

Round Body Minicylinders, DIN/ISO 6432 Series 16, 24 and 25

 EXPRESS DELIVERY AVAILABLE

Series 16: \varnothing 8 - 10 - 12 bumpers

Series 24: \varnothing 16 - 20 - 25 bumpers and magnetic piston

Series 25: \varnothing 16 - 20 - 25 adjustable cushion and magnetic piston



- » Single or double-acting
- » Standard CETOP RP52P DIN/ISO 6432
- » Stainless steel rod and tube
- » Anodized AL heads and caps

Minicylinders Series 16, 24 and 25 are manufactured according to the European Standard Specifications CETOP RP52-P and DIN/ISO 6432. The choice of materials and other design features have provided the basis for a complete range of versatile and reliable cylinders.

The precise method of crimping the tube at the head and cap ensures that all the parts are perfectly aligned. Since the Series 16 and 24 may operate at very high speeds, bumpers are attached to the piston as standard in order to reduce noise and wear resulting from high impact loads.

Series 24 and 25 are suitable for mounting magnetic proximity switches. Series 25 has an adjustable pneumatic cushion and a magnetic piston. Various mounting accessories are available to enable the cylinders to function in a variety of applications.

GENERAL DATA

Type of construction	crimped
Operation	single-acting or double-acting
Materials	end-caps = anodized AL, tube and rod = stainless steel, piston = AL, seals = NBR - PU, other parts = see coding
Brackets	rod end, flange, feet, trunnion (mounting brackets are supplied separately from the cylinders)
Stroke min - max	Series 16 \varnothing 8 - \varnothing 10: 10 - 250 mm / Series 16: \varnothing 12: 10 - 300 mm / Series 24 & 25 \varnothing 16: 10 - 600 mm; \varnothing 20 - \varnothing 25: 10 - 1000 mm
Bores	Series 16: \varnothing 8, 10, 12 / Series 24 & 25: \varnothing 16, 20, 25
Operating temperature	0°C - 80°C (with dry air -20°C) (32 - 176°F, with dry air -4°F)
Operating pressure	1 - 10 bar (double-acting); 2 - 10 bar (single-acting) (14.5 - 145 psi DA, 29 - 145 psi SA)
Fluid	filtered air, without lubrication. If lubricated air is used, it is recommended to use oil ISO VG32. Once applied the lubrication should never be interrupted.
Speed	10 - 1000 mm/sec (without load)

STANDARD STROKES FOR MINICYLINDERS SERIES 16 - 24 and 25

■ = Double-acting
 ✖ = Single-acting

MAXIMUM STROKE LENGTHS (mm)		
Series (and Ø)	Min-Max Stroke (Produced in USA)	Min-Max Stroke (Produced in Italy)
16 (Ø 8-10)	10-250 mm	10-250 mm
16 (Ø 12)	10-300 mm	10-300 mm
24, 25 (Ø 16)	10-600 mm	10-600 mm
24, 25 (Ø 20-25)	10-600 mm	10-1000 mm

STANDARD STROKES															
Series	Ø	10	25	40	50	80	100	125	160	200	250	300	320	400	500
16	8	✖	✖	✖	✖	■	■	■	■	■					
16	10	✖	✖	✖	✖	■	■	■	■	■					
16	12	✖	✖	✖	✖	■	■	■	■	■	■				
24	16	✖	✖	✖	✖	■	■	■	■	■	■	■	■	■	■
24	20	✖	✖	✖	✖	■	■	■	■	■	■	■	■	■	■
24	25	✖	✖	✖	✖	■	■	■	■	■	■	■	■	■	■
25	16	■	■	■	■	■	■	■	■	■	■	■	■	■	■
25	20	■	■	■	■	■	■	■	■	■	■	■	■	■	■
25	25	■	■	■	■	■	■	■	■	■	■	■	■	■	■

CODING EXAMPLE

24	N	2	A	16	A	100	
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24	SERIES: 16 = non-magnetic piston (bore sizes 8, 10 or 12 only) 24 = magnetic piston (bore sizes 16, 20 or 25 only) 25 = magnetic piston and adjustable cushions (bore sizes 16, 20 or 25 only)
N	VERSION N = standard
2	OPERATION 1 = single-acting (front spring) 2 = double-acting 3 = double-acting (through-rod) 7 = single-acting (through-rod)
A	MATERIALS rod = rolled stainless steel AISI 303 tube = stainless steel AISI 304 end-caps = anodized AL
16	BORE: 08 = 8 mm 10 = 10 mm 12 = 12 mm 16 = 16 mm 20 = 20 mm 25 = 25 mm
A	CONSTRUCTION A = threaded nose mount with lock nut + lock nut for rod RL = cylinder with rod lock ø20 - ø25 (rod extension required. See table.)
100	STROKE (see table)
	= standard V = rod seals FKM (VITON)

ISO / VDMA CYLINDERS

EXPRESS DELIVERY AVAILABLE

ACCESSORIES FOR MINICYLINDERS SERIES 16 - 24 - 25



Rear trunnion bracket
Mod. I



Coupling piece
Mod. GKF



Self aligning rod
Mod. GK



Rod fork end Mod. G



Swivel ball joint Mod. GA



Front/rear flange mount
Mod. E



Foot mount Mod. B



Front Cap nut Mod. V



Piston rod nut Mod. U



Piston rod socket joint
Mod. GY

All accessories are supplied separately, except for Piston rod nut Mod. U and Nose nut Mod. V

Rod Gland

Rod Bearing is oil impregnated, sintered bronze containing graphite for high speed and heavy load applications.

Heads and Caps

Heads and Caps are lightweight aluminum that have been precision machined and anodized.

Piston Bumpers

Shock absorbing bumpers reduce noise and piston wear. Standard (Series 16 and 24).

Piston

Aluminum, two-piece design allows for a solid magnet ensuring consistent switch sensing. Nylon wear ring increases piston support while reducing wear and friction. (Series 24 and 25).

Adjustable Cushion Seal Design

Precision-machined piston spears combined with floating cushion collar allow for a smooth deceleration at end of stroke. Cushion collar is specifically designed for rapid low-pressure breakaway when stroke reverses (Series 25).

Piston Rod

All stainless steel ground and polished rods, burnished for improved seal life and reduced wear. Standard.

Cylinder Tube

Stainless Steel tube that provides superior seal life and wear resistance.

Rod Threads

Threads are rolled Stainless Steel for greater strength..

Rod Nut

Threads are rolled Stainless Steel for greater strength.

Key Flat

Hydraulically pressed key flat.

Rod and Wiper Seal

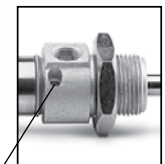
Piston rod lip seal and wiper combination. A compact design, allowing for greater bushing support without sacrificing sealing ability. Standard polyurethane.

Piston Seals

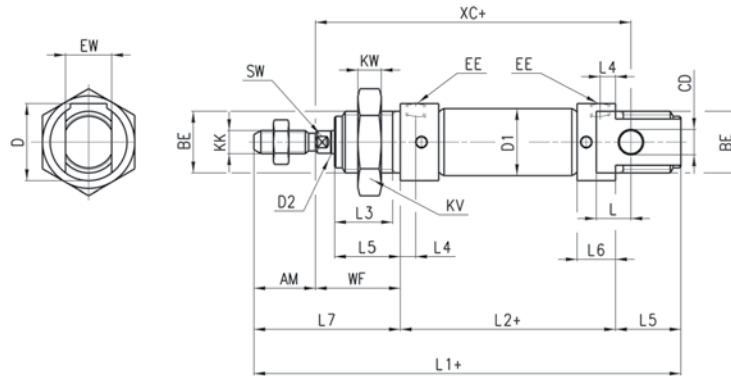
Rounded lip u-cup seal reduces friction; specifically designed for lube or non-lube service. Maintains factory prelube against the cylinder wall. Standard polyurethane.

Cushion Adjustment

Recessed and captive cushion adjustment screws. Fine thread adjustment for greater repeatability and accuracy. Standard Viton (Series 25).



Minicylinders Series 16, 24 and 25

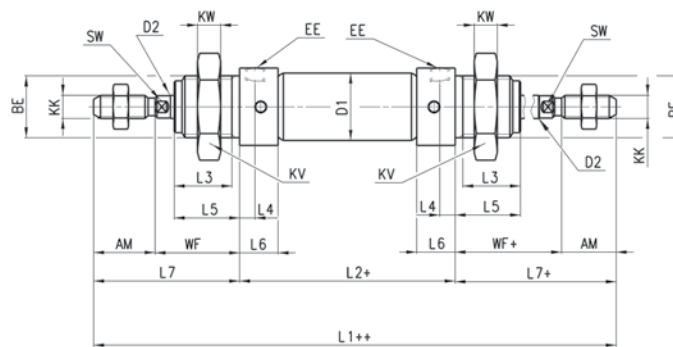


+ = add the stroke

DIMENSIONS (mm)

Mod.	∅	EW	KW	BE	KK	CD	D1	EE	∅D2	L1+	XC+	L2+	AM	L3	L4	L5	L	WF	L6	L7	KV	SW	D	cushion strokes front/rear
16	8	8	7	M12x1,25	M4x0,7	4	9,3	M5	4	86	64	46	12	10	4,5	12	6	16	9	28	19	-	15	- / -
16	10	8	7	M12x1,25	M4x0,7	4	11,3	M5	4	86	64	46	12	10	4,5	12	6	16	9	28	19	-	15	- / -
16	12	12	8	M16x1,5	M6x1	6	13,3	M5	6	105	75	50	16	15	4,5	17	9	22	9	38	24	5	20	- / -
24-25	16	12	8	M16x1,5	M6x1	6	17,3	M5	6	111	82	56	16	15	5,5	17	9	22	10	38	24	5	20	10 / 10
24-25	20	16	10	M22x1,5	M8x1,25	8	21,3	G1/8	8	132	95	68	20	18	8	20	12	24	16	44	32	7	27	13 / 15
24-25	25	16	10	M22x1,5	M10x1,25	8	26,5	G1/8	10	141,5	104	69,5	22	20	8	22	12	28	16	50	32	9	27	16 / 14

Minicylinders Series 16, 24 and 25 - through-rod



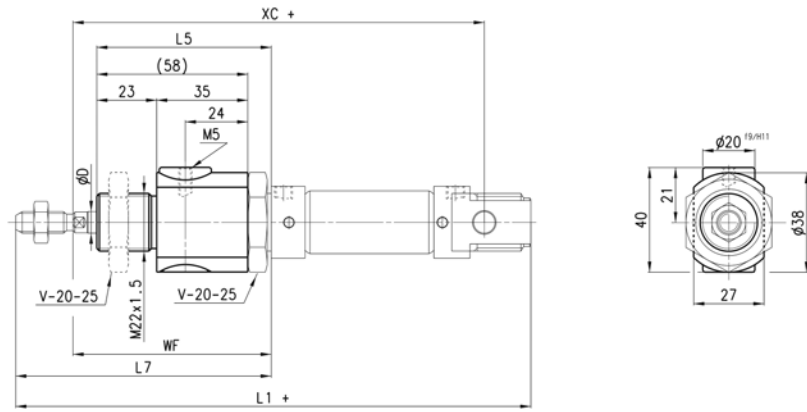
+ = add the stroke
++ = add the stroke two times

DIMENSIONS (mm)

Mod.	∅	KW	BE	KK	∅D1	EE	∅D2	L1++	L2+	AM	L3	L4	L5	WF+	L6	L7+	KV	SW	cushion strokes front/rear
16	8	7	M12x1,25	M4x0,7	9,3	M5	4	102	46	12	10	4,5	12	16	9	28	19	-	- / -
16	10	7	M12x1,25	M4x0,7	11,3	M5	4	102	46	12	10	4,5	12	16	9	28	19	-	- / -
16	12	8	M16x1,5	M6x1	13,3	M5	6	126	50	16	15	4,5	17	22	9	38	24	5	- / -
24-25	16	8	M16x1,5	M6x1	17,3	M5	6	132	56	16	15	5,5	17	22	10	38	24	5	10 / 10
24-25	20	10	M22x1,5	M8x1,25	21,3	G1/8	8	156	68	20	18	8	20	24	16	44	32	7	13 / 15
24-25	25	10	M22x1,5	M10x1,25	26,5	G1/8	10	169,5	69,5	22	20	8	22	28	16	50	32	9	16 / 14

EXPRESS DELIVERY AVAILABLE

Minicylinders Series 16, 24 and 25 with rod lock (Mod. RLC)



∅	Rod extension [X] (mm)	Holding force [static load] (N)
20	+50	300
25	+48	400

+ = add the stroke

DIMENSIONS (mm)

∅	[∅] D	WF	L5	L7	XC+	L1+	Clamping Force (Static Load)
							F (N)
20	8	74	70	94	145	182	300
25	10	76	70	98	152	189,5	400

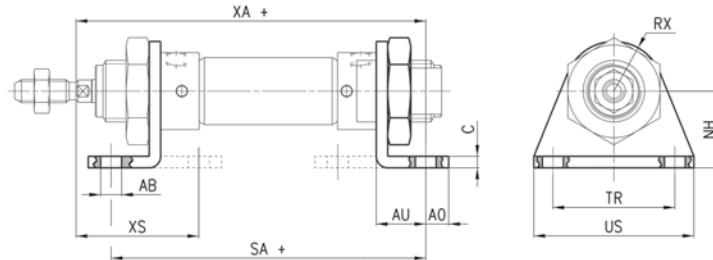
Foot mount Mod. B

Material: zinc-plated steel.



Supplied with:
2x feet
1x front end cap nut
mod. V

+ = add the stroke



DIMENSIONS (mm)

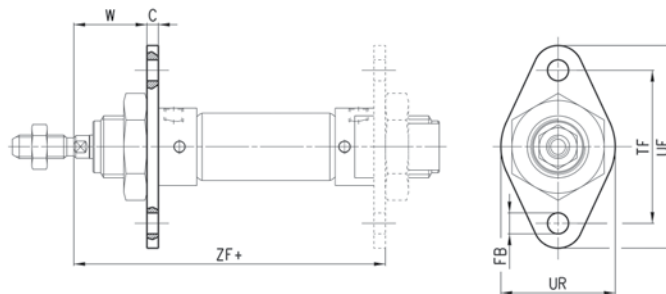
Mod.	Ø	TR	US	ØAB	C	NH	AO	AU	RX	XA+	SA+	XS	Weight (g)
B-8-10	8-10	25	35	4,5	2,5	16	4,5	10,5	10	72,5	67	54	46
B-12-16	12	32	42	5,5	3	20	6	13	13	82,5	71	64	78
B-12-16	16	32	42	5,5	3	20	6	13	13	91	82	68	78
B-20-25	20	40	54	6,6	4	25	8	16	20	108	100	80	174
B-20-25	25	40	54	6,6	4	25	8	16	20	113,5	101,5	85,5	174

Front/rear flange mount Mod. E

Material: zinc-plated steel.



+ = add the stroke



DIMENSIONS (mm)

Mod.	Ø	C	ØFB	TF	UF	UR	W	ZF	Weight (g)
E-8-10	8-10	2,5	4,5	30	25	40	13,5	64,5	10
E-12-16	12	3	5,5	40	30	53	19	75	21
E-12-16	16	3	5,5	40	30	53	19	81	21
E-20-25	20	4	6,6	50	40	66	20	96	39
E-20-25	25	4	6,6	50	40	66	24	101,5	39

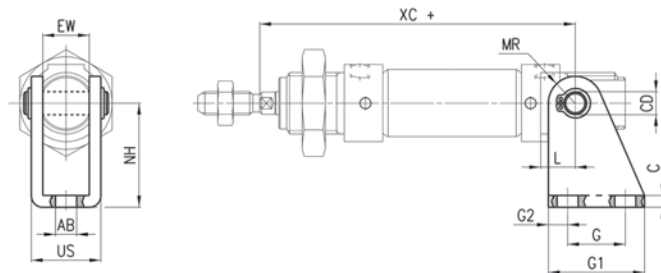
EXPRESS DELIVERY AVAILABLE

Rear trunnion bracket Mod. I

Material: zinc-plated steel.



+ = add the stroke



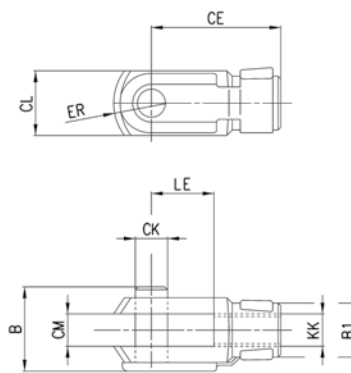
DIMENSIONS (mm)

Mod.	Ø	G1	G	G2	ØCD	ØAB	C	NH	EW	US	MR	XC+	L	Weight (g)
I-8-10	8-10	20	12,5	3,5	4	4,5	2,5	24	8	13,1	5	64	6	20
I-12-16	12	25	15	5	6	5,5	3	27	12	18,1	7	75	9	38
I-12-16	16	25	15	5	6	5,5	3	27	12	18,1	7	82	9	38
I-20-25	20	32	20	6	8	6,6	4	30	16	24,1	10	95	12	78
I-20-25	25	32	20	6	8	6,6	4	30	16	24,1	10	104	12	78

Rod fork end Mod. G

ISO 8140

Material: zinc-plated steel.



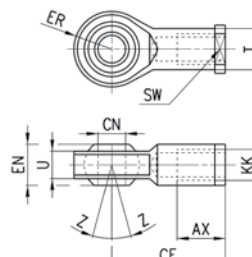
DIMENSIONS (mm)

Mod.	Ø	ØCK	LE	CM	CL	ER	CE	KK	B	ØB1	Weight (g)
G-8-10	8-10	4	8	4	8	5	16	M4x0,7	11	8	6
G-12-16	12-16	6	12	6	12	7	24	M6x1	16	10	18
G-20	20	8	16	8	16	10	32	M8x1,25	22	14	46
G-25-32	25	10	20	10	20	12	40	M10x1,25	26	18	88

Swivel ball joint Mod. GA

ISO 8139

Material: zinc-plated steel.



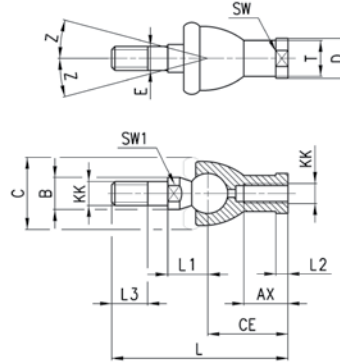
DIMENSIONS (mm)

Mod.	Ø	ØCN ^(H7)	U	EN	ER	AX	CE	KK	ØT	Z	SW	Weight (g)
GA-8-10	8-10	5	6	8	9	10	27	M4x0,75	9	6,5°	9	20
GA-12-16	12-16	6	7	9	10	12	30	M6X1	10	6,5°	11	25
GA-20	20	8	9	12	12	16	36	M8X1,25	12,5	6,5°	14	44
GA-32	25	10	10,5	14	14	20	43	M10X1,25	15	6,5°	17	76

Piston rod socket joint Mod. GY

ISO 8139

Material: Zinc-Aluminum alloy and zinc-plated steel.



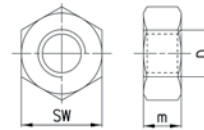
DIMENSIONS (mm)

Mod.	Ø	KK	L	CE	L2	AX	E	ØB	ØC	ØT	ØD	L1	L3	SW1	SW	Z	Weight (g)
GY-12-16	12-16	M6X1	40	28	5	15	6	10	20	10	13	12,2	11	8	11	15	42
GY-20	20	M8X1,25	65	32	5	16	8	12	24	12,5	16	16	12	10	14	15	74
GY-32	25	M10X1,25	74	35	6,5	18	10	14	28	15	19	19,5	15	11	17	15	122

Piston rod nut Mod. U

UNI EN ISO 4035

Material: zinc-plated steel.



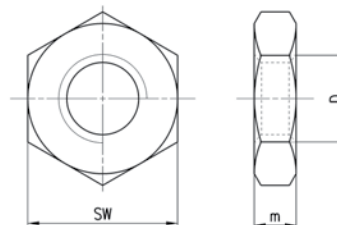
DIMENSIONS (mm)

Mod.	Ø	D	m	SW	Weight (g)
U-8-10	8-10	M4X0,7	3	7	0,5
U-12-16	12-16	M6X1	4	10	1,6
U-20	20	M8X1,25	5	13	3,6
U-25-32	25	M10X1,25	6	17	7,6

Front End-Cap nut Mod.V

UNI EN ISO 4035

Material: zinc-plated steel.



DIMENSIONS (mm)

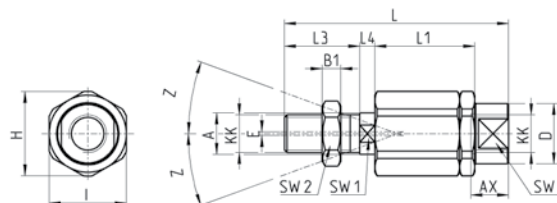
Mod.	Ø	D	m	SW	Weight (g)
V-8-10	8-10	M12X1,25	5	19	10,2
V-12-16	12-16	M16X1,5	6	24	15
V-20-25	20-25	M22X1,5	10	32	32

ISO / VDMA CYLINDERS

EXPRESS DELIVERY AVAILABLE

Self aligning rod Mod. GK

Material: zinc-plated steel.

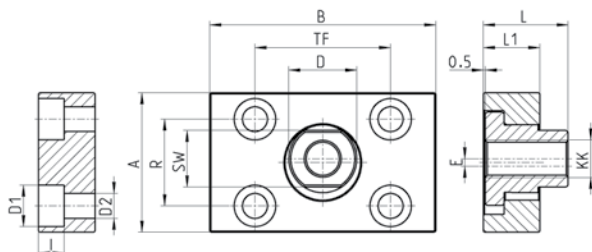
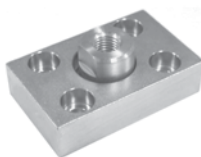


DIMENSIONS (mm)

Mod.	Ø	KK	L	L1	L3	L4	ØA	ØD	H	I	SW	SW1	SW2	B1	AX	Z	E	Weight (g)
GK-20	20	M8x1,25	57	26	21	5	8	12,5	19	17	11	7	13	4	16	4	2	51,5
GK-25-32	25-32	M10x1,25	71,5	35	20	7,5	14	22	32	30	19	12	17	5	22	4	2	215

Coupling piece Mod. GKF

Material: zinc-plated steel.



DIMENSIONS (mm)

Mod.	Ø	KK	A	B	R	TF	L	L1	I	Ø D	Ø D1	Ø D2	SW	E	Weight (g)
GKF-20	20	M8x1,25	30	35	20	25	22,5	10	-	14	5,5	-	13	1,5	76
GKF-25-32	25	M10x1,25	37	60	23	36	22,5	15	6,8	18	11	6,6	15	2	240