



# Compact Cylinder: Standard/ Double Acting Single Rod Non-Rotating NCQ2K / CQ2K Series

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

## How To Order

**W/ Auto Switch** NCQ2K B 20 F 30 D M

**W/ Auto Switch** NCDQ2K B 20 F 30 D M A73 S

**PT, metric**  
**NPT, inch**

**W/ Auto Switch (built-in magnet)**

**Non-Rotating Rod**

**Mounting**

<b>B</b>	Through hole	ø12~ø63
<b>A</b>	Both ends tapped	
<b>L</b>	Foot	
<b>F</b>	Rod side flange	ø40, ø50 ø63
<b>G</b>	Head side flange	
<b>D</b>	Double Clevis	

**Bore Size**

<b>12</b>	12mm (1/2" Nom.)	<b>32</b>	32mm (1-1/4" Nom.)
<b>16</b>	16mm (5/8" Nom.)	<b>40</b>	40mm (1-1/2" Nom.)
<b>20</b>	20mm (3/4" Nom.)	<b>50</b>	50mm (2" Nom.)
<b>25</b>	25mm (1" Nom.)	<b>63</b>	63mm (2-1/2" Nom.)

Note 1) In case of ø12 w/ switch, be sure to indicate w/ cushion (C) to body option.  
Example: CDQ2KB12-30DC

**Piping**

-	Threaded ports
<b>F</b>	See note 2) Built-in one-touch fitting

Note 2) Available built-in one touch fitting bore size: ø32~ø63.  
Not applicable for Air-Hydro, CQ2.

**Cylinder Stroke (mm)**  
Please refer to p.61 for standard strokes

**Action**

<b>D</b>	Double
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Preferred Option Program

**Auto Switch**

-	2 pcs.
<b>S</b>	1 pcs.
<b>n</b>	n pcs.

**Auto Switch Capability**

-	Without Auto Switch
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**Auto Switch Specifications**

Type	Autoswitch		Indicator light	Wire (Output type)	Load Voltage		
	Perpendicular entry	In-line entry			DC	AC	
Reed switch	—	A76H	Yes	3 Wire	—	5V	
	A72	A72H			—	200V	
	A73	A73H		No	2 Wire	12V	100V
	A80	A80H				5V, 12V	100V
	A73C	—	No	24V	12V	—	
	A80C	—	No		5V, 12V	24V	
	A79W	—	Yes		—	—	
	Solid State Switch	F7NV	F79	Yes	3 Wire NPN	24V	5V, 12V
F7PV		F7P	3 Wire PNP				
F7BV		J79	2 Wire		12V		
J79C		—					
F7NWV		F79W	3 Wire NPN		24V	5V, 12V	
—		F7PW	3 Wire PNP				
F7BWV		J79W	2 Wire		12V		
—		F7BAL					
—		F7NTL	3 Wire NPN		24V	5V, 12V	
—		F79F					
—		F7LF	4 Wire NPN		—	—	

• Load length 0.5m.....Std. Connector A80C 5m.....Z Connector A80CZ  
3m.....L A80CL No lead.....N A80CN

**Body Option**

-	Std. (Female thread)
<b>C</b>	W/ rubber cushion (only ø12 w/ switch)
<b>M</b>	Male thread
<b>F</b>	Head end boss

\* Body option combination is available as FM.

**Mounting Kits**

Bore Size (mm)	Note 4) Foot	Flange	Note 6) Double clevis
<b>40</b>	(N)CQ-L040	(N)CQ-F040	(N)CQ-D040
<b>50</b>	(N)CQ-L050	(N)CQ-F050	(N)CQ-D050
<b>63</b>	(N)CQ-L063	(N)CQ-F063	(N)CQ-D063

Note 4) If foot bracket is required for a cylinder, order a pair  
Note 5) Each bracket comes with the following accessories:  
Foot / Flange; Body mounting bolt  
Double clevis; Clevis pin, Axis C style snap ring,  
Body mounting bolt  
Note 6) The double-clevis is packaged with clevis pin and snap ring.



Standard Non-Rotating /  
Double Acting Single Rod

# (N)CQ2K Series

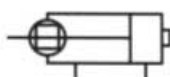
## Model



Double acting/  
Single rod non-rotating



Head end boss



## Precautions

- ❶ Flush away dust and cutting particles thoroughly in the porting tube to prevent the contamination of cylinder inside.
- ❷ • The Piston rod load should always be aligned with the cylinder axis.
  - Cylinder installation requires accurate alignment.
  - When using cylinder as a stopper, be sure to use a guide to avoid a direct impact from piston rod size loads.
- ❸ Prevent damage to the piston rod. A damaged piston rod will lead to damage of the rod seal and result in leakage.
- ❹ Use C type snap ring pliers when removing an orifice snap ring during disassembly.
- ❺ When using a non-rotating type cylinder,
  - Avoid an impact caused by torque from piston rod rotation or the rotation guide could be deformed and fail to maintain rotation accuracy.

The allowable range of rotation torque is shown in the table below as a guideline.

Allowable Rotation Torque	12	16	20	25	32	40	50	63
kgf·cm or less	0.4	1.5	2.0	2.5	4.5	4.5	4.5	4.5

- The orientation of piston rod load must be parallel to a cylinder axial.

When piping

- When fixing a workpiece to the piston rod end, be sure the piston rod is fully retracted.

Bore Size		12	16	20	25	32	40	50	63	
Air-Pressure Type	Mounting	Through hole (std)	●	●	●	●	●	●	●	
		Both ends tapped	-	-	-	-	-	●	●	●
	Built-In Magnet		●	●	●	●	●	●	●	
	Piping Method	Threaded PT or NPT	M5x 0.8	M5x 0.8	M5x 0.8	M5x 0.8	Note 1 M5x 0.8 1/8	1/8	1/4	1/4
		Built-In One Touch Fitting	-	-	-	-	Note 2 6/4	6/4	8/6	8/6
	Rod End Male Thread		●	●	●	●	●	●	●	●
W/Head End Boss		●	●	●	●	●	●	●	●	

Note 1) In cases without Auto Switch, only 5 stroke uses M5x0.8

Note 2) In case of built-in fitting, the external tube dimension for ø32, 5 stroke and 10 stroke are the same

## Standard Specifications

Model	Air Pressure (Non-Lube)
Media	Air
Proof Pressure	217psi {15.3kgf/cm <sup>2</sup> }
Max. Operating Pressure	145psi {10.2kgf/cm <sup>2</sup> }
Ambient and Media temp.	15~160°F{-10°C~+70°C} (At freezing temp. air must be dry)
Rubber cushion	Note 3 - None
Rod end thread	Female Thread (std.)
Rod end thread tolerance	JIS Class II
Stroke Length tolerance	+1.0 0 mm
Mounting	Through hole (std.)
Piston Speed	2~20in/s (50~500mm/s)

Note 3) ø12 w/ switches must have rubber cushion

## Min. Operating Pressure

Bore size	12	16	20	25	32	40	50	63
Air pressure type (non-lube)	10.15	10.15	7.25	7.25	7.25	7.25	7.25	7.25

## Non-Rotating Tolerance

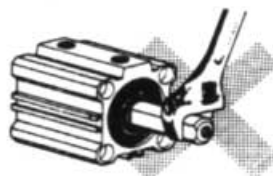
Bore size	12	16	20	25	32	40	50	63
Accuracy	±2°	±1°			±0.8°			

## Standard Stroke

Air pressure type (non-lube)		mm
Bore size	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 80,100	10,15,20,25,30,35,40,45,50,75,100	

• Available intermediate stroke. Intermediate strokes, in 1mm increments are available by installing a spacer into the STD. stroke cylinder. Contact an SMC representative for ø40-ø100 intermediate stroke cylinder with bumper. Example] (N)CQ2KB50-57D can be made by installing a 18 mm (w)spacer into the std. cylinder (N)CQ2KB50-75D. 5mm Incremental Stroke (spacers) done as standard.

For theoretical output force see page 4.





# Compact Cylinder: Standard / Double Acting Single Rod Non-Rotating

## Weight / Double Acting: Single Rod Non-Rotating lbs.

Bore size (mm)	Cylinder Stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	0.13	0.15	0.16	0.18	0.19	0.21	-	-	-	-	-	-
16	0.13	0.15	0.17	0.19	0.21	0.23	-	-	-	-	-	-
20	0.23	0.26	0.29	0.32	0.35	0.38	0.41	0.44	0.47	0.50	-	-
25	0.30	0.34	0.37	0.40	0.43	0.47	0.50	0.53	0.57	0.60	-	-
32	0.45	0.49	0.54	0.58	0.62	0.67	0.71	0.76	0.80	0.84	0.89	0.93
40	0.47	0.52	0.58	0.63	0.68	0.73	0.78	0.83	0.88	0.93	0.98	1.03
50	-	0.84	0.92	1.00	1.08	1.17	1.25	1.33	1.41	1.49	1.57	1.66
60	-	1.21	1.31	1.40	1.49	1.58	1.68	1.77	1.86	1.95	2.05	2.14

### How to obtain the total weight (lbs)

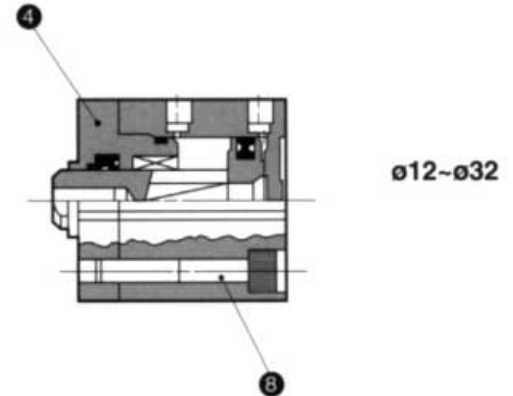
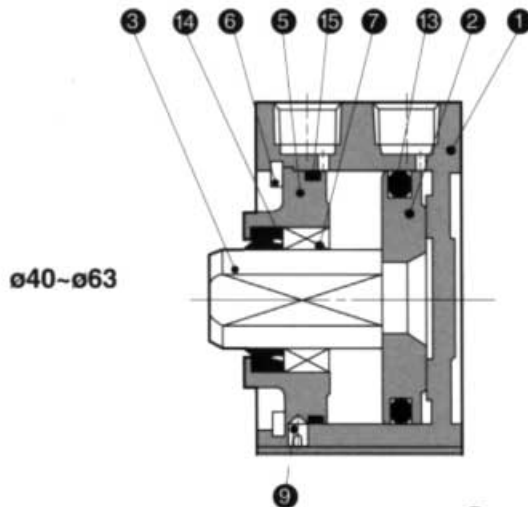
(N)CQ2KD40-20DM

<b>Std wt.:</b>	(N)CQ2KB40-20D	0.63
<b>Wt. adder:</b>	Both ends tapped	0.013
	Male rod end	0.097
	Double rear clevis	0.432
	<b>Total</b>	<b>1.172</b>

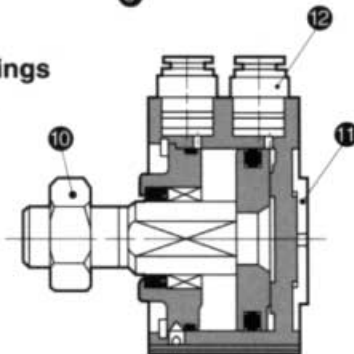
## Weight Adder

Bore size	12	16	20	25	32	40	50	63
Both ends tapped	-	-	-	-	-	0.013	0.013	0.042
Rod end M thread	Thread	0.003	0.007	0.013	0.026	0.057	0.060	0.117
	Nut	0.002	0.004	0.009	0.018	0.037	0.037	0.071
Head end boss	0.002	0.003	0.004	0.007	0.011	0.015	0.029	0.055
W/ one touch fitting	-	-	-	-	0.026	0.026	0.046	0.046
Foot mounting	-	-	-	-	-	0.340	0.534	0.712
Rod side flange	-	-	-	-	-	0.470	0.820	1.230
Head side flange	-	-	-	-	-	0.437	0.767	1.177
Double rear clevis	-	-	-	-	-	0.432	0.867	1.222

## Construction / Parts List



### One Touch Fittings Male Rod End



## Parts List

No.	Description	Material	
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Chromate
3	Piston rod	Stainless steel	Bore ø12-ø25
		Carbon steel	Bore ø32-ø63, hard chrome plated
4	Collar	Brass	Bore ø12 Black anodized
		Aluminum alloy	Bore ø16-ø32, Black paint
5	Collar	Aluminum alloy	Bore ø40-ø63, Black anodized
6	Retaining ring	Carbon tool steel	Phosphate coating
7	Bushing	Sintered alloy	Bore ø16-ø63, oil impregnated
8	Bolt	Steel alloy	Bore ø12-ø32, Nickel plated
9	Set screw	Steel alloy	Bore ø40-ø63, black coating
10	Rod end nut	Carbon steel	Nickel plated
11	End boss	Aluminum alloy	Hard anodized
12	One touch fittings	-	Bore ø32-ø63

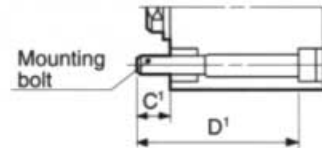
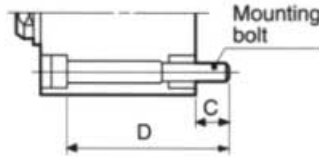
## Seals List

No.	Description	Material	Parts No.							
			ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
13	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B
14	Rod seal	NBR	SS-6x5.2Q	SS-8x6K2Q	SS-10x8Q	SS-12	SS-16S	SS-16S	SS-20S	SS-20S
15	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60

Note: Seal kit part numbers refer to p8.

## Mounting Bolt For (N)CQ2K

Special long mounting bolt for through hole mounting is available as an option.  
 How to Order:  
 Specify the required bolts



Example)

Bolt M3x35L  $\phi 12-\phi 32$  2pc.  
 $\phi 40-\phi 63$  4pc.

Thread	Pitch
M3	0.5
M5	0.8
M6	1.0
M8	1.25
M10	1.5

Model	C	D	Mounting bolt	C'	D'	Mounting bolt
(N)CQ2KB12-5D		30	M3x30L		30	M3x30L
-10D		35	x35L		35	x35L
-15D	6.5	40	x40L	6.5	40	x40L
-20D		45	x45L		45	x45L
-25D		50	x50L		50	x50L
-30D		55	x55L		55	x55L
(N)CQ2KB16-5D		30	x30L		30	x30L
-10D	5	35	x35L	5	35	x35L
-15D		40	x40L		40	x40L
-20D		45	x45L		45	x45L
-25D		50	x50L		50	x50L
-30D		55	x55L		55	x55L
(N)CQ2KB20-5D		35	M5x35L		35	M5x35L
-10D	8	40	x40L	9.5	40	x40L
-15D		45	x45L		45	x45L
-20D		50	x50L		50	x50L
-25D		55	x55L		55	x55L
-30D		60	x60L		60	x60L
-35D		65	x65L		65	x65L
-40D		70	x70L		70	x70L
-45D		75	x75L		75	x75L
-50D	80	x80L	80	x80L		
(N)CQ2KB25-5D		40	M5x40L		35	M5x35L
-10D	10	45	x45L	6.5	40	x40L
-15D		50	x50L		45	x45L
-20D		55	x55L		50	x50L
-25D		60	x60L		55	x55L
-30D		65	x65L		60	x60L
-35D		70	x70L		65	x65L
-40D		75	x75L		70	x70L
-45D		80	x80L		75	x75L
-50D	85	x85L	80	x80L		
(N)CQ2KB32-5D		40	M5x40L		40	M5x40L
-10D	8.5	45	x45L	10	45	x45L
-15D		50	x50L		50	x50L
-20D		55	x55L		55	x55L
-25D		60	x60L		60	x60L
-30D		65	x65L		65	x65L
-35D		70	x70L		70	x70L
-40D		75	x75L		75	x75L
-45D		80	x80L		80	x80L
-50D		85	x85L		85	x85L
-75D		120	x120L		120	x120L
-100D	145	x145L	145	x145L		

Model	C	D	Mounting bolt	C'	D'	Mounting bolt
(N)CQ2KB40-5D		35	M5x35L		35	M5x35L
-10D	7.5	40	x40L	7.5	40	x40L
-15D		45	x45L		45	x45L
-20D		50	x50L		50	x50L
-25D		55	x55L		55	x55L
-30D		60	x60L		60	x60L
-35D		65	x65L		65	x65L
-40D		70	x70L		70	x70L
-45D		75	x75L		75	x75L
-50D		80	x80L		80	x80L
-75D		115	x115L		115	x115L
-100D		140	x140L		140	x140L
(N)CQ2KB50-10D		45	M6x45L		45	M6x45L
-15D	12.5	50	x50L	12.5	50	x50L
-20D		55	x55L		55	x55L
-25D		60	x60L		60	x60L
-30D		65	x65L		65	x65L
-35D		70	x70L		70	x70L
-40D		75	x75L		75	x75L
-45D		80	x80L		80	x80L
-50D		85	x85L		85	x85L
-75D	120	x125L	120	x120L		
-100D	145	x140L	145	x145L		
(N)CQ2KB63-10D		50	M8x50L		50	M8x50L
-15D	14.5	55	x55L	14.5	55	x55L
-20D		60	x60L		60	x60L
-25D		65	x65L		65	x65L
-30D		70	x70L		70	x70L
-35D		75	x75L		75	x75L
-40D		80	x80L		80	x80L
-45D		85	x85L		85	x85L
-50D		90	x90L		90	x90L
-75D		125	x125L		125	x125L
-100D		150	x150L		150	x150L

## Copper Free Series Air Cylinder

20 —CQ2KB Bore Size Stroke D (M)

• Copper Free Series

•  $\phi 16, \phi 20, \phi 25, \phi 32, \phi 40, \phi 50, \phi 63$

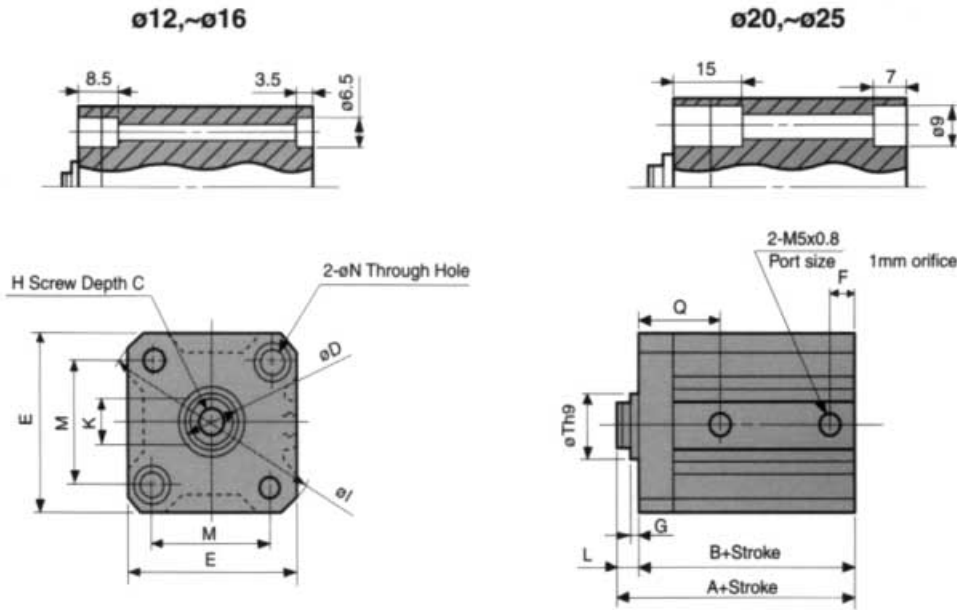
To protect against adverse effects on cathode ray tubes due to copper ion and fluorine contained in resin, the copper free series uses electroless nickel plated material, no copper is exposed allowing the generation of copper ions.

## Standard Specifications

Model	20- Non-Rotating
Bore Size	$\phi 16, \phi 20, \phi 25, \phi 32, \phi 40, \phi 50, \phi 63$
Proof Pressure	217psi (15.3kgf/cm <sup>2</sup> )
Max. Operating Pressure	145psi (10.2kgf/cm <sup>2</sup> )
Rubber cushion	None
Porting	Threaded
Piston Speed	2~20in/s (50~500mm/s)
Mounting	Through hole
Auto Switch	Capable

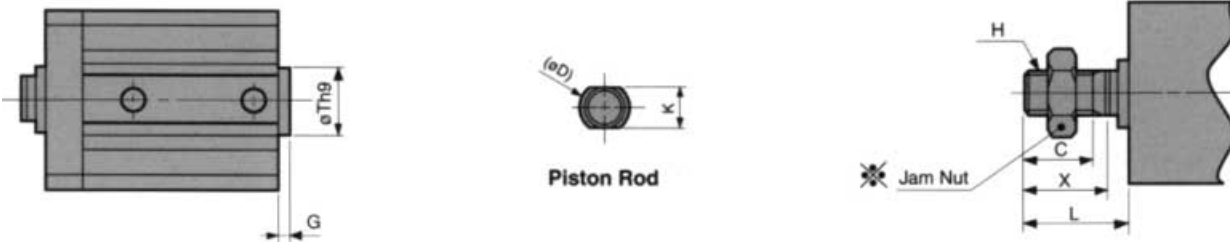
Bore Size  $\phi 12 \sim \phi 25$

Through Hole / (N)CQ2KB



Standard

Bore size	Stroke	A	B	CQ2 C	NCQ2 C	D	E	F	G	CQ2 H	NCQ2 inch H	I	L	M	N	Q	Th9
12	5~30	25.5	22	6	5.4	6	25	5	1.5	M3x0.5	#8-32	32	3.5	15.5	3.5	12.5	15 $\phi_{0.043}$
16	5~30	27	23.5	8	5.4	8	29	5.5	1.5	M4x0.7	#8-32	38	3.5	20	3.5	13	20 $\phi_{0.052}$
20	5~50	32	27.5	7	7	10	36	5.5	2	M5x0.8	#10-32	47	4.5	25.5	5.5	17	13 $\phi_{0.043}$
25	5~50	35.5	30.5	12	10	12	40	5.5	2	M6x1.0	1/4 - 28 UNF	52	5	28	5.5	19	15 $\phi_{0.043}$



End Boss (CQ2) mm

Bore size	G	Th9
12	1.5	15 $\phi_{0.043}$
16	1.5	20 $\phi_{0.052}$
20	2	13 $\phi_{0.043}$
25	2	15 $\phi_{0.043}$

NCQ2 Male Rod End mm

Bore size	X	H inch	L	K
12	8	#8-32UNC	11.5	5.2
16	8	#8-32UNC	11.5	6
20	8	#10-32UNF	12.5	8
25	9.5	1/4-28UNF	16.5	10

CQ2 Male Rod End mm

Bore size	C	X	H	L	K
12	9	10.5	M5x0.8	14	5.2
16	10	12	M6x1.0	15.5	6
20	12	14	M8x1.25	18.5	8
25	15	17.5	M10x1.25	22.5	10

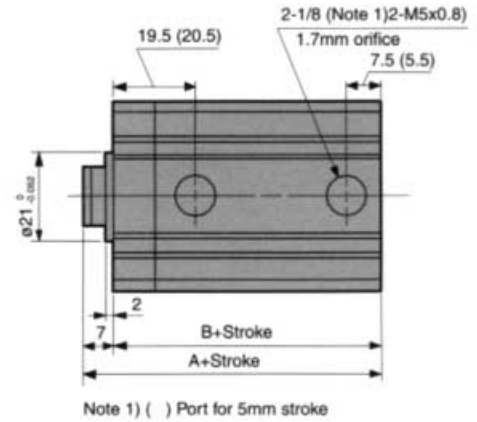
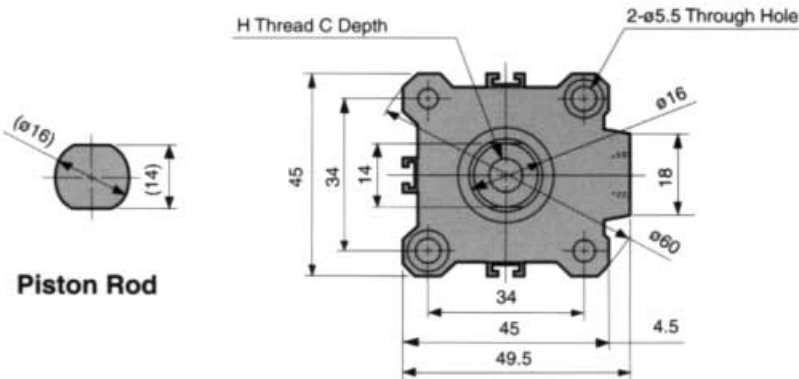
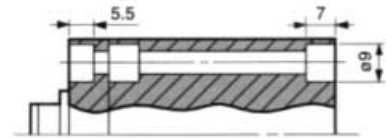
"C" dim. not applicable

✳ Rod end nut and accessories detail: see p. 6.



Bore Size  $\phi 32$

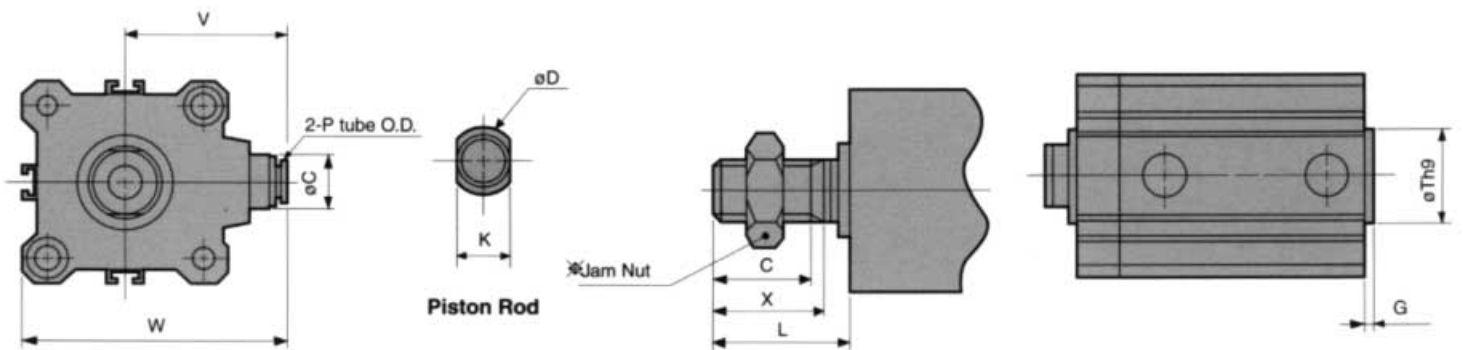
Through Hole / (N)CQ2KB



Piston Rod

Standard

Bore size	Stroke	A	B	mm			
				CQ2 H	NCQ2 Inch H	CQ2 C	NCQ2 C
32	5-50	39	32	M8x1.25	5/16-24	13	13.3
	75, 100	49	42				



One Touch Fittings mm

Bore size	C	P	V	W
32	13	6	38	60.5

NCQ2 Male Rod End mm

Bore size	X	H Inch	L	K
32	12.7	5/16-24UNF	17.7	14

CQ2 Male Rod End mm

Bore size	C	X	H	L	K
32	20.5	23.5	M14x1.5	28.5	14

End Boss (CQ2 only) mm

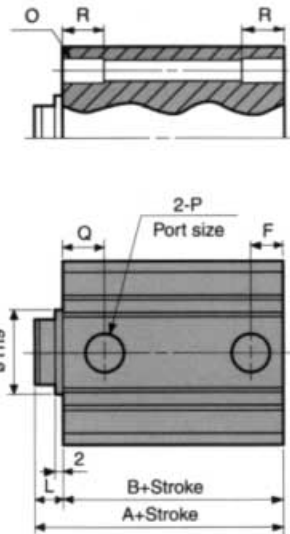
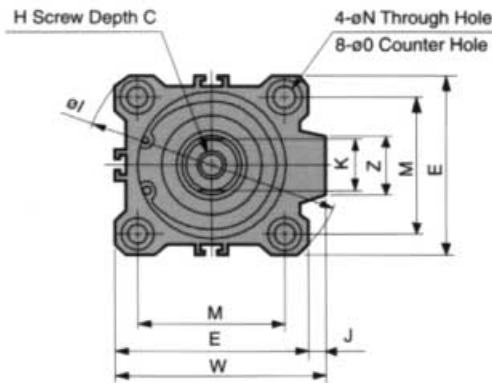
Bore size	G	Th9
32	2	21 $\pm 0.052$

\*"C" dim. not applicable

\*Rod end nut and accessories are detailed on p. 6.

Bore Size  $\phi 40 \sim \phi 63$

Through Hole / (N)CQ2KB

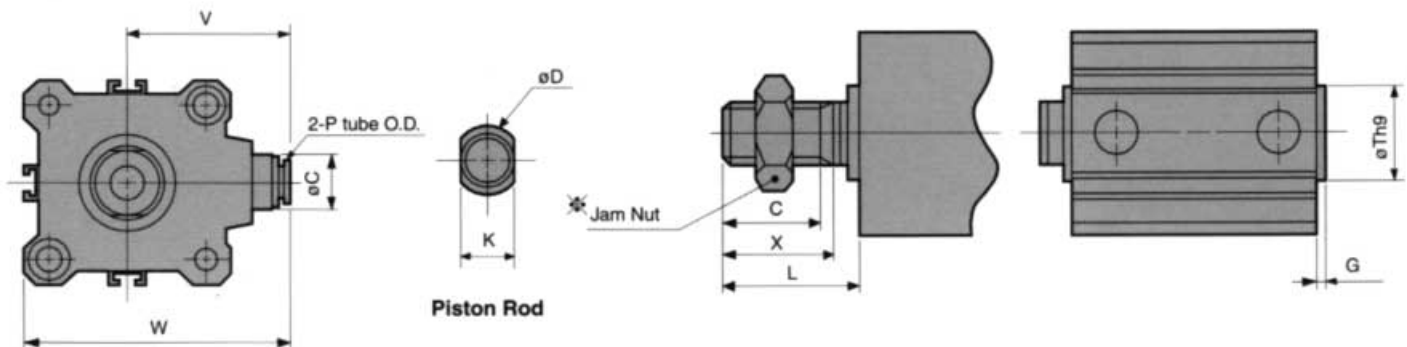


(N)CQ2KA  
Both Ends Tapped

Bore size	CQ2 O	NCQ2 Inch O	R
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18

Standard

Bore size	Stroke (mm)	A	B	CQ2 C	NCQ2 C	D	E	F	CQ2 H	NCQ2 Inch H	I	J	L	M	N	O	P	Orifice	Q	Th9	W	Z
40	5-50	36.5	29.5	13	18.3	16	52	8	M8x1.25	3/8-24UNF	69	5	7	40	5.5	9 depth 7	1/8	2	11	28 <sup>0</sup> <sub>-0.052</sub>	57	14
	75, 100	46.5	39.5																			
50	5-50	38.5	30.5	15	17.6	20	64	10.5	M10x1.5	1/2-20UNF	86	7	8	50	6.6	11 depth 8	1/4	2.2	10.5	35 <sup>0</sup> <sub>-0.062</sub>	71	19
	75, 100	48.5	40.5																			
63	10-50	44	36	15	17.6	20	77	10.5	M10x1.5	1/2-20UNF	103	7	8	60	9	14 depth 10.5	1/4	3	15	35 <sup>0</sup> <sub>-0.062</sub>	84	19
	75, 100	54	46																			



One Touch Fittings

Bore size	C	P	V	W
40	13	6	42	68
50	16	8	50	82
63	16	8	56.5	95

CQ2 only

NCQ2 Male Rod End

Bore size	X	H	L	K
40	16	3/8-24UNF	21	14
50	19.5	1/2-20UNF	23.5	18
63	19.5	1/2-20UNF	23.5	18

"C" dim. not applicable

\* Rod end nut and accessories are detailed on p. 6.

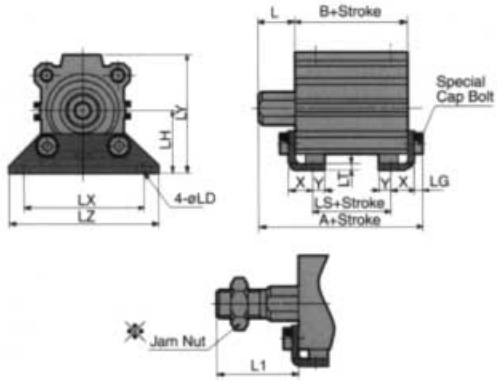
CQ2 Male Rod End

Bore size	C	X	H	L	K
40	20.5	23.5	M14x1.5	28.5	14
50	26	28.5	M18x1.5	33.5	18
63	26	28.5	M18x1.5	33.5	18

End Boss (CQ2)

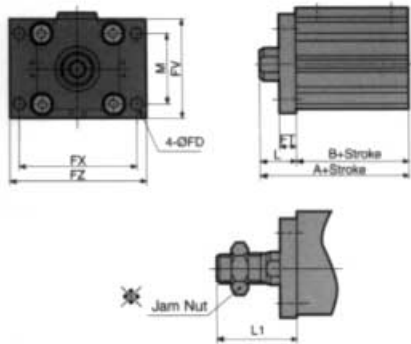
Bore size	G	Th9
40	2	28 <sup>0</sup> <sub>-0.052</sub>
50	2	35 <sup>0</sup> <sub>-0.062</sub>
63	2	35 <sup>0</sup> <sub>-0.062</sub>

# Compact Cylinder: Standard / Double Acting Single Rod Non-Rotating



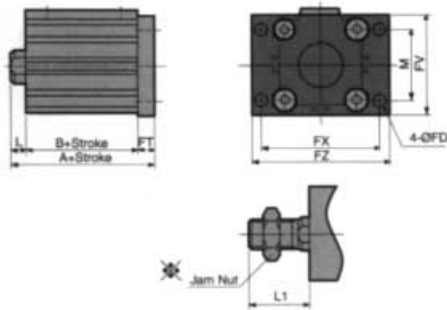
## Foot / (N)CQ2KL

Bore size (mm)	Stroke range (mm)	A	B	L	CQ2		LD	LG	LH	LS	LT	LX	LY	LZ	X	Y	mm	
					L1	NCQ2 L1												
40	5-50	53.7	29.5	17	38.5	31	6.6	4	33	13.5	3.2	64	64	78	11.2	7		
	75, 100	63.7	39.5							23.5								
50	10-50	56.7	30.5	18	43.5	33.5	9	5	39	7.5	3.2	79	78	95	14.7	8		
	75, 100	66.7	40.5							17.5								
63	10-50	62.2	36	18	43.5	33.5	11	5	46	10	3.2	95	91.5	113	16.2	9		
	75, 100	72.2	46							20								



## Rod Flange / (N)CQ2KF

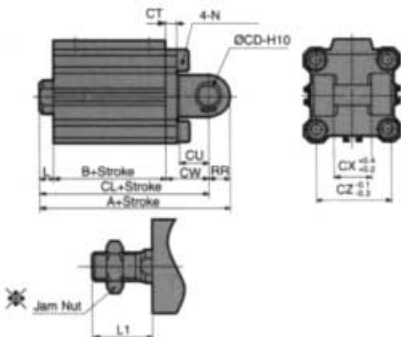
Bore size (mm)	Stroke range (mm)	A	B	FD	FT	FV	FX	FZ	L	CQ2		M	mm	
										L1	NCQ2 L1			
40	5-50	46.5	29.5	5.5	8	54	62	72	17	38.5	31	40		
	75, 100	56.5	39.5											
50	10-50	48.5	30.5	6.6	9	67	76	89	18	43.5	33.5	50		
	75, 100	58.5	40.5											
63	10-50	54	36	9	9	80	92	108	18	43.5	33.5	60		
	75, 100	64	46											



## Head Flange / (N)CQ2KG<sub>mm</sub>

Bore size (mm)	Stroke range (mm)	A	L	CQ2		mm	
				L1	NCQ2 L1		
40	5-50	44.5	7	28.5	21		
	75, 100	54.5					
50	10-50	47.5	8	33.5	23.5		
	75, 100	57.5					
63	10-50	53	8	33.5	23.5		
	75, 100	63					

✳ Dimensions for the head flange cylinder are the same as rod flange except A, L, L1.



## Double Clevis / (N)CQ2KD

Bore size (mm)	Stroke range (mm)	A	B	CQ2 CD	NCQ2 Inch CD	CL	CT	CU	CW	CX	CZ	L	CQ2		NCQ2		RR	mm	
													L1	NCQ2 L1	N	Inch N			
40	5-50	68.5	29.5	10	3/8	58.5	6	14	22	18	36	7	28.5	21	M6x1.0	1/4-20	10		
	75, 100	78.5	39.5			68.5													
50	10-50	80.5	30.5	14	1/2	66.5	7	20	28	22	44	8	33.5	23.5	M8x1.25	5/16-18	14		
	75, 100	90.5	40.5			76.5													
63	10-50	88	36	14	1/2	74	8	20	30	22	44	8	33.5	23.5	M10x1.5	7/16-14	14		
	75, 100	98	46			84													

✳ Rod end nut and accessories detail: see p. 6.  
 ✳✳ Clevis pin and snap rings are included in the package.





# Standard Non-Rotating / Double Acting Single Rod w/ Auto Switch

## (N)CDQ2K Series



### Standard Specifications

Model	Air pressure type (Non-lube type)
Media	Air
Ambient and fluid temp.	15~140°F(-10°C~+60°C)(At freezing temp. Air must be dry.)

The rest of the specifications are the same as that of standard (See p. 39).

### Auto Switch Mounting Available / Minimum Stroke

# of Auto Switch Mounting	D-F7□V D-J79C	D-A7 D-A8 D-A73C D-A80C	D-F7□WV	D-A7□H D-A80H D-F7□ D-J79	D-A79W	D-F7□W D-J79W D-F7BAL D-F79F	D-F7LF
1pcs	5mm	5mm	10mm	15mm	15mm	20mm	25mm
2pcs	5mm	10mm	15mm	15mm	20mm	20mm	25mm

Note) See pg.13 for Auto Switch Specifications.

### How To Order

Auto Switch How To Order: See p. 60

### Weight Chart

Bore size (mm)	Cylinder Stroke (mm)											lbs	
	5	10	15	20	25	30	35	40	45	50	75		100
12	0.17	0.18	0.20	0.21	0.22	0.24	-	-	-	-	-	-	-
16	0.19	0.21	0.22	0.24	0.26	0.28	-	-	-	-	-	-	-
20	0.30	0.34	0.37	0.40	0.43	0.46	0.49	0.52	0.55	0.58	-	-	-
25	0.39	0.43	0.46	0.50	0.53	0.57	0.60	0.64	0.67	0.71	-	-	-
32	0.52	0.56	0.61	0.65	0.70	0.74	0.78	0.83	0.87	0.92	1.14	1.36	-
40	0.56	0.61	0.66	0.71	0.76	0.81	0.86	0.91	0.96	1.01	1.27	1.52	-
50	-	1.02	1.10	1.19	1.27	1.35	1.43	1.51	1.59	1.68	2.08	2.49	-
63	-	1.44	1.53	1.63	1.72	1.81	1.91	2.00	2.09	2.18	2.65	3.11	-

### Weight Adder

Bore size	12	16	20	25	32	40	50	63	lbs.
Both ends tapped	-	-	-	-	-	0.013	0.015	0.037	-
Rod end M thread	Thread	0.003	0.007	0.013	0.026	0.057	0.060	0.117	0.117
	Nut	0.002	0.004	0.009	0.018	0.037	0.037	0.071	0.071
Head end boss	0.002	0.003	0.004	0.007	0.011	0.015	0.029	0.055	-
W/ one touch fitting	-	-	-	-	0.011	0.026	0.046	0.046	-
Foot mounting	-	-	-	-	-	0.340	0.534	0.712	-
Rod side flange	-	-	-	-	-	0.470	0.820	1.230	-
Head side flange	-	-	-	-	-	0.437	0.767	1.177	-
Double rear clevis	-	-	-	-	-	0.432	0.867	1.222	-

When mounting auto switch, add for additional mounting bracket weight

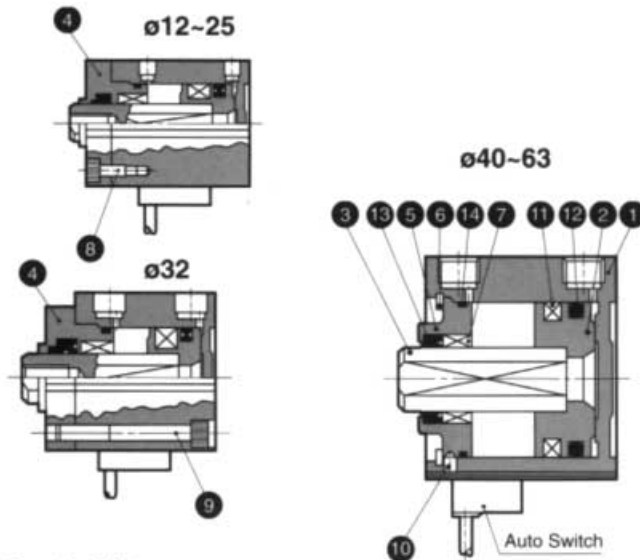
### Auto Switch Mounting Bracket Weight

Part no.	Applicable cylinder bore size	Weight lbs.
BQ-1	ø12~ ø25	.003
BQ-2	ø32~ ø63	.003

### How to obtain the total weight (lbs) (N)CDQ2KD40-25DM

Std wt.:	(N)CDQ2KB40-25D	0.64
Wt. adder:	Both ends tapped	0.013
	Male rod end	0.097
	Double rear clevis	0.432
	<b>Total</b>	<b>1.182</b>

### Construction / Parts List



### Parts List

No.	Description	Material	Remarks
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Chromate
3	Piston rod	Stainless steel	Bore ø12~ø25
		Carbon steel	Bore ø32~ø63, hard chrome plated
4	Collar	Brass	Bore ø12, Black chromate
		Aluminum alloy	Bore ø16~ø32, Black anodized
5	Collar	Aluminum alloy	Bore ø40~ø63, Black anodized
6	Retaining ring	Carbon tool steel	Phosphate coating
7	Bushing	Sintered alloy	ø16~ø63, Oil impregnated
8	Bolt	Steel alloy	ø12~ø25, Black chromate
9	Bolt	Steel alloy	ø32, Nickel plated
10	Set screw	Steel alloy	ø40~ø63, black coating
11	Magnet	-	-

### Seals List

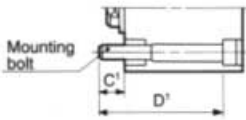
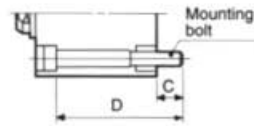
No.	Description	Material	Parts No.							
			ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
13	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B
14	Rod seal	NBR	SS-6X5.2Q	SS-8X6K2Q	SS-10X8Q	SS-12	SS-16S	SS-16S	SS-20S	SS-20S
15	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60

### Mounting Bolt For (N)CDQ2K / with Auto Switch

Special long mounting bolt for through hole mounting is available as an option.  
How to Order:  
Specify the required bolts

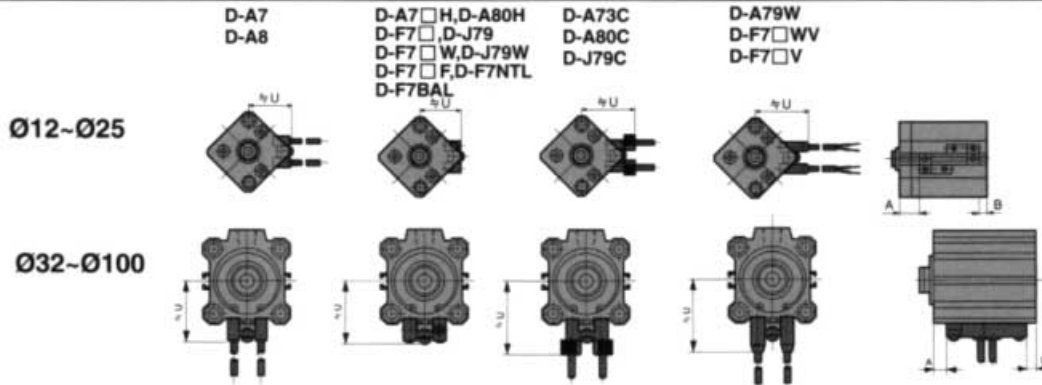
Example)  
Bolt M3x35L ø12-ø32 2pc.  
ø40-ø63 4pc.

Thread	Pitch
M3	0.5
M5	0.8
M6	1.0
M8	1.25
M10	1.5



Model	C	D	Mounting bolt	C'	D'	Mounting bolt	Model	C	D	Mounting bolt	C'	D'	Mounting bolt	
(N)CDQ2KB12-5DC	5.5	35	M3x35L	5.5	40	M3x40L	(N)CDQ2KB32-40D	8.5	85	M5x85L	10	85	M5x85L	
-10DC		40	x40L		45	x45L	-45D		90	x90L				
-15DC		45	x40L		50	x50L	-50D		95	x95L				
-20DC		50	x50L		55	x55L	-75D		120	x120L				
-25DC		55	x55L		60	x60L	-100D		145	x145L				
-30DC		60	x60L		65	x65L	(N)CDQ2KB40-5D		7.5	45		M5x45L	7.5	45
(N)CDQ2KB16-5D	8	40	M3x40L	8	45	M3x45L	-10D	50		x50L	50	x50L		
-10D		45	x45L		50	x50L	-15D	55		x55L	55	x55L		
-15D		50	x50L		55	x55L	-20D	60		x60L	60	x60L		
-20D		55	x55L		60	x60L	-25D	65		x65L	65	x65L		
-25D		60	x60L		65	x65L	-30D	70		x70L	70	x70L		
-30D		65	x65L		70	x70L	-35D	75		x75L	75	x75L		
(N)CDQ2KB20-5D	10.5	40	M5x40L	7.5	45	M5x45L	-40D	80		x80L	12.5	80		x80L
-10D		45	x45L		50	x50L	-45D	85		x85L		85		x85L
-15D		50	x50L		55	x55L	-50D	90		x90L		90		x90L
-20D		55	x55L		60	x60L	-75D	115	x115L	115		x115L		
-25D		60	x60L		65	x65L	-100D	140	x140L	140		x140L		
-30D		65	x65L		70	x70L	(N)CDQ2KB50-10D	12.5	55	M6x55L		12.5	55	M6x55L
-35D		70	x70L		75	x75L	-15D		60	x60L			60	x60L
-40D		75	x75L		80	x80L	-20D		65	x65L			65	x65L
-45D		80	x80L		85	x85L	-25D		70	x70L			70	x70L
-50D		85	x85L		90	x90L	-30D		75	x75L			75	x75L
(N)CDQ2KB25-5D	9.5	40	M5x40L	6.5	45	M5x45L	-35D		80	x80L	14.5		80	x80L
-10D		45	x45L		50	x50L	-40D		85	x85L			85	x85L
-15D		50	x50L		55	x55L	-45D		90	x90L			90	x90L
-20D		55	x55L		60	x60L	-50D		95	x95L			95	x95L
-25D		60	x60L		65	x65L	-75D		120	x120L			120	x120L
-30D		65	x65L		70	x70L	-100D	145	x145L	145		x145L		
-35D		70	x70L		75	x75L	(N)CDQ2KB63-10D	14.5	60	M8x60L		14.5	60	M8x60L
-40D		75	x75L		80	x80L	-15D		65	x65L			65	x65L
-45D		80	x80L		85	x85L	-20D		70	x70L			70	x70L
-50D		85	x85L		90	x90L	-25D		75	x75L			75	x75L
(N)CDQ2KB32-5D	8.5	50	M5x50L	10	50	M5x50L	-30D		80	x80L	14.5		80	x80L
-10D		55	x55L		55	x55L	-35D		85	x85L			85	x85L
-15D		60	x60L		60	x60L	-40D		90	x90L			90	x90L
-20D		65	x65L		65	x65L	-45D		95	x95L			95	x95L
-25D		70	x70L		70	x70L	-50D		100	x100L			100	x100L
-30D		75	x75L		75	x75L	-75D		125	x125L			125	x125L
-35D		80	x80L		80	x80L	-100D	150	x150L	150		x150L		

### Auto Switch Mounting Data



### Auto Switch Mounting Postion

Bore Size (mm)	D-A7•A8		D-A7□H•A80H D-A73C•A80C D-F7□V•J79 D-F7□V•J79C		D-A79W		D-F7PW D-F7□F D-J79W		D-F79W D-F7□VW	
	A	B	A	B	A	B	A	B	A	B
12	9.5	5.5	10	6	7	3	14	10	10.5	6.5
16	12.5	5	13	5.5	10	2.5	17	9.5	13.5	6
20	15.5	6.5	16	7	13	4	20	11	16.5	7.5
25	15.5	7	16	7.5	13	4.5	20	11.5	16.5	8
32	18	6	15.5	6.5	15.5	3.5	22.5	10.5	19	7
40	13	8.5	13.5	9	10.5	6	17.5	13	14	9.5
50	11	11.5	11.5	12	8.5	9	15.5	16	12	12.5
63	13.5	14.5	14	15	11	12	18	19	14.5	15.5

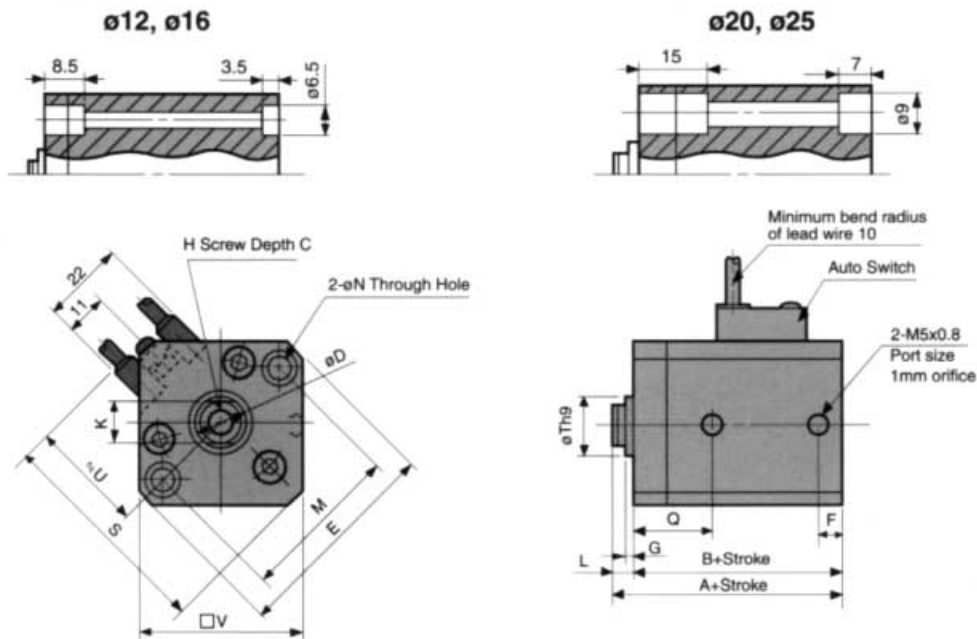
### Auto Switch Mounting Height

Bore Size (mm)	D-A7 A8		D-A7□H D-J79W D-A80H D-F7BAL D-F7□ D-F7□F D-J79 D-F7NTL D-F7□W		D-A73C D-A80C D-F7□VW	D-F7□V	D-J79C	D-A79W
	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		
40	35	36	42	38.5	41.5	37.5		
50	41	42	48	44.5	47.5	43.5		
63	47.5	48.5	54.5	51	54	50		



Bore Size  $\phi 12 \sim \phi 25$ 

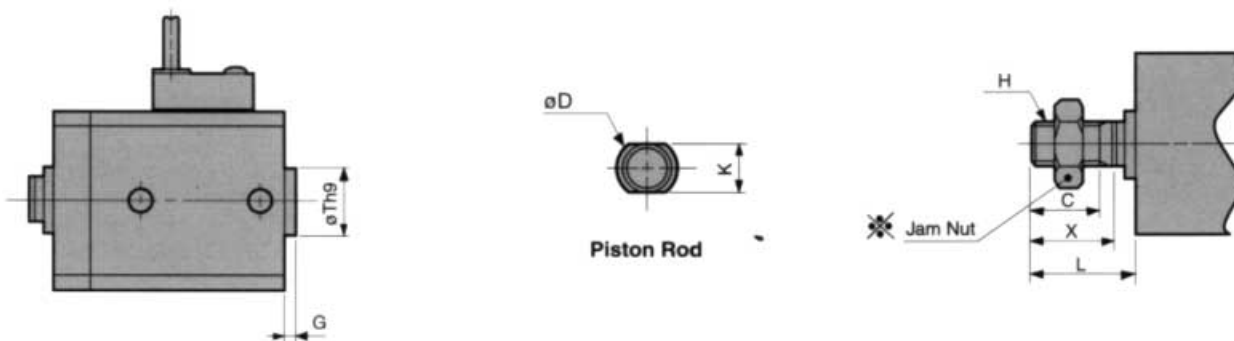
## Through Hole / (N)CDQ2KB



The Auto Switch mounting shown above is used for D-A73 and D-A80.  
The Auto Switch set position and mounting height: See p.69.

## Standard

Bore size	Stroke	A	B	CQ2 C	NCQ2 C	D	E	F	G	CQ2 H	NCQ2 inch H	L	M	N	Q	S	Th9	U	V
12	5~30	36.5	33	6	5.4	6	32	6.5	1.5	M3x0.5	#8-32	3.5	22	3.5	16	35.5	15 $\phi_{.043}$	19.5	25
16	5~30	39	35.5	8	5.4	8	38	5.5	1.5	M4x0.7	#8-32	3.5	28	3.5	15	41.5	20 $\phi_{.052}$	22.5	29
20	5~50	44	39.5	7	7	10	47	5.5	2	M5x0.8	#10-32	4.5	36	5.5	18.5	48	13 $\phi_{.043}$	24.5	36
25	5~50	45.5	40.5	12	10	12	52	5.5	2	M6x1.0	1/4-28UNF	5	40	5.5	19	53.5	15 $\phi_{.043}$	27.5	40



## End Boss (CQ2) mm

Bore size	G	Th9
12	1.5	15 $\phi_{.043}$
16	1.5	20 $\phi_{.052}$
20	2	13 $\phi_{.043}$
25	2	15 $\phi_{.043}$

## NCDQ2 Male Rod End mm

Bore size	X	H inch	L	K
12	8	#8-32UNC	11.5	5.2
16	8	#8-32UNC	11.5	6
20	8	#10-32UNF	12.5	8
25	9.5	1/4-28UNF	16.5	10

## CDQ2 Male Rod End mm

Bore size	C	X	H	L	K
12	9	10.5	M5x0.8	14	5.2
16	10	12	M6x1.0	15.5	6
20	12	14	M8x1.25	18.5	8
25	15	17.5	M10x1.25	22.5	10

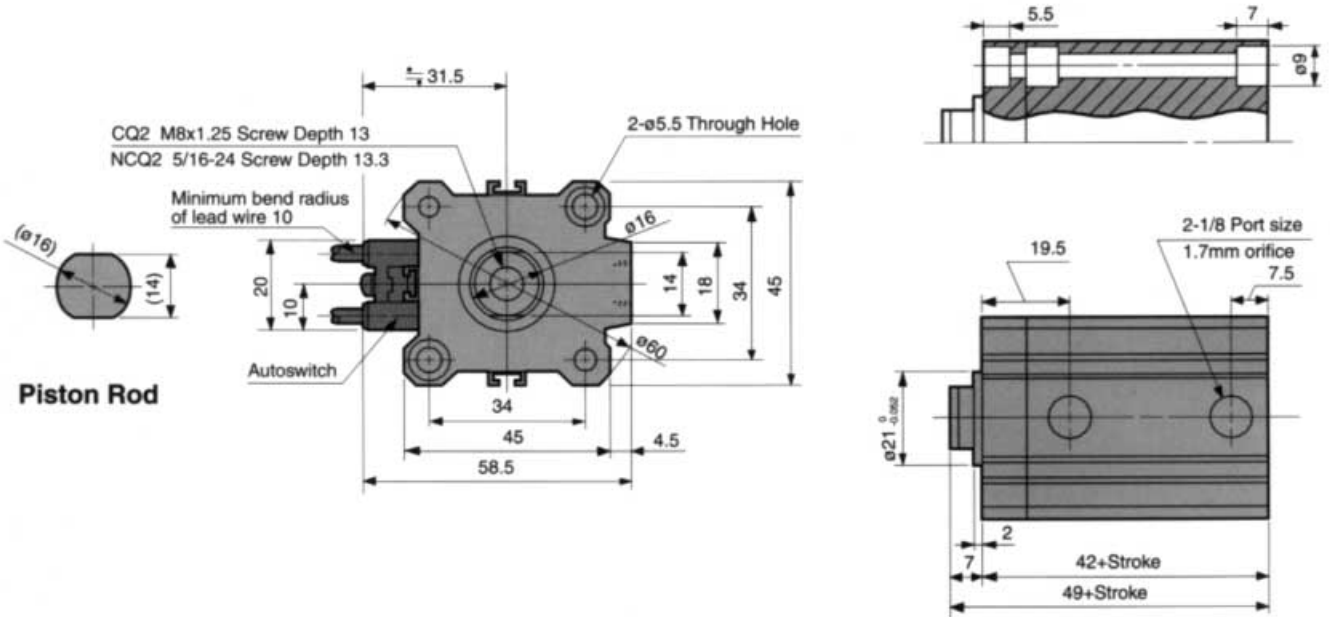
"C" dim. not applicable.

⊗ Rod end nut and accessories detail: see p. 6.

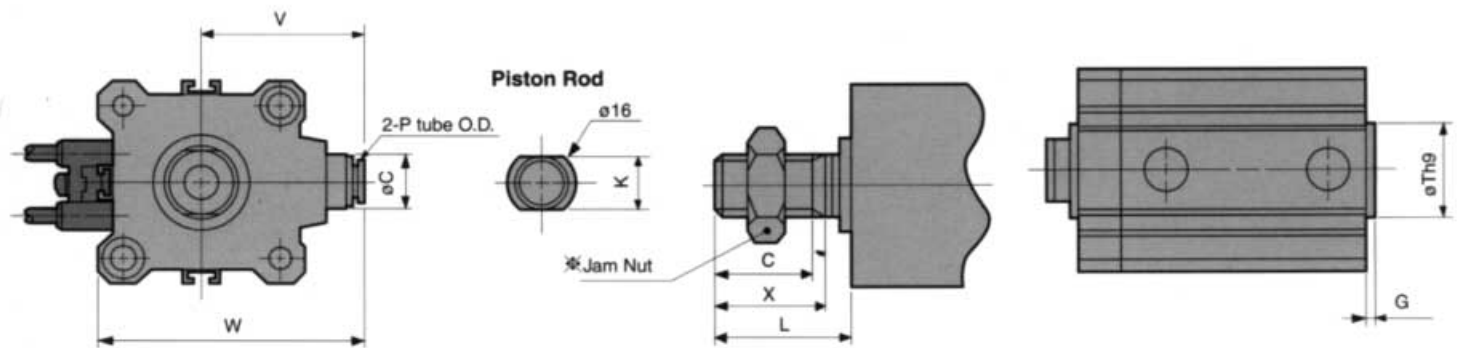


Bore Size  $\phi 32$

Through Hole / (N)CDQ2KB



The Auto Switch mounting is used for D-A73 and D-A80.  
The Auto Switch set position and mounting height: See p.69.



One Touch Fittings

Bore size	C	P	V	W
32	13	6	38	60.5

CQ2 only

NCQ2 Male Rod End

Bore size	X	H Inch	L	K
32	12.7	5/16-24UNF	17.7	14

\*"C" dim. not applicable.

\*Rod end nut and accessories are detailed on p. 6.

CQ2 Male Rod End

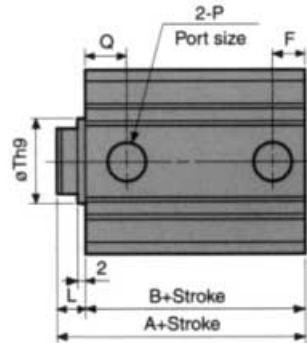
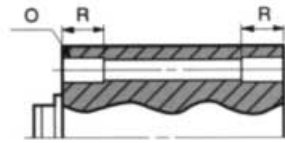
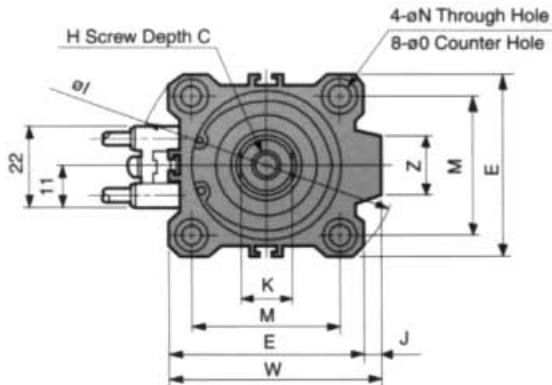
Bore size	C	X	H	L	K
32	20.5	23.5	M14x1.5	28.5	14

End Boss (CQ2 only)

Bore size	G	Th9
32	2	21 $\phi_{.052}$

# Bore Size $\phi 40 \sim \phi 63$

## Through Hole / (N)CDQ2KB



## (N)CDQ2KA Both Ends Tapped

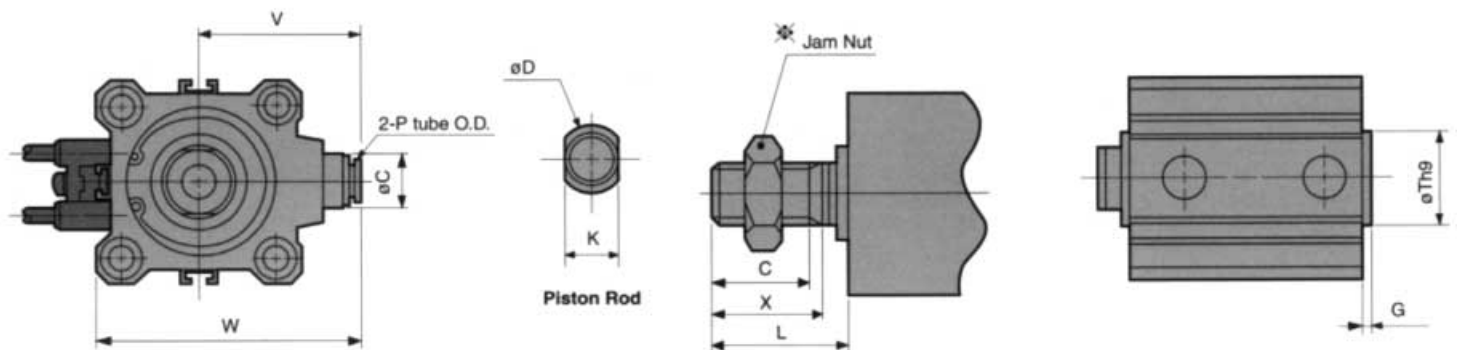
Bore size	CQ2 O	NCQ2 inch O	R
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18

The above Auto Switch mounting is used for D-A73 and D-A80.

The Auto Switch set position and mounting height: See p.69.

## Standard

Bore size	Stroke (mm)	A	B	CQ2 C	NCQ2 C	D	E	F	CQ2 H	NCQ2 inch H	I	J	K	L	M	N	O	P	Q	Orifice	S	Th9	U	Z
40	5-50	46.5	39.5	13	18.3	16	52	8	M8x1.25	3/8-24UNF	69	5	14	7	40	5.5	9 depth 7	1/8	11	2	66	28 <sup>0</sup> <sub>-0.052</sub>	35	14
	75, 100																							
50	10-50	48.5	40.5	15	17.5	20	64	10.5	M10x1.5	1/2-20UNF	86	7	18	8	50	6.6	11 depth 8	1/4	10.5	2.2	80	35 <sup>0</sup> <sub>-0.062</sub>	41	19
	75, 100																							
63	10-50	54	46	15	17.5	20	77	10.5	M10x1.5	1/2-20UNF	103	7	18	8	60	9	14 depth 10.5	1/4	15	3	93	35 <sup>0</sup> <sub>-0.062</sub>	47.5	19
	75, 100																							



## One Touch Fittings NCDQ2 Male Rod End

Bore size	C	P	V	W
40	13	6	42	68
50	16	8	50	82
63	16	8	56.5	95

"C" dim. not applicable.

\* Rod end nut and accessories are detailed on p. 6.

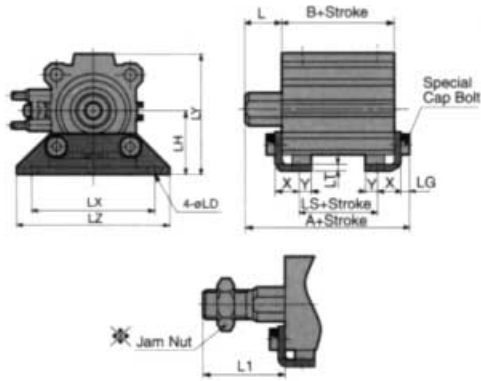
## CDQ2 Male Rod End

Bore size	C	X	H	L	K
40	20.5	23.5	M14x1.5	28.5	14
50	26	28.5	M18x1.5	33.5	18
63	26	28.5	M18x1.5	33.5	18

## End Boss CQ2

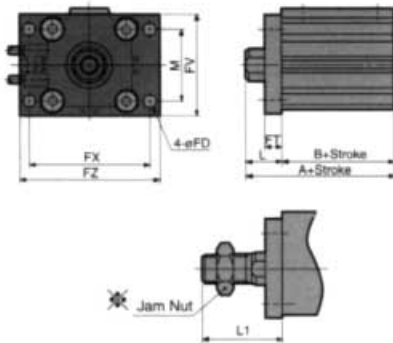
Bore size	G	Th9
40	2	28 <sup>0</sup> <sub>-0.052</sub>
50	2	35 <sup>0</sup> <sub>-0.062</sub>
63	2	35 <sup>0</sup> <sub>-0.062</sub>

Compact Cylinder: Standard / Double Acting Single Rod Non-Rotating



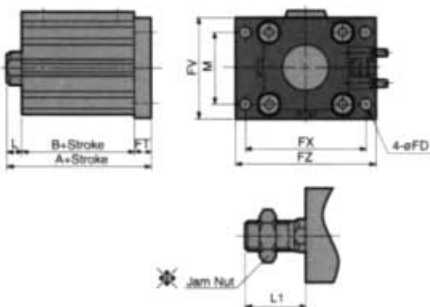
Foot / (N)CDQ2KL

Bore size (mm)	Stroke range (mm)	mm															
		A	B	L	CC2 L1	NCQ2 L1	LD	LG	LH	LS	LT	LX	LY	LZ	X	Y	
40	5-50	63.7	39.5	17	38.5	31	6.6	4	33	23.5	3.2	64	64	78	11.2	7	
	75, 100																
50	10-50	66.7	40.5	18	43.5	33.5	9	5	39	17.5	3.2	79	78	95	14.7	8	
	75, 100																
63	10-50	72.2	46	18	43.5	33.5	11	5	46	20	3.2	95	91.5	113	16.2	9	
	75, 100																



Rod Flange / (N)CDQ2KF

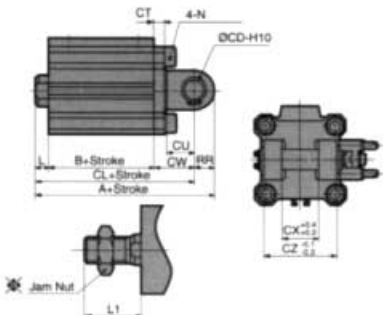
Bore size (mm)	Stroke range (mm)	mm											
		A	B	FD	FT	FV	FX	FZ	L	CC2 L1	NCQ2 L1	M	
40	5-50	56.5	39.5	5.5	8	54	62	72	17	38.5	31	40	
	75, 100												
50	10-50	58.5	40.5	6.6	9	67	76	89	18	43.5	33.5	50	
	75, 100												
63	10-50	64	46	9	9	80	92	108	18	43.5	33.5	60	
	75, 100												



Head Flange / (N)CDQ2KG

Bore size (mm)	Stroke range (mm)	mm			
		A	L	CC2 L1	NCQ2 L1
40	5-50	54.5	7	28.5	21
	75, 100				
50	10-50	57.5	8	33.5	23.5
	75, 100				
63	10-50	63	8	33.5	23.5
	75, 100				

※ Dimensions for the head flange cylinder are the same as rod flange except A, L, L1.



Double Clevis / (N)CDQ2KD

Bore size (mm)	Stroke range (mm)	mm															
		A	B	CC2 CD	NCQ2 Inch CD	CL	CT	CU	CW	CX	CZ	L	CC2 L1	NCQ2 L1	CC2 N	NCQ2 Inch N	RR
40	5-50	78.5	39.5	10	3/8	68.5	6	14	22	18	36	7	28.5	21	M6x1.0	1/4-20	10
	75, 100																
50	10-50	90.5	40.5	14	1/2	76.5	7	20	28	22	44	8	33.5	23.5	M8x1.25	5/16-18	14
	75, 100																
63	10-50	98	46	14	1/2	84	8	20	30	22	44	8	33.5	23.5	M10x1.5	7/16-14	14
	75, 100																

※ Rod end nut and accessories detail: see p. 6.

※※ Clevis pin and snap rings are included in the package.