

# Minicylinders Series 16, 24 and 25



Series 16:  $\varnothing$  8, 10, 12 mm  
 Series 24:  $\varnothing$  16, 20, 25 mm - magnetic  
 Series 25: 16, 20, 25 mm - magnetic, cushioned



- » Single-acting and double-acting
- » Standard CETOP RP52P DIN/ISO 6432
- » Stainless steel rod and tube
- » Anodized aluminium end-blocks

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 very reliable cylinders.

The precise method of placing the tube at the end block ensures that all the parts are perfectly aligned. Since the Series 16 and 24 may be required to operate at very high speeds, a fixed mechanical cushioning has been fitted as standard in order to reduce wear by high impact loads. Series 24 and 25 are suitable for mounting magnetic proximity switches. Series 25 has an adjustable pneumatic cushioning and a magnetic piston. Various mounting accessories are available to enable the cylinders to be fitted to suit the requirement of a particular application.

## GENERAL DATA

<b>Type of construction</b>	flanged
<b>Operation</b>	single-acting and double-acting
<b>Materials</b>	anodized aluminium end-blocks - stainless steel tube and rod, aluminium piston - NBR/PU seals, for other parts see coding
<b>Brackets</b>	screw - flange - feet - trunnion
<b>Stroke min - max</b>	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
<b>Bores</b>	Series 16: $\varnothing$ 8, 10, 12 / Series 24 & 25: $\varnothing$ 16, 20, 25
<b>Operating temperature</b>	0°C + 80°C (with dry air -20°C)
<b>Operating pressure</b>	1 + 10 bar (double-acting); 2 + 10 bar (single-acting)
<b>Fluid</b>	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.
<b>Speed</b>	10 + 1000 mm/sec (without load)

### STANDARD STROKES FOR MINICYLINDERS SERIES 16 - 24 and 25

■ = Double-acting  
 ✕ = Single-acting

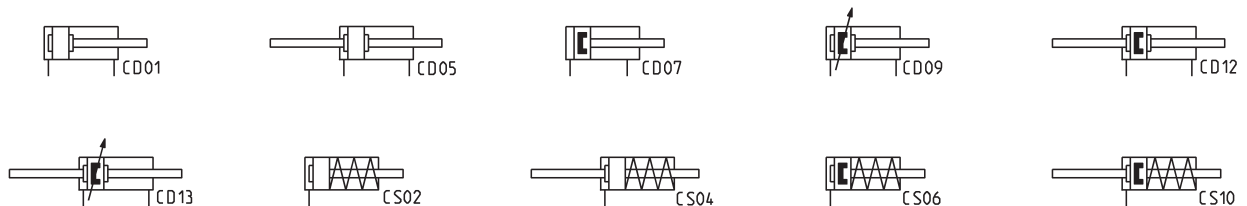
STANDARD STROKES															
Series	∅	10	25	40	50	80	100	125	160	200	250	300	320	400	500
16	8	✕	✕	✕	✕	■	■	■	■	■					
16	10	✕	✕	✕	✕	■	■	■	■	■					
16	12	✕	✕	✕	✕	■	■	■	■	■	■	■			
24	16	✕	✕	✕	✕	■	■	■	■	■	■	■	■	■	■
24	20	✕	✕	✕	✕	■	■	■	■	■	■	■	■	■	■
24	25	✕	✕	✕	✕	■	■	■	■	■	■	■	■	■	■
25	16	■	■	■	■	■	■	■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

### CODING EXAMPLE

<b>24</b>	<b>N</b>	<b>2</b>	<b>A</b>	<b>16</b>	<b>A</b>	<b>100</b>	
<b>24</b>	SERIES 16 = non magnetic 24 = magnetic 25 = magnetic, adjustable cushioning				PNEUMATIC SYMBOLS CS02 (s. 16) - CS06 (s. 24) CD01 (s. 16) - CD07 (s. 24) - CD09 (s. 25) CD05 (s. 16) - CD12 (s. 24) - CD13 (s. 25) CS04 (s. 16) - CS10 (s. 24)		
<b>N</b>	VERSION N = standard						
<b>2</b>	OPERATION 1 = single-acting, front spring, no cushion 2 = double-acting 3 = double-acting, through-rod 7 = single-acting, through-rod						
<b>A</b>	MATERIALS A = rolled stainless steel AISI 303 rod, stainless steel AISI 304 tube, anodized AL end-blocks						
<b>16</b>	BORE 08 = 8 mm - 10 = 10 mm - 12 = 12 mm - 16 = 16 mm - 20 = 20 mm - 25 = 25 mm						
<b>A</b>	CONSTRUCTION A = Nose nut Mod. V + Piston rod lock nut Mod. U RL = cylinder with rod lock ø20 - ø25						
<b>100</b>	STROKE (see the table)						
	= standard V = rod seal in FKM W = all seals in FKM, +130°C (for series 25 only)						

### PNEUMATIC SYMBOLS

The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.



**ACCESSORIES FOR MINICYLINDERS SERIES 16 - 24 - 25**
**1**

MOVEMENT


 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



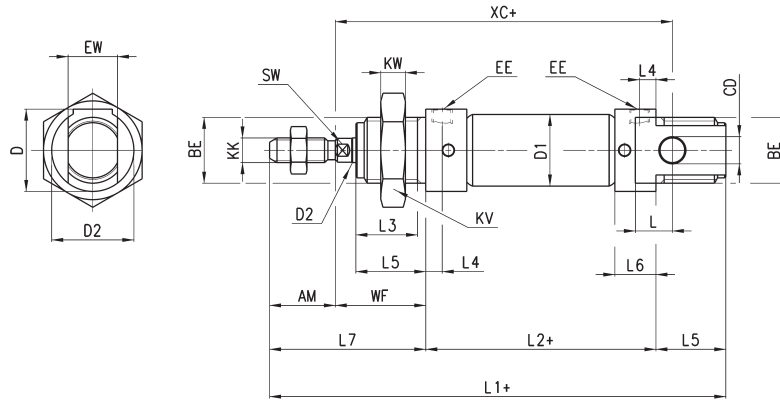
Nose nut Mod. V


 Piston rod lock nut  
Mod. U

 Piston rod socket joint  
Mod. GY


All accessories are supplied separately, except for piston rod lock nut Mod. U and nose nut Mod. V

Minicylinders Series 16, 24 and 25

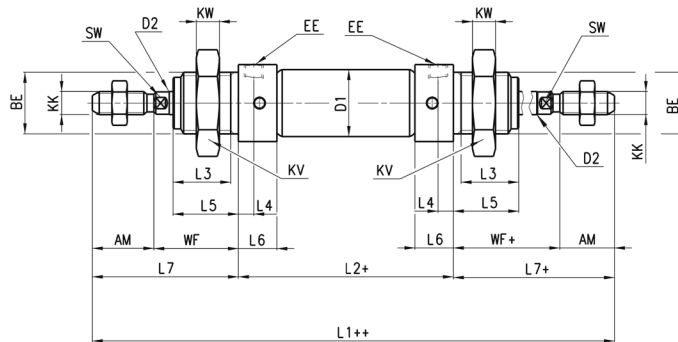


+ = add the stroke

DIMENSIONS

Mod.	∅	EW	KW	BE	KK	CD	D1	EE	∅D2	L1+	XC+	L2+	AM	L3	L4	L5	L	WF	L6	L7	KV	SW	D	D3	front/rear cushion stroke
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	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	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	20,5	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	20,5	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	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	27	16 / 14

Minicylinders Series 16, 24 and 25 - through-rod



+ = add the stroke once  
++ = add the stroke twice

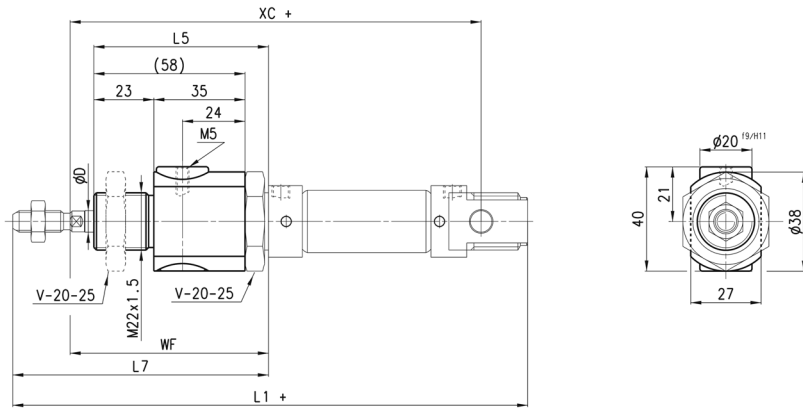
DIMENSIONS

Mod.	∅	KW	BE	KK	∅D1	EE	∅D2	L1++	L2+	AM	L3	L4	L5	WF+	L6	L7+	KV	SW	front/rear cushion stroke
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

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



+ = add the stroke



## DIMENSIONS

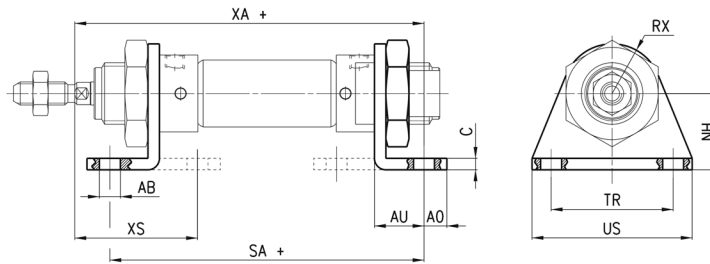
Ø	<sup>67</sup> D	WF	L5	L7	XC+	L1+	F (N)
20	8	74	70	94	145	182	300
25	10	76	70	98	152	189,5	400

**Foot mount Mod. B**

Feet and nose nut material: zinc-plated steel.



Supplied with:  
2x feet  
1x nose nut mod. V  
+ = add the stroke



**DIMENSIONS**

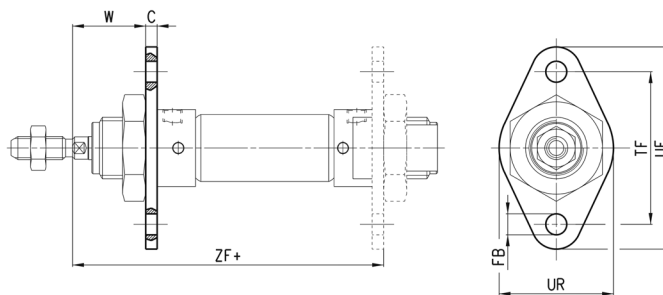
Mod.	Ø	ØAB	XS	XA+	SA+	AO	AU	C	RX	TR	US	NH
<b>B-8-10</b>	8-10	4,5	54	72,5	67	4,5	10,5	2,5	10	25	35	16
<b>B-12-16</b>	12	5,5	64	82,5	71	6	13	3	13	32	42	20
<b>B-12-16</b>	16	5,5	68	91	82	6	13	3	13	32	42	20
<b>B-20-25</b>	20	6,6	80	108	100	8	16	4	20	40	54	25
<b>B-20-25</b>	25	6,6	85,5	113,5	101,5	8	16	4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

**Front/rear flange mount Mod. E**

Material: zinc-plated steel.



+ = add the stroke

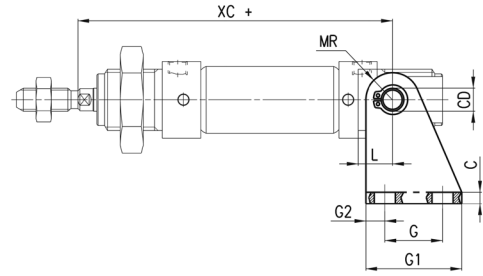
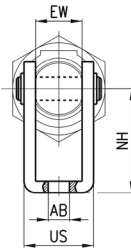


**DIMENSIONS**

Mod.	Ø	W	C	ZF+	FB	UR	TF	UF
<b>E-8-10</b>	8-10	13,5	2,5	64,5	4,5	40	30	25
<b>E-12-16</b>	12	19	3	75	5,5	53	40	30
<b>E-12-16</b>	16	19	3	81	5,5	53	40	30
<b>E-20-25</b>	20	20	4	96	6,6	66	50	40
<b>E-20-25</b>	25	24	4	101,5	6,6	66	50	40

**Rear trunnion bracket Mod. I**

Supplied with:  
 1x zinc-plated steel rear trunnion  
 1x stainless steel clevis pin  
 2x steel Seeger



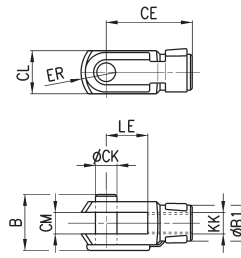
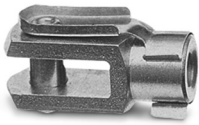
+ = add the stroke

**DIMENSIONS**

Mod.	∅	EW	∅AB	US	NH	XC+	MR	L	G2	G	G1	CD	C
I-8-10	8-10	8	4,5	13,1	24	64	5	6	3,5	12,5	20	4	2,5
I-12-16	12	12	5,5	18,1	27	75	7	9	5	15	25	6	3
I-12-16	16	12	5,5	18,1	27	82	7	9	5	15	25	6	3
I-20-25	20	16	6,6	24,1	30	95	10	12	6	20	32	8	4
I-20-25	25	16	6,6	24,1	30	104	10	12	6	20	32	8	4

**Rod fork end Mod. G**

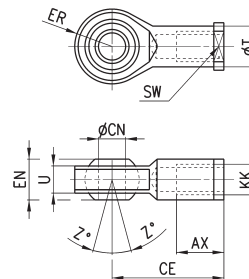
ISO 8140  
 Material: zinc-plated steel.


**DIMENSIONS**

Mod.	∅	CL	ER	CE	B	CM	∅CK	LE	KK	∅B1
G-8-10	8-10	8	5	16	11	4	4	8	M4x0,7	8
G-12-16	12-16	12	7	24	16	6	6	12	M6x1	10
G-20	20	16	10	32	22	8	8	16	M8x1,25	14
G-25-32	25	20	12	40	26	10	10	20	M10x1,25	18

**Swivel ball joint Mod. GA**

ISO 8139  
 Material: zinc-plated steel.

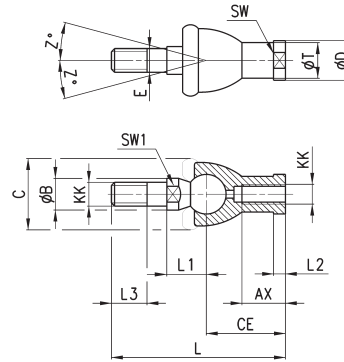

**DIMENSIONS**

Mod.	∅	∅CN <sup>(H7)</sup>	U	EN	ER	AX	CE	KK	∅T	Z	SW
GA-8-10	8-10	5	6	8	9	10	27	M4x0.7	9	6.5°	9
GA-12-16	12-16	6	7	9	10	12	30	M6X1	10	6.5°	11
GA-20	20	8	9	12	12	16	36	M8X1.25	12.5	6.5°	14
GA-32	25	10	10.5	14	14	20	43	M10X1.25	15	6.5°	17

Piston rod socket joint Mod. GY

ISO 8139

Material: zama and zinc-plated steel.



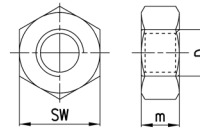
DIMENSIONS

Mod.	Ø	Z	E	SW	$\varnothing_T$	$\varnothing_D$	$\varnothing_C$	$\varnothing_B$	KK	L3	SW1	L1	L	CE	AX	L2
<b>GY-12-16</b>	12-16	15	6	11	10	13	20	10	M6X1	11	8	12,2	55	28	15	5
<b>GY-20</b>	20	15	8	14	12,5	16	24	12	M8X1,25	12	10	16	65	32	16	5
<b>GY-32</b>	25	15	10	17	15	19	28	14	M10X1,25	15	11	19,5	74	35	18	6,5

Piston rod lock nut Mod. U

ISO 4035

Material: zinc-plated steel.



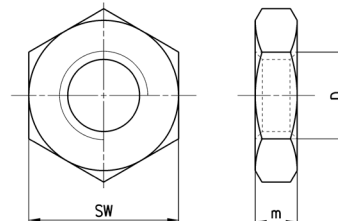
DIMENSIONS

Mod.	Ø	SW	m	D
<b>U-8-10</b>	8-10	7	3	M4X0,7
<b>U-12-16</b>	12-16	10	4	M6X1
<b>U-20</b>	20	13	5	M8X1,25
<b>U-25-32</b>	25	17	6	M10X1,25

Nose nut Mod.V

ISO 4035

Material: zinc-plated steel.



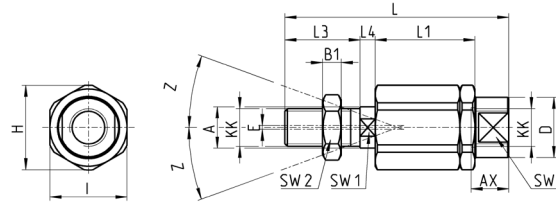
DIMENSIONS

Mod.	Ø	D	m	SW
<b>V-8-10</b>	8-10	M12X1,25	5	19
<b>V-12-16</b>	12-16	M16X1,5	6	24
<b>V-20-25</b>	20-25	M22X1,5	10	32



**Self aligning rod Mod. GK**

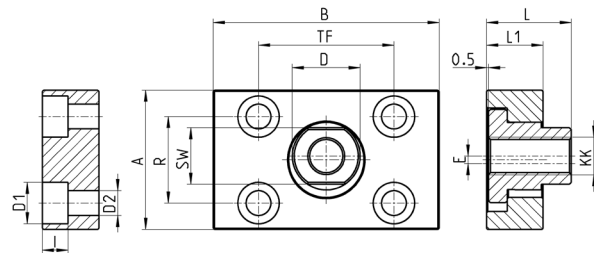
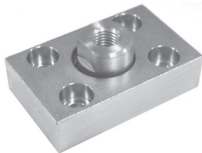
Material: zinc-plated steel.


**DIMENSIONS**

Mod.	∅	H	I	Z	A	KK	E	L	L3	L4	L1	B1	SW2	SW1	AX	SW	∅D
<b>GK-20</b>	20	19	17	4	8	M8x1,25	2	57	21	5	26	4	13	7	16	11	12,5
<b>GK-25-32</b>	25-32	32	30	4	14	M10x1,25	2	71,5	20	7,5	35	5	17	12	22	19	22

**Coupling piece Mod. GKF**

Material: zinc-plated steel.


**DIMENSIONS**

Mod.	∅	∅ D1	I	∅ D2	A	R	SW	B	TF	∅ D	E	L	L1	KK
<b>GKF-20</b>	20	5,5	-	-	30	20	13	35	25	14	1,5	22,5	10	M8x1,25
<b>GKF-25-32</b>	25	11	6,8	6,6	37	23	15	60	36	18	2	22,5	15	M10x1,25