

# 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 □

With auto switch  
(Built-in magnet)

### Mounting

<b>B</b>	Through-hole (Standard)	ø12 to ø63
<b>A</b>	Both ends tapped	
<b>L</b>	Foot	ø40 to ø63
<b>F</b>	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

<b>12</b>	12 mm	<b>32</b>	32 mm
<b>16</b>	16 mm	<b>40</b>	40 mm
<b>20</b>	20 mm	<b>50</b>	50 mm
<b>25</b>	25 mm	<b>63</b>	63 mm

### Port thread type

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

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.

## Applicable 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)	None (N)		IC circuit	Relay, PLC		
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	●	●	●	○	—	○			—
				3-wire (NPN)				M9NVV	M9NV	●	●	●	○	—	○			—
	Diagnostic indication (2-color indication)			3-wire (PNP)	M9PWV	M9PW	●	●	●	○	—	○	—	—	—	—		
				2-wire	M9BWW	M9BW	●	●	●	○	—	○	—	—	—	—		
				3-wire (NPN)	M9NAV**	M9NA**	○	○	●	○	—	○	—	—	—	—		
				3-wire (PNP)	M9PAV**	M9PA**	○	○	●	○	—	○	—	—	—	—		
	Water resistant (2-color indication)			2-wire	M9BAV**	M9BA**	○	○	●	○	—	○	—	—	—	—	—	
				2-wire (Non-polar)	—	P3DW	●	—	●	●	—	○	—	—	—	—		
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	5 V	100 V	A96V	A96	●	—	●	—	—	—	—	—	
				2-wire				A93V	A93	●	—	●	—	—	—	—	—	—
				5 V, 12 V				A90V	A90	●	—	●	—	—	—	—	—	—

\* \* 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.

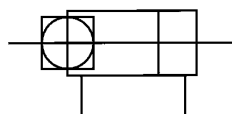
\* For details about auto switches with pre-wired connector, refer to pages 1328 and 1329 in Best Pneumatics No. 2.

Standard  
Large Bore Size  
Long Stroke  
Non-rotating Rod  
Axial Piping  
Anti-lateral Load  
With End Lock  
Water Resistant  
With Auto Switch  
Auto Switch  
Made to Order

# Series CQ2KW



**Symbol**  
Non-rotating rod,  
Double acting



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

Symbol	Specifications
-XA□	Change of rod end shape
-XB10	Intermediate stroke (Exclusive body type)
-X633	Intermediate stroke of double rod cylinder

\* -X633: Intermediate stroke in 5 mm intervals only

## Specifications

Bore size (mm)	12	16	20	25	32	40	50	63
<b>Action</b>	Double acting, Double rod							
<b>Fluid</b>	Air							
<b>Proof pressure</b>	1.5 MPa							
<b>Maximum operating pressure</b>	1.0 MPa							
<b>Minimum operating pressure</b>	0.07 MPa		0.05 MPa					
<b>Ambient and fluid temperature</b>	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)							
<b>Lubrication</b>	Not required (Non-lube)							
<b>Piston speed</b>	50 to 500 mm/s							
<b>Allowable kinetic energy (J)</b>	0.022 0.043 Note 1)	0.038	0.055	0.09	0.15	0.26	0.46	0.77
<b>Stroke length tolerance</b>	+1.0 mm Note 2) 0							
<b>Rod non-rotating accuracy</b>	±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)
<b>12, 16</b>	5, 10, 15, 20, 25, 30
<b>20, 25</b>	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
<b>32, 40</b>	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100
<b>50, 63</b>	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.				
<b>Part no.</b>	Refer to "How to Order" for the standard model number. (P. 92)				
<b>Description</b>	Strokes in 5 mm intervals are available by installing a spacer in the standard stroke cylinder.				
<b>Stroke range</b>	<table border="1"> <thead> <tr> <th>Bore size</th> <th>Stroke range</th> </tr> </thead> <tbody> <tr> <td>32 to 63</td> <td>55 to 95</td> </tr> </tbody> </table>	Bore size	Stroke range	32 to 63	55 to 95
Bore size	Stroke range				
32 to 63	55 to 95				
<b>Example</b>	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	M5 x 0.8 Note 1) Rc1/8	Rc1/8	Rc1/4	Rc1/4
			<b>TN</b>	—	—	—	—	NPT1/8	NPT1/8	NPT1/4	NPT1/4
		<b>TF</b>	—	—	—	—	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.

**Retaining Ring Installation/Removal**

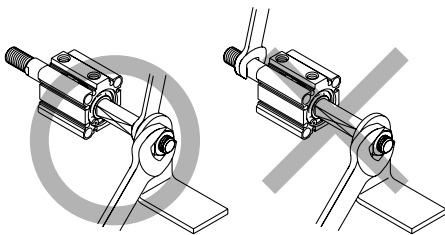
**⚠ Caution**

- 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 installment.

**Mounting**

**⚠ Warning**

- Do not apply reverse torque to the piston rods sticking out from both sides of this cylinder at the same time. The torque makes connection threads inside loosen, which may cause an accident or malfunction. Install or remove loads while the piston rod width across flat is secured. Also, tighten by giving consideration to prevent the tightening torque from being applied to the non-rotating guide. Do not fix the other side of the piston rod width across flat and apply reverse torque.



- Using a non-rotating rod cylinder  
Avoid using the air cylinder in such a way that rotational torque would be applied to the piston rod. If rotational torque is applied, the non-rotating guide will deform, causing a loss of non-rotating accuracy.  
Use the below table as a guide for the allowable rotational torque ranges.

Allowable rotational torque	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
N-m or less	0.04	0.15	0.20	0.25	0.44	0.44	0.44	0.44

**Mounting Brackets/Part No.**

Bore size (mm)	Foot <sup>Note 1)</sup>	Flange
40	CQ-L040	CQ-F040
50	CQ-L050	CQ-F050
63	CQ-L063	CQ-F063

Note 1) When ordering a foot bracket, order 2 pieces per cylinder.  
Note 2) Parts belonging to each bracket are as follows.  
Foot or Flange: Body mounting bolts

**Theoretical Output**

Bore size (mm)	Operating pressure (MPa)		
	0.3	0.5	0.7
12	25	42	59
16	45	75	106
20	71	118	165
25	113	189	264
32	181	302	422
40	317	528	739
50	495	825	1150
63	841	1400	1960

**Weight**

**Weight**

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	62	69	76	83	90	97	—	—	—	—	—	—
16	62	73	84	95	106	117	—	—	—	—	—	—
20	101	116	131	146	161	176	191	206	221	236	—	—
25	138	155	172	189	206	223	240	257	274	291	—	—
32	233	256	279	302	325	348	371	394	417	440	600	715
40	336	365	394	424	453	483	512	541	571	600	806	953
50	—	517	558	600	642	684	725	767	809	850	1142	1351
63	—	742	779	815	851	887	923	959	995	1032	1285	1465

**Additional Weight**

Bore size (mm)		12	16	20	25	32	40	50	63
Both ends tapped		—	—	—	—	—	6	6	19
Rod end male thread	Male thread	3	6	12	24	52	54	106	106
	Nut	2	4	8	16	34	34	64	64
Built-in one-touch fittings		—	—	—	—	12	12	21	21
Foot		—	—	—	—	—	154	243	317
Flange		—	—	—	—	—	214	373	559

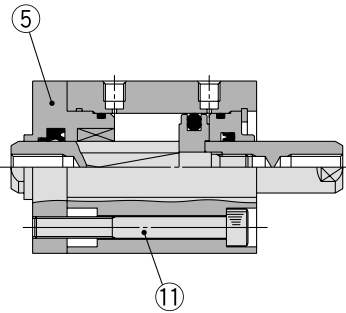
Calculation: (Example) **CQ2KWA40-20DMZ**  
 • Basic weight: CQ2KWB40-20DZ..... 424 g  
 • Additional weight: Both ends tapped ..... 6 g  
 Rod end male thread ..... 88 g  
**518 g**

Standard  
Large Bore Size  
Long Stroke  
Non-rotating Rod  
Axial Piping  
Anti-lateral Load  
With End Lock  
Water Resistant  
With Auto Switch  
Auto Switch  
Made to Order

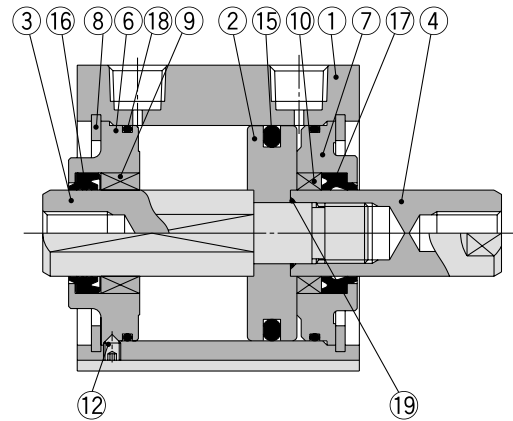
# Series CQ2KW

## Construction

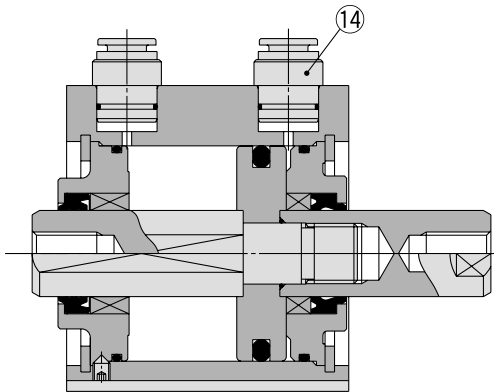
Standard (ø12 to ø32)



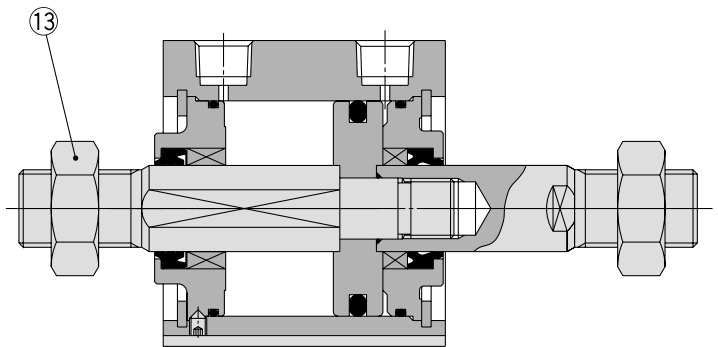
Standard (ø40 to ø63)



Built-in one-touch fittings



Rod end male thread



### Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Chromated
3	Piston rod A	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø63, Hard chrome plated
4	Piston rod B	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø63, Hard chrome plated
5	Rod cover	Brass	ø12, Electroless nickel plated
		Aluminum alloy	ø16 to ø32, Anodized
6	Collar for non-rotating	Aluminum alloy	ø40 to ø63, Anodized
7	Collar	Aluminum alloy	ø12 to ø40, Anodized
		Aluminum alloy casted	ø50 to ø63, Chromated, Painted
8	Retaining ring	Carbon tool steel	Phosphate coated
9	Bushing for non-rotating	Oil-impregnated sintered alloy	ø16 to ø63
10	Bushing	Bearing alloy	ø50, ø63
11	Hexagon socket head cap screw	Alloy steel	ø12 to ø32, Nickel plated
12	Hexagon socket head set screw	Alloy steel	ø40 to ø63, Nickel plated
13	Rod end nut	Carbon steel	Nickel plated
14	One-touch fitting	—	ø32 to ø63
15	Piston seal	NBR	
16	Rod seal for non-rotating	NBR	
17	Rod seal	NBR	
18	Gasket	NBR	
19	Piston gasket	NBR	ø32 to ø63

### Replacement Parts/Seal Kit

Bore size (mm)	Kit no.	Contents
12	CQ2KWB12-PS	Kits include items 15, 16, 17, 18 from the table.
16	CQ2KWB16-PS	
20	CQ2KWB20-PS	
25	CQ2KWB25-PS	
32	CQ2KWB32-PS	
40	CQ2KWB40-PS	
50	CQ2KWB50-PS	
63	CQ2KWB63-PS	

\* Seal kit includes 15, 16, 17, 18. Order the seal kit based on each bore size.  
 \* Since the seal kit does not include a grease pack, order it separately.

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

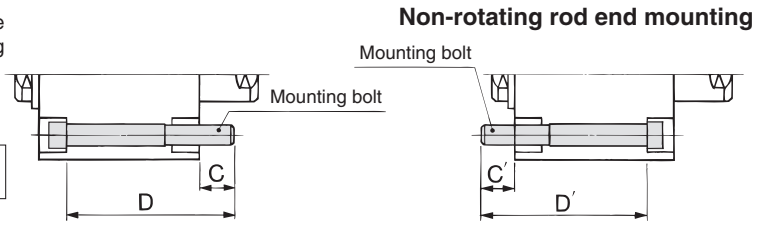
# Compact Cylinder: Non-rotating Rod Double Acting, Double Rod *Series CQ2KW*

## Mounting Bolt for CQ2KWB/Without Auto Switch

Mounting method: Mounting bolt for through-hole mounting of the CQ2KWB is available as an option. Refer to the following for ordering procedures. Order the actual number of bolts that will be used.

**Example) CQ-M3x40L 2 pcs.**

Material: Chromium molybdenum steel  
Surface treatment: Nickel plated



Cylinder model	C	D	Mounting bolt part no.	C'	D'	Mounting bolt part no.
<b>CQ2KWB12-5D</b>	8.3	40	CQ-M3 x 40L	8.3	40	CQ-M3 x 40L
<b>-10D</b>		45	x 45L		45	x 45L
<b>-15D</b>		50	x 50L		50	x 50L
<b>-20D</b>		55	x 55L		55	x 55L
<b>-25D</b>		60	x 60L		60	x 60L
<b>-30D</b>		65	x 65L		65	x 65L
<b>CQ2KWB16-5D</b>	7.5	40	CQ-M3 x 40L	7.5	40	CQ-M3 x 40L
<b>-10D</b>		45	x 45L		45	x 45L
<b>-15D</b>		50	x 50L		50	x 50L
<b>-20D</b>		55	x 55L		55	x 55L
<b>-25D</b>		60	x 60L		60	x 60L
<b>-30D</b>		65	x 65L		65	x 65L
<b>CQ2KWB20-5D</b>	6.5	40	CQ-M5 x 40L	8	40	CQ-M5 x 40L
<b>-10D</b>		45	x 45L		45	x 45L
<b>-15D</b>		50	x 50L		50	x 50L
<b>-20D</b>		55	x 55L		55	x 55L
<b>-25D</b>		60	x 60L		60	x 60L
<b>-30D</b>		65	x 65L		65	x 65L
<b>-35D</b>		70	x 70L		70	x 70L
<b>-40D</b>		75	x 75L		75	x 75L
<b>-45D</b>		80	x 80L		80	x 80L
<b>-50D</b>		85	x 85L		85	x 85L
<b>CQ2KWB25-5D</b>	8.5	45	CQ-M5 x 45L	10	45	CQ-M5 x 45L
<b>-10D</b>		50	x 50L		50	x 50L
<b>-15D</b>		55	x 55L		55	x 55L
<b>-20D</b>		60	x 60L		60	x 60L
<b>-25D</b>		65	x 65L		65	x 65L
<b>-30D</b>		70	x 70L		70	x 70L
<b>-35D</b>		75	x 75L		75	x 75L
<b>-40D</b>		80	x 80L		80	x 80L
<b>-45D</b>		85	x 85L		85	x 85L
<b>-50D</b>		90	x 90L		90	x 90L
<b>CQ2KWB32-5DZ</b>	11	50	CQ-M5 x 50L	7.5	45	CQ-M5 x 45L
<b>-10DZ</b>		55	x 55L		50	x 50L
<b>-15DZ</b>		60	x 60L		55	x 55L
<b>-20DZ</b>		65	x 65L		60	x 60L
<b>-25DZ</b>		70	x 70L		65	x 65L
<b>-30DZ</b>		75	x 75L		70	x 70L
<b>-35DZ</b>		80	x 80L		75	x 75L
<b>-40DZ</b>		85	x 85L		80	x 80L
<b>-45DZ</b>		90	x 90L		85	x 85L
<b>-50DZ</b>		95	x 95L		90	x 90L
<b>-75DZ</b>	130	x 130L	125	x 125L		
<b>-100DZ</b>	155	x 155L	150	x 150L		

Cylinder model	C	D	Mounting bolt part no.
<b>CQ2KWB40-5DZ</b>	7	45	CQ-M5 x 45L
<b>-10DZ</b>		50	x 50L
<b>-15DZ</b>		55	x 55L
<b>-20DZ</b>		60	x 60L
<b>-25DZ</b>		65	x 65L
<b>-30DZ</b>		70	x 70L
<b>-35DZ</b>		75	x 75L
<b>-40DZ</b>		80	x 80L
<b>-45DZ</b>		85	x 85L
<b>-50DZ</b>		90	x 90L
<b>-75DZ</b>	125	x 125L	
<b>-100DZ</b>	150	x 150L	
<b>CQ2KWB50-10DZ</b>	12.5	55	CQ-M6 x 55L
<b>-15DZ</b>		60	x 60L
<b>-20DZ</b>		65	x 65L
<b>-25DZ</b>		70	x 70L
<b>-30DZ</b>		75	x 75L
<b>-35DZ</b>		80	x 80L
<b>-40DZ</b>		85	x 85L
<b>-45DZ</b>		90	x 90L
<b>-50DZ</b>		95	x 95L
<b>-75DZ</b>		130	x 130L
<b>-100DZ</b>	155	x 155L	
<b>CQ2KWB63-10DZ</b>	13.5	55	CQ-M8 x 55L
<b>-15DZ</b>		60	x 60L
<b>-20DZ</b>		65	x 65L
<b>-25DZ</b>		70	x 70L
<b>-30DZ</b>		75	x 75L
<b>-35DZ</b>		80	x 80L
<b>-40DZ</b>		85	x 85L
<b>-45DZ</b>		90	x 90L
<b>-50DZ</b>		95	x 95L
<b>-75DZ</b>		130	x 130L
<b>-100DZ</b>	155	x 155L	

\*  $\phi 40$  to  $\phi 63$ : The C' and D' dimensions are the same as those of C and D.

## Copper and Fluorine-free Series (For CRT Manufacturing Process)

20 — C□Q2KWB **Bore size** — **Stroke** D(M)Z\*<sup>1</sup>  
 $\phi 16, \phi 20, \phi 25, \phi 32, \phi 40, \phi 50, \phi 63$   
 • Copper and fluorine-free series

For preventing the influence of copper ions or halogen ions during CRT manufacturing processes, copper and fluorine materials are not used in the component parts.

\*1 "Z" is not available for  $\phi 16$  to  $\phi 25$  without auto switches.

### Specifications

Bore size (mm)	16	20	25	32	40	50	63
<b>Action</b>	Double acting, Double rod						
<b>Proof pressure</b>	1.5 MPa						
<b>Max. operating pressure</b>	1.0 MPa						
<b>Rubber bumper</b>	None						
<b>Piping</b>	Pipe thread						
<b>Piston speed</b>	50 to 500 mm/s						
<b>Mounting</b>	Through-hole						
<b>Auto switch</b>	Mountable						

# Non-rotating Rod: Double Acting, Double Rod Series **CDQ2KW** With Auto Switch



Refer to the below pages for further information on auto switches.

Auto switch proper mounting position and its mounting height	P.169 to 175
Minimum stroke for auto switch mounting	
Operating range	
Auto switch mounting brackets/Part no.	

## Weight

### Weight

Bore size (mm)	Cylinder stroke (mm)											(g)		
	5	10	15	20	25	30	35	40	45	50	75		100	
12	76	83	90	98	105	113	—	—	—	—	—	—	—	—
16	89	99	109	118	128	138	—	—	—	—	—	—	—	—
20	148	164	179	194	210	225	240	256	271	286	—	—	—	—
25	213	228	244	259	275	291	306	322	337	353	—	—	—	—
32	259	282	305	328	351	374	397	420	443	466	580	695	—	—
40	441	471	500	530	559	588	618	647	677	706	853	1000	—	—
50	—	642	684	726	767	809	851	892	934	976	1184	1393	—	—
63	—	871	907	943	979	1015	1051	1088	1124	1160	1341	1521	—	—

### Additional Weight

Bore size (mm)	12	16	20	25	32	40	50	63
	Both ends tapped	—	—	—	—	—	6	6
Rod end male thread	Male thread	3	6	12	24	52	54	106
	Nut	2	4	8	16	34	34	64
Built-in one-touch fittings	—	—	—	—	12	12	21	21

Calculation: (Example) **CDQ2KWA40-20DMZ**

- Basic weight: CDQ2KWB40-20DZ.....530 g
- Additional weight: Both ends tapped .....6 g
- Rod end male thread .....88 g
- 624 g

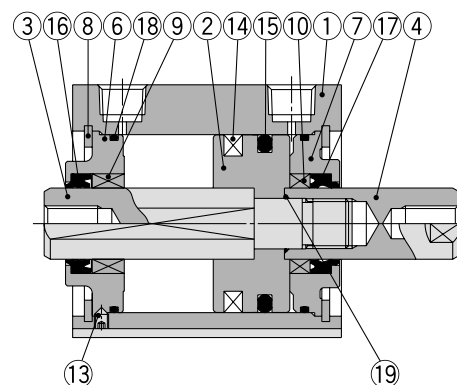
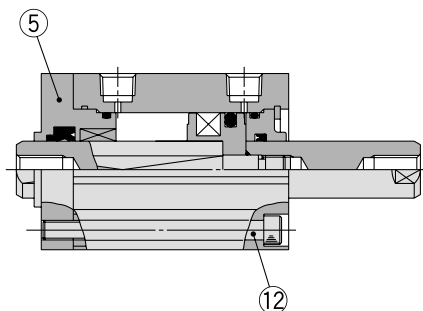
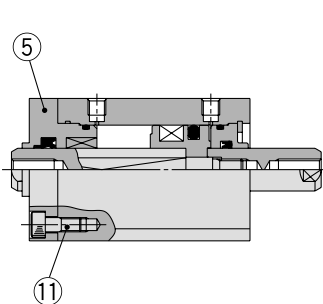
Add each weight of auto switches when auto switches are mounted.

## Construction

ø12 to ø25

ø32

ø40 to ø63



### Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Chromated
3	Piston rod A	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø63, Hard chrome plated
4	Piston rod B	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø63, Hard chrome plated
5	Rod cover	Brass	ø12, Electroless nickel plated
		Aluminum alloy	ø16 to ø32, Anodized
6	Collar for non-rotating	Aluminum alloy	ø40 to ø63, Anodized
7	Collar	Aluminum alloy	ø12 to ø40, Anodized
		Aluminum alloy casted	ø50 to ø63, Chromated, Painted
8	Retaining ring	Carbon tool steel	Phosphate coated
9	Bushing for non-rotating	Oil-impregnated sintered alloy	ø16 to ø63
10	Bushing	Bearing alloy	ø50, ø63
11	Hexagon socket head cap screw	Alloy steel	ø12 to ø25, Nickel plated
12	Hexagon socket head cap screw	Alloy steel	ø32, Nickel plated
13	Hexagon socket head set screw	Alloy steel	ø40 to ø63, Nickel plated
14	Magnet	—	—

No.	Description	Material	Note
15	Piston seal	NBR	—
16	Rod seal for non-rotating	NBR	—
17	Rod seal	NBR	—
18	Gasket	NBR	—
19	Piston gasket	NBR	ø32 to ø63

### Replacement Parts/Seal Kit

Bore size (mm)	Kit no.	Contents
12	CQ2KWB12-PS	Kits include items 15, 16, 17, 18 from the table.
16	CQ2KWB16-PS	
20	CQ2KWB20-PS	
25	CQ2KWB25-PS	
32	CQ2KWB32-PS	
40	CQ2KWB40-PS	
50	CQ2KWB50-PS	
63	CQ2KWB63-PS	

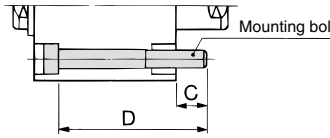
- \* Seal kit includes 15, 16, 17, 18. Order the seal kit based on each bore size.
- \* Since the seal kit does not include a grease pack, order it separately.
- Grease pack part no.: GR-S-010 (10 g)

**Mounting Bolt for CDQ2KWB/With Auto Switch**

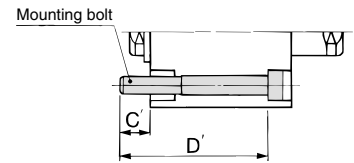
Mounting method: Mounting bolt for through-hole mounting of the CDQ2KWB is available as an option. Refer to the following for ordering procedures. Order the actual number of bolts that will be used.

**Example) CQ-M3x40L 2 pcs.**

Material: Chromium molybdenum steel  
Surface treatment: Nickel plated



**Non-rotating rod end mounting**



Cylinder model	C	D	Mounting bolt part no.	C'	D'	Mounting bolt part no.
<b>CDQ2KWB12-5DCZ</b>	6.1	40	CQ-M3 x 40L	6.1	45	CQ-M3 x 45L
<b>-10DCZ</b>		45	x 45L		50	x 50L
<b>-15DCZ</b>		50	x 50L		55	x 55L
<b>-20DCZ</b>		55	x 55L		60	x 60L
<b>-25DCZ</b>		60	x 60L		65	x 65L
<b>-30DCZ</b>		65	x 65L		70	x 70L
<b>CDQ2KWB16-5DZ</b>	7.5	45	CQ-M3 x 45L	7.5	50	CQ-M3 x 50L
<b>-10DZ</b>		50	x 50L		55	x 55L
<b>-15DZ</b>		55	x 55L		60	x 60L
<b>-20DZ</b>		60	x 60L		65	x 65L
<b>-25DZ</b>		65	x 65L		70	x 70L
<b>-30DZ</b>		70	x 70L		75	x 75L
<b>CDQ2KWB20-5DZ</b>	9	45	CQ-M5 x 45L	11	55	CQ-M5 x 55L
<b>-10DZ</b>		50	x 50L		60	x 60L
<b>-15DZ</b>		55	x 55L		65	x 65L
<b>-20DZ</b>		60	x 60L		70	x 70L
<b>-25DZ</b>		65	x 65L		75	x 75L
<b>-30DZ</b>		70	x 70L		80	x 80L
<b>-35DZ</b>		75	x 75L		85	x 85L
<b>-40DZ</b>		80	x 80L		90	x 90L
<b>-45DZ</b>		85	x 85L		95	x 95L
<b>-50DZ</b>		90	x 90L		100	x 100L
<b>CDQ2KWB25-5DZ</b>	8	45	CQ-M5 x 45L	10	55	CQ-M5 x 55L
<b>-10DZ</b>		50	x 50L		60	x 60L
<b>-15DZ</b>		55	x 55L		65	x 65L
<b>-20DZ</b>		60	x 60L		70	x 70L
<b>-25DZ</b>		65	x 65L		75	x 75L
<b>-30DZ</b>		70	x 70L		80	x 80L
<b>-35DZ</b>		75	x 75L		85	x 85L
<b>-40DZ</b>		80	x 80L		90	x 90L
<b>-45DZ</b>		85	x 85L		95	x 95L
<b>-50DZ</b>		90	x 90L		100	x 100L
<b>CDQ2KWB32-5DZ</b>	11	60	CQ-M5 x 60L	7.5	55	CQ-M5 x 55L
<b>-10DZ</b>		65	x 65L		60	x 60L
<b>-15DZ</b>		70	x 70L		65	x 65L
<b>-20DZ</b>		75	x 75L		70	x 70L
<b>-25DZ</b>		80	x 80L		75	x 75L
<b>-30DZ</b>		85	x 85L		80	x 80L
<b>-35DZ</b>		90	x 90L		85	x 85L
<b>-40DZ</b>		95	x 95L		90	x 90L
<b>-45DZ</b>		100	x 100L		95	x 95L
<b>-50DZ</b>		105	x 105L		100	x 100L
<b>-75DZ</b>	130	x 130L	125	x 125L		
<b>-100DZ</b>	155	x 155L	150	x 150L		

Cylinder model	C	D	Mounting bolt part no.
<b>CDQ2KWB40-5DZ</b>	7	55	CQ-M5 x 55L
<b>-10DZ</b>		60	x 60L
<b>-15DZ</b>		65	x 65L
<b>-20DZ</b>		70	x 70L
<b>-25DZ</b>		75	x 75L
<b>-30DZ</b>		80	x 80L
<b>-35DZ</b>		85	x 85L
<b>-40DZ</b>		90	x 90L
<b>-45DZ</b>		95	x 95L
<b>-50DZ</b>		100	x 100L
<b>-75DZ</b>	125	x 125L	
<b>-100DZ</b>	150	x 150L	
<b>CDQ2KWB50-10DZ</b>	12.5	65	CQ-M6 x 65L
<b>-15DZ</b>		70	x 70L
<b>-20DZ</b>		75	x 75L
<b>-25DZ</b>		80	x 80L
<b>-30DZ</b>		85	x 85L
<b>-35DZ</b>		90	x 90L
<b>-40DZ</b>		95	x 95L
<b>-45DZ</b>		100	x 100L
<b>-50DZ</b>		105	x 105L
<b>-75DZ</b>		130	x 130L
<b>-100DZ</b>	155	x 155L	
<b>CDQ2KWB63-10DZ</b>	13.5	65	CQ-M8 x 65L
<b>-15DZ</b>		70	x 70L
<b>-20DZ</b>		75	x 75L
<b>-25DZ</b>		80	x 80L
<b>-30DZ</b>		85	x 85L
<b>-35DZ</b>		90	x 90L
<b>-40DZ</b>		95	x 95L
<b>-45DZ</b>		100	x 100L
<b>-50DZ</b>		105	x 105L
<b>-75DZ</b>		130	x 130L
<b>-100DZ</b>	155	x 155L	

\* ø40 to ø63: The C' and D' dimensions are the same as those of C and D.

Standard  
Large Bore Size  
Long Stroke  
Non-rotating Rod  
Axial Piping  
Anti-lateral Load  
With End Lock  
Water Resistant  
With Auto Switch  
Auto Switch  
Made to Order

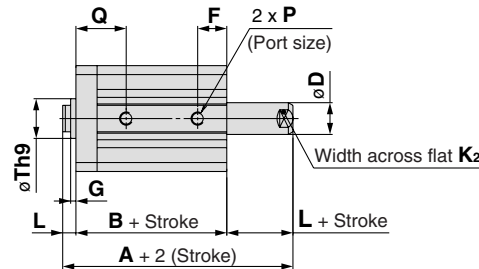
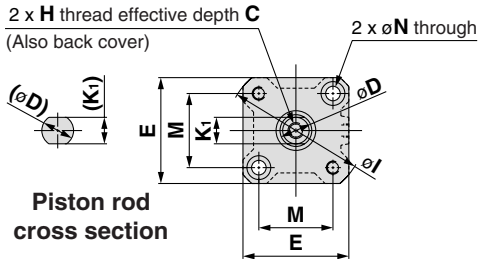
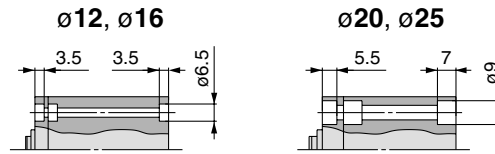
# Series CQ2KW

Dimensions

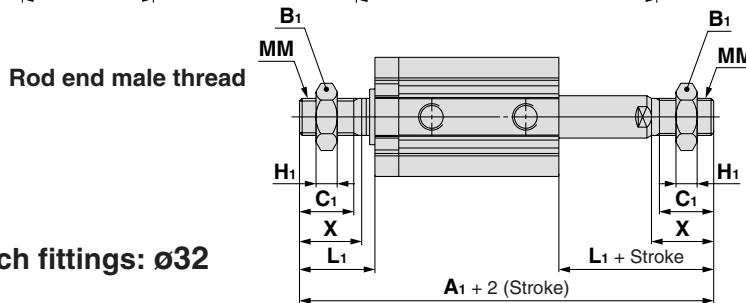
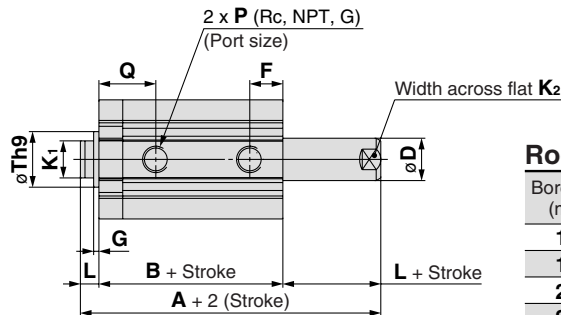
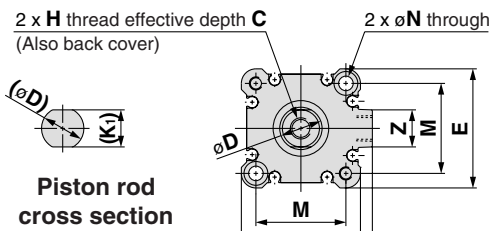
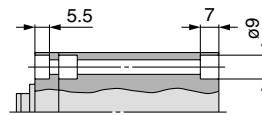
## ∅12 to ∅32/Without Auto Switch

Standard (Through-hole): CQ2KWB

∅12 to ∅25



∅32

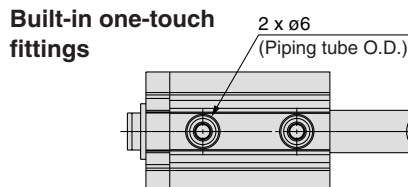
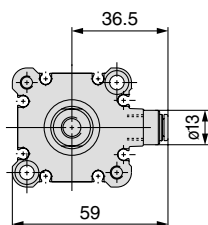


Rod End Male Thread (mm)

Bore size (mm)	Stroke range (mm)	A <sub>1</sub>	B <sub>1</sub>	C <sub>1</sub>	H <sub>1</sub>
12	5 to 30	58.2	8	9	4
16	5 to 30	62	10	10	5
20	5 to 50	71	13	12	5
25	5 to 50	82	17	15	6
32	5 to 50	96.5	22	20.5	8
	75, 100	106.5			

Bore size (mm)	L <sub>1</sub>	MM	X
12	14	M5 x 0.8	10.5
16	15.5	M6 x 1.0	12
20	18.5	M8 x 1.25	14
25	22.5	M10 x 1.25	17.5
32	28.5	M14 x 1.5	23.5

Built-in one-touch fittings: ∅32



\* The dimensions of ∅32-5 mm stroke with built-in one-touch fittings are the same as those of the 10 mm stroke cylinder tube. (mm)

Standard

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	G	H	I	J	K <sub>1</sub>	K <sub>2</sub>	L	M	N	P	Q	Th9	W	Z
12	5 to 30	37.2	30.2	6	6	25	10	1.5	M3 x 0.5	32	—	5.2	5	3.5	15.5	3.5	M5 x 0.8	15	15 <sup>0</sup> <sub>-0.043</sub>	—	—
16	5 to 30	38	31	8	8	29	10	1.5	M4 x 0.7	38	—	6	6	3.5	20	3.5	M5 x 0.8	15	20 <sup>0</sup> <sub>-0.052</sub>	—	—
20	5 to 50	43	34	7	10	36	9.5	2	M5 x 0.8	47	—	8	8	4.5	25.5	5.5	M5 x 0.8	17.5	13 <sup>0</sup> <sub>-0.043</sub>	—	—
25	5 to 50	47	37	12	12	40	11	2	M6 x 1.0	52	—	10	10	5	28	5.5	M5 x 0.8	19	15 <sup>0</sup> <sub>-0.043</sub>	—	—
32	5	53.5	39.5	13	16	45	12.5	2	M8 x 1.25	—	4.5	14	14	7	34	5.5	M5 x 0.8	21.5	21 <sup>0</sup> <sub>-0.052</sub>	49.5	14
	10 to 50																				
	75, 100	63.5	49.5																		

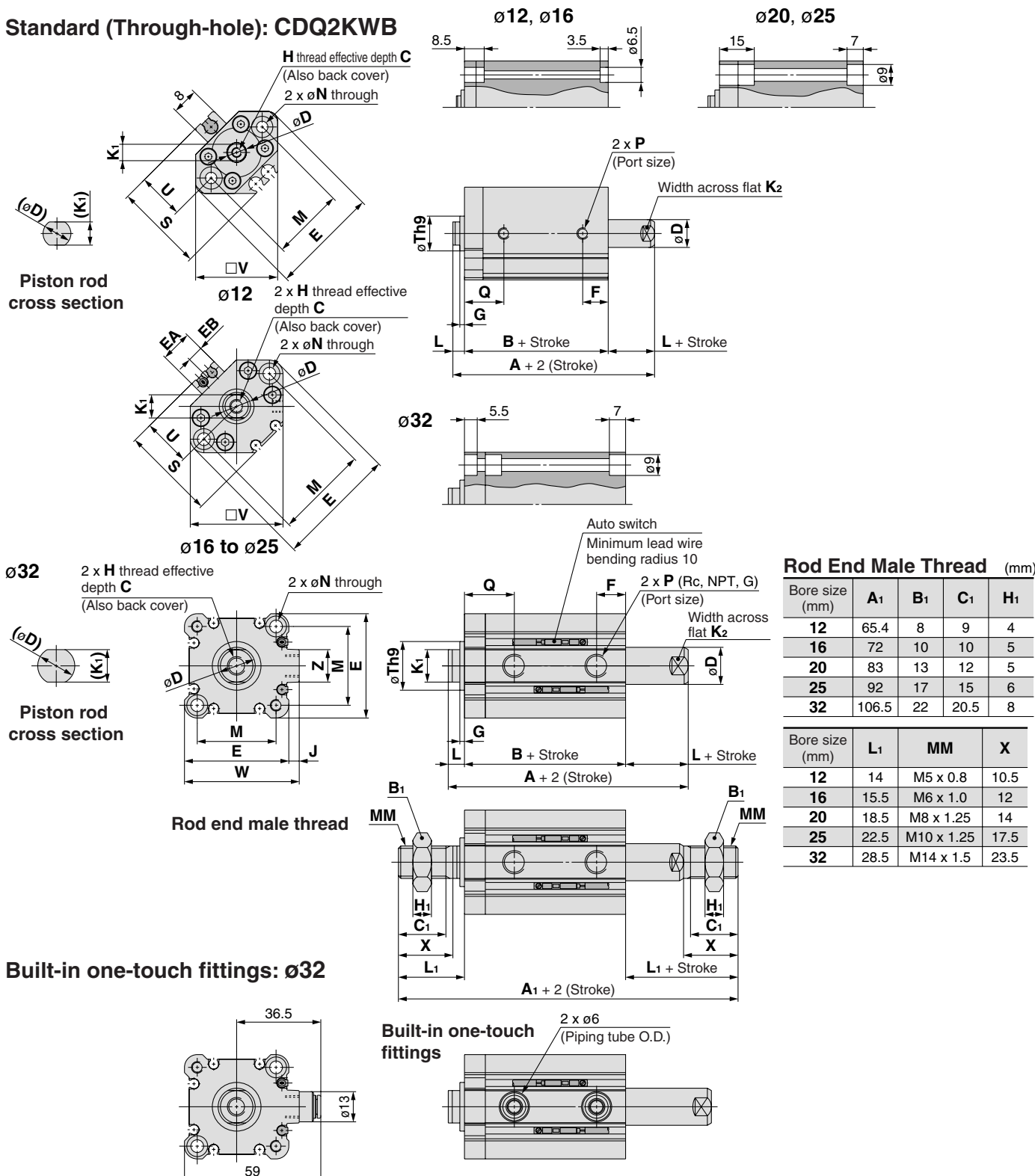
\* For details about the rod end nut and accessory brackets, refer to page 19.  
Note) The positions of piston rod's width across flats (K<sub>2</sub>) are not constant.



Dimensions

**∅12 to ∅32**/With Auto Switch

Standard (Through-hole): CDQ2KWB



**Rod End Male Thread** (mm)

Bore size (mm)	A <sub>1</sub>	B <sub>1</sub>	C <sub>1</sub>	H <sub>1</sub>
12	65.4	8	9	4
16	72	10	10	5
20	83	13	12	5
25	92	17	15	6
32	106.5	22	20.5	8

Bore size (mm)	L <sub>1</sub>	MM	X
12	14	M5 x 0.8	10.5
16	15.5	M6 x 1.0	12
20	18.5	M8 x 1.25	14
25	22.5	M10 x 1.25	17.5
32	28.5	M14 x 1.5	23.5

**Standard** For auto switch proper mounting position and its mounting height, refer to pages 169 to 175.

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	EA	EB	F	G	H	J	K <sub>1</sub>	K <sub>2</sub>	L	M	N	P	Q	S	Th9	U	V	W	Z
12	5 to 30	44.4	37.4	6	6	33	—	—	10.5	1.5	M3 x 0.5	—	5.2	5	3.5	22	3.5	M5 x 0.8	15.5	27.5	15 <sup>0</sup> <sub>-0.043</sub>	14	25	—	—
16	5 to 30	48	41	8	8	37	13.2	6.6	10	1.5	M4 x 0.7	—	6	6	3.5	28	3.5	M5 x 0.8	15	29.5	20 <sup>0</sup> <sub>-0.052</sub>	15	29	—	—
20	5 to 50	55	46	7	10	47	13.6	6.8	10.5	2	M5 x 0.8	—	8	8	4.5	36	5.5	M5 x 0.8	18.5	35.5	13 <sup>0</sup> <sub>-0.043</sub>	18	36	—	—
25	5 to 50	57	47	12	12	52	13.6	6.8	11	2	M6 x 1.0	—	10	10	5	40	5.5	M5 x 0.8	19	40.5	15 <sup>0</sup> <sub>-0.043</sub>	21	40	—	—
32	5 to 50, 75, 100	63.5	49.5	13	16	45	—	—	12.5	2	M8 x 1.25	4.5	14	14	7	34	5.5	1/8	21.5	—	21 <sup>0</sup> <sub>-0.052</sub>	—	—	49.5	14

\* For details about the rod end nut and accessory brackets, refer to page 19.  
 (Note) The positions of piston rod's width across flats (K<sub>2</sub>) are not constant.

Standard  
 Large Bore Size  
 Long Stroke  
 Non-rotating Rod  
 Axial Piping  
 Anti-lateral Load  
 With End Lock  
 Water Resistant  
 With Auto Switch  
 Auto Switch

# Series CQ2KW

## Dimensions

### Ø40 to Ø63/With Auto Switch

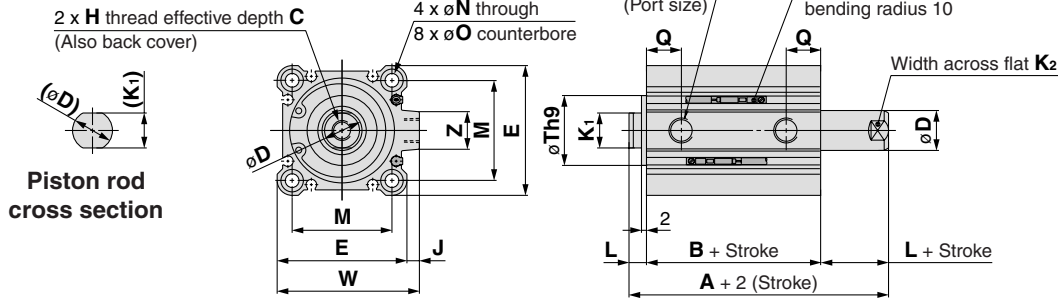
(In the case of without auto switches, the A, B dimensions will be only changed. Refer to the dimension table.)

#### Both ends tapped: CQ2KWA/CDQ2KWA

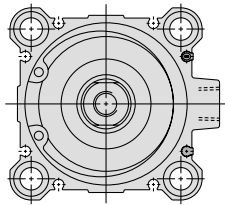
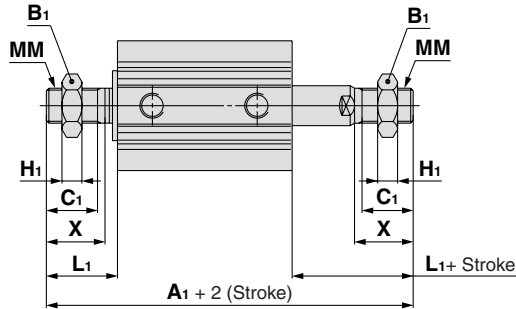
#### Standard (Through-hole): CQ2KWB/CDQ2KWB

#### Both Ends Tapped

Bore size (mm)	O <sub>1</sub>	R
40	M6 x 1.0	10
50	M8 x 1.25	14
63	M10 x 1.5	18



#### Rod end male thread

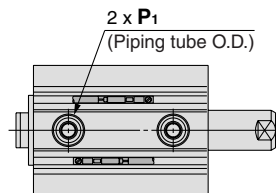
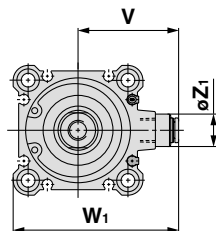


Cylinder tube form  
Ø63

#### Rod End Male Thread

Bore size (mm)	Without auto switch		With auto switch		B <sub>1</sub>	C <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	MM	X
	A <sub>1</sub>	A <sub>1</sub>	A <sub>1</sub>	A <sub>1</sub>						
40	97	107	22	20.5	8	28.5	M14 x 1.5	23.5		
50	107.5	117.5	27	26	11	33.5	M18 x 1.5	28.5		
63	109	119	27	26	11	33.5	M18 x 1.5	28.5		

#### Built-in one-touch fittings: Ø40 to Ø63



#### Built-in One-touch Fittings

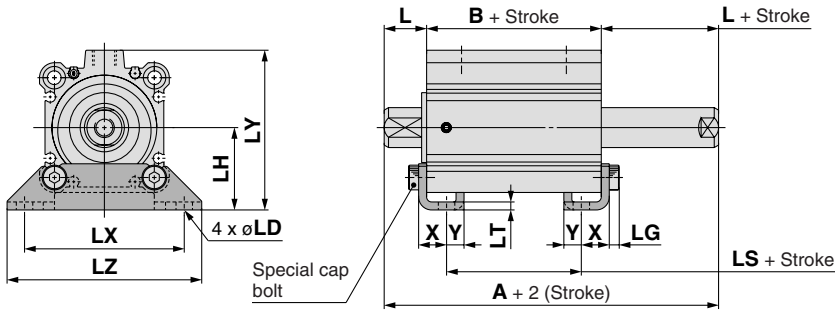
Bore size (mm)	Z <sub>1</sub>	P <sub>1</sub>	V	W <sub>1</sub>
40	13	6	40.5	66.5
50	16	8	50	82
63	16	8	56.5	95

#### Standard For auto switch proper mounting position and its mounting height, refer to pages 169 to 175.

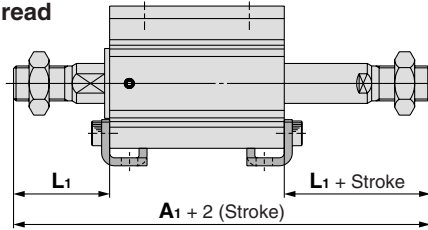
Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	D	E	H	J	K <sub>1</sub>	K <sub>2</sub>	L	M	N	O	P	Q	Th9	W	Z
		A	B	A	B																
40	5 to 50	54	40	64	50	13	16	52	M8 x 1.25	5	14	14	7	40	5.5	9 depth 7	1/8	14	28 <sup>0</sup> <sub>-0.052</sub>	57	15
	75, 100	64	50																		
50	10 to 50	56.5	40.5	66.5	50.5	15	20	64	M10 x 1.5	7	18	17	8	50	6.6	11 depth 8	1/4	14	35 <sup>0</sup> <sub>-0.062</sub>	71	19
	75, 100	66.5	50.5																		
63	10 to 50	58	42	68	52	15	20	77	M10 x 1.5	7	18	17	8	60	9	14 depth 10.5	1/4	15.5	35 <sup>0</sup> <sub>-0.062</sub>	84	19
	75, 100	68	52																		

\* For details about the rod end nut and accessory brackets, refer to page 19.  
Note) The positions of piston rod's width across flats (K<sub>2</sub>) are not constant.

**Foot: CQ2KWL/CDQ2KWL**



**Rod end male thread**



**Rod End Male Thread** (mm)

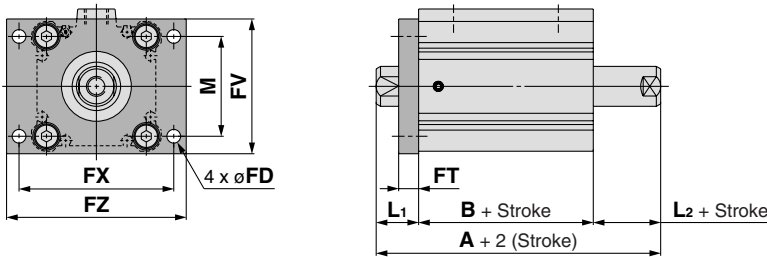
Bore size (mm)	Without auto switch	With auto switch	L <sub>1</sub>
	A <sub>1</sub>	A <sub>1</sub>	
40	117	127	38.5
50	127.5	137.5	43.5
63	129	139	43.5

**Foot** (mm)

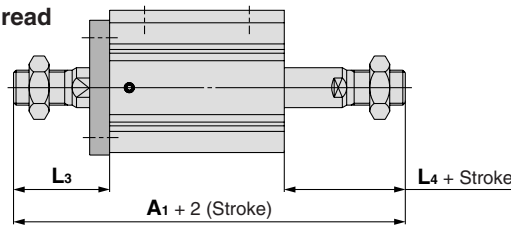
Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			L	LD	LG	LH	LT	LX	LY	LZ	X	Y
		A	B	LS	A	B	LS										
40	5 to 50	74	40	24	84	50	34	17	6.6	4	33	3.2	64	68	78	11.2	7
	75, 100	84	50	34													
50	10 to 50	76.5	40.5	17.5	86.5	50.5	27.5	18	9	5	39	3.2	79	78	95	14.7	8
	75, 100	86.5	50.5	27.5													
63	10 to 50	78	42	16	88	52	26	18	11	5	46	3.2	95	91.5	113	16.2	8
	75, 100	88	52	26													

Foot bracket material: Carbon steel  
Surface treatment: Nickel plated

**Flange: CQ2KWF/CDQ2KWF**



**Rod end male thread**



**Rod End Male Thread** (mm)

Bore size (mm)	Without auto switch	With auto switch	L <sub>3</sub>	L <sub>4</sub>
	A <sub>1</sub>	A <sub>1</sub>		
40	107	117	38.5	28.5
50	117.5	127.5	43.5	33.5
63	119	129	43.5	33.5

**Flange** For auto switch proper mounting position and its mounting height, refer to pages 169 to 175. (mm)

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		FD	FT	FV	FX	FZ	L <sub>1</sub>	L <sub>2</sub>	M
		A	B	A	B								
40	5 to 50	64	40	74	50	5.5	8	54	62	72	17	7	40
	75, 100	74	50										
50	10 to 50	66.5	40.5	76.5	50.5	6.6	9	67	76	89	18	8	50
	75, 100	76.5	50.5										
63	10 to 50	68	42	78	52	9	9	80	92	108	18	8	60
	75, 100	78	52										

\* For details about the rod end nut and accessory brackets, refer to page 19.

Flange bracket material: Carbon steel  
Surface treatment: Nickel plated

Standard  
Large Bore Size  
Long Stroke  
Non-rotating Rod  
Axial Piping  
Anti-lateral Load  
With End Lock  
Water Resistant  
With Auto Switch  
Auto Switch  
Made to Order