

Compact Cylinder: Non-rotating Rod Type

Double Acting, Double Rod

Series CQ2KW

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

How to Order

Without auto switch

CQ2KW B 20 30 D

With auto switch

CDQ2KW B 20 30 D J79W S

Built-in magnet

Mounting style

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

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

Bore size

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

Piping

Nil	Screw-in piping
F	Built-in One-touch fittings Note

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

Auto switch

Nil	Without auto switch (Built-in magnet)
S	With auto switch
n	"n" pcs.

* For the applicable auto switch model, refer to the table below.
* Auto switches are shipped together, (but not assembled). (Except D-P5DWL)

Body option

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

Action

D	Double acting
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Cylinder stroke (mm)
Refer to "Standard Stroke" on page 7-6-77.

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)				
							Perpendicular	In-line	Perpendicular	In-line								
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	—	A76H	A96V	A96	●	●	—	—	—	IC circuit	—
		Connector		2-wire	24 V	12 V	100 V	A72	A72H	—	—	●	●	—	—	—		
	A73							A73H	—	—	●	●	●	—	—			
	—							—	A93V	A93	●	●	●	—	—			
	A73C							—	—	—	●	●	●	●	—	—		
	Diagnostic indication (2-color indication)	Grommet		—	—	A79W	—	—	—	●	●	—	—	—				
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	F7NV	F79	M9NV	M9N	●	●	○	—	○	IC circuit	Relay, PLC
		3-wire (PNP)		F7PV				F7P	M9PV	M9P	●	●	○	—	○			
		Connector		2-wire				F7BV	J79	M9BV	M9B	●	●	○	—	○		
	J79C					—		—	—	●	●	●	●	—	—			
	Diagnostic indication (2-color indication)	Grommet		3-wire (NPN)		5 V, 12 V		F7NWV	F79W	F9NWV	F9NW	—	●	○	—	○		
				3-wire (PNP)				—	F7PW	F9PWV	F9PW	●	●	○	—	○		
	Water resistant (2-color indication)	Grommet		2-wire	12 V	F7BWV	J79W	F9BWV	F9BW	●	●	○	—	○				
						F7BAV	F7BA	—	F9BA	—	●	○	—	○				
	With diagnostic output (2-color indication)	Grommet		4-wire (NPN)	5 V, 12 V	—	—	F79F	—	—	●	●	○	—	○			
	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

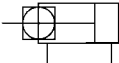
* Solid state switches marked with "○" are produced upon receipt of order.

- 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, Double Rod Series CQ2KW



JIS Symbol
Non-rotating rod,
Double acting



Precautions

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

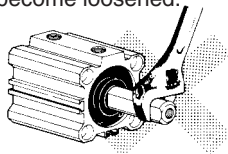
Caution

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 be deformed, causing a loss of non-rotating accuracy.
Use the chart below as a guide for the allowable rotational torque ranges.

Allowable rotational torque (N·m or less)	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
	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	—	—	—	—	●	●	●
	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 ⁽¹⁾ Rc 1/8	Rc 1/8	Rc 1/4
		Built-in One-touch fittings	—	—	—	—	ø6/4 ⁽²⁾	ø6/4	ø8/6
	Rod end male thread		●	●	●	●	●	●	●

Note 1) In the case of without auto switch, M5 x 0.8 is used for 5 stroke only.

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.

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 ⁽³⁾
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

Note 3) ø12, with switch: Rubber bumper is standard.

Minimum Operating Pressure (MPa)

Bore size (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

Non-rotating Accuracy

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

Allowable Kinetic Energy

(J)

Bore size (mm)	12	16	20	25	32	40	50	63	80	100
Standard	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27

Standard Stroke

Bore size (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

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 7-6-76.	
Description	Dealing with the stroke by the 5 mm interval is available by installing spacer with standard stroke cylinder.	
Stroke range	Bore size (mm)	Stroke range
	32 to 63	55 to 95
Example	Part no.: CQ2KWB50-65D CQ2KWB50-75D with 10 mm width spacer inside. B dimension is 125.5 mm.	

Series CQ2KW

Theoretical Output

(N)

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

Mounting Bracket Part No.

Bore size (mm)	Foot ⁽¹⁾	Flange
40	CQ-L040	CQ-F040
50	CQ-L050	CQ-F050
63	CQ-L063	CQ-F063



Note 1) When ordering foot bracket, order 2 pieces per cylinder.

Note 2) Parts belonging to each bracket are as follows.

Compact Cylinder: Non-rotating Rod Type Double Acting, Double Rod Series CQ2KW

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	242	266	290	314	338	362	386	410	434	458	595	715
40	349	380	411	442	473	504	535	566	597	628	879	1034
50	—	548	593	638	683	728	773	818	863	908	1251	1476
63	—	772	811	850	889	928	967	1006	1045	1084	1391	1586

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	3	6	12	24	52	54	106
	Nut	2	4	8	16	34	34	64
Built-in One-touch fittings	—	—	—	—	12	12	21	21
Foot style	—	—	—	—	—	155	243	324
Flange style	—	—	—	—	—	214	373	559

Calculation:

(Example) CQ2KWA40-20DM

Cylinder weight: CQ2KWB40-20D..... 442 g

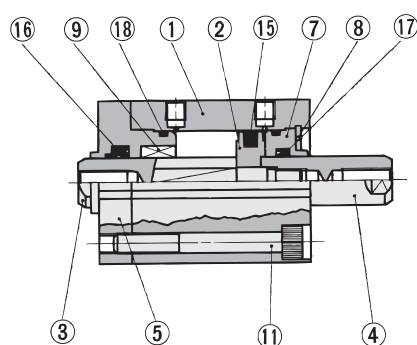
Option weight: Both ends tapped style..... 6 g

Rod end male thread..... 88 g

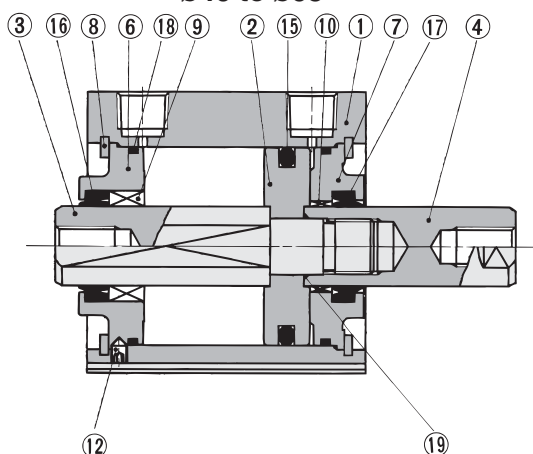
536 g

Construction

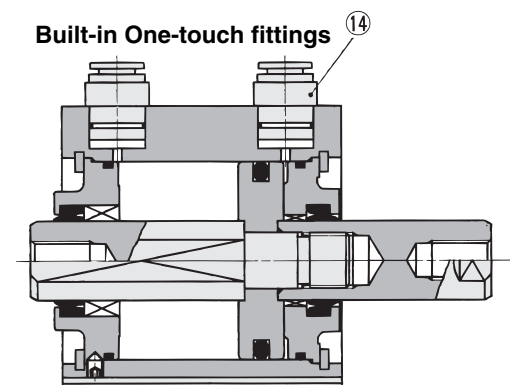
ø12 to ø32



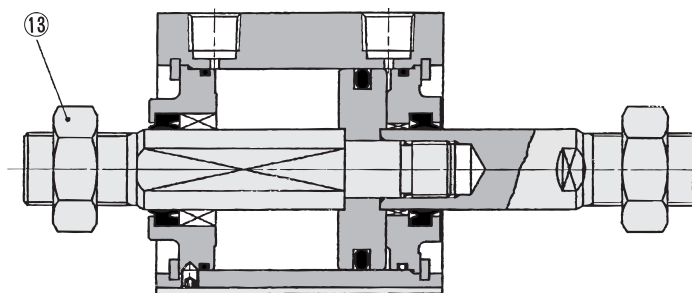
ø40 to ø63



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	Chromated
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, Nickel plated
		Aluminum alloy	ø16 to ø32, Anodized
⑥	Collar for non-rotating	Aluminum alloy	ø40 to ø63, Anodized
		Aluminum alloy	ø12 to ø40, Anodized
⑦	Collar	Aluminum alloy casted	ø50 to ø63, Chromated, Painted
		Carbon tool steel	Phosphate coated
⑧	Snap ring	Carbon tool steel	Phosphate coated
⑨	Bushing for non-rotating	Oil-impregnated sintered alloy	ø16 to ø63
⑩	Bushing	Lead-bronze casted	ø50, ø63
⑪	Hexagon socket head cap screw	Alloy steel	ø12 to ø32, Nickel plated
⑫	Hexagon socket head set screw	Alloy steel	ø40 to ø63, Nickel plated
⑬	Rod end nut	Carbon steel	Nickel plated
⑭	One-touch fitting	—	ø32 to ø63

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

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Note
12	CQ2KWB12-PS	Set of nos. above ⑮, ⑯, ⑰, ⑱
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.

Series CQ2KW

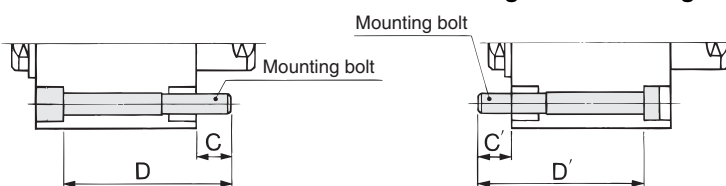
Mounting Bolt for CQ2KWB

Mounting method: Mounting bolt for through-hole mounting style of CQ2KWB is available as an option.

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

Example) Bolt M3 x 40ℓ 2 pcs.

Mounting at non-rotating side



Model	C	D	Mounting bolt	C'	D'	Mounting bolt
CQ2KWB12-5D	8.3	40	M3 x 40ℓ	8.3	40	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	M3 x 40ℓ	7.5	40	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	M5 x 40ℓ	8	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
CQ2KWB25-5D	8.5	45	M5 x 45ℓ	10	45	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
CQ2KWB32-5D	11	50	M5 x 50ℓ	7.5	45	M5 x 45ℓ
-10D		55	x 55ℓ		50	x 50ℓ
-15D		60	x 60ℓ		55	x 55ℓ
-20D		65	x 65ℓ		60	x 60ℓ
-25D		70	x 70ℓ		65	x 65ℓ
-30D		75	x 75ℓ		70	x 70ℓ
-35D		80	x 80ℓ		75	x 75ℓ
-40D		85	x 85ℓ		80	x 80ℓ
-45D		90	x 90ℓ		85	x 85ℓ
-50D		95	x 95ℓ		90	x 90ℓ
-75D		130	x 130ℓ		125	x 125ℓ
-100D		155	x 155ℓ		150	x 150ℓ

Model	C	D	Mounting bolt
CQ2KWB40-5D	7	45	M5 x 45ℓ
-10D		50	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
CQ2KWB50-10D	12.5	55	M6 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
CQ2KWB63-10D	13.5	55	M8 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

Copper-free (For CRT manufacturing process)

20 — CQ2KWB Bore size — Stroke D(M)
 • Copper-free • $\phi 16$, $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

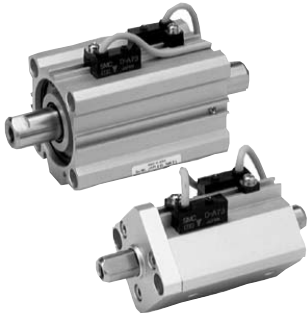
To prevent the influence of copper ions or halogen ions during CRT manufacturing processes, copper and fluorine materials are not used in the component parts.

Specifications

Action	Double acting, Double 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.



Minimum Stroke for Auto Switch Mounting

(mm)

Number 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	30
2 pcs.	5	10	15	15	20	20	10	30

Weight

(g)

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	82	90	98	106	114	122	—	—	—	—	—	—
16	103	114	125	136	147	158	—	—	—	—	—	—
20	169	186	203	220	237	254	271	288	305	322	—	—
25	231	248	265	282	299	316	333	350	367	384	—	—
32	270	294	318	342	366	390	414	438	462	486	606	726
40	458	489	520	551	582	613	644	675	706	737	892	1047
50	—	680	725	770	815	860	905	950	995	1040	1265	1490
63	—	906	945	984	1023	1062	1101	1140	1179	1218	1413	1608

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	3	6	12	24	52	54	106
	Nut	2	4	8	16	34	34	64
Built-in One-touch fittings	—	—	—	—	12	12	21	21

Calculation: (Example) CDQ2KWA40-20DM

• Cylinder weight: CDQ2KWB40-20D..... 551 g

• Option weight: Both ends tapped style..... 6 g

Rod end male thread..... 88 g

645 g

Add the weight 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

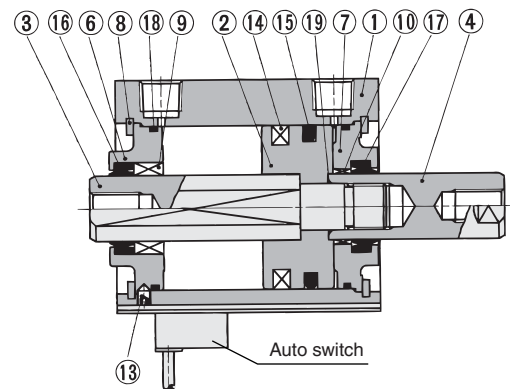
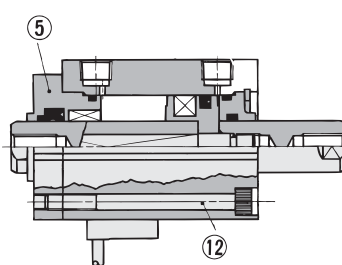
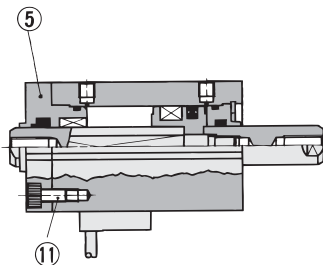
* For the auto switch weight, refer to page 7-9-1.

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 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, 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	Snap ring	Carbon tool steel	Phosphate coated
⑨	Bushing for non-rotating	Oil-impregnated sintered alloy	ø16 to ø63
⑩	Bushing	Lead-bronze casted	ø50, ø63
⑪	Hexagon socket head cap screw	Alloy steel	ø12 to ø25, Nickel plated
⑫	Hexagon socket head cap screw	Alloy steel	ø32, Nickel plated
⑬	Hexagon socket head set screw	Alloy steel	ø40 to ø63, Nickel plated
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.	Note
12	CQ2KWB12-PS	Set of nos. above ⑮, ⑯, ⑰, ⑱
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.

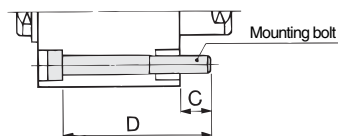
Series CDQ2KW

Mounting Bolt for CDQ2KWB with Auto Switch

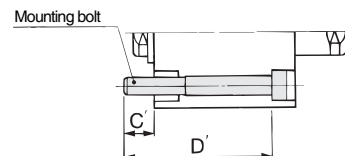
Mounting method: Mounting bolt for through-hole mounting
style of CDQ2KWB is available as an option.

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

Example) Bolt M3 x 40ℓ 2 pcs.



Mounting at non-rotating side



Model	C	D	Bolt	C'	D'	Bolt
CDQ2KWB12-5DC	6.1	40	M3 x 40ℓ	6.1	45	M3 x 45ℓ
-10DC		45	x 45ℓ		50	x 50ℓ
-15DC		50	x 50ℓ		55	x 55ℓ
-20DC		55	x 55ℓ		60	x 60ℓ
-25DC		60	x 60ℓ		65	x 65ℓ
-30DC	7.5	65	x 65ℓ		70	x 70ℓ
CDQ2KWB16-5D		45	M3 x 45ℓ		50	M3 x 50ℓ
-10D		50	x 50ℓ		55	x 55ℓ
-15D		55	x 55ℓ		60	x 60ℓ
-20D		60	x 60ℓ		65	x 65ℓ
-25D	9	65	x 65ℓ		70	x 70ℓ
-30D		70	x 70ℓ		75	x 75ℓ
CDQ2KWB20-5D		45	M5 x 45ℓ		55	M5 x 55ℓ
-10D		50	x 50ℓ		60	x 60ℓ
-15D		55	x 55ℓ		65	x 65ℓ
-20D	11	60	x 60ℓ		70	x 70ℓ
-25D		65	x 65ℓ		75	x 75ℓ
-30D		70	x 70ℓ		80	x 80ℓ
-35D		75	x 75ℓ		85	x 85ℓ
-40D		80	x 80ℓ		90	x 90ℓ
-45D	8	85	x 85ℓ	10	95	x 95ℓ
-50D		90	x 90ℓ		100	x 100ℓ
CDQ2KWB25-5D		45	M5 x 45ℓ		55	M5 x 55ℓ
-10D		50	x 50ℓ		60	x 60ℓ
-15D		55	x 55ℓ		65	x 65ℓ
-20D	10	60	x 60ℓ		70	x 70ℓ
-25D		65	x 65ℓ		75	x 75ℓ
-30D		70	x 70ℓ		80	x 80ℓ
-35D		75	x 75ℓ		85	x 85ℓ
-40D		80	x 80ℓ		90	x 90ℓ
-45D	11	85	x 85ℓ		95	x 95ℓ
-50D		90	x 90ℓ		100	x 100ℓ
CDQ2KWB32-5D		60	M5 x 60ℓ		55	M5 x 55ℓ
-10D		65	x 65ℓ		60	x 60ℓ
-15D		70	x 70ℓ		65	x 65ℓ
-20D	7.5	75	x 75ℓ		70	x 70ℓ
-25D		80	x 80ℓ		75	x 75ℓ
-30D		85	x 85ℓ		80	x 80ℓ
-35D		90	x 90ℓ		85	x 85ℓ
-40D		95	x 95ℓ		90	x 90ℓ
-45D	11	100	x 100ℓ		95	x 95ℓ
-50D		105	x 105ℓ		100	x 100ℓ
-75D		130	x 130ℓ		125	x 125ℓ
-100D		155	x 155ℓ		150	x 150ℓ

Model	C	D	Bolt
CDQ2KWB40-5D	7	55	M5 x 55ℓ
-10D		60	x 60ℓ
-15D		65	x 65ℓ
-20D		70	x 70ℓ
-25D		75	x 75ℓ
-30D		80	x 80ℓ
-35D		85	x 85ℓ
-40D		90	x 90ℓ
-45D		95	x 95ℓ
-50D		100	x 100ℓ
-75D	12.5	125	x 125ℓ
-100D		150	x 150ℓ
CDQ2KWB50-10D		65	M6 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	13.5	105	x 105ℓ
-75D		130	x 130ℓ
-100D		155	x 155ℓ
CDQ2KWB63-10D		65	M8 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	13.5	105	x 105ℓ
-75D		130	x 130ℓ
-100D		155	x 155ℓ

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	- Switch mounting screw (M3 x 0.5 x 8ℓ) - Square nut	D-A7□/A80 D-A73C/A80C D-A7□H/A80H D-A79W	D-F7□/J79 D-F7□V D-J79C D-F7□W/J79W D-F7□WV D-F7BAL D-F79F D-F7NTL D-F7BAVL
32, 40 50, 63	BQ-2	- Switch mounting screw (M3 x 0.5 x 10ℓ) - Switch spacer - Switch mounting nut		
40 to 63	BQP1-050	- Switch mounting bracket - Switch mounting nut - Hexagon socket head cap bolt (M3 x 0.5 x 14ℓ spring washer 2 pcs.) - Round head Phillips screw (M3 x 0.5 x 16ℓ spring washer 2 pcs.)	—	D-P5DWL

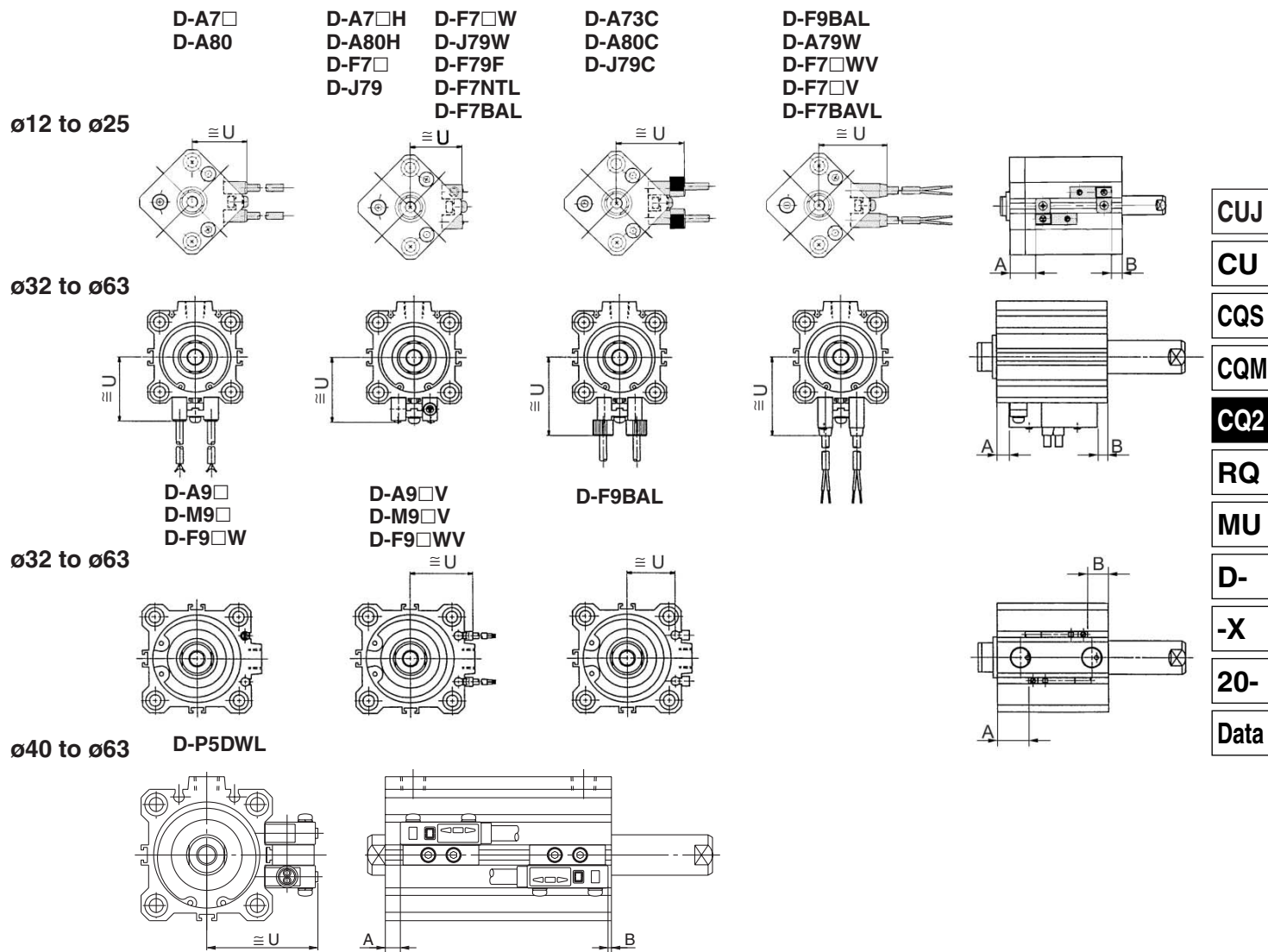
* Mounting screws set made of stainless steel
The set of stainless steel mounting screws (with nuts) described below is available and can be used depending on the operating environment. (Please order the auto switch spacer, since it is not included.)
BBA2: For D-A7/A8/F7/J7

"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, Double Rod Series CDQ2KW

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/F79F D-F7□V/J79C D-F7BAL/F7□W D-J79W/F7□WV D-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	10	10	10.5	7	7.5	—	—	—	—	—	—	—	—
16	12.5	10.5	13	11	10	8	—	—	—	—	—	—	—	—
20	15.5	13	16	13.5	13	10.5	—	—	—	—	—	—	—	—
25	15.5	13	16	13.5	13	10.5	—	—	—	—	—	—	—	—
32	18	13.5	18.5	14	15.5	11	17	12.5	21	16.5	20	15.5	—	—
40	13	19	13.5	19.5	10.5	16.5	12	18	16	22	15	21	9	15
50	11	21.5	11.5	22	8.5	19	10	20.5	14	24.5	13	23.5	7	17.5
63	13.5	20.5	14	21	11	18	12.5	19.5	16.5	23.5	15.5	22.5	9.5	16.5

Auto Switch Mounting Height

Bore size (mm)	D-A7□ D-A80		D-A7□H D-A80H D-F7□ D-J79 D-F7□W D-F79W D-F7BAL D-F79F D-F7NTL		D-A73C D-A80C		D-F7□V D-F7□WV 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	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	30	44	—	—	—	—	—	—	—
40	35	36	42	38.5	41.5	37.5	30.5	32.5	36	50	—	—	—	—	—	—	—	—
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 CQ2KW

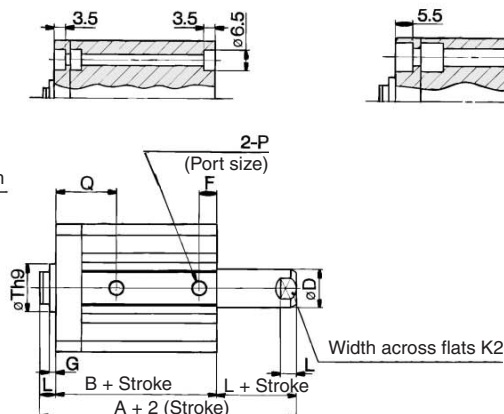
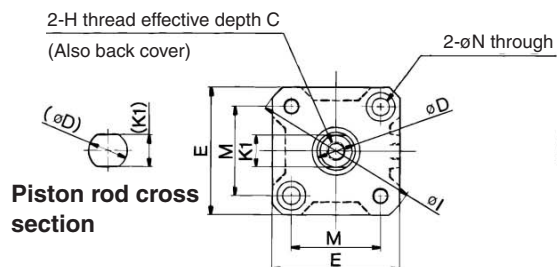
Dimensions: ø12 to ø32/Without Auto Switch

Basic style (Through-hole): CQ2KWB

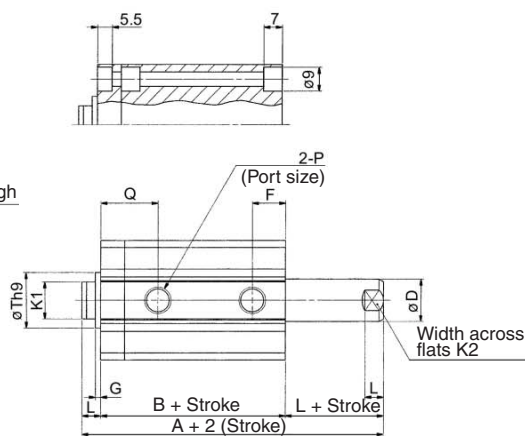
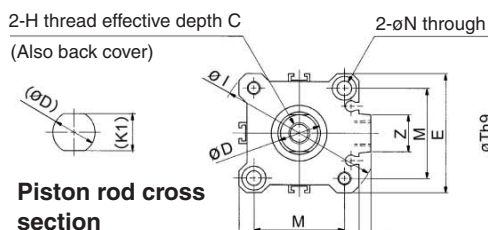
ø12, ø16

ø20, ø25

ø12 to ø25

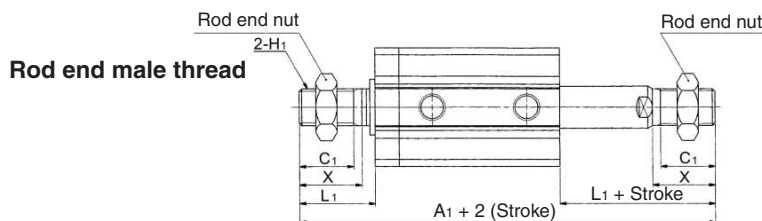


ø32



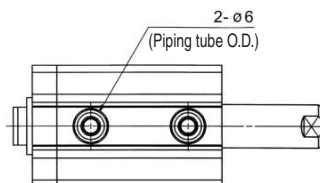
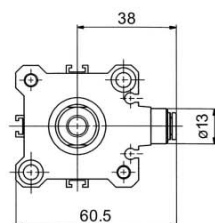
Rod End Male Thread

Bore size (mm)	Stroke range (mm)	A ₁	C ₁	H ₁
12	5 to 30	58.2	9	M5 x 0.8
16	5 to 30	62	10	M6 x 1.0
20	5 to 50	71	12	M8 x 1.25
25	5 to 50	82	15	M10 x 1.25
32	5 to 50	96.5	20.5	M14 x 1.5
	75, 100	106.5		



Bore size (mm)	L ₁	X
12	14	10.5
16	15.5	12
20	18.5	14
25	22.5	17.5
32	28.5	23.5

Built-in One-touch fittings: ø32



* In the case of w/ One-touch fitting, the 5 mm stroke with 32 bore is the same external dimensions as 10 mm stroke.

Basic Style

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	G	H	I	J	K1	K2	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 _{-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 _{-0.052}	—	—
20	5 to 50	43	34	7	10	36	9.5	2	M5 x 0.8	47	—	8	8	4.5	25.5	5.5	M5 x 0.8	17.5	13 ⁰ _{-0.043}	—	—
25	5 to 50	47	37	12	12	40	11	2	M6 x 1.0	52	—	10	10	5	28	5.5	M5 x 0.8	19	15 ⁰ _{-0.043}	—	—
32	5	53.5	39.5	13	16	45	12.5	2	M8 x 1.25	60	4.5	14	14	7	34	5.5	M5 x 0.8	21.5	21 ⁰ _{-0.052}	49.5	14
	10 to 50	53.5	39.5														RC 1/8				
	75, 100	63.5	49.5														RC 1/8				



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

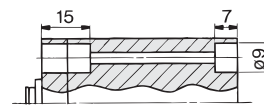
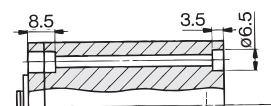
Compact Cylinder with Auto Switch: Non-rotating Rod Type Double Acting, Double Rod Series **CDQ2KW**

Dimensions: $\phi 12$ to $\phi 32$ /With Auto Switch

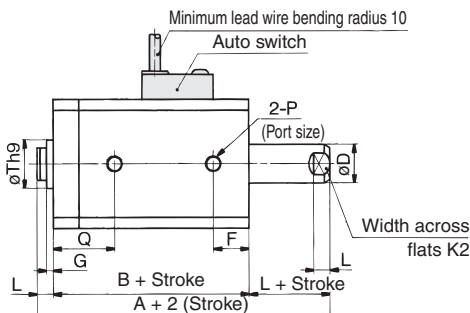
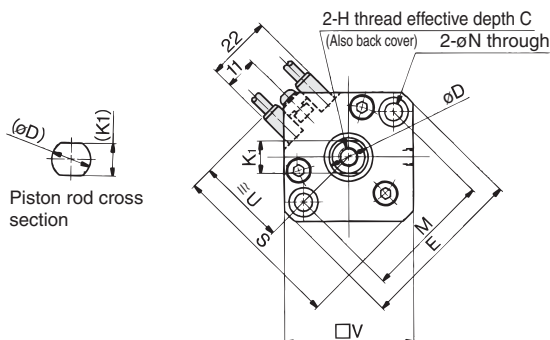
Basic style (Through-hole): CDQ2KWB

$\phi 12, \phi 16$

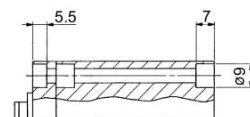
$\phi 20, \phi 25$



$\phi 12$ to $\phi 25$

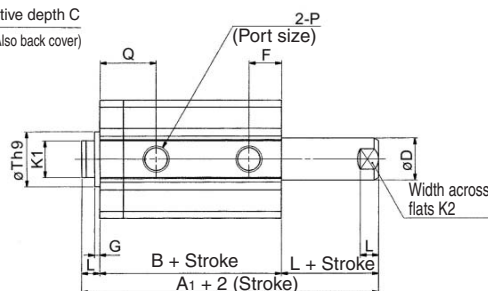
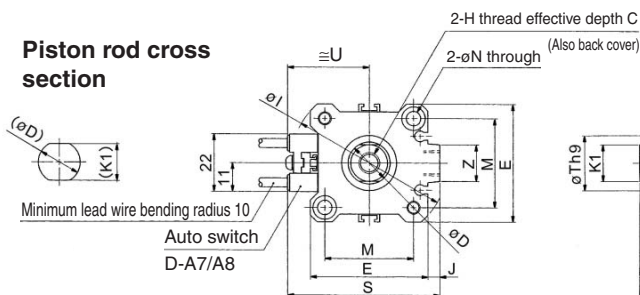


$\phi 32$

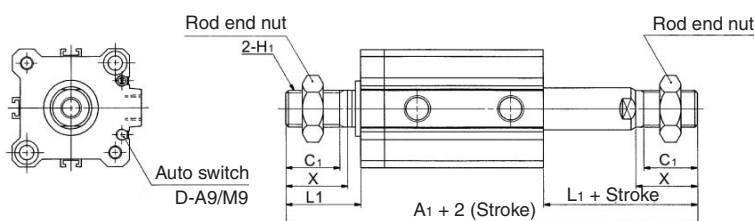


$\phi 32$

Piston rod cross section



Rod end male thread



Rod End Male Thread

Bore size (mm)	A ₁	C ₁	H ₁
12	65.4	9	M5 x 0.8
16	72	10	M6 x 1.0
20	83	12	M8 x 1.25
25	92	15	M10 x 1.25
32	106.5	20.5	M14 x 1.5

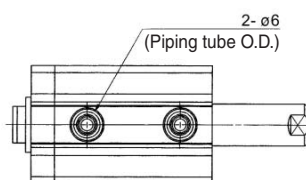
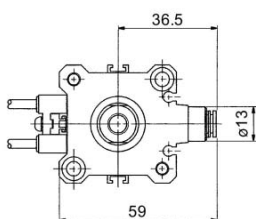
Bore size (mm)	L ₁	X
12	14	10.5
16	15.5	12
20	18.5	14
25	22.5	17.5
32	28.5	23.5

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



Auto switch shown above is D-A73 type and D-A80 type.

For the auto switch mounting position and its mounting height, refer to page 7-6-83.



Basic Style

Bore size (mm)	Stroke range (mm)	A	B	C	D	E	F	G	H	I	J	K1	K2	L	M	N	P	Q	S	Th9	U	V	Z
12	5 to 30	44.4	37.4	6	6	32	10.5	1.5	M3 x 0.5	—	—	5.2	5	3.5	22	3.5	M5 x 0.8	15.5	35.5	15 ⁰ _{-0.043}	19.5	25	—
16	5 to 30	48	41	8	8	38	10	1.5	M4 x 0.7	—	—	6	6	3.5	28	3.5	M5 x 0.8	15	41.5	20 ⁰ _{-0.052}	22.5	29	—
20	5 to 50	55	46	7	10	47	10.5	2	M5 x 0.8	—	—	8	8	4.5	36	5.5	M5 x 0.8	18.5	48	13 ⁰ _{-0.043}	24.5	36	—
25	5 to 50	57	47	12	12	52	11	2	M6 x 1.0	—	—	10	10	5	40	5.5	M5 x 0.8	19	53.5	15 ⁰ _{-0.043}	27.5	40	—
32	5 to 50, 75, 100	63.5	49.5	13	16	45	12.5	2	M8 x 1.25	60	4.5	14	14	7	34	5.5	Rc 1/8	21.5	58.5	21 ⁰ _{-0.052}	31.5	—	14

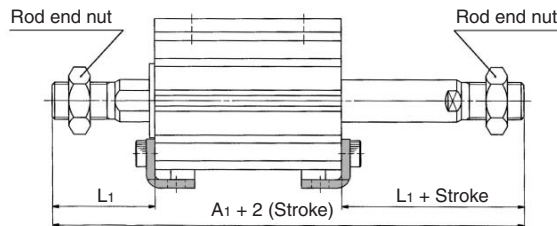
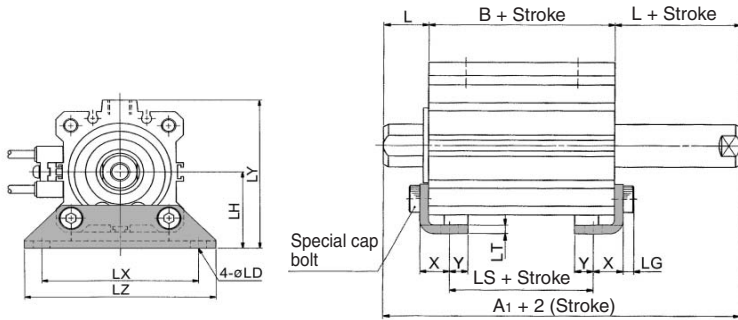


* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

Compact Cylinder: Non-rotating Rod Type Double Acting, Double Rod Series **CQ2KW/CDQ2KW**

Dimensions: ø40 to ø63

Foot style: CQ2KWL/CDQ2KWL



Rod End Male Thread

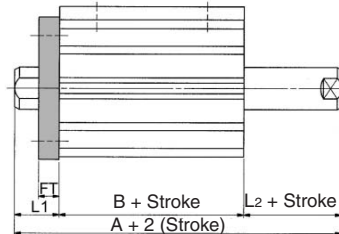
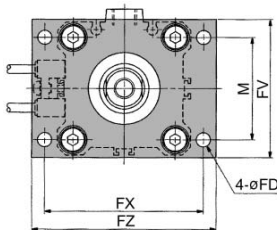
Bore size (mm)	Without auto switch	With auto switch	L ₁
40	117	127	38.5
50	127.5	137.5	43.5
63	129	139	43.5

Foot Style

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	84	50	34	17	6.6	4	33	3.2	64	68	78	11.2	7
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	86.5	50.5	27.5	18	9	5	39	3.2	79	78	95	14.7	8
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	88	52	26	18	11	5	46	3.2	95	91.5	113	16.2	8

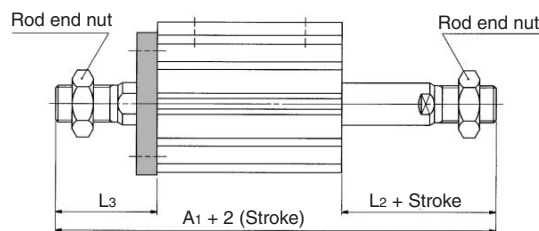
Foot bracket material: Carbon steel

Flange style: CQ2KWF/CDQ2KWL



Rod End Male Thread

Bore size (mm)	Without auto switch	With auto switch	L ₃	L ₄
40	107	117	38.5	28.5
50	117.5	127.5	43.5	33.5
63	119	129	43.5	33.5



Auto switch shown above is D-A73 type and D-A80 type.
For the auto switch mounting position and its mounting height, refer to page 7-6-83.

Flange Style

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	74	50	5.5	8	54	62	72	17	7	40
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	76.5	50.5	6.6	9	67	76	89	18	8	50
63	10 to 50	68	42	78	52	9	9	80	92	108	18	8	60
	75,100	78	52	78	52	9	9	80	92	108	18	8	60



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

Flange bracket material: Carbon steel