

Compact Cylinder: Non-rotating Rod Double Acting, Double Rod Series **CQ2KW**

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

How to Order

Without auto switch ø12 to ø25
CQ2KW **B** **20** **□** - **30** **D** **□**

Without auto switch ø32 to ø63
CQ2KW **B** **32** **□** - **30** **D** **□** **Z**

With auto switch
CDQ2KW **B** **32** **□** - **30** **D** **□** **Z** - **M9BW** **□**

Mounting

B	Through-hole (Standard)	ø12 to ø63
A	Both ends tapped	ø40 to ø63
L	Foot	
F	Flange	

* Mounting brackets are shipped together (but not assembled).
* Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for C(D)Q2KWB" on pages 96 and 98.

Bore size

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

Port thread type

Nil	M thread	ø12 to ø25
	Rc	ø32 to ø63
TN	NPT	
TF	G	
F	Built-in one-touch fittings (Note)	

Note) Bore sizes available with one-touch fittings are ø32 to ø63.
* For cylinders without auto switch, M threads are compatible only for ø32-5 mm stroke model.

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.

Auto switch mounting groove

Z	ø12 to ø25	2 surfaces
	ø32 to ø63	4 surfaces

Body option

Nil	Standard (Rod end female thread)
C	With rubber bumper (ø12 with auto switch only)
M	Rod end male thread

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

Action

D	Double acting
----------	---------------

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) CDQ2KWB32-30DZ

Refer to pages 1263 to 1371 in Best Pneumatics No. 2 for further information on auto switches.
Refer to the individual catalog (ES20-201) for the D-P3DW type.

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, 12 V	—	M9NV	M9N	●	●	●	○	—	○	IC circuit	Relay, PLC	
	3-wire (PNP)			M9PV				M9P	●	●	●	○	—	○				
	2-wire			M9BV				M9B	●	●	●	○	—	○				
	Diagnostic indication (2-color indication)			3-wire (NPN)				5 V, 12 V	M9NVV	M9NW	●	●	●	○	—	○		IC circuit
	Water resistant (2-color indication)			3-wire (PNP)				12 V	M9PWV	M9PW	●	●	●	○	—	○		
				2-wire				12 V	M9BWV	M9BW	●	●	●	○	—	○		
				3-wire (NPN)				5 V, 12 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	Relay, PLC	
				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) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWX

* Solid state auto switches marked with "○" are produced upon receipt of order.
* The D-P3DW□ type is available from ø32 to ø63 only.

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

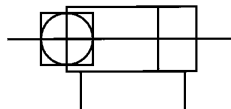
* For details about auto switches with pre-wired connector, refer to pages 1328 and 1329 in Best Pneumatics No. 2.

Series CQ2KW



Symbol

Non-rotating rod,
Double acting



Made to Order

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

Symbol	Specifications
-XB10	Intermediate stroke (Exclusive body type)
-X633	Intermediate stroke of double rod cylinder, ø125 to ø160 only

* -X633: Intermediate stroke in 5 mm intervals only

Specifications

Bore size (mm)	12	16	20	25	32	40	50	63
Action	Double acting, Double 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)	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77
	0.043 Note 1)							
Stroke length tolerance	+1.0 mm Note 2) 0							
Rod non-rotating accuracy	±2°	±1°			±0.8°			

* ø12 with auto switch: With rubber bumper (Standard)

Note 1) For cylinders with rubber bumper (ø12 with auto switch only)

Note 2) Stroke length tolerance does not include the amount of bumper change.

Standard Strokes

Bore size	Standard stroke (mm)
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	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. 92)	
Description	Strokes in 5 mm intervals are available by installing a spacer in the standard stroke cylinder.	
Stroke range	Bore size	Stroke range
	32 to 63	55 to 95
Example	Part no.: CQ2KWB50-65DZ CQ2KWB50-75DZ with 10 mm width spacer inside The B dimension is 125.5 mm.	

Type

Bore size (mm)			12	16	20	25	32	40	50	63	
Pneumatic	Mounting	Through-hole (Standard)	●	●	●	●	●	●	●	●	
		Both ends tapped	—	—	—	—	—	●	●	●	
	Built-in magnet		●	●	●	●	●	●	●	●	
	Piping	Pipe thread	—	M5 x 0.8	M5 x 0.8	M5 x 0.8	M5 x 0.8	Note 1) M5 x 0.8 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		—	—	—	—	ø6/4 Note 2)	ø6/4	ø8/6	ø8/6
	Rod end male thread		●	●	●	●	●	●	●	●	●

Note 1) ø32 without auto switch: M5 x 0.8 is used for 5 mm stroke piping dimension.

Thus, do not enter a symbol for the port thread type.

Note 2) The dimensions of the ø32-5 mm stroke with built-in one-touch fittings are the same as those of the 10 mm stroke cylinder tube.

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.