

# Compact Cylinder: Water Resistant Double Acting, Single Rod

## CQ2 Series

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

### How to Order

Without auto switch  
ø20, ø25

CQ2 **B** **20** **R** - **30** **D** -

Without auto switch  
ø32 to ø100

CQ2 **B** **32** **R** - **30** **D** **Z** -

With auto switch

CDQ2 **B** **32** **R** - **30** **D** **Z** - **M9BA** -

With auto switch  
(Built-in magnet)

Mounting

<b>B</b>	Through-hole (Standard)	(ø20 to ø100)
<b>A</b>	Both ends tapped	
<b>L</b>	Foot	
<b>LC</b>	Compact foot	(ø40 to ø100)
<b>F</b>	Rod flange	
<b>G</b>	Head flange	
<b>D</b>	Double clevis	

\* Mounting brackets are shipped together (but not assembled).  
\* Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolts for CQ2" on page 951 and "Mounting Bolts for CDQ2" on page 953.

Bore size

<b>20</b>	20mm	<b>50</b>	50mm
<b>25</b>	25mm	<b>63</b>	63mm
<b>32</b>	32mm	<b>80</b>	80mm
<b>40</b>	40mm	<b>100</b>	100mm

Port thread type

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

### 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) CDQ2B32R-25DMZ

Number of auto switches

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

Made to Order  
Refer to the next page for details.

Auto switch

<b>Nil</b>	Without auto switch
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\* Refer to the below table for applicable auto switches.

Auto switch mounting groove

<b>Z</b>	ø20 to ø25	2 surfaces
	ø32 to ø100	4 surfaces

Body option

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

Action

<b>D</b>	Double acting
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Cylinder stroke (mm)

For "Standard Strokes", refer to page 950.

Water resistant cylinder

<b>R</b>	NBR seal (Nitrile rubber)
<b>V</b>	FKM seal (Fluororubber)

### Applicable Auto Switches

Refer to pages 1575 to 1701 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)		IC circuit	Relay, PLC	
Solid state auto switch	Water resistant (2-color indicator)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	<b>M9NAV</b>	<b>M9NA</b>	○	○	●	○			○
				3-wire (PNP)				<b>M9PAV</b>	<b>M9PA</b>	○	○	●	○	○		
				2-wire				<b>M9BAV</b>	<b>M9BA</b>	○	○	●	○	○		

\* Lead wire length symbols: 0.5 m ..... Nil (Example) M9BA  
1 m ..... M (Example) M9BAL  
3 m ..... L (Example) M9BAL  
5 m ..... Z (Example) M9BAZ

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

\* For details about auto switches with pre-wired connector, refer to pages 1648 and 1649 in Best Pneumatics No. 2.

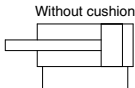
CUJ  
CU  
CQS  
JCC  
CQ2  
RQ  
CQM  
CQU  
MU

D-□  
-X□  
Technical Data

# CQ2 Series



## Symbol



**Made to Order**  
[Click here for details](#)

Symbol	Specifications
-XC6(A)	Piston rod/Retaining ring/Rod end nut material: Stainless steel

Refer to pages 964 to 970 for the specifications of cylinders with autoswitches.

- 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.

## Moisture Control Tube IDK Series



When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.

Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to [the IDK series in the Best Pneumatics No. 6](#).

## Specifications

Bore size (mm)	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	0.08 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)	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
Stroke length tolerance	+1.0 mm 0							

## Standard Strokes

Bore size	Standard stroke (mm)
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. 949)	
Description	Strokes in 1 mm increments are available by installing a spacer in the standard stroke cylinder.	
Stroke range	Bore size	Stroke range
	20, 25	1 to 49
	32 to 100	1 to 99
Example	Part no.: CQ2B50R-57DZ CQ2B50R-75DZ with 18 mm width spacer inside The B dimension is 115.5 mm.	

## Type

Bore size (mm)		20	25	32	40	50	63	80	100	
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 Rc1/8	Rc1/8	Rc1/4	Rc1/4	Rc3/8
			TN	—	—	NPT1/8	NPT1/8	NPT1/4	NPT1/4	NPT3/8
			TF	—	—	G1/8	G1/8	G1/4	G1/4	G3/8
	Rod end male thread		●	●	●	●	●	●	●	

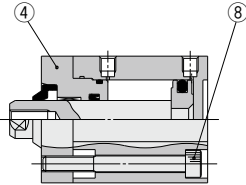
Note) ø32 without auto switch: M5 x 0.8 is used for 5 mm strokekeeping dimension.

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

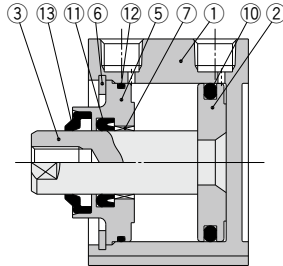


## Construction

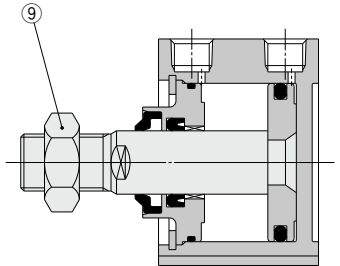
Standard (ø20 to ø32)



Standard (ø40 to ø100)



Rod end male thread



### Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	
3	Piston rod	Stainless steel	ø32 to ø25
		Carbon steel	ø32 to ø100, Hard chrome plated
4	Rod cover	Aluminum alloy	ø20 to ø32, Anodized
5	Collar	Aluminum alloy	ø40 to ø100, Anodized
6	Retaining ring	Carbon tool steel	ø40 to ø100, Phosphate coated
7	Bushing	Oil-impregnated sintered alloy	ø20, ø25
		Bearing alloy	ø32 to ø100
8	Hexagon socket head cap screw	Chromium molybdenum steel	ø20 to ø32, Zinc chromated
9	Rod end nut	Carbon steel	Zinc chromated
10	Piston seal	R: NBR	
		V: FKM	
11	Rod seal	R: NBR	
		V: FKM	
12	Tube gasket	R: NBR	
		V: FKM	
13	Rod scraper	R: NBR	
		V: FKM	

\* R: NBR seal (Nitrile rubber) V: FKM seal (Fluororubber)

### Replacement Parts/Seal Kit

Bore size (mm)	Kit no.		Contents
	R: NBR	V: FKM	
20	CQ2B20R-PS	CQ2B20V-PS	Kits include items 10, 11, 12 from the table.
25	CQ2B25R-PS	CQ2B25V-PS	
32	CQ2B32R-PS	CQ2B32V-PS	
40	CQ2B40R-PS	CQ2B40V-PS	
50	CQ2B50R-PS	CQ2B50V-PS	
63	CQ2B63R-PS	CQ2B63V-PS	
80	CQ2B80R-PS	CQ2B80V-PS	
100	CQ2B100R-PS	CQ2B100V-PS	

\* Seal kit includes 10, 11, 12. Order the seal kit, based on each bore size.

\* A rod scraper cannot be replaced independently. It is press-fitted, so replace it not only with a rod cover and collar, but also with a rod cover assembly and collar assembly. Contact SMC separately for how to order them.

\* Since the seal kit does not include a grease pack, order it separately.

**Grease pack part no.:** GR-S-010 (10 g)

### Retaining Ring Installation/Removal

#### ⚠ Caution

- For installation and removal, use an appropriate pair of pliers (tool for installing a type C retaining ring).
- Even if a proper plier (tool for installing a type C retaining ring) is used, it is likely to inflict damage to a human body or peripheral equipment, as a retaining ring may be flown out of the tip of a plier (tool for installing a type C retaining ring). Be much careful with the popping of a retaining ring. Besides, be certain that a retaining ring is placed firmly into the groove of rod cover before supplying air at the time of installation.

### Handling Precautions

#### ⚠ Caution

- Before installing a cylinder, thoroughly flush out the piping to prevent dust or cutting chips from entering the cylinder. For hydraulic cylinders, use the air bleed valve to release the air inside the cylinder.
- Eccentric loads applied to the piston rod dramatically shorten the service life. Use the piston rod by always applying a load in an axial direction.
- Make sure not to scratch or gouge the sliding portion of the piston rod, as this could damage the seals and lead to leakage.

### Handling Precautions

#### ⚠ Caution

- When the cylinder is exposed to dust or sand, or is used in a place where liquid from the piston rod splashes, use the heavy-duty scraper (-XC4) type.
- If there is a possibility of liquid splashing on cylinder fittings when using an air cylinder, use insert fittings, self-align fittings, steel piping, etc. Consider the compatibility of liquid components and piping materials before using.
- When selecting seals, generally use NBR (nitrile rubber) seals with liquids that do not contain chlorine and sulfur, and use FKM (fluoro rubber) seals with liquids that contain chlorine and sulfur. However, depending on the type and the brand of liquid (such as coolant liquid) that splashes on the cylinder, the operating life of seals may be reduced dramatically.

#### Examples of coolant liquid

Shimiron, PA-O-5 (Daido Chemical Industry Co., Ltd.) (NBR seals)  
 Noritake Cool, AFG-S (Noritake Co., Ltd.) (NBR seals)  
 Yushiroken, S-46S (Yushiro Chemical Industry Co., Ltd.) (NBR seals)  
 Yushiroken, EC-50-T3 (Yushiro Chemical Industry Co., Ltd.) (NBR seals)  
 Yushiron Oil, No. 23 (Yushiro Chemical Industry Co., Ltd.) (FKM seals)  
 Daphne Cut, Hs-1 (Idemitsu Kosan Co., Ltd.) (FKM seals)

# Water Resistant: Double Acting, Single Rod CDQ2 Series With Auto Switch



## Weight

### Weight (g)

Stroke																
Bore size	5	10	15	20	25	30	35	40	45	50	75	100				
ø20	130	142	155	167	179	191	204	216	228	240	—	—				
ø25	182	197	213	228	244	259	275	290	306	320	—	—				
ø32	263	284	305	327	348	369	390	412	433	454	561	668				
ø40	293	315	336	358	379	401	422	444	465	487	598	710				
ø50	—	489	522	555	588	620	653	687	720	753	925	1097				
ø63	—	700	738	776	814	852	890	928	966	1004	1201	1397				
ø80	—	1219	1279	1340	1400	1460	1520	1581	1641	1701	1998	2295				
ø100	—	2061	2142	2222	2302	2383	2463	2543	2624	2704	3112	3520				

### Additional Weight (g)

Bore size (mm)		20	25	32	40	50	63	80	100
Both ends tapped		—	—	—	6	6	19	45	45
Rod end male thread	Male thread	6	12	26	27	53	53	120	175
	Nut	4	8	17	17	32	32	49	116
Foot (Including mounting bolts)		—	—	—	154	243	320	690	1057
Rod flange (Including mounting bolts)		—	—	—	214	373	559	1056	1365
Head flange (Including mounting bolts)		—	—	—	198	348	534	1017	1309
Double clevis (Including pin, retaining rings, bolts)		—	—	—	196	393	554	1109	1887

Calculation: (Example) **CDQ2D40R-20DMZ**  
 • Basic weight: CDQ2B40R-20DZ ..... 358 g  
 • Additional weight: Both ends tapped ..... 6 g  
 Rod end male thread ... 44 g  
 Double clevis ..... 196 g  
 604 g

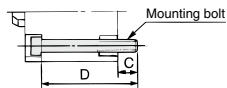
Add each weight of auto switches when auto switches are mounted.

## Mounting Bolt for CDQ2B/With Auto Switch

Mounting method: Mounting bolt for through-hole mounting of the CDQ2B is available as an option. Refer to the following for ordering procedures. Order the actual number of bolts that will be used.

Example) CQ-M5 x 50L 2 pcs.

Material: Chromium molybdenum steel  
 Surface treatment: Zinc chromated



Cylinder model	C	D	Mounting bolt part no.
CDQ2B20 <sup>ø</sup> -5DZ	10.5	50	CQ-M5 x 50L
		-10DZ	55 x 55L
		-15DZ	60 x 60L
		-20DZ	65 x 65L
		-25DZ	70 x 70L
		-30DZ	75 x 75L
		-35DZ	80 x 80L
		-40DZ	85 x 85L
		-45DZ	90 x 90L
-50DZ	95 x 95L		
CDQ2B25 <sup>ø</sup> -5DZ	9.5	50	CQ-M5 x 50L
		-10DZ	55 x 55L
		-15DZ	60 x 60L
		-20DZ	65 x 65L
		-25DZ	70 x 70L
		-30DZ	75 x 75L
		-35DZ	80 x 80L
		-40DZ	85 x 85L
		-45DZ	90 x 90L
-50DZ	95 x 95L		
CDQ2B32 <sup>ø</sup> -5DZ	9	50	CQ-M5 x 50L
		-10DZ	55 x 55L
		-15DZ	60 x 60L
		-20DZ	65 x 65L
		-25DZ	70 x 70L
		-30DZ	75 x 75L
		-35DZ	80 x 80L
		-40DZ	85 x 85L
		-45DZ	90 x 90L
-50DZ	95 x 95L		
-75DZ	120 x 120L		
-100DZ	145 x 145L		

Cylinder model	C	D	Mounting bolt part no.
CDQ2B40 <sup>ø</sup> -5DZ	7.5	45	CQ-M5 x 45L
		-10DZ	50 x 50L
		-15DZ	55 x 55L
		-20DZ	60 x 60L
		-25DZ	65 x 65L
		-30DZ	70 x 70L
		-35DZ	75 x 75L
		-40DZ	80 x 80L
		-45DZ	85 x 85L
-50DZ	90 x 90L		
-75DZ	115 x 115L		
-100DZ	140 x 140L		
CDQ2B50 <sup>ø</sup> -10DZ	12.5	55	CQ-M6 x 55L
		-15DZ	60 x 60L
		-20DZ	65 x 65L
		-25DZ	70 x 70L
		-30DZ	75 x 75L
		-35DZ	80 x 80L
		-40DZ	85 x 85L
		-45DZ	90 x 90L
		-50DZ	95 x 95L
-75DZ	120 x 120L		
-100DZ	145 x 145L		
CDQ2B63 <sup>ø</sup> -10DZ	14.5	60	CQ-M8 x 60L
		-15DZ	65 x 65L
		-20DZ	70 x 70L
		-25DZ	75 x 75L
		-30DZ	80 x 80L
		-35DZ	85 x 85L
		-40DZ	90 x 90L
		-45DZ	95 x 95L
		-50DZ	100 x 100L
-75DZ	125 x 125L		
-100DZ	150 x 150L		

Cylinder model	C	D	Mounting bolt part no.
CDQ2B80 <sup>ø</sup> -10DZ	15	65	CQ-M10 x 65L
		-15DZ	70 x 70L
		-20DZ	75 x 75L
		-25DZ	80 x 80L
		-30DZ	85 x 85L
		-35DZ	90 x 90L
		-40DZ	95 x 95L
		-45DZ	100 x 100L
		-50DZ	105 x 105L
-75DZ	130 x 130L		
-100DZ	155 x 155L		
CDQ2B100 <sup>ø</sup> -10DZ	15.5	75	CQ-M10 x 75L
		-15DZ	80 x 80L
		-20DZ	85 x 85L
		-25DZ	90 x 90L
		-30DZ	95 x 95L
		-35DZ	100 x 100L
		-40DZ	105 x 105L
		-45DZ	110 x 110L
		-50DZ	115 x 115L
-75DZ	140 x 140L		
-100DZ	165 x 165L		

CUJ

CU

CQS

JCQ

CDQ2

RQ

CQM

CQU

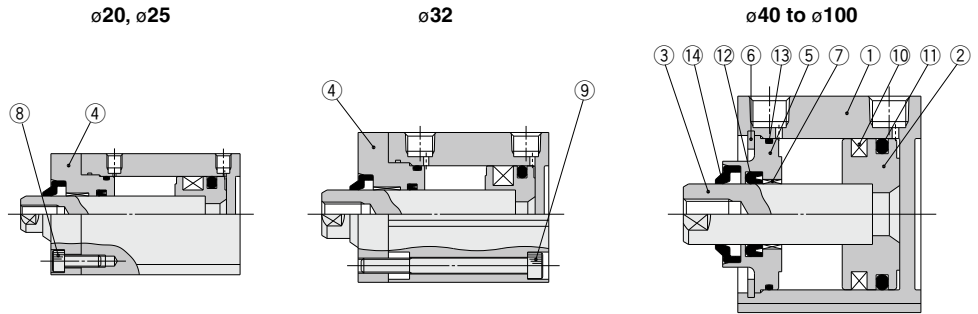
MU

D-□

-X□

Technical Data

## Construction



### Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	
3	Piston rod	Stainless steel	ø20 to ø25
		Carbon steel	ø32 to ø100, Hard chrome plated
4	Rod cover	Aluminum alloy	ø20 to ø32, Anodized
5	Collar	Aluminum alloy	ø40 to ø100, Anodized
6	Retaining ring	Carbon tool steel	Phosphate coated
7	Bushing	Oil-impregnated sintered alloy	ø20, ø25
		Bearing alloy	ø32 to ø100
8	Hexagon socket head cap screw	Chromium molybdenum steel	ø20 to ø25, Zinc chromated
9	Hexagon socket head cap screw	Chromium molybdenum steel	ø32, Zinc chromated
10	Magnet	—	
11	Piston seal	R: NBR	
		V: FKM	
12	Rod seal	R: NBR	
		V: FKM	
13	Tube gasket	R: NBR	
		V: FKM	
14	Rod scraper	R: NBR	
		V: FKM	

\* R: NBR seal (Nitrile rubber)

V: FKM seal (Fluororubber)

### Replacement Parts/Seal Kit

Bore size (mm)	Kit no.		Contents
	R: NBR	V: FKM	
20	CQ2B20R-PS	CQ2B20V-PS	Kits include items ⑪, ⑫, ⑬ from the table.
25	CQ2B25R-PS	CQ2B25V-PS	
32	CQ2B32R-PS	CQ2B32V-PS	
40	CQ2B40R-PS	CQ2B40V-PS	
50	CQ2B50R-PS	CQ2B50V-PS	
63	CQ2B63R-PS	CQ2B63V-PS	
80	CQ2B80R-PS	CQ2B80V-PS	
100	CQ2B100R-PS	CQ2B100V-PS	

\* Seal kit includes ⑪, ⑫, ⑬. Order the seal kit, based on each bore size.

\* A rod scraper cannot be replaced independently. It is press-fitted, so replace it not only with a rod cover and collar, but also with a rod cover assembly and collar assembly. Contact SMC separately for how to order them.

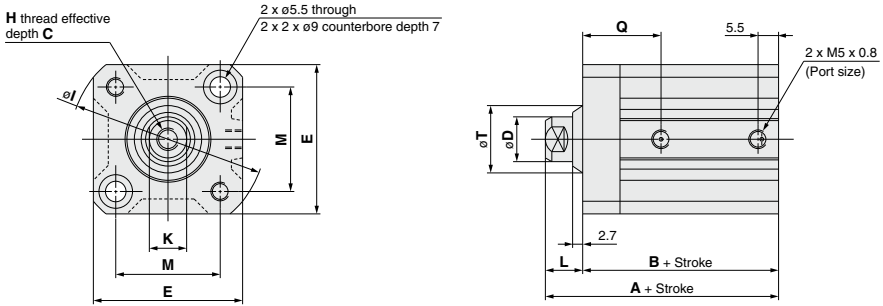
\* Since the seal kit does not include a grease pack, order it separately.

**Grease pack part no.: GR-S-010 (10 g)**

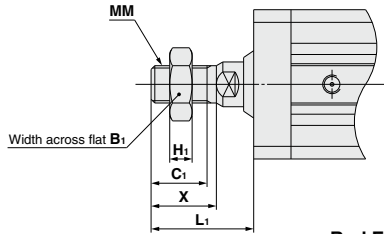
Dimensions

**Ø20, Ø25/Without Auto Switch**

Standard (Through-hole): CQ2B



Rod end male thread



Rod End Male Thread

Bore size (mm)	$B_1$	$C_1$	$H_1$	$L_1$	MM	X
20	13	12	5	23.5	M8 x 1.25	14
25	17	15	6	27.5	M10 x 1.25	17.5

Standard

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	H	I	K	L	M	Q	T
20	5 to 50	39	29.5	7	10	36	M5 x 0.8	47	8	9.5	25.5	18	16.1
25	5 to 50	42.5	32.5	12	12	40	M6 x 1.0	52	10	10	28	19	18.1

\* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.  
\* Refer to page 950 for the calculation on the longitudinal dimension of intermediate strokes.

- CJ
- CU
- CQS
- JCQ
- CQ2**
- RQ
- CQM
- CQU
- MU

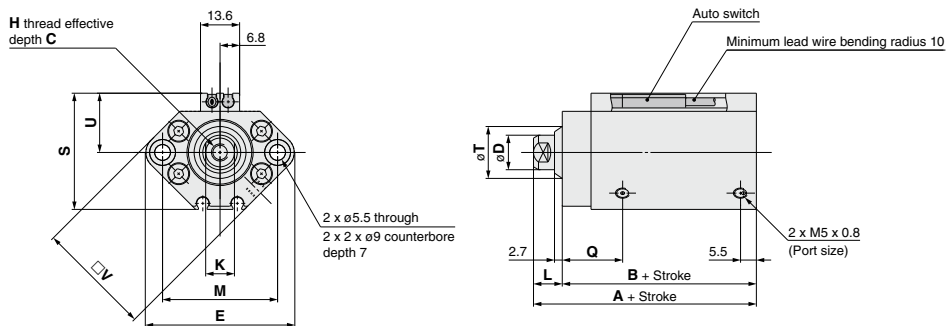
- D-□
- X□
- Technical Data

# CQ2 Series

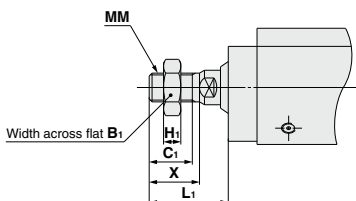
## Dimensions

### Ø20, Ø25/With Auto Switch

#### Standard (Through-hole): CDQ2B



#### Rod end male thread



#### Rod End Male Thread (mm)

Bore size (mm)	B <sub>1</sub>	C <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	MM	X
20	13	12	5	23.5	M8 x 1.25	14
25	17	15	6	27.5	M10 x 1.25	17.5

#### Standard For auto switch proper mounting position and its mounting height, refer to pages 964 to 970. (mm)

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	H	K	L	M	Q	S	T	U	V
20	5 to 50	51	41.5	7	10	47	M5 x 0.8	8	9.5	36	18	35.5	16.1	18	36
25	5 to 50	52.5	42.5	12	12	52	M6 x 1.0	10	10	40	19	40.5	18.1	21	40

\* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

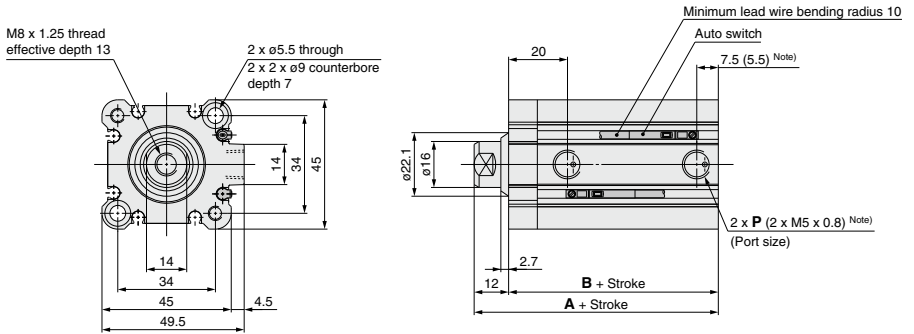
\* Refer to page 950 for the calculation on the longitudinal dimension of intermediate strokes.

# Compact Cylinder: Water Resistant Double Acting, Single Rod **CQ2 Series**

## Dimensions

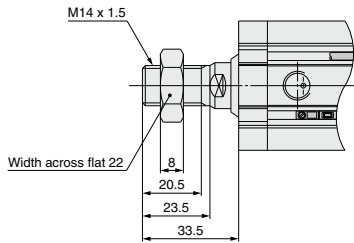
### Ø32/With Auto Switch

(In the case of without auto switches, the A, B dimensions will be only changed. Refer to the dimension table.)



### Rod end male thread

Note) ( ): Without auto switch, 5 mm strokes



(mm)

Stroke range (mm)	Without auto switch		With auto switch		P		
	A	B	A	B	—	TN	TF
5 to 50	45	33	55	43	Rc1/8	NPT1/8	G1/8
75, 100	55	43					

\* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

\* Refer to page 950 for the calculation on the longitudinal dimension of intermediate strokes.

CJ

CU

CQS

JCQ

**CQ2**

RQ

QQM

CQU

MU

D-□

-X□

Technical Data

# CQ2 Series

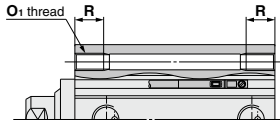
## Dimensions

### Ø40, Ø50/With Auto Switch

(In the case of without auto switches, the A, B dimensions will be only changed. Refer to the dimension table.)

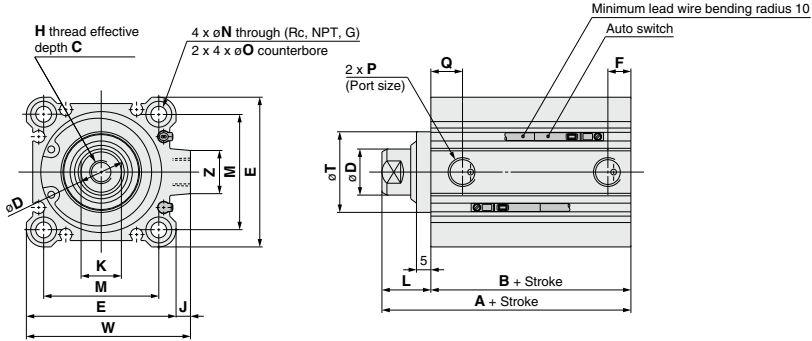
#### Standard (Through-hole): CQ2B/CDQ2B

#### Both ends tapped: CQ2A/CDQ2A

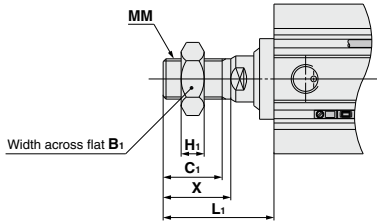


#### Both Ends Tapped

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



#### Rod end male thread



#### Rod End Male Thread

Bore size (mm)	B <sub>1</sub>	C <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	MM	X
40	22	20.5	8	38.5	M14 x 1.5	23.5
50	27	26	11	43.5	M18 x 1.5	28.5

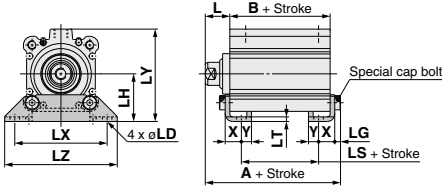
#### Standard For auto switch proper mounting position and its mounting height, refer to pages 964 to 970.

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	D	E	F	H	J	K	L	M	N	O	P	Q	T	W	Z
		A	B	A	B																
40	5 to 50	46.5	29.5	56.5	39.5	13	16	52	7.5	M8 x 1.25	5	14	17	40	5.5	9 depth 7	1/8	12.5	28	57	15
	75, 100	56.5	39.5																		
50	10 to 50	48.5	30.5	58.5	40.5	15	20	64	10.5	M10 x 1.5	7	17	18	50	6.6	11 depth 8	1/4	10.5	35	71	19
	75, 100	58.5	40.5																		

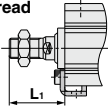
Note 1) For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

Note 2) Refer to page 950 for the calculation on the longitudinal dimension of intermediate strokes.

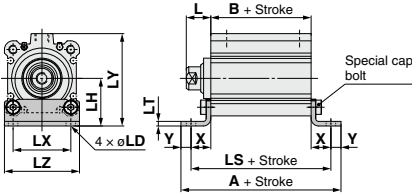
**Foot: CQ2L/CDQ2L**



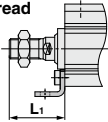
Rod end male thread



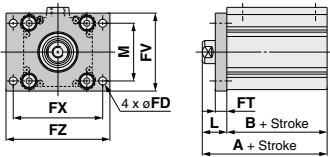
**Compact foot: CQ2LC/CDQ2LC**



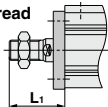
Rod end male thread



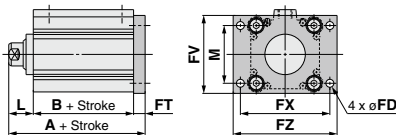
**Rod flange: CQ2F/CDQ2F**



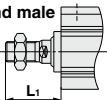
Rod end male thread



**Head flange: CQ2G/CDQ2G**



Rod end male thread



**Foot**

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			L	L <sub>1</sub>	LD
		A	B	LS	A	B	LS			
40	5 to 50	53.7	29.5	13.5	63.7	39.5	23.5	17	38.5	6.6
	75, 100	63.7	39.5	23.5						
	10 to 50	56.7	30.5	7.5						
50	75, 100	66.7	40.5	17.5	66.7	40.5	17.5	18	43.5	9

Bore size (mm)	LG	LH	LT	LX	LY	LZ	X	Y
40	4	33	3.2	64	64	78	11.2	7
50	5	39	3.2	79	78	95	14.7	8

Foot bracket material: Carbon steel  
Surface treatment: Nickel plated

**Compact Foot**

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			L	L <sub>1</sub>	LD
		A	B	LS	A	B	LS			
40	5 to 50	70.9	29.5	56.9	80.9	39.5	66.9	17	38.5	6.6
	75, 100	80.9	39.5	66.9						
	10 to 50	79.9	30.5	63.9						
50	75, 100	89.9	40.5	73.9	89.9	40.5	73.9	18	43.5	9

Bore size (mm)	LH	LT	LX	LY	LZ	X	Y
40	33	3.2	40	64	52	13.7	7
50	39	3.2	50	78	64	16.7	8

Compact foot bracket material: Carbon steel  
Surface treatment: Zinc chromated

**Rod Flange**

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		FD	FT	FV	FX	FZ
		A	B	A	B					
40	5 to 50	46.5	29.5	56.5	39.5	5.5	8	54	62	72
	75, 100	56.5	39.5							
	10 to 50	48.5	30.5							
50	75, 100	58.5	40.5	58.5	40.5	6.6	9	67	76	89

Bore size (mm)	L	L <sub>1</sub>	M
40	17	38.5	40
50	18	43.5	50

Flange bracket material: Carbon steel  
Surface treatment: Nickel plated

**Head Flange**

Bore size (mm)	Stroke range (mm)	Without auto switch	With auto switch
		A	A
40	5 to 50	54.5	64.5
	75, 100	64.5	
	10 to 50	57.5	
50	75, 100	67.5	67.5

(\* The dimensions except A are the same as those of the rod flange.)

Flange bracket material: Carbon steel  
Surface treatment: Nickel plated

\* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

CJ

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CQS

JCQ

CQ2

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CQM

CQU

MU

D-□

-X□

Technical Data

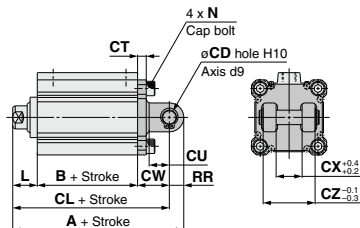
# CQ2 Series

## Dimensions

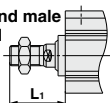
### Ø40, Ø50/With Auto Switch

(In the case of without auto switches, the A, B dimensions will be only changed. Refer to the dimension table.)

#### Double clevis: CQ2D/CDQ2D



#### Rod end male thread



#### Double Clevis

(mm)

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			CD	CT	CU
		A	B	CL	A	B	CL			
40	5 to 50	78.5	29.5	68.5	88.5	39.5	78.5	10	6	14
	75, 100	88.5	39.5	78.5						
50	10 to 50	90.5	30.5	76.5	100.5	40.5	86.5	14	7	20
	75, 100	100.5	40.5	86.5						

Bore size (mm)	CW	CX	CZ	L	L <sub>1</sub>	N	RR
40	22	18	36	17	38.5	M6 x 1.0	10
50	28	22	44	18	43.5	M8 x 1.25	14

Double clevis bracket material: Cast iron  
Surface treatment: Painted

\* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

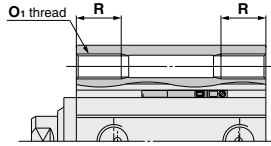
\* Double clevis pin and retaining rings are included.

Dimensions

**Ø63 to Ø100/With Auto Switch**

(In the case of without auto switches, the A, B dimensions will be only changed. Refer to the dimension table.)

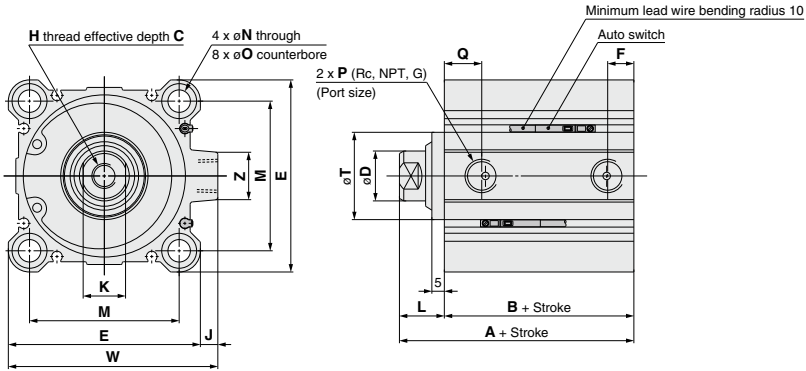
Both ends tapped: CQ2A/CDQ2A



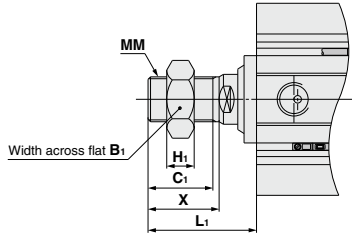
Both Ends Tapped

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

Standard (Through-hole): CQ2B/CDQ2B



Rod end male thread



Rod End Male Thread

Bore size (mm)	B <sub>1</sub>	C <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	MM	X
63	27	26	11	43.5	M18 x 1.5	28.5
80	32	32.5	13	53.5	M22 x 1.5	35.5
100	41	32.5	16	53.5	M26 x 1.5	35.5

Standard For auto switch proper mounting position and its mounting height, refer to pages 964 to 970.

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	D	E	F	H	J	K	L	M	N	O	P	Q	T	
		A	B	A	B															
63	10 to 50	54	36	64	46	15	20	77	10.5	M10 x 1.5	7	17	18	60	9	14 depth	10.5	1/4	15	35
	75, 100	64	46																	
80	10 to 50	63.5	43.5	73.5	53.5	21	25	98	12.5	M16 x 2.0	6	22	20	77	11	17.5 depth	13.5	3/8	16	43
	75, 100	73.5	53.5																	
100	10 to 50	75	53	85	63	27	30	117	13	M20 x 2.5	6.5	27	22	94	11	17.5 depth	13.5	3/8	23	59
	75, 100	85	63																	

(mm)

\* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

Note) Refer to page 950 for the calculation on the longitudinal dimension of intermediate strokes.

Bore size (mm)	W	Z
63	84	19
80	104	25
100	123.5	25

CJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data

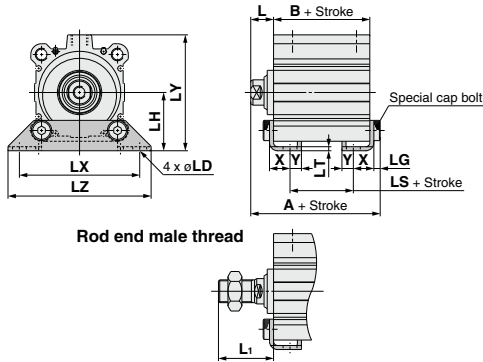
# CQ2 Series

## Dimensions

### Ø63 to Ø100/With Auto Switch

(In the case of without auto switches, the A, B dimensions will be only changed. Refer to the dimension table.)

#### Foot: CQ2L/CDQ2L



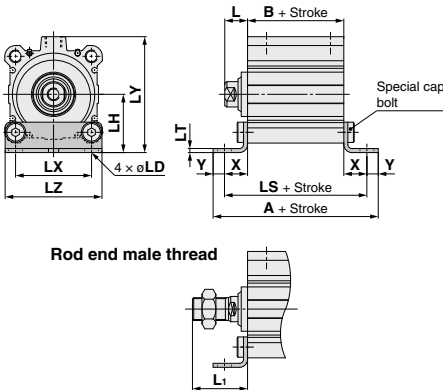
#### Foot

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			(mm)					
		A	B	LS	A	B	LS	L	L <sub>1</sub>	LD	LG	LH	LT
63	10 to 50	82.2	36	10	72.2	46	20	18	43.5	11	5	46	3.2
	75, 100	72.2	46	20									
80	10 to 50	75	43.5	13.5	85	53.5	23.5	20	53.5	13	7	59	4.5
	75, 100	85	53.5	23.5									
100	10 to 50	88	53	19	98	63	29	22	53.5	13	7	71	6
	75, 100	98	63	29									

Foot bracket material: Carbon steel  
Surface treatment: Nickel plated

Bore size (mm)	Stroke range (mm)	LX	LY	LZ	X	Y
63	10 to 50	95	91.5	113	16.2	9
	75, 100					
80	10 to 50	118	114	140	19.5	11
	75, 100					
100	10 to 50	137	136	162	23	12.5
	75, 100					

#### Compact foot: CQ2LC/CDQ2LC



#### Compact Foot

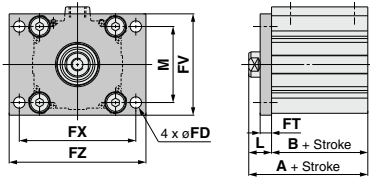
Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			(mm)						
		A	B	LS	A	B	LS	L	L <sub>1</sub>	LD	LH	LT	LX	
63	10 to 50	90.4	36	72.4	100.4	46	82.4	18	43.5	11	46	3.2	60	
	75, 100	100.4	46	82.4										
80	10 to 50	110.5	43.5	88.5	120.5	53.5	98.5	20	53.5	13	59	4.5	77	
	75, 100	120.5	53.5	98.5										
100	10 to 50	126	53	101	136	63	111	22	53.5	13	71	6	94	
	75, 100	136	63	111										

Compact foot bracket material: Carbon steel  
Surface treatment: Zinc chromated

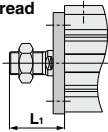
Bore size (mm)	Stroke range (mm)	LY	LZ	X	Y
63	10 to 50	91.5	77	18.2	9
	75, 100				
80	10 to 50	114	98	22.5	11
	75, 100				
100	10 to 50	136	117	24	12.5
	75, 100				

\* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

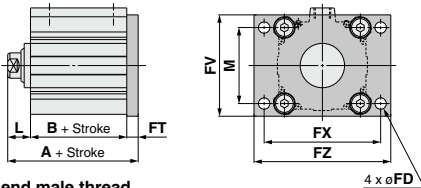
**Rod flange: CQ2F/CDQ2F**



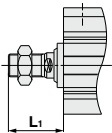
**Rod end male thread**



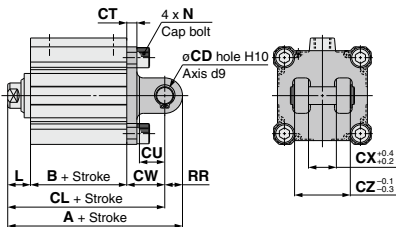
**Head flange: CQ2G/CDQ2G**



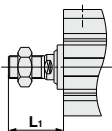
**Rod end male thread**



**Double clevis: CQ2D/CDQ2D**



**Rod end male thread**



**Rod Flange**

(mm)

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		FD	FT	FV	FX	FZ	L	L <sub>1</sub>	M
		A	B	A	B								
63	10 to 50	54	36	64	46	9	9	80	92	108	18	43.5	60
	75, 100	64	46										
80	10 to 50	63.5	43.5	73.5	53.5	11	11	99	116	134	20	53.5	77
	75, 100	73.5	53.5										
100	10 to 50	75	53	85	63	11	11	117	136	154	22	53.5	94
	75, 100	85	63										

Flange bracket material: Carbon steel  
Surface treatment: Nickel plated

**Head Flange**

(mm)

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch	
		A	B	A	B
63	10 to 50	63		73	
	75, 100	73			
80	10 to 50	74.5		84.5	
	75, 100	84.5			
100	10 to 50	86		96	
	75, 100	96			

\* The dimensions except A are the same as those of the rod flange.

Flange bracket material: Carbon steel  
Surface treatment: Nickel plated

**Double Clevis**

(mm)

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			CD	CT	CU	CW	CX
		A	B	CL	A	B	CL					
63	10 to 50	98	36	84	108	46	94	14	8	20	30	22
	75, 100	108	46	94								
80	10 to 50	119.5	43.5	101.5	129.5	53.5	111.5	18	10	27	38	28
	75, 100	129.5	53.5	111.5								
100	10 to 50	142	53	120	152	63	130	22	13	31	45	32
	75, 100	152	63	130								

Double clevis bracket material: Cast iron  
Surface treatment: Painted

\* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

\* Double clevis pin and retaining rings are included.

CJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data