8	650
040096	CTN080AQIS+GR	80	72	102	25	20	20	110	87	M10	830
040097	CTN100AQIS+GR	100	89	125	30	25	25	132	107	M10	1560
040098	CTN125AQIS+GR	125	110	155	32	25	25	160	133	M12	2450
040099	CTN160AQIS+GR	160	140	190	40	32	32	200	170	M16	4150
040100	CTN200AQIS+GR	200	175	240	40	32	32	250	211	M16	7300
040110	CTN250AQIS+GR	250	220	296	50	40	40	320	268	M20	13050
040590	CTN320AQIS+GR	320	270	370	60	50	50	400	343	M24	-

Type: CTA

Centre trunnion (tie rod) for heads

Code	Item	For cyl. Ø mm	AE	AL	AH	AG	AF	AN	A	B	F	G	L	R	Weight (g)
040591	CTA032AQIS+V	32	46	14	12	12	50	30	32,5	6,5	6,5	-	6	1	137
040592	CTA040AQIS+V	40	59	19	16	16	63	35	38	9	6,5	10,5	6	1,6	385
040593	CTA050AQIS+V	50	69	19	16	16	75	40	46,5	9	8,5	13,5	8	1,6	513
040594	CTA063AQIS+V	63	84	24	20	20	90	45	56,5	11,5	8,5	13,5	8	1,6	1041
040595	CTA080AQIS+V	80	102	24	20	20	110	45	72	11,5	10,5	16,5	10	1,6	1567
040596	CTA100AQIS+V	100	125	29	25	25	132	55	89	14	10,5	16,5	10	2	3000
040598	CTA125AQIS+V	125													

Type: ST

Support for centre trunnion (tie rod)

Code	Item	For cyl. Ø mm	A	M	R	P	C	S	L	U	T	E	Weight (g)
040681	ST032AQIS	32	46	18	30	15	32	12	10,5	11	6,6	7	100
040682	ST040/050AQIS	40-50	55	21	36	18	36	16	12	15	9	9	150
040684	ST063/080AQIS	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.

Mounting Accessories for Cylinders

Mountings for CNOMO in aluminium



Standard executions		
Version	Sym.	Type
Rear clevis		CF..ALCN
Rear standard hinge		AN..ALCN
Rear 90° hinge		AS..ALCN
High foot		P..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.

Type: CF

Code	Item	For cyl. Ø mm	A	L	D	H	CM	S	R	Z	G	Weight (g)
040401	CF032ALCN	32	33	45	7	8	26	25	8	18	8	38
040402	CF040ALCN	40	40	52	7	8	33	32	12	24	12	58
040403	CF050ALCN	50	49	65	9	10	33	32	12	26	12	118
040404	CF063ALCN	63	59	75	9	10	47	45	16	30	16	146
040405	CF080ALCN	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)

Type: AN

Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	L	M	Weight (g)
040281	AN032ALCN	32	40	25	28	-	8	8	7	18	16	26	26
040282	AN040/050ALCN	40-50	52	32	38	16	10	12	9	26	24	38	56
040284	AN063/080ALCN	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

Type: AS

Code	Item	For cyl. Ø mm	Q	BG	H	I	L	M	N	O	S	R	BQ	G	Weight (g)
040321	AS032ALCN	32	7	20	37	18	8	32	25	41	9	19,5	25	8	58
040322	AS040/050ALCN	40-50	9	32	54	25	10	45	32	52	14	26	32	12	144
040324	AS063/080ALCN	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

Mounting for CNOMO in aluminium



Type: P														
 High foot														
Code	Item	For cyl. Ø mm	A	B	C	D	E	F	M	O	S	U	V	Weight (g)
040101	P032ALCN	32	33	8	28	7	45	32	54	9	25	27	35	54
040102	P040ALCN	40	40	8	36	7	52	36	62	9	32	27	35	70
040103	P050ALCN	50	49	10	45	9	65	45	77	11	32	35	45	150
040104	P063ALCN	63	59	10	55	9	75	50	87	11	45	35	45	170
040105	P080ALCN	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

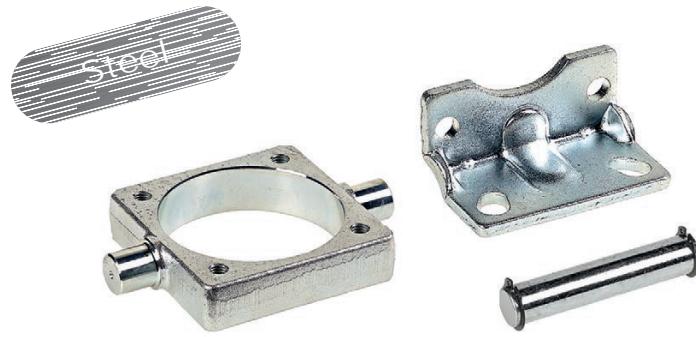
It is supplied singly.

Mounting Accessories for Cylinders

Mounting for CNOMO in steel



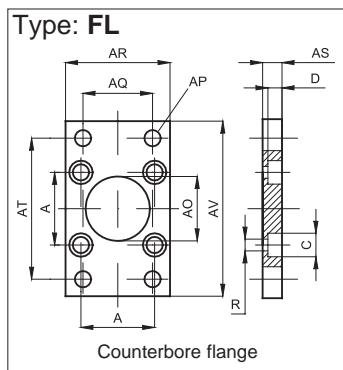
Standard executions		
Version	Sym.	Type
Counterbore flange		FL..AQCN
Threaded flange		FLF..AQCN
Low foot		PB..AQCN
Pin for rear clevis with seeger		SEC..AQCN
Round center trunnion not adjustable (threaded)		CTN..AQCN
Round center trunnion adjustable (with grains)		CT..AQCN



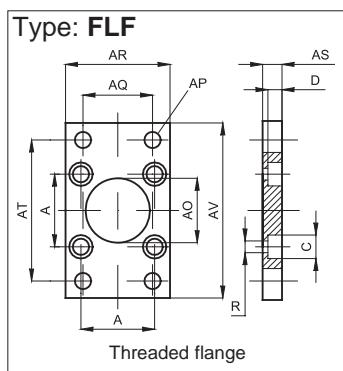
Technical data				
Type	Materials and treatments			
	Steel A105	Steel AVP	Fe 37	White zinking
FL..AQCN			•	
PB..AQCN			•	
SEC..AQCN		•		
CT..AQCN	•			

Note: The mounting screws are to be ordered separately.

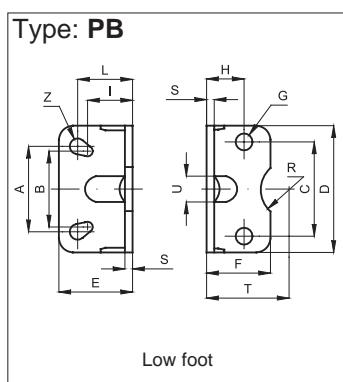
For screws see page 1.101.1.



Code	Item	For cyl. Ø mm	A	AP	AO	R	AS	AR	AQ	AT	AV	C	D	Weight (g)
040621	FL032AQCN	32	33	9	25	6,5	8	45	33	69	80	10,5	6	158
040622	FL040AQCN	40	40	9	32	6,5	8	52	40	78	90	10,5	6	206
040623	FL050AQCN	50	49	11	32	9	10	65	49	94	110	13,5	8	424
040624	FL063AQCN	63	59	11	45	9	10	75	59	104	120	13,5	8	504
040625	FL080AQCN	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	AP	AO	R	AS	AR	AQ	AT	AV	C	D	Weight (g)
040948	FLF032AQCN	32	33	9	25	6,5	8	45	33	69	80	10,5	6	158
040949	FLF040AQCN	40	40	9	32	6,5	8	52	40	78	90	10,5	6	206
040950	FLF050AQCN	50	49	11	32	9	10	65	49	94	110	13,5	8	424
040951	FLF063AQCN	63	59	11	45	9	10	75	59	104	120	13,5	8	504
040952	FLF080AQCN	80	75	14	45	10,5	12	95	75	130	150	16,5	10	1046
040953	FLF100AQCN	100	90	14	55	10,5	12	115	90	150	170	16,5	10	1480
040954	FLF125AQCN	125	110	18	55	13,5	16	140	110	180	205	19	12,5	3000
040955	FLF160AQCN	160	140	22	65	16,5	20	180	140	228	260	24,5	16,5	6300
040956	FLF200AQCN	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	PB032AQCN	32	28	32	33	45	35	30	7	15,5	22	27	4,5	3,5	12,5	4	32	11	66
040162	PB040AQCN	40	36	36	40	52	36	30	7	16	26	27	4,5	4,5	16	4	36	15	78
040163	PB050AQCN	50	45	45	49	65	45	36	9	20,5	30	35	505	4,5	16	5	45	16	168
040164	PB063AQCN	63	55	50	59	75	45	35	9	20,5	30	35	5,5	4,5	22,5	5	50	18	190
040165	PB080AQCN	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

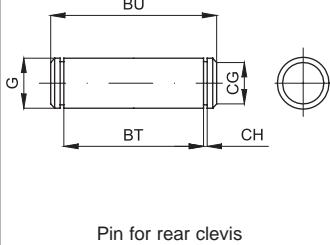
It is supplied singly.

Mounting Accessories for Cylinders

Mounting for CNOMO in steel



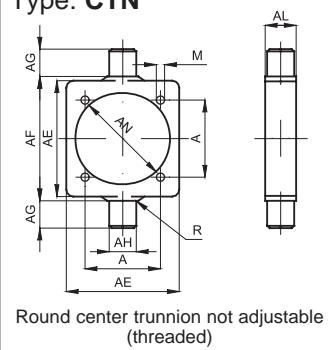
Type: SEC



It is supplied with 2 seegers included.

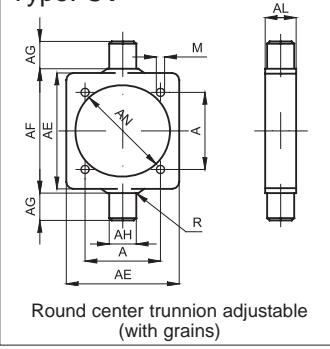
Code	Item	For cyl. Ø mm	G	BT	CG	CH	BU	Weight (g)
040221	SEC032AQCN	32	8	46	7,6	1,1	53	21
040222	SEC040AQCN	40	12	53	11,5	1,1	60	52
040223	SEC050AQCN	50	12	66	11,5	1,1	73	64
040224	SEC063AQCN	63	16	76	15,2	1,1	83	130
040225	SEC080AQCN	80	16	96	15,2	1,1	103	160
040226	SEC100AQCN	100	20	117	19	1,3	124	304
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

Type: CTN



Code	Item	For cyl. Ø mm	A	AE	AL	AH	AG	AF	AN	R	M	Weight (g)
040541	CTN032AQCN	32	33	46	15	12	12	50	37	1	M6	130
040542	CTN040AQCN	40	40	59	20	16	16	63	46	1,5	M6	306
040543	CTN050AQCN	50	49	69	20	16	16	73	56	1,6	M8	370
040544	CTN063AQCN	63	59	84	25	20	20	90	69	1,6	M8	702
040545	CTN080AQCN	80	75	102	25	20	20	108	87	1,6	M10	894
040546	CTN100AQCN	100	90	125	30	25	25	131	107	2	M10	1590
040547	CTN125AQCN	125	110	155	32	25	25	160	133,5	2	M12	2600
040548	CTN160AQCN	160	140	190	40	32	32	200	171	2,5	M16	4300
040549	CTN200AQCN	200	175	240	40	32	32	250	211	2,5	M16	7450

Type: CT



Code	Item	For cyl. Ø mm	A	AE	AL	AH	AG	AF	AN	R	M	Weight (g)
040559	CT032AQCN	32	33	46	15	12	12	50	37	1	M6	130
040558	CT040AQCN	40	40	59	20	16	16	63	46	1,5	M6	306
040538	CT050AQCN	50	49	69	20	16	16	73	56	1,6	M8	370
040540	CT063AQCN	63	59	84	25	20	20	90	69	1,6	M8	702
040545R	CT080AQCN	80	75	102	25	20	20	108	87	1,6	M10	894
040546R	CT100AQCN	100	90	125	30	25	25	131	107	2	M10	1590
040580	CT125AQCN	125	110	155	32	25	25	160	133,5	2	M12	2600
040630	CT160AQCN	160	140	190	40	32	32	200	171	2,5	M16	4300
040597	CT200AQCN	200	175	240	40	32	32	250	211	2,5	M16	7450

Mounting Accessories for Cylinders

Mountings for compact UNITOP in aluminium



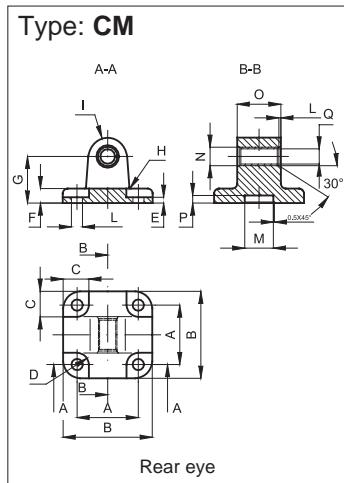
Standard executions		
Version	Sym.	Type
Rear eye		CM..ALUN
Rear clevis		CF..ALUN
Flange		FL..ALUN



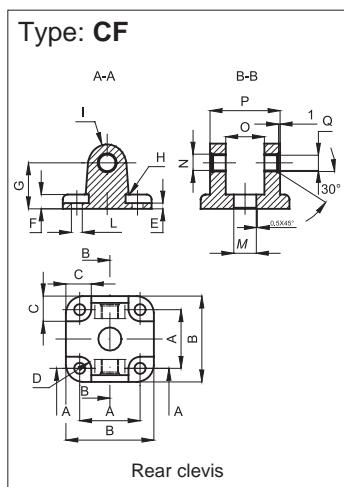
1

Technical data	
Material	Die-cast aluminium
Treatment	Sifting

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



Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	Weight (g)
040701	CM012/016ALUN	12-16	18	27	8,5	4,5	2,6	6	16	2	6	4,5	10	8	12	3	6	17
040702	CM020ALUN	20	22	34	11	5	2,6	6	20	2	8	5,5	12	10	16	3	8	21
040703	CM025ALUN	25	26	38	11	5	2,6	6	20	2	8	5,5	12	10	16	3	8	27

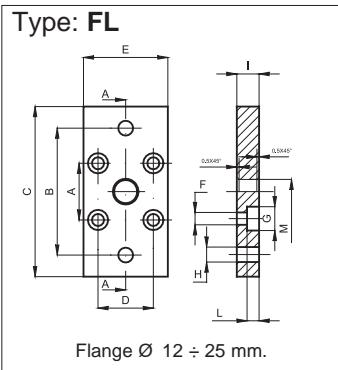


Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	Weight (g)
040711	CF032ALUN	32	32	48	13,5	5,5	5,5	9	22	2,5	10	6,6	14	12	26	45	10	60
040712	CF040ALUN	40	42	58	13,5	5,5	5,5	9	25	2,5	12,5	6,6	14	14	28	52	12	104
040713	CF050ALUN	50	50	66	15,5	7,5	6,5	11	27	2,5	12,5	9	18	14	32	60	12	142
040714	CF063ALUN	63	62	83	18	7,5	6,5	11	32	4	15	9	18	18	40	70	16	240
040715	CF080ALUN	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

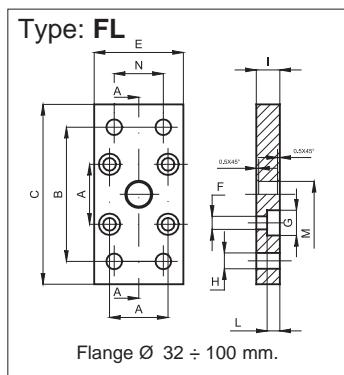
The pin is to be ordered separately: for the pin see page 1.98.2 (SEC..AQIS).

Mounting Accessories for Cylinders

Mountings for compact UNITOP in aluminium



Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	Weight (g)
040721	FL012/016ALUN	12-16	18	43	55	18	29	4,5	9	5,5	10	5,4	10	34
040722	FL020ALUN	20	22	55	70	22	36	5,5	10	6,6	10	5,4	12	55
040723	FL025ALUN	25	26	60	76	26	40	5,5	10	6,6	10	5,4	12	68



Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	N	Weight (g)
040724	FL032ALUN	32	32	65	80	32	50	6,6	11	7	10	6,4	14	32	88
040725	FL040ALUN	40	42	82	102	42	60	6,6	11	9	10	6,4	14	36	143
040726	FL050ALUN	50	50	90	110	50	68	9	15	9	12	8,6	18	45	204
040727	FL063ALUN	63	62	110	130	62	87	9	15	9	15	8,6	18	50	411
040728	FL080ALUN	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	Sym.	Type
Rear eye		CM..AQUN
Rear clevis		CF..AQUN
Flange		FL..AQUN
Low foot		PB..AQUN

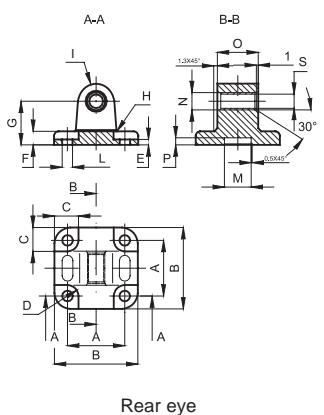


1

Technical data				
Type	Materials and treatments			
	Steel A105	Fe 37	Black cat- aphoresis	White zinking
CM..AQUN	•		•	
CF..AQUN	•		•	
FL..AQUN		•		•
PB..AQUN	•	•		•

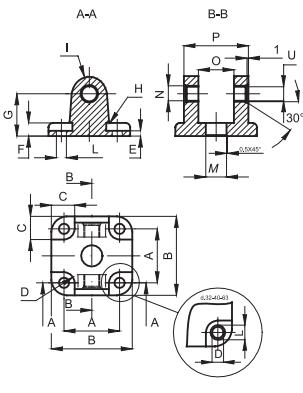
Note: The mounting screws are to be ordered separately.
For screws see page 1.101.1.

Type: CM



Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	Weight (g)
040732	CM020AQUN	20	22	34	11	5	2,6	6	20	2	8	5,5	12	10	16	3	6	28	8	64
040733	CM025AQUN	25	26	38	11	5	2,6	6	20	2	8	5,5	12	10	16	3	6	28	8	80

Type: CF



Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U	Weight (g)
040741	CF032AQUN	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	CF040AQUN	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	CF050AQUN	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	CF063AQUN	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	CF080AQUN	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

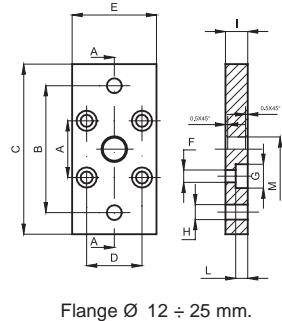
The pin is to be ordered separately: for the pin see page 1.98.2 (SEC..AQIS).

Mounting Accessories for Cylinders

Mountings for compact UNITOP in steel

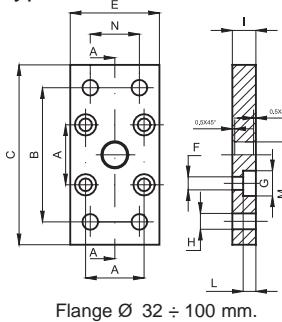


Type: FL



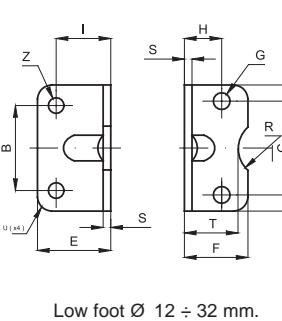
Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	Weight (g)
040751	FL012/016AQUN	12-16	18	43	55	18	29	4,5	9	5,5	10	5,4	10	10
040752	FL020AQUN	20	22	55	70	22	36	5,5	10	6,6	10	5,4	12	16
040753	FL025AQUN	25	26	60	76	26	40	5,5	10	6,6	10	5,4	12	20

Type: FL



Code	Item	For cyl. Ø mm	A	B	C	D	E	F	G	H	I	L	M	N	Weight (g)
040754	FL032AQUN	32	32	65	80	32	50	6,6	11	7	10	6,4	14	32	260
040755	FL040AQUN	40	42	82	102	42	60	6,6	11	9	10	6,4	14	36	420
040756	FL050AQUN	50	50	90	110	50	68	9	15	9	12	8,6	18	45	600
040757	FL063AQUN	63	62	110	130	62	87	9	15	9	15	8,6	18	50	1200
040758	FL080AQUN	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

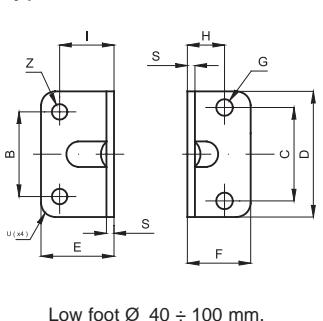
Type: PB



Code	Item	For cyl. Ø mm	C	B	D	E	F	G	H	I	S	T	R	U	Z	Weight (g)
040761	PB012/016AQUN	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

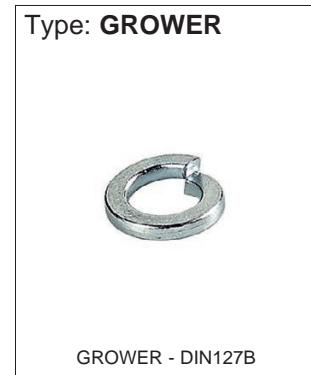
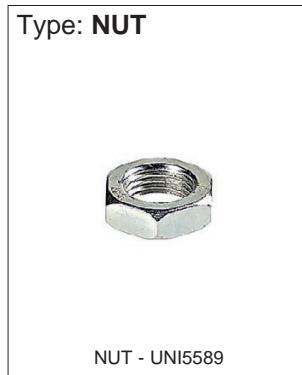
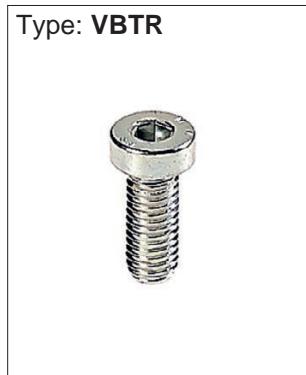
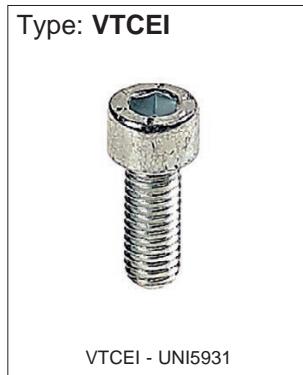


Code	Item	For cyl. Ø mm	C	B	D	E	F	G	H	I	S	U	Z	Weight (g)
040765	PB040AQUN	40	42	42	60	28	29,5	6,6	21,5	20	5	5	9	100
040766	PB050AQUN	50	50	50	68	32	30	9	22	24	6	5	9	150
040767	PB063AQUN	63	62	62	84	39	39	9	28,5	27	6	5	11	250
040768	PB080AQUN	80	82	82	102	42	36,5	11	24,5	30	8	5	11	380
040769	PB100AQUN	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



1

MOUNTING SCREWS FOR CYLINDERS ISO 15552														
Ø Cylind.	Code	Item	Normative	CF	CM	CFS	P	CMS	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	VTCEIM12x25	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	P	CMS	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	FL	PB							
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 (grower)	Normative (grower)	CF	AN	P	PL	FL	PB		
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	D36x2	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

Mounting 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.

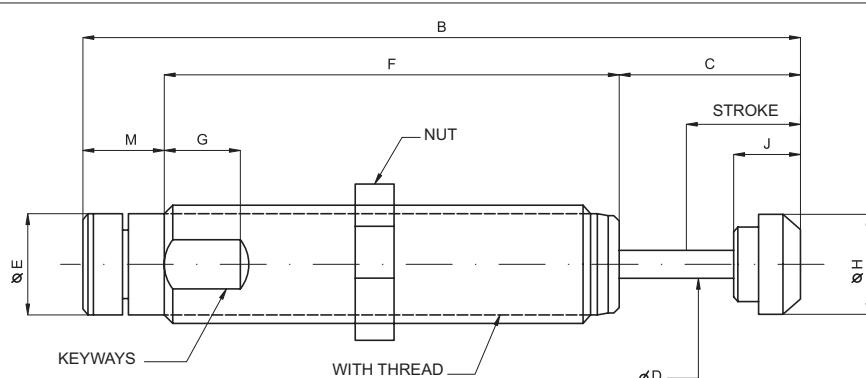
The optimal cushion is obtained:

- If the cushion is too high at the beginning of the stroke, move the nut towards 9.
- 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)		Efficiency measurement		Weight (g)
															Per cycle (W3)	Per hour (W4)	minimum (Kg.)	maximum (Kg.)	
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

Symbol

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 indicate the power supported by the cushioning.

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:

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

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



Standard executions			
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, 2 poles, with M8 connector		071189	ASV1C5M8
Reed PNP, 3 poles, with flying lead flexible cable 2,5 mt.		073639	ASV4D225
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



1

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

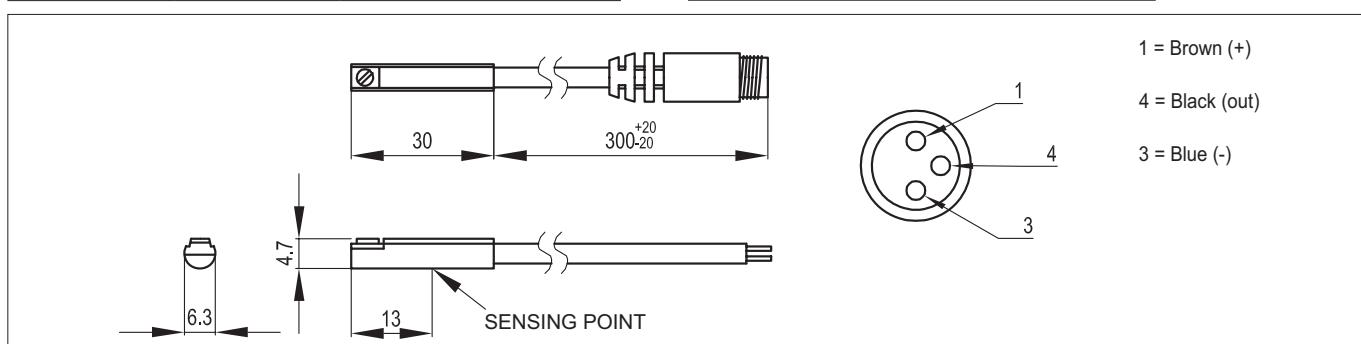
For fixing brackets

see page 1.120.1

For coupling item / switches

see pag. 1.120.5

For ATEX switches see
page 1.110.10



Technical data					
Item	ASV1C...	ASV4D...	ASV7N2M8	ASV7M2M8	ASV1H525
Circuit	Reed, 2 poles	Reed, PNP, 3 poles	Reed-Hall, PNP, 3 poles	Reed-Hall, NPN, 3 poles	Reed, 2 poles
Switching	Normally open		Normally open, solid state output		Normally closed
Voltage	5 ÷ 240 V DC/AC		10 ÷ 30 V DC		5 ÷ 120 V DC/AC
Switching current			100 mA max		
Contact rating	10 W		3 W max		10 W
Voltage drop	3 V max	0,1 V max	2 V max		3,5 V max
LED	Red	Yellow	Yellow	Red	Yellow
Cable		Ø 3,3 PU			Ø 3 PUR
Temperature range			-10 °C ÷ +70 °C		
Protection class			IEC 529 IP67		

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

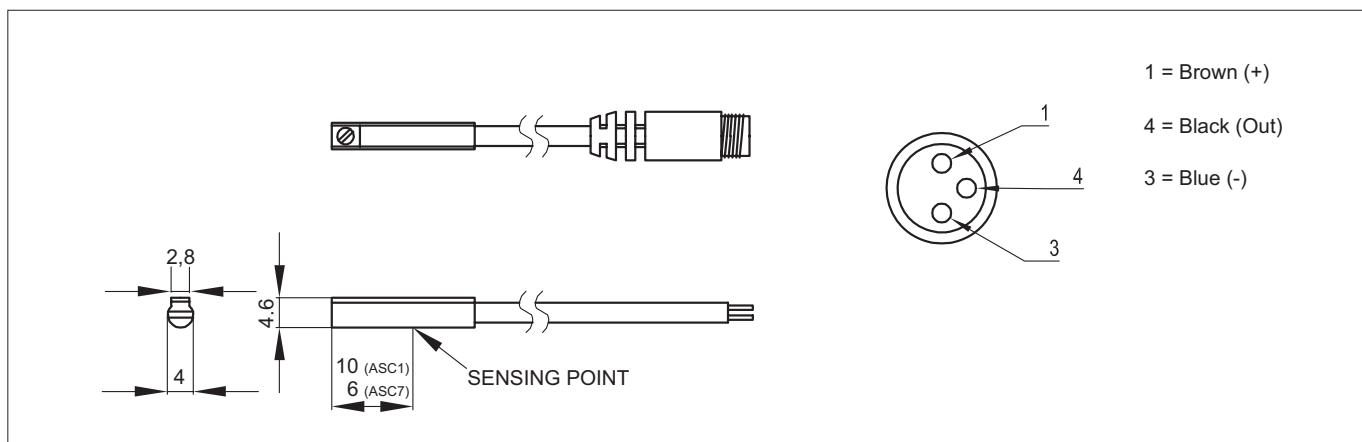


The magnetic reed switches are magnetic sensors responding to the presence of a magnetic field. When mounted on a cylinder tube they detect the presence of the magnetic field generated by the magnet set on the piston and so of the piston itself. This information is used to signal electrical circuits as required.

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

For cables with M8 connector
For fixing brackets
For coupling item / switches

see page 1.110.3
see page 1.120.1
see pag. 1.120.5



Technical data			
Circuit	Reed, 2 poles	Reed-Hall, PNP, 3 poles	Reed-Hall, NPN, 3 poles
Switching	Normally open - SPST	Normally open, solid state output	
Voltage	5 ÷ 120 V DC/AC	5 ÷ 28 V DC	
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	
Electrical protection	-	Reverse polarity -Source suppression	

Switches and Brackets

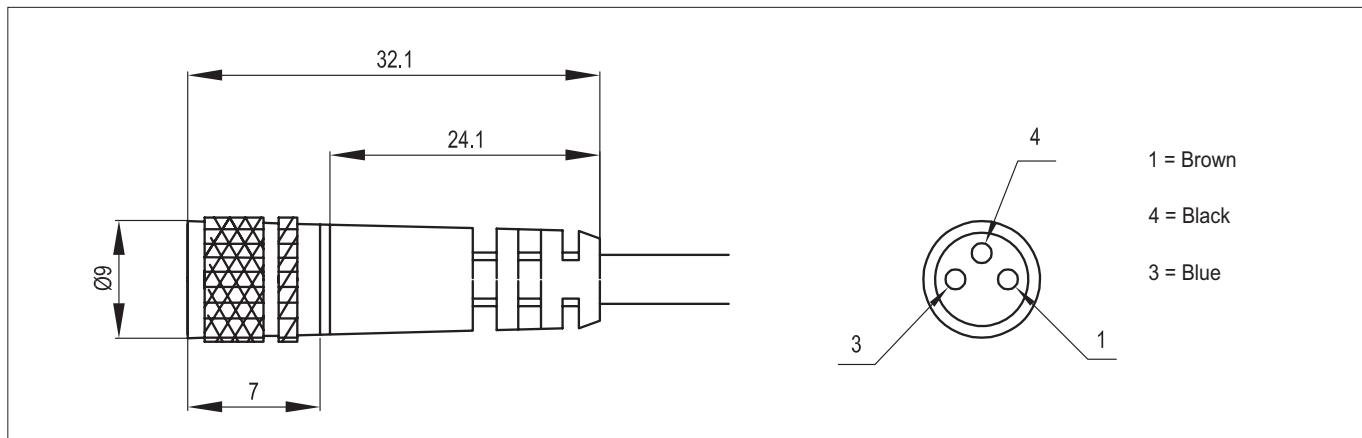
Cables with M8 connector



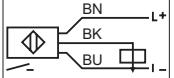
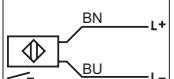
Standard executions		
Version	Code	Item
Cable mt. 2 with M8 connector	070269	CAV20M8
Cable mt. 5 with M8 connector	070250	CAV50M8
Cable mt. 10 with M8 connector	070298	CAV1KM8



1



Technical data	
Material of the cable	PVC black
Material of the connector	Body: Polypropylene
	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 range	- 20 °C ÷ + 80 °C
Protection	IP 67

Standard executions				
Version	Circuit	ATEX	Code	Item
3 poles, with flying lead flexible cable 2 m.		II3D	071120	MK500A
2 poles, with flying lead flexible cable 6 m.		II1G	071108	MK502A



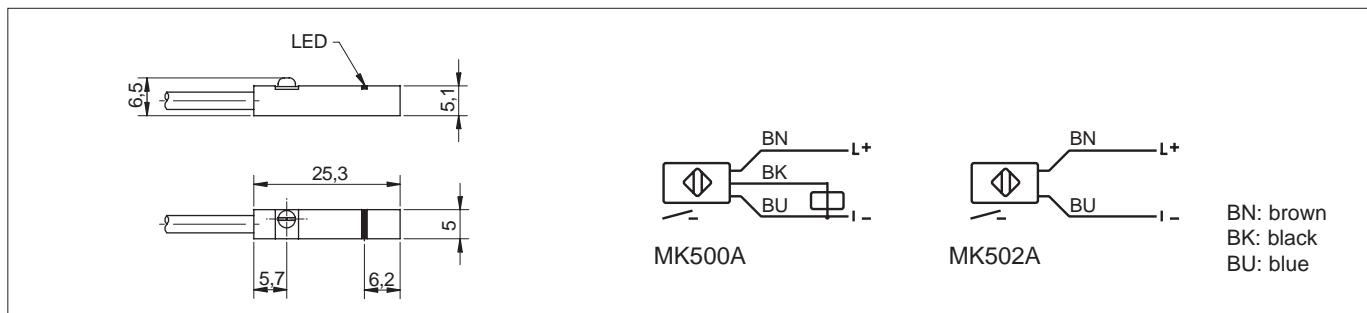
Series of magnetic switches conforming to
2014/34/EU Directive - ATEX

For fixing brackets

For coupling item / switches

see page 1.120.1

see pag. 1.120.5



Technical data		
Item	MK500A	MK502A
Electrical design	DC PNP	Connection to certified intrinsically safe circuits with the max. values $U = 15 \text{ V} / I = 50 \text{ mA} / P = 120 \text{ mW}$
Operating voltage	10 ÷ 30 V DC	8,2 V DC
Current consumption	$\leq 10 \text{ mA}$	$\geq 2,2 \text{ mA}$
Protection class	III	III
Reverse polarity protection	SI	-
Power-on delay time	< 30 ms	-
Output function	NO	NO
Voltage drop	< 2,5 V	-
Current rating	100 mA	-
Short-circuit protection	SI	-
Overload protection	SI	-
Switching frequency	10000 Hz	2000 Hz
Magnetic sensitivity	2,8 mT	2 mT
Travel speed	> 10 m/s	> 10 m/s
Hysteresis	< 1,5 mm	< 1 mm
Repeatability	< 0,2 mm	< 0,2 mm
Temperature	-25 °C ÷ +60 °C	-25 °C ÷ +70 °C
Protection	IP 65 / IP 67	IP 65 / IP 67
ATEX certification	 II 3D Ex tc IIIC T125°C Dc X	 II 1G Ex ia IIC T4 Ga  II 1D Ex ia IIIC T135°C Da
Materials	PA - stainless steel	PA - stainless steel
LED	Yellow	Yellow
Cable	PVC / 2m; 3x0.14mm ²	PVC / 6m; 2x0.14mm ²
Weight	59 g	86 g

Switches and Brackets

Magnetic switches ASH, for high temperatures



Standard executions			
Version	Circuit	Code	Item
Reed, 2 poles, with flying lead flexible cable 5 mt.		074047	ASH6C550



1

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

These sensors are specifically designed for high temperatures. 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 ASH can be applied only using a specific bracket.

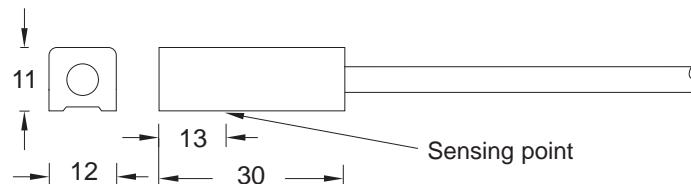
For fixing brackets

see page 1.120.1

For coupling item / switches

see pag. 1.120.5

For ATEX switches see
page 1.110.10



Technical data	
Item	ASH6C550
Circuit	Reed, 2 poles
Switching	Normally open
Voltage	5 ÷ 240 V DC/AC
Switching current	500 mA max
Contact rating	10 W
Voltage drop	0,5 V max
Cable	Ø 3, 2C, Teflon
Temperature range	-10 °C ÷ +140°C
Protection class	IEC 60529 IP67

Notes

Switches and Brackets

Brackets for magnetic switches



1

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 AMA cylinders Ø 32 and 40 mm	072908	AS101
Bracket for AMA cylinders Ø 50 and 63 mm	072909	AS102
Bracket for AMA cylinders Ø 80 and 100 mm	072910	AS103
Bracket for AMA cylinders Ø 125 mm	072911	AS104
Bracket for tie rod cylinders Ø 32 and 40 mm	072912	AS105
Bracket for tie rod cylinders Ø 50 ÷ 100 mm	072913	AS106
Bracket for tie rod cylinders Ø 125 mm	072909	AS102
Bracket for cylinders Ø 160 and 200 mm	072910	AS103
Bracket for tie rod cylinders Ø 250 and 320 mm	072917	AS110
Bracket for short stroke cylinders	072915	AS108
Bracket for rodless cylinders	072916	AS109

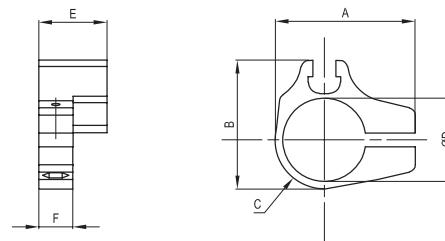


Series of brackets used to fix the different types of magnetic reed switches for the different types of existing cylinders.
For the coupling / item table see page 1.120.5

Locking bands for cylinders ISO 6432

Material: Polyamide Mounting screw included in the Kit

Code	Item	A	B	C	Ø D	E	F
072901	AFM8	21,4	18,9	6,45	9,3	18	9
072902	AFM10	23,4	20,9	7,45	11,3	18	9
072903	AFM12	25,4	22,9	8,45	13,3	18	9
072904	AFM16	29,4	26,9	10,45	17,3	18	9
072905	AFM20	33,4	30,9	12,45	21,3	18	9
072906	AFM25	38,4	35,9	14,95	26,3	18	9



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
072908	AS101	11,5	11
072909	AS102	14,5	14
072910	AS103	16,5	20
072911	AS104	17,5	24
072912	AS105	7	8
072913	AS106	10	14
072917	AS110	24,5	21

Brackets for short stroke cylinders

Material: Polyamide

Code	Item
072915	AS108

Brackets for rodless cylinders

Material: Polyamide

Code	Item
072916	AS109

Brackets for ISO and CNOMO cylinders (only for ASH type switches)

Material: Aluminium Mounting screw included in the Kit

Code	Item	A	B
077838	AS112	10,9	10,4
077651	AS113	14,1	13,5
074055	AS114	15,4	15
077839	AS115	16,3	16

Switches and Brackets

Table of coupling item / reed switches



Item	STANDARD switches			ATEX switches	
	ASV	ASC	ASH	MK500A	MK502A
MSM MDM-MDMA	■	○	○	■	■
AMA - BMA	▲	▲	■	▲	▲
AMT - BMT	■	○	■	■	■
REDM - RDM - RDMA	■	○	○	■	■
CM-CX	■	○	■	■	■
CIS-CI-CIN	▲	○	○	▲	▲
CS-CD-CDN	▲	○	○	▲	▲
DUM - DUMN	○	▲	○	○	○
BSM BDM - BDMN	■	○	○	■	■
GEDB - GEDS	○	▲	○	○	○
GPB - GPS	○	▲	○	○	○
GSB - GSS	○	▲	○	○	○
S1-S2-S S4-S5-S6	■	▲	○	■	■
CRTH - CRTHD CRTF	■	○	○	■	■
ARTMC - ARTMFC ARTMLC - ARTMFLC	○	▲	○	○	○
ARC - ARP	○	▲	○	○	○
PAB - PAC - PPB PPC - PPD - PPE	○	▲	○	○	○
MDMX - MDMAX	■	○	○	■	■
AMX	■	○	■	■	■
RXDVA - RXDVD - RXDFP RXDCM - RXDCS - RXDCF RXDBA - RXDBP	■	○	○	■	■
RDMX - RDMAX	■	○	○	■	■
CIXS - CIX - CIXN	■	○	○	■	■

▲ Direct mounting

■ Mounting with bracket

○ Not applicable