

SERIES 23
ISO 6432 CYLINDER
WITH AUTO-CUSHIONING



SERIES 23

OPTIMAL DECELERATION UNDER EVERY OPERATIONAL CONDITION



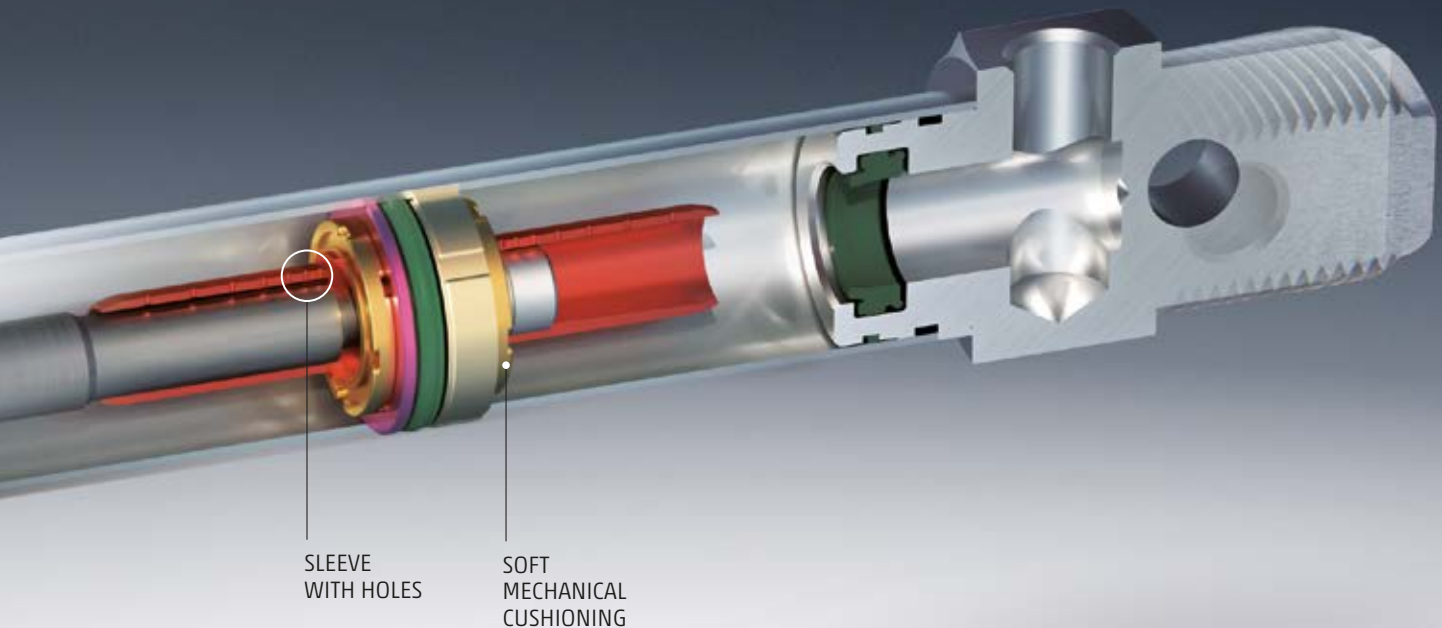
The new Series 23 pneumatic cylinders are based on the innovative concept of 'auto-cushioning' and comply with the ISO 6432 standard. The cylinder, thanks to a patented system*, automatically adjusts the cushioning in order to provide optimal deceleration under every condition.

During the entire cushioning phase, the cylinder enjoys smooth, jolt-free movement, reducing vibrations and noise, while also guaranteeing higher reliability and constant performance over time.

As manual adjustments are not required, commissioning times are reduced and the cylinder is tamperproof. The cylinders are suitable for use in many industrial applications, especially where working conditions vary over time, because of changes in dimensions or due to wear of the host machine or mechanism.

AUTO-CUSHIONING SYSTEM

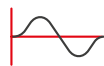
The "auto-cushioning" system is based on the use of shaped sleeves that have a number of holes that are accurately positioned and precisely dimensioned in order to enable the system to adapt to the different combinations of speed and applied mass.



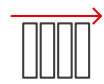
BENEFITS



Reduced Commissioning times



Reduction of vibrations and noise

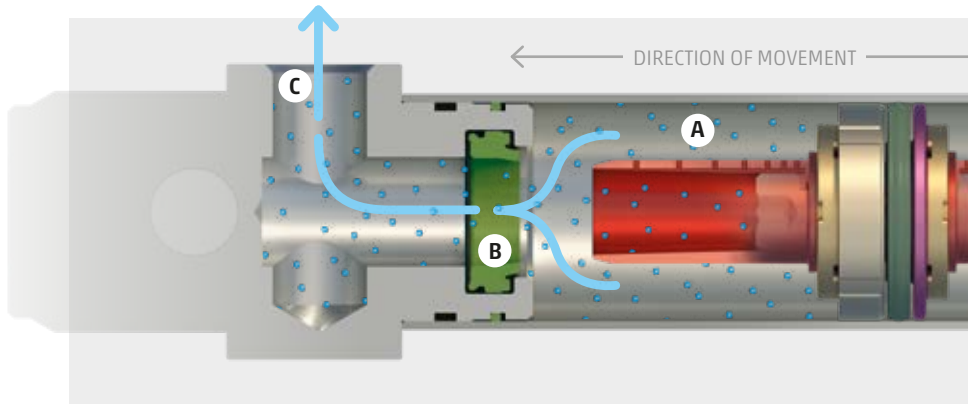


Constant performance over time

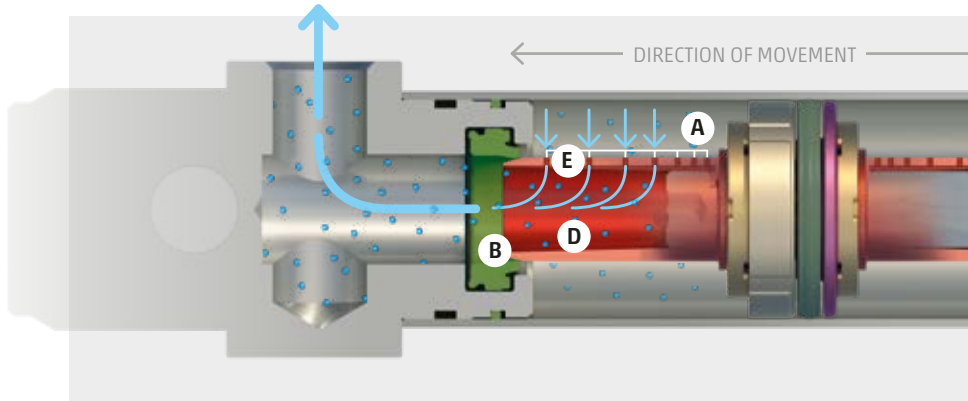


Tamperproof

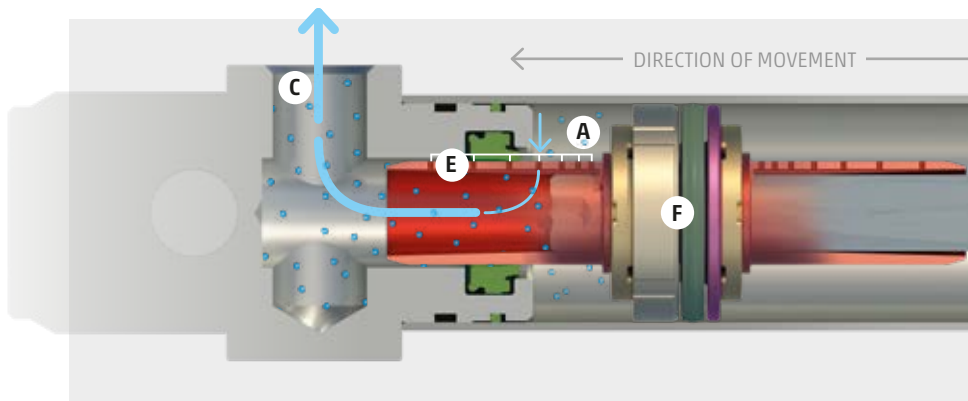
Operation



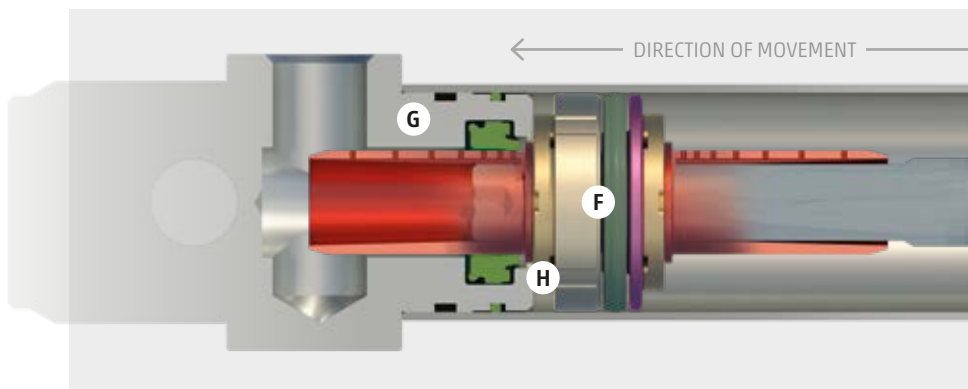
During the free movement phase, the air contained in the chamber (A) passes through the seal (B) and is exhausted through the outlet (C).



When the sleeve (D) reaches the seal (B), the air present in the chamber (A) is forced to pass through the holes (E) in the sleeve, causing the start of the slowdown.



As the piston (F) moves, the holes (E) close off one by one causing a consequential decrease in the air flow from the chamber (A) towards the outlet (C), generating a progressive and smooth deceleration.



The movement stops when the end stroke position is reached and the piston (F) touches the end cap (G). The presence of a damper (H) absorbs any residual kinetic energy and minimises the impact so that there is no vibration or noise.

Position and dimension of the holes have been studied in order to:

- **Optimise the cushioning capacity of the cylinder**
- **Completely eliminates piston jolts**
- **Reduce vibrations**
- **Reach the end stroke position with minimal residual kinetic energy**

General data

Type of construction	round crimped tube
Design	ISO 6432
Operation	double-acting auto-cushioning
Materials	anodized aluminium end-caps – stainless steel rod and barrel – aluminium + technopolymer piston – NBR/PU seals
Brackets	rod end – flange – feet – trunnion
Stroke min - max	∅ 16: 10 - 600 mm; ∅ 20 - ∅ 25: 10 - 1000 mm
Bores	∅ 16, 20, 25
Operating temperature	0°C ÷ 80°C (with dry air -20°C)
Operating pressure	1 ÷ 10 bar (double-acting)
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 external sensors	sensor models CSH and CST with adapters Series S-CST
Speed	10 ÷ 1000 mm/sec (without load)

Standard strokes

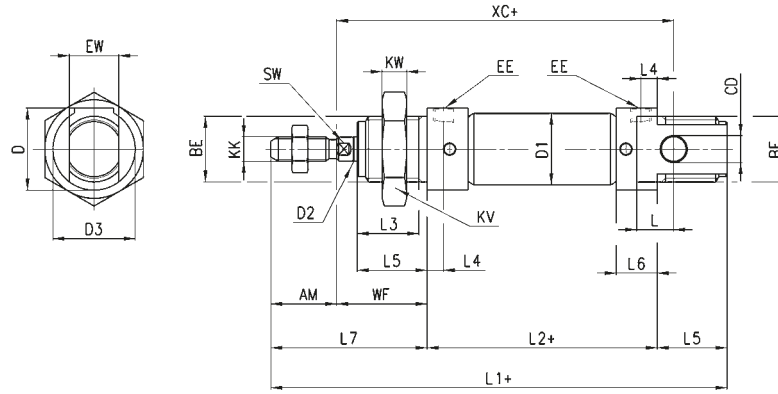
STANDARD STROKES														
∅	10	25	40	50	80	100	125	160	200	250	300	320	400	500
16	■	■	■	■	■	■	■	■	■	■	■	■	■	■
20	■	■	■	■	■	■	■	■	■	■	■	■	■	■
25	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Coding example

23	N	2	A	16	A	100	
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23	SERIES: 23 = magnetic, auto-cushioning
N	VERSION: N = standard
2	OPERATION: 2 = double-acting 3 = double-acting, through-rod
A	MATERIALS: A = rolled stainless steel AISI 303 rod – stainless steel AISI 304 barrel – anodized AL end-caps
16	BORE: 16 = 16 mm - 20 = 20 mm - 25 = 25 mm
A	CONSTRUCTION: A = nose nut Mod. V + Piston rod lock nut Mod. U RL = cylinder with rod lock ∅20 - ∅25
100	STROKE (see the table)
	= standard V = rod seal in FKM

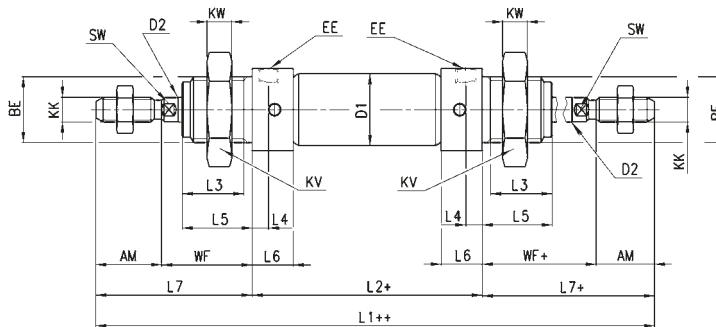
Mini-cylinders Series 23



+ = add the stroke

DIMENSIONS																						front/rear cushion stroke				
∅	EW	KW	BE	KK	CD	D1	EE	∅D2	L1+	XC+	L2+	AM	L3	L4	L5	L	WF	L6	L7	KV	SW	D	D3			
16	12	8	M16x1,5	M6x1	6	17,3	M5	6	111	82	56	16	15	5,5	17	9	22	12	38	24	5	20,5	20			10 / 10
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
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

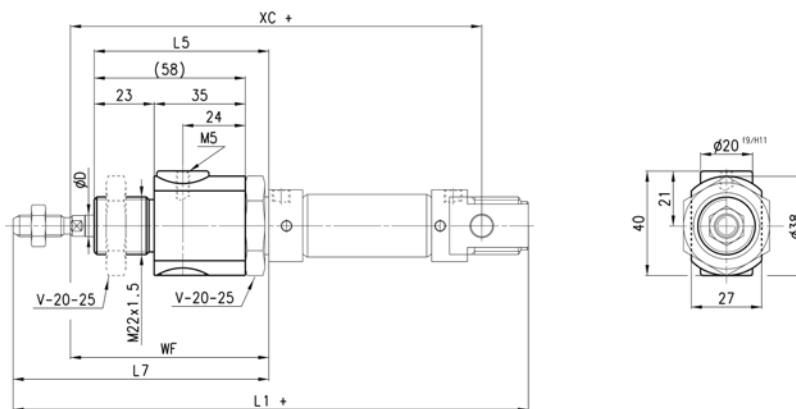
Mini-cylinders Series 23 - through-rod



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

DIMENSIONS																				front/rear cushion stroke	
∅	KW	BE	KK	∅D1	EE	∅D2	L1++	L2+	AM	L3	L4	L5	WF+	L6	L7+	KV	SW				
16	8	M16x1,5	M6x1	17,3	M5	6	132	56	16	15	7,2	17	22	12	38	24	5			10 / 10	
20	10	M22x1,5	M8x1,25	21,3	G1/8	8	156	68	20	18	8,5	20	24	16	44	32	7			13 / 15	
25	10	M22x1,5	M10x1,25	26,5	G1/8	10	169,5	69,5	22	20	8,5	22	28	16	50	32	9			16 / 14	

Mini-cylinders Series 23 - with rod lock (Mod. RLC)



+ = add the stroke

DIMENSIONS								
∅	∅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	

Accessories

Foot mount Mod. B

Mod.
B-12-16
B-20-25



Piston rod socket joint Mod. GY

Mod.
GY-12-16
GY-20
GY-32



Front/rear flange mount Mod. E

Mod.
E-12-16
E-20-25



Piston rod lock nut Mod. U

Mod.
U-12-16
U-20
U-25-32



Rear trunnion bracket Mod. I

Mod.
I-12-16
I-20-25



Nose nut Mod. V

Mod.
V-12-16
V-20-25



Rod fork end Mod. G

Mod.
G-12-16
G-20
G-25-32



Self aligning rod Mod. GK

Mod.
GK-12-16
GK-20
GK-25-32



Swivel ball joint Mod. GA

Mod.
GA-12-16
GA-20
GA-32



Coupling piece Mod. GKF

Mod.
GKF-20
GKF-25-32



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