

# Compact Cylinder: Long Stroke Double Acting, Single Rod Series CQ2

ø32, ø40, ø50, ø63, ø80, ø100

## How to Order

Without auto switch

CQ2 A 32 - 200 DC Z -

With auto switch

CDQ2 A 32 - 200 DC Z - M9BW -

With auto switch  
(Built-in magnet)

Mounting

A	Both ends tapped
L	Foot
F	Rod flange
G	Head flange
D	Double clevis

\* 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

Port thread type

Nil	Rc
TN	NPT
TF	G
F	Built-in one-touch fittings <small>Note</small>

Note) Bore sizes available with one-touch fittings are ø32 to ø63.

Cylinder stroke (mm)

Refer to the next page for standard strokes.

Action

D Double acting

Cushion

C Rubber bumper

Number of auto switches

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

Made to Order

Refer to the next page for details.

Auto switch

Nil Without auto switch

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

Auto switch mounting groove

Z 4 surfaces

Body option

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

### 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) CDQ2L40-200DCZ

### Applicable Auto Switches

Refer to pages 1263 to 1371 in Best Pneumatics No. 2 for further information on auto switches.

Consult with SMC regarding water resistant types with the above model numbers.

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	●	●	●	○	—	○			
	2-wire			12 V		M9BV		M9B	●	●	●	○	—	○			
	Diagnostic indication (2-color indication)			3-wire (NPN)		5 V,		M9NWV	M9NW	●	●	●	○	—	○	IC circuit	
				3-wire (PNP)		12 V		M9PWV	M9PW	●	●	●	○	—	○		
	Water resistant (2-color indication)			2-wire		12 V		M9BWV	M9BW	●	●	●	○	—	○	—	
				3-wire (NPN)		5 V,		M9NAV**	M9NA**	○	○	●	○	—	○	IC circuit	
				3-wire (PNP)		12 V		M9PAV**	M9PA**	○	○	●	○	—	○		
				2-wire		12 V		M9BAV**	M9BA**	○	○	●	○	—	○	—	
	Magnetic field resistant (2-color indication)			2-wire (Non-polar)		—		—	P3DW	●	—	●	●	—	○	—	
Reed auto switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	—	●	—	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	A93V	A93	●	—	●	—	—	—	—	—
			5 V, 12 V			100 V or less	A90V	A90	●	—	●	—	—	—	—	—	IC circuit

\* 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) M9NVW  
3 m ..... L (Example) M9NVWL  
5 m ..... Z (Example) M9NVWZ

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

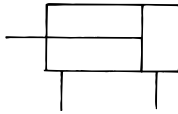
\* There are other applicable auto switches other than the listed above. For details, refer to page 175.

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

# Compact Cylinder: Long Stroke Double Acting, Single Rod *Series CQ2*



**JIS Symbol**  
Double acting,  
Single rod



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

Symbol	Specifications
-XB10	Intermediate stroke (Exclusive body type)
-XC4	With heavy-duty scraper
-XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel
-XC26	With split pins for double clevis pin/ double knuckle joint pin and flat washers
-X271	Fluororubber seals

## Specifications

Bore size (mm)	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	0.05 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)	0.29	0.52	0.91	1.54	2.71	4.54
Stroke length tolerance	+1.4 mm Note) 0					

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

## Standard Strokes

Bore size	Standard stroke (mm)
32, 40, 50 63, 80, 100	125, 150, 175, 200, 250, 300

## Manufacture of Intermediate Strokes

Type	A spacer is installed in the standard stroke body.	Exclusive body (-XB10)
Part no.	Refer to "How to Order" for the standard model number. (P. 69)	Suffix "-XB10" to the end of standard model number. (P. 69)
Description	Strokes in 1 mm intervals are available by installing a spacer in the standard stroke cylinder.	Strokes in 1 mm intervals are available by using an exclusive body with the specified stroke.
Stroke range	Bore size	Bore size
	Stroke range	Stroke range
Example	32 to 200	32 to 160
	101 to 299	101 to 299
Example	Part no.: CQ2A50-166DCZ CQ2B50-175DCZ with 9 mm width spacer inside The B dimension is 230.5 mm.	Part no.: CQ2B50-166DCZ-XB10 Makes 166 mm stroke tube. The B dimension is 221.5 mm.

## Type

Bore size (mm)	32	40	50	63	80	100
Pneumatic	Built-in magnet	●	●	●	●	●
	Piping	—	Rc1/8	Rc1/8	Rc1/4	Rc1/4
		TN	NPT1/8	NPT1/8	NPT1/4	NPT1/4
		TF	G1/8	G1/8	G1/4	G1/4
	Built-in one-touch fittings Note)	ø6/4	ø6/4	ø8/6	ø8/6	—
Rod end male thread		●	●	●	●	●

Note) One-touch fittings cannot be replaced.

Refer to pages 169 to 175 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.