

# Compact Cylinder: Axial Piping Single Acting, Single Rod Series *CQP2* ø12, ø16, ø20, ø25, ø32, ø40, ø50

## How to Order

Without auto switch

**CQP2B** **50** **-10** **T** **-**

With auto switch

**CDQP2B** **50** **-10** **T** **-M9BW** **-**

With auto switch  
(Built-in magnet)

Axial piping

Mounting

**B** Through-hole

\* Cylinder mounting bolts are not included.  
Order them separately referring to  
"Mounting Bolt for C(D)QP2B" on pages  
114 and 117.

### Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.

(Example) CDQP2B32-10S

Bore size

12	12 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm

Port thread type

Nil	M thread	ø12 to ø25
	Rc	
TN	NPT	ø32 to ø50
TF	G	

Made to Order  
Refer to the next page  
for details.

Number of  
auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Auto switch

Nil Without auto switch

\* Refer to the below table for  
applicable auto switches.

Body option

Nil	Standard (Rod end female thread)
M	Rod end male thread

Action

S	Single acting, Spring return
T	Single acting, Spring extend

Cylinder stroke (mm)

Refer to the next page for standard strokes.

**Applicable Auto Switches**/Refer to pages 1263 to 1371 in 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	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)							
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V,	—	M9NV	M9N	●	●	●	○	—	○	Relay, PLC				
		3-wire (PNP)		12 V		M9PV		M9P	●	●	●	○	—	○						
		Connector		2-wire		12 V		M9BV	M9B	●	●	●	○	—	○					
						J79C		—	●	—	●	●	●	—	—					
	Diagnostic indication (2-color indication)	Grommet		3-wire (NPN)		5 V,		M9NWV	M9NW	●	●	●	○	—	○		IC circuit			
				3-wire (PNP)		12 V		M9PWV	M9PW	●	●	●	○	—	○					
				2-wire		12 V		M9BWV	M9BW	●	●	●	○	—	○			—		
				3-wire (NPN)		5 V,		M9NAV**	M9NA**	○	○	○	—	○	○					
	Water resistant (2-color indication)	Grommet		3-wire (PNP)		12 V		M9PAV**	M9PA**	○	○	●	○	—	○		IC circuit			
				2-wire		12 V		M9BAV**	M9BA**	○	○	●	○	—	○				—	
				With diagnostic output (2-color indication)		4-wire		5 V, 12 V	—	F79F	●	—	●	○	—			○		IC circuit
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	5 V	—	A96V	A96	●	—	●	—	—	—	Relay, PLC				
				2-wire		—	200 V	A72	A72H	●	—	●	—	—	—					
						12 V	100 V	A93V	A93	●	—	●	—	—	—					
						5 V, 12 V	100 V or less	A90V	A90	●	—	●	—	—	—					
		Connector				12 V	—	A73C	—	●	—	●	●	●	—		—			
				5 V, 12 V		24 V or less	A80C	—	●	—	●	●	●	—	—					
				Diagnostic indication (2-color indication)		Grommet	Yes	—	—	A79W	—	●	—	●	—		—	—		
							No													

\* Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.  
Consult with SMC regarding water resistant types with the above model numbers.

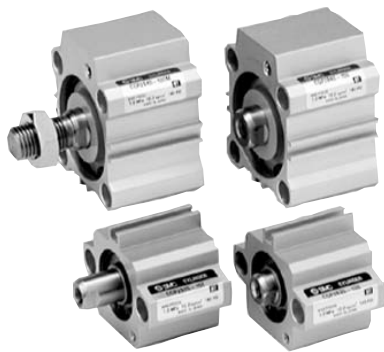
\* Lead wire length symbols: 0.5 m ..... Nil (Example) M9NW  
1 m ..... M (Example) M9NWM  
3 m ..... L (Example) M9NWL  
5 m ..... Z (Example) M9NWZ  
None ..... N (Example) J79CN

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

\* There are other applicable auto switches other than the listed above. For details, refer to page 127.

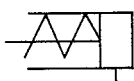
\* For details about auto switches with pre-wired connector, refer to pages 1328 and 1329 in Best Pneumatics No. 2.

# Series CQP2

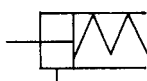


## JIS Symbol

Single acting,  
Spring return



Single acting,  
Spring extend



## Made to Order

(For details, refer to pages 177 to 207.)

Symbol	Specifications
-XA□	Special rod end shape
-XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel
-XC36	With boss on rod end
-X271	Fluororubber seals

## Retaining Ring Installation/Removal

### ⚠ Caution

- For installation and removal, use an appropriate pair of pliers (tool for installing a type C retaining ring).
- Even if a proper plier (tool for installing a type C retaining ring) is used, it is likely to inflict damage to a human body or peripheral equipment, as a retaining ring may be flown out of the tip of a plier (tool for installing a type C retaining ring). Be much careful with the popping of a retaining ring. Besides, be certain that a retaining ring is placed firmly into the groove of rod cover before supplying air at the time of installment.

## Mounting/Removal

- Do not remove the hexagon socket set screw on the side of the rod.
  - Be aware that if the hexagon socket set screw is removed with compressed air supplied to the cylinder, an internal steel ball could fly out or the compressed air could be discharged, leading to injury to humans or damage to peripheral equipment.

## Specifications

Bore size (mm)	12	16	20	25	32	40	50
Action	Double acting, Single rod						
Fluid	Air						
Proof pressure	1.5 MPa						
Maximum operating pressure	1.0 MPa						
Minimum operating pressure (MPa)	0.25	0.25	0.18	0.18	0.17	0.15	0.13
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)						
Lubrication	Not required (Non-lube)						
Piston speed	50 to 500 mm/s						
Allowable kinetic energy (J)	0.022	0.038	0.055	0.09	0.15	0.26	0.46
Stroke length tolerance	+1.0 mm 0						

## Standard Strokes

Bore size	Standard stroke (mm)
12	5, 10
16	
20	
25	
32	
40	10, 20
50	

## Manufacture of Intermediate Strokes

(Except single acting, spring return)

Type	A spacer is installed in the standard stroke body.	
Part no.	Refer to "How to Order" for the standard model number. (P. 112)	
Description	Strokes in 1 mm intervals are available by installing a spacer in the standard stroke cylinder.	
Stroke range	Bore size	Stroke range
	12 to 40	1 to 9
	50	1 to 19
Example	Part no.: CQP2B20-3T CQP2B20-5T with 2 mm width spacer inside The B dimension is 24.5 mm.	

## Type

Bore size (mm)			12	16	20	25	32	40	50
Pneumatic	Mounting	Through-hole (Standard)	●	●	●	●	●	●	●
	Built-in magnet		●	●	●	●	●	●	●
	Piping	Pipe thread	M5 x 0.8	M5 x 0.8	M5 x 0.8	M5 x 0.8	Rc1/8	Rc1/8	Rc1/4
							NPT1/8	NPT1/8	NPT1/4
							G1/8	G1/8	G1/4
Rod end male thread		●	●	●	●	●	●	●	

Refer to pages 123 to 127 for the specifications of cylinders with auto switches.

- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Minimum stroke for auto switch mounting
- Operating range
- Auto switch mounting brackets/Part no.