

# COMPACT CYLINDER SERIES CMPC TWO-FLAT



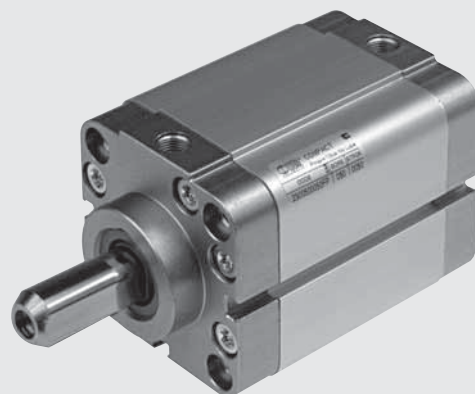
This version is used to keep at an angle the objects fixed onto the piston rod and to apply torques within the specified limits.

The piston rod in Two-Flat cylinders has two opposing longitudinal surfaces and is made entirely of stainless steel. The front head of the cylinder includes a sintered bronze bush that engages the piston rod and prevents it from rotating. A special polyurethane gasket guarantees air-tightness and dirt removal. This technical solution is more airtight and reliable than square or hexagonal piston rods.

These compact cylinders come in the following versions:

- with or without a magnet
- dual-acting, single piston rod
- dual-acting, through piston rod – one piston rod is Two-Flat, and the other is cylindrical
- fixing centre distances compatible with, ISO 15552 (former ISO 6431), or with French standard NFE 49-004-1 and 2 (UNITOP).

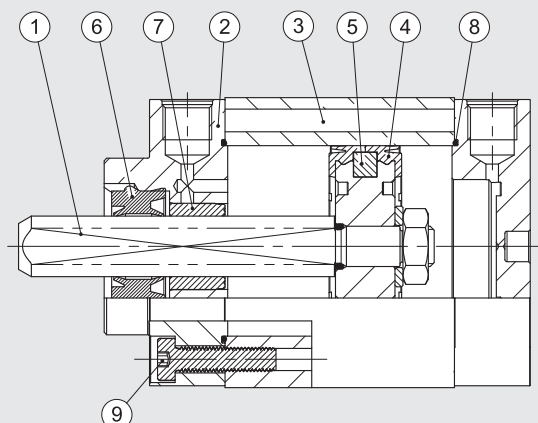
The special profile and the fact that the external heads are screwed onto the liner give an excellent guide. Numerous fixing options are available thanks to wide range of anchor points. Retractable magnetic limit switches can be mounted in slots in the cylinder to measure the position.



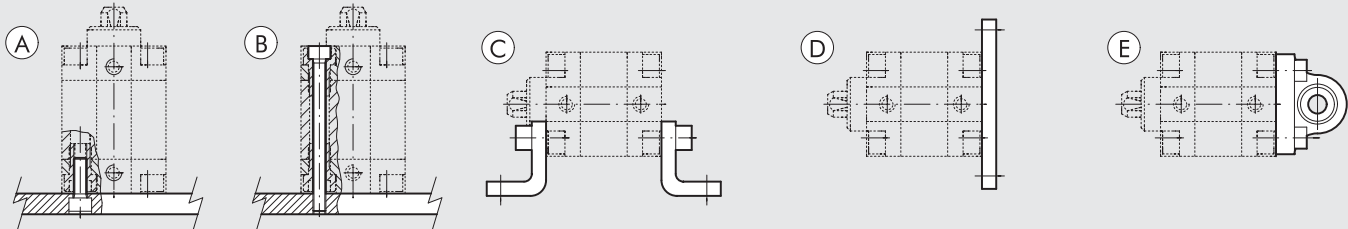
TECHNICAL DATA		POLYURETHANE
Max operating pressure	bar	10
	MPa	1
	psi	145
Temperature range	°C	-10 to +80
Fluid		Unlubricated air. Lubrication, if used, must be continuous
Bores	mm	32; 40; 50; 63; 80 with ISO 15552 fixing centre distances
	mm	32; 40; 50; 63; 80 with NFE 49-004-1 and 2 fixing centre distances
Design		With profile, heads with screws
Maximum strokes $\dagger$	mm	$\varnothing$ 32-40 = 300; $\varnothing$ 50-63 = 400; $\varnothing$ 80 = 500
Versions		Double-acting, Double-acting Through-rod
Magnet for sensors		All versions come complete with magnet. Supplied without magnet on request
Inrush pressure	bar	$\varnothing$ 32 = 0.8; from $\varnothing$ 40 to 80 = 0.6
Max torque on piston rod	Nm	$\varnothing$ 32 and 40 = 0.2; $\varnothing$ 50 and 63 = 0.4; $\varnothing$ 80 = 1
Maximum rotation on the rod	degrees	$\varnothing$ 32 and 40 = 1° 30'; $\varnothing$ 50 and 63 = 1° 30'; $\varnothing$ 80 = 1°
Weights		See cylinder "General technical data" at the beginning of the chapter
Notes		$\dagger$ Maximum recommended strokes. Higher values can create operating problems
		For speeds lower than 0.2 m/s to prevent surging, use the version No stick-slip and non-lubricated air

## COMPONENTS $\varnothing$ 12 to 25

- ① PISTON ROD: stainless steel, Two-Flat
- ② HEAD: extruded anodised aluminium alloy
- ③ BARREL: drawn anodised and calibrated aluminium alloy
- ④ PISTON GASKET: polyurethane
- ⑤ MAGNET:  $\varnothing$  32 neodymium -  $\varnothing$  40 to 100 plastoferite
- ⑥ PISTON ROD GASKET TWO-FLAT: polyurethane
- ⑦ GUIDE BUSHING: steel strip with bronze
- ⑧ STATIC O-rings: NBR
- ⑨ SECURING SCREWS: zinc-plated steel



FIXING OPTIONS



- Ⓐ Fixing to structural work with a through screw, using the thread in the heads
- Ⓑ Direct fixing from above using long through screws or tie rods. Non-magnetic stainless steel must be used (e.g. AISI 304)
- Ⓒ Fixing with feet; the ordering code covers the supply of one foot and two screws for fixing to the cylinder.
- Ⓓ Fixing with a flange mounted on the front or rear head; the ordering code covers the supply of a flange and four screws for fixing to the cylinder
- Ⓔ Fixing with articulated hinge to compensate for slight system misalignment and turn freely  
The ordering code covers the supply of a hinge and four screws for fixing to the cylinder

KEY TO CODE

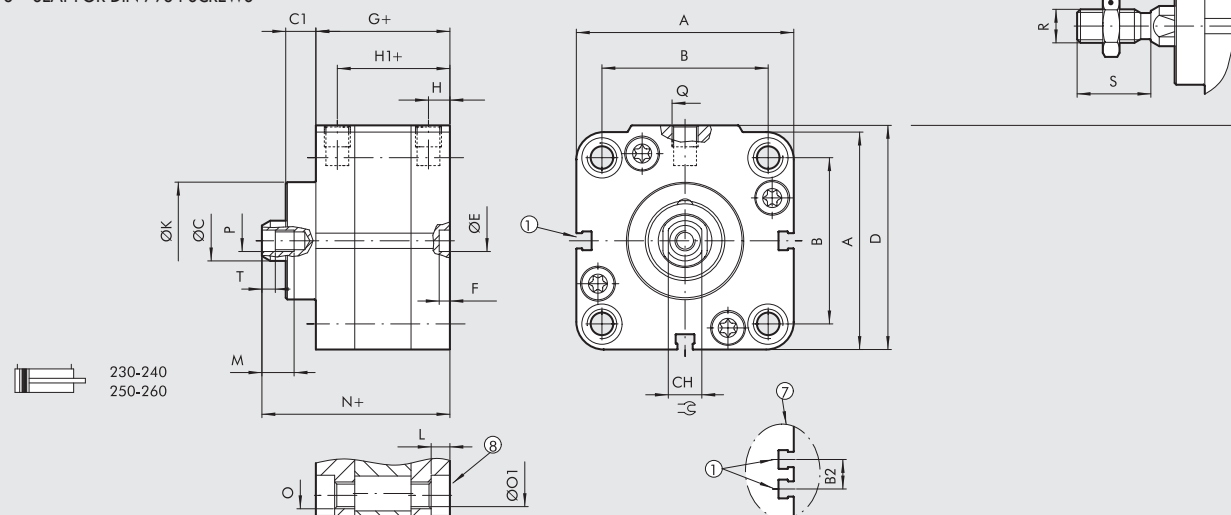
CYL	2 3 TYPE	1	0	3 2 BORE	0	0 5 0 STROKE *	F MATERIAL	P GASKETS
	23 Compact cylinder centre distances to UNITOP male piston rod	0 Double-acting 1 Double-acting through-rod	0 Magnetic S Non-magnetic ▲ G No stick-slip	32 40 50 63 80	0 Standard		F "Two-Flat" piston rod AISI 303 stainless steel	P Polyurethane gaskets
	24 Compact cylinder centre distances to UNITOP female piston rod							
	25 Compact cylinder centre distances to ISO male piston rod							
	26 Compact cylinder centre distances to ISO female piston rod							

\* For the maximum suppliable strokes, look at the technical data  
 ▲ For speeds lower than 0.2 m/s, to prevent surging. Use no-lubricated air only

## DIMENSIONS OF DOUBLE-ACTING

+ = ADD THE STROKE  
1 = SENSOR SLOT  
7 = ONLY FOR Ø 63 to 100  
8 = SEAT FOR DIN 7984 SCREWS

DE MALE PISTON ROD



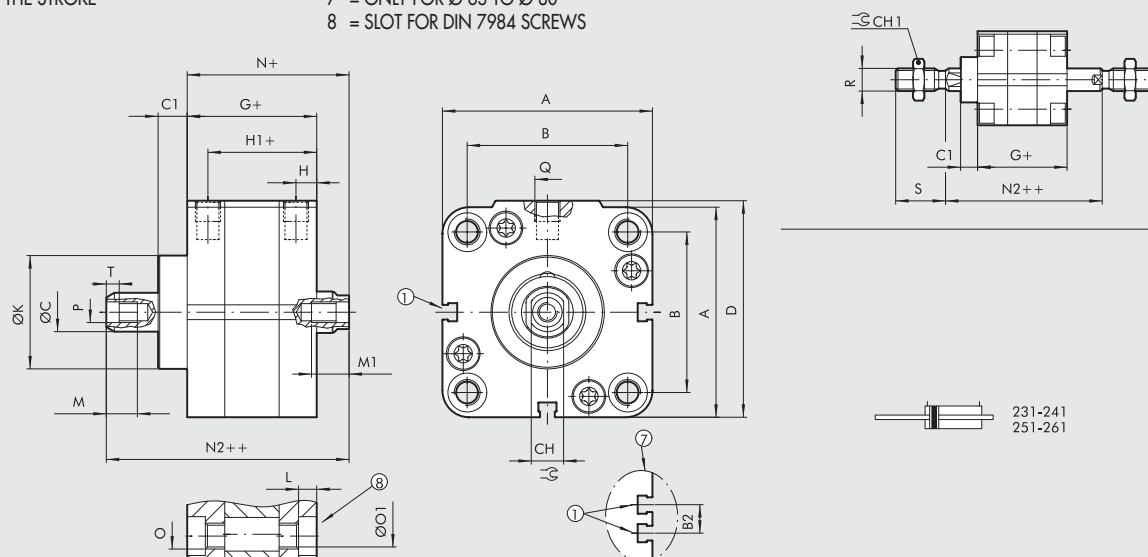
Ø	A	B				B2	ØC	C1	CH	CH1	D	ØE <sup>H9</sup>	F	G	H	H1	ØK	L	M	N	O		Ø1		P	Q	R	S	T
		ISO	UNITOP	ISO	UNITOP																ISO	UNITOP							
32	47	32.5 <sup>+0.1 -0.4</sup>	32 <sup>+0.4 -0.1</sup>	–	12	9	10	17	48.5	6	4	44.5	7.5	37	30	4	14	59.5	M6	M6	5.2	5.2	M6	G1/8	M10x1.25	22	2.5		
40	56	38	42	–	12	9	10	17	57.5	6	4	45.5	7.5	38	35	4.5	14	61	M6	M6	5.2	5.2	M6	G1/8	M10x1.25	22	2.5		
50	67	46.5	50	–	16	11.5	13	19	69	6	4	45.5	7.5	38	40	4.5	16	64.5	M8	M8	6.2	6.2	M8	G1/8	M12x1.25	24	3.5		
63	80	56.5	62	13	16	11.5	13	19	82	8	4	50	7.5	42.5	45	5.5	16	69	M8	M10	6.2	8.5	M8	G1/8	M12x1.25	24	3.5		
80	102	72	82	17	20	13	17	24	105	8	4	56	8.5	47.5	45	5.5	20	77	M10	M10	8.5	8.5	M10	G1/8	M16x1.5	32	4		

## DIMENSIONS OF THROUGH-ROD

+ = ADD THE STROKE  
++ = ADD TWICE THE STROKE

1 = SENSOR SLOT  
7 = ONLY FOR Ø 63 TO Ø 80  
8 = SLOT FOR DIN 7984 SCREWS

DE MALE PISTON ROD



Ø	A	B				B2	ØC	C1	CH	CH1	D	G	H	H1	ØK	L	M	M1 x strokes				N2	O		Ø1		P	Q	R	S	T
		ISO	UNITOP	≥ 5	< 5													N	ISO	UNITOP	ISO		UNITOP								
32	47	32.5 <sup>+0.1/-0.4</sup>	32 <sup>+0.4/-0.1</sup>	–	12	9	10	17	48.5	44.5	7.5	37	30	4	14	14	9	50.5	65.5	M6	M6	5.2	5.2	M6	G1/8	M10x1.25	22	2.5			
40	56	38	42	–	12	9	10	17	57.5	45.5	7.5	38	35	4.5	14	14	9	52	67.5	M6	M6	5.2	5.2	M6	G1/8	M10x1.25	22	2.5			
50	67	46.5	50	–	16	11.5	13	19	69	45.5	7.5	38	40	4.5	16	16	11	53	72	M8	M8	6.2	6.2	M8	G1/8	M12x1.25	24	3.5			
63	80	56.5	62	13	16	11.5	13	19	82	50	7.5	42	45	5.5	16	16	11	57.5	76.5	M8	M10	6.2	8.5	M8	G1/8	M12x1.25	24	3.5			
80	102	72	82	17	20	13	17	24	105	56	8.5	47.5	45	5.5	20	20	15	64	85	M10	M10	8.5	8.5	M10	G1/8	M16x1.5	32	4			