

Compact Cylinder: Non-rotating Rod Double Acting, Double Rod

CQ2KW Series

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

How to Order

Without auto switch
ø12 to ø25

CQ2KW **B** **20** - **30D**

Without auto switch
ø32 to ø63

CQ2KW **B** **32** - **30D** **Z**

With auto switch

CDQ2KW **B** **32** - **30D** **Z** - **M9BW**

With auto switch
(Built-in magnet)

Mounting

B	Through-hole (Standard)	ø12 to ø63
A	Both ends tapped	
L	Foot	ø40 to ø63
LC	Compact foot	
F	Flange	

- * Mounting brackets are shipped together (but not assembled).
- * Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for CQ2KW" on pages 884 and 887.

Bore size

12	12 mm	32	32 mm
16	16 mm	40	40 mm
20	20 mm	50	50 mm
25	25 mm	63	63 mm

Port thread type

Nil	M thread	ø12 to ø25
	Rc	
TN	NPT	ø32 to ø63
TF	G	
F	Built-in One-touch fittings (Note 1)	

Note 1) Bore sizes available with One-touch fittings are ø32 to ø63.

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

Number of auto switches

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

Auto switch

Nil	Without auto switch
------------	---------------------

* Refer to the below table for applicable auto switches.

Auto switch mounting groove

Z	ø12 to ø25	2 surfaces
	ø32 to ø63	4 surfaces

Body option

Nil	Standard (Rod end female thread)
C	With rubber bumper (ø12 with auto switch only)
M	Rod end male thread

Cylinder stroke (mm)

Refer to page 882 for standard strokes.

Action

D Double acting

Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.

(Example) CDQ2KWB32-30DZ

Applicable Auto Switches

Refer to pages 1575 to 1701 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)					Pre-wired connector	Applicable load		
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)				
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	—	M9NV	M9N	●	●	○	○	○	○	IC circuit		
				3-wire (PNP)					5 V, 12 V	●	●	○	○	○		Relay, PLC	
				2-wire					12 V	●	●	○	○	○			
				3-wire (NPN)					5 V, 12 V	●	●	○	○	○			
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (PNP)	24 V	—	M9PW	M9W	●	●	○	○	○	○	IC circuit		
				2-wire					12 V	●	●	○	○	○		Relay, PLC	
				3-wire (NPN)					5 V, 12 V	●	●	○	○	○			
				3-wire (PNP)					5 V, 12 V	●	●	○	○	○			
Water resistant (2-color indicator)	Grommet	Yes	3-wire (NPN)	24 V	—	M9NAV ^{*1}	M9NA ^{*1}	○	○	○	●	○	○	IC circuit			
			3-wire (PNP)					5 V, 12 V	○	○	○	●	○		Relay, PLC		
			2-wire					12 V	○	○	○	●	○				
			2-wire (Non-polar)					—	○	○	○	●	○				
Magnetic field resistant (2-color indicator)	Grommet	No	3-wire (NPN)	24 V	—	M9BAV ^{*1}	M9BA ^{*1}	○	○	○	●	○	○	—			
			3-wire (PNP)					5 V, 12 V	○	○	○	●	○		Relay, PLC		
			2-wire					12 V	○	○	○	●	○				
			2-wire (Non-polar)					—	○	○	○	●	○				
Read auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	—	A96V	A96	●	●	—	—	—	○		IC circuit	
				2-wire					5 V, 12 V	●	●	—	—	—	○		Relay, PLC
				100 V					●	●	—	—	—	○			
				100 V or less					●	●	—	—	—	○			
Read auto switch	—	Grommet	No	2-wire	24 V	—	A93V ^{*2}	A93	●	●	●	●	—	—	IC circuit		
				2-wire					5 V, 12 V	●	●	—	—	—		○	

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

*2 Consult with SMC regarding water resistant types with the above model numbers.

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

* Lead wire length symbols: 0.5 m Nil (Example) M9NV
 1 m M (Example) M9NW
 3 m L (Example) M9NW
 5 m Z (Example) M9NWZ

* Solid state auto switches marked with "○" are produced upon receipt of order.
 * The D-P3DWA□ type is available from ø25 to ø63 only.

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

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

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

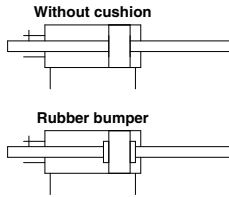
-X□

Technical Data

CQ2KW Series



Symbol



Made to Order: Individual Specifications
(For details, refer to page 978.)

Symbol	Specifications
-X633	Intermediate stroke of double rod cylinder

Made to Order

[Click here for details](#)

Symbol	Specifications
-XA□	Change of rod end shape
-XB10	Intermediate stroke (Exclusive body type) ø40 to ø63
-XC2(A)	Rod end length, 10 mm increased (For foot and flange bracket)
-XC85	Grease for food processing equipment

* -X633: Intermediate stroke in 5 mm intervals only

Refer to pages 964 to 970 for the specifications of cylinders with autoswitches.

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

Moisture Control Tube IDK Series



When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.

Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to [the IDK series in the Best Pneumatics No. 6](#).

Specifications

Bore size (mm)	12	16	20	25	32	40	50	63
Action	Double acting, Double rod							
Fluid	Air							
Proof pressure	1.5 MPa							
Maximum operating pressure	1.0 MPa							
Minimum operating pressure	0.07 MPa				0.05 MPa			
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)							
Lubrication	Not required (Non-lube)							
Piston speed	50 to 500 mm/s							
Allowable kinetic energy (J)	0.022 <small>0.043 Note 1)</small>	0.038	0.055	0.09	0.15	0.26	0.46	0.77
Stroke length tolerance	+1.0 mm Note 2) 0							
Rod non-rotating accuracy	±2°		±1°			±0.8°		

* ø12 with auto switch: With rubber bumper (Standard)

Note 1) For cylinders with rubber bumper (ø12 with auto switch only)

Note 2) Stroke length tolerance does not include the amount of bumper change.

Standard Strokes

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

Manufacture of Intermediate Strokes

Type	A spacer is installed in the standard stroke body.		A spacer is installed in the standard stroke body. (1 mm intervals)		Exclusive body (-XB10)	
Part no.	Refer to "How to Order" for the standard model number. (P. 881)		Suffix "-X633" (P. 881) to the end of standard model number. (P. 978)		Suffix "-XB10" to the end of standard model number. (P. 881)	
Description	Strokes in 5 mm increments are available by installing a spacer in the standard stroke cylinder.		Strokes in 1 mm increments are available by installing a spacer in the standard stroke cylinder.		Strokes in 1 mm increments are available by using an exclusive body with the specified stroke.	
Stroke range	Bore size	Stroke range	Bore size	Stroke range	Bore size	Stroke range
	—	—	12, 16	6 to 29	—	—
			20, 25	6 to 49		
	32 to 63	55 to 95	32, 40	6 to 99	40	6 to 99
		50, 63	11 to 99	50, 63	11 to 99	
Example	Part no.: CQ2KWB50-65DZ CQ2KWB50-75DZ with 10 mm width spacer inside The B dimension is 125.5 mm.		Part no.: CQ2KWB50-72DZ-X633 CQ2KWB50-75DZ with 3 mm width spacer inside The B dimension is 125.5 mm.		Part no.: CQ2KWB50-65DZ-XB10 Makes 65 mm stroke tube. The B dimension is 115.5 mm.	

* Only bore sizes ø40 to ø63 are applicable to the XB10.

Type

Pneumatic	Bore size (mm)		12	16	20	25	32	40	50	63
	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	M5 x 0.8 <small>Note 1)</small> Rc1/8	Rc1/8	Rc1/4	Rc1/4
		TN	—	—	—	—	NPT1/8	NPT1/8	NPT1/4	NPT1/4
	TF	—	—	—	—	—	G1/8	G1/8	G1/4	G1/4
	Built-in one-touch fittings	—	—	—	—	—	ø6 <small>Note 2)</small>	ø6	ø8	ø8
	Rod end male thread	●	●	●	●	●	●	●	●	●

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) The dimensions of the ø32-5 mm stroke with built-in One-touch fittings are the same as those of the 10 mm stroke cylinder tube.

Retaining Ring Installation/Removal

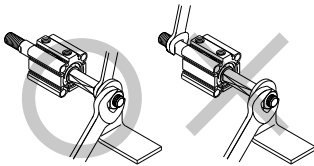
⚠ Caution

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

Mounting

⚠ Warning

- Do not apply reverse torque to the piston rods sticking out from both sides of this cylinder at the same time. The torque makes connection threads inside loosen, which may cause an accident or malfunction. Install or remove loads while the piston rod width across flat is secured. Also, tighten by giving consideration to prevent the tightening torque from being applied to the non-rotating guide. Do not fix the other side of the piston rod width across flat and apply reverse torque.



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

Allowable rotational torque	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
N·m or less	0.04	0.15	0.20	0.25	0.44	0.44	0.44	0.44

Mounting Brackets/Part No.

Bore size (mm)	Foot ^{Note 1)}	Compact foot ^{Note 1)}	Flange
40	CQ-L040	CQ-LC040	CQ-F040
50	CQ-L050	CQ-LC050	CQ-F050
63	CQ-L063	CQ-LC063	CQ-F063

- Note 1) When ordering foot and compact foot brackets, order 2 pieces per cylinder.
 Note 2) Parts belonging to each bracket are as follows.
 Foot, Compact foot, Flange: Body mounting bolts
 Note 3) For details about accessories (options), refer to page 796.

Theoretical Output

(N)

Bore size (mm)	Operating pressure (MPa)		
	0.3	0.5	0.7
12	25	42	59
16	45	75	106
20	71	118	165
25	113	189	264
32	181	302	422
40	317	528	739
50	495	825	1150
63	841	1400	1960

Weight

Weight

(g)

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	62	69	76	83	90	97	—	—	—	—	—	—
16	62	73	84	95	106	117	—	—	—	—	—	—
20	101	116	131	146	161	176	191	206	221	236	—	—
25	138	155	172	189	206	223	240	257	274	291	—	—
32	233	256	279	302	325	348	371	394	417	440	600	715
40	336	365	394	424	453	483	512	541	571	600	806	953
50	—	517	558	600	642	684	725	767	809	850	1142	1351
63	—	742	779	815	851	887	923	959	995	1032	1285	1465

Additional Weight

(g)

Bore size (mm)		12	16	20	25	32	40	50	63
Both ends tapped		—	—	—	—	—	6	6	19
Rod end male thread	Male thread	3	6	12	24	52	54	106	106
	Nut	2	4	8	16	34	34	64	64
Built-in One-touch fittings		—	—	—	—	12	12	21	21
Foot (Including mounting bolts)		—	—	—	—	—	154	243	317
Compact foot (Including mounting bolts)		—	—	—	—	—	114	177	241
Flange (Including mounting bolts)		—	—	—	—	—	214	373	559

- Calculation: (Example) **CQ2KWA40-20DMZ**
- Basic weight: CQ2KWB40-20DZ 424 g
 - Additional weight: Both ends tapped 6 g
 - Rod end male thread 88 g
- 518 g

CUJ
CU
CQS
JCQ
CQ2
RQ
CQM
CQU
MU

D-□
-X□
Technical Data

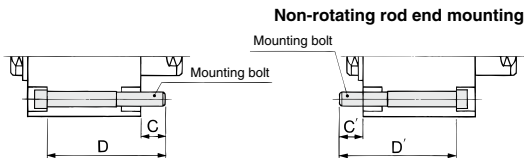
CQ2KW Series

Mounting Bolt for CQ2KWB/Without Auto Switch

Mounting method: Mounting bolt for through-hole mounting of the CQ2KWB is available as an option. Refer to the following for ordering procedures. Order the actual number of bolts that will be used.

Example) CQ-M3 x 40L 2 pcs.

Material: Chromium molybdenum steel
Surface treatment: Zinc chromated



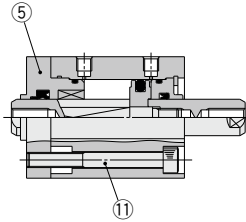
Cylinder model	C	D	Mounting bolt part no.	C'	D'	Mounting bolt part no.
CQ2KWB12-5D	8.3	40	CQ-M3 x 40L	8.3	40	CQ-M3 x 40L
-10D		45	x 45L		45	x 45L
-15D		50	x 50L		50	x 50L
-20D		55	x 55L		55	x 55L
-25D		60	x 60L		60	x 60L
-30D	65	x 65L	65	x 65L		
CQ2KWB16-5D	7.5	40	CQ-M3 x 40L	7.5	40	CQ-M3 x 40L
-10D		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		
CQ2KWB20-5D	6.5	40	CQ-M5 x 40L	8	40	CQ-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
CQ2KWB25-5D	8.5	45	CQ-M5 x 45L	10	45	CQ-M5 x 45L
-10D		50	x 50L		50	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
CQ2KWB32-5DZ	11	50	CQ-M5 x 50L	7.5	45	CQ-M5 x 45L
-10DZ		55	x 55L		50	x 50L
-15DZ		60	x 60L		55	x 55L
-20DZ		65	x 65L		60	x 60L
-25DZ		70	x 70L		65	x 65L
-30DZ		75	x 75L		70	x 70L
-35DZ		80	x 80L		75	x 75L
-40DZ		85	x 85L		80	x 80L
-45DZ		90	x 90L		85	x 85L
-50DZ		95	x 95L		90	x 90L
-75DZ		130	x 130L		125	x 125L
-100DZ	155	x 155L	150	x 150L		

Cylinder model	C	D	Mounting bolt part no.
CQ2KWB40-5DZ	7	45	CQ-M5 x 45L
-10DZ		50	x 50L
-15DZ		55	x 55L
-20DZ		60	x 60L
-25DZ		65	x 65L
-30DZ		70	x 70L
-35DZ		75	x 75L
-40DZ		80	x 80L
-45DZ		85	x 85L
-50DZ		90	x 90L
-75DZ	125	x 125L	
-100DZ	150	x 150L	
CQ2KWB50-10DZ	12.5	55	CQ-M6 x 55L
-15DZ		60	x 60L
-20DZ		65	x 65L
-25DZ		70	x 70L
-30DZ		75	x 75L
-35DZ		80	x 80L
-40DZ		85	x 85L
-45DZ		90	x 90L
-50DZ		95	x 95L
-75DZ		130	x 130L
-100DZ	155	x 155L	
CQ2KWB63-10DZ	13.5	55	CQ-M8 x 55L
-15DZ		60	x 60L
-20DZ		65	x 65L
-25DZ		70	x 70L
-30DZ		75	x 75L
-35DZ		80	x 80L
-40DZ		85	x 85L
-45DZ		90	x 90L
-50DZ		95	x 95L
-75DZ		130	x 130L
-100DZ	155	x 155L	

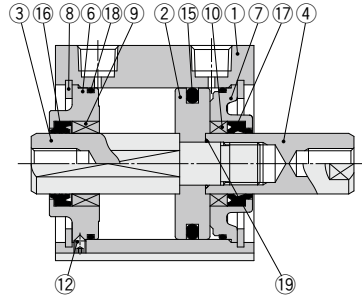
* ø40 to ø63: The C' and D' dimensions are the same as those of C and D.

Construction

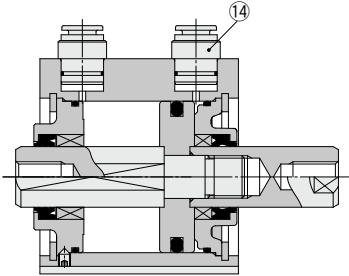
Standard (ø12 to ø32)



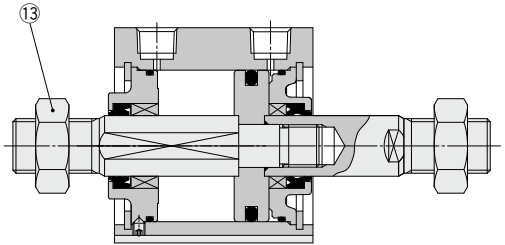
Standard (ø40 to ø63)



Built-in One-touch fittings



Rod end male thread



Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	
3	Piston rod A	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø63, Hard chrome plated
4	Piston rod B	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø63, Hard chrome plated
5	Rod cover	Brass	ø12, Electroless nickel plated
		Aluminum alloy	ø16 to ø32, Anodized
6	Collar for non-rotating	Aluminum alloy	ø40 to ø63, Anodized
7	Collar	Aluminum alloy	ø12 to ø40, Anodized
		Aluminum alloy casted	ø50 to ø63, Chromated, Painted
8	Retaining ring	Carbon tool steel	Phosphate coated
9	Bushing for non-rotating	Oil-impregnated sintered alloy	ø16 to ø63
10	Bushing	Bearing alloy	ø50, ø63
11	Hexagon socket head cap screw	Alloy steel	ø12 to ø32, Zinc chromated
12	Hexagon socket set screw	Alloy steel	ø40 to ø63, Zinc chromated
13	Rod end nut	Carbon steel	Zinc chromated
14	One-touch fitting	—	ø32 to ø63
15	Piston seal	NBR	
16	Rod seal for non-rotating	NBR	
17	Rod seal	NBR	
18	Gasket	NBR	
19	Piston gasket	NBR	ø32 to ø63

Replacement Parts/Seal Kit

Bore size (mm)	Kit no.	Contents
12	CQ2KWB12-PS	Kits include items 15, 16, 17, 18 from the table.
16	CQ2KWB16-PS	
20	CQ2KWB20-PS	
25	CQ2KWB25-PS	
32	CQ2KWB32-PS	
40	CQ2KWB40-PS	
50	CQ2KWB50-PS	
63	CQ2KWB63-PS	

* Seal kit includes 15, 16, 17, 18. Order the seal kit based on each bore size.
* Since the seal kit does not include a grease pack, order it separately.
Grease pack part no.: GR-S-010 (10 g)

CJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data

Non-rotating Rod: Double Acting, Double Rod CDQ2KW Series With Auto Switch



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

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

Weight

Weight

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	76	83	90	98	105	113	—	—	—	—	—	—
16	89	99	109	118	128	138	—	—	—	—	—	—
20	148	164	179	194	210	225	240	256	271	286	—	—
25	213	228	244	259	275	291	306	322	337	353	—	—
32	259	282	305	328	351	374	397	420	443	466	580	695
40	441	471	500	530	559	588	618	647	677	706	853	1000
50	—	642	684	726	767	809	851	892	934	976	1184	1393
63	—	871	907	943	979	1015	1051	1088	1124	1160	1341	1521

Additional Weight

Bore size (mm)	12	16	20	25	32	40	50	63
Both ends tapped	—	—	—	—	—	6	6	19
Rod end male thread	3	6	12	24	52	54	106	106
Female thread	2	4	8	16	34	34	64	64
Built-in One-touch fittings	—	—	—	—	12	12	21	21
Foot (Including mounting bolts)	—	—	—	—	—	154	243	317
Compact foot (Including mounting bolts)	—	—	—	—	—	114	177	241
Flange (Including mounting bolts)	—	—	—	—	—	214	373	559

Calculation: (Example) **CDQ2KWA40-20DMZ**

• Basic weight: CDQ2KWB40-20DZ.....530 g

• Additional weight: Both ends tapped.....6 g

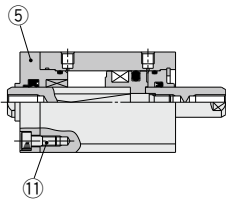
Rod end male thread.....88 g

624 g

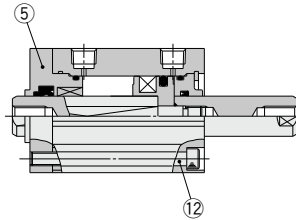
Add each weight of auto switches when auto switches are mounted.

Construction

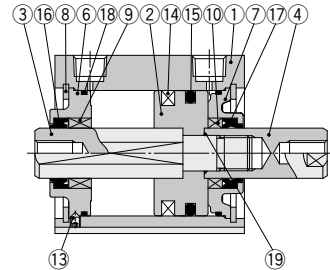
ø12 to ø25



ø32



ø40 to ø63



Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	
3	Piston rod A	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø63, Hard chrome plated
4	Piston rod B	Stainless steel	ø12 to ø25
		Carbon steel	ø32 to ø63, Hard chrome plated
5	Rod cover	Brass	ø12, Electroless nickel plated
		Aluminum alloy	ø16 to ø32, Anodized
6	Collar for non-rotating	Aluminum alloy	ø40 to ø63, Anodized
7	Collar	Aluminum alloy	ø12 to ø40, Anodized
		Aluminum alloy casted	ø50 to ø63, Chromated, Painted
8	Retaining ring	Carbon tool steel	Phosphate coated
9	Bushing for non-rotating	Oil-impregnated sintered alloy	ø16 to ø63
10	Bushing	Bearing alloy	ø50, ø63
11	Hexagon socket head cap screw	Alloy steel	ø12 to ø25, Zinc chromated
12	Hexagon socket head cap screw	Alloy steel	ø32, Zinc chromated
13	Hexagon socket set screw	Alloy steel	ø40 to ø63, Zinc chromated
14	Magnet	—	

No.	Description	Material	Note
15	Piston seal	NBR	
16	Rod seal for non-rotating	NBR	
17	Rod seal	NBR	
18	Gasket	NBR	
19	Piston gasket	NBR	ø32 to ø63

Replacement Parts/Seal Kit

Bore size (mm)	Kit no.	Contents
12	CQ2KWB12-PS	Kits include items 15, 16, 17, 18 from the table.
16	CQ2KWB16-PS	
20	CQ2KWB20-PS	
25	CQ2KWB25-PS	
32	CQ2KWB32-PS	
40	CQ2KWB40-PS	
50	CQ2KWB50-PS	
63	CQ2KWB63-PS	

* Seal kit includes 15, 16, 17, 18. Order the seal kit based on each bore size.

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

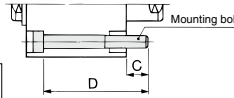
Grease pack part no.: GR-S-010 (10 g)

Mounting Bolt for CDQ2KWB/With Auto Switch

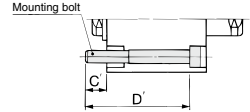
Mounting method: Mounting bolt for through-hole mounting of the CDQ2KWB is available as an option. Refer to the following for ordering procedures. Order the actual number of bolts that will be used.

Example) CQ-M3 x 40L 2 pcs.

Material: Chromium molybdenum steel
Surface treatment: Zinc chromated



Non-rotating rod end mounting



Cylinder model	C	D	Mounting bolt part no.	C'	D'	Mounting bolt part no.
CDQ2KWB12-5DCZ	6.1	40	CQ-M3 x 40L	6.1	45	CQ-M3 x 45L
-10DCZ		45	x 45L		50	x 50L
-15DCZ		50	x 50L		55	x 55L
-20DCZ		55	x 55L		60	x 60L
-25DCZ		60	x 60L		65	x 65L
-30DCZ		65	x 65L		70	x 70L
CDQ2KWB16-5DZ	7.5	45	CQ-M3 x 45L	7.5	50	CQ-M3 x 50L
-10DZ		50	x 50L		55	x 55L
-15DZ		55	x 55L		60	x 60L
-20DZ		60	x 60L		65	x 65L
-25DZ		65	x 65L		70	x 70L
-30DZ		70	x 70L		75	x 75L
CDQ2KWB20-5DZ	9	45	CQ-M5 x 45L	11	55	CQ-M5 x 55L
-10DZ		50	x 50L		60	x 60L
-15DZ		55	x 55L		65	x 65L
-20DZ		60	x 60L		70	x 70L
-25DZ		65	x 65L		75	x 75L
-30DZ		70	x 70L		80	x 80L
-35DZ		75	x 75L		85	x 85L
-40DZ		80	x 80L		90	x 90L
-45DZ		85	x 85L		95	x 95L
-50DZ	90	x 90L	100	x 100L		
CDQ2KWB25-5DZ	8	45	CQ-M5 x 45L	10	55	CQ-M5 x 55L
-10DZ		50	x 50L		60	x 60L
-15DZ		55	x 55L		65	x 65L
-20DZ		60	x 60L		70	x 70L
-25DZ		65	x 65L		75	x 75L
-30DZ		70	x 70L		80	x 80L
-35DZ		75	x 75L		85	x 85L
-40DZ		80	x 80L		90	x 90L
-45DZ		85	x 85L		95	x 95L
-50DZ	90	x 90L	100	x 100L		
CDQ2KWB32-5DZ	11	60	CQ-M5 x 60L	7.5	55	CQ-M5 x 55L
-10DZ		65	x 65L		60	x 60L
-15DZ		70	x 70L		65	x 65L
-20DZ		75	x 75L		70	x 70L
-25DZ		80	x 80L		75	x 75L
-30DZ		85	x 85L		80	x 80L
-35DZ		90	x 90L		85	x 85L
-40DZ		95	x 95L		90	x 90L
-45DZ		100	x 100L		95	x 95L
-50DZ		105	x 105L		100	x 100L
-75DZ		130	x 130L		125	x 125L
-100DZ	155	x 155L	150	x 150L		

Cylinder model	C	D	Mounting bolt part no.
CDQ2KWB40-5DZ	7	55	CQ-M5 x 55L
-10DZ		60	x 60L
-15DZ		65	x 65L
-20DZ		70	x 70L
-25DZ		75	x 75L
-30DZ		80	x 80L
-35DZ		85	x 85L
-40DZ		90	x 90L
-45DZ		95	x 95L
-50DZ		100	x 100L
-75DZ	125	x 125L	
-100DZ	150	x 150L	
CDQ2KWB50-10DZ	12.5	65	CQ-M6 x 65L
-15DZ		70	x 70L
-20DZ		75	x 75L
-25DZ		80	x 80L
-30DZ		85	x 85L
-35DZ		90	x 90L
-40DZ		95	x 95L
-45DZ		100	x 100L
-50DZ		105	x 105L
-75DZ		130	x 130L
-100DZ	155	x 155L	
CDQ2KWB63-10DZ	13.5	65	CQ-M8 x 65L
-15DZ		70	x 70L
-20DZ		75	x 75L
-25DZ		80	x 80L
-30DZ		85	x 85L
-35DZ		90	x 90L
-40DZ		95	x 95L
-45DZ		100	x 100L
-50DZ		105	x 105L
-75DZ		130	x 130L
-100DZ	155	x 155L	

* $\phi 40$ to $\phi 63$: The C' and D' dimensions are the same as those of C and D.

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

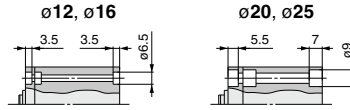
Technical
Data

CQ2KW Series

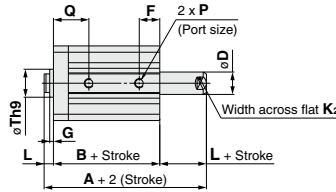
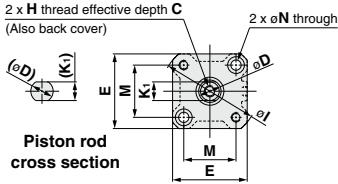
Dimensions

Ø12 to Ø32/Without Auto Switch

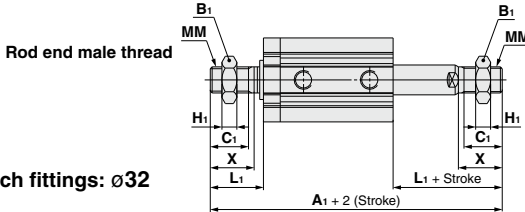
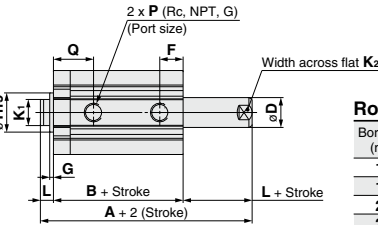
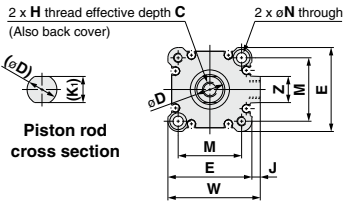
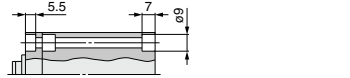
Standard (Through-hole): CQ2KWB



Ø12 to Ø25



Ø32

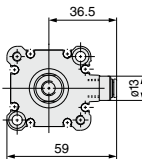


Rod End Male Thread (mm)

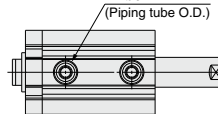
Bore size (mm)	Stroke range (mm)	A ₁	B ₁	C ₁	H ₁
12	5 to 30	58.2	8	9	4
16	5 to 30	62	10	10	5
20	5 to 50	71	13	12	5
25	5 to 50	82	17	15	6
32	5 to 50	96.5	22	20.5	8
	75, 100	106.5			

Bore size (mm)	L ₁	MM	X
12	14	M5 x 0.8	10.5
16	15.5	M6 x 1.0	12
20	18.5	M8 x 1.25	14
25	22.5	M10 x 1.25	17.5
32	28.5	M14 x 1.5	23.5

Built-in One-touch fittings: Ø32



Built-in One-touch fittings



* The dimensions of ø32-5 mm stroke with built-in One-touch fittings are the same as those of the 10 mm stroke cylinder tube. (mm)

Standard

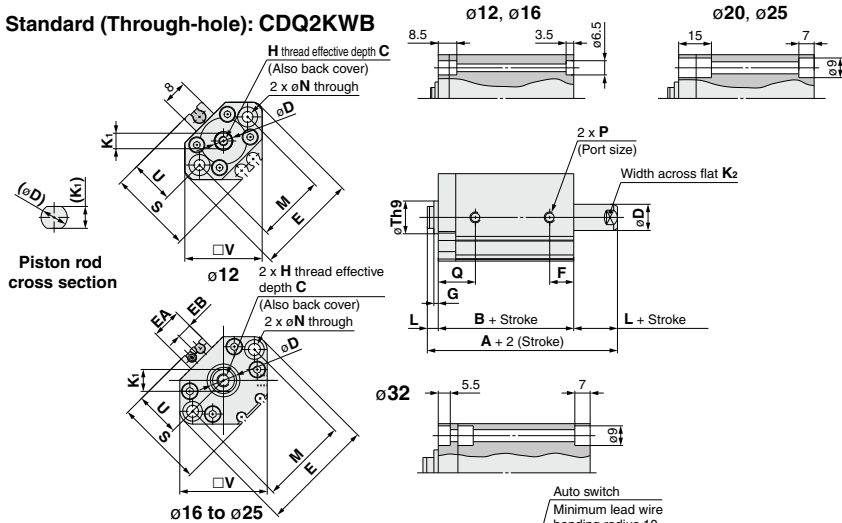
Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	G	H	I	J	K ₁	K ₂	L	M	N	P	Q	Th9	W	Z
12	5 to 30	37.2	30.2	6	6	25	10	1.5	M3 x 0.5	32	—	5.2	5	3.5	15.5	3.5	M5 x 0.8	15	15 ^{0.043}	—	—
16	5 to 30	38	31	8	8	29	10	1.5	M4 x 0.7	38	—	6	6	3.5	20	3.5	M5 x 0.8	15	20 ^{0.052}	—	—
20	5 to 50	43	34	7	10	36	8	2	M5 x 0.8	47	—	8	8	4.5	25.5	5.5	M5 x 0.8	16	13 ^{0.043}	—	—
25	5 to 50	47	37	12	12	40	9	2	M6 x 1.0	52	—	10	10	5	28	5.5	M5 x 0.8	17	15 ^{0.043}	—	—
32	5	53.5	39.5	13	16	45	10	2	M8 x 1.25	—	4.5	14	14	7	34	5.5	M5 x 0.8	19	21 ^{0.052}	49.5	14
	10 to 50																				
	75, 100																63.5				

* For details about the rod end nut and accessory brackets, refer to page 796.
Note) The positions of piston rod's width across flats (K₂) are not constant.

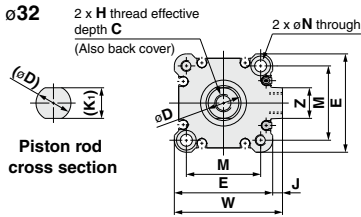
Dimensions

∅12 to ∅32/With Auto Switch

Standard (Through-hole): CDQ2KWB

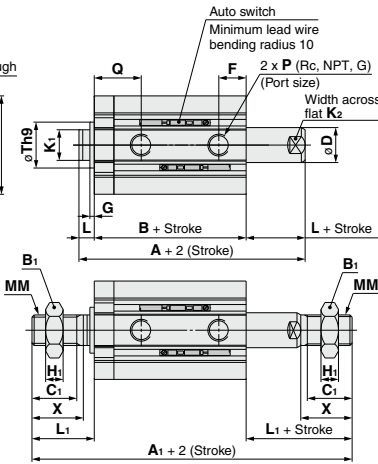


Piston rod cross section



Piston rod cross section

Rod end male thread

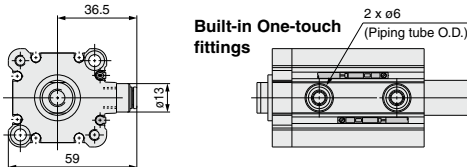


Rod End Male Thread (mm)

Bore size (mm)	A ₁	B ₁	C ₁	H ₁
12	65.4	8	9	4
16	72	10	10	5
20	83	13	12	5
25	92	17	15	6
32	106.5	22	20.5	8

Bore size (mm)	L ₁	MM	X
12	14	M5 x 0.8	10.5
16	15.5	M6 x 1.0	12
20	18.5	M8 x 1.25	14
25	22.5	M10 x 1.25	17.5
32	28.5	M14 x 1.5	23.5

Built-in One-touch fittings: ∅32



Built-in One-touch fittings

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

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	EA	EB	F	G	H	J	K ₁	K ₂	L	M	N	P	Q	S	Th9	U	V	W	Z
12	5 to 30	44.4	37.4	6	6	33	—	—	10.5	1.5	M3 x 0.5	—	5.2	5	3.5	22	3.5	M5 x 0.8	15.5	27.5	15 ^{-0.043}	14	25	—	—
16	5 to 30	48	41	8	8	37	13.2	6.6	10	1.5	M4 x 0.7	—	6	6	3.5	28	3.5	M5 x 0.8	15	29.5	20 ^{-0.052}	15	29	—	—
20	5 to 50	55	46	7	10	47	13.6	6.8	8	2	M5 x 0.8	—	8	8	4.5	36	5.5	M5 x 0.8	16	35.5	13 ^{-0.043}	18	36	—	—
25	5 to 50	57	47	12	12	52	13.6	6.8	9	2	M6 x 1.0	—	10	10	5	40	5.5	M5 x 0.8	17	40.5	15 ^{-0.043}	21	40	—	—
32	5 to 50, 75, 100	83.5	49.5	13	16	45	—	—	10	2	M8 x 1.25	4.5	14	14	7	34	5.5	1/8	19	—	21 ^{-0.052}	—	—	49.5	14

* For details about the rod end nut and accessory brackets, refer to page 796.
Note) The positions of piston rod's width across flats (K₂) are not constant.

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

- D-□
- X□

Technical Data

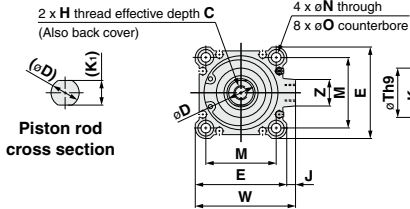
CQ2KW Series

Dimensions

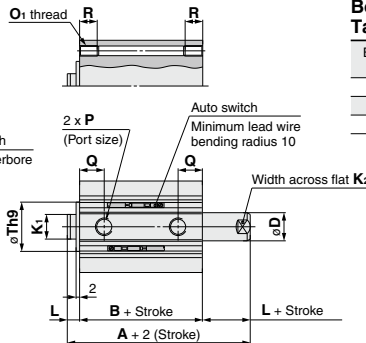
Ø40 to Ø63/With Auto Switch

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

Standard (Through-hole): CQ2KWB/CDQ2KWB



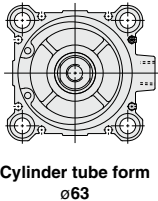
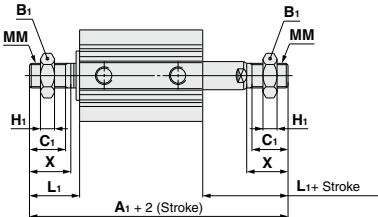
Both ends tapped: CQ2KWA/CDQ2KWA



Both Ends Tapped

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

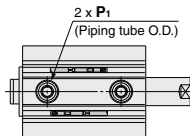
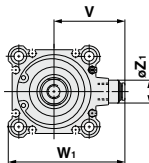
Rod end male thread



Rod End Male Thread

Bore size (mm)	Stroke range (mm)	A ₁		B ₁	C ₁	H ₁	L ₁	MM	X
		Without auto switch	With auto switch						
40	5 to 50	97	107	22	20.5	8	28.5	M14 x 1.5	23.5
	75, 100	107							
50	10 to 50	107.5	117.5	27	26	11	33.5	M18 x 1.5	28.5
	75, 100	117.5							
63	10 to 50	109	119	27	26	11	33.5	M18 x 1.5	28.5
	75, 100	119							

Built-in One-touch fittings: Ø40 to Ø63



Built-in One-touch Fittings

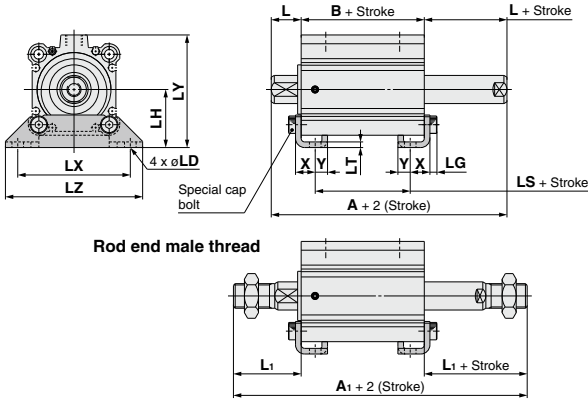
Bore size (mm)	Z ₁	P ₁	V	W ₁
40	13	6	40.5	66.5
50	16	8	50	82
63	16	8	56.5	95

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

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	D	E	H	J	K ₁	K ₂	L	M	N	O	P	Q	Th9	W	Z
		A	B	A	B																
40	5 to 50	54	40	64	50	13	16	52	M8 x 1.25	5	14	14	7	40	5.5	9 depth 7	1/8	12.5	28 ⁰ _{-0.052}	57	15
	75, 100	64	50																		
50	10 to 50	56.5	40.5	66.5	50.5	15	20	64	M10 x 1.5	7	18	17	8	50	6.6	11 depth 8	1/4	14	35 ⁰ _{-0.062}	71	19
	75, 100	66.5	50.5																		
63	10 to 50	58	42	68	52	15	20	77	M10 x 1.5	7	18	17	8	60	9	14 depth 10.5	1/4	15.5	35 ⁰ _{-0.062}	84	19
	75, 100	68	52																		

* For details about the rod end nut and accessory brackets, refer to page 796.
Note) The positions of piston rod's width across flats (K₂) are not constant.

Foot: CQ2KWL/CDQ2KWL



Rod End Male Thread (mm)

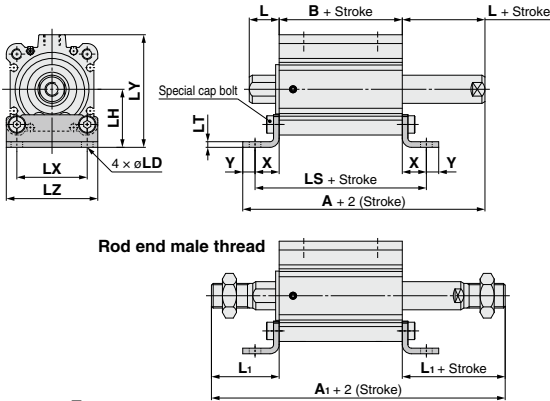
Bore size (mm)	Stroke range (mm)	A ₁		L ₁
		Without auto switch	With auto switch	
40	5 to 50	117	127	38.5
	75, 100	127	127	
50	10 to 50	127.5	137.5	43.5
	75, 100	137.5	137.5	
63	10 to 50	129	139	43.5
	75, 100	139	139	

Foot (mm)

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			L	LD	LG	LH	LT	LX	LY	LZ	X	Y
		A	B	LS	A	B	LS										
40	5 to 50	74	40	24	84	50	34	17	6.6	4	33	3.2	64	68	78	11.2	7
	75, 100	84	50	34													
50	10 to 50	76.5	40.5	17.5	86.5	50.5	27.5	18	9	5	39	3.2	79	78	95	14.7	8
	75, 100	86.5	50.5	27.5													
63	10 to 50	78	42	16	88	52	26	18	11	5	46	3.2	95	91.5	113	16.2	8
	75, 100	88	52	26													

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Compact foot: CQ2KWLC/CDQ2KWLC



Rod End Male Thread (mm)

Bore size (mm)	Stroke range (mm)	A ₁		L ₁
		Without auto switch	With auto switch	
40	5 to 50	117	127	38.5
	75, 100	127	127	
50	10 to 50	127.5	137.5	43.5
	75, 100	137.5	137.5	
63	10 to 50	129	139	43.5
	75, 100	139	139	

Compact Foot (mm)

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			L	LD	LH	LT	LX	LY	LZ	X	Y
		A	B	LS	A	B	LS									
40	5 to 50	81.4	40	67.4	91.4	50	77.4	17	6.6	33	3.2	40	64	52	13.7	7
	75, 100	91.4	50	77.4												
50	10 to 50	89.9	40.5	73.9	99.9	50.5	83.9	18	9	39	3.2	50	78	64	16.7	8
	75, 100	99.9	50.5	83.9												
63	10 to 50	96.4	42	78.4	106.4	52	88.4	18	11	46	3.2	60	91.5	77	18.2	9
	75, 100	106.4	52	88.4												

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

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

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

- D-□**
- X□**

Technical Data

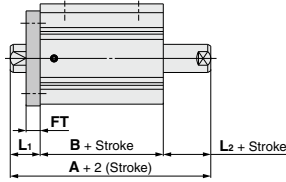
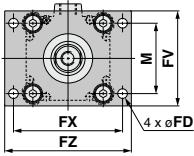
CQ2KW Series

Dimensions

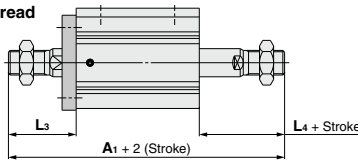
Ø40 to Ø63/With Auto Switch

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

Flange: CQ2KWF/CDQ2KWF



Rod end male thread



Rod End Male Thread

Bore size (mm)	Stroke range (mm)	A ₁		L ₃	L ₄
		Without auto switch	With auto switch		
40	5 to 50	107	117	38.5	28.5
	75, 100	117	117		
50	10 to 50	117.5	127.5	43.5	33.5
	75, 100	127.5	127.5		
63	10 to 50	119	129	43.5	33.5
	75, 100	129	129		

Flange For auto switch proper mounting position and its mounting height, refer to pages 964 to 970. (mm)

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		FD	FT	FV	FX	FZ	L ₁	L ₂	M
		A	B	A	B								
40	5 to 50	64	40	74	50	5.5	8	54	62	72	17	7	40
	75, 100	74	50										
50	10 to 50	66.5	40.5	76.5	50.5	6.6	9	67	76	89	18	8	50
	75, 100	76.5	50.5										
63	10 to 50	68	42	78	52	9	9	80	92	108	18	8	60
	75, 100	78	52										

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

Flange bracket material: Carbon steel
Surface treatment: Nickel plated