

Compact Cylinder: Axial Piping Double Acting, Single Rod Series CQP2

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order

Without auto switch CQP2B [] 50 [] - 30 D [] - []

With auto switch CDQP2B [] 50 [] - 30 D [] - 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 106 and 109.

Type

Nil	Pneumatic
H	Air-hydro (Note 1)

Note 1) Bore sizes available for air-hydro type are ø20 to ø100.

Bore size

12	12 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

Port thread type

Nil	M thread	ø12 to ø25
	Rc	
TN	NPT	ø32 to ø100
TF	G	

Action

D Double acting

Cylinder stroke (mm)
Refer to the next page for standard strokes.

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
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* Refer to the below table for applicable auto switches.

Body option

Nil	Standard (Rod end female thread)
C	With rubber bumper (Note 2)
M	Rod end male thread

* Combination of body option ("CM") is available.
Note 2) Air-hydro type with rubber bumper is not available.

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) CDQP2B32-30D

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	●	●	●	○	—	○	IC circuit	Relay, PLC	
		3-wire (PNP)		12 V		M9PV		M9P	●	●	●	○	—	○				
	Connector	2-wire		12 V		M9BV		M9B	●	●	●	○	—	○	—			
		3-wire (NPN)		5 V,		M9NWV		M9NW	●	●	●	○	—	○		IC circuit		
	Diagnostic indication (2-color indication)	3-wire (PNP)		12 V	M9PWV	M9PW	●	●	●	○	—	○	—					
		2-wire		12 V	M9B WV	M9B W	●	○	●	○	—	○		IC circuit				
		3-wire (NPN)		5 V,	M9NAV**	M9NA**	○	○	●	○	—	○	IC circuit					
		3-wire (PNP)		12 V	M9PAV**	M9PA**	○	○	●	○	—	○		—				
		2-wire		12 V	M9BAV**	M9BA**	○	○	●	○	—	○	IC circuit					
		4-wire		5 V, 12 V	—	F79F	●	—	●	○	—	○		—				
	2-wire (Non-polar)	—		—	P4DW	—	—	●	●	—	○	—						
	Reed auto switch	—		Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96		●	—	●	—		—
2-wire			—			200 V		A72		A72H	●	—	●	—	—	—	—	
			12 V			100 V		A93V		A93	●	—	●	—	—	—	—	
			5 V, 12 V			100 V or less		A90V		A90	●	—	●	—	—	—	IC circuit	
		Diagnostic indication (2-color indication)	Connector	12 V		—	A73C	—	●	—	●	●	●	—	—	—		
5 V, 12 V				24 V or less		A80C	—	●	—	●	●	●	—	IC circuit				
—				—		A79W	—	●	—	●	—	—	—	—				
—				—		—	—	●	—	●	—	—	—	—				

* * 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) M9NV
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.

* The D-P4DWL type is available from ø40 to ø100 only.

* Only for the D-P4DWL type, an auto switch is assembled and shipped with the cylinder.

* 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.

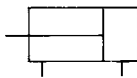
Compact Cylinder: Axial Piping Double Acting, Single Rod *Series CQP2*



Rod end male thread

JIS Symbol

Double acting,
Single rod



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

Symbol	Specifications
-XA□	Special rod end shape
-XB6	Heat resistant cylinder (-10 to 150°C) w/o auto switch only
-XB7	Cold resistant cylinder (-40 to 70°C) w/o auto switch only
-XB9	Low-speed cylinder (10 to 50 mm/s)
-XB13	Low-speed cylinder (5 to 50 mm/s)
-XC4	With heavy-duty scraper, ø32 to ø100 only
-XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel
-XC35	With coil scraper
-XC36	With boss on rod end
-X271	Fluororubber seals

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.

Specifications

Pneumatic type

Bore size (mm)		12	16	20	25	32	40	50	63	80	100
Action		Double acting, Single rod									
Fluid		Air									
Proof pressure		1.5 MPa									
Maximum operating pressure		1.0 MPa									
Minimum operating pressure		0.07 MPa		0.05 MPa							
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)	Without cushion	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
	With rubber bumper	0.043	0.075	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54
Stroke length tolerance		+1.0 mm (Note) 0									

Note) Stroke length tolerance does not include the amount of bumper change.

Air-hydro type

Bore size (mm)	20	25	32	40	50	63	80	100
Action	Double acting, Single rod							
Fluid	Turbine oil ^{Note)}							
Proof pressure	1.5 MPa							
Maximum operating pressure	1.0 MPa							
Minimum operating pressure	0.18 MPa			0.1 MPa				
Ambient and fluid temperature	5 to 60°C							
Piston speed	5 to 50 mm/s							
Cushion	None							
Stroke length tolerance	+1.0 mm 0							

Note) Refer to "Handling Precautions for SMC Products" (M-E03-3) for Actuator Precautions (5).

Standard Strokes

Pneumatic type (Non-lube) (mm)

Bore size	Standard stroke
12, 16	5, 10, 15, 20, 25, 30
20, 25	5, 10, 15, 20, 25, 30, 35 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35 40, 45, 50, 75, 100
50, 63 80, 100	10, 15, 20, 25, 30, 35, 40 45, 50, 75, 100

Air-hydro type (mm)

Bore size	Standard stroke
20, 25	5, 10, 15, 20, 25, 30, 35 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35 40, 45, 50, 75, 100
50, 63 80, 100	10, 15, 20, 25, 30, 35, 40 45, 50, 75, 100

Manufacture of Intermediate Strokes

Type	A spacer is installed in the standard stroke body.	
Part no.	Refer to "How to Order" for the standard model number. (P. 103)	
Description	Strokes in 1 mm intervals are available by installing a spacer in the standard stroke cylinder.	
Stroke range	Bore size	Stroke range
	12, 16	1 to 29
	20, 25	1 to 49
	32 to 100	1 to 99
Example	Part no.: CQP2B50-57D CQP2B50-75D with 18 mm width spacer inside The B dimension is 115.5 mm.	



- Except air-hydro type
- In the case of spacer type, intermediate strokes with bumper for ø40 to ø100, it can be manufactured in 5 mm intervals in 5 mm and 55 to 95 mm.