

Cylinder with Lock

Double Acting, Single Rod/Double Rod

CP96N Series

ø32, ø40, ø50, ø63, ø80, ø100

RoHS

How to Order

CP96N **B** **32** - **100** **C** **J** **W** - [] - [] - []

With auto switch **CP96N D** **B** **32** - **100** **C** **J** **W** - [] - [] - **M9BW** **S** - []

With auto switch (Built-in magnet)

Mounting

Symbol	Description	Single rod	Double rod
B	Basic	○	○
L	Axial foot	○	○
F	Rod flange	○	○
G	Head flange	○	○
C	Single clevis	○	—
D	Double clevis	○	—

* Mounting brackets are shipped together with the product but do not come assembled.
* The single clevis with ball joint should be ordered separately.

Bore size

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

Cylinder stroke [mm]

Refer to page 10 for standard strokes.

Air cushion on both ends + Bumper cushion

Rod boot

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

Rod

	Nil	W
	Single rod	Double rod

Pivot bracket

	Nil	N
	No bracket	Pivot bracket

* Only for the D mounting type
* The double clevis pivot bracket and clevis pivot bracket with ball joint should be ordered separately.

Rod end bracket

	Nil	W
	No bracket	Rod clevis

* The floating joint and rod end should be ordered separately.

Made to order

Refer to page 10 for details.

Number of auto switches

	Nil	S	3	n
	2	1	3	n

Auto switch

	Nil
	Without auto switch

* For applicable auto switches, refer to the table below.

Refer to the Ordering Example of Cylinder Assembly on page 10.

Applicable Auto Switches/Refer to the Web Catalog or Best Pneumatics Catalog 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	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)			
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)											
				2-wire											
				3-wire (NPN)											
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (PNP)											
				2-wire											
				3-wire (NPN)											
				3-wire (PNP)											
	Water-resistant (2-color indicator)	Grommet	Yes	2-wire											
				3-wire (NPN)											
				3-wire (PNP)											
				2-wire											
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	12 V	A96V	A96	●	—	●	—	—	IC circuit	Relay, PLC
				2-wire											
				2-wire											

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

*2 The 1 m lead wire is only applicable to the D-A93.

* Lead wire length symbols: 0.5 m Nil (Example) M9NV
1 m M (Example) M9NM
3 m L (Example) M9NL
5 m Z (Example) M9NZ

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

* Since there are applicable auto switches other than those listed above, refer to page 23 for details.

* The D-A9□/M9□/M9□/M9□ auto switches are shipped together with the product but do not come assembled. (Only the auto switch mounting brackets are assembled before shipment.)

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

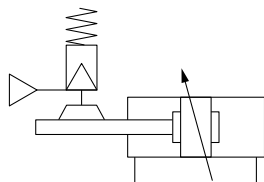
Moreover, the D-M9□ and A9□ auto switches cannot be mounted on square groove.

Cylinder with Lock Double Acting, Single Rod/Double Rod **CP96N Series**



Symbol

Air cushion + Bumper cushion



Made to Order Individual Specifications
(For details, refer to pages 45-1 to 45-4.)

Symbol	Specifications
-X3030	With lock status indication
-X3075	ISO 13849-1 safety standard compliant product / Cylinder with brake/lock unit

Made to Order Common Specifications

[Click here for details.](#)

Symbol	Specifications
-XA	Change of rod end shape (Single rod only)
-XC35	With coil scraper

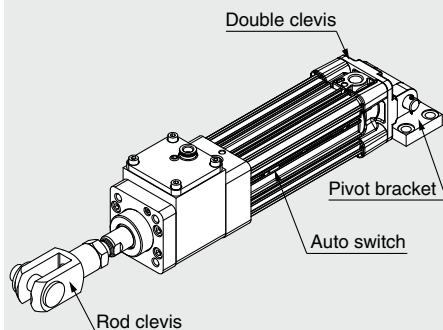
For details of **cylinders with auto switches**

⇒ page 23

- Auto Switch Proper Mounting Position (Detection at stroke end)
- Minimum Stroke for Auto Switch Mounting
- Operating Range

Ordering Example of Cylinder Assembly

Cylinder model: CP96NDD50-100C-NW-M9BW



Mounting D: Double clevis
Pivot bracket N: Yes
Rod end bracket W: Rod clevis
Auto switch D-M9BW: 2 pcs.

* Pivot bracket, rod clevis, and auto switch are shipped together with the product but do not come assembled.

Cylinder Specifications

Bore size [mm]	32	40	50	63	80	100
Action	Double acting					
Fluid	Air					
Proof pressure	1.5 MPa					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.08 MPa					
Ambient and fluid temperatures	Without auto switch: -10°C to 70°C With auto switch: -10°C to 60°C (No freezing)					
Lubricant	Not required (Non-lube)					
Piston speed	50 to 1000 mm/s*1					
Stroke length tolerance	Up to 500 st: $\begin{smallmatrix} +2.0 \\ 0 \end{smallmatrix}$, 501 to 1000 st: $\begin{smallmatrix} +2.4 \\ 0 \end{smallmatrix}$, 1001 to 1500 st: $\begin{smallmatrix} +2.8 \\ 0 \end{smallmatrix}$, 1501 to 2000 st: $\begin{smallmatrix} +3.2 \\ 0 \end{smallmatrix}$					
Cushion	Air cushion on both ends + Bumper cushion					
Port size	G1/8	G1/4		G3/8		G1/2
Mounting	Basic, Axial foot, Rod flange, Head flange Single clevis, Double clevis					

*1 Load limits exist depending upon the piston speed when locked, mounting direction, and operating pressure.

Lock Unit Specifications

Bore size [mm]	32	40	50	63	80	100
Locking action	Exhaust locking					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.3 MPa					
Locking direction	Both directions					
Holding force (Max. static load) [N]*1	630	980	1570	2450	3920	6080

*1 The holding force (max. static load) shows the maximum capability and does not show the normal holding capability. Be sure to select a cylinder using the method described in Model Selection (page 6).

Standard Strokes

* When using with auto switches, refer to the Minimum Stroke for Auto Switch Mounting table on page 23.

Bore size	Standard stroke	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

- * The manufacturing of intermediate strokes is possible. (Spacers are not used.)
- * Applicable strokes should be confirmed according to the usage. For details, refer to the Air Cylinders Model Selection in the **Web Catalog** or Best Pneumatics Catalog. In addition, products that exceed the standard stroke might not be able to fulfill the specifications due to deflection, etc.
- * When using a rod boot, a stroke range of up to 1000 mm is available. Please consult with SMC when exceeding a 1000 mm stroke.

Stopping Accuracy

Bore size [mm]	32	40	50	63	80	100
Lock type	Exhaust locking					
Stopping accuracy [mm]	±1.0					
Conditions	· Mounting orientation: Horizontal · Supply pressure: 0.5 MPa · Piston speed: 300 mm/s · Load condition: Upper limit of allowed value Solenoid valve for locking is mounted on the unlock port. Maximum value of stopping position dispersion from 100 measurements					

