

Compact Cylinder: Standard Single Acting, Single Rod

CQ2 Series

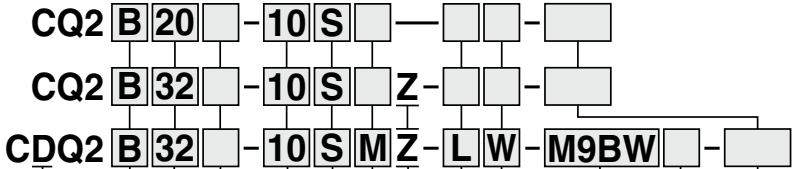
ø12, ø16, ø20, ø25, ø32, ø40, ø50

How to Order

Without auto switch
ø12 to ø25

Without auto switch
ø32 to ø50

With auto switch



With auto switch
(Built-in magnet)

Mounting

B	Through-hole (Standard)	F	Rod flange
A	Both ends tapped	G	Head flange
L	Foot	D	Double clevis
LC	Compact foot		

- * Mounting brackets are shipped together (but not assembled).
- * Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for CQ2" on pages 822 and 825.

Bore size

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

Port thread type

Nil	M thread	ø12 to ø25
TN	NPT	ø32 to ø50
TF	G	
F	Built-in One-touch fittings <small>Note 1)</small>	

Note 1) Bore sizes available with One-touch fittings are ø32 to ø50.

- * For cylinders without auto switch, M threads are compatible only for ø32-5 mm stroke model.

Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example) CDQ2L32-10SZ

Mounting bolt

Nil	None
L	Shipped together

- * Mounting bolt is shipped together only when the mounting bracket is "B".
- * For details about the mounting bolt sizes, refer to pages 822 and 825.
- * Mounting bolt is shipped together.
- * Order mounting bolts separately for made to order specifications.

Number of auto switches

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

Auto switch

Nil	Without auto switch
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- * Refer to the below table for applicable auto switches.

Made to Order

Refer to the next page for details.

Auto switch mounting groove

Z	ø12 to ø25	2 surfaces
	ø32 to ø50	4 surfaces

Body option

Nil	Standard
F	With boss on head end
M	Rod end male thread

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

Action

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

Cylinder stroke (mm)

Refer to the next page for standard strokes.

Rod end bracket

(Refer to pages 796 and 797.)

Nil	None
D	Simple joint A type + Joint
E	Simple joint B type + Joint
V	Single knuckle joint
W	Double knuckle joint

- * The single knuckle joint and double knuckle joint cannot be mounted for the rod end female thread.
- * A knuckle joint pin is not provided with the single knuckle joint.
- * The simple joint A and B types cannot be mounted for the rod end male thread.
- * Rod end bracket is shipped together.

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)	None (N)					
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V,	—	M9NV	M9N	●	●	●	○	—	○	IC circuit			
				3-wire (PNP)	12 V		M9PV	M9P	●	●	●	○	—					
				2-wire	12 V		M9BV	M9B	●	●	●	○	—					
	3-wire (NPN)			5 V,	M9NVW		M9NW	●	●	●	○	—	IC circuit					
	3-wire (PNP)			12 V	M9PWW		M9PW	●	●	●	○	—						
	2-wire			12 V	M9BWW		M9BW	●	●	●	○	—						
Water resistant (2-color indicator)	—	Grommet	Yes	3-wire (NPN)	5 V,	M9NAV ^{*1}	M9NA ^{*1}	○	○	○	○	○	○	IC circuit				
				3-wire (PNP)	12 V	M9PAV ^{*1}	M9PA ^{*1}	○	○	○	○	○						
				2-wire	12 V	M9BAV ^{*1}	M9BA ^{*1}	○	○	○	○	○						
Read auto switch	—			Grommet	No	3-wire (NPN equivalent)	—	5 V	A96V	A96	●	—	●	—	—	—	IC circuit	—
						2-wire	24 V	12 V	100 V	A93V ^{*2}	A93	●	●	●	●	—	—	Relay, PLC
							5 V, 12 V	100 V or less	A90V	A90	●	●	●	●	—	—	IC circuit	—

*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.

*2 1 m type lead wire is only applicable to D-A93.

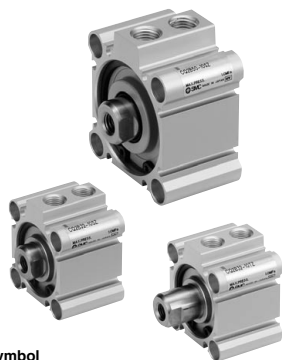
* Lead wire length symbols: 0.5 m Nil (Example) M9NV
1 m M (Example) M9NVW
3 m L (Example) M9NWL
5 m Z (Example) M9NVZ

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

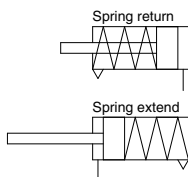
* There are other applicable auto switches other than the listed above. For details, refer to page 970.

* For details about auto switches with pre-wired connector, refer to pages 1648 and 1649.

CQ2 Series



Symbol



Made to Order: Individual Specifications
(For details, refer to pages 971 to 980.)

Symbol	Specifications
-X144	Special port location, with auto switch $\phi 12$ to $\phi 25$ only
-X202	Full length dimension is the same as the CQ1 series, Except $\phi 12$, $\phi 16$, $\phi 25$.
-X203	L dimension from rod cover is the same as the CQ1 series, $\phi 20$, $\phi 32$ only.
-X271	Fluororubber seals
-X1876	Cylinder tube: With concave boss on head end

Made to Order

[Click here for details](#)

Symbol	Specifications
-XA□	Change of rod end shape, spring return type only
-XB10	Intermediate stroke (Exclusive body type), Spring return type only
-XC2(A)	Rod end length, 10 mm increased (For foot and flange bracket)
-XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel
-XC26	With split pins for double clevis pin/ double knuckle joint pin and flat washers
-XC27	Double clevis pin/Double knuckle joint pin material: Stainless steel 304
-XC36	With boss on rod end
-XC85	Grease for food processing equipment

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)	12	16	20	25	32	40	50
Action	Single acting, Single rod						
Fluid	Air						
Proof pressure	1.5 MPa						
Maximum operating pressure	1.0 MPa						
Minimum operating pressure (MPa)	0.25	0.25	0.18	0.18	0.17	0.15	0.13
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)						
Lubrication	Not required (Non-lube)						
Piston speed	50 to 500 mm/s						
Allowable kinetic energy (J)	0.022	0.038	0.055	0.09	0.15	0.26	0.46
Stroke length tolerance	$+1.0$ mm 0						

Standard Strokes

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

Manufacture of Intermediate Strokes

(Except single acting, spring return type)

Type	A spacer is installed in the standard stroke body.						
Part no.	Refer to "How to Order" for the standard model number. (P. 819)						
Description	Strokes in 1 mm increments are available by installing a spacer in the standard stroke cylinder.						
Stroke range	<table border="1"> <thead> <tr> <th>Bore size</th> <th>Stroke range</th> </tr> </thead> <tbody> <tr> <td>12 to 40</td> <td>1 to 9</td> </tr> <tr> <td>50</td> <td>1 to 19</td> </tr> </tbody> </table>	Bore size	Stroke range	12 to 40	1 to 9	50	1 to 19
Bore size	Stroke range						
12 to 40	1 to 9						
50	1 to 19						
Example	Part no.: CQ2B20-3T CQ2B20-5T with 2 mm width spacer inside The B dimension is 24.5 mm.						

Type

Bore size (mm)		12	16	20	25	32	40	50		
Pneumatic	Mounting	Through-hole (Standard)	●	●	●	●	●	●		
		Both ends tapped	●	●	●	●	●	●		
Pneumatic	Piping	Built-in magnet	●	●	●	●	●	●		
		Pipe thread	—	M5 x 0.8	M5 x 0.8	M5 x 0.8	M5 x 0.8	Note 1) M5 x 0.8 Rc1/8	Rc1/8	Rc1/4
			TN	—	—	—	—	NPT1/8	NPT1/8	NPT1/4
			TF	—	—	—	—	G1/8	G1/8	G1/4
Built-in One-touch fittings Note 2)		—	—	—	—	$\phi 6/4$	$\phi 6/4$	$\phi 8/6$		
Rod end male thread		●	●	●	●	●	●	●		
With boss on head end		●	●	●	●	●	●	●		

Note 1) $\phi 32$ 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) One-touch fittings cannot be replaced.

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.

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 blown 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.

Spring Force

Single Acting, Spring Return (N)

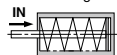
Bore size (mm)	Stroke (mm)	Spring reaction force (N)	
		Second	First
12	5	13	8.6
	10	13	3.9
16	5	15	10.3
	10	15	5.9
20	5	15	10
	10	15	5.9
25	5	20	16
	10	20	11
32	5	30	23
	10	30	16
40	5	30	13
	10	39	21
50	10	50	30
	20	54	24

Single Acting, Spring Extend (N)

Bore size (mm)	Stroke (mm)	Spring reaction force (N)	
		Second	First
12	5	11	2.9
	10	9.7	2.8
16	5	20	3.9
	10	20	3.9
20	5	27	5.3
	10	27	5.9
25	5	29	9.8
	10	29	9.8
32	5	29	20
	10	29	20
40	5	29	20
	10	29	20
50	10	83	24
	20	83	24

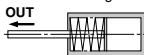
Single acting, Spring return

Spring state with first mounting load



When spring is set in cylinder

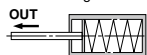
Spring state with second mounting load



When spring is compressed with air

Single acting, Spring extend

Spring state with first mounting load



When spring is set in cylinder

Spring state with second mounting load



When spring is compressed with air

Mounting Brackets/Part No.

Bore size (mm)	Model	Foot ^{Note 1)}	Compact foot ^{Note 1)}	Flange	Double clevis	
12	Without switch	CQ2□□-□□D	CQ-L012	CQ-LC012	CQ-F012	CQ-D012
	With switch	CQ2□□-□□DZ	CQ-LZ12	CQ-LCZ12		
16	Without switch	CQ2□□-□□D	CQ-L016	CQ-LC016	CQ-F016	CQ-D016
	With switch	CQ2□□-□□DZ	CQ-LZ16	CQ-LCZ16		
20	Without switch	CQ2□□-□□D	CQ-L020	CQ-LC020	CQ-F020	CQ-D020
	With switch	CQ2□□-□□DZ	CQ-LZ20	CQ-LCZ20		
25	Without switch	CQ2□□-□□D	CQ-L025	CQ-LC025	CQ-F025	CQ-D025
	With switch	CQ2□□-□□DZ	CQ-LZ25	CQ-LCZ25		
32	C(D)Q2□□-□□DZ	CQ-L032	CQ-LC032	CQ-F032	CQ-D032	
40	C(D)Q2□□-□□DZ	CQ-L040	CQ-LC040	CQ-F040	CQ-D040	
50	C(D)Q2□□-□□DZ	CQ-L050	CQ-LC050	CQ-F050	CQ-D050	

Note 1) When ordering foot and compact foot brackets, the required quantity will be different depending on the bore size.

ø12 to ø25:

• Without switch: Order 2 pieces per cylinder.

• With switch: Order 1 piece per cylinder. (Part number for a set of 2 foot brackets)

ø32 to ø50:

• 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, Type C retaining rings for axis,

Body mounting bolts

Note 3) For details about accessories (options), refer to pages 796 to 798.

Theoretical Output

Action	Bore size (mm)	Operating pressure (MPa)		
		0.3	0.5	0.7
Spring return	12	21	44	66
	16	45	86	126
	20	79	142	205
	25	126	224	323
	32	211	372	533
	40	338	589	841
Spring extend	12	14	31	48
	16	24	54	85
	20	44	91	138
	25	84	160	235
	32	152	273	393
	40	288	499	710
50	412	742	1072	

Weight

Weight (g)

Action	Bore size (mm)	Cylinder stroke (mm)			
		5	10	15	20
Spring return	12	29	35	—	—
	16	42	51	—	—
	20	63	76	—	—
	25	87	101	—	—
	32	125	145	—	—
	40	196	217	—	—
Spring extend	50	—	357	—	426
	12	29	35	—	—
	16	43	50	—	—
	20	67	78	—	—
	25	92	104	—	—
	32	135	151	—	—
40	206	223	—	—	
50	—	374	—	429	

Additional Weight (g)

Bore size (mm)		12	16	20	25	32	40	50
Both ends tapped		2	2	6	6	6	6	6
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 end		0.7	1.3	2	3	5	7	13
Built-in One-touch fittings		—	—	—	—	6	6	10.5
Foot (Including mounting bolts)		55	67	164	186	142	154	243
Compact foot (Including mounting bolts)		41	51	121	140	99	114	177
Rod flange (Including mounting bolts)		57	69	139	161	180	214	373
Head flange (Including mounting bolts)		54	65	133	152	165	198	348
Double clevis (Including pin, retaining rings, bolts)		32	39	88	123	151	196	393

Calculation: (Example) **CQ2B32-10SMZ**

• Basic weight: CQ2B32-10SZ 145 g

• Additional weight: Both ends tapped 6 g

Rod end male thread 43 g

Double clevis 151 g

345 g

CJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data

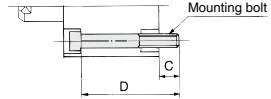
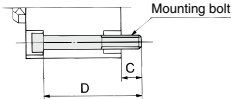
CQ2 Series

Mounting Bolt for CQ2B/Without Auto Switch

Mounting method: Mounting bolt for through-hole mounting of the CQ2B 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 25L 4 pcs.

Material: Chromium molybdenum steel
Surface treatment: Zinc chromated



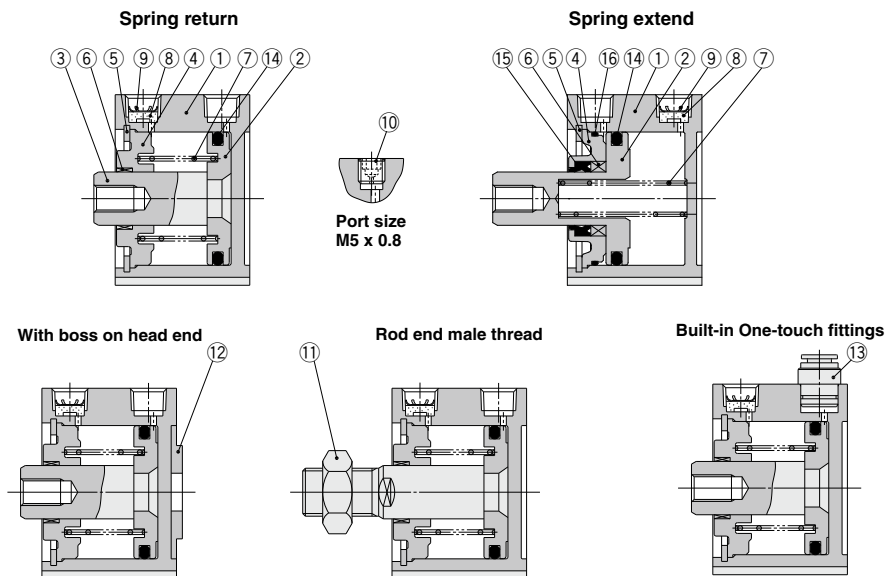
Spring Return

Cylinder model	C	D	Mounting bolt part no.
CQ2B12-5S	6.5	25	CQ-M3 x 25L
-10S		30	x 30L
CQ2B16-5S	5	25	CQ-M3 x 25L
-10S		30	x 30L
CQ2B20-5S	7.5	25	CQ-M5 x 25L
-10S		30	x 30L
CQ2B25-5S	9.5	30	CQ-M5 x 30L
-10S		35	x 35L
CQ2B32-5SZ	9	30	CQ-M5 x 30L
-10SZ		35	x 35L
CQ2B40-5SZ	7.5	35	CQ-M5 x 35L
-10SZ		40	x 40L
CQ2B50-10SZ	12.5	45	CQ-M6 x 45L
-20SZ		55	x 55L

Spring Extend

Cylinder model	C	D	Mounting bolt part no.
CQ2B12-5T	6.5	25	CQ-M3 x 25L
-10T		30	x 30L
CQ2B16-5T	5	25	CQ-M3 x 25L
-10T		30	x 30L
CQ2B20-5T	7.5	25	CQ-M5 x 25L
-10T		30	x 30L
CQ2B25-5T	9.5	30	CQ-M5 x 30L
-10T		35	x 35L
CQ2B32-5TZ	9	30	CQ-M5 x 30L
-10TZ		35	x 35L
CQ2B40-5TZ	7.5	35	CQ-M5 x 35L
-10TZ		40	x 40L
CQ2B50-10TZ	12.5	45	CQ-M6 x 45L
-20TZ		55	x 55L

Construction



Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2*	Piston	Aluminum alloy	
3	Piston rod	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø50, Hard chrome plated
4	Collar	Aluminum alloy	ø12 to ø40, Anodized
		Aluminum alloy casted	ø50, Chromated, Painted
5	Retaining ring	Carbon tool steel	Phosphate coated
6	Bushing	Bearing alloy	ø50
7	Return spring	Piano wire	Zinc chromated
8	Bronze element	Sintered metallic BC	
9	Retaining ring	Carbon tool steel	Port size Rc1/8, 1/4
10	Plug with fixed orifice	Alloy steel	Port size M5 x 0.8
11	Rod end nut	Carbon steel	Zinc chromated
12	Centering location ring	Aluminum alloy	ø20 to ø50, Anodized
13	One-touch fitting	—	ø32 to ø50

* On spring extend (Type T), piston and piston rod are integrated (stainless steel).
(Except ø12 and ø16 of built-in magnet type)

Replacement Parts

No.	Description	Material	Note
14	Piston seal	NBR	
15	Rod seal	NBR	
16	Gasket	NBR	

Replacement Parts/Seal Kit

Bore size (mm)	Single acting/Spring return		Single acting/Spring extend	
	No.	Description	No.	Description
12	14	CQ2B12-S-PS	14	CQ2B12-T-PS
16	14	CQ2B16-S-PS	14	CQ2B16-T-PS
20	14	CQ2B20-S-PS	14	CQ2B20-T-PS
25	14	CQ2B25-S-PS	14	CQ2B25-T-PS
32	14	CQ2B32-S-PS	14	CQ2B32-T-PS
40	14	CQ2B40-S-PS	14	CQ2B40-T-PS
50	14	CQ2B50-S-PS	14	CQ2B50-T-PS
Contents	Kits include item 14 from the above table.		Kits include items 14, 15, 16 from the above table.	
How to Order	* Seal kit includes 14. Order the seal kit, based on each bore size.		* Seal kit includes 14, 15, 16. 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)

CJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data

Standard: Single Acting, Single Rod

CDQ2 Series

With Auto Switch



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

Auto switch proper mounting position and its mounting height	P.964 to 970
Minimum stroke for auto switch mounting	
Operating range	
Auto switch mounting brackets/Part no.	

Weight

Weight (g)

Action	Bore size (mm)	Cylinder stroke (mm)			
		5	10	15	20
Spring return	12	44	49	—	—
	16	64	72	—	—
	20	97	109	—	—
	25	135	150	—	—
	32	182	202	—	—
	40	269	290	—	—
	50	—	456	—	521
Spring extend	12	49	65	—	—
	16	63	71	—	—
	20	110	119	—	—
	25	149	163	—	—
	32	192	208	—	—
	40	279	296	—	—
50	—	486	—	540	

Additional Weight (g)

Bore size (mm)		12	16	20	25	32	40	50
Both ends tapped		1	1	3	3	6	6	6
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 end		0.7	1.3	2	3	5	7	13
Built-in One-touch fittings		—	—	—	—	6	6	10.5
Foot (Including mounting bolts)		49	62	147	169	142	154	243
Compact foot (Including mounting bolts)		32	40	97	116	99	114	177
Rod flange (Including mounting bolts)		54	67	131	153	180	214	373
Head flange (Including mounting bolts)		52	63	124	144	165	198	348
Double clevis (Including pin, retaining rings, bolts)		29	35	78	114	151	196	393

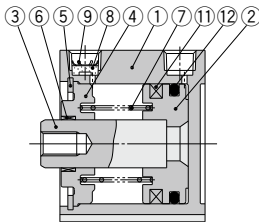
Calculation: (Example) **CDQ2D32-10SMZ**

- Basic weight: CDQ2B32-10SZ 202 g
 - Additional weight: Both ends tapped 6 g
 - Rod end male thread 43 g
 - Double clevis 151 g
- 402 g

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

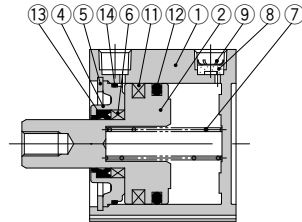
Construction

Spring return



Port size
M5 x 0.8

Spring extend



Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	
3	Piston rod	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø50, Hard chrome plated
4	Collar	Aluminum alloy	ø12 to ø40, Anodized
		Aluminum alloy casted	ø50, Chromated, Painted
5	Retaining ring	Carbon tool steel	Phosphate coated
6	Bushing	Bearing alloy	ø50
7	Return spring	Piano wire	Zinc chromated
8	Bronze element	Sintered metallic BC	
9	Retaining ring	Carbon tool steel	Port size Rc1/8, 1/4
10	Plug with fixed orifice	Alloy steel	Port size M5 x 0.8
11	Magnet	—	

No.	Description	Material	Note
12	Piston seal	NBR	
13	Rod seal	NBR	
14	Gasket	NBR	

Replacement Parts/Seal Kit

Since the same as those of the standard, single acting, single rod, refer to page 823.

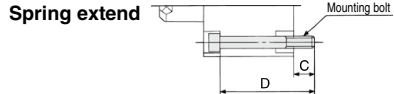
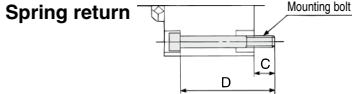
* On spring extend (Type T), piston with ø20 or more and piston rod are integrated (stainless steel).

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-M3 x 35L 2 pcs.

Material: Chromium molybdenum steel
Surface treatment: Zinc chromated



Spring Return

Cylinder model	C	D	Mounting bolt part no.
CDQ2B12-5SZ -10SZ	5.5	35	CQ-M3 x 35L
		40	x 40L
CDQ2B16-5SZ -10SZ	8	40	CQ-M3 x 40L
		45	x 45L
CDQ2B20-5SZ -10SZ	10.5	40	CQ-M5 x 40L
		45	x 45L
CDQ2B25-5SZ -10SZ	9.5	40	CQ-M5 x 40L
		45	x 45L
CDQ2B32-5SZ -10SZ	9	40	CQ-M5 x 40L
		45	x 45L
CDQ2B40-5SZ -10SZ	7.5	45	CQ-M5 x 45L
		50	x 50L
CDQ2B50-10SZ -20SZ	12.5	55	CQ-M6 x 55L
		65	x 65L

Spring Extend

Cylinder model	C	D	Mounting bolt part no.
CDQ2B12-5TZ -10TZ	6.1	40	CQ-M3 x 40L
		45	x 45L
CDQ2B16-5TZ -10TZ	8	40	CQ-M3 x 40L
		45	x 45L
CDQ2B20-5TZ -10TZ	10.5	40	CQ-M5 x 40L
		45	x 45L
CDQ2B25-5TZ -10TZ	9.5	40	CQ-M5 x 40L
		45	x 45L
CDQ2B32-5TZ -10TZ	9	40	CQ-M5 x 40L
		45	x 45L
CDQ2B40-5TZ -10TZ	7.5	45	CQ-M5 x 45L
		50	x 50L
CDQ2B50-10TZ -20TZ	12.5	55	CQ-M6 x 55L
		65	x 65L

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

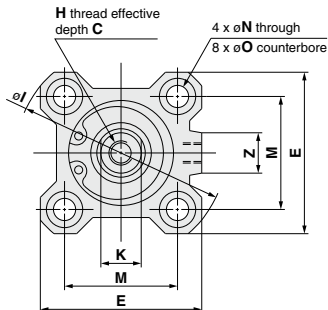
Technical
Data

CQ2 Series

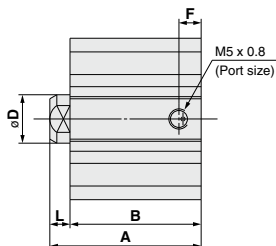
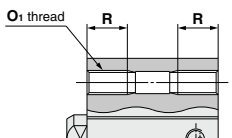
Dimensions

Ø12 to Ø25/Spring Return Without Auto Switch

Standard (Through-hole): CQ2B



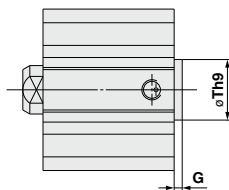
Both ends tapped: CQ2A



Both Ends Tapped (mm)

Bore size (mm)	O1	R
12	M4 x 0.7	7
16	M4 x 0.7	7
20	M6 x 1.0	10
25	M6 x 1.0	10

With boss on head end

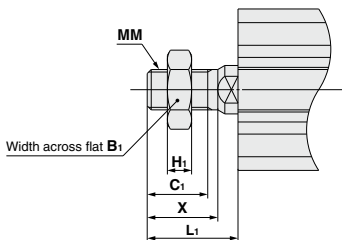


With Boss on Head End (mm)

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}

Note) With boss on rod end: Option (Suffix "-XC36" to the end of model number.)

Rod end male thread



Rod End Male Thread (mm)

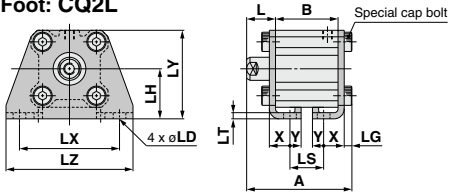
Bore size (mm)	B1	C1	H1	L1	MM	X
12	8	9	4	14	M5 x 0.8	10.5
16	10	10	5	15.5	M6 x 1.0	12
20	13	12	5	18.5	M8 x 1.25	14
25	17	15	6	22.5	M10 x 1.25	17.5

Standard

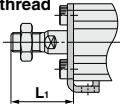
Bore size (mm)	Stroke (mm)	A	B	C	D	E	F	H	I	K	L	M	N	O	Z
12	5	25.5	22	6	6	25	5	M3 x 0.5	32	5	3.5	15.5	3.5	6.5 depth 3.5	—
	10	30.5	27												
16	5	27	23.5	8	8	29	5.5	M4 x 0.7	38	6	3.5	20	3.5	6.5 depth 3.5	10
	10	32	28.5												
20	5	29	24.5	7	10	36	5.5	M5 x 0.8	47	8	4.5	25.5	5.5	9 depth 7	10
	10	34	29.5												
25	5	32.5	27.5	12	12	40	5.5	M6 x 1.0	52	10	5	28	5.5	9 depth 7	10
	10	37.5	32.5												

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

Foot: CQ2L



Rod end male thread



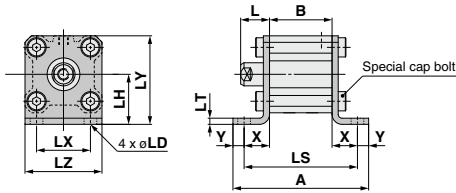
Foot

Bore size (mm)	A		B		L	L ₁	LD	LG	LH	LS	
	5st	10st	5st	10st						5st	10st
12	40.3	45.3	22	27	13.5	24	4.5	2.8	17	10	15
16	41.8	46.8	23.5	28.5	13.5	25.5	4.5	2.8	19	11.5	16.5
20	46.2	51.2	24.5	29.5	14.5	28.5	6.6	4	24	12.5	17.5
25	49.7	54.7	27.5	32.5	15	32.5	6.6	4	26	12.5	17.5

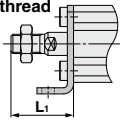
Bore size (mm)	LT	LX	LY	LZ	X	Y
12	2	34	29.5	44	8	4.5
16	2	38	33.5	48	8	5
20	3.2	48	42	62	9.2	5.8
25	3.2	52	46	66	10.7	5.8

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Compact foot: CQ2LC



Rod end male thread



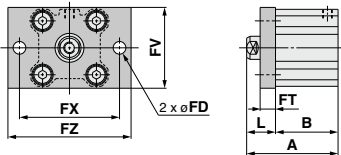
Compact Foot

Bore size (mm)	A		B		L	L ₁	LD	LH	LS		LT
	5st	10st	5st	10st					5st	10st	
12	49.6	54.6	22	27	13.5	24	4.5	17	40.6	45.6	2
16	52.1	57.1	23.5	28.5	13.5	25.5	4.5	19	42.1	47.1	2
20	62.5	67.5	24.5	29.5	14.5	28.5	6.6	24	50.9	55.9	3.2
25	65.5	70.5	27.5	32.5	15	32.5	6.6	26	53.9	58.9	3.2

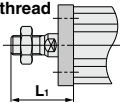
Bore size (mm)	LX	LY	LZ	X	Y
12	15.5	29.5	25	9.3	4.5
16	20	33.5	29	9.3	5
20	25.5	42	36	13.2	5.8
25	28	46	40	13.2	5.8

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

Rod flange: CQ2F



Rod end male thread

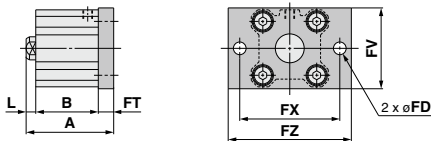


Rod Flange

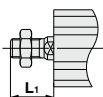
Bore size (mm)	A		B		FD	FT	FV	FX	FZ	L	L ₁
	5st	10st	5st	10st							
12	35.5	40.5	22	27	4.5	5.5	25	45	55	13.5	24
16	37	42	23.5	28.5	4.5	5.5	30	45	55	13.5	25.5
20	39	44	24.5	29.5	6.6	8	39	48	60	14.5	28.5
25	42.5	47.5	27.5	32.5	6.6	8	42	52	64	15	32.5

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head flange: CQ2G



Rod end male thread



Head Flange

Bore size (mm)	A		L	L ₁
	5st	10st		
12	31	36	3.5	14
16	32.5	37.5	3.5	15.5
20	37	42	4.5	18.5
25	40.5	45.5	5	22.5

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

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

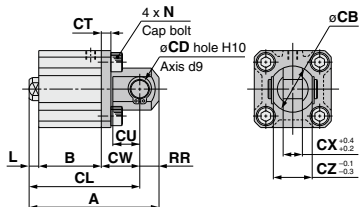
Technical Data

CQ2 Series

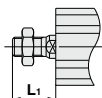
Dimensions

Ø12 to Ø25/Spring Return Without Auto Switch

Double clevis: CQ2D



Rod end male thread



Double Clevis

(mm)

Bore size (mm)	A		B		CB	CD	CL		CT	CU	CW
	5st	10st	5st	10st			5st	10st			
12	45.5	50.5	22	27	12	5	39.5	44.5	4	7	14
16	48	53	23.5	28.5	14	5	42	47	4	10	15
20	56	61	24.5	29.5	20	8	47	52	5	12	18
25	62.5	67.5	27.5	32.5	24	10	52.5	57.5	5	14	20

Bore size (mm)	CX	CZ	L	L ₁	N	RR
12	5	10	3.5	14	M4 x 0.7	6
16	6.5	12	3.5	15.5	M4 x 0.7	6
20	8	16	4.5	18.5	M6 x 1.0	9
25	10	20	5	22.5	M6 x 1.0	10

Double clevis bracket material: Carbon steel

Surface treatment: Nickel plated

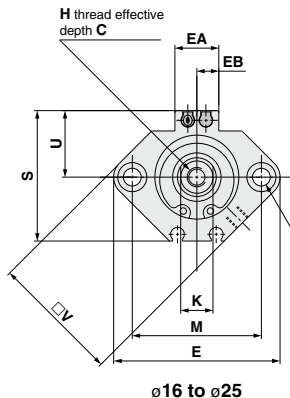
* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

* Double clevis pin and retaining rings are included.

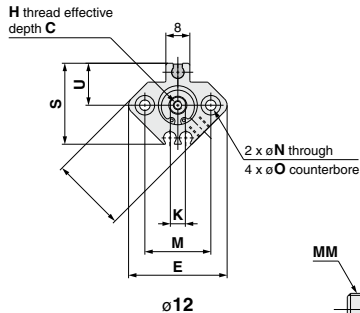
Dimensions

ø12 to ø25/Spring Return With Auto Switch

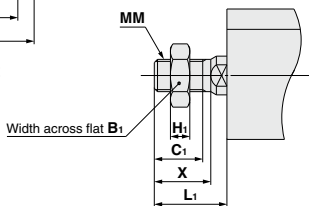
Standard (Through-hole): CDQ2B



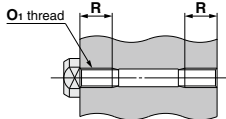
ø16 to ø25



ø12

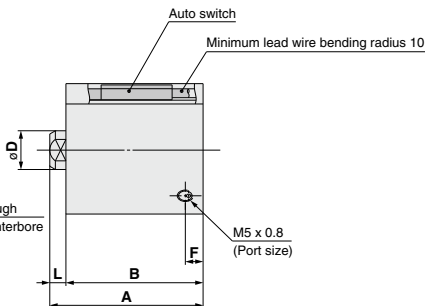


Both ends tapped: CDQ2A

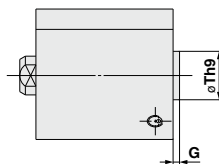


Both Ends Tapped

Bore size (mm)	O1	R
12	M4 x 0.7	7
16	M4 x 0.7	7
20	M6 x 1.0	10
25	M6 x 1.0	10



With boss on head end



With Boss on Head End

Bore size (mm)	G	Th9
12	1.5	15 ⁰ _{-0.043}
16	1.5	20 ⁰ _{-0.050}
20	2	13 ⁰ _{-0.043}
25	2	15 ⁰ _{-0.043}

Note) With boss on rod end: Option (Suffix "-XC36" to the end of model number.)

Rod end male thread

Rod End Male Thread

Bore size (mm)	B1	C1	H1	L1	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 964 to 970.

Bore size (mm)	Stroke (mm)	A	B	C	D	E	EA	EB	F	H	K	L	M	N	O	S	U	V
12	5	36.5	33	6	6	33	—	—	6.5	M3 x 0.5	5	3.5	22	3.5	6.5 depth 3.5	27.5	14	25
	10	41.5	38															
16	5	39	35.5	8	8	37	13.2	6.6	5.5	M4 x 0.7	6	3.5	28	3.5	6.5 depth 3.5	29.5	15	29
	10	44	40.5															
20	5	41	36.5	7	10	47	13.6	6.8	5.5	M5 x 0.8	8	4.5	36	5.5	9 depth 7	35.5	18	36
	10	46	41.5															
25	5	42.5	37.5	12	12	52	13.6	6.8	5.5	M6 x 1.0	10	5	40	5.5	9 depth 7	40.5	21	40
	10	47.5	42.5															

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

CJ
CU
CQS
JCQ
CQ2
RQ
CQM
CQU
MU

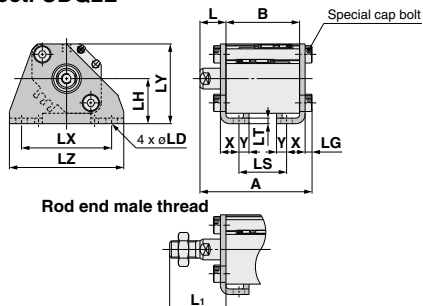
D-□
-X□
Technical Data

CQ2 Series

Dimensions

Ø12 to Ø25/Spring Return With Auto Switch

Foot: CDQ2L



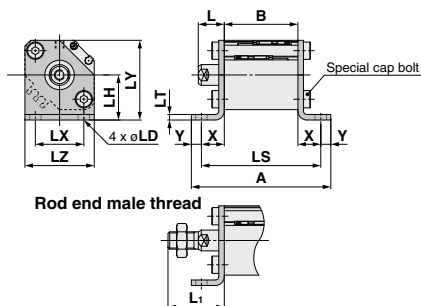
Foot

Bore size (mm)	A		B		L	L ₁	LD	LG	LH	LS	
	5st	10st	5st	10st						5st	10st
12	51.3	56.3	33	38	13.5	24	4.5	2.8	17	21	26
16	53.8	58.8	35.5	40.5	13.5	25.5	4.5	2.8	19	23.5	28.5
20	58.2	63.2	36.5	41.5	14.5	28.5	6.6	4	24	24.5	29.5
25	59.7	64.7	37.5	42.5	15	32.5	6.6	4	26	22.5	27.5

Bore size (mm)	LT	LX	LY	LZ	X	Y
12	2	34	29.5	44	8	4.5
16	2	38	33.5	48	8	5
20	3.2	48	42	62	9.2	5.8
25	3.2	52	46	66	10.7	5.8

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Compact foot: CDQ2LC



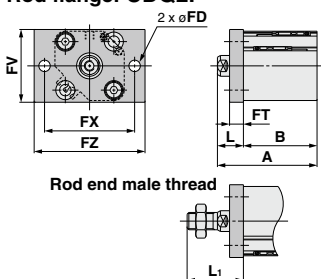
Compact Foot

Bore size (mm)	A		B		L	L ₁	LD	LH	LS		
	5st	10st	5st	10st					5st	10st	LT
12	60.6	65.6	33	38	13.5	24	4.5	17	51.6	56.6	2
16	64.1	69.1	35.5	40.5	13.5	25.5	4.5	19	54.1	59.1	2
20	74.5	79.5	36.5	41.5	14.5	28.5	6.6	24	62.9	67.9	3.2
25	75.5	80.5	37.5	42.5	15	32.5	6.6	26	63.9	68.9	3.2

Bore size (mm)	LX	LY	LZ	X	Y
12	15.5	29.5	25	9.3	4.5
16	20	33.5	29	9.3	5
20	25.5	42	36	13.2	5.8
25	28	46	40	13.2	5.8

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

Rod flange: CDQ2F

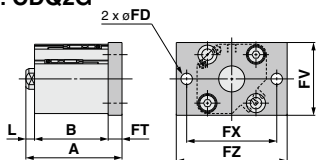


Rod Flange

Bore size (mm)	A		B		FD	FT	FV	FX	FZ	L	L ₁
	5st	10st	5st	10st							
12	46.5	51.5	33	38	4.5	5.5	25	45	55	13.5	24
16	49	54	35.5	40.5	4.5	5.5	30	45	55	13.5	25.5
20	51	56	36.5	41.5	6.6	8	39	48	60	14.5	28.5
25	52.5	57.5	37.5	42.5	6.6	8	42	52	64	15	32.5

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head flange: CDQ2G

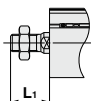


Head Flange

Bore size (mm)	A		L	L ₁	(* The dimensions except A, L and L ₁ are the same as those of the rod flange.)
	5st	10st			
12	46.4	51.4	3.5	14	
16	44.5	49.5	3.5	15.5	
20	49	54	4.5	18.5	
25	50.5	55.5	5	22.5	

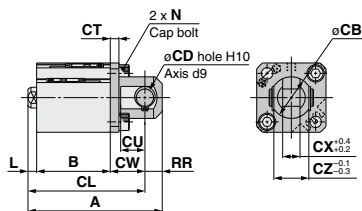
Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Rod end male thread



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

Double clevis: CDQ2D



Rod end male thread



Double Clevis

Bore size (mm)	A		B		CB	CD	CL		CT	CU	CW
	5st	10st	5st	10st			5st	10st			
12	56.5	61.5	33	38	12	5	50.5	55.5	4	7	14
16	60	65	35.5	40.5	14	5	54	59	4	10	15
20	68	73	36.5	41.5	20	8	59	64	5	12	18
25	72.5	77.5	37.5	42.5	24	10	62.5	67.5	5	14	20

Bore size (mm)	CX	CZ	L	L ₁	N	RR
12	5	10	3.5	14	M4 x 0.7	6
16	6.5	12	3.5	15.5	M4 x 0.7	6
20	8	16	4.5	18.5	M6 x 1.0	9
25	10	20	5	22.5	M6 x 1.0	10

Double clevis bracket material: Carbon steel
Surface treatment: Nickel plated

- * 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

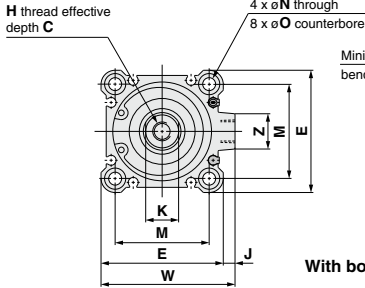
CQ2 Series

Dimensions

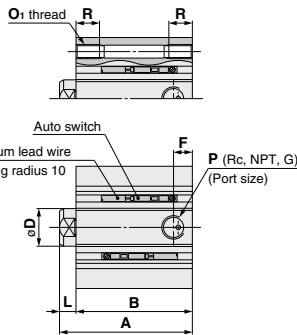
ø32 to ø50/Spring Return With Auto Switch

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

Standard (Through-hole): CQ2B/CDQ2B



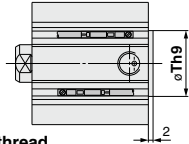
Both ends tapped: CQ2A/CDQ2A



Both Ends Tapped

Bore size (mm)	O1	R
32	M6 x 1.0	10
40	M6 x 1.0	10
50	M8 x 1.25	14

With boss on head end

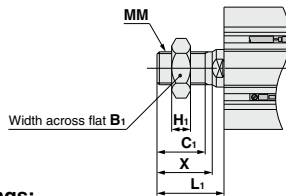


With Boss on Head End

Bore size (mm)	Th9
32	21 ^{0.002}
40	28 ^{0.002}
50	35 ^{0.002}

Note 1) With boss on rod end: Option (Suffix "-XC36" to the end of model number.)

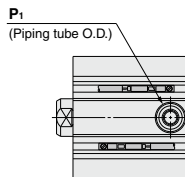
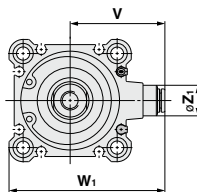
Rod end male thread



Rod End Male Thread

Bore size (mm)	B1	C1	H1	L1	MM	X
32	22	20.5	8	28.5	M14 x 1.5	23.5
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

Built-in One-touch fittings: ø32 to ø50



Built-in One-touch Fittings

Bore size (mm)	Z1	P1	V	W1
32	13	6	36.5	59
40	13	6	40.5	66.5
50	16	8	50	82

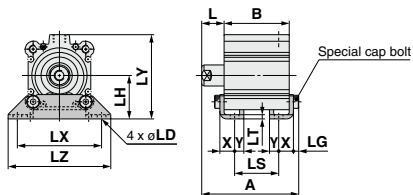
Standard For auto switch proper mounting position and its mounting height, refer to pages 964 to 970.

Bore size (mm)	Stroke (mm)	Without auto switch				With auto switch				C	D	E	H	J	K	L	M	N	O	W	Z
		A	B	F	P	A	B	F	P												
32	5	35	28	5.5	M5 x 0.8	45	38	7.5	1/8	13	16	45	M8 x 1.25	4.5	14	7	34	5.5	9 depth 7	49.5	14
	10	40	33	7.5	1/8	50	43														
40	5	41.5	34.5			51.5	44.5														
	10	46.5	39.5	7.5	1/8	56.5	49.5	7.5	1/8	13	16	52	M8 x 1.25	5	14	7	40	5.5	9 depth 7	57	15
50	10	48.5	40.5	10.5		58.5	50.5														
	20	58.5	50.5	10.5	1/4	68.5	60.5	10.5	1/4	15	20	64	M10 x 1.5	7	17	8	50	6.6	11 depth 8	71	19

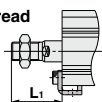
Note 2) The A, B dimensions of the ø32-5 mm stroke with built-in One-touch fittings without auto switch are the same as those of the ø32-10 mm stroke without auto switch.

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

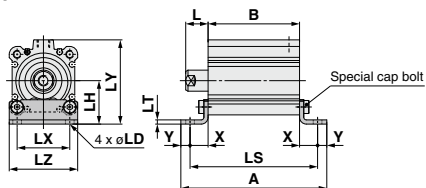
Foot: CQ2L/CDQ2L



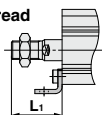
Rod end male thread



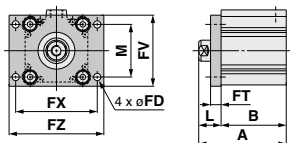
Compact foot: CQ2LC/CDQ2LC



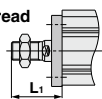
Rod end male thread



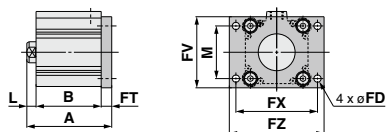
Rod flange: CQ2F/CDQ2F



Rod end male thread



Head flange: CQ2G/CDQ2G



Rod end male thread



Foot (mm)

Bore size (mm)	Without auto switch						With auto switch					
	A		B		LS		A		B		LS	
32	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st
32	52.2	57.2	—	28	33	—	12	17	—	62.2	67.2	—
40	58.7	63.7	—	34.5	39.5	—	18.5	23.5	—	68.7	73.7	—
50	—	66.7	76.7	—	40.5	50.5	—	17.5	27.5	—	76.7	86.7

Bore size (mm)	L	L ₁	LD	LG	LH	LT	LX	LY	LZ	X	Y
32	17	38.5	6.6	4	30	32	57	57	71	11.2	5.8
40	17	38.5	6.6	4	33	32	64	64	78	11.2	7
50	18	43.5	9	5	39	32	79	78	95	14.7	8

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Compact Foot (mm)

Bore size (mm)	Without auto switch						With auto switch					
	A		B		LS		A		B		LS	
32	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st
32	67	72	—	28	33	—	55.4	60.4	—	77	82	—
40	75.9	80.9	—	34.5	39.5	—	61.9	66.9	—	85.9	90.9	—
50	—	89.9	99.9	—	40.5	50.5	—	73.9	83.9	—	99.9	109.9

Bore size (mm)	L	L ₁	LD	LH	LT	LX	LY	LZ	X	Y
32	17	38.5	6.6	30	32	34	57	45	13.7	5.8
40	17	38.5	6.6	33	32	40	64	52	13.7	7
50	18	43.5	9	39	32	50	78	64	16.7	8

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

Rod Flange (mm)

Bore size (mm)	Without auto switch				With auto switch				
	A		B		A		B		
32	5st	10st	20st	5st	10st	20st	5st	10st	20st
32	45	50	—	28	33	—	55	60	—
40	51.5	56.5	—	34.5	39.5	—	61.5	66.5	—
50	—	58.5	68.5	—	40.5	50.5	—	68.5	78.5

Bore size (mm)	FD	FT	FV	FX	FZ	L	L ₁	M
32	5.5	8	48	56	65	17	38.5	34
40	5.5	8	54	62	72	17	38.5	40
50	6.6	9	67	76	89	18	43.5	50

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head Flange (mm)

Bore size (mm)	Without auto switch			With auto switch			L	L ₁
	A			A				
32	5st	10st	20st	5st	10st	20st	7	28.5
32	43	48	—	53	58	—	7	28.5
40	49.5	54.5	—	59.5	64.5	—	7	28.5
50	—	57.5	67.5	—	67.5	77.5	8	33.5

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.

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

- D**
- X**
- Technical Data

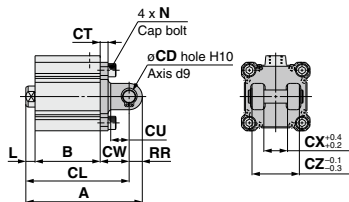
CQ2 Series

Dimensions

Ø32 to Ø50/Spring Return With Auto Switch

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

Double clevis: CQ2D/CDQ2D



Rod end male thread



Double Clevis

(mm)

Bore size (mm)	Without auto switch						With auto switch					
	A		B		CL		A		B		CL	
	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st
32	65	70	—	28	33	—	55	60	—	75	80	—
40	73.5	78.5	—	34.5	39.5	—	63.5	68.5	—	83.5	88.5	—
50	—	90.5	100.5	—	40.5	50.5	—	76.5	86.5	—	100.5	110.5

Bore size (mm)	CD	CT	CU	CW	CX	CZ	L	L ₁	N	RR
32	10	5	14	20	18	36	7	28.5	M6 x 1.0	10
40	10	6	14	22	18	36	7	28.5	M6 x 1.0	10
50	14	7	20	28	22	44	8	33.5	M6 x 1.25	14

Double clevis bracket material: Cast iron
Surface treatment: Painted

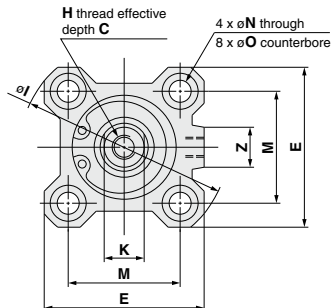
* For details about the rod end nut and accessory brackets, refer to pages 796 to 798.

* Double clevis pin and retaining rings are included.

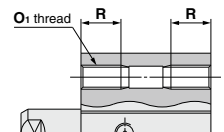
Dimensions

Ø12 to Ø25/Spring Extend Without Auto Switch

Standard (Through-hole): CQ2B

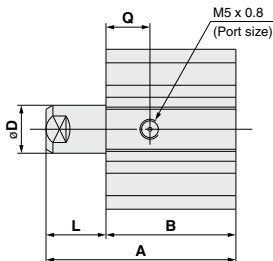


Both ends tapped: CQ2A

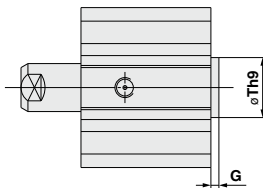


Both Ends Tapped (mm)

Bore size (mm)	O1	R
12	M4 x 0.7	7
16	M4 x 0.7	7
20	M6 x 1.0	10
25	M6 x 1.0	10



With boss on head end

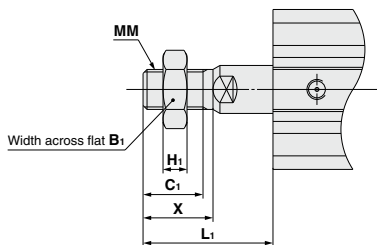


With Boss on Head End (mm)

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}

Note) With boss on rod end: Option (Suffix "-XC36" to the end of model number.)

Rod end male thread



Rod End Male Thread (mm)

Bore size (mm)	B1	C1	H1	L1		MM	X
				5st	10st		
12	8	9	4	19	24	M5 x 0.8	10.5
16	10	10	5	20.5	25.5	M6 x 1.0	12
20	13	12	5	23.5	28.5	M8 x 1.25	14
25	17	15	6	27.5	32.5	M10 x 1.25	17.5

Standard

Bore size (mm)	Stroke (mm)	A	B	C	D	E	H	I	K	L	M	N	O	Q	Z
12	5	30.5	22	6	6	25	M3 x 0.5	32	5	8.5	15.5	3.5	6.5 depth 3.5	7.5	—
	10	40.5	27							13.5					
16	5	32	23.5	8	8	29	M4 x 0.7	38	6	8.5	20	3.5	6.5 depth 3.5	8	10
	10	42	28.5							13.5					
20	5	34	24.5	7	10	36	M5 x 0.8	47	8	9.5	25.5	5.5	9 depth 7	8	10
	10	44	29.5							14.5					
25	5	37.5	27.5	12	12	40	M6 x 1.0	52	10	10	28	5.5	9 depth 7	9	10
	10	47.5	32.5							15					

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

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

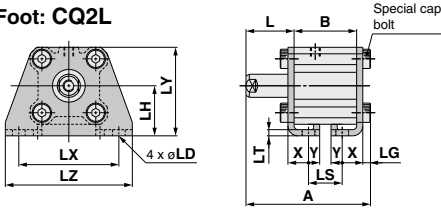
- D-□**
- X□**
- Technical Data

CQ2 Series

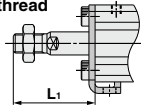
Dimensions

Ø12 to Ø25/Spring Extend Without Auto Switch

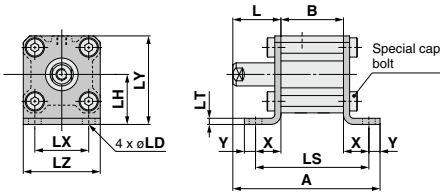
Foot: CQ2L



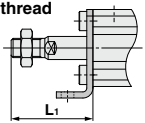
Rod end male thread



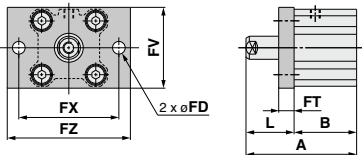
Compact foot: CQ2LC



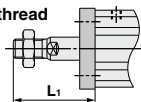
Rod end male thread



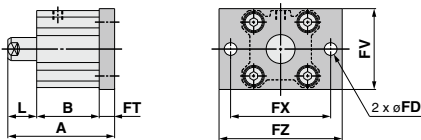
Rod flange: CQ2F



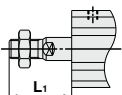
Rod end male thread



Head flange: CQ2G



Rod end male thread



Foot

Bore size (mm)	A		B		L		L ₁		LD	LG	LH	LS	
	5st	10st	5st	10st	5st	10st	5st	10st				5st	10st
12	45.3	55.3	22	27	18.5	23.5	29	34	4.5	2.8	17	10	15
16	46.8	56.8	23.5	28.5	18.5	23.5	30.5	35.5	4.5	2.8	19	11.5	16.5
20	51.2	61.2	24.5	29.5	19.5	24.5	33.5	38.5	6.6	4	24	12.5	17.5
25	54.7	64.7	27.5	32.5	20	25	37.5	42.5	6.6	4	26	12.5	17.5

Bore size (mm)	LT	LX	LY	LZ	X	Y
12	2	34	29.5	44	8	4.5
16	2	38	33.5	48	8	5
20	3.2	48	42	62	9.2	5.8
25	3.2	52	46	66	10.7	5.8

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Compact Foot

Bore size (mm)	A		B		L		L ₁		LD	LH	LS		LT
	5st	10st	5st	10st	5st	10st	5st	10st					
12	54.3	64.3	22	27	18.5	23.5	29	34	4.5	17	40.6	45.6	2
16	56.3	66.3	23.5	28.5	18.5	23.5	30.5	35.5	4.5	19	42.1	47.1	2
20	63	73	24.5	29.5	19.5	24.5	33.5	38.5	6.6	24	50.9	55.9	3.2
25	66.5	76.5	27.5	32.5	20	25	37.5	42.5	6.6	26	53.9	58.9	3.2

Bore size (mm)	LX	LY	LZ	X	Y
12	15.5	29.5	25	9.3	4.5
16	20	33.5	29	9.3	5
20	25.5	42	36	13.2	5.8
25	28	46	40	13.2	5.8

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

Rod Flange

Bore size (mm)	A		B		FD	FT	FV	FX	FZ	L		L ₁	
	5st	10st	5st	10st						5st	10st	5st	10st
12	40.5	50.5	22	27	4.5	5.5	25	45	55	18.5	23.5	29	34
16	42	52	23.5	28.5	4.5	5.5	30	45	55	18.5	23.5	30.5	35.5
20	44	54	24.5	29.5	6.6	8	39	48	60	19.5	24.5	33.5	38.5
25	47.5	57.5	27.5	32.5	6.6	8	42	52	64	20	25	37.5	42.5

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head Flange

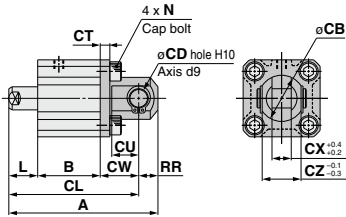
Bore size (mm)	A		L		L ₁	
	5st	10st	5st	10st	5st	10st
12	36	46	8.5	13.5	19	24
16	37.5	47.5	8.5	13.5	20.5	25.5
20	42	52	9.5	14.5	23.5	28.5
25	45.5	55.5	10	15	27.5	32.5

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

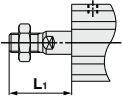
* The dimensions except A, L and L₁ are the same as those of the rod flange.

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

Double clevis: **CQ2D**



Rod end male thread



Double Clevis

Bore size (mm)	A		B		CB	CD	CL		CT	CU	CW	CX	CZ
	5st	10st	5st	10st			5st	10st					
12	50.5	60.5	22	27	12	5	44.5	54.5	4	7	14	5	10
16	53	63	23.5	28.5	14	5	47	57	4	10	15	6.5	12
20	61	71	24.5	29.5	20	8	52	62	5	12	18	8	16
25	67.5	77.5	27.5	32.5	24	10	57.5	67.5	5	14	20	10	20

Double clevis bracket material:
Carbon steel
Surface treatment: Nickel plated

Bore size (mm)	L		L ₁		N	RR
	5st	10st	5st	10st		
12	8.5	13.5	19	24	M4 x 0.7	6
16	8.5	13.5	20.5	25.5	M4 x 0.7	6
20	9.5	14.5	23.5	28.5	M6 x 1.0	9
25	10	15	27.5	32.5	M6 x 1.0	10

* 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□

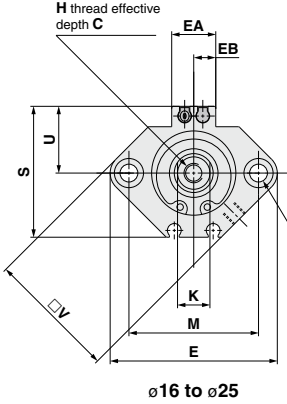
Technical
Data

CQ2 Series

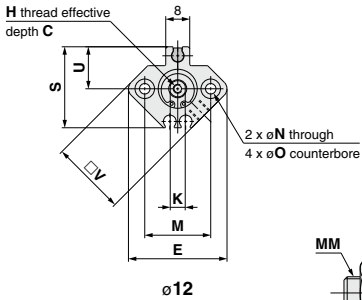
Dimensions

Ø12 to Ø25/Spring Extend With Auto Switch

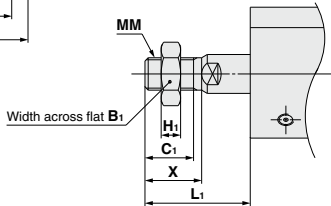
Standard (Through-hole): CDQ2B



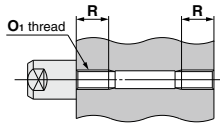
Ø16 to Ø25



Ø12

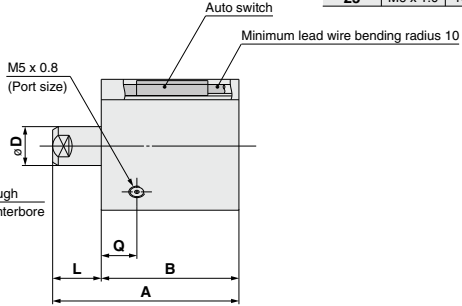


Both ends tapped: CDQ2A

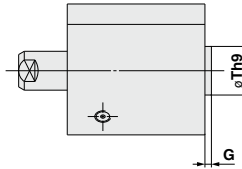


Both Ends Tapped

Bore size (mm)	O1	R
12	M4 x 0.7	7
16	M4 x 0.7	7
20	M6 x 1.0	10
25	M6 x 1.0	10



With boss on head end



With Boss on Head End

Bore size (mm)	G	Th9
12	1.5	15 ^{±0.043}
16	1.5	20 ^{±0.062}
20	2	13 ^{±0.043}
25	2	15 ^{±0.043}

Note) With boss on rod end: Option (Suffix "-XC36" to the end of model number.)

Rod end male thread

Rod End Male Thread

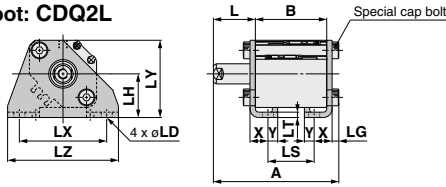
Bore size (mm)	B1	C1	H1	L1		MM	X
				5st	10st		
12	8	9	4	19	24	M5 x 0.8	10.5
16	10	10	5	20.5	25.5	M6 x 1.0	12
20	13	12	5	23.5	28.5	M8 x 1.25	14
25	17	15	6	27.5	32.5	M10 x 1.25	17.5

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

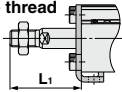
Bore size (mm)	Stroke (mm)	A	B	C	D	E	EA	EB	H	K	L	M	N	O	Q	S	U	V
12	5	45.9	37.4	6	6	33	—	—	M3 x 0.5	5	8.5 13.5	22	3.5	6.5 depth 3.5	11	27.5	14	25
	10	55.9	42.4															
16	5	44	35.5	8	8	37	13.2	6.6	M4 x 0.7	6	8.5 13.5	28	3.5	6.5 depth 3.5	10	29.5	15	29
	10	54	40.5															
20	5	46	36.5	7	10	47	13.6	6.8	M5 x 0.8	8	9.5 14.5	36	5.5	9 depth 7	8	35.5	18	36
	10	56	41.5															
25	5	47.5	37.5	12	12	52	13.6	6.8	M6 x 1.0	10	10 15	40	5.5	9 depth 7	9	40.5	21	40
	10	57.5	42.5															

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

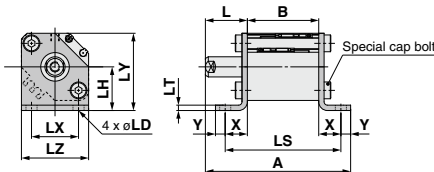
Foot: CDQ2L



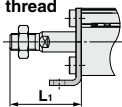
Rod end male thread



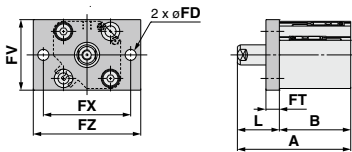
Compact foot: CDQ2LC



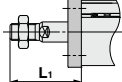
Rod end male thread



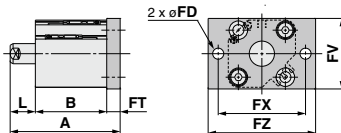
Rod flange: CDQ2F



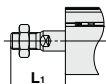
Rod end male thread



Head flange: CDQ2G



Rod end male thread



Foot

Bore size (mm)	A		B		L		L ₁		LD	LG	LH	LS	
	5st	10st	5st	10st	5st	10st	5st	10st				5st	10st
12	60.7	70.7	37.4	42.4	18.5	23.5	29	34	4.5	2.8	17	25.4	30.4
16	58.8	68.8	35.5	40.5	18.5	23.5	30.5	35.5	4.5	2.8	19	23.5	28.5
20	63.2	73.2	36.5	41.5	19.5	24.5	33.5	38.5	6.6	4	24	24.5	29.5
25	64.7	74.7	37.5	42.5	20	25	37.5	42.5	6.6	4	26	22.5	27.5

Bore size (mm)	LT	LX	LY	LZ	X	Y
12	2	34	29.5	44	8	4.5
16	2	38	33.5	48	8	5
20	3.2	48	42	62	9.2	5.8
25	3.2	52	46	66	10.7	5.8

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Compact Foot

Bore size (mm)	A		B		L		L ₁		LD	LH	LS		LT
	5st	10st	5st	10st	5st	10st	5st	10st			5st	10st	
12	69.7	79.7	37.4	42.4	18.5	23.5	29	34	4.5	17	56	61	2
16	68.3	78.3	35.5	40.5	18.5	23.5	30.5	35.5	4.5	19	54.1	59.1	2
20	75	85	36.5	41.5	19.5	24.5	33.5	38.5	6.6	24	62.9	67.9	3.2
25	76.5	86.5	37.5	42.5	20	25	37.5	42.5	6.6	26	63.9	68.9	3.2

Bore size (mm)	LX	LY	LZ	X	Y
12	15.5	29.5	25	9.3	4.5
16	20	33.5	29	9.3	5
20	25.5	42	36	13.2	5.8
25	28	46	40	13.2	5.8

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

Rod Flange

Bore size (mm)	A		B		FD	FT	FV	FX	FZ	L		L ₁	
	5st	10st	5st	10st						5st	10st		
12	55.9	65.9	37.4	42.4	4.5	5.5	25	45	55	18.5	23.5	29	34
16	54	64	35.5	40.5	4.5	5.5	30	45	55	18.5	23.5	30.5	35.5
20	56	66	36.5	41.5	6.6	8	39	48	60	19.5	24.5	33.5	38.5
25	57.5	67.5	37.5	42.5	6.6	8	42	52	64	20	25	37.5	42.5

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head Flange

Bore size (mm)	A		L		L ₁	
	5st	10st	5st	10st		
12	51.4	61.4	8.5	13.5	19	24
16	49.5	59.5	8.5	13.5	20.5	25.5
20	54	64	9.5	14.5	23.5	28.5
25	55.5	65.5	10	15	27.5	32.5

(* 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

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

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

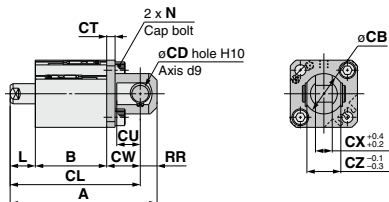
Technical Data

CQ2 Series

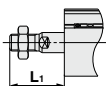
Dimensions

Ø12 to Ø25/Spring Extend With Auto Switch

Double clevis: CDQ2D



Rod end male thread



Double Clevis

(mm)

Bore size (mm)	A		B		CB	CD	CL		CT	CU	CW	CX	CZ
	5st	10st	5st	10st			5st	10st					
12	65.9	75.9	37.4	42.4	12	5	59.9	69.9	4	7	14	5	10
16	65	75	35.5	40.5	14	5	59	69	4	10	15	6.5	12
20	73	83	36.5	41.5	20	8	64	74	5	12	18	8	16
25	77.5	87.5	37.5	42.5	24	10	67.5	77.5	5	14	20	10	20

Bore size (mm)	L		L1		N	RR
	5st	10st	5st	10st		
12	8.5	13.5	19	24	M4 x 0.7	6
16	8.5	13.5	20.5	25.5	M4 x 0.7	6
20	9.5	14.5	23.5	28.5	M6 x 1.0	9
25	10	15	27.5	32.5	M6 x 1.0	10

Double clevis bracket material:

Carbon steel

Surface treatment:

Nickel plated

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

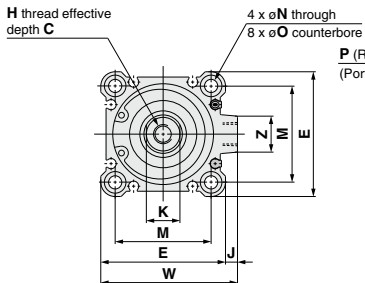
* Double clevis pin and retaining rings are included.

Dimensions

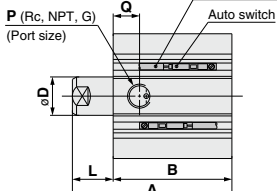
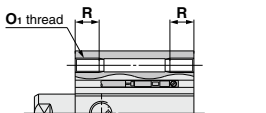
ø32 to ø50/Spring Extend With Auto Switch

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

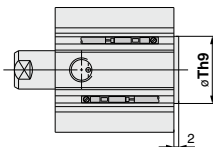
**Standard (Through-hole):
CQ2B/CDQ2B**



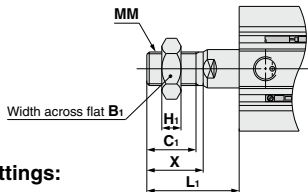
Both ends tapped: CQ2A/CDQ2A



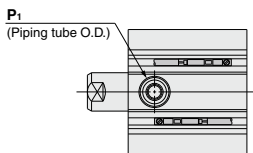
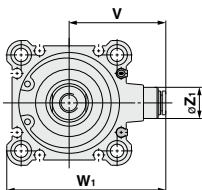
With boss on head end



Rod end male thread



**Built-in One-touch fittings:
ø32 to ø50**



Both Ends Tapped (mm)

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

With Boss on Head End (mm)

Bore size (mm)	Th9
32	21 ⁰ _{0.052}
40	28 ⁰ _{0.052}
50	35 ⁰ _{0.052}

Note) With boss on rod end: Option
(Suffix "-XC36" to the end of model number.)

Rod End Male Thread (mm)

Bore size (mm)	B ₁	C ₁	H ₁	L ₁			MM	X
				5st	10st	20st		
32	22	20.5	8	33.5	38.5	—	M14 x 1.5	23.5
40	22	20.5	8	33.5	38.5	—	M14 x 1.5	23.5
50	27	26	11	—	43.5	53.5	M18 x 1.5	28.5

Built-in One-touch Fittings (mm)

Bore size (mm)	Z ₁	P ₁	V	W ₁
32	13	6	36.5	59
40	13	6	40.5	66.5
50	16	8	50	82

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

Bore size (mm)	Stroke (mm)	Without auto switch				With auto switch															
		A	B	P	Q	A	B	P	Q	C	D	E	H	J	K	L	M	N	O	W	Z
32	5	40	28	M5 x 0.8	10	50	38	1/8	10	13	16	45	M8 x 1.25	4.5	14	12	34	5.5	9 depth 7	49.5	14
	10	50	33	1/8	12.5	60	43	1/8	12.5	13	16	52	M8 x 1.25	5	14	17	40	5.5	9 depth 7	57	15
40	5	46.5	34.5	1/8	12.5	56.5	44.5	1/8	12.5	13	16	52	M8 x 1.25	5	14	12	40	5.5	9 depth 7	57	15
	10	56.5	39.5	1/8	12.5	66.5	49.5	1/8	12.5	13	16	52	M8 x 1.25	5	14	17	40	5.5	9 depth 7	57	15
50	10	58.5	40.5	1/4	10.5	68.5	50.5	1/4	10.5	15	20	64	M10 x 1.5	7	17	18	50	6.6	11 depth 8	71	19
	20	78.5	50.5	1/4	10.5	88.5	60.5	1/4	10.5	15	20	64	M10 x 1.5	7	17	28	50	6.6	11 depth 8	71	19

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

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

- D-□
- X□
- Technical Data

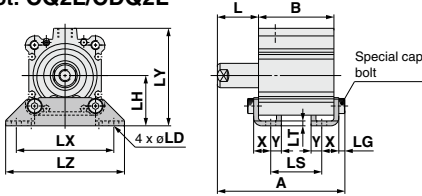
CQ2 Series

Dimensions

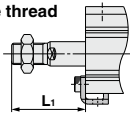
Ø32 to Ø50/Spring Extend with Auto Switch

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

Foot: CQ2L/CDQ2L



Rod end male thread



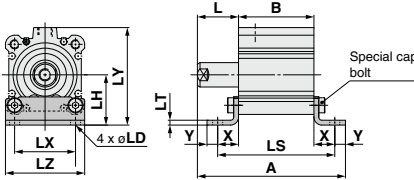
Foot

Bore size (mm)	Without auto switch						With auto switch											
	A		B		LS		A		B		LS							
	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st						
32	57.2	67.2	-	28	33	-	12	17	-	67.2	77.2	-	38	43	-	22	27	-
40	63.7	73.7	-	34.5	39.5	-	18.5	23.5	-	73.7	83.7	-	44.5	49.5	-	28.5	33.5	-
50	-	76.7	96.7	-	40.5	50.5	-	17.5	27.5	-	86.7	106.7	-	50.5	60.5	-	27.5	37.5

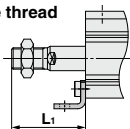
Bore size (mm)	L		L ₁		LD	LH	LT	LX	LY	LZ	X	Y		
	5st	10st	20st	5st									10st	20st
32	22	27	-	43.5	48.5	-	6.6	4	30	3.2	57	71	11.2	5.8
40	22	27	-	43.5	48.5	-	6.6	4	33	3.2	64	78	11.2	7
50	-	28	38	-	53.5	63.5	9	5	39	3.2	79	95	14.7	8

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Compact foot: CQ2LC/CDQ2LC



Rod end male thread



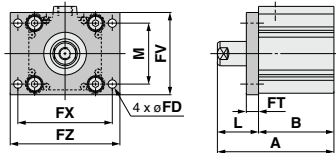
Compact Foot

Bore size (mm)	Without auto switch						With auto switch											
	A		B		LS		A		B		LS							
	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st						
32	68.5	79.5	-	28	33	-	55.4	60.4	-	79.5	89.5	-	38	43	-	65.4	70.4	-
40	77.2	87.2	-	34.5	39.5	-	61.9	66.9	-	87.2	97.2	-	44.5	49.5	-	71.9	76.9	-
50	-	93.2	113.2	-	40.5	50.5	-	73.9	83.9	-	103.2	123.2	-	50.5	60.5	-	83.9	93.9

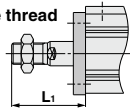
Bore size (mm)	L		L ₁		LD	LH	LT	LX	LY	LZ	X	Y		
	5st	10st	20st	5st									10st	20st
32	22	27	-	43.5	48.5	-	6.6	30	3.2	34	57	45	13.7	5.8
40	22	27	-	43.5	48.5	-	6.6	33	3.2	40	64	52	13.7	7
50	-	28	38	-	53.5	63.5	9	39	3.2	50	78	64	16.7	8

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

Rod flange: CQ2F/CDQ2F



Rod end male thread



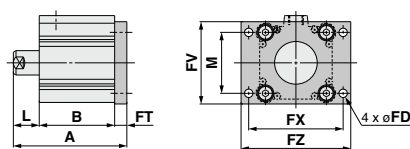
Rod Flange

Bore size (mm)	Without auto switch						With auto switch										
	A		B		LS		A		B		FD	FT	FV	FX	FZ		
	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st						10st	20st
32	50	60	-	28	33	-	60	70	-	38	43	-	5.5	8	45	56	65
40	56.5	66.5	-	34.5	39.5	-	66.5	76.5	-	44.5	49.5	-	5.5	8	54	62	72
50	-	68.5	88.5	-	40.5	50.5	-	78.5	88.5	-	50.5	60.5	6.6	9	67	76	89

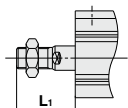
Bore size (mm)	L		L ₁		M		
	5st	10st	20st	5st		10st	20st
32	22	27	-	43.5	48.5	-	34
40	22	27	-	43.5	48.5	-	40
50	-	28	38	-	53.5	63.5	50

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head flange: CQ2G/CDQ2G



Rod end male thread



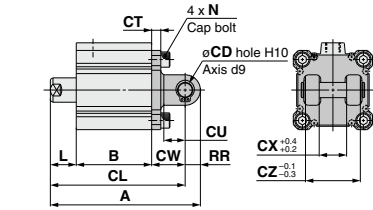
Head Flange

Bore size (mm)	Without auto switch			With auto switch			L	L ₁				
	A		A		A							
	5st	10st	20st	5st	10st	20st						
32	48	58	-	58	68	-	12	17	-	33.5	38.5	-
40	54.5	64.5	-	64.5	74.5	-	12	17	-	33.5	38.5	-
50	-	67.5	87.5	-	77.5	97.5	-	18	28	-	43.5	53.5

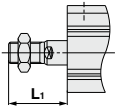
Flange bracket material: Carbon steel
Surface treatment: Nickel plated

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

Double clevis: CQ2D/CDQ2D



Rod end male thread



Double Clevis

(mm)

Bore size (mm)	Without auto switch						With auto switch												
	A		B		CL		A		B		CL								
	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st							
32	70	80	—	28	33	—	60	70	—	80	90	—	38	43	—	70	80	—	
40	78.5	88.5	—	34.5	39.5	—	66.5	78.5	—	88.5	98.5	—	44.5	49.5	—	78.5	88.5	—	
50	—	100.5	120.5	—	40.5	50.5	—	86.5	106.5	—	110.5	130.5	—	50.5	60.5	—	96.5	116.5	—

Bore size (mm)	CD	CT	CU	CW	CX	CZ	L		L1		N	RR		
							5st	10st	5st	10st				
							20st	20st						
32	10	5	14	20	18	36	12	17	—	33.5	38.5	—	M6 x 1.0	10
40	10	6	14	22	18	36	12	17	—	33.5	38.5	—	M6 x 1.0	10
50	14	7	20	28	22	44	—	18	28	—	43.5	53.5	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.

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data