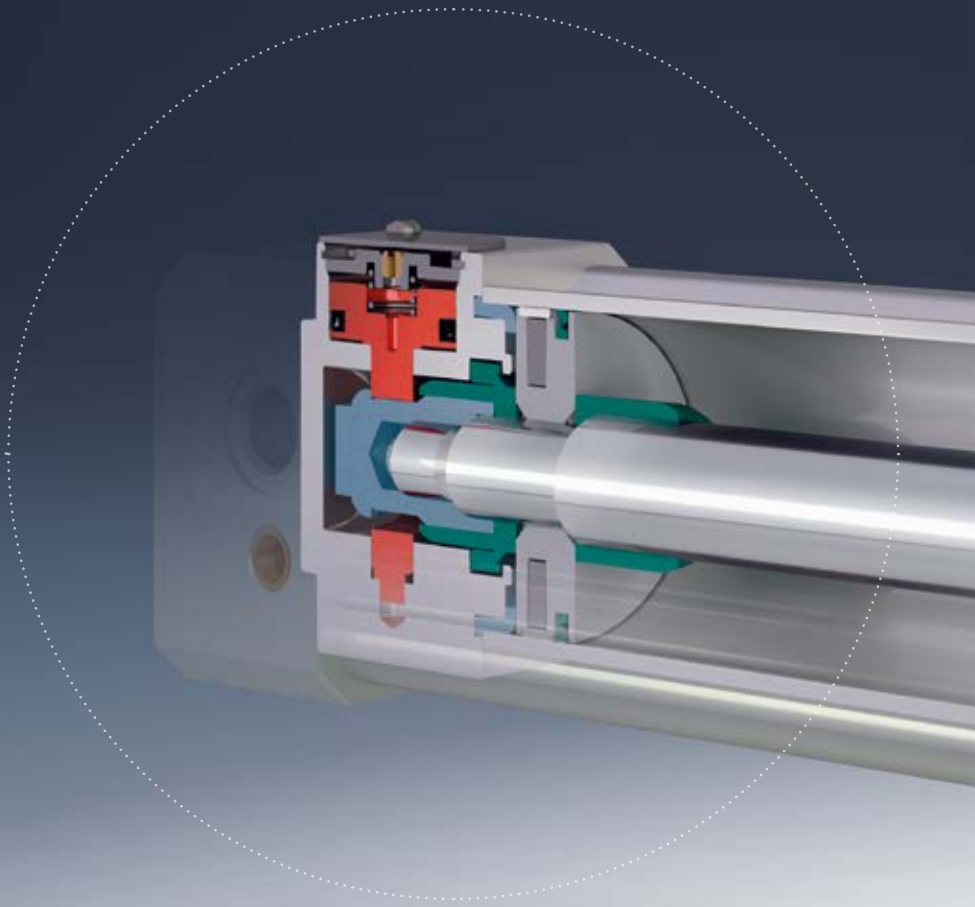
CAMOZZI
Automation

END LOCK CYLINDER
SERIES 63

END LOCK CYLINDER
ROBUST, SAFE AND EFFICIENT



LOCKING OPTIONS*:

- Automatic mechanical end-stroke lock in three options:
  - **Front**
  - **Rear**
  - **Front & Rear**

END LOCK pneumatic cylinders are fitted with automatic mechanical end stroke locks which guarantee safe and secure holding of the cylinder rod in both the fully retracted and fully extended positions. The locks activate and release automatically, without the need for external signals or commands and cylinder END LOCK Series 63 comply with ISO 15552.

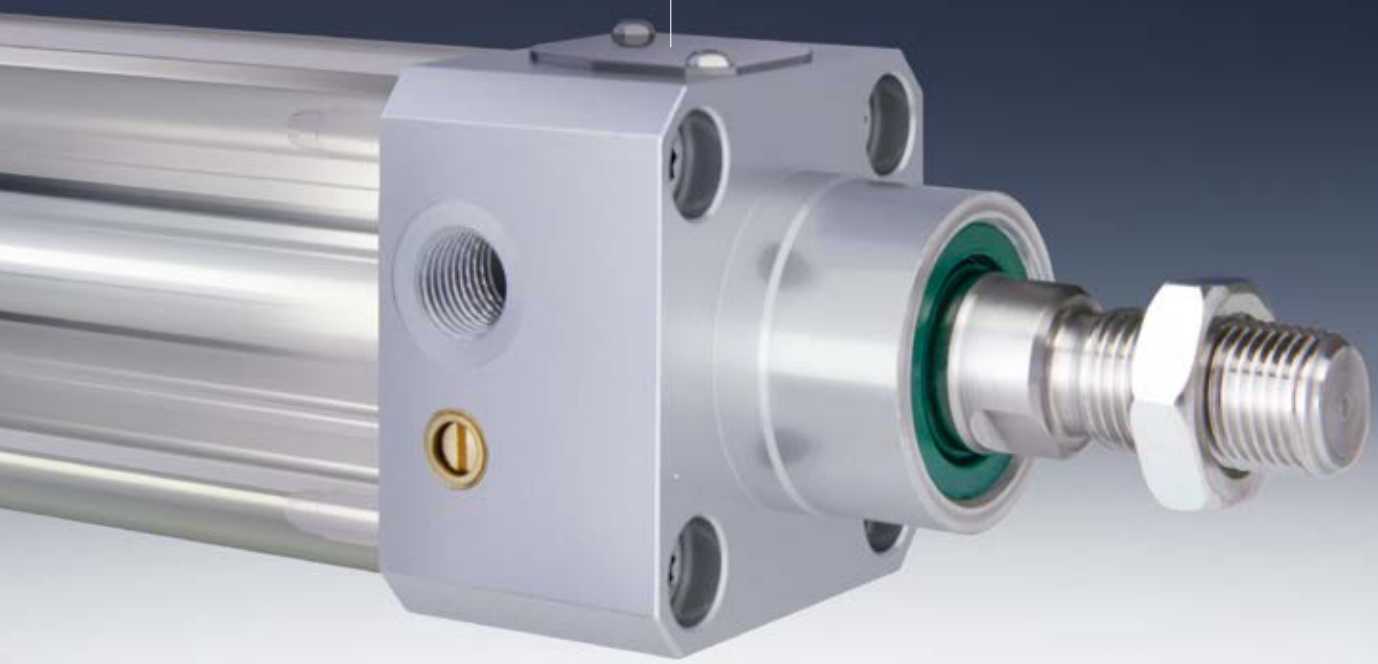
The automatic mechanical lock therefore makes the END LOCK cylinders Series 63 highly suitable for use in sectors and for applications where it is essential to lock the cylinder's position, both to avoid sliding during long stops and in situations with an absence of air, for example in transportation, printing & paper and the woodworking industry.

In addition, their capability to withstand external forces, that are much higher than the force exerted by the piston, makes the END LOCK cylinder the ideal solution for applications such as lifters, positioners and presses where a greater degree of safety is required compared to the more traditional rod locks combined with blocking valves.

* PATENT PENDING

LOCKING FEATURES:

- Automatic unlocking without pilot inputs
- Manual unlocking function
- Integrated manual unlocking function with unhooking pin
- Ability to deactivate the locking function (during machine set-up phase)



BENEFITS

Reliable and safe even under harsh environments	Robust design for high reliability
Increased machine performance	Locking force greater than thrust force of cylinder (6bar)
Reduced maintenance and set-up times	Reliable automatic locking and unlocking functions
Reduced installation times	Locking/unlocking system easy to install and to use. No machine programming or additional locking components required.
Functional machine upgrade	ISO 15552 compliant. Standard cylinders can be replaced with END LOCK cylinders without the need for machine modifications

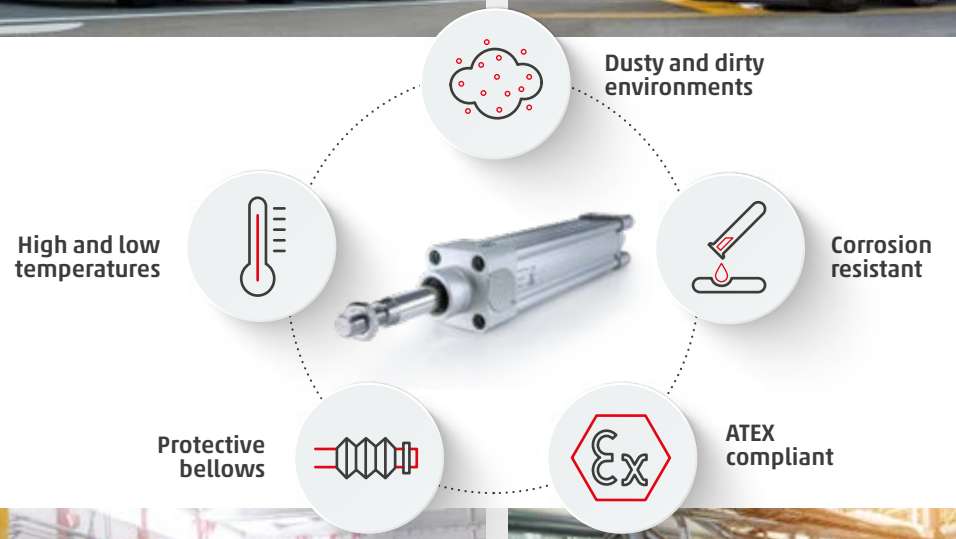
Cylinder variants

The END LOCK cylinder Series 63 is available in different variants that enable its use even for applications in harsh environments or adverse working conditions.

These configurations are mostly used in applications that require robustness and reliability, such as the transportation sector, especially where trucks or special vehicles are characterized by strong vibration, frequent changes in temperature or humid and dusty working environments.

Its automatic mechanical lock makes the END LOCK cylinder highly suitable for industrial sectors like printing & paper or woodworking, where maximum safety is necessary because of the movement of material through lifting, stopping or pushing processes.
The integrated lock allows the cylinder to be used even in dusty working environments or in confined spaces.

TRANSPORTATION - MOBILE AUTOMATION
Doorstep systems, trailer tailgates, actuated aerodynamic flaps, passenger ramps, retractable handrail systems.



INDUSTRIAL AUTOMATION
Vertical axes, lifters, presses and tilting units.

General data

Type of construction	profile (with screws)
Design	ISO 15552
Operation	double-acting
Type of mounting	with front / rear flange, foot mounting, with front / rear / centre / swivel trunnion
Stroke min - max	10 ÷ 2500 mm
Operating temperature	standard: 0°C ÷ 80°C (with dry air -20°C) high temperatures (version W): 0°C ÷ 150°C (with dry air -20°C) low temperatures (version Z): -40°C ÷ 60°C (with dry air -40°C) low temperatures (version Y): -50°C ÷ 60°C (with dry air -50°C)
Storage temperature	0°C ÷ 80°C (with dry air -20°C)
Operating pressure	2 ÷ 10 bar (standard, high and low temperatures)
Fluid	filtered air in class 7.8.4, according to ISO 8573-1. If lubricated air is used, it is recommended to use oil ISOVG32. Once applied the lubrication should never be interrupted.
Use with sensors	model CSH

END LOCK system features

	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125
Static Holding Force [N]**	1000	1000	3000	3000	5500	5500	5500
Axial backlash of locking system [mm]	< 0,15	< 0,15	< 0,15	< 0,15	< 0,15	< 0,15	< 0,15
Minimum unlocking pressure [bar]	2	2	2	2	2	2	2

** maximum applicable load in continuous operation, higher loads may cause permanent deformations to the locking system

Standard strokes

✖ = Double-acting (standard, high/low temperatures) Other strokes up to 2500 mm are available on request.

STANDARD STROKES														
Ø	25	50	75	80	100	125	150	160	200	250	300	320	400	500
32	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
40	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
50	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
63	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
80	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
100		✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖
125		✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖	✖

Coding example

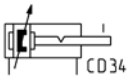
63	M	P	2	C	050	A	0400	FL	W				

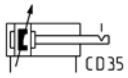
63	SERIES	
M	VERSION: M = standard, magnetic	
P	CONSTRUCTION: P = profile	
2	OPERATION: 2 = double-acting	
C	CUSHIONING: C = cushioning on both sides	
050	BORE: 032 = 32 mm - 040 = 40 mm - 050 = 50 mm - 063 = 63 mm - 080 = 80 mm - 100 = 100 mm - 125 = 125 mm	
A	CONSTRUCTION: A = standard with rod nut - DC = back to back cylinder with DC accessory [x_1 / x_2] - F = cylinder with centre trunnion	
0400	STROKE: = standard	
FL	CONSTRUCTIVE TYPE: FL = Front lock BL = Rear lock DL = Double lock	PNEUMATIC SYMBOLS: CD34 CD35 CD36
	TEMPERATURE RANGE*: = standard (-20°/+80°) - W = high temperatures (150°C) - Z = low temperatures (-40°C) - Y = low temperatures (-50°C)	
	CORROSION RESISTANCE*: = standard - C2 = treated end cap screws (profile) or AISI 303 tie-rod nuts and AISI 420B tie-rods (Ø 125) - C3 = C2 + AISI 316 rod nut, AISI 316 rod C5 = C3 + end caps END LOCK with triple protection (only for constructive type FL and BL)	
	TYPE OF MANUAL UNLOCKING: = manual with M3 screw (not supplied) - T = manual with unhooking pin and protective cover	
	ROD VARIATIONS: = standard (male rod thread) K = end caps without END LOCK with Kanigen treatment (only for constructive type FL and BL) V = FKM rod seal R = NBR rod seal	G = dusty and dirty environments (with metal scraper and chrome-plated AISI 420B rod) B = cylinder with NBR bellow rod protection (_ _ _) = extended rod _ _ _ mm
	CERTIFICATIONS: = standard - EX = ATEX	

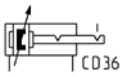
*See table "Materials" for details

Pneumatic symbols

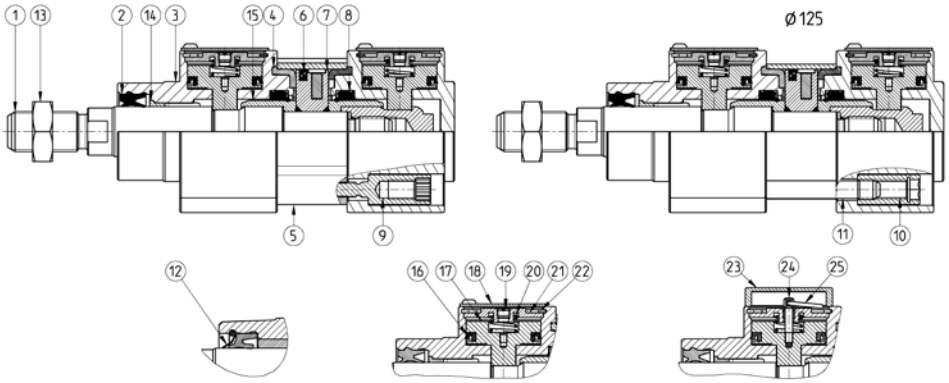
The pneumatic symbols indicated in the CODING EXAMPLE are shown below.







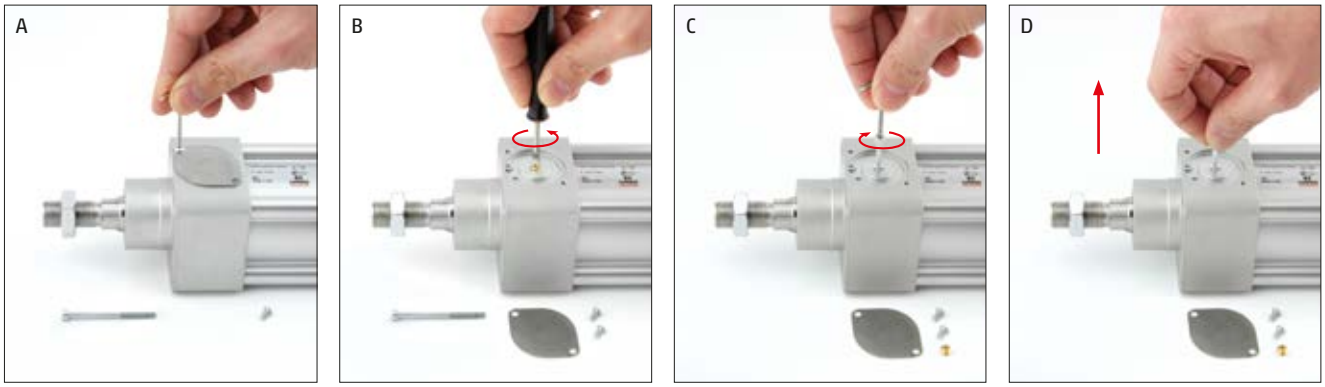
Materials



LIST OF COMPONENTS	standard manual release	standard manual release "T"	Rod scraper (G)	Low temperatures (Z/Y)	High temperatures (W)	Resistance to corrosion (C2)	Resistance to corrosion (C3)	Resistance to corrosion (C5)
PARTS								
1 - Rod	AISI 420B	AISI 420B	Chrome-plated AISI 420B	Chrome-plated AISI 420B	AISI 420B	AISI 420B	AISI 316	AISI 316
2 - Rod seal	PU	PU	NBR	PU for -40°C/-50°C	FKM	PU	PU	PU
3 - END LOCK end-cap	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium
3bis - End-cap without END LOCK	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	
4 - Counterbore seal	NBR	NBR	NBR	NBR for -40°C/-50°C	FKM	NBR	NBR	NBR
5 - Extruded profile	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium
6 - Piston seal	NBR	NBR	NBR	NBR for -40°C/-50°C	FKM	NBR	NBR	NBR
7 - Piston	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
8 - Cushion seal	PU	PU	PU	PU for -40°C/-50°C	FKM	PU	PU	PU
9 - Self-tapping screw	Zinc-plated steel	Zinc-plated steel	Zinc-plated steel	Zinc-plated steel	Zinc-plated steel	Zinc-plated steel	Coated steel	Coated steel
10 - Tie-rod (Ø125)	Zinc-plated steel	Zinc-plated steel	Zinc-plated steel	AISI 303	Zinc-plated steel	AISI 303	AISI 303	AISI 303
11 - Tie-rod (Ø125)	Zinc-plated steel	Zinc-plated steel	Zinc-plated steel	AISI 420B	Zinc-plated steel	AISI 420B	AISI 420B	AISI 420B
12 - Rod scraper	-	-	Brass	Brass	-	-	-	-
13 - Rod nut	Zinc-plated steel	Zinc-plated steel	Zinc-plated steel	AISI 304	Zinc-plated steel	AISI 304	AISI 316	AISI 316
14 - Rod guide bush	Technopolymer	Technopolymer	Technopolymer	Technopolymer	Steel + PTFE	Technopolymer	Technopolymer	Technopolymer
15 - Sleeve	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
16 - Seal of piston lock	NBR	NBR	NBR	NBR for -40°C/-50°C	FKM	NBR	NBR	NBR
17 - Locking piston	AISI 304	AISI 304	AISI 304	AISI 304	AISI 304	AISI 304	AISI 304	AISI 304
18 - Standard cover	AISI 304	-	AISI 304	AISI 304	AISI 304	AISI 304	AISI 304	AISI 304
19 - Filter	Brass	-	Brass	Brass	Brass	Brass	Brass	Brass
20 - Spring	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel
21 - Internal cover	Anodized aluminium	spring Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium
22 - Seeger ring	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel
23 - Cover	-	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium
24 - Unlocking pin	-	AISI 303	AISI 303	AISI 303	AISI 303	AISI 303	AISI 303	AISI 303
25 - Unlocking ring	-	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel	Spring steel

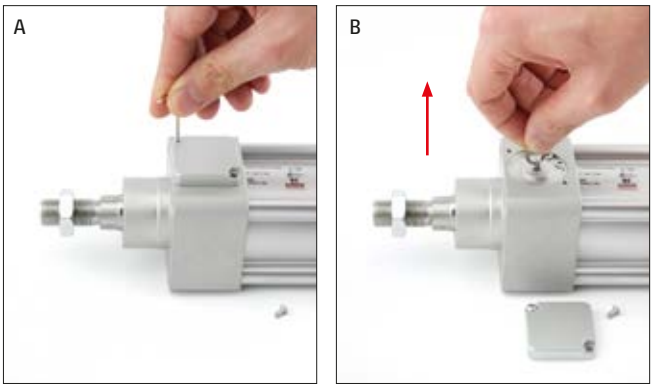
Manual unlocking function with M3 screw (not supplied)

Manual unlocking: Remove the cover (fig. A), unscrew the filter (fig. B), screw an M3 screw into the locking piston (fig. C) and pull the screw to unlock the rod (fig. D)

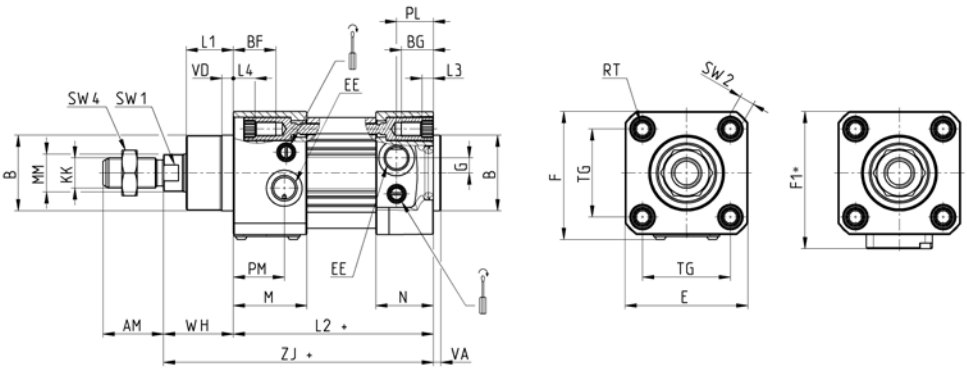


Manual unlocking function with unhooking pin

Integrated manual unlocking: Remove the external cover (fig. A) and pull the ring to unlock the rod (fig. B)



END LOCK cylinders Series 63, profile, double-acting, FL-type

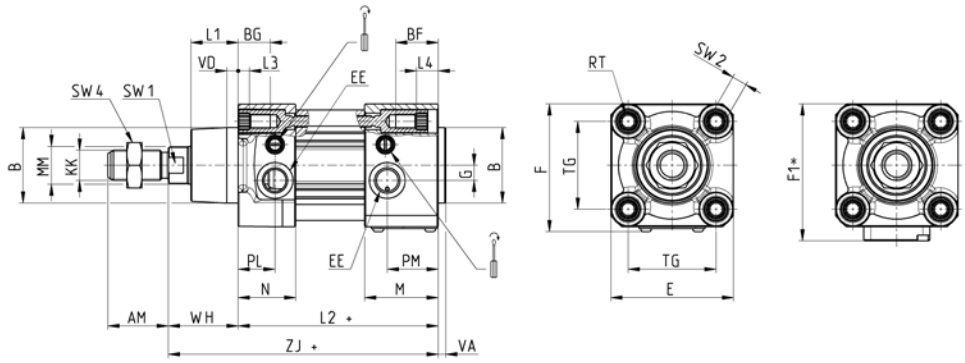


+ = add the stroke

* unlocking type "T"

Ø	Ømm	KK	ØB	PL	PM	L1	AM	VA	EE	WH	L2	L3	L4	ZJ	VD	N	BG	M	BF	RT	G	TG	E	F	F1*	SW1	SW2	SW4	front cushioning	rear cushioning
32	12	M10x1.25	30	18.5	18	18	22	4	G1/8	26	94	5.5	11,5	120	5	27	16	34	22	M6	5	32.5	47	49,7	57	10	6	17	17	17
40	16	M12x1.25	35	19	24	21	24	4	G1/4	30	105	5.5	15	135	5	30	16	40	22,5	M6	5	38	55	57,7	64,5	13	6	19	17	17
50	20	M16x1.5	40	19.5	27	25	32	4	G1/4	37	106	6	11,5	143	6	30.5	16	39	21,5	M8	8	46.5	65	67,7	72,5	17	8	24	14,5	19
63	20	M16x1.5	45	24	27	26	32	4	G3/8	37	121	6	12,5	158	6	37.5	16	44	22,5	M8	8	56.5	75	77,5	82,5	17	8	24	19,5	19
80	25	M20x1.5	45	23.5	32	30	40	4	G3/8	46	128	0	6	174	7	37	19	46	25	M10	8	72	93	95,7	99,5	22	6	30	17	21
100	25	M20x1.5	55	24	32	35	40	4	G1/2	51	138	0	7,5	189	7	39.5	19.5	47	27	M10	8	89	110	112,7	116,5	22	6	30	21	21
125	32	M27x2	60	28	39	42	54	6	G1/2	65	160	6	6	225	8	44	23	54	23	M12	10.5	110	135	137,7	142,5	27	12	41	23	33

END LOCK cylinders Series 63, profile, double-acting, BL-type

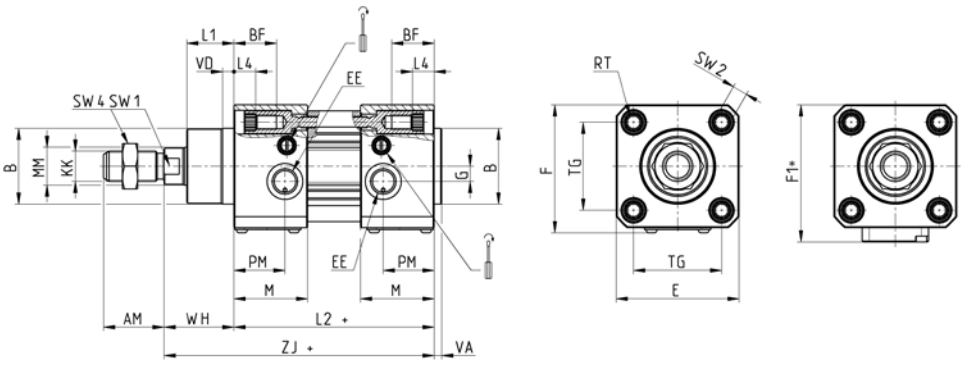


+ = add the stroke

* locking type "T"

Ø	Ømm	KK	ØB	PL	PM	L1	AM	VA	EE	WH	L2	L3	L4	ZJ	VD	N	BG	M	BF	RT	G	TG	E	F	F1*	SW1	SW2	SW4	front cushioning	rear cushioning
32	12	M10x1.25	30	18.5	18	18	22	4	G1/8	26	94	5.5	11,5	120	5	27	16	34	22	M6	5	32.5	47	49,7	57	10	6	17	17	17
40	16	M12x1.25	35	19	24	21	24	4	G1/4	30	105	5.5	15	135	5	30	16	40	25,5	M6	5	38	55	57,7	64,5	13	6	19	17	17
50	20	M16x1.5	40	19.5	27	25	32	4	G1/4	37	106	6	11,5	143	6	30.5	16	39	21,5	M8	8	46.5	65	67,7	72,5	17	8	24	14,5	14,5
63	20	M16x1.5	45	24	27	26	32	4	G3/8	37	121	6	12,5	158	6	37.5	16	44	22,5	M8	8	56.5	75	77,5	82,5	17	8	24	19,5	19,5
80	25	M20x1.5	45	23.5	32	30	40	4	G3/8	46	128	0	6	174	7	37	19	46	25	M10	8	72	93	95,7	99,5	22	6	30	17	17
100	25	M20x1.5	55	24	32	35	40	4	G1/2	51	138	0	7,5	189	7	39.5	19.5	47	27	M10	8	89	110	112,7	116,5	22	6	30	20,5	20,5
125	32	M27x2	60	28	39	42	54	6	G1/2	65	160	6	6	225	8	44	23	54	23	M12	10.5	110	135	137,7	142,5	27	12	41	23	23

END LOCK cylinders Series 63, profile, double-acting, DL-type

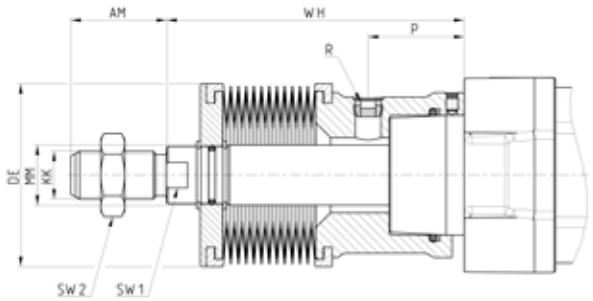


\+ = add the stroke

* locking type "T"

Ø	ØMM	KK	ØB	PM	L1	AM	VA	EE	WH	L2	L4	ZJ	VD	M	BF	RT	G	TG	E	F	F1*	SW1	SW2	SW4	front/rear cushion stroke
32	12	M10x1.25	30	18	18	22	4	G1/8	26	94	11,5	120	5	34	22	M6	5	32.5	47	49,7	57	10	6	17	17
40	16	M12x1.25	35	24	21	24	4	G1/4	30	105	15	135	5	40	25,5	M6	5	38	55	57,7	64,5	13	6	19	17
50	20	M16x1.5	40	27	25	32	4	G1/4	37	106	11,5	143	6	39	21,5	M8	8	46.5	65	67,7	72,5	17	8	24	14,5
63	20	M16x1.5	45	27	26	32	4	G3/8	37	121	12,5	158	6	44	22,5	M8	8	56.5	75	77,5	82,5	17	8	24	19,5
80	25	M20x1.5	45	32	30	40	4	G3/8	46	128	6	174	7	46	25	M10	8	72	93	95,7	99,5	22	6	30	17
100	25	M20x1.5	55	32	35	40	4	G1/2	51	138	7,5	189	7	47	27	M10	8	89	110	112,7	116,5	22	6	30	21,5
125	32	M27x2	60	39	42	54	6	G1/2	65	160	6	225	8	54	23	M12	10.5	110	135	137,7	142,5	27	12	41	23

END LOCK cylinders Series 63 with protective bellow



Ø	Corsa	WH	AM	KK	MM	P	R	DE	SW1	SW2
32	0 ÷ 245	88	22	M10X1.25	12	25	G1/8	61	10	17
32	246 ÷ 490	132	22	M10X1.25	12	25	G1/8	61	10	17
40	0 ÷ 245	89	24	M12X1.25	16	26	G1/8	61	13	19
40	246 ÷ 490	133	24	M12X1.25	16	26	G1/8	61	13	19
50	0 ÷ 245	99	32	M16X1.5	20	30	G1/8	61	17	24
50	246 ÷ 490	143	32	M16X1.5	20	30	G1/8	61	17	24
63	0 ÷ 245	76	32	M16X1.5	20	16.5	G1/8	61	17	24
63	246 ÷ 490	120	32	M16X1.5	20	16.5	G1/8	61	17	24
80	0 ÷ 285	86	40	M20X1.5	25	11.5	G1/8	83	22	30
80	286 ÷ 570	139	40	M20X1.5	25	11.5	G1/8	83	22	30
100	0 ÷ 285	86	40	M20X1.5	25	12	G1/8	83	22	30
100	286 ÷ 570	139	40	M20X1.5	25	12	G1/8	83	22	30
125	0 ÷ 285	108	54	M27X2	32	30	G1/8	83	29	41
125	286 ÷ 570	161	54	M27X2	32	30	G1/8	83	29	41

Accessories

Opposed cylinder coupler Mod. DC-63

Mod.

DC-63-32	DC-63-80
DC-63-40	DC-63-100
DC-63-50	DC-63-125
DC-63-63	

Foot mount Mod. B-41

Mod.

B-41-32	B-41-80
B-41-40	B-41-100
B-41-50	B-41-125
B-41-63	

Front and rear flange Mod. D-E

Mod.

D-E-41-32	D-E-41-80
D-E-41-40	D-E-41-100
D-E-41-50	D-E-41-125
D-E-41-63	

Rear female trunnion Mod. C and C-H

Mod.

C-41-32	C-H-41-63
C-41-40	C-H-41-80
C-41-50	C-H-41-100
	C-H-41-125

Front female trunnion Mod. H and C-H

Mod.

H-41-32	C-H-41-80
H-41-40	C-H-41-100
H-41-50	C-H-41-125
H-60-63	

Rear male trunnion Mod. L

Mod.

L-41-32	L-41-80
L-41-40	L-41-100
L-41-50	L-41-125
L-41-63	

Front/rear spot faced trunnion Mod. FN

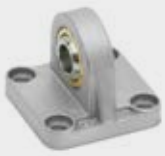
Mod.

FN-32	FN-80
FN-40	FN-100
FN-50	FN-125
FN-63	

Trunnion ball-joint Mod. R

Mod.

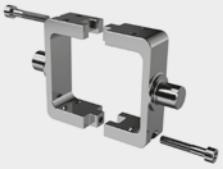
R-41-32	R-41-100
R-41-40	R-41-125
R-41-50	R-50
R-41-63	R-80
R-41-80	



Centre trunnion Mod. F-63 for cylinders, FL-type

Mod.

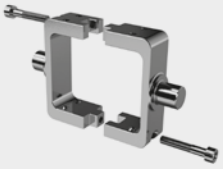
F-32	F-80
F-40	F-100
F-50	F-125
F-63	



Centre trunnion Mod. F-63 for cylinders, BL-type

Mod.

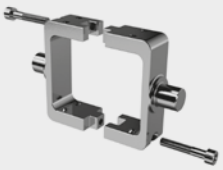
F-32	F-80
F-40	F-100
F-50	F-125
F-63	



Centre trunnion Mod. F-63 for cylinders, DL-type

Mod.

F-32	F-80
F-40	F-100
F-50	F-125
F-63	



Accessory combination Mod. C+L+S

Mod.

C+L+S-32	C+L+S-80
C+L+S-40	C+L+S-100
C+L+S-50	C+L+S-125
C+L+S-63	

90° male trunnion Mod. ZC

Mod.
ZC-32
ZC-40
ZC-50
ZC-63
ZC-80
ZC-100
ZC-125

Counter bracket for centre trunnion Mod. BF

Mod.
BF-32
BF-40-50
BF-63-80
BF-100-125

Clevis pin Mod. S

Mod.
S-32
S-40
S-50
S-63
S-80
S-100
S-125

Swivel ball joint Mod. GA

Mod.
GA-32
GA-40
GA-50-63
GA-80-100
GA-41-125

Piston rod socket joint Mod. GY

Mod.
GY-32
GY-40
GY-50-63
GY-80-100

Rod fork end Mod. G

Mod.
G-25-32
G-40
G-50-63
G-80-100
G-41-125

Piston rod lock nut Mod. U

Mod.
U-25-32
U-40
U-50-63
U-80-100
U-41-125

Self aligning rod Mod. GK

Mod.
GK-25-32
GK-40
GK-50-63
GK-80-100
GK-125

Coupling piece Mod. GKF

Mod.
GKF-25-32
GKF-40
GKF-50-63
GKF-80-100
GKF-125

Screws and locking screws Mod. KR

Mod.
KR-EL-01
KR-EL-02
KR-EL-03
KR-EL-04
KR-EL-05
KR-EL-06
KR-EL-07
KR-EL-08
KR-EL-09
KR-EL-10
KR-EL-11
KR-EL-12

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09/2021

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