

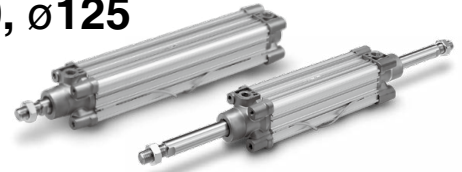
ISO Standard (15552)

Air Cylinder: Standard Type Double Acting, Single/Double Rod

RoHS

CP96 Series

ø32, ø40, ø50, ø63, ø80, ø100, ø125



How to Order

CP96S **B** **32** - **100** **C** **J** **W** - **□**

With auto switch **CP96SD** **B** **32** - **100** **C** **J** **W** - **M9BW** **S** - **□**

With auto switch •
(Built-in magnet)

Mounting •

B	Basic
L	Axial foot
F	Rod flange
G	Head flange
C	Single clevis
D	Double clevis
V	Adjustable position trunnion

* Mounting brackets are shipped together, but not assembled.

Bore size •

32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm
125	125 mm

Cylinder stroke [mm] •
Refer to "Standard Strokes" on page 130.

Cushion •

Symbol	Cushion	Bore size [mm]
C	Air cushion on both ends + Bumper cushion	ø32 to ø100
Nil	Air cushion	ø125

Rod boot •

Nil	Without rod boot
J	Nylon tarpaulin (One end)
JJ	Nylon tarpaulin (Both ends)
K	Heat-resistant tarpaulin (One end)
KK	Heat-resistant tarpaulin (Both ends)

Number of auto switches

Nil	2
S	1
3	3
n	n

Auto switch

Nil	Without auto switch
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* For applicable auto switches, refer to the table below.

Rod

Nil	Single rod
W	Double rod

Made to Order •
Refer to page 130 for details.

Applicable Auto Switches/Refer to the **Web Catalog** or Best Pneumatics for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model	Lead wire length [m]				Pre-wired connector	Applicable load	
					DC	AC		0.5 (Nil)	1 (M)	3 (L)	5 (Z)			
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	M9N	●	●	●	○	○	Relay, PLC	IC circuit
				3-wire (PNP)			M9P	●	●	●	○	○		
				2-wire			M9B	●	●	●	○	○		
				3-wire (NPN)			M9NW	●	●	●	○	○		
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (PNP)			M9PW	●	●	●	○	○		
				2-wire			M9BW	●	●	●	○	○		
				3-wire (NPN)			M9NA *1	○	○	●	○	○		
				3-wire (PNP)			M9PA *1	○	○	●	○	○		
	Water-resistant (2-color indicator)	Grommet	Yes	2-wire			M9BA *1	○	○	●	○	○		
				2-wire				○	○	○	○	○		
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	A96	●	—	●	—	—	Relay, PLC	IC circuit
			No	2-wire	24 V	100 V	A93	●	●	●	●	—		
						100 V or less	A90	●	—	●	—	—		

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWX

* Solid state auto switches marked with "○" are produced upon receipt of order.

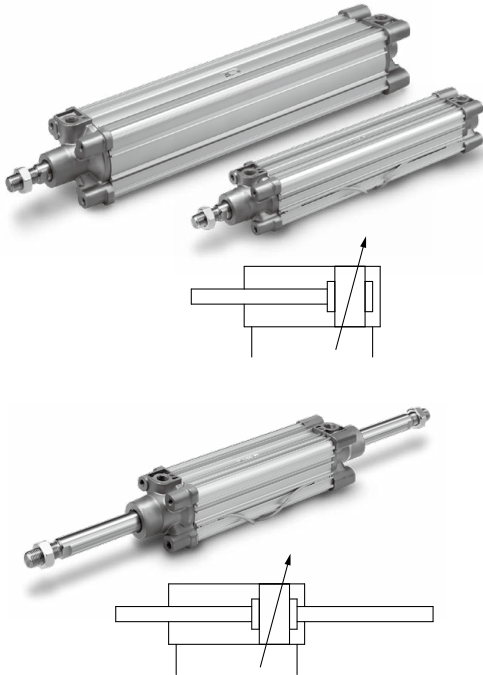
* Since there are other applicable auto switches than listed above, refer to page 146 for details.

* The D-A9□/M9□/M9□W/M9□A auto switches are shipped together, but not assembled.

* The D-Y59A, Y69A, Y7P, Y7□W, Z7□, Z80 cannot be mounted on the CP96 series.

Moreover, the D-M9□□ and A9□ auto switches cannot be mounted on square groove of the CP96 series.

Specifications



Bore size [mm]		32	40	50	63	80	100	125
Action		Double acting						
Fluid		Air						
Proof pressure		1.5 MPa						
Max. operating pressure		1.0 MPa						
Min. operating pressure		0.05 MPa						
Ambient and fluid temperatures		Without auto switch: -20 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)						
Lubrication		Not required (Non-lube)						
Operating piston speed		50 to 1000 mm/s						50 to 700 mm/s
Allowable stroke tolerance	Up to 500	+2 0					+1.0 0	
	501 to 1000	+2.4 0					+1.4 0	
	1001 to 1500	+2.8 0					+1.8 0	
	1501 to 2000	+3.2 0					+2.2 0	
Cushion		Air cushion on both ends + Bumper cushion						Air cushion
Port size		G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2
Mounting		Basic, Axial foot, Rod flange, Head flange, Single clevis, Double clevis, Center trunnion, Adjustable position trunnion						

Standard Strokes

Bore size [mm]	Standard stroke [mm]	Max. stroke
32	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	2000
40	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	2000
50	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600	2000
63	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600	2000
80	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800	2000
100	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800	2000
125	—	2000

* Aside from the standard strokes, intermediate strokes are also available in 1 mm increments and are produced upon receipt of order.

* Strokes exceeding the max. stroke are available as a special order.

Accessories

Mounting		Basic	Foot	Rod flange	Head flange	Single clevis	Double clevis	Adjustable position trunnion
Standard	Rod end nut	●	●	●	●	●	●	●
	Clevis pin	—	—	—	—	—	●	—
Option	Rod end	●	●	●	●	●	●	●
	Rod clevis	●	●	●	●	●	●	●
	Rod boot	●	●	●	●	●	●	●

* Do not use a rod end (or floating joint) together with a single clevis with a ball joint (or clevis pivot bracket with a ball joint).

* Refer to pages 137 to 140 for dimensions and part numbers of the accessories.



Made to Order
(For details, refer to pages 148 to 155.)

Symbol	Specifications
-XA□	Change of rod end shape
-XB6	Heat-resistant cylinder (-10 to 150°C)
-XC4	With heavy duty scraper
-XC7	Tie-rod, tie-rod nut, etc. made of stainless steel
-XC10	Dual stroke cylinder/Double rod type
-XC11	Dual stroke cylinder/Single rod type
-XC22	Fluororubber seal
-XC35	With coil scraper
-XC65	Made of stainless steel (Combination of -XC7 and -XC68)
-XC68	Made of stainless steel (with hard chrome plated piston rod)
-XC85	Grease for food processing equipment
-XC88	Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: Stainless steel 304)
-XC89	Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: S45C)

Refer to pages 145 and 146 for cylinders with auto switches.

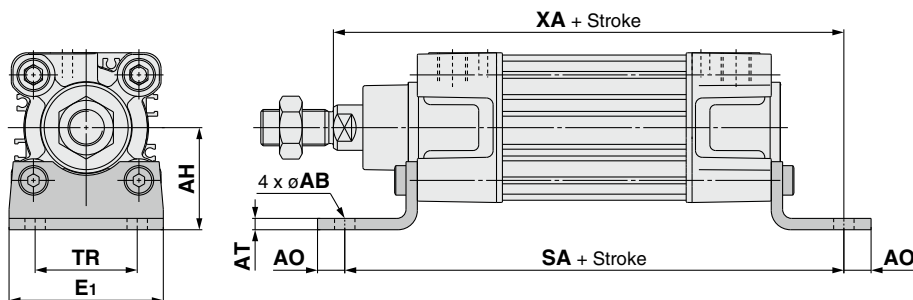
- Auto Switch Proper Mounting Position (Detection at stroke end)
- Minimum Stroke for Auto Switch Mounting
- Operating Range
- How to Mount and Move the Auto Switch

⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

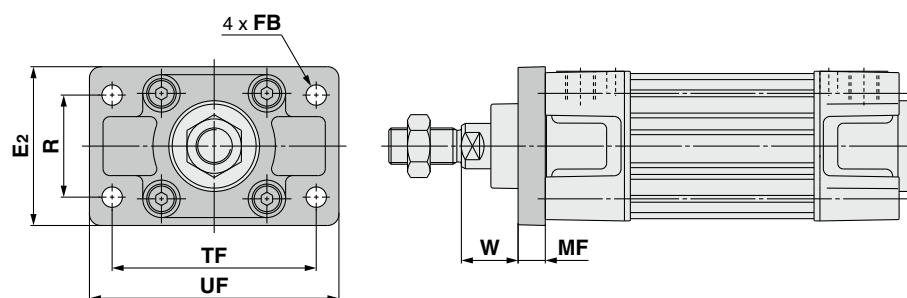
Dimensions: With Mounting Bracket (Dimensions are common to single rod and double rod.)

Axial foot (L)



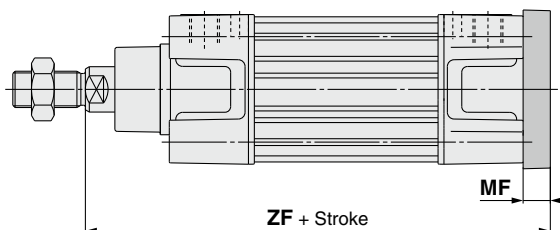
Bore size [mm]	E1	TR	AH	AO	AT	AB	SA	XA
32	48	32	32	10	4.5	7	142	144
40	55	36	36	11	4.5	10	161	163
50	68	45	45	12	5.5	10	170	175
63	80	50	50	12	5.5	10	185	190
80	100	63	63	14	6.5	12	210	215
100	120	75	71	16	6.5	14.5	220	230
125	Max. 157	90	90	Max. 25	8	16	250	270

Rod flange (F)



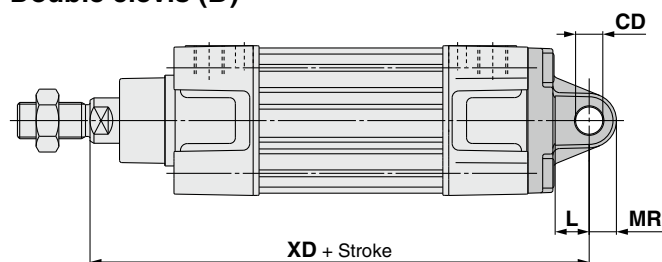
Bore size [mm]	R	TF	FB	E2	UF	W	MF
32	32	64	7	50	79	16	10
40	36	72	9	55	90	20	10
50	45	90	9	70	110	25	12
63	50	100	9	80	120	25	12
80	63	126	12	100	153	30	16
100	75	150	14	120	178	35	16
125	90	180	16	Max. 157	Max. 224	45	20

Head flange (G)

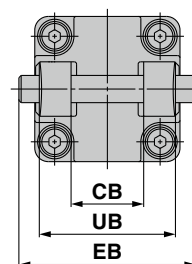


Bore size [mm]	MF	ZF
32	10	130
40	10	145
50	12	155
63	12	170
80	16	190
100	16	205
125	20	245

**Single clevis (C)
Double clevis (D)**



Single clevis (C)



Double clevis (D)

Bore size [mm]	EW	CD H9	L	MR	XD	UB h14	CB H14	EB
32	26 ^{-0.2} _{-0.6}	10	12	9.5	142	45	26	65
40	28 ^{-0.2} _{-0.6}	12	15	12	160	52	28	75
50	32 ^{-0.2} _{-0.6}	12	15	12	170	60	32	80
63	40 ^{-0.2} _{-0.6}	16	20	16	190	70	40	90
80	50 ^{-0.2} _{-0.6}	16	20	16	210	90	50	110
100	60 ^{-0.2} _{-0.6}	20	25	20	230	110	60	140
125	70 ^{-0.5} _{-1.2}	25	Min. 30	Max. 26	275	130	70	Max. 157