Compact Cylinder: Standard Type
Single Acting, Single Rod
Series CQ2
ø12, ø16, ø20, ø25, ø32, ø40, ø50

How to Order

CQ2 **B** **20** **□** – **10** **S** **□** – **□**

With auto switch **CDQ2** **B** **20** **□** – **10** **S** **□** – **M9BW** **□** – **□**

With auto switch
(Built-in magnet)

Mounting style

B	Through-hole (Standard)	**F**	Rod side flange style
A	Both ends tapped style	**G**	Head side flange style
L	Foot style	**D**	Double clevis style

∗Mounting brackets are shipped together, (but not assembled).
∗Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for CQ2" on pages 642 and 645.

Bore size

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

Port thread type

Nil	M thread	ø12 to ø25
	Rc	ø32 to ø50
TN	NPT	
TF	G	
F	Built-in One-touch fittings Note)	

Note) Bore sizes available w/ One-touch fittings are ø32 to ø50.
∗ For the cylinders without an auto switch, M threads are compatible only for ø32 with 5 strokes.

Action

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

Cylinder stroke (mm)
For "Standard Stroke" and "Manufacture of intermediate of Stroke", refer to page 640.

Auto switch

Nil	Without auto switch

∗ Refer to the table below for the applicable auto switch model.

Body option

Nil	Standard
F	With boss in head side
M	Rod end male thread

∗ Combination of body option ("FM") is available.

Number of auto switches

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

Made to Order
(Refer to page 640 for details.)

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) CDQ2L32-10S

Applicable Auto Switch/Refer to pages 1263 to 1371 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model: Perpendicular	Auto switch model: In-line	Lead wire length (m): 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)	Pre-wired connector	Applicable load	
Solid state switch	——	Grommet	Yes	3-wire (NPN)	5V, 12V	—	**M9NV**	**M9N**	●	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)			**M9PV**	**M9P**	●	●	●	○	—	○		
				2-wire	12V		**M9BV**	**M9B**	●	●	●	○	—	○	—	
		Connector					**J79C**	—	●	—	●	●	●	—		
	Diagnostic indication (2-color indication)	Grommet		3-wire (NPN)	5V, 12V	—	**M9NWV**	**M9NW**	●	●	●	○	—	○	IC circuit	
				3-wire (PNP)			**M9PWV**	**M9PW**	●	●	●	○	—	○		
				2-wire	12V		**M9BWV**	**M9BW**	●	●	●	○	—	○	—	
	Water resistant (2-color indication)			3-wire (NPN)	5V, 12V		**M9NAV**	**M9NA**	○	○	●	○	—	○	IC circuit	
				3-wire (PNP)			**M9PAV**	**M9PA**	○	○	●	○	—	○		
				2-wire	12V		**M9BAV**	**M9BA**	○	○	●	○	—	○	—	
	With diagnostic output (2-color indication)			4-wire	5V,12V		—	**F79F**	●	—	●	○	—	○	IC circuit	
Reed switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5V	—	**A96V**	**A96**	●	—	●	—	—	—	IC circuit	—
				2-wire		—	200V	**A72**	**A72H**	●	—	●	—	—	—	—	Relay, PLC
			No		24V	12V	100V	**A93V**	**A93**	●	—	●	—	—	—		
						5V,12V	100V or less	**A90V**	**A90**	●	—	●	—	—	—	IC circuit	
		Connector	Yes			12V	—	**A73C**	—	●	—	●	●	●	—	—	
			No			5V,12V	24V or less	**A80C**	—	●	—	●	●	●	—	IC circuit	
	Diagnostic indication (2-color indication)	Grommet	Yes			—	—	**A79W**	—	●	—	●	—	—	—	—	

∗ 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 769.
∗ For details about auto switches with pre-wired connector, refer to pages 1328 and 1329.
∗ When D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V)L types with ø32 to ø50 are mounted on a side other than the port side, order auto switch mounting brackets separately. Refer to page 768 for details.

Specifications

Bore size	12	16	20	25	32	40	50
Action	Single 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	$^{+1.0\text{mm}}_{0}$ Note)						

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

Standard Stroke

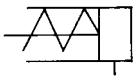
Bore size (mm)	Standard stroke (mm)
12, 16, 20 25, 32, 40	5, 10
50	10, 20

Manufacture of Intermediate Stroke
(Single acting, Spring return type is excluded.)

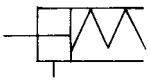
Description	Spacer is installed in the standard stroke body.	
Part no.	Refer to "How to Order" for the standard model no. on page 639.	
Description	Dealing with the stroke by the 1 mm interval is available by installing spacer with standard stroke cylinder.	
Stroke range	Bore size	Stroke range
	12 to 40	1 to 9
	50	1 to 19
Example	Part no.: CQ2B20-3T CQ2B20-5T with 2 mm width spacer inside. B dimension is 24.5 mm.	

JIS Symbol

Single acting, Spring return



Single acting, Spring extend



Made to Order Specifications
(For details, refer to pages 1373 to 1565.)

Symbol	Specifications
—XA□	Change of rod end shape spring retun type only
—XB10	Intermediate stroke (Using exclusive body) spring retun type only
—XC6	Retaining ring, piston rod, rod end nut made of stainless steel
—XC26	Double clevis pins include copper pins and a flat washer.
—XC27	Double clevis pins and Double knuckle pins made of stainless steel (Stainless steel 304)
—XC36	With boss in rod side
—X144	Change of port location, ø12, to 25 only
—X202	Same overall length dimension as Series CQ1, Except ø12, 16, 25
—X203	Same L dimension from rod cover as Series CQ1, ø20, 32 only
—X271	Fluororubber seals
—X1876	With concave shape end boss on the cylinder tube head side

Refer to pages 760 to 769 for the specifications of cylinders with auto switches.

· Minimum auto switch mounting stroke
· Proper auto switch mounting position (detection at stroke end) and height
· Operating range
· Switch mounting bracket: Part no.

Type

Bore size (mm)				12	16	20	25	32	40	50
Pneumatic	Mounting	Through-hole (Standard)		●	●	●	●	●	●	●
		Both ends tapped style		●	●	●	●	●	●	●
	Built-in magnet			●	●	●	●	●	●	●
	Piping	Screw-in type	—	M5 × 0.8	M5 × 0.8	M5 × 0.8	M5 × 0.8	M5 × 0.8 (1) Rc 1/8	Rc 1/8	Rc 1/4
			TN	—	—	—	—	NPT 1/8	NPT 1/8	NPT 1/4
			TF	—	—	—	—	G 1/8	G 1/8	G 1/4
		Built-in One-touch fittings (2)		—	—	—	—	ø6/4	ø6/4	ø8/6
	Rod end male thread			●	●	●	●	●	●	●
	With boss in head side			●	●	●	●	●	●	●

Note 1) For a ø32 cylinder without an auto switch, M5 x 0.8 is used for 5-stroke piping dimension. Thus, do not enter a symbol for the port tread type.
Note 2) One-touch fittings cannot be replaced.