Compact Cylinder: Standard Type
Double Acting, Single Rod
Series CQ2
ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order

CQ2 **B** □ **20** □ – **30** **D** □ – □

With auto switch **CDQ2** **B** □ **20** □ – **30** **D** □ – **M9BW** □ – □

With auto switch (Built-in magnet)

Mounting style

B	Through-hole (Standard)	**F**	Rod side flange style
A	Both ends tapped style	**G**	Head side flange style
L	Foot style	**D**	Double clevis style

∗ 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 606 and 611.

Type

Nil	Pneumatic
H	Air-hydro (1)

Note 1) Bore sizes available for air-hydro type are ø20 to ø100.

Bore size

12	12 mm	**40**	40 mm
16	16 mm	**50**	50 mm
20	20 mm	**63**	63 mm
25	25 mm	**80**	80 mm
32	32 mm	**100**	100 mm

Port thread type

Nil	M thread	ø12 to ø25
	Rc	ø32 to ø100
TN	NPT	
TF	G	
F	Built-in One-touch fittings (2)	

Note 2) Bore sizes available w/ one-touch fittings are ø32 to ø63. Besides, it is not possible to use for air-tydro type.
Note 3) TF is not available for the air-hydro type.
∗ For the cylinders without an auto switch, M threads are compatible only for ø32 with 5 strokes.

Auto switch

Nil	Without auto switch

∗ Refer to the table below for the applicable auto switch model.

Number of auto switches

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

Made to Order (Refer to page 603 for details.)

Body option

Nil	Standard (Rod end female thread)
F	With boss in head side
C	With rubber bumper (4)
M	Rod end male thread

∗ Combination of body options ("CM", "FC", "FM", "FCM") is available.
Note 4) Air-hydro type with rubber bumper is not available.

Action

D	Double acting

Cylinder stroke (mm)
For "Standard Stroke" and "Manufacture of intermediate of Stroke", refer to page 603.

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) CDQ2L32-25D

Applicable Auto Switch/Refer to pages 1263 to 1371 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model: Perpendicular	Auto switch model: In-line	Lead wire length (m): 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)	Pre-wired connector	Applicable load	
Solid state switch	—	Grommet	Yes	3-wire (NPN)	5V, 12V	—	M9NV	M9N	●	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)			M9PV	M9P	●	●	●	○	—	○		
				2-wire	12V		M9BV	M9B	●	●	●	○	—	○	—	
		Connector					J79C	—	●	—	●	●	●	—		
	Diagnostic indication (2-color indication)	Grommet		3-wire (NPN)	5V, 12V	—	M9NWV	M9NW	●	●	●	○	—	○	IC circuit	
				3-wire (PNP)			M9PWV	M9PW	●	●	●	○	—	○		
				2-wire	12V		M9BWV	M9BW	●	●	●	○	—	○	—	
	Water resistant (2-color indication)			3-wire (NPN)	5V, 12V		M9NAV	M9NA	○	○	●	○	—	○	IC circuit	
				3-wire (PNP)			M9PAV	M9PA	○	○	●	○	—	○		
				2-wire	12V		M9BAV	M9BA	○	○	●	○	—	○	—	
	With diagnostic output (2-color indication)			4-wire	5V,12V		—	F79F	●	—	●	○	—	○	IC circuit	
	Magnetic field resistant (2-color indication)			2-wire (Non-polar)	—		—	P4DW	—	—	●	●	—	○	—	
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5V	—	A96V	A96	●	—	●	—	—	—	IC circuit	—
				2-wire	—	—	200V	A72	A72H	●	—	●	—	—	—	—	Relay, PLC
					24V	12V	100V	A93V	A93	●	—	●	—	—	—		
			No			5V,12V	100V or less	A90V	A90	●	—	●	—	—	—	IC circuit	
		Connector	Yes			12V	—	A73C	—	●	—	●	●	●	—	—	
			No			5V,12V	24V or less	A80C	—	●	—	●	●	●	—	IC circuit	
	Diagnostic indication (2-color indication)	Grommet	Yes			—	—	A79W	—	●	—	●	—	—	—	—	

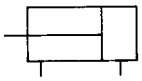
∗ Lead wire length symbols: 0.5 m ·····Nil (Example) M9NW
1 m ····· M (Example) M9NWM
3 m ····· L (Example) M9NWL
5 m ····· Z (Example) M9NWZ
None····· N (Example) J79CN

∗ Solid state auto switches marked with "○" are produced upon receipt of order.
∗ D-P4DWL type is available from ø40 up to ø100 only.
∗ Only for D-P4DWL type, an auto switch is assembled and shipped with the cylinder.

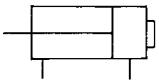
∗ There are other applicable auto switches other than the listed above. For details, refer to page 769.
∗ For details about auto switches with pre-wired connector, refer to pages 1328 and 1329.
∗ When D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V)L types with ø32 to ø50 are mounted on a side other than the port side, order auto switch mounting brackets separately. Refer to page 768 for details.



JIS Symbol
Double acting, Single rod



JIS Symbol
With boss in head side



Specifications(Pneumatic)

Bore size		12	16	20	25	32	40	50	63	80	100
Action		Double acting, Single rod									
Fluid		Air									
Proof pressure		1.5 MPa									
Maximum operating pressure		1.0 MPa									
Minimum operating pressure		0.07 MPa	0.05 MPa								
Ambient and fluid temperature		Without auto switch: –10 to 70°C (No freezing) With auto switch: –10 to 60°C (No freezing)									
Lubrication		Not required (Non-lube)									
Piston speed		50 to 500 mm/s									
Allowable kinetic energy J	**Standard**	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
	With rubber bumper	0.043	0.075	0.110	0.18	0.29	0.52	0.91	1.54	2.71	4.54
Stroke length tolerance		$^{+1.0\text{mm}}_{0}$ Note)									

Note) Stroke length tolerance dose not include the amount of bumper change.

Specifications(Air-hydro)

Bore size	20	25	32	40	50	63	80	100
Action	Double acting, Single rod							
Fluid	Turbine oil Note)							
Proof pressure	1.5 MPa							
Maximum operating pressure	1.0 MPa							
Minimum operating pressure	0.18 MPa			0.1 MPa				
Ambient and fluid temperature	5 to 60°C							
Piston speed	5 to 50 mm/s							
Cushion	None							
Stroke length tolerance	$^{+1.0\text{mm}}_{0}$							

Note) Refer to Actuator/Common Precautions (5) on page 7.

Made to Order Specifications
(For details, refer to pages 1373 to 1565.)

Symbol	Specifications
—XA□	Change of rod end shape
—XB6	Heat resistant cylinder (–10 to 150°C) w/o auto switch only
—XB7	Cold resistant cylinder (–40 to 70°C) w/o auto switch only
—XB9	Low speed cylinder (10 to 50 mm/s)
—XB10	Intermediate stroke (Using exclusive body)
—XB11	Long stroke type, Air-hydro type only
—XB13	Low speed cylinder (5 to 50 mm/s)
—XB14	Cylinder with heat resistant auto switch ø16 to 63 only
—XC4	With heavy duty scraper, ø20 to 100 only
—XC6	Retaining ring, piston rod, rod end nut made of stainless steel
—XC8	Adjustable stroke cylinder/Adjustable extension type
—XC9	Adjustable stroke cylinder/Adjustable retraction type
—XC10	Dual stroke cylinder/Double rod type
—XC11	Dual stroke cylinder/Single rod type
—XC26	Double clevis pins include copper pins and a flat washer.
—XC27	Double clevis pins and Double knuckle pins made of stainless steel (Stainless steel 304)
—XC35	With coil scraper, ø32 to 100 only
—XC36	With boss in rod side
—XC59	Fluoro rubber for seal/Built-in hard plastic magnet, ø20 to 100 only
—X202	Same overall length dimension as Series CQ1, Except ø16, 25
—X203	Same L dimension from rod cover as Series CQ1, ø20, 32 only
—X144	Change of port location, with auto switch ø12 to 25 only
—X271	Fluororubber seals
—X525	Long stroke of adjustable extension stroke cylinder (-XC8)
—X526	Long stroke of adjustable retraction stroke cylinder (XC9)
—X636	Long stroke of dual stroke single rod
—X1876	With concave shape end boss on the cylinder tube head side

Refer to pages 760 to 769 for the specifications of cylinders with auto switches.

- Minimum auto switch mounting stroke
- Proper auto switch mounting position (detection at stroke end) and height
- Operating range
- Switch mounting bracket: Part no.

Manufacture of Intermediate Stroke

Description	Spacer is installed in the standard stroke body.		Exclusive body (-XB10)	
Part no.	Refer to "How to Order" for the standard model no. on page 602.		Suffix "-XB10" to the end of standard model no. on page 602.	
Description	Dealing with intermediate stroke by the 1 mm interval is available by using spacer with standard stroke.		Dealing with the stroke by the 1 mm interval by using an exclusive body with the stroke.	
Stroke range	Bore size	Stroke range	Bore size	Stroke range
	12, 16	1 to 29	12, 16	6 to 29
	20, 25	1 to 49	20, 25	6 to 49
	32 to 100	1 to 99	32, 40	6 to 99
			50 to 100	11 to 99
Example	Part No.: CQ2B50-57D 18 mm width spacer is installed in the standard CQ2B50-75D. B dimension is 115.5 mm.		Part no. CQ2B50-57D-XB10 Makes 57 stroke tube. B dimension is 97.5 mm.	

- Air-hydro type is excluded.
- In the case of spacer type, intermediate stroke with dumper for ø40 to ø100, it can be manufactured by 5 mm intervals in 5 mm and 55 to 95 mm.
- In the case of an exclusive body with ø32 to ø100 (-XB10) with the stroke length exceeding 50 mm, the reference values of the longitudinal dimension will be changed. Calculate length dimensions by deducting from those of 75 or 100 mm stroke models.
- Regarding the long stroke which exceeds the stroke range, refer to page 671 for the long stroke type of either CQS or CQ2.

Standard Stroke

Pneumatic

Bore size (mm)	Standard stroke (mm)
12, 16	5, 10, 15, 20, 25, 30
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100
50 to 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100

● When stroke exceeds the standard range, refer to page 670.

Air-hydro

Bore size (mm)	Standard stroke (mm)
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100
50, 63, 80, 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100

Type

Bore size (mm)				12	16	20	25	32	40	50	63	80	100
Pneumatic	Mounting	Through-hole (Standard)		●	●	●	●	●	●	●	●	●	●
		Both ends tapped style		●	●	●	●	●	●	●	●	●	●
	Built-in magnet			●	●	●	●	●	●	●	●	●	●
	Piping	Screw-in type	—	M5 x 0.8	M5 x 0.8	M5 x 0.8	M5 x 0.8	M5 x 0.8 Rc1/8 (1)	Rc 1/8	Rc 1/4	Rc 1/4	Rc 3/8	Rc 3/8
			TN	—	—	—	—	NPT1/8	NPT1/8	NPT1/4	NPT1/4	NPT3/8	NPT3/8
			TF	—	—	—	—	G1/8	G1/8	G1/4	G1/4	G3/8	G3/8
		Built-in One-touch fittings		—	—	—	—	ø6/4 (2)	ø6/4	ø8/6	ø8/6	—	—
	Rod end male thread			●	●	●	●	●	●	●	●	●	●
	With rubber bumper			●	●	●	●	●	●	●	●	●	●
	With boss in head side			●	●	●	●	●	●	●	●	●	●
Air-hydro	Mounting	Through-hole (Standard)		—	—	●	●	●	●	●	●	●	●
		Both ends tapped style		—	—	●	●	●	●	●	●	●	●
	Built-in magnet			—	—	●	●	●	●	●	●	●	●
	Piping	Screw-in type	—	—	—	M5 x 0.8	M5 x 0.8	M5 x 0.8 Rc1/8 (1)	Rc 1/8	Rc 1/4	Rc 1/4	Rc 3/8	Rc 3/8
			TN			—	—	NPT1/8	NPT1/8	NPT1/4	NPT1/4	NPT3/8	NPT3/8
	Rod end male thread			—	—	●	●	●	●	●	●	●	●
	With boss in head side			—	—	●	●	●	●	●	●	●	●

Note 1) For a ø32 cylinder without an auto switch, M5 x 0.8 is used for 5-stroke piping dimension. Thus, do not enter a symbol for the port tread type.
Note 2) In the case of built-in fitting, the 5 mm stroke with ø32 bore is the same external dimensions as 10 mm stroke.
Note 3) One-touch fittings cannot be replaced.

Mounting Bracket Part No.

Bore size (mm)	Foot (4)	Flange	Double clevis
12	CQ-L012	CQ-F012	CQ-D012
16	CQ-L016	CQ-F016	CQ-D016
20	CQ-L020	CQ-F020	CQ-D020
25	CQ-L025	CQ-F025	CQ-D025
32	CQ-L032	CQ-F032	CQ-D032
40	CQ-L040	CQ-F040	CQ-D040
50	CQ-L050	CQ-F050	CQ-D050
63	CQ-L063	CQ-F063	CQ-D063
80	CQ-L080	CQ-F080	CQ-D080
100	CQ-L100	CQ-F100	CQ-D100

Note 4) When ordering foot bracket, order 2 pieces per cylinder.
Note 5) Parts belonging to each bracket are as follows. Foot, Flange: Body mounting bolt/Double clevis: Clevis pin, Type C retaining ring for axis, body mounting bolt

⚠ Precautions

Be sure to read before handling.
Refer to front matters 54 and 55 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

Retaining Ring Installation/Removal

⚠ Caution

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

Mounting

⚠ Caution

Series CQ2 compact cylinders are designed to create compact mechanical equipment and promote space saving. Thus, if it is used in the same manner as conventional cylinders such as tie-rod cylinders, it may degrade the performance.
Pay sufficient attention to the operating conditions when using.

(1) Allowable lateral load

Lateral load that can apply to the piston rod end is limited. If a cylinder is used with a lateral load over the limit, it may cause air leakage due to abnormal friction of seals, galling of cylinder tubes and pistons, or abnormal friction of the bearing part.
The lateral load applied to the piston must be within the allowable range indicated in this catalog. When the load exceeds the limit, use a double rod cylinder, install a guide, or change the bore size to suit the load in order to make the load within the allowable range. As a standard product, a lateral load resistant type that is resistant to approx. 2 times more than the conventional compact CQ2 series is also available (pages 723 to 733).

Mounting

⚠ Caution

(2) Connection with workpiece

When a workpiece is mounted on the piston rod end, connect them aligning the center of piston rod and workpiece. If they are off-center, lateral load is generated and phenomena mentioned in (1) may occur. In order not to apply the off-center load, use of a floating joint or simple joint is recommended.

(3) Simultaneous use of multiple cylinders

It is difficult to control the speed of pneumatic cylinders. The following conditions cause speed change: change in supply pressure, load, temperature and lubrication, performance difference of each cylinder, deterioration of each part over time, etc. A speed controller can be used to control the speed of multiple cylinders simultaneously for a short period of time, but depending on conditions, it may not work as desired. If multiple cylinders cannot operate simultaneously, unreasonable force is applied to the piston rod because cylinder positions may not be the same.
This may cause abnormal friction of seals and bearings, and galling of cylinder tubes and pistons. Do not use an application to operate several cylinders simultaneously by adjusting cylinder speed. If this is inevitable, use a high rigid guide against load, so that the cylinder is not damaged even when the each cylinder output is slightly different.

Allowable Kinetic Energy

Table (1) Load Mass and Piston Speed.

[J]

Bore size (mm)	12	16	20	25	32	40	50	63	80	100
Standard Allowable kinetic energy: Ea	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
With rubber bumper Allowable kinetic energy: Eb	0.043	0.075	0.110	0.18	0.29	0.52	0.91	1.54	2.71	4.54

Kinetic energy E (J)= $\frac{(m1+m2)V^2}{2}$

m1: Weight of cylinder operating part kg
m2: Load mass kg
V : Piston speed m/s

Table (2) Mass of Cylinder Movable Parts/Without Built-in Magnet (g)

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	5	6	7	8	10	11	—	—	—	—	—	—
16	9	11	13	15	17	19	—	—	—	—	—	—
20	15	18	21	24	27	31	34	37	40	44	—	—
25	24	28	33	37	42	46	51	55	60	64	—	—
32	45	52	60	68	76	84	92	100	107	115	170	209
40	64	72	80	88	96	104	112	119	127	135	190	229
50	—	117	129	141	153	166	178	190	202	214	300	361
63	—	153	165	177	190	202	214	226	239	251	337	398
80	—	270	289	308	327	347	366	385	404	423	557	653
100	—	487	515	543	570	598	625	653	681	708	901	1038

Table (3) Mass of Cylinder Movable Parts/With Built-in Magnet (g)

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	8	9	10	11	12	13	—	—	—	—	—	—
16	16	18	20	22	24	26	—	—	—	—	—	—
20	28	31	34	37	40	44	47	50	53	56	—	—
25	44	48	53	57	62	66	71	75	80	84	—	—
32	78	86	93	101	109	117	125	133	140	148	187	227
40	109	117	125	133	140	148	156	164	172	180	219	258
50	—	187	199	211	223	236	248	260	272	285	346	407
63	—	254	266	278	290	303	315	327	339	352	413	474
80	—	433	453	472	491	510	530	549	568	587	683	778
100	—	741	768	796	823	851	879	906	934	962	1099	1236

Table (4)

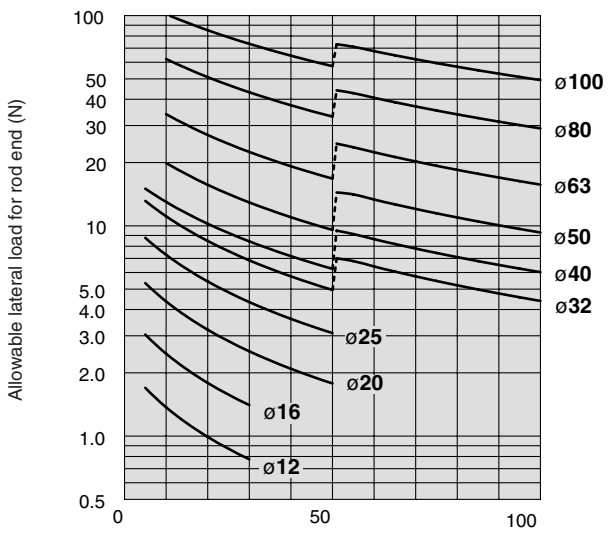
(g)

Bore size (mm)		12	16	20	25	32	40	50	63	80	100
Rod end male thread	Thread	1.5	3	6	12	26	27	53	53	120	175
	Nut	1	2	4	8	17	17	32	32	49	116
With rubber bumper		0	0	–2	–3	–3	–7	–9	–18	–31	–56

Calculation: (Example) **CDQ2B32-20DCM**
• Cylinder mass: CDQ2B32-20D ..... 101 g
• Option mass: Rod end male thread ..... 43 g
With rubber bumper ..... –3 g
141 g

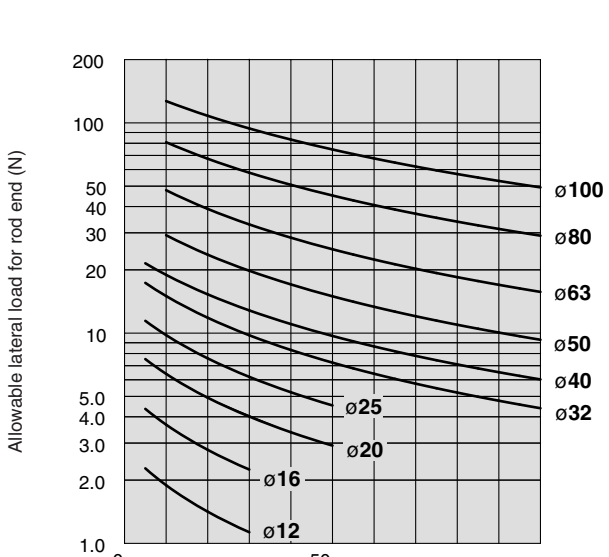
Allowable Lateral Load at Rod End

Without Auto Switch



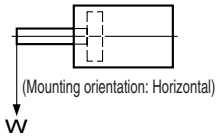
Allowable lateral load for rod end (Single rod, without switch)

With Auto Switch

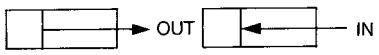


Allowable lateral load for rod end (Single rod, with switch)

If an allowable lateral load at rod end is exceeding the value in the graph, we recommend anti-lateral load type cylinder be used.



Theoretical Output



(N)

Bore size (mm)	Operating direction	Operating pressure (MPa)		
		0.3	0.5	0.7
12	IN	25	42	59
	OUT	34	57	79
16	IN	45	75	106
	OUT	60	101	141
20	IN	71	118	165
	OUT	94	157	220
25	IN	113	189	264
	OUT	147	245	344
32	IN	181	302	422
	OUT	241	402	563
40	IN	317	528	739
	OUT	377	628	880
50	IN	495	825	1150
	OUT	589	982	1370
63	IN	841	1400	1960
	OUT	935	1560	2180
80	IN	1360	2270	3170
	OUT	1510	2510	3520
100	IN	2140	3570	5000
	OUT	2360	3930	5500

Mass

(g)

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	29	35	41	47	54	60	—	—	—	—	—	—
16	42	50	59	67	76	84	—	—	—	—	—	—
20	63	75	88	101	114	127	140	152	165	178	—	—
25	86	100	115	129	144	158	173	187	202	216	—	—
32	131	152	173	193	214	235	256	277	297	318	471	576
40	206	229	252	275	298	321	344	367	390	413	597	717
50	—	369	405	441	477	514	550	586	622	659	951	1139
63	—	538	579	620	661	702	742	783	824	865	1213	1424
80	—	997	1064	1132	1200	1268	1336	1404	1471	1539	2111	2446
100	—	1738	1829	1920	2011	2101	2192	2283	2374	2464	3269	3729

Additional Mass

(g)

Bore size (mm)		12	16	20	25	32	40	50	63	80	100
Both ends tapped style		2	2	6	6	6	6	6	19	45	45
Rod end male thread	Thread	1.5	3	6	12	26	27	53	53	120	175
	Nut	1	2	4	8	17	17	32	32	49	116
With boss in head side		0.7	1.3	2	3	5	7	13	25	45	96
With rubber bumper		0	0	−2	−3	−3	−7	−9	−18	−31	−56
Built-in One-touch fittings		—	—	—	—	12	12	21	21	—	—
Foot style (Including mounting bolt)		55	67	164	186	143	155	243	324	696	1062
Rod side flange style (Including mounting bolt)		57	69	139	161	180	214	373	559	1056	1365
Rear flange style (Including mounting bolt)		54	65	133	152	165	198	348	534	1017	1309
Double clevis style (Including pin, snap ring, bolt)		32	39	88	123	151	196	393	554	1109	1887

Calculation: (Example) **CQ2D32-20DCM**

- Cylinder mass: CQ2B32-20D ..... 193 g
- Option mass: Both ends tapped style ..... 6 g
  - Rod end male thread ..... 43 g
  - With rubber bumper ..... −3 g
  - Double clevis style ..... 151 g

390 g

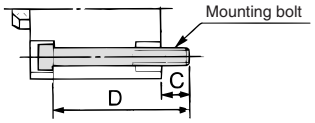
Mounting Bolt for CQ2/Without Auto Switch

Mounting method: Mounting bolt for through-hole mounting style of CQ2B is available as an option.

Ordering: Add the word "Bolt" in front of the bolts to be used.

Example) Bolt M3 x 25L 4 pcs.

Material: Chromium molybdenum steel
Surface treatment: Nickel plated



Cylinder model	C	D	Mounting bolt size
CQ2B12-5D	6.5	25	M3 x 25L
-10D		30	x 30L
-15D		35	x 35L
-20D		40	x 40L
-25D		45	x 45L
-30D		50	x 50L
CQ2B16-5D	5	25	M3 x 25L
-10D		30	x 30L
-15D		35	x 35L
-20D		40	x 40L
-25D		45	x 45L
-30D		50	x 50L
CQ2B20-5D	7.5	25	M5 x 25L
-10D		30	x 30L
-15D		35	x 35L
-20D		40	x 40L
-25D		45	x 45L
-30D		50	x 50L
-35D		55	x 55L
-40D		60	x 60L
-45D		65	x 65L
-50D		70	x 70L
CQ2B25-5D	9.5	30	M5 x 30L
-10D		35	x 35L
-15D		40	x 40L
-20D		45	x 45L
-25D		50	x 50L
-30D		55	x 55L
-35D		60	x 60L
-40D		65	x 65L
-45D		70	x 70L
-50D		75	x 75L

Cylinder model	C	D	Mounting bolt size
CQ2B32-5D	9	30	M5 x 30L
-10D		35	x 35L
-15D		40	x 40L
-20D		45	x 45L
-25D		50	x 50L
-30D		55	x 55L
-35D		60	x 60L
-40D		65	x 65L
-45D		70	x 70L
-50D		75	x 75L
-75D		110	x 110L
-100D		135	x 135L
CQ2B40-5D	7.5	35	M5 x 35L
-10D		40	x 40L
-15D		45	x 45L
-20D		50	x 50L
-25D		55	x 55L
-30D		60	x 60L
-35D		65	x 65L
-40D		70	x 70L
-45D		75	x 75L
-50D		80	x 80L
-75D		115	x 115L
-100D		140	x 140L
CQ2B50-10D	12.5	45	M6 x 45L
-15D		50	x 50L
-20D		55	x 55L
-25D		60	x 60L
-30D		65	x 65L
-35D		70	x 70L
-40D		75	x 75L
-45D		80	x 80L
-50D		85	x 85L
-75D		120	x 120L
-100D		145	x 145L

Cylinder model	C	D	Mounting bolt size
CQ2B63-10D	14.5	50	M8 x 50L
-15D		55	x 55L
-20D		60	x 60L
-25D		65	x 65L
-30D		70	x 70L
-35D		75	x 75L
-40D		80	x 80L
-45D		85	x 85L
-50D		90	x 90L
-75D		125	x 125L
-100D		150	x 150L
CQ2B80-10D	15	55	M10 x 55L
-15D		60	x 60L
-20D		65	x 65L
-25D		70	x 70L
-30D		75	x 75L
-35D		80	x 80L
-40D		85	x 85L
-45D		90	x 90L
-50D		95	x 95L
-75D		130	x 130L
-100D		155	x 155L
CQ2B100-10D	15.5	65	M10 x 65L
-15D		70	x 70L
-20D		75	x 75L
-25D		80	x 80L
-30D		85	x 85L
-35D		90	x 90L
-40D		95	x 95L
-45D		100	x 100L
-50D		105	x 105L
-75D		140	x 140L
-100D		165	x 165L