

Compact Cylinder: Standard Single Acting, Single Rod Series CQ2

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

CQ2 **B** **20** **-** **10** **S** **-** **-**

CQ2 **B** **32** **-** **10** **S** **Z** **-** **-**

CDQ2 **B** **32** **-** **10** **S** **Z** **-** **M9BW** **-** **-**

Mounting

B	Through-hole (Standard)	F	Rod flange
A	Both ends tapped	G	Head flange
L	Foot	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)Q2B" on pages 41 and 44.

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
	Rc	
TN	NPT	ø32 to ø50
TF	G	
F	Built-in one-touch fittings (Note)	

Note) 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.

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.

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.

Made to Order

Refer to the next page for details.

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

Applicable Auto Switches/Refer to pages 1263 to 1371 in Best Pneumatics No. 2 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)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	—	○	IC circuit	Relay, PLC	
	3-wire (PNP)			M9PV				M9P	●	●	●	○	—	○				
	2-wire			M9BV				M9B	●	●	●	○	—	○				
	Diagnostic indication (2-color indication)			3-wire (NPN)	24 V	5 V, 12 V	—	M9NWV	M9NW	●	●	●	○	—	○	IC circuit		
	Water resistant (2-color indication)			3-wire (PNP)				M9PWV	M9PW	●	●	●	○	—	○			
				2-wire				M9BWV	M9BW	●	●	●	○	—	○			
				3-wire (NPN)	24 V	5 V, 12 V	—	M9NAV**	M9NA**	○	○	●	○	—	○	IC circuit		
				3-wire (PNP)				M9PAV**	M9PA**	○	○	●	○	—	○			
				2-wire				M9BAV**	M9BA**	○	○	●	○	—	○			
Reed auto switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	—	●	—	—	—	IC circuit	Relay, PLC	
				No	2-wire	24 V	12 V	100 V	100 V or less	A93V	A93	●	—	●	—	—		—
			A90V							A90	●	—	●	—	—	—		—

** Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.

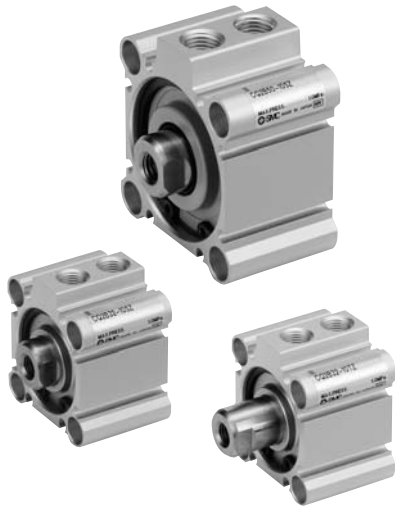
* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWZ

* 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 175.

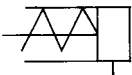
* For details about auto switches with pre-wired connector, refer to pages 1328 and 1329 in Best Pneumatics No. 2.

Series CQ2

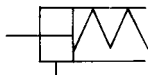


JIS Symbol

Single acting,
Spring return



Single acting,
Spring extend



Made to Order

(For details, refer to pages 177 to 207.)

Symbol	Specifications
-XA□	Special rod end shape, spring return type only
-XB10	Intermediate stroke (Exclusive body type), Spring return type only
-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
-X144	Special port location, with auto switch ø12 to ø25 only
-X202	Full length dimension is the same as Series CQ1, Except ø12, ø16, ø25.
-X203	L dimension from rod cover is the same as Series CQ1, ø20, ø32 only.
-X271	Fluororubber seals
-X1876	Cylinder tube: With concave boss on head end

Refer to pages 169 to 175 for the specifications of cylinders with auto switches.

- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Minimum stroke for auto switch mounting
- Operating range
- Auto switch mounting brackets/Part no.

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 (mm)
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. 38)	
Description	Strokes in 1 mm intervals are available by installing a spacer in the standard stroke cylinder.	
Stroke range	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		●	●	●	●	●	●	●
	Built-in magnet			●	●	●	●	●	●	●
	Piping	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)	—	—	—	—	—	—
	Rod end male thread			●	●	●	●	●	●	●
	With boss on head end			●	●	●	●	●	●	●

Note 1) ø32 without auto switch: M5 x 0.8 is used for 5 mm stroke piping dimension.

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

Note 2) One-touch fittings cannot be replaced.

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.

Spring Force

Single Acting, Spring Return (N)

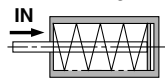
Bore size (mm)	Stroke (mm)	Spring reaction force (N)	
		Second	First
12	5	13	8.6
	10	13	3.9
16	5	15	10.3
	10	15	5.9
20	5	15	10
	10	15	5.9
25	5	20	16
	10	20	11
32	5	30	23
	10	30	16
40	5	30	13
	10	39	21
50	10	50	30
	20	54	24

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

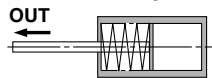
Single acting, Spring return

Spring state with first mounting load



When spring is set in cylinder

Spring state with second mounting load



When spring is compressed with air

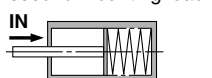
Single acting, Spring extend

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)}	Flange	Double clevis
12	Without switch CQ2□□-□D	CQ-L012	CQ-F012	CQ-D012
	With switch CQ2□□-□DZ	CQ-LZ12		
16	Without switch CQ2□□-□D	CQ-L016	CQ-F016	CQ-D016
	With switch CQ2□□-□DZ	CQ-LZ16		
20	Without switch CQ2□□-□D	CQ-L020	CQ-F020	CQ-D020
	With switch CQ2□□-□DZ	CQ-LZ20		
25	Without switch CQ2□□-□D	CQ-L025	CQ-F025	CQ-D025
	With switch CQ2□□-□DZ	CQ-LZ25		
32	CQ2□□-□DZ	CQ-L032	CQ-F032	CQ-D032
40	CQ2□□-□DZ	CQ-L040	CQ-F040	CQ-D040
50	CQ2□□-□DZ	CQ-L050	CQ-F050	CQ-D050

Note 1) When ordering a foot bracket, 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 ø100:
- Order 2 pieces per cylinder.

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

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	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
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) **CQ2D32-10SMZ**

- 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

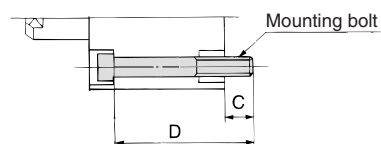
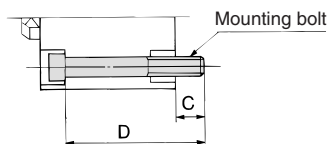
Series CQ2

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-M3x25L 4 pcs.

Material: Chromium molybdenum steel
Surface treatment: Nickel plated



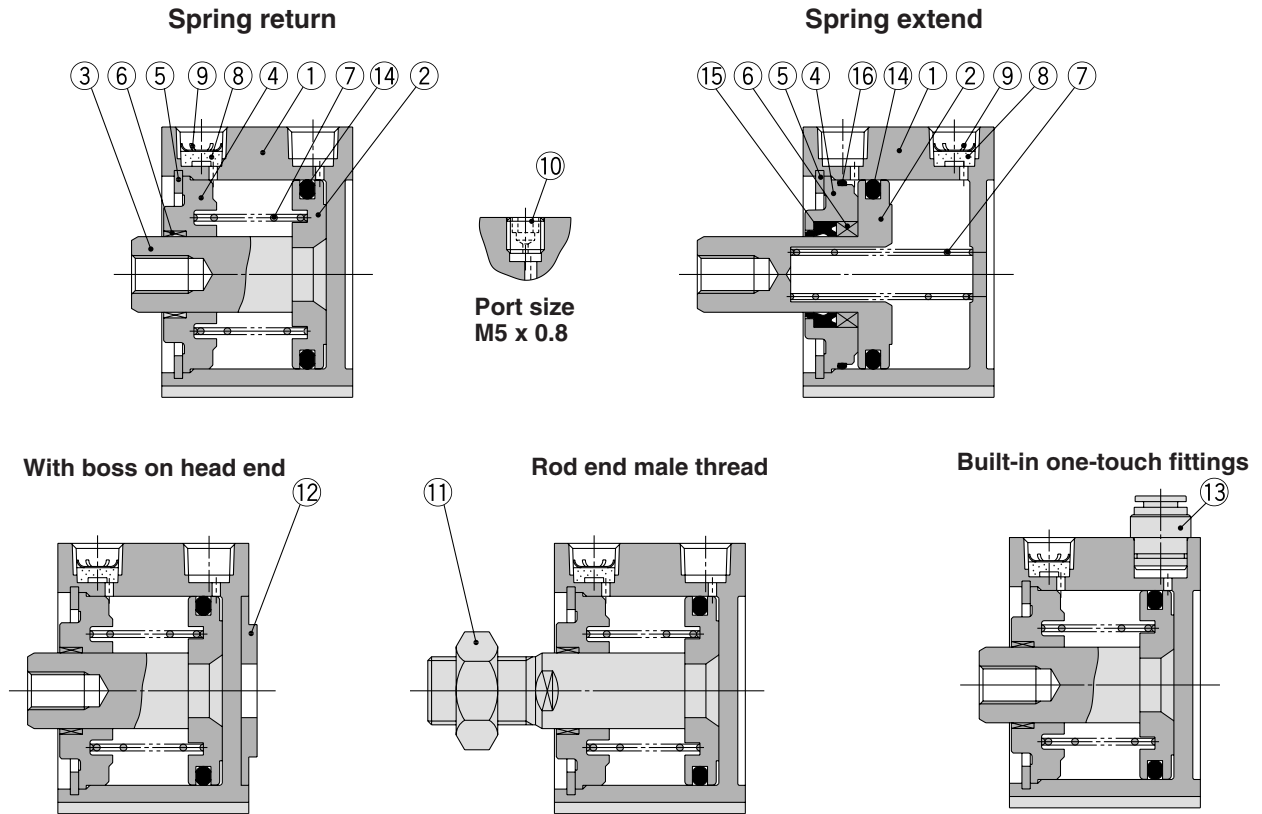
Spring Return

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	Chromated
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	Port size Rc1/8, 1/4
9	Retaining ring	Carbon tool steel	
10	Plug with fixed orifice	Alloy steel	Port size M5 x 0.8
11	Rod end nut	Carbon steel	Nickel plated
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
12	CQ2B12-S-PS	CQ2B12-T-PS
16	CQ2B16-S-PS	CQ2B16-T-PS
20	CQ2B20-S-PS	CQ2B20-T-PS
25	CQ2B25-S-PS	CQ2B25-T-PS
32	CQ2B32-S-PS	CQ2B32-T-PS
40	CQ2B40-S-PS	CQ2B40-T-PS
50	CQ2B50-S-PS	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)

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

20 — C□Q2B Bore size — Stroke $\frac{S}{T}(M)Z^{-1}$

• Copper and fluorine-free series • ø12, ø16, ø20, ø25, ø32 ø40, ø50

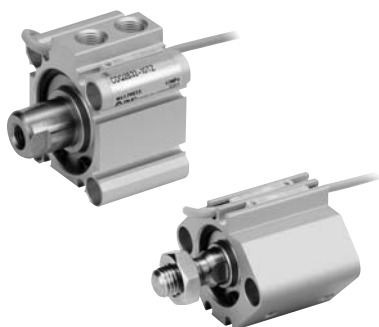
For preventing the influence of copper ions or halogen ions during CRT manufacturing processes, copper and fluorine materials are not used in the component parts.

*1 "Z" is not available for ø12 to ø25 without auto switches.

Specifications

Bore size (mm)	12	16	20	25	32	40	50
Action	Single 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: Single Acting, Single Rod Series **CDQ2** With Auto Switch



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

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

Weight

Weight

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

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
	Nut	1	2	4	8	17	17
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
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

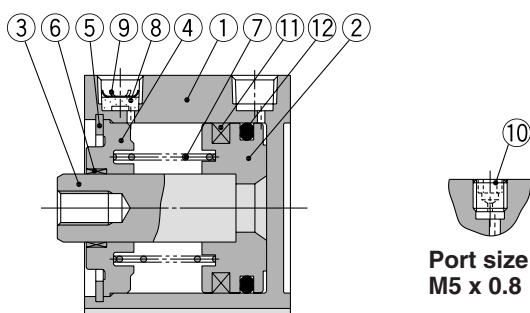
Calculation: (Example) **CDQ2D32-10SMZ**

- 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.

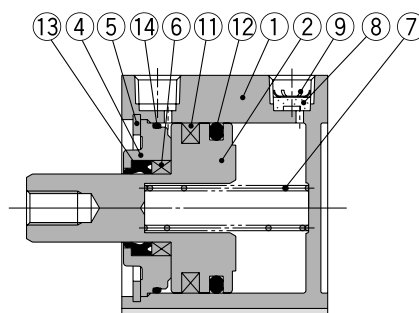
Construction

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	Chromated
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	Port size Rc1/8, 1/4
9	Retaining ring	Carbon tool steel	
10	Plug with fixed orifice	Alloy steel	Port size M5 x 0.8
11	Magnet	—	

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

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



Replacement Parts/Seal Kit

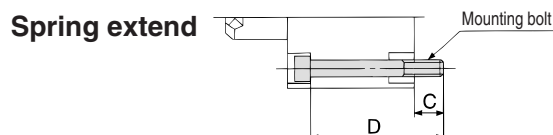
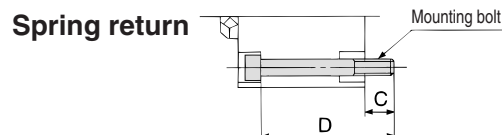
Since the same as those of the standard, single acting, single rod, refer to page 42.

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-M3x35L 2 pcs.

Material: Chromium molybdenum steel
Surface treatment: Nickel plated



Spring Return

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

Spring Extend

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

Standard

Large Bore
Size

Long Stroke

Non-rotating
Rod

Axial Piping

Anti-lateral
Load

With End Lock

Water
Resistant

With Auto
Switch

Auto Switch

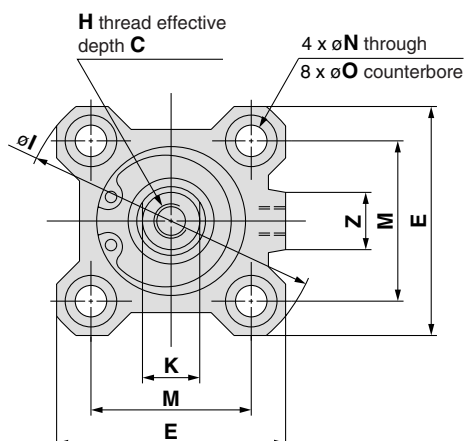
Made to Order

Series CQ2

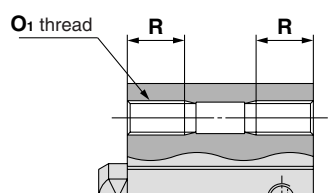
Dimensions

ø12 to ø25/Spring Return Without Auto Switch

Standard (Through-hole): CQ2B

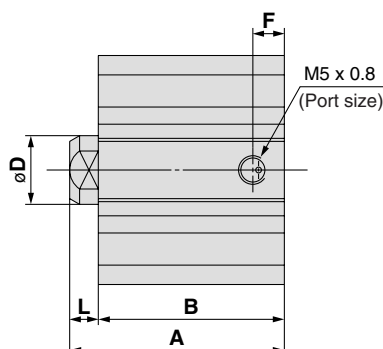


Both ends tapped: CQ2A

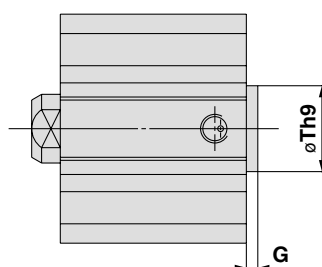


Both Ends Tapped

Bore size (mm)	O ₁	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

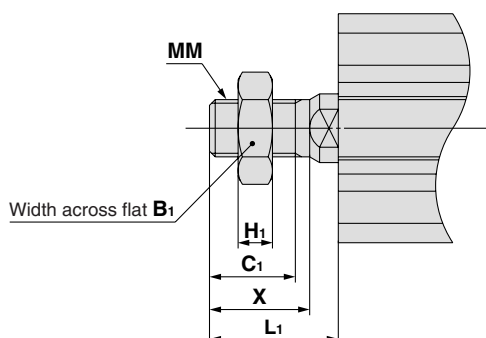


With Boss on Head End

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

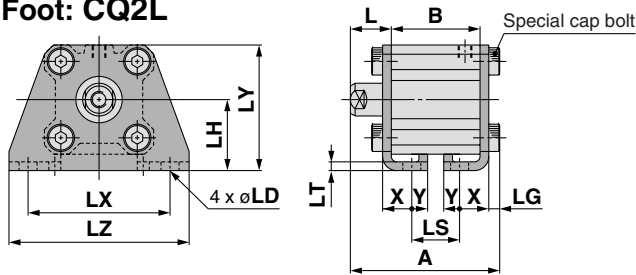
Bore size (mm)	B ₁	C ₁	H ₁	L ₁	MM	X
12	8	9	4	14	M5 x 0.8	10.5
16	10	10	5	15.5	M6 x 1.0	12
20	13	12	5	18.5	M8 x 1.25	14
25	17	15	6	22.5	M10 x 1.25	17.5

Standard

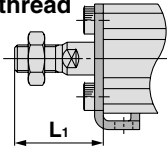
Bore size (mm)	Stroke (mm)	A	B	C	D	E	F	H	I	K	L	M	N	O	Z
12	5	25.5	22	6	6	25	5	M3 x 0.5	32	5	3.5	15.5	3.5	6.5 depth 3.5	—
	10	30.5	27												
16	5	27	23.5	8	8	29	5.5	M4 x 0.7	38	6	3.5	20	3.5	6.5 depth 3.5	10
	10	32	28.5												
20	5	29	24.5	7	10	36	5.5	M5 x 0.8	47	8	4.5	25.5	5.5	9 depth 7	10
	10	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 page 19.

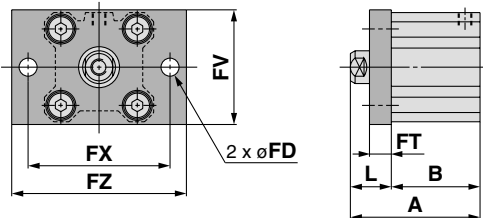
Foot: CQ2L



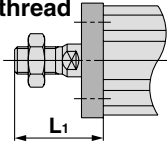
Rod end male thread



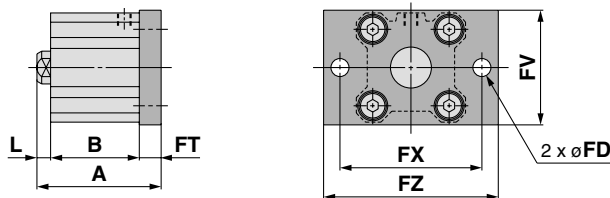
Rod flange: CQ2F



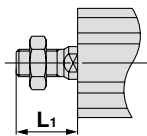
Rod end male thread



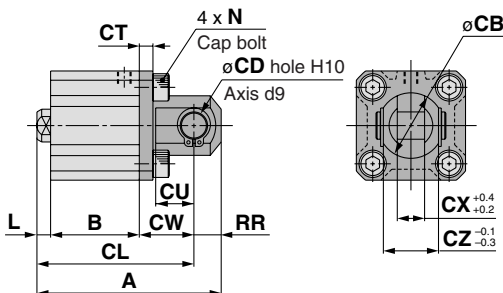
Head flange: CQ2G



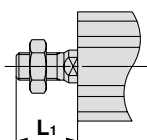
Rod end male thread



Double clevis: CQ2D



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

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

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

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

Double Clevis

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

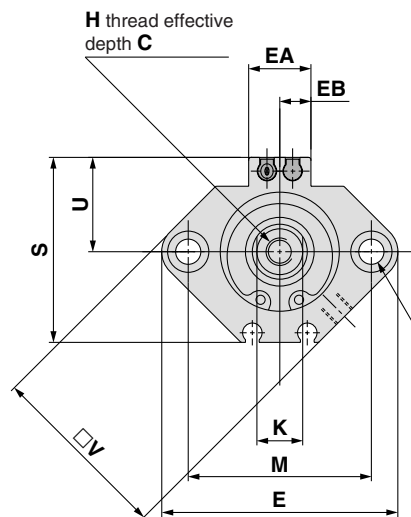
* For details about the rod end nut and accessory brackets, refer to page 19.
* Double clevis pin and retaining rings are included.

Series CQ2

Dimensions

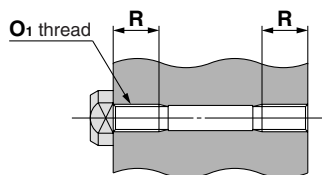
ø12 to ø25/Spring Return With Auto Switch

Standard (Through-hole): CDQ2B



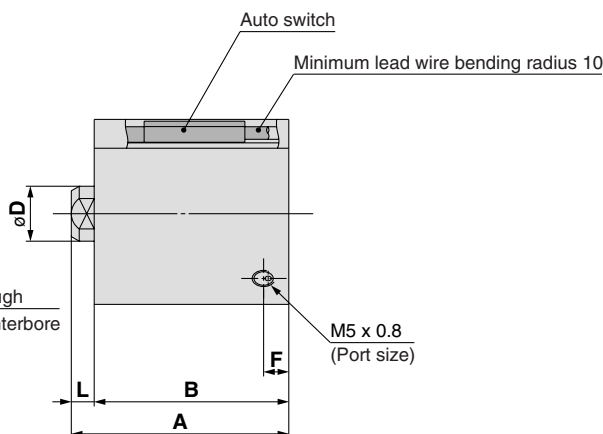
ø16 to ø25

Both ends tapped: CDQ2A



Both Ends Tapped

Bore size (mm)	O ₁	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

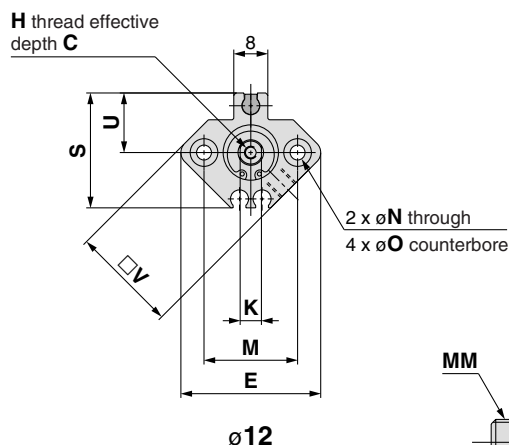


With boss on head end

With Boss on Head End

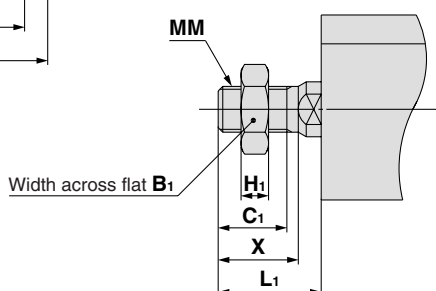
Bore size (mm)	G	Th9
12	1.5	15 ⁰ _{-0.043}
16	1.5	20 ⁰ _{-0.052}
20	2	13 ⁰ _{-0.043}
25	2	15 ⁰ _{-0.043}

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



ø12

Rod end male thread



Rod End Male Thread

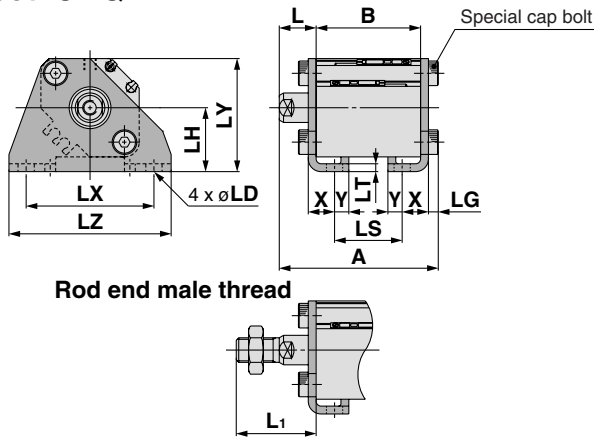
Bore size (mm)	B ₁	C ₁	H ₁	L ₁	MM	X
12	8	9	4	14	M5 x 0.8	10.5
16	10	10	5	15.5	M6 x 1.0	12
20	13	12	5	18.5	M8 x 1.25	14
25	17	15	6	22.5	M10 x 1.25	17.5

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

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 page 19.

Foot: CDQ2L



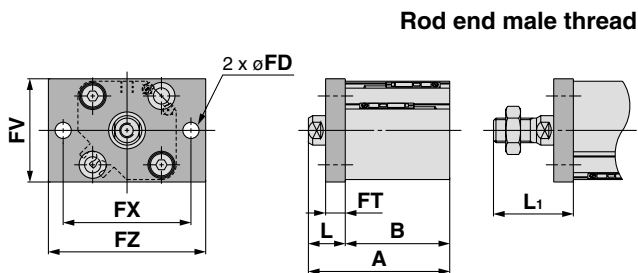
Foot

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

Rod flange: CDQ2F

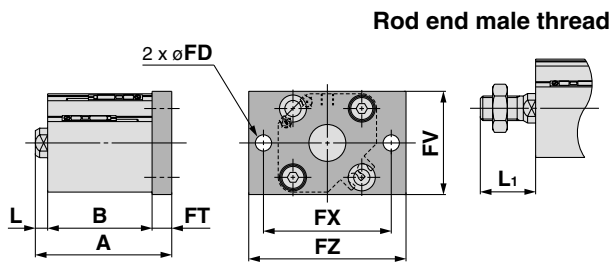


Rod Flange

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



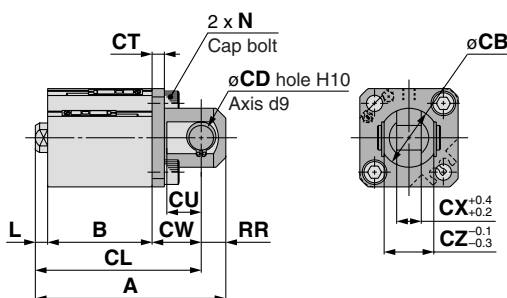
Head Flange

Bore size (mm)	A		L	L ₁
	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

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

Double clevis: CDQ2D



Double Clevis

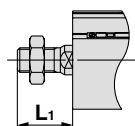
Bore size (mm)	A		B		CB	CD	CL		CT	CU	CW
	5st	10st	5st	10st			5st	10st			
12	56.5	61.5	33	38	12	5	50.5	55.5	4	7	14
16	60	65	35.5	40.5	14	5	54	59	4	10	15
20	68	73	36.5	41.5	20	8	59	64	5	12	18
25	72.5	77.5	37.5	42.5	24	10	62.5	67.5	5	14	20

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 page 19.
* Double clevis pin and retaining rings are included.

Rod end male thread



Series CQ2

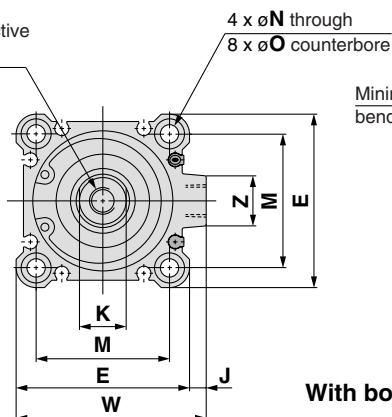
Dimensions

ø32 to ø50/Spring Return With Auto Switch

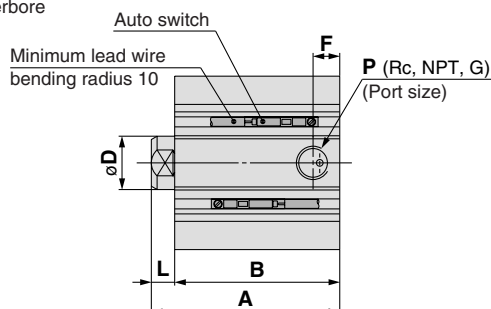
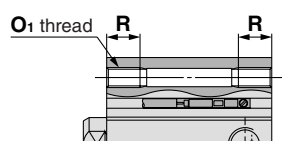
(In the case of without auto switches, the A, B, F and P dimensions will be only changed. Refer to the dimension table.)

Standard (Through-hole): CQ2B/CDQ2B

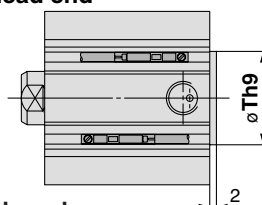
H thread effective depth C



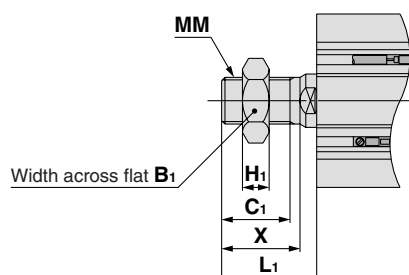
Both ends tapped: CQ2A/CDQ2A



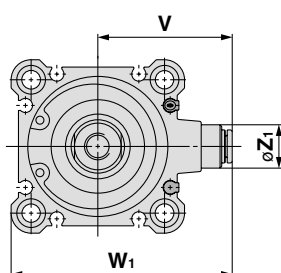
With boss on head end



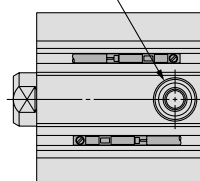
Rod end male thread



Built-in one-touch fittings: ø32 to ø50



P1
(Piping tube O.D.)



Both Ends Tapped (mm)

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 (mm)

Bore size (mm)	Th9
32	21 ⁰ _{-0.052}
40	28 ⁰ _{-0.052}
50	35 ⁰ _{-0.062}

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

Rod End Male Thread (mm)

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 (mm)

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

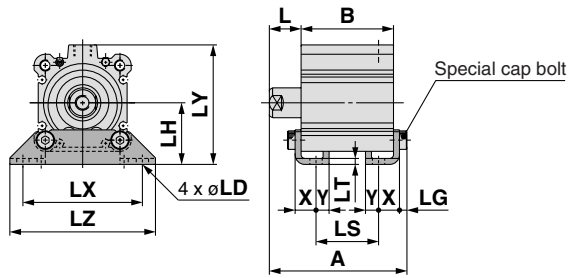
Standard For auto switch proper mounting position and its mounting height, refer to pages 169 to 175.

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	8	1/8	51.5	44.5	8	1/8	13	16	52	M8 x 1.25	5	14	7	40	5.5	9 depth 7	57	15
	10	46.5	39.5	8		56.5	49.5														
50	10	48.5	40.5	10.5	1/4	58.5	50.5	10.5	1/4	15	20	64	M10 x 1.5	7	17	8	50	6.6	11 depth 8	71	19
	20	58.5	50.5	10.5		68.5	60.5														

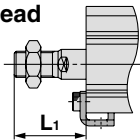
Note 2) The A, B dimensions of the ø32-5 mm stroke with built-in one-touch fittings without auto switch are the same as those of the ø32-10 mm stroke without auto switch.

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

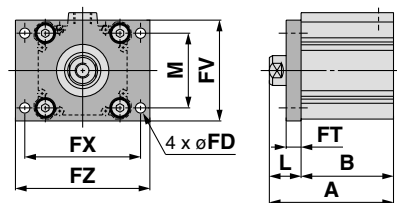
Foot: CQ2L/CDQ2L



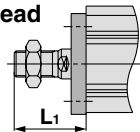
Rod end male thread



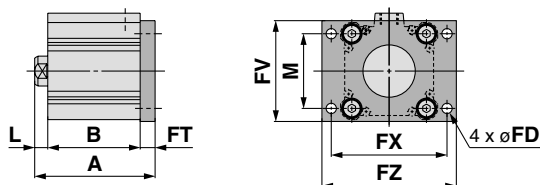
Rod flange: CQ2F/CDQ2F



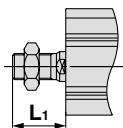
Rod end male thread



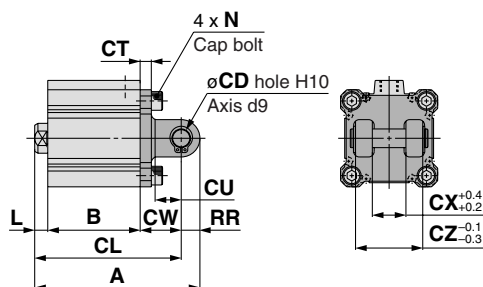
Head flange: CQ2G/CDQ2G



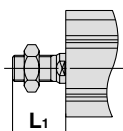
Rod end male thread



Double clevis: CQ2D/CDQ2D



Rod end male thread



Foot

(mm)

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	5st	10st	20st	5st	10st	20st
32	52.2	57.2	—	28	33	—	12	17	—	62.2	67.2	—	38	43	—	22	27	—
40	58.7	63.7	—	34.5	39.5	—	18.5	23.5	—	68.7	73.7	—	44.5	49.5	—	28.5	33.5	—
50	—	66.7	76.7	—	40.5	50.5	—	17.5	27.5	—	76.7	86.7	—	50.5	60.5	—	27.5	37.5

Bore size (mm)	L	L ₁	LD	LG	LH	LX	LT	LY	LZ	X	Y
32	17	38.5	6.6	4	30	57	3.2	57	71	11.2	5.8
40	17	38.5	6.6	4	33	64	3.2	64	78	11.2	7
50	18	43.5	9	5	39	79	3.2	78	95	14.7	8

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Rod Flange

(mm)

Bore size (mm)	Without auto switch						With auto switch					
	A			B			A			B		
	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st
32	45	50	—	28	33	—	55	60	—	38	43	—
40	51.5	56.5	—	34.5	39.5	—	61.5	66.5	—	44.5	49.5	—
50	—	58.5	68.5	—	40.5	50.5	—	68.5	78.5	—	50.5	60.5

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				
	5st	10st	20st	5st	10st	20st		
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

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

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	5st	10st	20st	5st	10st	20st
32	65	70	—	28	33	—	55	60	—	75	80	—	38	43	—	65	70	—
40	73.5	78.5	—	34.5	39.5	—	63.5	68.5	—	83.5	88.5	—	44.5	49.5	—	73.5	78.5	—
50	—	90.5	100.5	—	40.5	50.5	—	76.5	86.5	—	100.5	110.5	—	50.5	60.5	—	86.5	96.5

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	M8 x 1.25	14

Double clevis bracket material: Cast iron
Surface treatment: Painted

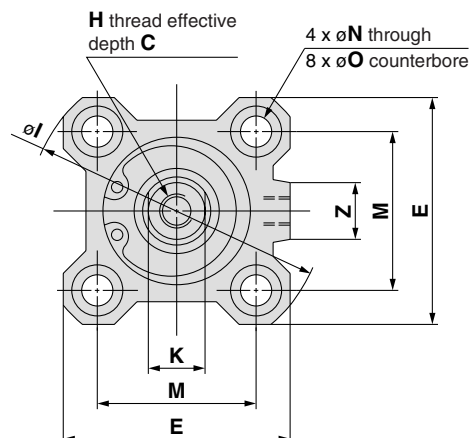
* For details about the rod end nut and accessory brackets, refer to page 19.
* Double clevis pin and retaining rings are included.

Series CQ2

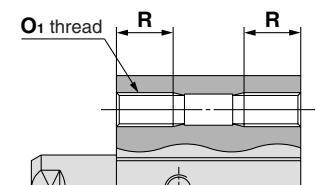
Dimensions

Ø12 to Ø25/Spring Extend Without Auto Switch

Standard (Through-hole): CQ2B

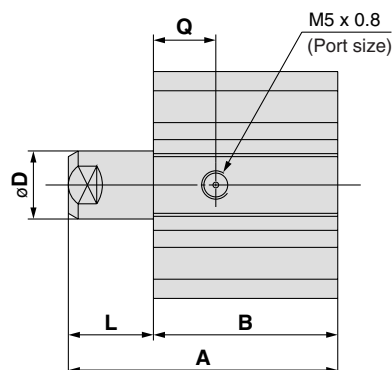


Both ends tapped: CQ2A

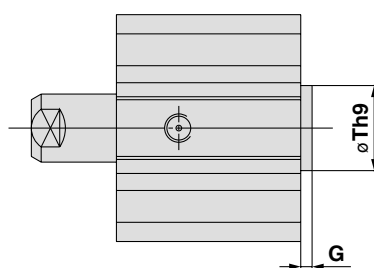


Both Ends Tapped

Bore size (mm)	Ø1	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

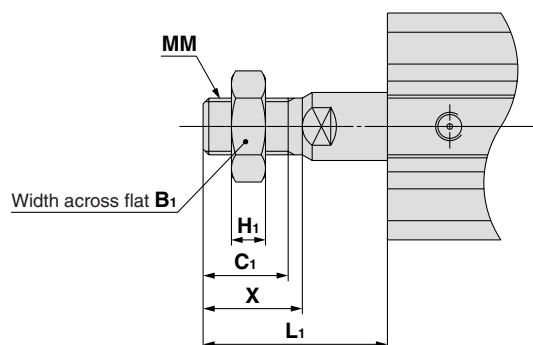


With Boss on Head End

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

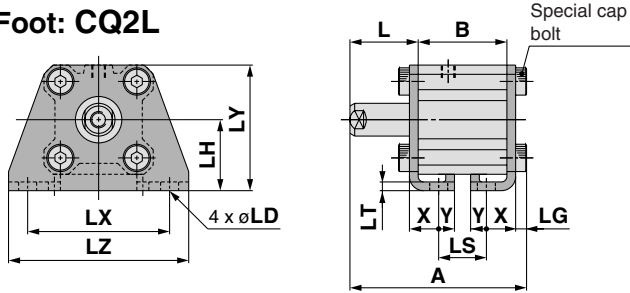
Bore size (mm)	B1	C1	H1	L1		MM	X
				5st	10st		
12	8	9	4	19	24	M5 x 0.8	10.5
16	10	10	5	20.5	25.5	M6 x 1.0	12
20	13	12	5	23.5	28.5	M8 x 1.25	14
25	17	15	6	27.5	32.5	M10 x 1.25	17.5

Standard

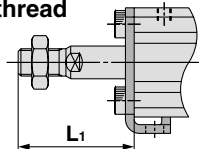
Bore size (mm)	Stroke (mm)	A	B	C	D	E	H	I	K	L	M	N	O	Q	Z
12	5	30.5	22	6	6	25	M3 x 0.5	32	5	8.5	15.5	3.5	6.5 depth 3.5	7.5	—
	10	40.5	27							13.5					
16	5	32	23.5	8	8	29	M4 x 0.7	38	6	8.5	20	3.5	6.5 depth 3.5	8	10
	10	42	28.5							13.5					
20	5	34	24.5	7	10	36	M5 x 0.8	47	8	9.5	25.5	5.5	9 depth 7	9	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	11	10
	10	47.5	32.5							15					

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

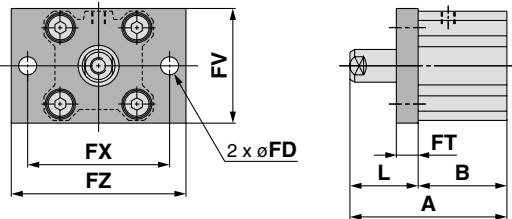
Foot: CQ2L



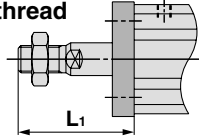
Rod end male thread



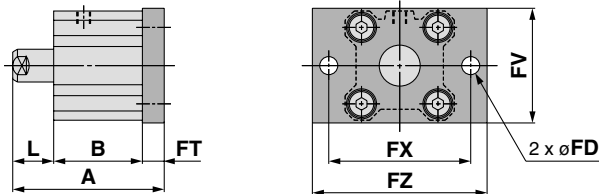
Rod flange: CQ2F



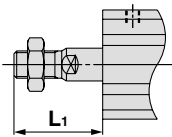
Rod end male thread



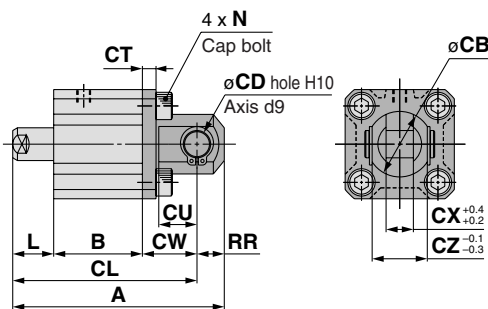
Head flange: CQ2G



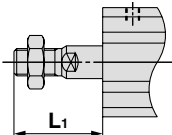
Rod end male thread



Double clevis: CQ2D



Rod end male thread



Foot

(mm)

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

Rod Flange

(mm)

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

(mm)

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

(* 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

Double Clevis

(mm)

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

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

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

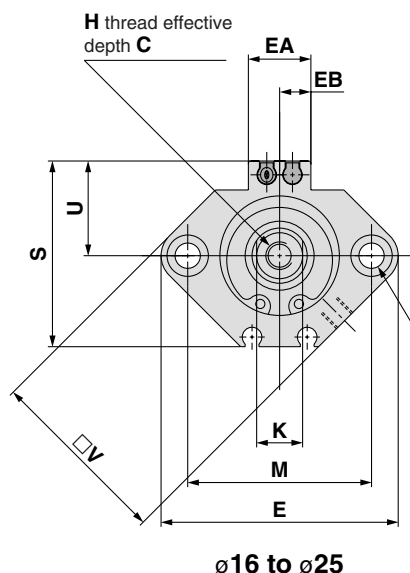
* For details about the rod end nut and accessory brackets, refer to page 19.
* Double clevis pin and retaining rings are included.

Series CQ2

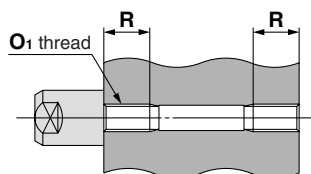
Dimensions

ø12 to ø25/Spring Extend With Auto Switch

Standard (Through-hole): CDQ2B

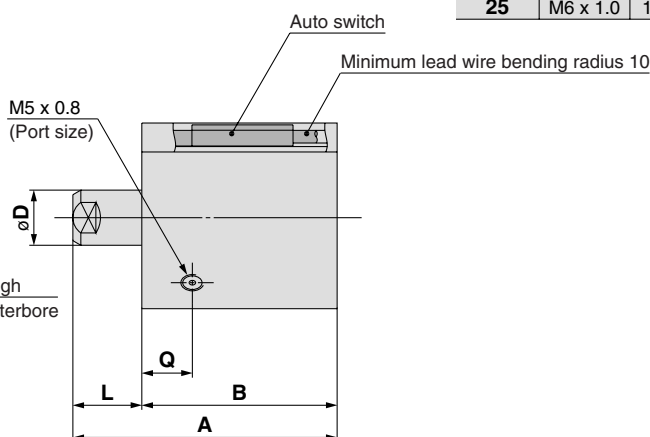


Both ends tapped: CDQ2A



Both Ends Tapped

Bore size (mm)	O ₁	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

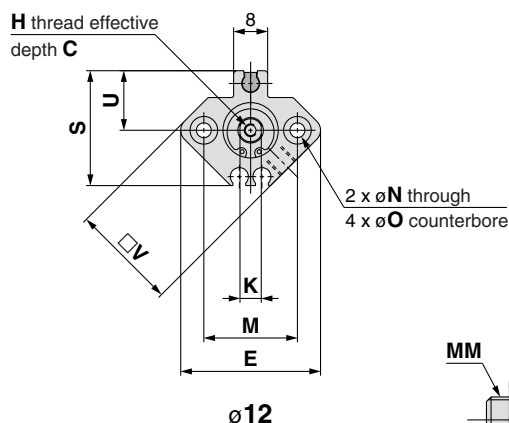


With boss on head end

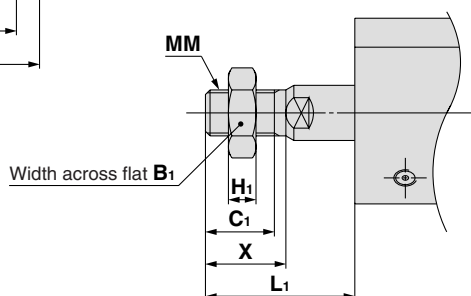
With Boss on Head End

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

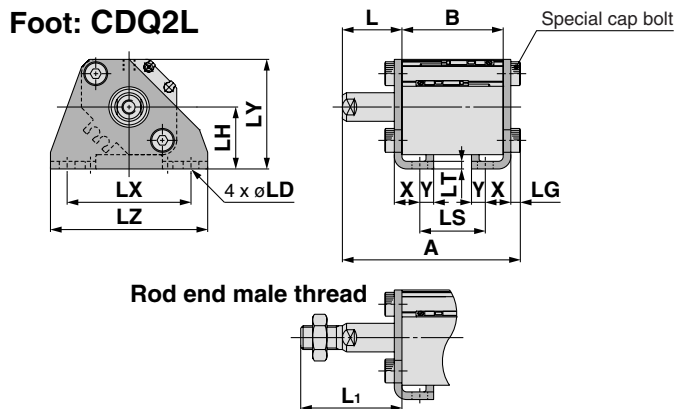
Bore size (mm)	B ₁	C ₁	H ₁	L ₁		MM	X
				5st	10st		
12	8	9	4	19	24	M5 x 0.8	10.5
16	10	10	5	20.5	25.5	M6 x 1.0	12
20	13	12	5	23.5	28.5	M8 x 1.25	14
25	17	15	6	27.5	32.5	M10 x 1.25	17.5

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

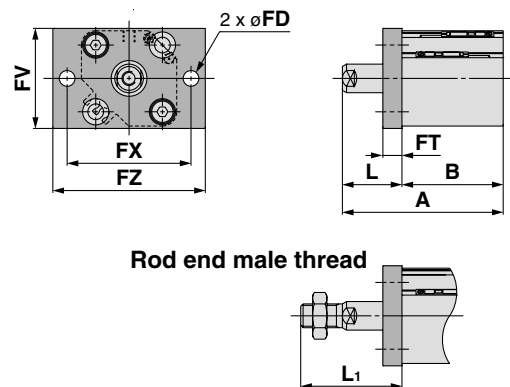
Bore size (mm)	Stroke (mm)	A	B	C	D	E	EA	EB	H	K	L	M	N	O	Q	S	U	V
12	5	45.9	37.4	6	6	33	—	—	M3 x 0.5	5	8.5	22	3.5	6.5 depth 3.5	11	27.5	14	25
	10	55.9	42.4								13.5							
16	5	44	35.5	8	8	37	13.2	6.6	M4 x 0.7	6	8.5	28	3.5	6.5 depth 3.5	10	29.5	15	29
	10	54	40.5								13.5							
20	5	46	36.5	7	10	47	13.6	6.8	M5 x 0.8	8	9.5	36	5.5	9 depth 7	10.5	35.5	18	36
	10	56	41.5								14.5							
25	5	47.5	37.5	12	12	52	13.6	6.8	M6 x 1.0	10	10	40	5.5	9 depth 7	11	40.5	21	40
	10	57.5	42.5								15							

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

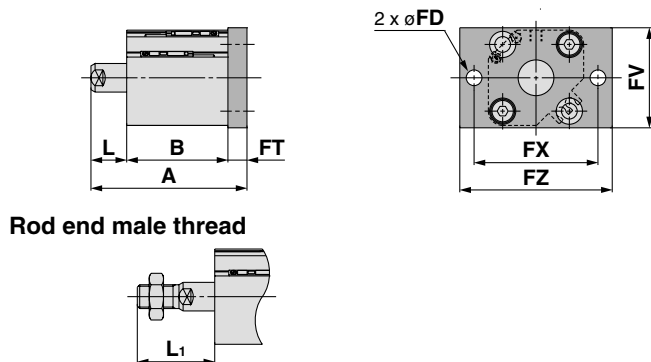
Foot: CDQ2L



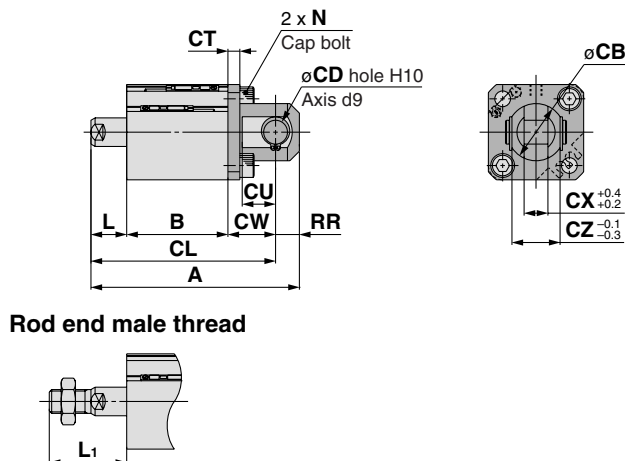
Rod flange: CDQ2F



Head flange: CDQ2G



Double clevis: CDQ2D



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

Rod Flange

Bore size (mm)	A		B		FD	FT	FV	FX	FZ	L		L ₁	
	5st	10st	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	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

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.)

Double Clevis

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		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

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

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

* For details about the rod end nut and accessory brackets, refer to page 19.
* Double clevis pin and retaining rings are included.

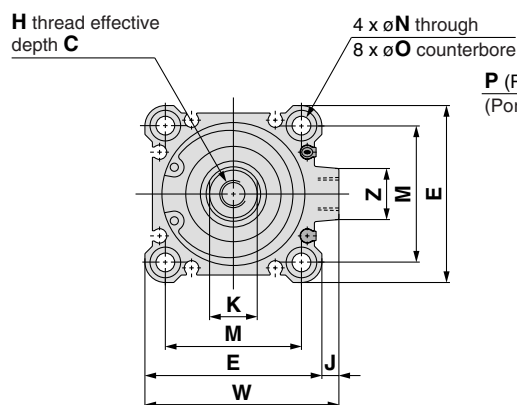
Series CQ2

Dimensions

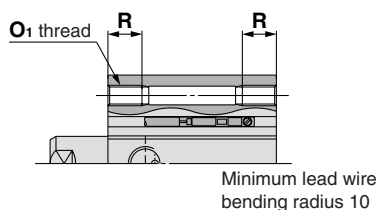
ø32 to ø50/Spring Extend With Auto Switch

(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



Both Ends Tapped (mm)

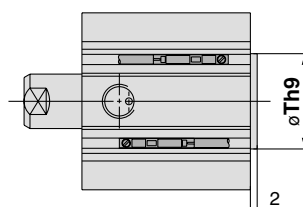
Bore size (mm)	O ₁	R
32	M6 x 1.0	10
40	M6 x 1.0	10
50	M8 x 1.25	14

With Boss on Head End (mm)

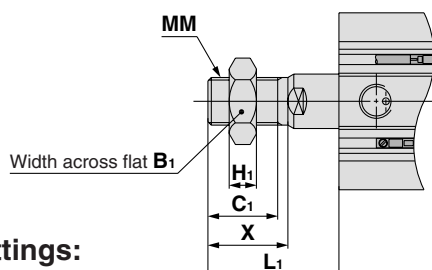
Bore size (mm)	Th9
32	21 ⁰ _{-0.052}
40	28 ⁰ _{-0.052}
50	35 ⁰ _{-0.062}

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

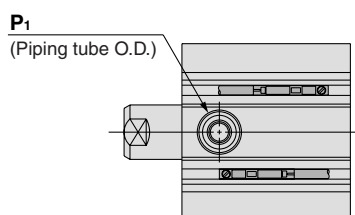
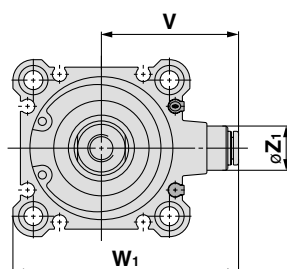
With boss on head end



Rod end male thread



Built-in one-touch fittings: ø32 to ø50



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)

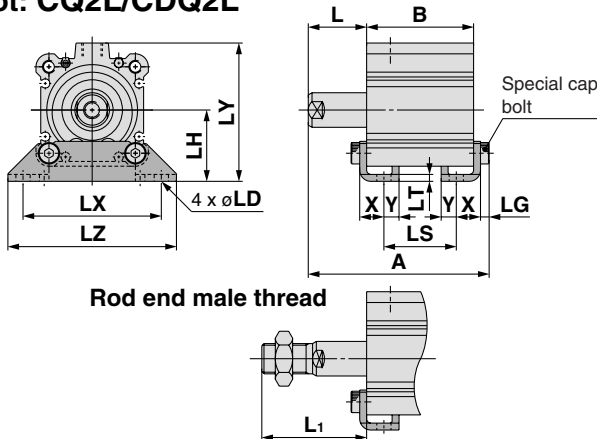
Bore size (mm)	Z ₁	P ₁	V	W ₁
32	13	6	36.5	59
40	13	6	40.5	66.5
50	16	8	50	82

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

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	P	Q	A	B	P	Q												
32	5	40	28	M5 x 0.8	11.5	50	38	1/8	10.5	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	10.5	60	43	—	—	—	—	—	—	—	—	17	—	—	—	—	—
40	5	46.5	34.5	—	—	56.5	44.5	—	—	—	—	—	—	—	—	12	40	5.5	9 depth 7	57	15
	10	56.5	39.5	1/8	11	66.5	49.5	1/8	11	13	16	52	M8 x 1.25	5	14	17	—	—	—	—	—
50	10	58.5	40.5	—	—	68.5	50.5	—	—	—	—	—	—	—	—	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	—	—	—	—	—

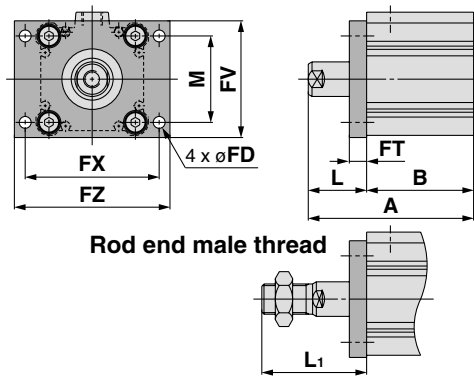
* For details about the rod end nut and accessory brackets, refer to page 19.

Foot: CQ2L/CDQ2L



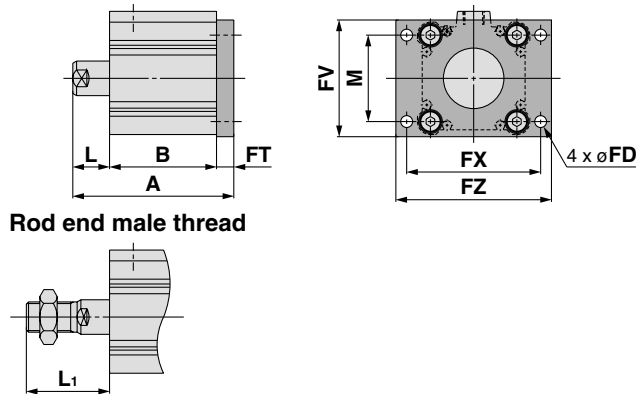
Rod end male thread

Rod flange: CQ2F/CDQ2F



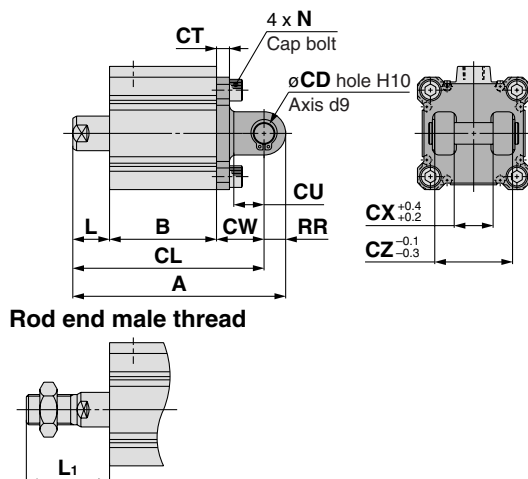
Rod end male thread

Head flange: CQ2G/CDQ2G



Rod end male thread

Double clevis: CQ2D/CDQ2D



Rod end male thread

Foot

(mm)

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	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			L1			LD	LG	LH	LT	LX	LY	LZ	X	Y
	5st	10st	20st	5st	10st	20st									
	5st	10st	20st	5st	10st	20st									
32	22	27	—	43.5	48.5	—	6.6	4	30	3.2	57	57	71	11.2	5.8
40	22	27	—	43.5	48.5	—	6.6	4	33	3.2	64	64	78	11.2	7
50	—	28	38	—	53.5	63.5	9	5	39	3.2	79	78	95	14.7	8

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Rod Flange

(mm)

Bore size (mm)	Without auto switch						With auto switch						FD	FT	FV	FX	FZ
	A			B			A			B							
	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	98.5	—	50.5	60.5	6.6	9	67	76	89

Bore size (mm)	L			L ₁			M
	5st	10st	20st	5st	10st	20st	
	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

(mm)

Bore size (mm)	Without auto switch			With auto switch			L			L1		
	A			A			L			L1		
	5st	10st	20st	5st	10st	20st	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

* 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

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	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	—	68.5	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	20st	5st	10st	20st		
							5st	10st	20st	5st	10st	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 page 19.
* Double clevis pin and retaining rings are included.