



# Compact Cylinder: Non-rotating Rod Type

## Double Acting, Single Rod

# Series CQ2K

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

### How to Order

**Without auto switch**

**CQ2K B 20 30 D**

**With auto switch**

**CDQ2K B 20 30 D J79W S**

**Number of auto switches**

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

**Auto switch**

Nil Without auto switch (Built-in magnet)

S For the applicable auto switch model, refer to the table below.

n Auto switches are shipped together, (but not assembled). (Except D-P5DWL)

**Built-in magnet**

**Non-rotating rod type**

**Mounting style**

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

\* Mounting brackets are shipped together, (but not assembled).

**Body option**

Nil	Standard (Rod end female thread)
F	With boss in head side
C	With rubber bumper (Only ø12 with switch)
M	Rod end male thread

\* Combination of body option (FM) is available.

**Action**

D	Double acting
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**Cylinder stroke (mm)**

Refer to "Standard Stroke" on page 7-6-63.

**Piping**

Nil	Screw-in piping
F	Built-in One-touch fittings <small>Note</small>

Note Bore sizes available w/ One-touch fittings are ø32 to ø63.

**Bore size**

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

Note When ø12 with switch is required, the body option should be with rubber bumper (C).  
Ex.) CDQ2KB12-30DC

### Applicable Auto Switch

Refer to page 7-9-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Rail mounting		Direct mounting		Lead wire length (m) *				Pre-wire connector	Applicable load					
					DC	AC	ø12 to ø63		ø32 to ø63		0.5 (Nil)	3 (L)	5 (Z)	None (N)		IC circuit	Relay, PLC				
							Perpendicular	In-line	Perpendicular	In-line											
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A76H	A96V	A96	●	●	—	—	—	—	—				
				2-wire	—	—	200 V	A72	A72H	—	—	●	●	—	—	—	—	Relay, PLC			
					24 V	12 V	100 V	—	—	A93V	A93	●	●	—	—	—					
					—	—	—	A73C	—	—	—	●	●	●	●	—			—		
Diagnostic indication (2-color indication)	Grommet	—	—	—	—	A79W	—	—	—	●	●	—	—	—	—	—					
Solid state switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	F7NV	F79	M9NV	M9N	●	●	○	—	○	IC circuit	Relay, PLC				
				3-wire (PNP)			F7PV	F7P	M9PV	M9P	●	●	○	—	○						
		Connector		2-wire	12 V		F7BV	J79	M9BV	M9B	●	●	○	—	○	—		—			
				3-wire (NPN)			F7NWV	F79W	F9NWV	F9NW	●	●	○	—	○						
		Diagnostic indication (2-color indication)		3-wire (PNP)	—		F7PW	F9PWV	F9PW	●	●	○	—	○							
				2-wire	24 V		12 V	—	F7BWV	J79W	F9BWV	F9BW	●	●	○	—		○			
		Water resistant (2-color indication)		Grommet	2-wire		24 V	12 V	—	F7BA	—	F9BA	—	●	○	—		○	—	—	
		With diagnostic output (2-color indication)			4-wire (NPN)		5 V, 12 V	—	—	F7BAV	—	—	—	●	○	—		○	—	—	
		Magnetic field resistant (2-color indication)			2-wire		—	—	—	—	—	—	—	●	●	●		—	○	—	—
					—		—	—	—	—	—	P5DW	—	—	●	●		●	—	○	—

\* Lead wire length symbols: 0.5 m.....Nil (Example) A73C  
 3 m.....L (Example) A73CL  
 5 m.....Z (Example) A73CZ  
 None.....N (Example) A73CN

\* Solid state switches marked with "○" are produced upon receipt of order.  
 • D-P5DWL type is available from ø40 to ø63 only.  
 • There are other applicable auto switches other than the listed above. For details, refer to page 7-6-23.  
 • For details about auto switches with pre-wire connector, refer to page 7-9-36.

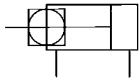


# Compact Cylinder: Non-rotating Rod Type Double Acting, Single Rod Series CQ2K



## JIS Symbol

Non-rotating rod



## ⚠️ Precautions

**Be sure to read before handling. For Safety Instructions and Actuator Precautions, refer to pages 7-13-3 to 7-13-6.**

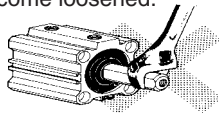
## ⚠️ Caution

### Snap Ring Installation/Removal

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

## Mounting

- When removing a load, be sure to secure the wrench flats of the piston rod on the load side.
- If this is done without securing the piston rod on the load side, be aware that the coupled (screwed-in) portion of the piston rod could become loosened.



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

Use the chart below as a guide for the allowable rotational torque ranges.

Allowable rotational torque	12	16	20	25	32	40	50	63
N·m or less	0.04	0.15	0.20	0.25	0.44	0.44	0.44	0.44

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

## Type

Bore size (mm)		12	16	20	25	32	40	50	63
Pneumatic Mounting	Through-hole (Standard)	●	●	●	●	●	●	●	●
	Both ends tapped style	—	—	—	—	—	●	●	●
Pneumatic Piping	Built-in magnet	●	●	●	●	●	●	●	●
	Screw-in type	M5 x 0.8	M5 x 0.8	M5 x 0.8	M5 x 0.8	M5 x 0.8 <small>Note)</small> Rc 1/8	Rc 1/8	Rc 1/4	Rc 1/4
	Built-in One-touch fittings	—	—	—	—	ø6/4	ø6/4	ø8/6	ø8/6
	Rod end male thread	●	●	●	●	●	●	●	●
With boss in head side		●	●	●	●	●	●	●	●

Note) In the case of without auto switch, M5 x 0.8 is used for 5 stroke only.

## Standard Specifications

Type	Pneumatic (Non-lube)
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)
Rubber bumper	None
Rod end thread	Female thread
Rod end thread tolerance	JIS Class 2
Stroke length tolerance	+1.0 0
Mounting	Through-hole
Piston speed	50 to 500 mm/s

## Allowable Kinetic Energy

(J)

Bore size (mm)	12	16	20	25	32	40	50	63
Allowable kinetic energy	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77

## Minimum Operating Pressure (MPa)

Bore (mm)	12	16	20	25	32	40	50	63
Minimum operating pressure	0.07	0.07	0.05	0.05	0.05	0.05	0.05	0.05

## Standard Stroke

Bore (mm)	Standard stroke
12, 16	5, 10, 15, 20, 25, 30
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100
50, 63	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100

## Non-rotating Accuracy

Bore (mm)	12	16	20	25	32	40	50	63
Rod non-rotating accuracy	±2°	±1°			±0.8°			

## Manufacture of Intermediate Stroke

Description	Spacer is installed in the standard stroke body.	
Part no.	Refer to "How to Order" for the standard model no. on page 7-6-62.	
Description	Dealing with the stroke by the 1 mm interval is available by installing spacer with standard stroke cylinder.	
Stroke range	Bore size	Stroke range
	12, 16	1 to 29
	20, 25	1 to 49
	32 to 63	1 to 99
Example	Part no.: CQ2KB50-57D CQ2KB50-75D with 18 mm width spacer inside. B dimension is 115.5 mm.	

# Series CQ2K



## Made to Order Specifications (For details, refer to page 7-10-1.)

Symbol	Specifications
-XA□	Change of rod end shape
-XB10	Intermediate stroke (Using exclusive body)
-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
-XC18	NPT finish piping port

## Theoretical Output

(N)

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

## Mounting Bracket Part No.

Bore size (mm)	Foot (3)	Flange	Double clevis
40	CQ-L040	CQ-F040	CQ-D040
50	CQ-L050	CQ-F050	CQ-D050
63	CQ-L063	CQ-F063	CQ-D063



Note 3) Order two foot brackets per cylinder.

Note 4) Parts belonging to each bracket are as follows.

Foot or Flange style/Body mounting bolt, Double clevis style: Clevis pin, Type C snap ring for axis/Body mounting bolt.

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

## Weight

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	60	67	74	81	88	95	—	—	—	—	—	—
16	58	67	76	85	94	103	—	—	—	—	—	—
20	103	117	131	145	159	173	187	201	215	229	—	—
25	137	152	167	182	197	212	227	242	257	272	—	—
32	203	223	243	263	283	303	323	343	363	383	403	423
40	215	238	261	284	307	330	353	376	399	422	445	468
50	—	381	418	455	492	529	566	603	640	677	714	751
63	—	550	592	634	676	718	760	802	844	886	928	970

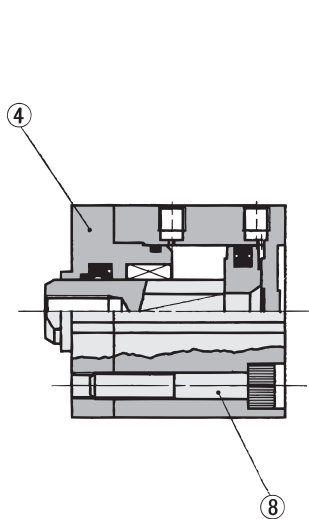
## Additional Weight

Bore size (mm)	12	16	20	25	32	40	50	63
Both ends tapped style	—	—	—	—	—	6	6	19
Rod end male thread	Male thread	1.5	3	6	12	26	27	53
	Nut	1	2	4	8	17	17	32
With boss in head side	0.7	1.3	2	3	5	7	13	25
Built-in One-touch fittings	—	—	—	—	12	12	21	21
Foot style (Including mounting bolt)	—	—	—	—	—	154	242	323
Rod side flange style (Including mounting bolt)	—	—	—	—	—	213	372	558
Rear flange style (Including mounting bolt)	—	—	—	—	—	198	348	534
Double clevis style (Including pin, snap ring, bolt)	—	—	—	—	—	196	393	554

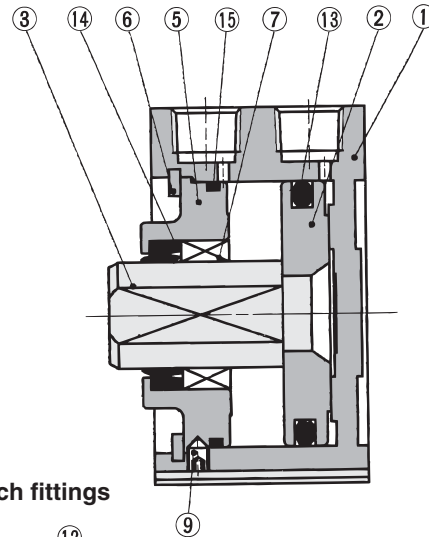
Calculation: (Example) CQ2KD40-20DM • Cylinder weight: CQ2KA40-20D ..... 284 g  
 • Option weight: Both ends tapped style ..... 6 g  
 Rod end male thread ..... 44 g  
 Double clevis style ..... 196 g  
 530 g

## Construction

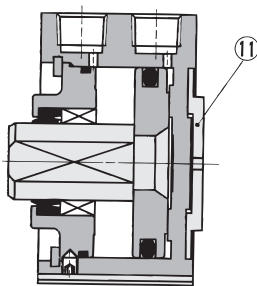
### Basic style (Bore size ø12 to ø32)



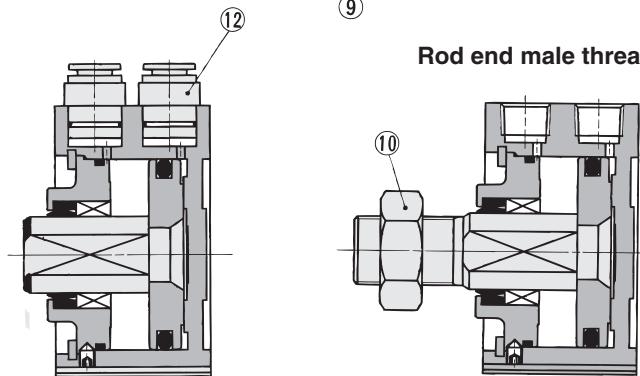
### Basic style (Bore size ø40 to ø63)



### With boss in head side



### Rod end male thread



## Component Parts

No.	Description	Material	Note
①	Cylinder tube	Aluminum alloy	Hard anodized
②	Piston	Aluminum alloy	Chromated
③	Piston rod	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø100, Hard chrome plated
④	Rod cover	Brass	ø12, Nickel plated
		Aluminum alloy	ø16 to ø32, Anodized
⑤	Collar	Aluminum alloy	ø40 to ø63, Anodized
⑥	Snap ring	Carbon tool steel	Phosphate coated
⑦	Bushing	Oil-impregnated sintered alloy	ø16 to ø63
⑧	Hexagon socket head cap screw	Alloy steel	ø12 to ø32, Nickel plated
⑨	Hexagon socket head set screw	Alloy steel	ø40 to ø63, Nickel plated
⑩	Rod end nut	Carbon steel	Nickel plated
⑪	Centering location ring	Aluminum alloy	ø20 to ø63, Hard anodized
⑫	One-touch fitting	—	ø32 to ø63

No.	Description	Material	Note
⑬	Piston seal	NBR	
⑭	Rod seal	NBR	
⑮	Tube gasket	NBR	

## Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Note	Bore size (mm)	Kit no.	Note
12	CQ2KB12-PS	Nos. above ⑬, ⑭, ⑮	32	CQ2KB32-PS	Nos. above ⑬, ⑭, ⑮
16	CQ2KB16-PS		40	CQ2KB40-PS	
20	CQ2KB20-PS		50	CQ2KB50-PS	
25	CQ2KB25-PS		63	CQ2KB63-PS	

CUJ  
CU  
CQS  
CQM  
CQ2  
RQ  
MU  
D-  
-X  
20-  
Data

# Series CQ2K

## Mounting Bolt for CQ2KB

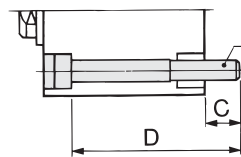
Mounting method: Mounting bolt for through-hole mounting style of CQ2KB is available as an option.

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

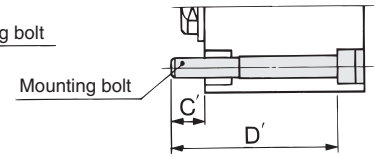
Example) Bolt M3 x 30ℓ 2 pcs.

Model	C	D	Mounting bolt	C'	D'	Mounting bolt
CQ2KB12-5D	6.5	30	M3 x 30ℓ	6.5	30	M3 x 30ℓ
-10D		35	x 35ℓ		35	x 35ℓ
-15D		40	x 40ℓ		40	x 40ℓ
-20D		45	x 45ℓ		45	x 45ℓ
-25D		50	x 50ℓ		50	x 50ℓ
-30D		55	x 55ℓ		55	x 55ℓ
CQ2KB16-5D	5	30	M3 x 30ℓ	5	30	M3 x 30ℓ
-10D		35	x 35ℓ		35	x 35ℓ
-15D		40	x 40ℓ		40	x 40ℓ
-20D		45	x 45ℓ		45	x 45ℓ
-25D		50	x 50ℓ		50	x 50ℓ
-30D		55	x 55ℓ		55	x 55ℓ
CQ2KB20-5D	8	35	M5 x 35ℓ	9.5	35	M5 x 35ℓ
-10D		40	x 40ℓ		40	x 40ℓ
-15D		45	x 45ℓ		45	x 45ℓ
-20D		50	x 50ℓ		50	x 50ℓ
-25D		55	x 55ℓ		55	x 55ℓ
-30D		60	x 60ℓ		60	x 60ℓ
-35D		65	x 65ℓ		65	x 65ℓ
-40D		70	x 70ℓ		70	x 70ℓ
-45D		75	x 75ℓ		75	x 75ℓ
-50D		80	x 80ℓ		80	x 80ℓ
CQ2KB25-5D	10	40	M5 x 40ℓ	6.5	35	M5 x 35ℓ
-10D		45	x 45ℓ		40	x 40ℓ
-15D		50	x 50ℓ		45	x 45ℓ
-20D		55	x 55ℓ		50	x 50ℓ
-25D		60	x 60ℓ		55	x 55ℓ
-30D		65	x 65ℓ		60	x 60ℓ
-35D		70	x 70ℓ		65	x 65ℓ
-40D		75	x 75ℓ		70	x 70ℓ
-45D		80	x 80ℓ		75	x 75ℓ
-50D		85	x 85ℓ		80	x 80ℓ
CQ2KB32-5D	8.5	40	M5 x 40ℓ	10	40	M5 x 40ℓ
-10D		45	x 45ℓ		45	x 45ℓ
-15D		50	x 50ℓ		50	x 50ℓ
-20D		55	x 55ℓ		55	x 55ℓ
-25D		60	x 60ℓ		60	x 60ℓ
-30D		65	x 65ℓ		65	x 65ℓ
-35D		70	x 70ℓ		70	x 70ℓ
-40D		75	x 75ℓ		75	x 75ℓ
-45D		80	x 80ℓ		80	x 80ℓ
-50D		85	x 85ℓ		85	x 85ℓ
-75D		120	x 120ℓ		120	x 120ℓ
-100D	145	x 145ℓ	145	x 145ℓ		

### Head side mounting style



### Rod side mounting style



Model	C	D	Mounting bolt	C'	D'	Mounting bolt
CQ2KB40-5D	7.5	35	M5 x 35ℓ	7.5	35	M5 x 35ℓ
-10D		40	x 40ℓ		40	x 40ℓ
-15D		45	x 45ℓ		45	x 45ℓ
-20D		50	x 50ℓ		50	x 50ℓ
-25D		55	x 55ℓ		55	x 55ℓ
-30D		60	x 60ℓ		60	x 60ℓ
-35D		65	x 65ℓ		65	x 65ℓ
-40D		70	x 70ℓ		70	x 70ℓ
-45D		75	x 75ℓ		75	x 75ℓ
-50D		80	x 80ℓ		80	x 80ℓ
-75D	115	x 115ℓ	115	x 115ℓ		
-100D	140	x 140ℓ	140	x 140ℓ		
CQ2KB50-10D	12.5	45	M6 x 45ℓ	12.5	45	M6 x 45ℓ
-15D		50	x 50ℓ		50	x 50ℓ
-20D		55	x 55ℓ		55	x 55ℓ
-25D		60	x 60ℓ		60	x 60ℓ
-30D		65	x 65ℓ		65	x 65ℓ
-35D		70	x 70ℓ		70	x 70ℓ
-40D		75	x 75ℓ		75	x 75ℓ
-45D		80	x 80ℓ		80	x 80ℓ
-50D		85	x 85ℓ		85	x 85ℓ
-75D		120	x 120ℓ		120	x 120ℓ
-100D	145	x 145ℓ	145	x 145ℓ		
CQ2KB63-10D	14.5	50	M8 x 50ℓ	14.5	50	M8 x 50ℓ
-15D		55	x 55ℓ		55	x 55ℓ
-20D		60	x 60ℓ		60	x 60ℓ
-25D		65	x 65ℓ		65	x 65ℓ
-30D		70	x 70ℓ		70	x 70ℓ
-35D		75	x 75ℓ		75	x 75ℓ
-40D		80	x 80ℓ		80	x 80ℓ
-45D		85	x 85ℓ		85	x 85ℓ
-50D		90	x 90ℓ		90	x 90ℓ
-75D		125	x 125ℓ		125	x 125ℓ
-100D	150	x 150ℓ	150	x 150ℓ		

## Copper-free (For CRT manufacturing process)

20 — CQ2KB Bore size — Stroke D(M)  
 • Copper-free —  $\phi 16, \phi 20, \phi 25, \phi 32, \phi 40, \phi 50, \phi 63$

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

### Specifications

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



\* Refer to page 7-9-1 for further information on auto switches.

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



## Minimum Stroke for Auto Switch Mounting

(mm)

No. of auto switches mounted	D-F7□V D-J79C D-M9□V	D-A7□ D-A80 D-A73C D-A80C D-A9□V	D-F7□WV D-F9□WV D-F7BAVL	D-A7□H D-A80H D-F7□ D-J79 D-M9□ D-F9□w	D-A79W	D-F7□W D-J79W D-F7BAL D-F79F D-F9BAL	D-A9□	D-P5DWL
1 pc.	5	5	10	15	15	20	10	15
2 pcs.	5	10	15	15	20	20	10	15

## Weight

(g)

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	77	83	89	95	101	107	—	—	—	—	—	—
16	86	94	102	110	118	126	—	—	—	—	—	—
20	138	152	166	180	194	208	222	236	250	264	—	—
25	178	194	210	226	242	258	274	290	306	322	—	—
32	236	256	276	296	316	336	356	376	396	416	516	616
40	253	276	299	322	345	368	391	414	437	460	575	690
50	—	464	501	538	575	612	649	686	723	760	945	1130
63	—	654	696	738	780	822	864	906	948	990	1200	1410

## Additional Weight

(g)

Bore size (mm)	12	16	20	25	32	40	50	63
Both ends tapped style	—	—	—	—	—	6	6	19
Rod end male thread	Male thread	1.5	3	6	12	26	27	53
	Nut	1	2	4	8	17	17	32
With boss in head side	0.7	1.3	2	3	5	7	13	25
Built-in One-touch fittings	—	—	—	—	12	12	21	21
Foot style (Including mounting bolt)	—	—	—	—	—	154	242	323
Rod side flange style (Including mounting bolt)	—	—	—	—	—	213	372	558
Head side flange style (Including mounting bolt)	—	—	—	—	—	198	348	534
Double clevis style (Including pin, snap ring and bolt)	—	—	—	—	—	196	393	554

Calculation: (Example) CDQ2KD40-25DM

- Cylinder weight: CDQ2KB40-25D..... 345 g
  - Option weight: Both ends tapped style..... 6 g
  - Rod end male thread..... 44 g
  - Double clevis style..... 196 g
- 591 g

When auto switch is mounted, add the weight of number of auto switches and mounting brackets.

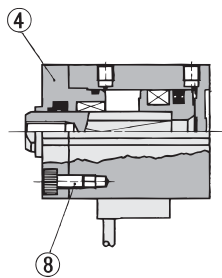
### Auto Switch Mounting Bracket Weight

Mounting bracket part no.	Applicable bore size (mm)	Weight (g)
BQ-1	12 to 25	1.5
BQ-2	32 to 63	1.5

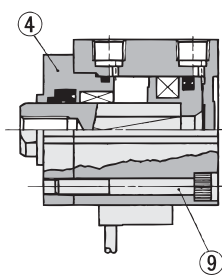
\* For the auto switch weight, refer to page 7-9-1.

## Construction

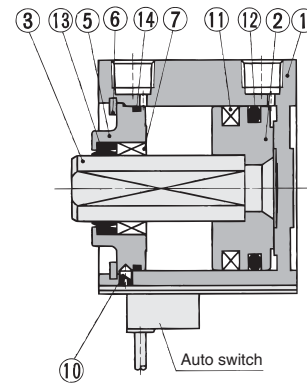
ø12 to ø25



ø32



ø40 to ø63



## Component Parts

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

## Replacement Parts: Pneumatic (Non-lube)

Bore size (mm)	Kit no.	No.
12	CQ2KB12-PS	Set of nos. at left ⑫, ⑬, ⑭
16	CQ2KB16-PS	
20	CQ2KB20-PS	
25	CQ2KB25-PS	
32	CQ2KB32-PS	
40	CQ2KB40-PS	
50	CQ2KB50-PS	
63	CQ2KB63-PS	

\* Seal kit includes ⑫ ⑬ ⑭. Order the seal kit, based on each bore size.



# Series CDQ2K

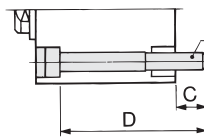
## Mounting Bolt for CDQ2KB with Auto Switch

Mounting method: Mounting bolt for through-hole mounting style of CDQ2KB is available as an option.

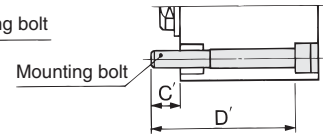
Ordering: Add the word "Bolt" in front of the bolts to be used.

Example) Bolt M3 x 35 $\ell$  2 pcs.

### Head side mounting style



### Rod side mounting style



Model	C	D	Mounting bolt	C'	D'	Mounting bolt
CDQ2KB12-5DC	5.5	35	M3 x 35 $\ell$	5.5	40	M3 x 40 $\ell$
-10DC		40	x 40 $\ell$		45	x 45 $\ell$
-15DC		45	x 45 $\ell$		50	x 50 $\ell$
-20DC		50	x 50 $\ell$		55	x 55 $\ell$
-25DC		55	x 55 $\ell$		60	x 60 $\ell$
-30DC		60	x 60 $\ell$		65	x 65 $\ell$
CDQ2KB16-5D	8	40	M3 x 40 $\ell$	8	45	M3 x 45 $\ell$
-10D		45	x 45 $\ell$		50	x 50 $\ell$
-15D		50	x 50 $\ell$		55	x 55 $\ell$
-20D		55	x 55 $\ell$		60	x 60 $\ell$
-25D		60	x 60 $\ell$		65	x 65 $\ell$
-30D		65	x 65 $\ell$		70	x 70 $\ell$
CDQ2KB20-5D	10.5	40	M5 x 40 $\ell$	7.5	45	M5 x 45 $\ell$
-10D		45	x 45 $\ell$		50	x 50 $\ell$
-15D		50	x 50 $\ell$		55	x 55 $\ell$
-20D		55	x 55 $\ell$		60	x 60 $\ell$
-25D		60	x 60 $\ell$		65	x 65 $\ell$
-30D		65	x 65 $\ell$		70	x 70 $\ell$
-35D	70	x 70 $\ell$	75	x 75 $\ell$		
-40D	75	x 75 $\ell$	80	x 80 $\ell$		
-45D	80	x 80 $\ell$	85	x 85 $\ell$		
-50D	85	x 85 $\ell$	90	x 90 $\ell$		
CDQ2KB25-5D	9.5	40	M5 x 40 $\ell$	6.5	45	M5 x 45 $\ell$
-10D		45	x 45 $\ell$		50	x 50 $\ell$
-15D		50	x 50 $\ell$		55	x 55 $\ell$
-20D		55	x 55 $\ell$		60	x 60 $\ell$
-25D		60	x 60 $\ell$		65	x 65 $\ell$
-30D		65	x 65 $\ell$		70	x 70 $\ell$
-35D	70	x 70 $\ell$	75	x 75 $\ell$		
-40D	75	x 75 $\ell$	80	x 80 $\ell$		
-45D	80	x 80 $\ell$	85	x 85 $\ell$		
-50D	85	x 85 $\ell$	90	x 90 $\ell$		
CDQ2KB32-5D	8.5	50	M5 x 50 $\ell$	10	50	M5 x 50 $\ell$
-10D		55	x 55 $\ell$		55	x 55 $\ell$
-15D		60	x 60 $\ell$		60	x 60 $\ell$
-20D		65	x 65 $\ell$		65	x 65 $\ell$
-25D		70	x 70 $\ell$		70	x 70 $\ell$
-30D		75	x 75 $\ell$		75	x 75 $\ell$
-35D	80	x 80 $\ell$	80	x 80 $\ell$		

Model	C	D	Mounting bolt	C'	D'	Mounting bolt
CDQ2KB32-40D	8.5	85	M5 x 85 $\ell$	10	85	M5 x 85 $\ell$
-45D		90	x 90 $\ell$		90	x 90 $\ell$
-50D		95	x 95 $\ell$		95	x 95 $\ell$
-75D		120	x 120 $\ell$		120	x 120 $\ell$
-100D		145	x 145 $\ell$		145	x 145 $\ell$
CDQ2KB40-5D		7.5	45		M5 x 45 $\ell$	7.5
-10D	50		x 50 $\ell$	50	x 50 $\ell$	
-15D	55		x 55 $\ell$	55	x 55 $\ell$	
-20D	60		x 60 $\ell$	60	x 60 $\ell$	
-25D	65		x 65 $\ell$	65	x 65 $\ell$	
-30D	70		x 70 $\ell$	70	x 70 $\ell$	
-35D	75	x 75 $\ell$	75	x 75 $\ell$		
-40D	80	x 80 $\ell$	80	x 80 $\ell$		
-45D	85	x 85 $\ell$	85	x 85 $\ell$		
-50D	90	x 90 $\ell$	90	x 90 $\ell$		
-75D	115	x 115 $\ell$	115	x 115 $\ell$		
-100D	140	x 140 $\ell$	140	x 140 $\ell$		
CDQ2KB50-10D	12.5	55	M6 x 55 $\ell$	12.5	55	M6 x 55 $\ell$
-15D		60	x 60 $\ell$		60	x 60 $\ell$
-20D		65	x 65 $\ell$		65	x 65 $\ell$
-25D		70	x 70 $\ell$		70	x 70 $\ell$
-30D		75	x 75 $\ell$		75	x 75 $\ell$
-35D		80	x 80 $\ell$		80	x 80 $\ell$
-40D	85	x 85 $\ell$	85	x 85 $\ell$		
-45D	90	x 90 $\ell$	90	x 90 $\ell$		
-50D	95	x 95 $\ell$	95	x 95 $\ell$		
-75D	120	x 120 $\ell$	120	x 120 $\ell$		
-100D	145	x 145 $\ell$	145	x 145 $\ell$		
CDQ2KB63-10D	14.5	60	M8 x 60 $\ell$	14.5	60	M8 x 60 $\ell$
-15D		65	x 65 $\ell$		65	x 65 $\ell$
-20D		70	x 70 $\ell$		70	x 70 $\ell$
-25D		75	x 75 $\ell$		75	x 75 $\ell$
-30D		80	x 80 $\ell$		80	x 80 $\ell$
-35D		85	x 85 $\ell$		85	x 85 $\ell$
-40D	90	x 90 $\ell$	90	x 90 $\ell$		
-45D	95	x 95 $\ell$	95	x 95 $\ell$		
-50D	100	x 100 $\ell$	100	x 100 $\ell$		
-75D	125	x 125 $\ell$	125	x 125 $\ell$		
-100D	150	x 150 $\ell$	150	x 150 $\ell$		

## Auto Switch Mounting Bracket Part No.

Bore size (mm)	Mounting bracket part no.	Note	Applicable auto switch	
			Reed switch	Solid state switch
12, 16 20, 25	BQ-1	<ul style="list-style-type: none"> <li>Switch mounting screw (M3 x 0.5 x 8<math>\ell</math>)</li> <li>Square nut</li> </ul>	D-A7□/A80 D-A73C/A80C	D-F7□/J79 D-F7□V D-J79C
32, 40 50, 63 80, 100	BQ-2	<ul style="list-style-type: none"> <li>Switch mounting screw (M3 x 0.5 x 10<math>\ell</math>)</li> <li>Switch spacer</li> <li>Switch mounting nut</li> </ul>	D-A7□H/A80H D-A79W	D-F7□W/J79W D-F7□WV D-F7BAL/F7BAVL D-F79F D-F7NTL
40 to 100	BQP1-050	<ul style="list-style-type: none"> <li>Switch mounting bracket</li> <li>Switch mounting nut</li> <li>Hexagon hole cap bolt (M3 x 0.5 x 14<math>\ell</math> spring washer 2 pcs.)</li> <li>Round head Phillips screw (M3 x 0.5 x 16<math>\ell</math> spring washer 2 pcs.)</li> </ul>	—	D-P5DWL

[Mounting screws set made of stainless steel]

The set of stainless steel mounting screws (with nuts) described below is available and can be used depending on the operating environment.

(Since the spacer is not included, order it separately.)

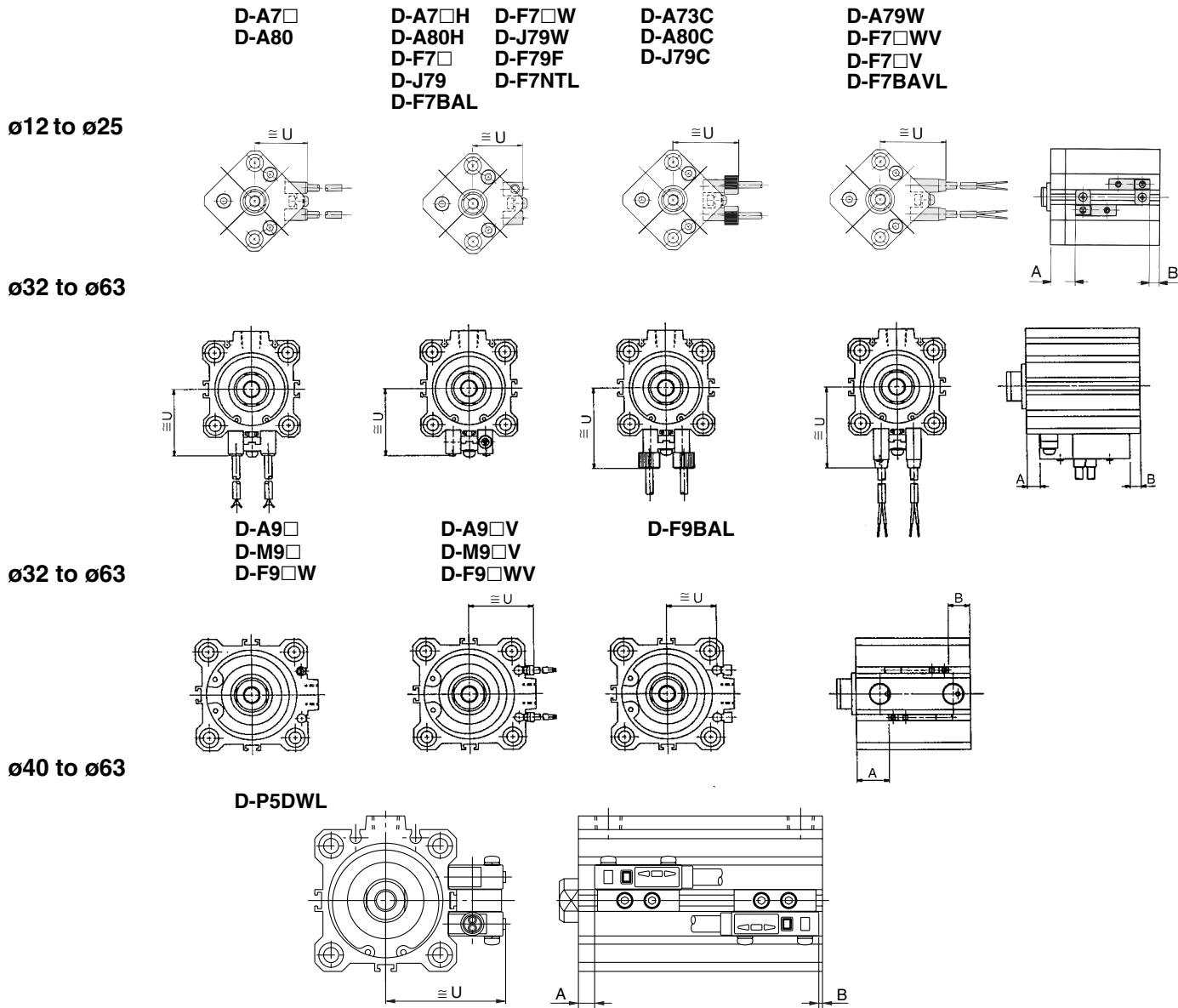
BBA2: For D-A7/A8/F7/J7

"D-F7BAL/F7BAVL" switch is set on the cylinder with the stainless steel screws above when shipped.

When only a switch is shipped independently, "BBA2" screws are attached.

# Compact Cylinder with Auto Switch: Non-rotating Rod Type Double Acting, Single Rod Series **CDQ2K**

## Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height



### Proper Auto Switch Mounting Position

Bore size (mm)	D-A7□ D-A80		D-A7□H/A80H D-A73C/A80C D-F7□/J79/J79W/F79F D-F7□V/J79C D-F7□W/F7□WV D-F7BAL/F7BAVL		D-A79W		D-A9□ D-A9□V		D-M9□ D-M9□V D-F9□W D-F9□WV		D-F9BAL		D-P5DWL	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
12	9.5	5.5	10	6	7	3	—	—	—	—	—	—	—	—
16	12.5	5	13	5.5	10	2.5	—	—	—	—	—	—	—	—
20	15.5	6.5	16	7	13	4	—	—	—	—	—	—	—	—
25	15.5	7	16	7.5	13	4.5	—	—	—	—	—	—	—	—
32	18	6	18.5	6.5	15.5	3.5	17	5	21	9	20	8	—	—
40	13	8.5	13.5	9	10.5	6	12	7.5	16	11.5	15	10.5	9	4.5
50	11	11.5	11.5	12	8.5	9	10	10.5	14	14.5	13	13.5	7	7.5
63	13.5	14.5	14	15	11	12	12.5	13.5	16.5	17.5	15.5	16.5	9.5	10.5

### Auto Switch Mounting Height

Bore size (mm)	D-A7□ D-A80	D-A7□H/A80H/F7□ D-J79/F7□V/J79W D-F7BAL/F79F/F7NTL	D-A73C D-A80C	D-F7□V D-F7□WV D-F7BAVL	D-J79C	D-A79W	D-A9□V	D-M9□V D-F9□WV	D-F9BAL	D-P5DWL
	U	U	U	U	U	U	U	U	U	U
12	19.5	20.5	26.5	23	26	22	—	—	—	—
16	22.5	23.5	29.5	26	29	25	—	—	—	—
20	24.5	25.5	31.5	28	31	27	—	—	—	—
25	27.5	28.5	34.5	31	34	30	—	—	—	—
32	31.5	32.5	38.5	35	38	34	27	29	26.5	—
40	35	36	42	38.5	41.5	37.5	30.5	32.5	30	44
50	41	42	48	44.5	47.5	43.5	36.5	38.5	36	50
63	47.5	48.5	54.5	51	54	50	40	42	39.5	56.5

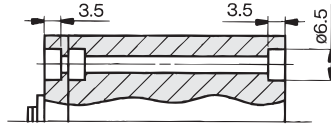


# Series CQ2K

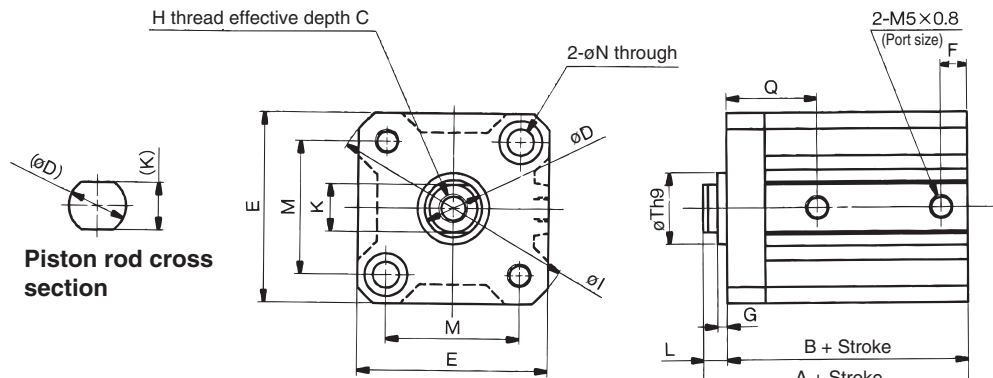
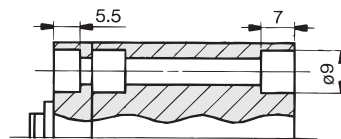
Dimensions:  $\phi 12$  to  $\phi 25$ /Without Auto Switch

Basic style (Through-hole): CQ2KB

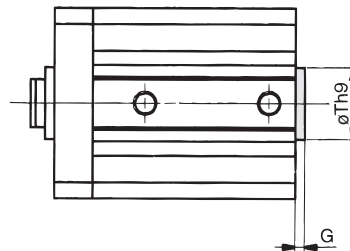
$\phi 12, \phi 16$



$\phi 20, \phi 25$



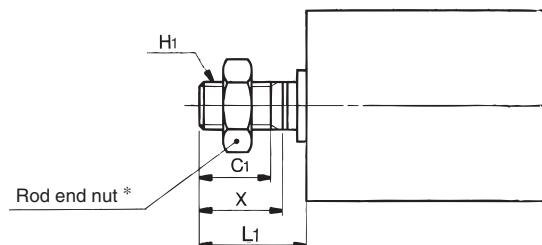
With boss in head side



With Boss in Head Side

Bore size (mm)	G	Th9
12	1.5	15 <sup>0</sup> <sub>-0.043</sub>
16	1.5	20 <sup>0</sup> <sub>-0.052</sub>
20	2	13 <sup>0</sup> <sub>-0.043</sub>
25	2	15 <sup>0</sup> <sub>-0.043</sub>

Rod end male thread



Rod End Male Thread

Bore size (mm)	C1	H1	L1	X
12	9	M5 x 0.8	14	10.5
16	10	M6 x 1.0	15.5	12
20	12	M8 x 1.25	18.5	14
25	15	M10 x 1.25	22.5	17.5

## Basic Style

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	G	H	I	K	L	M	N	Q	Th9
12	5 to 30	25.5	22	6	6	25	5	1.5	M3 x 0.5	32	5.2	3.5	15.5	3.5	12.5	15 <sup>0</sup> <sub>-0.043</sub>
16	5 to 30	27	23.5	8	8	29	5.5	1.5	M4 x 0.7	38	6	3.5	20	3.5	13	20 <sup>0</sup> <sub>-0.052</sub>
20	5 to 50	32	27.5	7	10	36	5.5	2	M5 x 0.8	47	8	4.5	25.5	5.5	17	13 <sup>0</sup> <sub>-0.043</sub>
25	5 to 50	35.5	30.5	12	12	40	5.5	2	M6 x 1.0	52	10	5	28	5.5	19	15 <sup>0</sup> <sub>-0.043</sub>

\* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

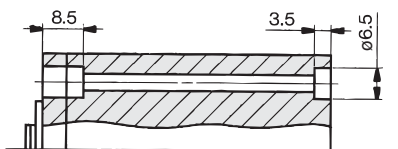


# Compact Cylinder: Non-rotating Rod Type Double Acting, Single Rod Series CQ2K

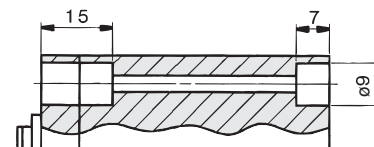
**Dimensions:  $\phi 12$  to  $\phi 25$ /With Auto Switch**

**Basic Style (Through-hole): CDQ2KB**

$\phi 12, \phi 16$



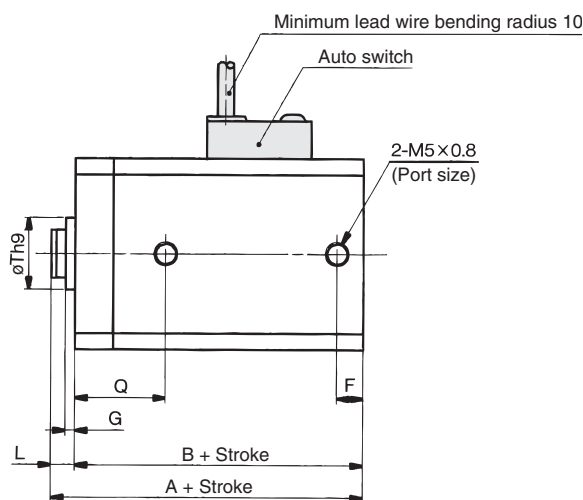
$\phi 20, \phi 25$



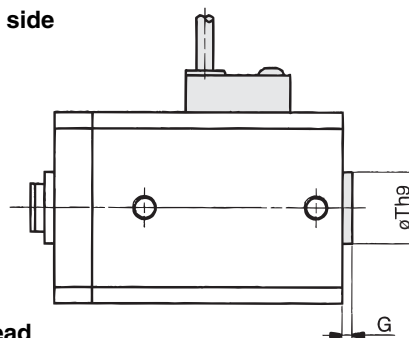
Minimum lead wire bending radius 10

Auto switch

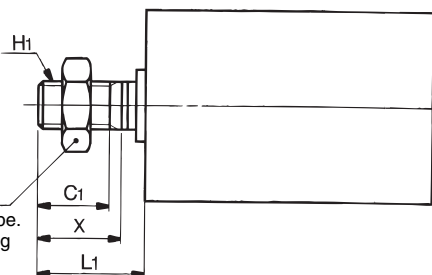
2-M5x0.8  
(Port size)



With boss in head side



Rod end male thread



**Rod End  
Male Thread**

Bore size (mm)	C1	H1	L1	X
12	9	M5 x 0.8	14	10.5
16	10	M6 x 1.0	15.5	12
20	12	M8 x 1.25	18.5	14
25	15	M10 x 1.25	22.5	17.5



\* Auto switch shown above is D-A73 type and DA80 type. For the auto switch mounting position and its mounting height, refer to page 7-6-69.

## Basic Style

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	G	H	K	L	M	N	Q	S	Th9	U	V
12	5 to 30	36.5	33	6	6	32	6.5	1.5	M3 x 0.5	5.2	3.5	22	3.5	16	35.5	15 <sup>0</sup> <sub>-0.043</sub>	19.5	25
16	5 to 30	39	35.5	8	8	38	5.5	1.5	M4 x 0.7	6	3.5	28	3.5	15	41.5	20 <sup>0</sup> <sub>-0.052</sub>	22.5	29
20	5 to 50	44	39.5	7	10	47	5.5	2	M5 x 0.8	8	4.5	36	5.5	18.5	48	13 <sup>0</sup> <sub>-0.043</sub>	24.5	36
25	5 to 50	45.5	40.5	12	12	52	5.5	2	M6 x 1.0	10	5	40	5.5	19	53.5	15 <sup>0</sup> <sub>-0.043</sub>	27.5	40

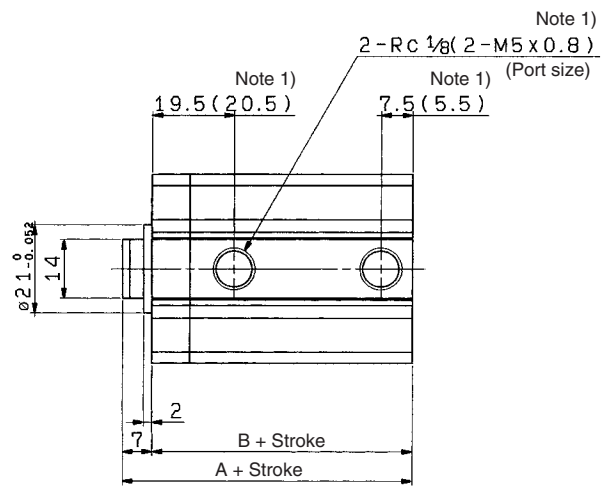
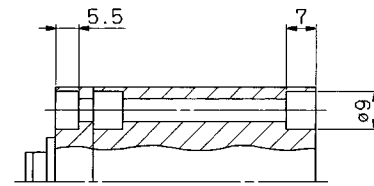
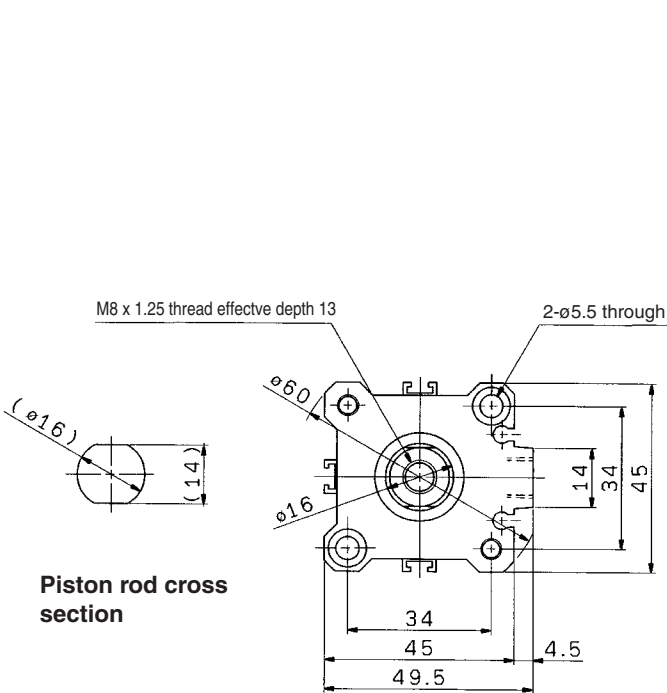


\* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

CUJ
CU
CQS
CQM
<b>CQ2</b>
RQ
MU
D-
-X
20-
Data

# Series CDQ2K

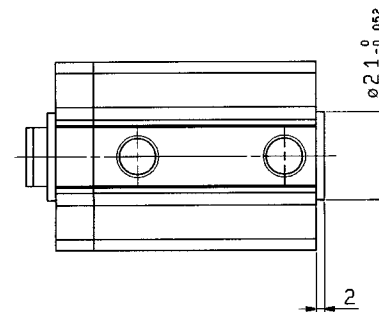
## Dimensions: $\phi 32$ /Without Auto Switch



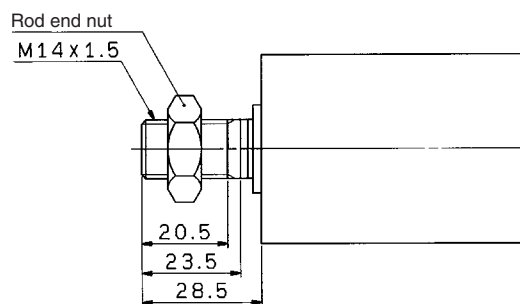
Stroke range	A	B
5 to 50	39	32
75, 100	49	42

(mm)

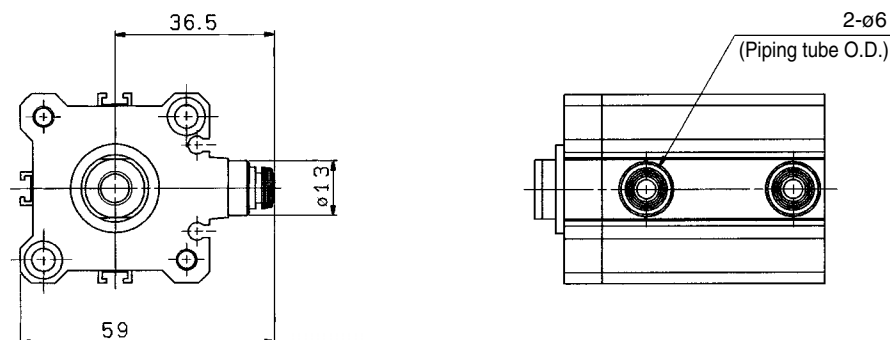
With boss in head side



Rod end male thread



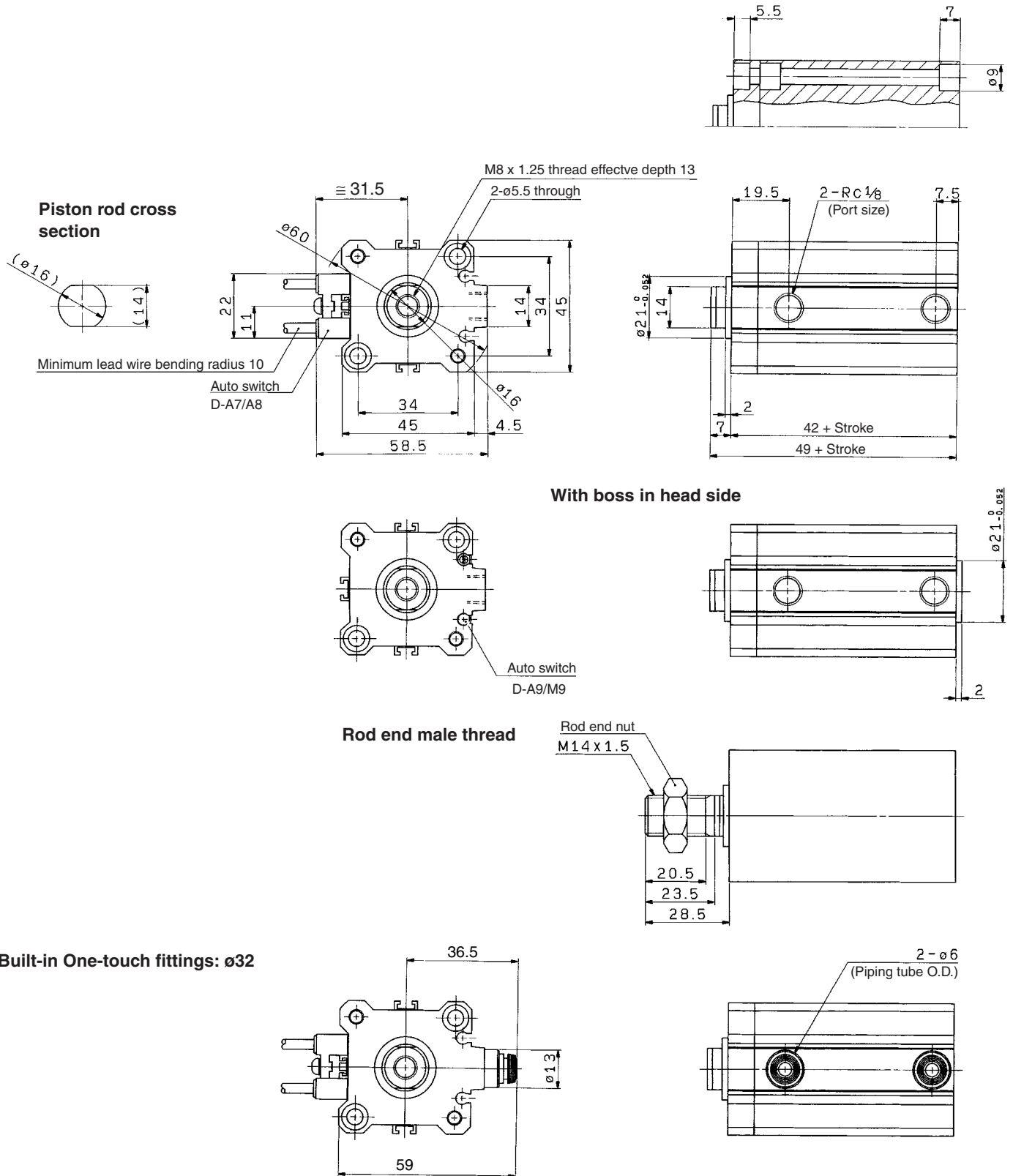
Built-in One-touch fittings:  $\phi 32$



Note 2) In the case of built-in fitting, the 5 mm stroke is the same external dimensions as 10 mm stroke.  
\* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

# Compact Cylinder with Auto Switch: Non-rotating Rod Type Double Acting, Single Rod Series **CDQ2K**

## Dimensions: $\phi 32$ /With Auto Switch



- CUJ
- CU
- CQS
- CQM
- CQ2**
- RQ
- MU
- D-
- X
- 20-
- Data



\* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

# Series CQ2K/CDQ2K

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

## Dimensions: ø40 to ø63/With Auto Switch

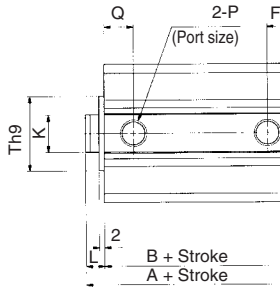
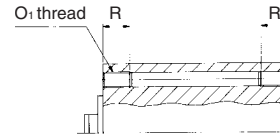
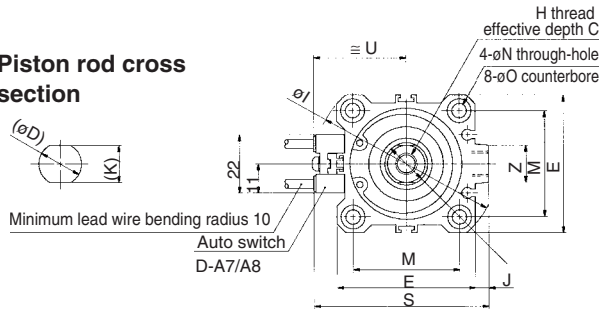
### Basic style (Through-hole): CDQ2KB

### Both ends tapped style: CDQ2KA

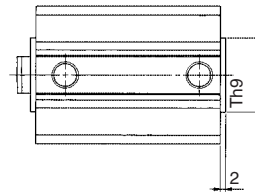
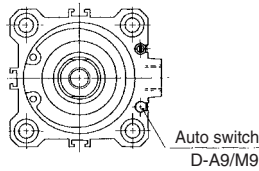
### Both Ends Tapped Style

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

### Piston rod cross section



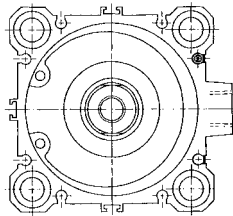
### With boss in head side



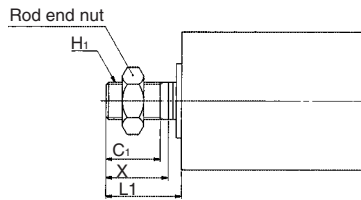
### With Boss in Head Side

Bore size (mm)	Th9
40	28 <sup>0</sup> <sub>-0.052</sub>
50	35 <sup>0</sup> <sub>-0.062</sub>
63	35 <sup>0</sup> <sub>-0.062</sub>

### Rod end male thread



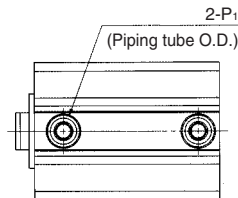
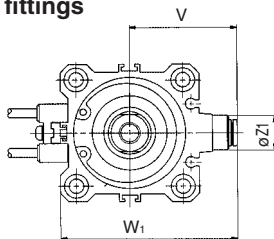
ø63 Cylinder tube form



### Rod End Male Thread

Bore size (mm)	C <sub>1</sub>	H <sub>1</sub>	L <sub>1</sub>	X
40	20.5	M14 x 1.5	28.5	23.5
50	26	M18 x 1.5	33.5	28.5
63	26	M18 x 1.5	33.5	28.5

### Built-in One-touch fittings



### Built-in One-touch Fittings

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

### Basic Style

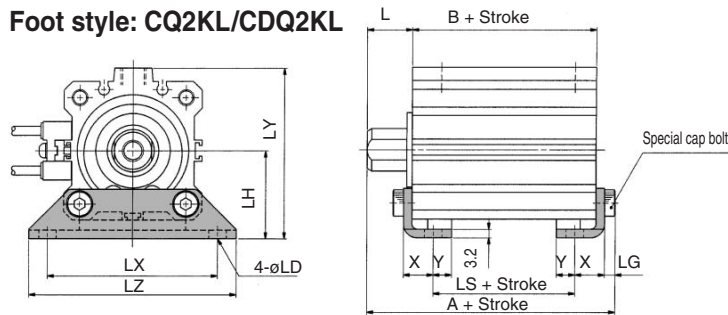
Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	D	E	F	H	I	J	K	L	M	N	O	P	Q	S	Th9	U	Z
		A	B	A	B																		
40	5 to 50	36.5	29.5	46.5	39.5	13	16	52	8	M8 x 1.25	69	5	14	7	40	5.5	9 depth 7	Rc 1/8	11	66	28 <sup>0</sup> <sub>-0.052</sub>	35	14
	75, 100	46.5	39.5																				
50	10 to 50	38.5	30.5	48.5	40.5	15	20	64	10.5	M10 x 1.5	86	7	18	8	50	6.6	11 depth 8	Rc 1/4	10.5	80	35 <sup>0</sup> <sub>-0.062</sub>	41	19
	75, 100	48.5	40.5																				
63	10 to 50	44	36	54	46	15	20	77	10.5	M10 x 1.5	103	7	18	8	60	9	14 depth 10.5	Rc 1/4	15	93	35 <sup>0</sup> <sub>-0.062</sub>	47.5	19
	75, 100	54	46																				

\* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

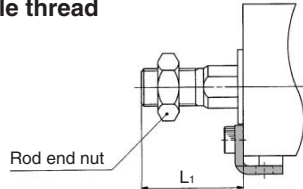


# Compact Cylinder: Non-rotating Rod Type Double Acting, Single Rod Series CQ2K/CDQ2K

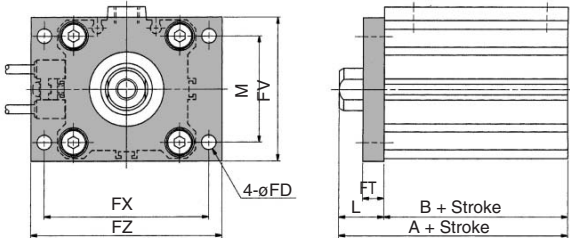
## Foot style: CQ2KL/CDQ2KL



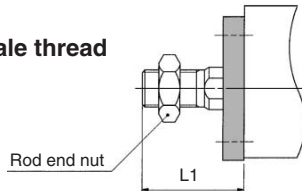
### Rod end male thread



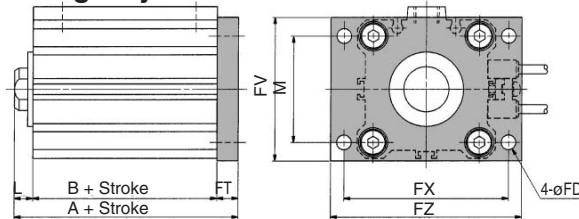
## Rod side flange style: CQ2KF/CDQ2KF



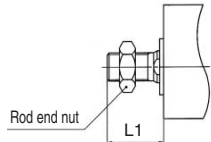
### Rod end male thread



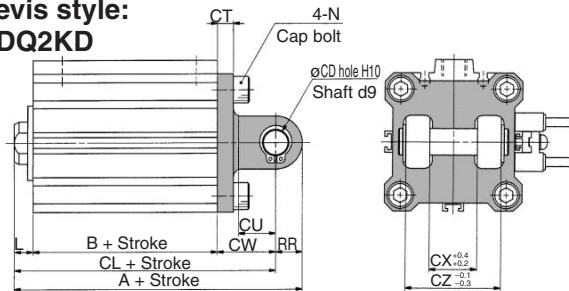
## Head side flange style: CQ2KG/CDQ2KG



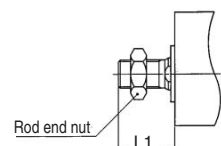
### Rod end male thread



## Double clevis style: CQ2KD/CDQ2KD



### Rod end male thread



## Foot Style

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			L	L1	LD	LG	LH	LX	LY
		A	B	LS	A	B	LS							
40	5 to 50	53.7	29.5	13.5	63.7	39.5	23.5	17	38.5	6.6	4	33	64	64
	75, 100	63.7	39.5	23.5										
50	10 to 50	56.7	30.5	7.5	66.7	40.5	17.5	18	43.5	9	5	39	79	78
	75, 100	66.7	40.5	17.5										
63	10 to 50	62.2	36	10	72.2	46	20	18	43.5	11	5	46	95	91.5
	75, 100	72.2	46	20										

Bore size (mm)	LZ	X	Y
40	78	11.2	7
50	95	14.7	8
63	113	16.2	9

Foot bracket material:  
Carbon steel

## Rod Side Flange Style

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		FD	FT	FV	FX	FZ	L	L1	M
		A	B	A	B								
40	5 to 50	46.5	29.5	56.5	39.5	5.5	8	54	62	72	17	38.5	40
	75, 100	56.5	39.5										
50	10 to 50	48.5	30.5	58.5	40.5	6.6	9	67	76	89	18	43.5	50
	75, 100	58.5	40.5										
63	10 to 50	54	36	64	46	9	9	80	92	108	18	43.5	60
	75, 100	64	46										

Flange bracket material: Carbon steel

## Head Side Flange Style

Bore size (mm)	Stroke range (mm)	Without auto switch	With auto switch	L	L1
		A	A		
40	5 to 50	44.5	54.5	7	28.5
	75, 100	54.5			
50	10 to 50	47.5	57.5	8	33.5
	75, 100	57.5			
63	10 to 50	53	63	8	33.5
	75, 100	63			

Flange bracket material: Carbon steel

\* Dimensions except A, L and L1 are the same as rod side flange style.

## Double Clevis Style

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			CD	CT	CU	CW	CX	CZ	L	L1
		A	B	CL	A	B	CL								
40	5 to 50	68.5	29.5	58.5	78.5	39.5	68.5	10	6	14	22	18	36	7	28.5
	75, 100	78.5	39.5	68.5											
50	10 to 50	80.5	30.5	66.5	90.5	40.5	76.5	14	7	20	28	22	44	8	33.5
	75, 100	90.5	40.5	76.5											
63	10 to 50	88	36	74	98	46	84	14	8	20	30	22	44	8	33.5
	75, 100	98	46	84											

Double clevis bracket material: Carbon steel



\* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

\*\* Clevis pin and snap ring are shipped together.

CUJ

CU

CQS

CQM

CQ2

RQ

MU

D-

-X

20-

Data