

# Smooth Cylinder Series CQ2Y

ø32, ø40, ø50, ø63, ø80, ø100

Specifications and auto switch information not provided below are the same as those of the anti-lateral load type of Series CQ2□S.

## How to Order

**Standard**

**CQ2Y** B 32 □ 30 D C □

**With auto switch**

**CDQ2Y** B 32 □ 30 D C □ F9BW S

**Mounting**

<b>B</b>	Through-hole (Standard)
<b>A</b>	Both ends tapped
<b>L</b>	Foot
<b>F</b>	Front flange
<b>G</b>	Rear flange
<b>D</b>	Double clevis

**Bore size**

<b>32</b>	32 mm
<b>40</b>	40 mm
<b>50</b>	50 mm
<b>63</b>	63 mm
<b>80</b>	80 mm
<b>100</b>	100 mm

**Port thread type**

<b>Nil</b>	Rc
<b>TN</b>	NPT
<b>TF</b>	G

**Cylinder stroke (mm)**  
→ Refer to Standard stroke table on page 5.

**Action**

<b>D</b>	Double acting
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**Cushion**

<b>C</b>	Rubber bumper
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**Body option**

<b>Nil</b>	Standard (Rod end female thread)
<b>M</b>	Rod end male thread

**With auto switch (Built-in magnet)**

**Number of auto switches**

<b>Nil</b>	2 pcs.
<b>S</b>	1 pc.
<b>n</b>	n pcs.

**Auto switch**

<b>Nil</b>	Without auto switch (Built-in magnet)
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\* Please select the applicable auto switch model from the table below.  
\* Auto switches are not mounted and are supplied loose at the time of shipment (except for D-P5DWL).

## Applicable Auto Switches /

Type	Special function	Electrical entry	Indicator	Wiring (Output)	Load voltage		Rail mounting		Direct mounting		Lead wire (m)*				Pre-wired connector	Applicable load					
					DC	AC	ø12 to ø100		ø32 to ø100		0.5 (Nil)	3 (L)	5 (Z)	None (N)		IC	Relay, PLC				
							Perp.	In-line	Perp.	In-line											
Reed switch	-	Grommet	Yes	3-wire (Equiv. NPN)	-	5 V	-	-	A76H	A96V	A96	●	●	-	-	-	IC	-			
					-	-	200 V	A72	A72H	-	-	●	●	-	-	-	-	-	-	-	
				2-wire	24 V	12 V	100 V	A73	A73H	-	-	●	●	●	-	-	-	-	-	-	Relay, PLC
					-	12 V	-	A73C	-	-	-	●	●	●	●	-	-	-	-	-	-
Diagnostic indication (2-color)	Grommet	Yes	2-wire	-	-	-	-	A79W	-	-	-	●	●	-	-	-	-				
Solid state switch	-	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	-	F7NV	F79	F9NV	F9N	●	●	○	-	○	-	IC			
				3-wire (PNP)				F7PV	F79	F9PV	F9P	●	●	○	-	○	-	-	-	-	
		2-wire		F7BV				J79	F9BV	F9B	●	●	○	-	○	-	-	-	-	-	-
				J79C				-	-	-	●	●	●	●	-	-	-	-	-	-	-
	Grommet	3-wire (NPN)	5 V, 12 V	-	-	-	M9N	●	●	-	-	-	-	-	○	-	-	IC			
		3-wire (PNP)		-	-	-	M9P	●	●	-	-	-	-	-	-	○	-	-			
	2-wire	-	12 V	-	-	-	M9B	●	●	-	-	-	-	-	○	-	-	-			
		Diagnostic indication (2-color)		F7N WV	F79 W	F9N WV	F9N W	●	●	○	-	○	-	-	-	○	-	-	IC		
	Water resistant (2-color)	Grommet	Yes	2-wire	24 V	12 V	-	-	F7B WV	J79 W	F9B WV	F9B W	●	●	○	-	○	-	-		
									-	F7B A	-	F9B A	-	●	○	-	○	-	-	-	-
	With diagnostic output (2-color)	Grommet	Yes	4-wire (NPN)	24 V	12 V	-	-	F7B A V	-	-	-	-	●	○	-	○	-	IC		
									-	F79 F	-	-	-	●	●	○	-	○	-	-	-
Latch with diagnostic output (2-color)	Grommet	Yes	2-wire	24 V	12 V	-	-	-	F7L F	-	-	●	●	○	-	○	-	-			
								-	P5D W	-	-	-	-	●	●	-	-	-	○	-	-
Magnetic field resistant (2-color)	Grommet	Yes	2-wire	24 V	12 V	-	-	-	-	-	-	-	●	●	-	○	-	-			
								-	-	-	-	-	-	-	-	-	-	-	-	-	-

\* Lead wire length 0.5 m ..... Nil (Example) A73C  
 3 m ..... L (Example) A73CL  
 5 m ..... Z (Example) A73CZ  
 None ..... N (Example) A73CN

\* ○: Manufactured upon receipt of order.

D-P5DWL is available for ø40 to ø100.

In addition to the models in the above table, there are some other auto switches that are applicable. For more information, please consult SMC.

# Series CQ2Y



## Specifications

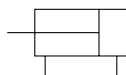
Model	Pneumatic (Non-lube)
Fluid	Air
Proof pressure	1.05 MPa
Maximum operating pressure	0.7 MPa
Ambient and fluid temperature	Without auto switch -10 to 70°C (with no freezing) With auto switch -10 to 60°C (with no freezing)
Cushion	Rubber bumper (Standard)
Rod end thread	Female thread
Rod end thread tolerance	JIS class 2
Stroke length tolerance	$\begin{matrix} +1.0 \\ 0 \end{matrix}$
Mounting	Through-hole
Operating piston speed range	5 to 500 mm/s
Allowable leakage rate	0.5 l/min (ANR) or less

## Minimum Operating Pressure

Unit: MPa

Bore size (mm)	32	40	50	63	80	100
Minimum operating pressure	0.02			0.01		

JIS symbol



## Standard Stroke Table

Bore size (mm)	Standard stroke (mm)
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

## Replacement Parts: Seal Kits

Bore size (mm)	Kit No.	Contents
32	CQ2Y32-PS	
40	CQ2Y40-PS	Piston seal 1 pc.
50	CQ2Y50-PS	Rod seal 1 pc.
63	CQ2Y63-PS	Gasket 1 pc.
80	CQ2Y80-PS	Grease pack (10 g) 1 pc.
100	CQ2Y100-PS	

When only grease for maintenance is necessary, please order by the following part numbers.

**Grease pack** GR-L-005 (5 g)  
GR-L-010 (10 g)  
GR-L-150 (150 g)

## Theoretical Output Table



Unit: N

Bore size (mm)	Operating direction	Operating pressure (MPa)		
		0.3	0.5	0.7
32	IN	181	302	422
	OUT	241	402	563
40	IN	317	528	739
	OUT	377	628	880
50	IN	495	825	1155
	OUT	589	982	1374
63	IN	841	1402	1962
	OUT	935	1559	2182
80	IN	1361	2268	3175
	OUT	1508	2513	3519
100	IN	2144	3574	5003
	OUT	2356	3927	5498

## Intermediate Strokes

Method	Installation of spacer on standard stroke body.				
Model no.	Refer to page 4 for standard model no.				
Standard stroke	Method	Intermediate strokes at 1 mm intervals are available by using spacers with standard stroke cylinders.			
	Stroke range	<table border="1"> <tr> <th>Bore size (mm)</th> <th>Stroke range (mm)</th> </tr> <tr> <td>32 to 100</td> <td>1 to 99</td> </tr> </table>	Bore size (mm)	Stroke range (mm)	32 to 100
Bore size (mm)	Stroke range (mm)				
32 to 100	1 to 99				
Example	Model no.: CQ2YB50-57DC CQ2YB50-75DC with 18 mm width spacer inside. B dimension is 125.5 mm. Calculation: $\varnothing 50$ , B dimension 50.5 mm (without switch) $50.5 \text{ (B dimension)} + 75 \text{ (st)} = 125.5 \text{ (mm)}$				

# Smooth Cylinder Series CQ2Y

Mounting bracket dimensions are the same as those of the anti-lateral load type of Series CQ2□S.

**Dimensions/ø32 to ø50** (Types with auto switch and without auto switch only differ in the A and B dimensions. Please refer to the table below.)

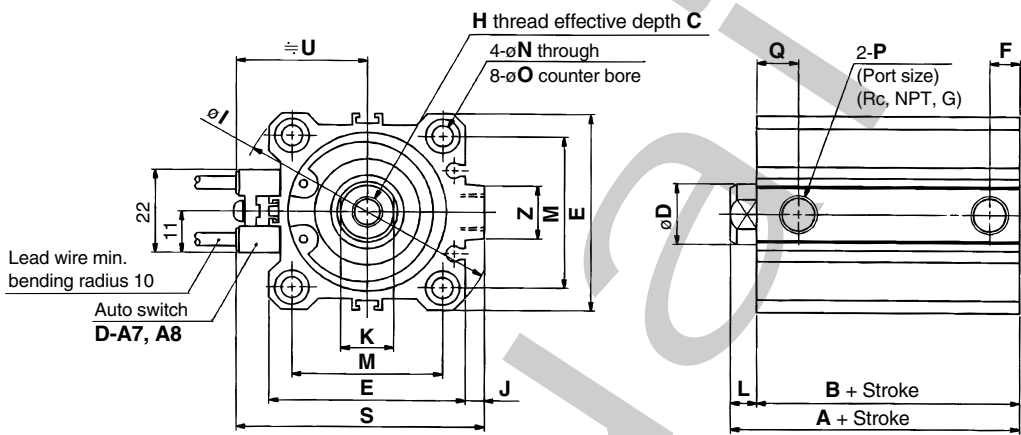
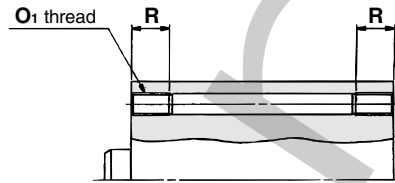
## Through-hole/CQ2YB, CDQ2YB

## Both ends tapped/CQ2YA, CDQ2YA

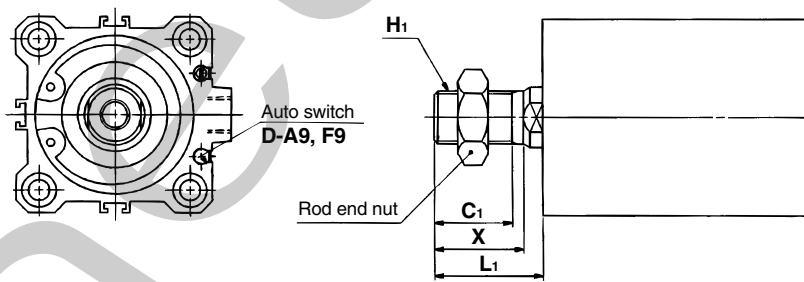
### CDQ2YA

Both ends tapped (mm)

Bore size (mm)	O <sub>1</sub>	R
32	M6 x 1.0	10
40	M6 x 1.0	10
50	M8 x 1.25	14



## Rod end male thread



Rod end male thread (mm)

Bore size (mm)	C <sub>1</sub>	X	H <sub>1</sub>	L <sub>1</sub>
32	20.5	23.5	M14 x 1.5	28.5
40	20.5	23.5	M14 x 1.5	28.5
50	26	28.5	M18 x 1.5	33.5

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	D	E	F	H	I	J	K	L	M	N	O	P	Q	S	U	Z
		A	B	A	B																	
32	5 to 50	40	33	50	43	13	16	45	7.5	M8 x 1.25	60	4.5	14	7	34	5.5	9 depth 7	1/8	10.5	58.5	31.5	14
	75, 100	50	43																			
40	5 to 50	46.5	39.5	56.5	49.5	13	16	52	8	M8 x 1.25	69	5	14	7	40	5.5	9 depth 7	1/8	11	66	35	14
	75, 100	56.5	49.5																			
50	10 to 50	48.5	40.5	58.5	50.5	15	20	64	10.5	M10 x 1.5	86	7	17	8	50	6.6	11 depth 8	1/4	10.5	80	41	19
	75, 100	58.5	50.5																			

# Series CQ2Y

Mounting bracket dimensions are the same as those of the anti-lateral load type of Series CQ2□S.

## Dimensions/ø63 to ø100

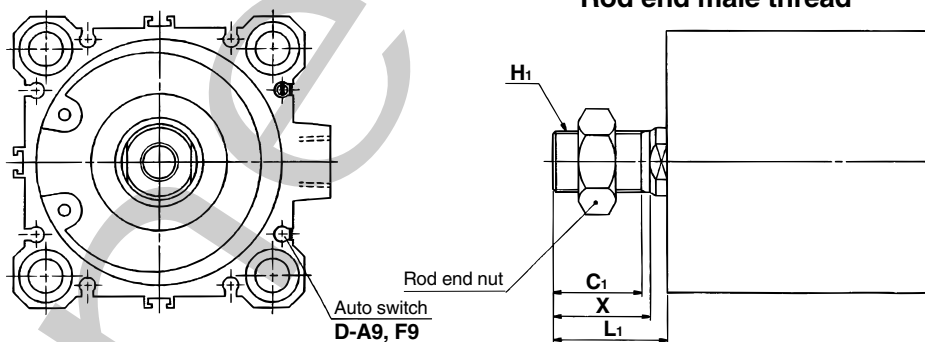
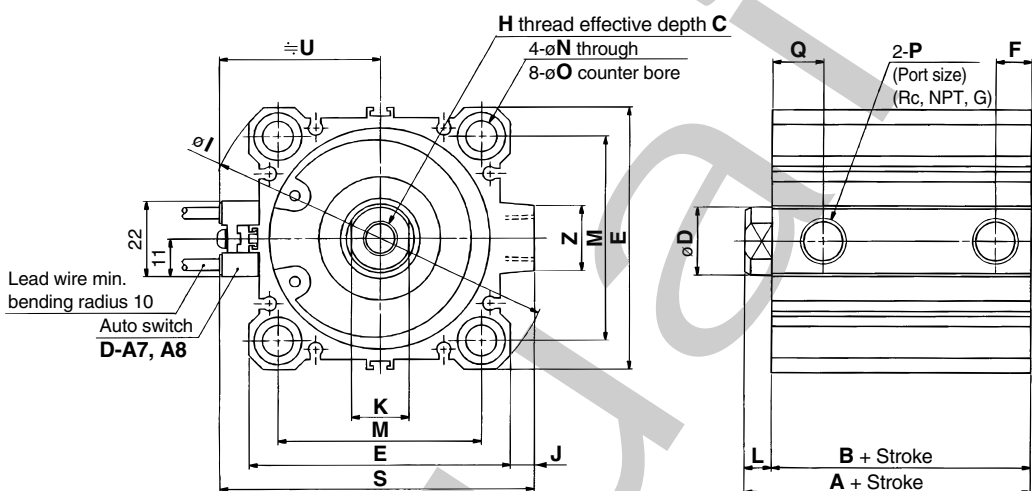
(Types with auto switch and without auto switch only differ in the A and B dimensions. Please refer to the table below.)

### Through-hole/CQ2YB, CDQ2YB

### Both ends tapped/CQ2YA, CDQ2YA

#### Both ends tapped (mm)

Bore size (mm)	O <sub>1</sub>	R
63	M10 x 1.5	18
80	M12 x 1.75	22
100	M12 x 1.75	22



#### Rod end male thread (mm)

Bore size (mm)	C <sub>1</sub>	X	H <sub>1</sub>	L <sub>1</sub>
63	26	28.5	M18 x 1.5	33.5
80	32.5	35.5	M22 x 1.5	43.5
100	32.5	35.5	M26 x 1.5	43.5

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	D	E	F	H	I	J	K	L	M	N	O	P	Q	S	U	Z
		A	B	A	B																	
63	10 to 50	54	46	64	56	15	20	77	10.5	M10 x 1.5	103	7	17	8	60	9	14 depth 10.5	1/4	15	93	47.5	19
	75, 100	64	56																			
80	10 to 50	63.5	53.5	73.5	63.5	21	25	98	12.5	M16 x 2.0	132	6	22	10	77	11	17.5 depth 13.5	3/8	16	112.5	57.5	26
	75, 100	73.5	63.5																			
100	10 to 50	75	63	85	73	27	30	117	13	M20 x 2.5	156	6.5	27	12	94	11	17.5 depth 13.5	3/8	23	132.5	67.5	26
	75, 100	85	73																			