

# ISO Standards

## Air Cylinder: Standard Double Acting with End of Stroke Cushioning **Series CP96** ø32, ø40, ø50, ø63, ø80, ø100, ø125

### How to Order

**CP96S**    **B** **32** - **100** **W**

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

**Built-in magnet** ●

**Mounting** ●

<b>B</b>	Basic
<b>L</b>	Axial foot
<b>F</b>	Rod flange
<b>G</b>	Head flange
<b>C</b>	Single clevis
<b>D</b>	Double clevis

\* Mounting brackets are shipped together, (but not assembled).

**Bore size** ●

<b>32</b>	32 mm
<b>40</b>	40 mm
<b>50</b>	50 mm
<b>63</b>	63 mm
<b>80</b>	80 mm
<b>100</b>	100 mm
<b>125</b>	125 mm

**Stroke (mm)** ●  
Refer to "Standard Stroke" on page 36.

**Auto switch** ●

<b>Nil</b>	Without auto switch
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\* For applicable auto switch model, refer to the table below.

**Number of auto switches** ●

<b>Nil</b>	2 pcs.
<b>S</b>	1 pc.
<b>3</b>	3 pcs.
<b>n</b>	"n" pcs.

**Rod** ●

<b>Nil</b>	Single rod
<b>W</b>	Double rod

### Applicable Auto Switches/Refer to Best Pneumatics No. 2 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)		IC	Relay, PLC					
Solid state switch	—	Grommet	—	3-wire (NPN)	5 V, 12 V	—	<b>M9N</b>	●	●	●	○	○			IC	Relay, PLC			
				3-wire (PNP)			<b>M9P</b>	●	●	●	○	○							
				2-wire			<b>M9B</b>	●	●	●	○	○							
	Diagnosis indication (2-color)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	<b>M9NW</b>	●	●	●	○	○	IC						
				3-wire (PNP)			<b>M9PW</b>	●	●	●	○	○							
				2-wire			<b>M9BW</b>	●	●	●	○	○							
	Water resistant (2-color)	Grommet	—	3-wire (NPN)	5 V, 12 V	—	<b>M9NA**</b>	○	○	●	○	○	IC						
				3-wire (PNP)			<b>M9PA**</b>	○	○	●	○	○							
				2-wire			<b>M9BA**</b>	○	○	●	○	○							
Reed switch	—	Grommet	Yes	3-wire (Equiv. to NPN)	—	5 V	—	<b>A96</b>	●	—	●	—	—	IC	—				
				None				2-wire	24 V	12 V	100 V	<b>A93</b>	●	—	●	—	—	—	Relay, PLC
												100 V or less	<b>A90</b>	●	—	●	—	—	—

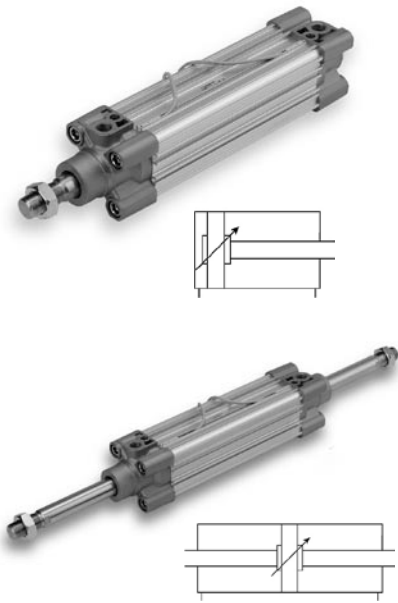
\*\* Water resistant type auto switch can be mounted to the models with the above mentioned part numbers, but this does not guarantee the water resistance of the cylinder.

\* Lead wire length symbols: 0.5 m ..... Nil (Example) M9NW  
 1 m ..... M (Example) M9NWM  
 3 m ..... L (Example) M9NWL  
 5 m ..... Z (Example) M9NWZ

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

\* Since there are other applicable auto switches than listed, refer to Best Pneumatics No. 2 for details.  
 \* For details about auto switches with pre-wired connector, refer to Best Pneumatics No. 2.  
 \* D-A9□, M9□, M9□W, M9□A are shipped together, (but not assembled).  
 \* (Switch mounting bracket is only assembled at the time of shipment.)  
 Note) D-Y59A, Y69A, Y7P, Y7□W, Z7□, Z80 type cannot be mounted on the CP96 series.  
 Moreover, D-M9□□ and A9□ type cannot be mounted on square groove of the CP96 series.

# Series CP96



## Specifications

Bore size (mm)	32	40	50	63	80	100	125
<b>Action</b>	Double acting						
<b>Fluid</b>	Air						
<b>Proof pressure</b>	1.5 MPa						
<b>Max. operating pressure</b>	1.0 MPa						
<b>Min. operating pressure</b>	0.05 MPa						
<b>Ambient and fluid temperature</b>	Without auto switch: -20 to 70°C* With auto switch: -10 to 60°C*						
<b>Lubrication</b>	Not required (Non-lube)						
<b>Operating piston speed</b>	50 to 1000 mm/s					50 to 700 mm/s	
<b>Allowable stroke tolerance</b>	Up to 250 st: ${}^{+1.0}_0$ , 251 to 1000 st: ${}^{+1.4}_0$ , 1001 to 1500 st: ${}^{+1.8}_0$ , 1501 to 2000 st: ${}^{+2.2}_0$						
<b>Cushion</b>	Air cushion						
<b>Port size</b>	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2
<b>Mounting</b>	Basic, Axial foot, Rod flange, Head flange, Single clevis, Double clevis, Center trunnion						

\* No fleezing

## Standard Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke <sup>Note)</sup>
<b>32</b>	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	2000
<b>40</b>	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	2000
<b>50</b>	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600	2000
<b>63</b>	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600	2000
<b>80</b>	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800	2000
<b>100</b>	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800	2000
<b>125</b>	—	2000

Intermediate strokes are available.

Note) Please consult with SMC for longer strokes.

## Accessories

Mounting		Basic	Foot	Rod flange	Head flange	Single clevis	Double clevis	Center trunnion
Standard	Rod end nut	●	●	●	●	●	●	●
	Clevis pin	—	—	—	—	—	●	—
Option	Piston rod ball joint	●	●	●	●	●	●	●
	Rod clevis	●	●	●	●	●	●	●
	Rod boot	●	●	●	●	●	●	●

\* Please do not use a piston rod ball joint (or floating joint) together with a single clevis with a ball joint (or clevis pivot bracket with a ball joint).

## Replacement Parts/Seal Kit

Bore size (mm)	Kit no.	Contents
<b>32</b>	CS95-32	Cushion seal Wearing Piston seal Rod seal Tube gasket
<b>40</b>	CS95-40	
<b>50</b>	CS95-50	
<b>63</b>	CS95-63	
<b>80</b>	CS95-80	
<b>100</b>	CS96-100	
<b>125</b>	CS96-125	

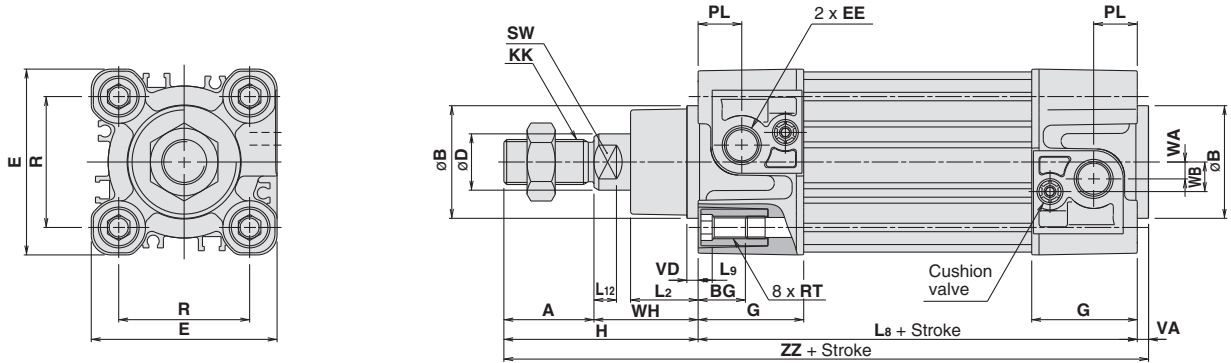
\* Seal kit includes cushion seal, wearing, piston seal, rod seal, and tube gasket. Order the seal kit, based on each bore size.

\* Seal kit includes a grease pack (ø32 to ø50: 10 g, ø63, ø80: 20 g, ø100, ø125: 30 g). Order with the following part number when only the grease pack is needed.

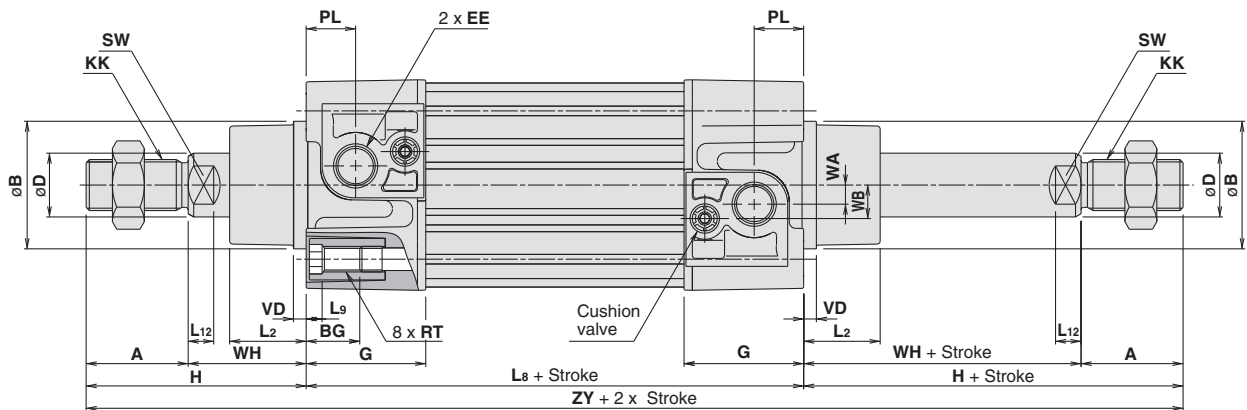
Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

**Dimensions**

Basic: CP96S(D)B Bore size – Stroke



Basic: CP96S(D)B Bore size – Stroke W



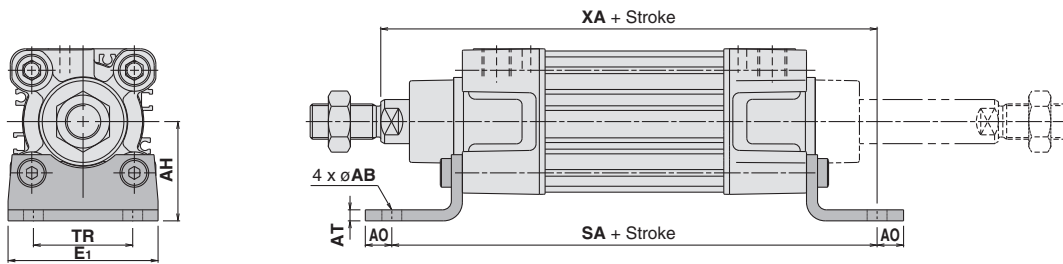
Bore size (mm)	A	B d11	BG	D	E	EE	G	H	KK	L <sub>2</sub>	L <sub>8</sub>	L <sub>9</sub>	L <sub>12</sub>	PL	R	RT	SW	VA	VD	WA	WB	WH	ZY	ZZ
32	22	30	16	12	47	G 1/8	32	48	M10 x 1.25	15	94	4	6	13	32.5	M6 x 1	10	4	4	4	7	26	190	146
40	24	35	16	16	54	G 1/4	37.5	54	M12 x 1.25	17	105	4	6.5	14	38	M6 x 1	13	4	4	5	9	30	213	163
50	32	40	16	20	66	G 1/4	37.5	69	M16 x 1.5	24	106	5	8	15.5	46.5	M8 x 1.25	17	4	4	6	10.5	37	244	179
63	32	45	16	20	77	G 3/8	45	69	M16 x 1.5	24	121	5	8	16.5	56.5	M8 x 1.25	17	4	4	9	12	37	259	194
80	40	45	17	25	99	G 3/8	45	86	M20 x 1.5	30	128	—	10	19	72	M10 x 1.5	22	4	4	11.5	14	46	300	218
100	40	55	17	25	118	G 1/2	50	91	M20 x 1.5	32	138	—	10	19	89	M10 x 1.5	22	4	4	17	15	51	320	233
125	54	60	20	32	144	G 1/2	58	119	M27 x 2	40	160	—	13	19	110	M12 x 1.75	27	6	6	17	15	65	398	285

(mm)

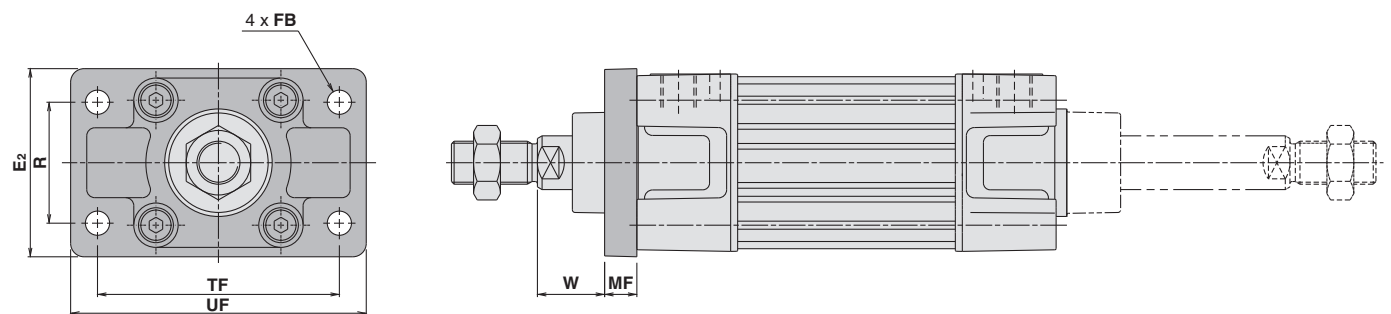
# Series CP96

## Dimensions

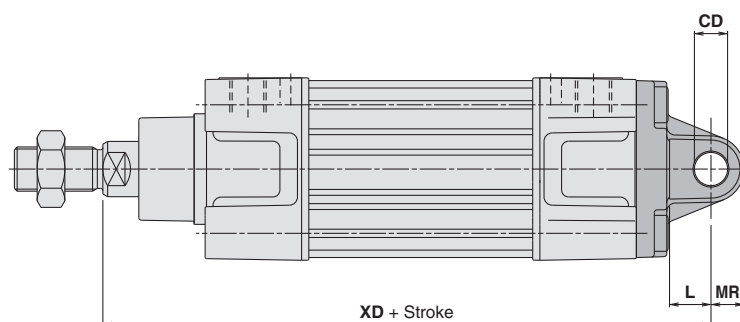
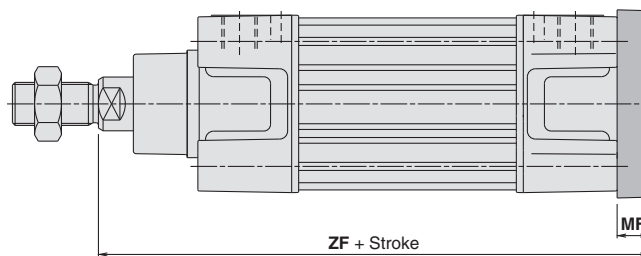
### Axial foot (L)



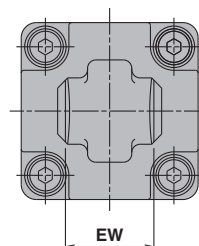
### Rod flange (F)



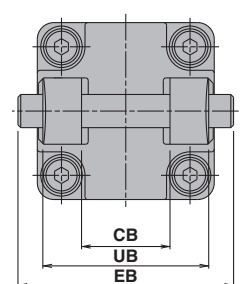
### Head flange (G)



### Single clevis (C)



### Double clevis (D)



Bore size (mm)	E1	TR	AH	AO	AT	AB	SA	XA	R	TF	FB	E2	UF	W	MF	ZF	UB h14	CB H14	EW	CD H9	L	MR	XD	EB
32	48	32	32	10	4.5	7	142	144	32	64	7	50	79	16	10	130	45	26	26 <sup>-0.2</sup> <sub>-0.6</sub>	10	12	9.5	142	65
40	55	36	36	11	4.5	10	161	163	36	72	9	55	90	20	10	145	52	28	28 <sup>-0.2</sup> <sub>-0.6</sub>	12	15	12	160	75
50	68	45	45	12	5.5	10	170	175	45	90	9	70	110	25	12	155	60	32	32 <sup>-0.2</sup> <sub>-0.6</sub>	12	15	12	170	80
63	80	50	50	12	5.5	10	185	190	50	100	9	80	120	25	12	170	70	40	40 <sup>-0.2</sup> <sub>-0.6</sub>	16	20	16	190	90
80	100	63	63	14	6.5	12	210	215	63	126	12	100	153	30	16	190	90	50	50 <sup>-0.2</sup> <sub>-0.6</sub>	16	20	16	210	110
100	120	75	71	16	6.5	14.5	220	230	75	150	14	120	178	35	16	205	110	60	60 <sup>-0.2</sup> <sub>-0.6</sub>	20	25	20	230	140
125	Max.157	90	90	Max.25	8	16	250	270	90	180	16	Max.157	Max.224	45	20	245	130	70	70 <sup>-0.5</sup> <sub>-1.2</sub>	25	Min.30	Max.26	275	Max.157