

Compact Cylinder: Non-rotating Rod Double Acting, Single Rod Series CQ2K

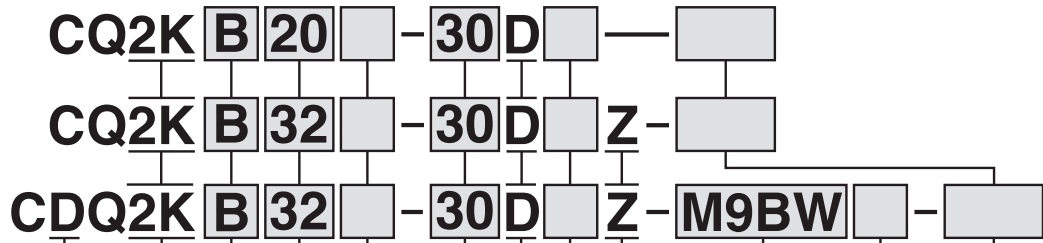
ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63

How to Order

Without auto switch
ø12 to ø25

Without auto switch
ø32 to ø63

With auto switch



With auto switch
(Built-in magnet)

Non-rotating rod

Mounting

| | | |
|----|-------------------------|---------------|
| B | Through-hole (Standard) | ø12 to ø63 |
| A | Both ends tapped | |
| L | Foot | |
| LC | Compact Foot | ø40, ø50, ø63 |
| F | Rod flange | |
| G | Head flange | |
| D | Double clevis | |

* Mounting brackets are shipped together, (but not assembled).
* Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for C(D)Q2KB" on pages 98 and 100.

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 |

Note 1) When ø12 with auto switch is required, the body option should be with rubber bumper (C).
Example) CDQ2KB12-30DCZ

Port thread type

| | | |
|----|-----------------------------|------------|
| | M thread | ø12 to ø25 |
| | Rc | |
| TN | NPT | ø32 to ø63 |
| TF | G | |
| F | Built-in one-touch fittings | Note 2) |

Note 2) 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.

Cylinder stroke (mm)

Refer to the next page for standard strokes.

Number of auto switches

| | |
|---|----------|
| — | 2 pcs. |
| S | 1 pc. |
| n | "n" pcs. |

Auto switch

| | |
|---|---------------------|
| — | 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 |

Made to Order

Refer to the next page for details.

Body option

| | |
|---|--|
| — | Standard (Rod end female thread) |
| F | With boss on head end |
| C | With rubber bumper (ø12 with auto switch only) |
| M | Rod end male thread |

* Combination of body options ("FM") is available.

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) CDQ2KL32-30DZ

Applicable Auto Switches

Refer to pages 1263 to 1371 in Best Pneumatics No. 2 for further information on auto switches.

Refer to the individual catalogue (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 (-) | 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 | | |
| | | | | 3-wire (PNP) | | | | M9PV | M9P | ● | ● | ● | ○ | — | ○ | | | |
| | | | | 2-wire | | | | M9BV | M9B | ● | ● | ● | ○ | — | ○ | | — | |
| | | | | 3-wire (NPN) | | | | M9NWV | M9NW | ● | ● | ● | ○ | — | ○ | | | |
| | Diagnostic indication (2-colour indication) | | | 3-wire (PNP) | | | | M9PWV | M9PW | ● | ● | ● | ○ | — | ○ | | IC circuit | |
| | | | | 2-wire | | | | M9BWW | M9BW | ● | ● | ● | ○ | — | ○ | | | — |
| | | | | 3-wire (NPN) | | | | M9NAV** | M9NA** | ○ | ○ | ● | ○ | — | ○ | | | |
| | | | | 3-wire (PNP) | | | | M9PAV** | M9PA** | ○ | ○ | ● | ○ | — | ○ | | | |
| Water resistant (2-colour indication) | 2-wire | M9BAV** | M9BA** | ○ | ○ | ● | ○ | — | ○ | — | | | | | | | | |
| | 2-wire (Non-polar) | — | P3DW | ● | — | ● | ● | — | ○ | | | | | | | | | |
| | Magnetic field resistant (2-colour indication) | 3-wire (NPN equivalent) | A96V | A96 | ● | — | ● | — | — | | — | IC circuit | | | | | | |
| | | 2-wire | A93V | A93 | ● | — | ● | — | — | | — | | | | | | | |
| Read auto switch | — | Grommet | No | 2-wire | 24 V | 5 V, 12 V | 100 V or less | A90V | A90 | ● | — | ● | — | — | IC circuit | | | |
| | | | | 5 V, 12 V | | 100 V or less | A93V | A93 | ● | — | ● | — | — | Relay, PLC | | | | |

* 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 — (Example) M9NV
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWZ

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

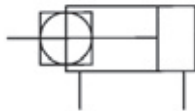
* There are other applicable auto switches other than the listed above. For details, refer to page 199.

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

Series CQ2K



Symbol
Non-rotating rod



Made to Order
(For details, refer to pages 201 to 235.)

| Symbol | Specifications |
|---------|---|
| -XA□ | Special rod end shape |
| -XB10 | Intermediate stroke (Exclusive body type): ø40 to ø63 |
| -XC2(A) | Rod end length, 10 mm increased (For foot and flange bracket) |
| -XC8 | Adjustable stroke cylinder/Adjustable extension type |
| -XC9 | Adjustable stroke cylinder/Adjustable retraction type |
| -XC10 | Dual stroke cylinder/Double rod |
| -XC11 | Dual stroke cylinder/Single rod |
| -XC26 | With split pins for double clevis pin/ double knuckle joint pin and flat washers |
| -X1876 | Cylinder tube: With concave boss on head side |

Refer to pages 193 to 199 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.

Specifications

| Bore size (mm) | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 |
|--------------------------------------|---|-------|----------|------|------|-------|------|------|
| Action | Double acting, Single 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 0,043 Note 1) | 0.038 | 0.055 | 0.09 | 0.15 | 0.26 | 0.46 | 0.77 |
| 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. 94) | |
| Description | Strokes in 1 mm intervals are available by installing a spacer in the standard stroke cylinder. | |
| Stroke range | Bore size | Stroke range |
| | 12, 16 | 1 to 29 |
| | 20, 25 | 1 to 49 |
| | 32 to 63 | 1 to 99 |
| Example | Part no.: CQ2KB50-57DZ CQ2KB50-75DZ with 18 mm width spacer inside The B dimension is 115.5 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 | M5 | M5 | M5 | Note 1) M5 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 | | ● | ● | ● | ● | ● | ● | ● | ● | |
| | With boss on head end | | ● | ● | ● | ● | ● | ● | ● | ● | |

Note 1) ø32 without auto switch: M5 is used for 5 mm strokekeeping 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.

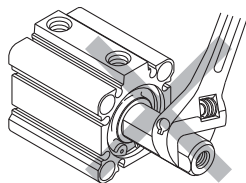
Retaining Ring Installation/Removal

⚠ 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

- Install or remove loads while the piston rod width across flat is secured.



- 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 | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 |
|-----------------------------|------|------|------|------|------|------|------|------|
| N·m or less | 0.04 | 0.15 | 0.20 | 0.25 | 0.44 | 0.44 | 0.44 | 0.44 |

Operate the cylinder in such a way that the load to the piston rod is always applied in the axial direction.

- When a work piece is secured to the end of the piston rod, ensure that the piston rod is retracted entirely, and place a wrench on the portion of the rod that protrudes beyond the section. Also, tighten in a way that prevents the tightening torque from being applied to the non-rotating guide.

Mounting Brackets/Part No.

| Bore size (mm) | Note 1) Foot | Note 1) Compact Foot | Flange | Double clevis |
|----------------|--------------|----------------------|---------|---------------|
| 40 | CQ-L040 | CQ-LC040 | CQ-F040 | CQ-D040 |
| 50 | CQ-L050 | CQ-LC050 | CQ-F050 | CQ-D050 |
| 63 | CQ-L063 | CQ-LC063 | CQ-F063 | CQ-D063 |

Note 1) When ordering a foot, and compact foot brackets, order 2 pieces per cylinder.

Note 2) Parts belonging to each bracket are as follows.
Foot, Compact foot, Flange: Body mounting bolts
Double clevis: Clevis pin, Body mounting bolts, Type C retaining rings for axis

Theoretical Output

| Bore size (mm) | Operating direction | Operating pressure (MPa) | | |
|----------------|---------------------|--------------------------|------|------|
| | | 0.3 | 0.5 | 0.7 |
| 12 | IN | 25 | 42 | 59 |
| | OUT | 34 | 57 | 79 |
| 16 | IN | 45 | 75 | 106 |
| | OUT | 60 | 101 | 141 |
| 20 | IN | 71 | 118 | 165 |
| | OUT | 94 | 157 | 220 |
| 25 | IN | 113 | 189 | 264 |
| | OUT | 147 | 245 | 344 |
| 32 | IN | 181 | 302 | 422 |
| | OUT | 241 | 402 | 563 |
| 40 | IN | 317 | 528 | 739 |
| | OUT | 377 | 628 | 880 |
| 50 | IN | 495 | 825 | 1150 |
| | OUT | 589 | 982 | 1370 |
| 63 | IN | 841 | 1400 | 1960 |
| | OUT | 935 | 1560 | 2180 |

Weight

Weight

| Bore size (mm) | Cylinder stroke (mm) | | | | | | | | | | | |
|----------------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 75 | 100 |
| 12 | 60 | 67 | 74 | 81 | 88 | 95 | — | — | — | — | — | — |
| 16 | 58 | 67 | 76 | 85 | 94 | 103 | — | — | — | — | — | — |
| 20 | 103 | 117 | 131 | 145 | 159 | 173 | 187 | 201 | 215 | 229 | — | — |
| 25 | 137 | 152 | 167 | 182 | 197 | 212 | 227 | 242 | 257 | 272 | — | — |
| 32 | 196 | 215 | 234 | 253 | 272 | 291 | 310 | 329 | 347 | 366 | 506 | 601 |
| 40 | 205 | 226 | 248 | 269 | 291 | 312 | 333 | 355 | 376 | 398 | 570 | 682 |
| 50 | — | 356 | 390 | 424 | 457 | 491 | 525 | 559 | 592 | 626 | 901 | 1075 |
| 63 | — | 524 | 563 | 602 | 641 | 680 | 720 | 759 | 798 | 837 | 1173 | 1375 |

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 | 1.5 | 3 | 6 | 12 | 26 | 27 | 53 | 53 |
| | Nut | 1 | 2 | 4 | 8 | 17 | 17 | 32 | 32 |
| With boss on head side | | 0.7 | 1.3 | 2 | 3 | 5 | 7 | 13 | 25 |
| Built-in one-touch fittings | | — | — | — | — | 12 | 12 | 21 | 21 |
| Foot (Including mounting bolts) | | — | — | — | — | — | 153 | 242 | 316 |
| Compact foot (Including mounting bolts) | | 41 | 51 | 121 | 140 | 99 | 114 | 177 | 241 |
| Rod flange (Including mounting bolts) | | — | — | — | — | — | 213 | 372 | 558 |
| Head flange (Including mounting bolts) | | — | — | — | — | — | 198 | 348 | 534 |
| Double clevis (Including pin, retaining rings, bolts) | | — | — | — | — | — | 196 | 393 | 554 |

Calculation: (Example) **CQ2KD40-20DMZ**

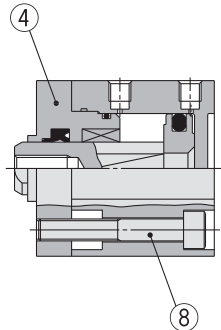
- Basic weight: CQ2KB40-20DZ 269 g
 - Additional weight: Both ends tapped 6 g
 - Rod end male thread 44 g
 - Double clevis 196 g
- 515 g

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

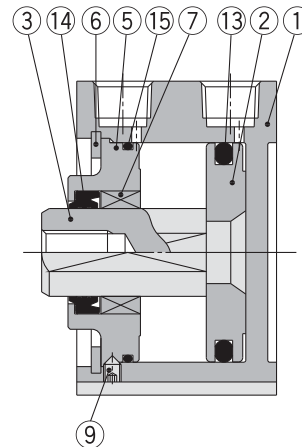
Series CQ2K

Construction

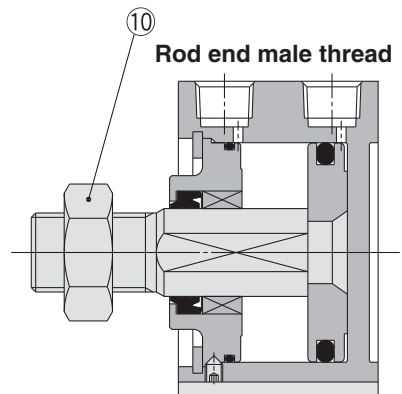
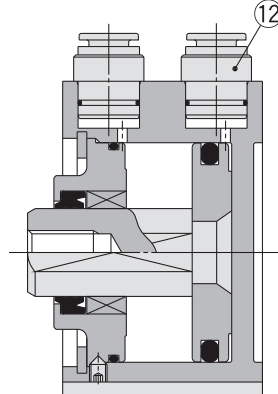
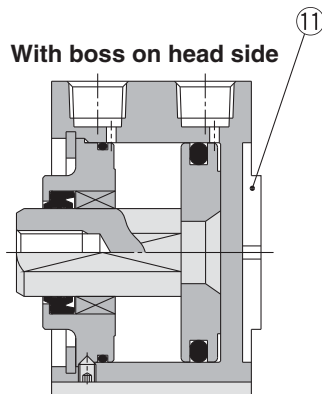
Standard (ø12 to ø32)



Standard (ø40 to ø63)



Built-in one-touch fittings



Component Parts

| No. | Description | Material | Note |
|-----|-------------------------------|--------------------------------|--------------------------------|
| 1 | Cylinder tube | Aluminum alloy | Hard anodised |
| 2 | Piston | Aluminum alloy | Chromated |
| 3 | Piston rod | Stainless steel | ø12 to ø25 |
| | | Carbon steel | ø32 to ø63, Hard chrome plated |
| 4 | Rod cover | Brass | ø12, Electroless nickel plated |
| | | Aluminum alloy | ø16 to ø32, Anodised |
| 5 | Collar | Aluminum alloy | ø40 to ø63, Anodised |
| 6 | Retaining ring | Carbon tool steel | Phosphate coated |
| 7 | Bushing | Oil-impregnated sintered alloy | ø16 to ø63 |
| 8 | Hexagon socket head cap screw | Alloy steel | ø12 to ø32, Nickel plated |
| 9 | Hexagon socket head set screw | Alloy steel | ø40 to ø63, Nickel plated |
| 10 | Rod end nut | Carbon steel | Nickel plated |
| 11 | Centering location ring | Aluminum alloy | ø20 to ø63, Anodised |
| 12 | One-touch fitting | — | ø32 to ø63 |
| 13 | Piston seal | NBR | |
| 14 | Rod seal | NBR | |
| 15 | Tube gasket | NBR | |

Replacement Parts/Seal Kit

| Bore size (mm) | Kit no. | Contents |
|----------------|------------|---|
| 12 | CQ2KB12-PS | Kits include items 13, 14, 15 from the table. |
| 16 | CQ2KB16-PS | |
| 20 | CQ2KB20-PS | |
| 25 | CQ2KB25-PS | |
| 32 | CQ2KB32-PS | |
| 40 | CQ2KB40-PS | |
| 50 | CQ2KB50-PS | |
| 63 | CQ2KB63-PS | |

* Seal kit includes 13, 14, 15. Order the seal kit based on each bore size.

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

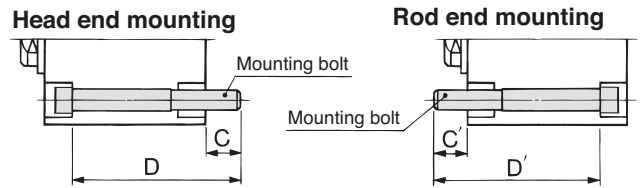
Grease pack part no.: GR-S-010 (10 g)

Mounting Bolt for CQ2KB/Without Auto Switch

Mounting method: Mounting bolt for through-hole mounting of the CQ2KB is available as an option. Refer to the following for ordering procedures. Order the actual number of bolts that will be used.

Example) CQ-M3 x 30L 2 pcs.

Material: Chromium molybdenum steel
Surface treatment: Zinc chromated



| Cylinder model | C | D | Mounting bolt part no. | C' | D' | Mounting bolt part no. |
|--------------------|-----|--------|------------------------|--------|----|------------------------|
| CQ2KB12-5D | 6.5 | 30 | CQ-M3 x 30L | 6.5 | 30 | CQ-M3 x 30L |
| -10D | | 35 | x 35L | | 35 | x 35L |
| -15D | | 40 | x 40L | | 40 | x 40L |
| -20D | | 45 | x 45L | | 45 | x 45L |
| -25D | | 50 | x 50L | | 50 | x 50L |
| -30D | | 55 | x 55L | | 55 | x 55L |
| CQ2KB16-5D | 5 | 30 | CQ-M3 x 30L | 5 | 30 | CQ-M3 x 30L |
| -10D | | 35 | x 35L | | 35 | x 35L |
| -15D | | 40 | x 40L | | 40 | x 40L |
| -20D | | 45 | x 45L | | 45 | x 45L |
| -25D | | 50 | x 50L | | 50 | x 50L |
| -30D | | 55 | x 55L | | 55 | x 55L |
| CQ2KB20-5D | 8 | 35 | CQ-M5 x 35L | 9.5 | 35 | CQ-M5 x 35L |
| -10D | | 40 | x 40L | | 40 | x 40L |
| -15D | | 45 | x 45L | | 45 | x 45L |
| -20D | | 50 | x 50L | | 50 | x 50L |
| -25D | | 55 | x 55L | | 55 | x 55L |
| -30D | | 60 | x 60L | | 60 | x 60L |
| -35D | | 65 | x 65L | | 65 | x 65L |
| -40D | | 70 | x 70L | | 70 | x 70L |
| -45D | | 75 | x 75L | | 75 | x 75L |
| -50D | | 80 | x 80L | | 80 | x 80L |
| CQ2KB25-5D | 10 | 40 | CQ-M5 x 40L | 6.5 | 35 | CQ-M5 x 35L |
| -10D | | 45 | x 45L | | 40 | x 40L |
| -15D | | 50 | x 50L | | 45 | x 45L |
| -20D | | 55 | x 55L | | 50 | x 50L |
| -25D | | 60 | x 60L | | 55 | x 55L |
| -30D | | 65 | x 65L | | 60 | x 60L |
| -35D | | 70 | x 70L | | 65 | x 65L |
| -40D | | 75 | x 75L | | 70 | x 70L |
| -45D | | 80 | x 80L | | 75 | x 75L |
| -50D | | 85 | x 85L | | 80 | x 80L |
| CQ2KB32-5DZ | 8.5 | 40 | CQ-M5 x 40L | 10 | 40 | CQ-M5 x 40L |
| -10DZ | | 45 | x 45L | | 45 | x 45L |
| -15DZ | | 50 | x 50L | | 50 | x 50L |
| -20DZ | | 55 | x 55L | | 55 | x 55L |
| -25DZ | | 60 | x 60L | | 60 | x 60L |
| -30DZ | | 65 | x 65L | | 65 | x 65L |
| -35DZ | | 70 | x 70L | | 70 | x 70L |
| -40DZ | | 75 | x 75L | | 75 | x 75L |
| -45DZ | | 80 | x 80L | | 80 | x 80L |
| -50DZ | | 85 | x 85L | | 85 | x 85L |
| -75DZ | 120 | x 120L | 120 | x 120L | | |
| -100DZ | 145 | x 145L | 145 | x 145L | | |

| Cylinder model | C | D | Mounting bolt part no. | C' | D' | Mounting bolt part no. |
|---------------------|------|--------|------------------------|--------|-----|------------------------|
| CQ2KB40-5DZ | 7.5 | 35 | CQ-M5 x 35L | 7.5 | 35 | CQ-M5 x 35L |
| -10DZ | | 40 | x 40L | | 40 | x 40L |
| -15DZ | | 45 | x 45L | | 45 | x 45L |
| -20DZ | | 50 | x 50L | | 50 | x 50L |
| -25DZ | | 55 | x 55L | | 55 | x 55L |
| -30DZ | | 60 | x 60L | | 60 | x 60L |
| -35DZ | | 65 | x 65L | | 65 | x 65L |
| -40DZ | | 70 | x 70L | | 70 | x 70L |
| -45DZ | | 75 | x 75L | | 75 | x 75L |
| -50DZ | | 80 | x 80L | | 80 | x 80L |
| -75DZ | 115 | x 115L | 115 | x 115L | | |
| -100DZ | 140 | x 140L | 140 | x 140L | | |
| CQ2KB50-10DZ | 12.5 | 45 | CQ-M6 x 45L | 12.5 | 45 | CQ-M6 x 45L |
| -15DZ | | 50 | x 50L | | 50 | x 50L |
| -20DZ | | 55 | x 55L | | 55 | x 55L |
| -25DZ | | 60 | x 60L | | 60 | x 60L |
| -30DZ | | 65 | x 65L | | 65 | x 65L |
| -35DZ | | 70 | x 70L | | 70 | x 70L |
| -40DZ | | 75 | x 75L | | 75 | x 75L |
| -45DZ | | 80 | x 80L | | 80 | x 80L |
| -50DZ | | 85 | x 85L | | 85 | x 85L |
| -75DZ | | 120 | x 120L | | 120 | x 120L |
| -100DZ | 145 | x 145L | 145 | x 145L | | |
| CQ2KB63-10DZ | 14.5 | 50 | CQ-M8 x 50L | 14.5 | 50 | CQ-M8 x 50L |
| -15DZ | | 55 | x 55L | | 55 | x 55L |
| -20DZ | | 60 | x 60L | | 60 | x 60L |
| -25DZ | | 65 | x 65L | | 65 | x 65L |
| -30DZ | | 70 | x 70L | | 70 | x 70L |
| -35DZ | | 75 | x 75L | | 75 | x 75L |
| -40DZ | | 80 | x 80L | | 80 | x 80L |
| -45DZ | | 85 | x 85L | | 85 | x 85L |
| -50DZ | | 90 | x 90L | | 90 | x 90L |
| -75DZ | | 125 | x 125L | | 125 | x 125L |
| -100DZ | 150 | x 150L | 150 | x 150L | | |

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

20 — CQ2KB Bore size — Stroke D(M)Z

• Copper and fluorine-free series — $\varnothing 16, \varnothing 20, \varnothing 25, \varnothing 32, \varnothing 40, \varnothing 50, \varnothing 63$

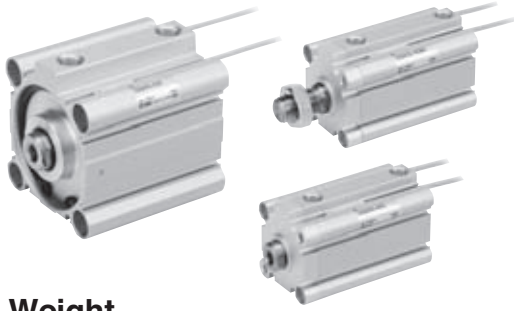
For preventing the influence of copper ions or halogen ions during CRT manufacturing processes, copper and fluorine materials are not used in the component parts.

Specifications

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

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

Non-rotating Rod: Double Acting, Single Rod Series CDQ2K With Auto Switch



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

| | |
|--|--------------|
| Auto switch proper mounting position and its mounting height | P.193 to 199 |
| Minimum stroke for auto switch mounting | |
| Operating range | |
| Auto switch mounting brackets/Part no. | |

Weight

Weight

| Bore size (mm) | Cylinder stroke (mm) | | | | | | | | | | | |
|----------------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 75 | 100 |
| 12 | 71 | 77 | 83 | 89 | 96 | 102 | — | — | — | — | — | — |
| 16 | 74 | 82 | 89 | 97 | 105 | 113 | — | — | — | — | — | — |
| 20 | 119 | 132 | 144 | 156 | 168 | 180 | 192 | 204 | 217 | 229 | — | — |
| 25 | 162 | 177 | 192 | 208 | 223 | 238 | 254 | 269 | 284 | 300 | — | — |
| 32 | 227 | 247 | 266 | 286 | 306 | 326 | 345 | 365 | 385 | 404 | 504 | 604 |
| 40 | 240 | 261 | 283 | 305 | 326 | 348 | 369 | 391 | 413 | 434 | 546 | 658 |
| 50 | — | 433 | 466 | 499 | 532 | 565 | 598 | 630 | 663 | 697 | 869 | 1041 |
| 63 | — | 622 | 660 | 698 | 736 | 774 | 812 | 850 | 888 | 926 | 1124 | 1321 |

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 | 1.5 | 3 | 6 | 12 | 26 | 27 | 53 |
| | Nut | 1 | 2 | 4 | 8 | 17 | 17 | 32 |
| With boss on head side | 0.7 | 1.3 | 2 | 3 | 5 | 7 | 13 | 25 |
| Built-in one-touch fittings | — | — | — | — | 12 | 12 | 21 | 21 |
| Foot (Including mounting bolts) | — | — | — | — | — | 153 | 242 | 316 |
| Compact foot (Including mounting bolts) | 32 | 40 | 97 | 116 | 99 | 114 | 177 | 241 |
| Rod flange (Including mounting bolts) | — | — | — | — | — | 213 | 372 | 558 |
| Head flange (Including mounting bolts) | — | — | — | — | — | 198 | 348 | 534 |
| Double clevis (Including pin, retaining rings and bolts) | — | — | — | — | — | 196 | 393 | 554 |

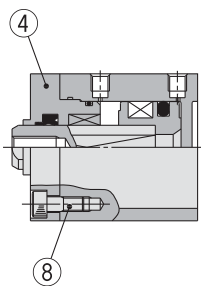
Calculation: (Example) CDQ2KD40-25DMZ

- Basic weight: CDQ2KB40-25DZ 326 g
 - Additional weight: Both ends tapped 6 g
 - Rod end male thread 44 g
 - Double clevis 196 g
- 572 g

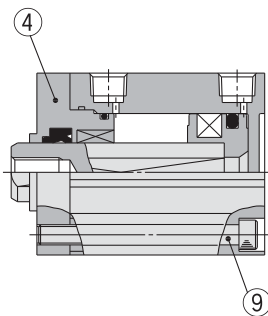
Add each weight of auto switches when auto switches are mounted.

Construction

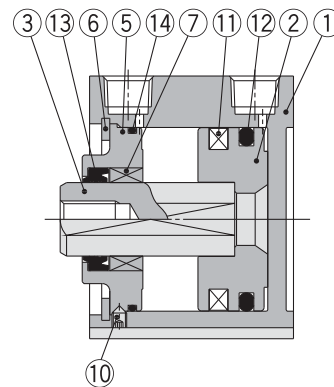
ø12 to ø25



ø32



ø40 to ø63



Component Parts

| No. | Description | Material | Note |
|-----|-------------------------------|--------------------------------|--------------------------------|
| 1 | Cylinder tube | Aluminum alloy | Hard anodised |
| 2 | Piston | Aluminum alloy | Chromated |
| 3 | Piston rod | Stainless steel | ø12 to ø25 |
| | | Carbon steel | ø32 to ø63, Hard chrome plated |
| 4 | Rod cover | Brass | ø12, Electroless nickel plated |
| | | Aluminum alloy | ø16 to ø32, Anodised |
| 5 | Collar | Aluminum alloy | ø40 to ø63, Anodised |
| 6 | Retaining ring | Carbon tool steel | Phosphate coated |
| 7 | Bushing | Oil-impregnated sintered alloy | ø16 to ø63 |
| 8 | Hexagon socket head cap screw | Alloy steel | ø12 to ø25, Nickel plated |
| 9 | Hexagon socket head cap screw | Alloy steel | ø32, Nickel plated |
| 10 | Hexagon socket head set screw | Alloy steel | ø40 to ø63, Nickel plated |
| 11 | Magnet | — | — |
| 12 | Piston seal | NBR | — |
| 13 | Rod seal | NBR | — |
| 14 | Tube gasket | NBR | — |

Replacement Parts/Seal Kit (Pneumatic type (Non-lube))

| Bore size (mm) | Kit no. | Contents |
|----------------|------------|---|
| 12 | CQ2KB12-PS | Kits include items 12, 13, 14 from the table. |
| 16 | CQ2KB16-PS | |
| 20 | CQ2KB20-PS | |
| 25 | CQ2KB25-PS | |
| 32 | CQ2KB32-PS | |
| 40 | CQ2KB40-PS | |
| 50 | CQ2KB50-PS | |
| 63 | CQ2KB63-PS | |

- * Seal kit includes 12, 13, 14. 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, Single Rod *Series CQ2K*

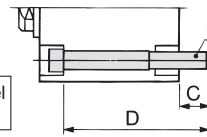
Mounting Bolt for CDQ2KB/With Auto Switch

Mounting method: Mounting bolt for through-hole mounting of the CDQ2KB is available as an option. Refer to the following for ordering procedures. Order the actual number of bolts that will be used.

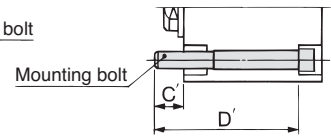
Example) CQ-M3 x 35L 2 pcs.

Material: Chromium molybdenum steel
Surface treatment: Zinc chromated

Head end mounting



Rod end mounting



| Cylinder model | C | D | Mounting bolt part no. | C' | D' | Mounting bolt part no. |
|----------------------|------|-------|------------------------|-------|----|------------------------|
| CDQ2KB12-5DCZ | 5.5 | 35 | CQ-M3 x 35L | 5.5 | 40 | CQ-M3 x 40L |
| -10DCZ | | 40 | x 40L | | 45 | x 45L |
| -15DCZ | | 45 | x 45L | | 50 | x 50L |
| -20DCZ | | 50 | x 50L | | 55 | x 55L |
| -25DCZ | | 55 | x 55L | | 60 | x 60L |
| -30DCZ | | 60 | x 60L | | 65 | x 65L |
| CDQ2KB16-5DZ | 8 | 40 | CQ-M3 x 40L | 8 | 45 | CQ-M3 x 45L |
| -10DZ | | 45 | x 45L | | 50 | x 50L |
| -15DZ | | 50 | x 50L | | 55 | x 55L |
| -20DZ | | 55 | x 55L | | 60 | x 60L |
| -25DZ | | 60 | x 60L | | 65 | x 65L |
| -30DZ | | 65 | x 65L | | 70 | x 70L |
| CDQ2KB20-5DZ | 10.5 | 40 | CQ-M5 x 40L | 7.5 | 45 | CQ-M5 x 45L |
| -10DZ | | 45 | x 45L | | 50 | x 50L |
| -15DZ | | 50 | x 50L | | 55 | x 55L |
| -20DZ | | 55 | x 55L | | 60 | x 60L |
| -25DZ | | 60 | x 60L | | 65 | x 65L |
| -30DZ | | 65 | x 65L | | 70 | x 70L |
| -35DZ | 70 | x 70L | 75 | x 75L | | |
| -40DZ | 75 | x 75L | 80 | x 80L | | |
| -45DZ | 80 | x 80L | 85 | x 85L | | |
| -50DZ | 85 | x 85L | 90 | x 90L | | |
| CDQ2KB25-5DZ | 9.5 | 40 | CQ-M5 x 40L | 6.5 | 45 | CQ-M5 x 45L |
| -10DZ | | 45 | x 45L | | 50 | x 50L |
| -15DZ | | 50 | x 50L | | 55 | x 55L |
| -20DZ | | 55 | x 55L | | 60 | x 60L |
| -25DZ | | 60 | x 60L | | 65 | x 65L |
| -30DZ | | 65 | x 65L | | 70 | x 70L |
| -35DZ | 70 | x 70L | 75 | x 75L | | |
| -40DZ | 75 | x 75L | 80 | x 80L | | |
| -45DZ | 80 | x 80L | 85 | x 85L | | |
| -50DZ | 85 | x 85L | 90 | x 90L | | |
| CDQ2KB32-5DZ | 8.5 | 50 | CQ-M5 x 50L | 10 | 50 | CQ-M5 x 50L |
| -10DZ | | 55 | x 55L | | 60 | x 60L |
| -15DZ | | 60 | x 60L | | 65 | x 65L |
| -20DZ | | 65 | x 65L | | 70 | x 70L |
| -25DZ | | 70 | x 70L | | 75 | x 75L |
| -30DZ | | 75 | x 75L | | 80 | x 80L |

| Cylinder model | C | D | Mounting bolt part no. | C' | D' | Mounting bolt part no. | |
|----------------------|------|--------|------------------------|--------|-------------|------------------------|----|
| CDQ2KB32-40DZ | 8.5 | 85 | CQ-M5 x 85L | 10 | 85 | CQ-M5 x 85L | |
| -45DZ | | 90 | x 90L | | 90 | x 90L | |
| -50DZ | | 95 | x 95L | | 95 | x 95L | |
| -75DZ | | 120 | x 120L | | 120 | x 120L | |
| -100DZ | | 145 | x 145L | | 145 | x 145L | |
| CDQ2KB40-5DZ | | 7.5 | 45 | | CQ-M5 x 45L | 7.5 | 45 |
| -10DZ | 50 | | x 50L | 50 | x 50L | | |
| -15DZ | 55 | | x 55L | 55 | x 55L | | |
| -20DZ | 60 | | x 60L | 60 | x 60L | | |
| -25DZ | 65 | | x 65L | 65 | x 65L | | |
| -30DZ | 70 | | x 70L | 70 | x 70L | | |
| -35DZ | 75 | x 75L | 75 | x 75L | | | |
| -40DZ | 80 | x 80L | 80 | x 80L | | | |
| -45DZ | 85 | x 85L | 85 | x 85L | | | |
| -50DZ | 90 | x 90L | 90 | x 90L | | | |
| -75DZ | 115 | x 115L | 115 | x 115L | | | |
| -100DZ | 140 | x 140L | 140 | x 140L | | | |
| CDQ2KB50-10DZ | 12.5 | 55 | CQ-M6 x 55L | 12.5 | 55 | CQ-M6 x 55L | |
| -15DZ | | 60 | x 60L | | 60 | x 60L | |
| -20DZ | | 65 | x 65L | | 65 | x 65L | |
| -25DZ | | 70 | x 70L | | 70 | x 70L | |
| -30DZ | | 75 | x 75L | | 75 | x 75L | |
| -35DZ | | 80 | x 80L | | 80 | x 80L | |
| -40DZ | 85 | x 85L | 85 | x 85L | | | |
| -45DZ | 90 | x 90L | 90 | x 90L | | | |
| -50DZ | 95 | x 95L | 95 | x 95L | | | |
| -75DZ | 120 | x 120L | 120 | x 120L | | | |
| -100DZ | 145 | x 145L | 145 | x 145L | | | |
| CDQ2KB63-10DZ | 14.5 | 60 | CQ-M8 x 60L | 14.5 | 60 | CQ-M8 x 60L | |
| -15DZ | | 65 | x 65L | | 65 | x 65L | |
| -20DZ | | 70 | x 70L | | 70 | x 70L | |
| -25DZ | | 75 | x 75L | | 75 | x 75L | |
| -30DZ | | 80 | x 80L | | 80 | x 80L | |
| -35DZ | | 85 | x 85L | | 85 | x 85L | |
| -40DZ | 90 | x 90L | 90 | x 90L | | | |
| -45DZ | 95 | x 95L | 95 | x 95L | | | |
| -50DZ | 100 | x 100L | 100 | x 100L | | | |
| -75DZ | 125 | x 125L | 125 | x 125L | | | |
| -100DZ | 150 | x 150L | 150 | x 150L | | | |

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

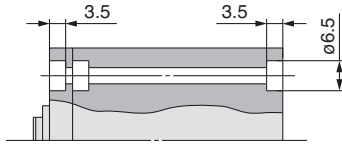
Series CQ2K

Dimensions

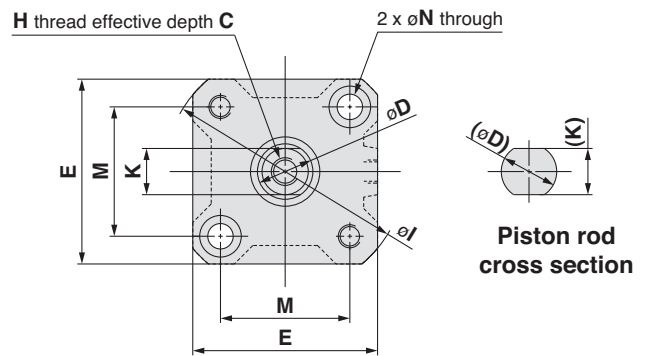
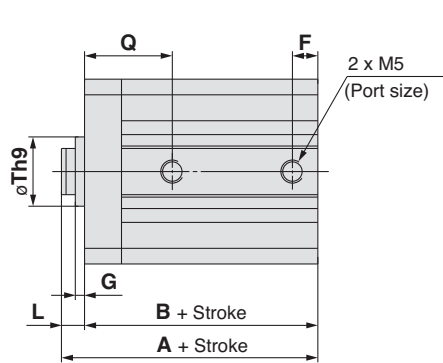
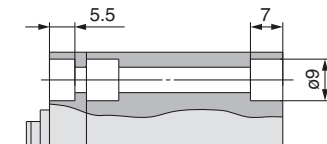
Ø12 to Ø25/Without Auto Switch

Standard (Through-hole): CQ2KB

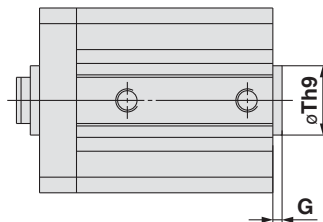
Ø12, Ø16



Ø20, Ø25



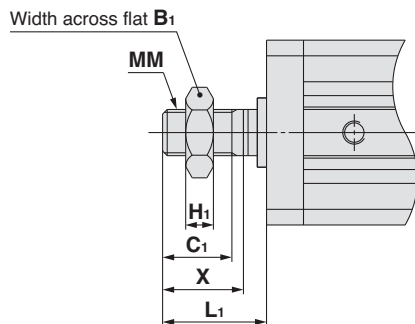
With boss on head side



With Boss on Head Side (mm)

| Bore size (mm) | G | Th9 |
|----------------|-----|-----------------------------------|
| 12 | 1.5 | 15 ⁰ _{-0.043} |
| 16 | 1.5 | 20 ⁰ _{-0.052} |
| 20 | 2 | 13 ⁰ _{-0.043} |
| 25 | 2 | 15 ⁰ _{-0.043} |

Rod end male thread



Rod End Male Thread (mm)

| Bore size (mm) | B ₁ | C ₁ | H ₁ | L ₁ | MM | X |
|----------------|----------------|----------------|----------------|----------------|------------|------|
| 12 | 8 | 9 | 4 | 14 | M5 x 0.8 | 10.5 |
| 16 | 10 | 10 | 5 | 15.5 | M6 x 1.0 | 12 |
| 20 | 13 | 12 | 5 | 18.5 | M8 x 1.25 | 14 |
| 25 | 17 | 15 | 6 | 22.5 | M10 x 1.25 | 17.5 |

Standard

(mm)

| Bore size (mm) | Stroke range (mm) | A | B | C | D | E | F | G | H | I | K | L | M | N | Q | Th9 |
|----------------|-------------------|------|------|----|----|----|-----|-----|----------|----|-----|-----|------|-----|------|-----------------------------------|
| 12 | 5 to 30 | 25.5 | 22 | 6 | 6 | 25 | 5 | 1.5 | M3 x 0.5 | 32 | 5.2 | 3.5 | 15.5 | 3.5 | 12.5 | 15 ⁰ _{-0.043} |
| 16 | 5 to 30 | 27 | 23.5 | 8 | 8 | 29 | 5.5 | 1.5 | M4 x 0.7 | 38 | 6 | 3.5 | 20 | 3.5 | 13 | 20 ⁰ _{-0.052} |
| 20 | 5 to 50 | 32 | 27.5 | 7 | 10 | 36 | 5.5 | 2 | M5 x 0.8 | 47 | 8 | 4.5 | 25.5 | 5.5 | 16 | 13 ⁰ _{-0.043} |
| 25 | 5 to 50 | 35.5 | 30.5 | 12 | 12 | 40 | 5.5 | 2 | M6 x 1.0 | 52 | 10 | 5 | 28 | 5.5 | 17 | 15 ⁰ _{-0.043} |

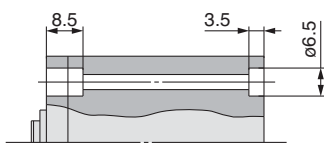
* For details about the rod end nut and accessory brackets, refer to page 23.

Dimensions

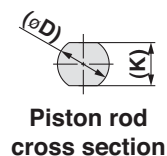
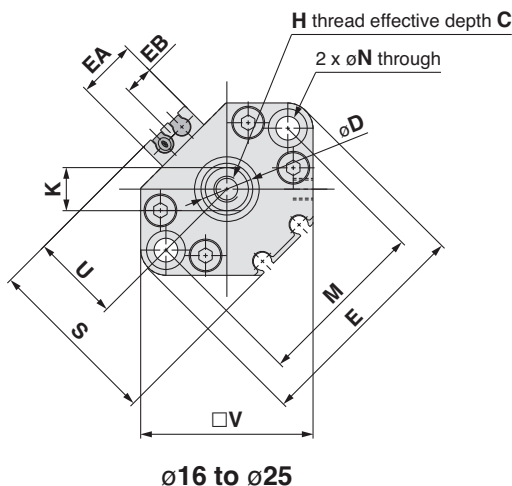
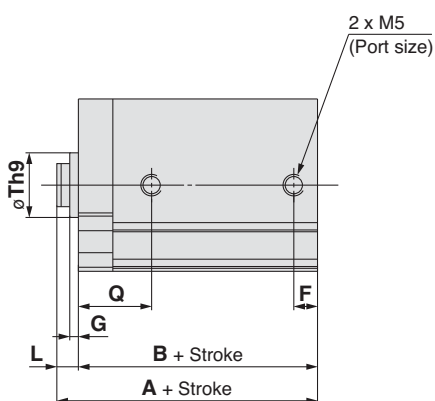
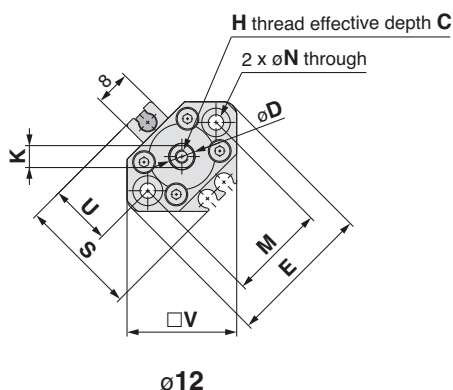
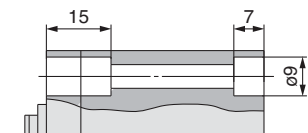
∅12 to ∅25/With Auto Switch

Standard (Through-hole): CDQ2KB

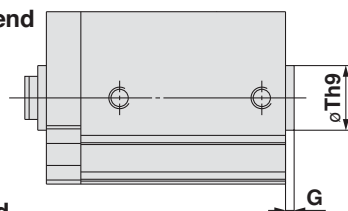
∅12, ∅16



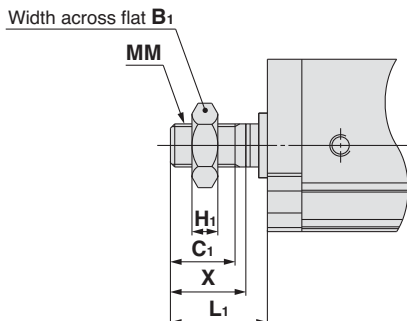
∅20, ∅25



With boss on head end



Rod end male thread



Rod End Male Thread (mm)

| Bore size (mm) | B ₁ | C ₁ | H ₁ | L ₁ | MM | X |
|----------------|----------------|----------------|----------------|----------------|------------|------|
| 12 | 8 | 9 | 4 | 14 | M5 x 0.8 | 10.5 |
| 16 | 10 | 10 | 5 | 15.5 | M6 x 1.0 | 12 |
| 20 | 13 | 12 | 5 | 18.5 | M8 x 1.25 | 14 |
| 25 | 17 | 15 | 6 | 22.5 | M10 x 1.25 | 17.5 |

Standard For auto switch proper mounting position and its mounting height, refer to pages 193 to 199.

| Bore size (mm) | Stroke range (mm) | A | B | C | D | E | EA | EB | F | G | H | K | L | M | N | Q | S | Th9 | U | V |
|----------------|-------------------|------|------|----|----|----|------|-----|-----|-----|----------|-----|-----|----|-----|----|------|-----------------------------------|----|----|
| 12 | 5 to 30 | 36.5 | 33 | 6 | 6 | 33 | — | — | 6.5 | 1.5 | M3 x 0.5 | 5.2 | 3.5 | 22 | 3.5 | 16 | 27.5 | 15 ⁰ _{-0.043} | 14 | 25 |
| 16 | 5 to 30 | 39 | 35.5 | 8 | 8 | 37 | 13.2 | 6.6 | 5.5 | 1.5 | M4 x 0.7 | 6 | 3.5 | 28 | 3.5 | 15 | 29.5 | 20 ⁰ _{-0.052} | 15 | 29 |
| 20 | 5 to 50 | 44 | 39.5 | 7 | 10 | 47 | 13.6 | 6.8 | 5.5 | 2 | M5 x 0.8 | 8 | 4.5 | 36 | 5.5 | 16 | 35.5 | 13 ⁰ _{-0.043} | 18 | 36 |
| 25 | 5 to 50 | 45.5 | 40.5 | 12 | 12 | 52 | 13.6 | 6.8 | 5.5 | 2 | M6 x 1.0 | 10 | 5 | 40 | 5.5 | 17 | 40.5 | 15 ⁰ _{-0.043} | 21 | 40 |

* For details about the rod end nut and accessory brackets, refer to page 23.

Standard

Large Bore Size

Long Stroke

Non-rotating Rod

Axial Piping

Anti-lateral Load

With End Lock

Water Resistant

With Auto Switch

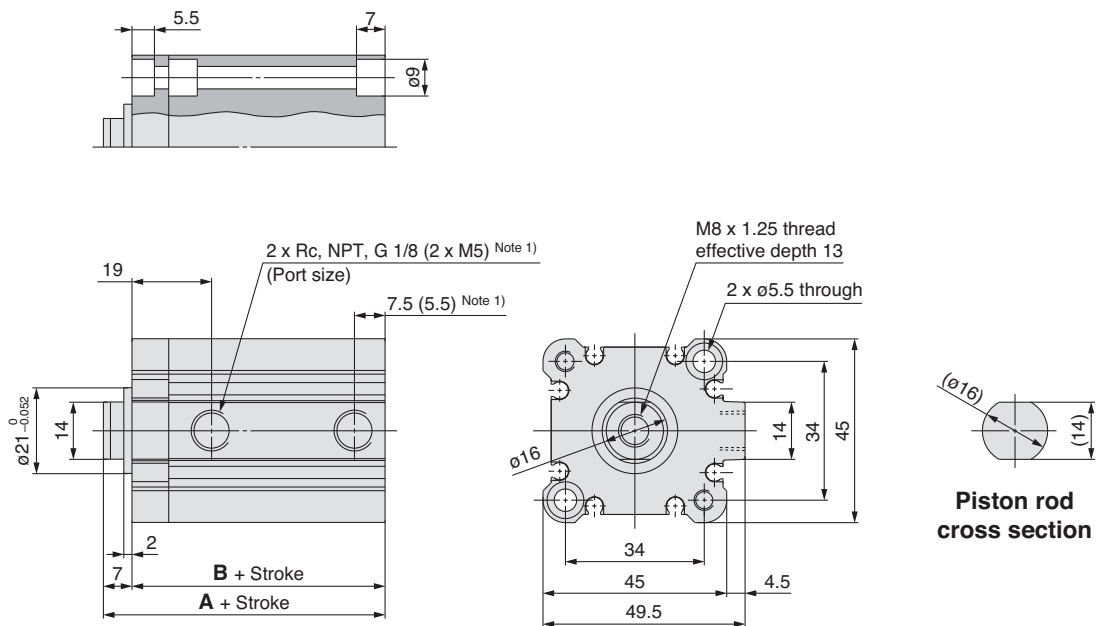
Auto Switch

Made to Order

Series CQ2K

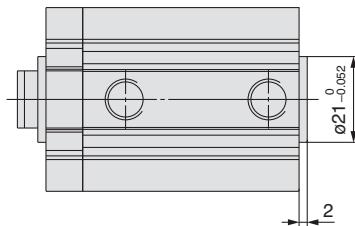
Dimensions

Ø32/Without Auto Switch



Note 1) () : Stroke 5 mm

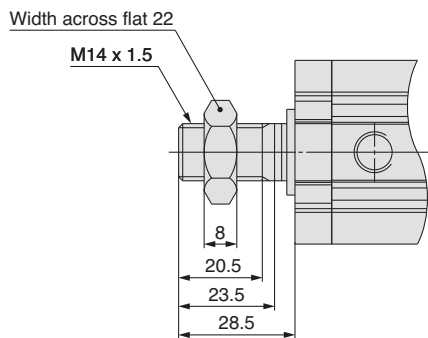
With boss on head side



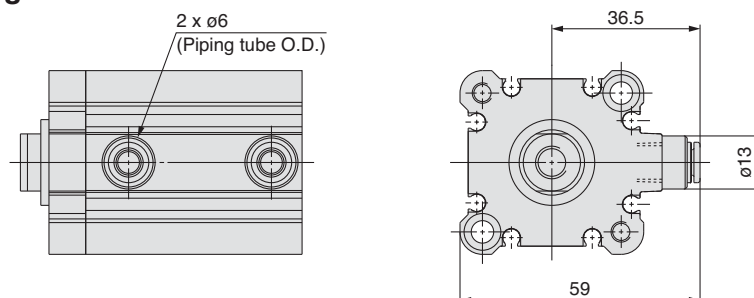
| Stroke range (mm) | A | B |
|-------------------|----|----|
| 5 to 50 | 39 | 32 |
| 75, 100 | 49 | 42 |

(mm)

Rod end male thread



Built-in one-touch fittings: Ø32

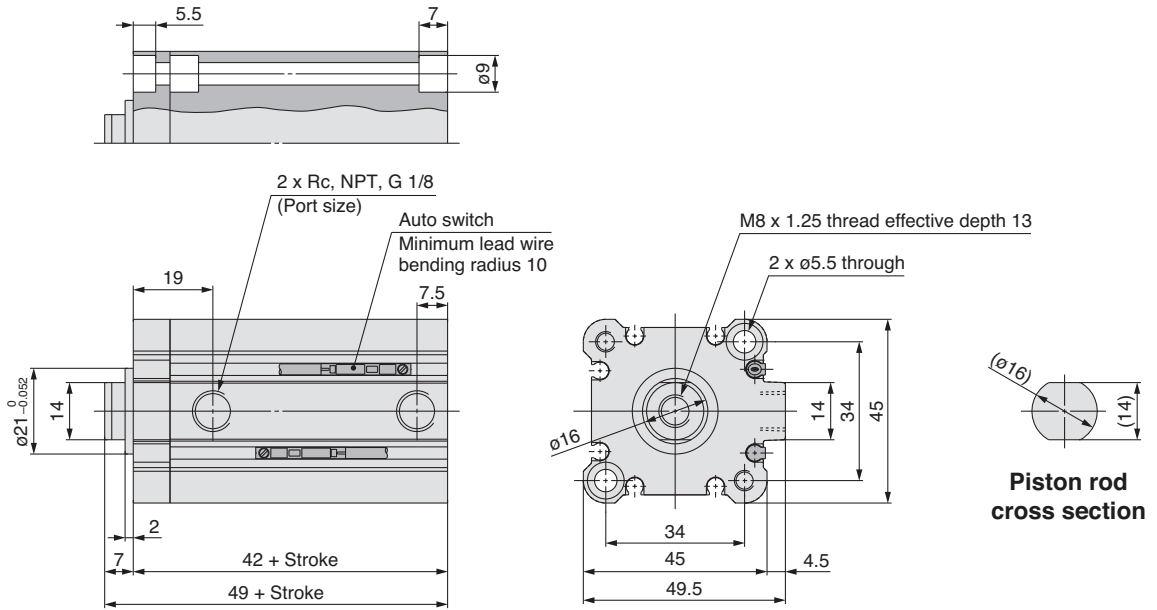


Note 2) The dimensions of the $\text{Ø}32$ -5 mm stroke with built-in one-touch fittings are the same as those of the 10 mm stroke cylinder tube.

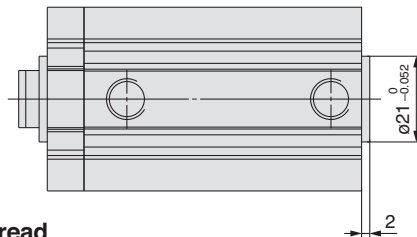
* For details about the rod end nut and accessory brackets, refer to page 23.

Dimensions

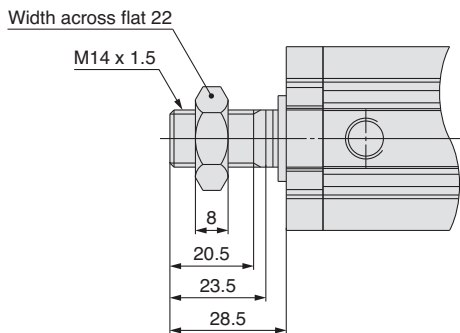
Ø32/With Auto Switch



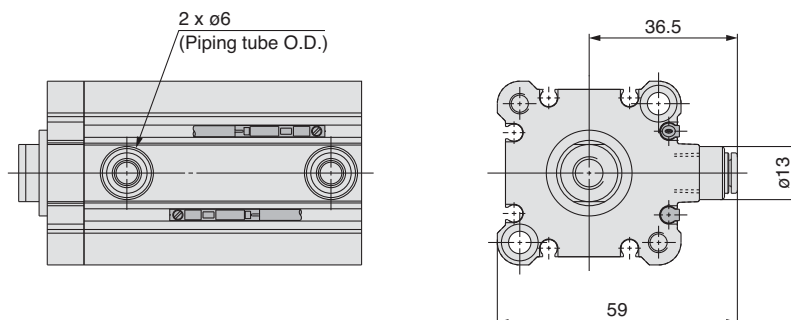
With boss on head end



Rod end male thread



Built-in one-touch fittings: Ø32



* For details about the rod end nut and accessory brackets, refer to page 23.

| |
|-------------------|
| 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 |

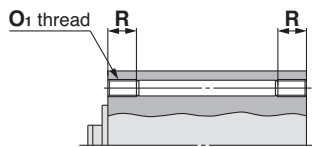
Series CQ2K

Dimensions

Ø40 to Ø63/With Auto Switch

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

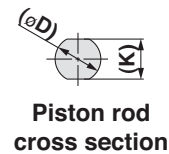
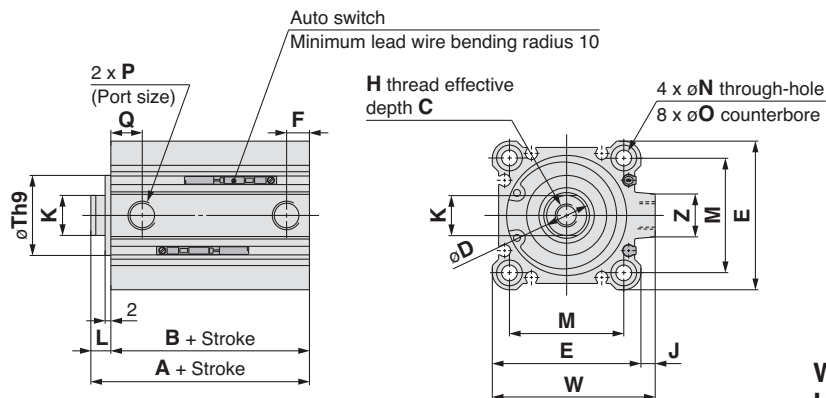
Both ends tapped: CDQ2KA



Both Ends Tapped (mm)

| Bore size (mm) | O ₁ | R |
|----------------|----------------|----|
| 40 | M6 x 1.0 | 10 |
| 50 | M8 x 1.25 | 14 |
| 63 | M10 x 1.5 | 18 |

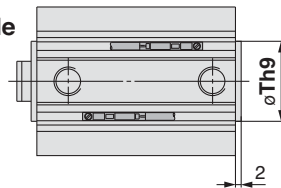
Standard (Through-hole): CDQ2KB



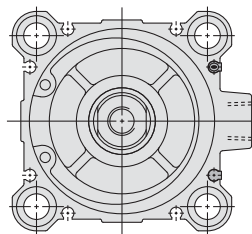
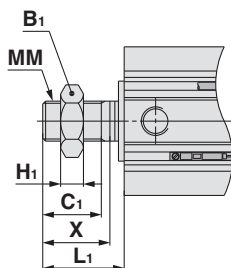
With Boss on Head Side (mm)

| Bore size (mm) | Th9 |
|----------------|-----------------------------------|
| 40 | 28 ⁰ _{-0.052} |
| 50 | 35 ⁰ _{-0.062} |
| 63 | 35 ⁰ _{-0.062} |

With boss on head side



Rod end male thread

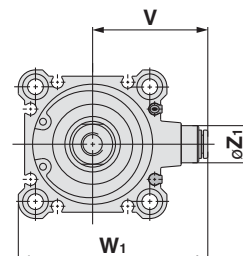
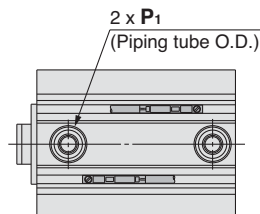


Rod End Male Thread (mm)

| Bore size (mm) | B ₁ | C ₁ | H ₁ | L ₁ | MM | X |
|----------------|----------------|----------------|----------------|----------------|-----------|------|
| 40 | 22 | 20.5 | 8 | 28.5 | M14 x 1.5 | 23.5 |
| 50 | 27 | 26 | 11 | 33.5 | M18 x 1.5 | 28.5 |
| 63 | 27 | 26 | 11 | 33.5 | M18 x 1.5 | 28.5 |

Cylinder tube form Ø63

Built-in one-touch fittings: Ø40 to Ø63



Built-in One-touch Fittings (mm)

| Bore size (mm) | Z ₁ | P ₁ | V | W ₁ |
|----------------|----------------|----------------|------|----------------|
| 40 | 13 | 6 | 40.5 | 66.5 |
| 50 | 16 | 8 | 50 | 82 |
| 63 | 16 | 8 | 56.5 | 95 |

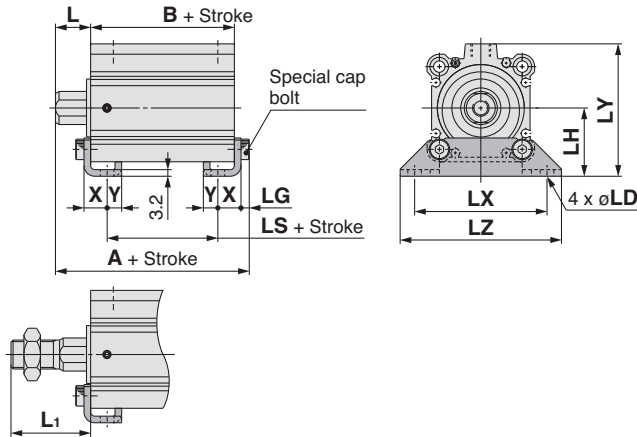
Standard

| 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 | Th9 | W | Z |
|----------------|-------------------|---------------------|------|------------------|------|----|----|----|------|-----------|---|----|---|----|-----|---------------|-----|------|-----------------------------------|----|----|
| | | A | B | A | B | | | | | | | | | | | | | | | | |
| 40 | 5 to 50 | 36.5 | 29.5 | 46.5 | 39.5 | 13 | 16 | 52 | 7.5 | M8 x 1.25 | 5 | 14 | 7 | 40 | 5.5 | 9 depth 7 | 1/8 | 12.5 | 28 ⁰ _{-0.052} | 57 | 15 |
| | 75, 100 | 46.5 | 39.5 | | | | | | | | | | | | | | | | | | |
| 50 | 10 to 50 | 38.5 | 30.5 | 48.5 | 40.5 | 15 | 20 | 64 | 10.5 | M10 x 1.5 | 7 | 18 | 8 | 50 | 6.6 | 11 depth 8 | 1/4 | 10.5 | 35 ⁰ _{-0.062} | 71 | 19 |
| | 75, 100 | 48.5 | 40.5 | | | | | | | | | | | | | | | | | | |
| 63 | 10 to 50 | 44 | 36 | 54 | 46 | 15 | 20 | 77 | 10.5 | M10 x 1.5 | 7 | 18 | 8 | 60 | 9 | 14 depth 10.5 | 1/4 | 15 | 35 ⁰ _{-0.062} | 84 | 19 |
| | 75, 100 | 54 | 46 | | | | | | | | | | | | | | | | | | |

* For details about the rod end nut and accessory brackets, refer to page 23.

Compact Cylinder: Non-rotating Rod Double Acting, Single Rod *Series CQ2K*

Foot: CDQ2KL



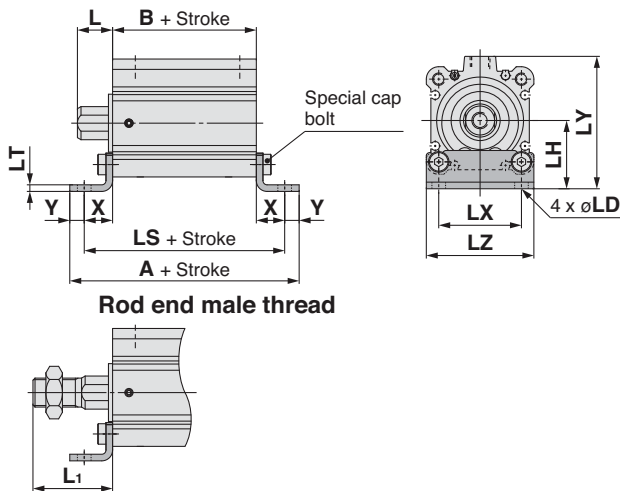
Foot

| Bore size (mm) | Stroke range (mm) | Without auto switch | | | With auto switch | | | (mm) | | |
|----------------|-------------------|---------------------|------|------|------------------|------|------|------|----------------|-----|
| | | A | B | LS | A | B | LS | L | L ₁ | LD |
| 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 | | | | | | |
| 50 | 10 to 50 | 56.7 | 30.5 | 7.5 | 66.7 | 40.5 | 17.5 | 18 | 43.5 | 9 |
| | 75, 100 | 66.7 | 40.5 | 17.5 | | | | | | |
| 63 | 10 to 50 | 62.2 | 36 | 10 | 72.2 | 46 | 20 | 18 | 43.5 | 11 |
| | 75, 100 | 72.2 | 46 | 20 | | | | | | |

| Bore size (mm) | LG | LH | LX | LY | LZ | X | Y |
|----------------|----|----|----|------|-----|------|---|
| 40 | 4 | 33 | 64 | 64 | 78 | 11.2 | 7 |
| 50 | 5 | 39 | 79 | 78 | 95 | 14.7 | 8 |
| 63 | 5 | 46 | 95 | 91.5 | 113 | 16.2 | 9 |

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Compact foot: CQ2KLC/CDQ2KLC



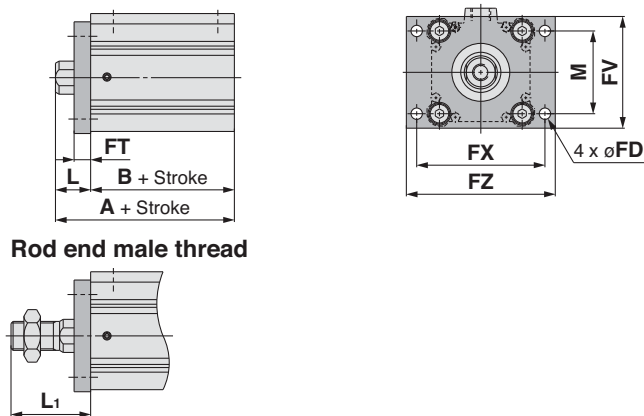
Compact Foot

| Bore size (mm) | Stroke range (mm) | Without auto switch | | | With auto switch | | | (mm) | | |
|----------------|-------------------|---------------------|------|------|------------------|------|------|------|----------------|-----|
| | | A | B | LS | A | B | LS | L | L ₁ | LD |
| 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 | | | | | | |
| 50 | 10 to 50 | 79.9 | 30.5 | 63.9 | 89.9 | 40.5 | 73.9 | 18 | 43.5 | 9 |
| | 75, 100 | 89.9 | 40.5 | 73.9 | | | | | | |
| 63 | 10 to 50 | 90.4 | 36 | 72.4 | 100.4 | 46 | 82.4 | 18 | 43.5 | 11 |
| | 75, 100 | 100.4 | 46 | 82.4 | | | | | | |

| 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 |
| 63 | 46 | 3.2 | 60 | 91.5 | 77 | 18.2 | 9 |

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

Rod flange: CDQ2KF



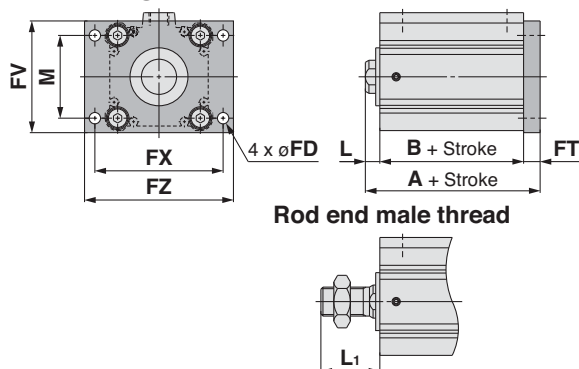
Rod Flange

| 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 | | | | | | | |
| 50 | 10 to 50 | 48.5 | 30.5 | 58.5 | 40.5 | 6.6 | 9 | 67 | 76 | 89 |
| | 75, 100 | 58.5 | 40.5 | | | | | | | |
| 63 | 10 to 50 | 54 | 36 | 64 | 46 | 9 | 9 | 80 | 92 | 108 |
| | 75, 100 | 64 | 46 | | | | | | | |

| Bore size (mm) | L | L ₁ | M |
|----------------|----|----------------|----|
| 40 | 17 | 38.5 | 40 |
| 50 | 18 | 43.5 | 50 |
| 63 | 18 | 43.5 | 60 |

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head flange: CDQ2KG



Head Flange

| Bore size (mm) | Stroke range (mm) | Without auto switch | With auto switch | (mm) | |
|----------------|-------------------|---------------------|------------------|------|----------------|
| | | A | A | L | L ₁ |
| 40 | 5 to 50 | 44.5 | 54.5 | 7 | 28.5 |
| | 75, 100 | 54.5 | | | |
| 50 | 10 to 50 | 47.5 | 57.5 | 8 | 33.5 |
| | 75, 100 | 57.5 | | | |
| 63 | 10 to 50 | 53 | 63 | 8 | 33.5 |
| | 75, 100 | 63 | | | |

(* The dimensions except A, L and L₁ are the same as those of the rod flange.)

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

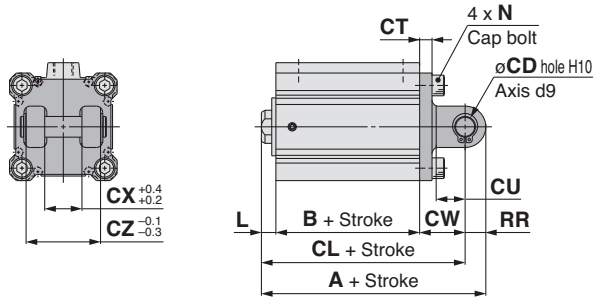
Water Resistant

With Auto Switch

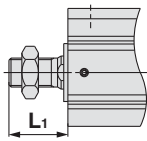
Auto Switch

Made to Order

Double clevis: **CDQ2KD**



Rod end male thread



- * For details about the rod end nut and accessory brackets, refer to page 23.
- * Double clevis pin and retaining rings are included.

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 | 68.5 | 29.5 | 58.5 | 78.5 | 39.5 | 68.5 | 10 | 6 | 14 |
| | 75, 100 | 78.5 | 39.5 | 68.5 | | | | | | |
| 50 | 10 to 50 | 80.5 | 30.5 | 66.5 | 90.5 | 40.5 | 76.5 | 14 | 7 | 20 |
| | 75, 100 | 90.5 | 40.5 | 76.5 | | | | | | |
| 63 | 10 to 50 | 88 | 36 | 74 | 98 | 46 | 84 | 14 | 8 | 20 |
| | 75, 100 | 98 | 46 | 84 | | | | | | |

| Bore size (mm) | CW | CX | CZ | L | L ₁ | N | RR |
|----------------|----|----|----|---|----------------|-----------|----|
| 40 | 22 | 18 | 36 | 7 | 28.5 | M6 x 1.0 | 10 |
| 50 | 28 | 22 | 44 | 8 | 33.5 | M8 x 1.25 | 14 |
| 63 | 30 | 22 | 44 | 8 | 33.5 | M10 x 1.5 | 14 |

Double clevis bracket material: Cast iron
Surface treatment: Painted