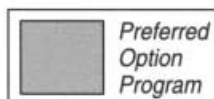


# Series NCQ2/CQ2

## Compact Cylinders

### **The Preferred Option Program: "Quick Delivery and Service Assurance"**



The product series in this catalog utilizes SMC's Preferred Option Program, a unique program intended to emphasize the model configurations that are most readily available where the catalog presents an extensive variety of choices. All other options are available, whereas they may be stocked in lesser quantities or manufactured to order. Special arrangements can be made for repeating (blanket) orders of these product models. Contact your sales representative for further details.



Targeting new trends in the advancement of industrial automation, SMC has developed a category of products recognized as especially significant and of universal importance. We refer to these products as "Z Products". These revolutionary products, whether simple or complex, provide SMC customers with superior performance and availability at a very affordable cost.



Compact Cylinder

# NCQ2/CQ2 Series

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160

The cylinder is designed with ultra compact overall dimensions offering space saving features. Ideal for use on applications requiring compact size fixtures and equipment.

Series Variation	Action	Style	Standard Built in magnet Mounting thread (A) type Rod end M thread W/ rubber cushion End boss CQ2	Bore size (mm)	Std Stroke (mm)	Page
<b>Standard</b> 	Double Acting	Single rod (N)CQ2	●●●●●●●●●●●●●●●●	12, 16, 20, 25 32, 40, 50, 63 80, 100	ø12-ø16/5-30 ø20-ø25/5-50 ø32-ø40/5-100 ø50-ø100/10-100	2
		Double rod (N)CQ2W	●●●●●●●●●●●●●●●●	12, 16, 20, 25 32, 40, 50, 63 80, 100	ø12-ø16/5-30 ø20-ø40/5-50 ø50-ø100/10-50	24
	Single Acting	Extension/Retraction (N)CQ2	●●●●●●●●●●●●●●●●	12, 16, 20, 25 32, 40, 50	ø12-ø40/5,10 ø50/10,20	38
<b>Rod non-rotating</b> 	Double Acting	Single rod (N)CQ2K	●●●●●●●●●●●●●●●●	12, 16, 20, 25 32, 40, 50, 63	ø12, ø16/5-30 ø20, ø25/5-50 ø32, ø40/5-100 ø50, ø63/10-100	60
		Double rod CQ2KW	●●●●●●●●●●●●●●●●	12, 16, 20, 25 32, 40, 50, 63	ø12, ø16/5-30 ø20-ø40/5-50 ø50, ø63/10-50	74
<b>Large Bore Size</b> 	Double Acting	Single rod CQ2	●●●●●●●●●●●●●●●●	125, 140, 160	10~300	84
		Double rod CQ2W	●●●●●●●●●●●●●●●●	125, 140, 160	10~300	88
<b>Long Stroke</b> 	Double Acting	Single rod CQ2	●●●●●●●●●●●●●●●●	32, 40, 50 63, 80, 100	125~300	92

W/ one touch fitting (bore size ø22-ø63)  
 Foot / flange mounting  
 Clevis mounting  
 Copper free  
 Air-Hydro (Bore size ø20-ø100)  
 Clean Room Series (Bore size ø12-ø63)

**Applicable Auto Switch**

Reed switch	D-A7•A8, D-A73C•A80C D-A7□H•A80H, D-A79W
Solid State	D-F7□•J79, D-F7□V, D-J79C, D-F7□W•J79W, D-F7□WV, D-F7BAL, D-F7□F, D-F7NTL

**Made To Order**

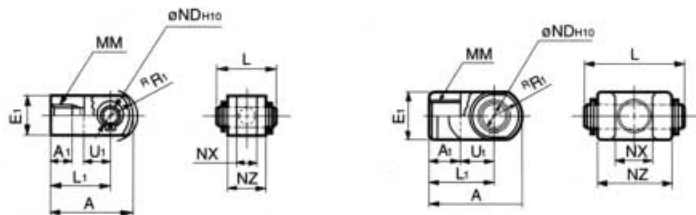
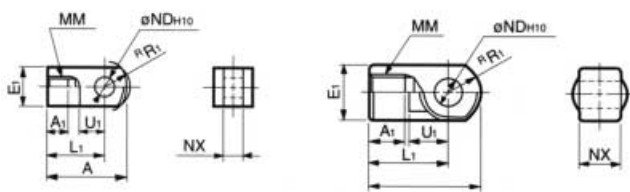
CQ2 Series made to order spec: see p. 98

Switch specifications see pg. 13

Accessories

**SINGLE ROD CLEVIS (ROD EYE)**

**DOUBLE ROD CLEVIS (ROD EYE)**



**CQ2 - Single Rod Clevis**

mm

Part Number	Applicable bore size	A	A <sub>1</sub>	E <sub>1</sub>	L <sub>1</sub>	MM	<sup>R</sup> R <sub>1</sub>	U <sub>1</sub>	ND <sub>H10</sub>	NX
I-G012	12	21.5	6	□10	16	M5x0.8	6.3	7	5 <sup>+0.048</sup> <sub>0</sub>	5 <sup>-0.2</sup> <sub>-0.4</sub>
I-Z015	16	32	8	□12	25	M6x1	8.1	14	5 <sup>+0.048</sup> <sub>0</sub>	6.4 <sup>-0.1</sup> <sub>-0.3</sub>
I-G02	20	34	8.5	□16	25	M8x1.25	10.3	11.5	8 <sup>+0.058</sup> <sub>0</sub>	8 <sup>-0.2</sup> <sub>-0.4</sub>
I-G03	25	41	10.5	□20	30	M10x1.25	12.8	14	10 <sup>+0.058</sup> <sub>0</sub>	10 <sup>-0.2</sup> <sub>-0.4</sub>
I-G04	32,40	42	14	∅22	30	M14x1.5	12	14	10 <sup>+0.058</sup> <sub>0</sub>	18 <sup>-0.3</sup> <sub>-0.5</sub>
I-G05	50,63	56	18	∅28	40	M18x1.5	16	20	14 <sup>+0.070</sup> <sub>0</sub>	22 <sup>-0.3</sup> <sub>-0.5</sub>
I-G08	80	71	21	∅38	50	M22x1.5	21	27	18 <sup>+0.070</sup> <sub>0</sub>	28 <sup>-0.3</sup> <sub>-0.5</sub>
I-G10	100	79	21	∅44	55	M26x1.5	24	31	22 <sup>+0.084</sup> <sub>0</sub>	32 <sup>-0.3</sup> <sub>-0.5</sub>

**CQ2 - Double Rod Clevis**

mm

Part Number	Applicable bore size	A	A <sub>1</sub>	E <sub>1</sub>	L <sub>1</sub>	MM	<sup>R</sup> R <sub>1</sub>	U <sub>1</sub>	ND <sub>H10</sub>	NX	NZ	L	PIN PART NO.
Y-G012	12	21.5	6	□10	16	M5x0.8	6.3	7	5 <sup>+0.048</sup> <sub>0</sub>	5 <sup>-0.2</sup> <sub>-0.4</sub>	10	14.6	IY-G012
Y-Z015A	16	28	11	□12	21	M6x1	8.1	10	5 <sup>+0.048</sup> <sub>0</sub>	6.5 <sup>-0.2</sup> <sub>0</sub>	12	16.6	IY-J015
Y-G02	20	34	8.5	□16	25	M8x1.25	10.3	11.5	8 <sup>+0.058</sup> <sub>0</sub>	8 <sup>-0.2</sup> <sub>-0.4</sub>	16	21	IY-G02
Y-G03	25	41	10.5	□20	30	M10x1.25	12.8	14	10 <sup>+0.058</sup> <sub>0</sub>	10 <sup>-0.2</sup> <sub>-0.4</sub>	20	25.6	IY-G03
Y-G04	32,40	42	16	∅22	30	M14x1.5	12	14	10 <sup>+0.058</sup> <sub>0</sub>	18 <sup>-0.3</sup> <sub>-0.5</sub>	36	41.6	IY-G04
Y-G05	50,63	56	20	∅28	40	M18x1.5	16	20	14 <sup>+0.070</sup> <sub>0</sub>	22 <sup>-0.3</sup> <sub>-0.5</sub>	44	50.6	IY-G05
Y-G08	80	71	23	∅38	50	M22x1.5	21	27	18 <sup>+0.070</sup> <sub>0</sub>	28 <sup>-0.3</sup> <sub>-0.5</sub>	56	64	IY-G08
Y-G10	100	79	24	∅44	55	M26x1.5	24	31	22 <sup>+0.084</sup> <sub>0</sub>	32 <sup>-0.3</sup> <sub>-0.5</sub>	64	72	IY-G10

Clevis, Pin and Snap Ring are in the package

**NCQ2 - Single Rod Clevis**

mm

Part Number	Applicable bore size	A	A <sub>1</sub>	E <sub>1</sub>	L <sub>1</sub>	MM	<sup>R</sup> R <sub>1</sub>	U <sub>1</sub>	ND <sub>H10</sub> Inch	NX
RCS-01	12	21.5	6	□10	16	#8-32UNC	6.3	7	3/16 <sup>+0.002</sup> <sub>0</sub>	5 <sup>-0.2</sup> <sub>-0.4</sub>
RCS-015	16	32	6	□12	25	#8-32UNC	12	14	3/16 <sup>+0.002</sup> <sub>0</sub>	6.4 <sup>-0.1</sup> <sub>-0.3</sub>
RCS-02	20	34	6	□16	25	#10-32UNF	10.3	11.5	5/16 <sup>+0.002</sup> <sub>0</sub>	8 <sup>-0.2</sup> <sub>-0.4</sub>
RCS-025	25	41	8	□20	30	1/4-28UNF	18	14	3/8 <sup>+0.002</sup> <sub>0</sub>	10 <sup>-0.2</sup> <sub>-0.4</sub>
RCS-03	32	42	16	∅22	30	5/16-24UNF	12	14	3/8 <sup>+0.002</sup> <sub>0</sub>	18 <sup>-0.3</sup> <sub>-0.5</sub>
RCS-04	40	42	11	∅22	30	3/8-24UNF	12	14	3/8 <sup>+0.002</sup> <sub>0</sub>	18 <sup>-0.3</sup> <sub>-0.5</sub>
RCS-05	50, 63	56	18	∅28	40	1/2-20UNF	16	20	1/2 <sup>+0.003</sup> <sub>0</sub>	22 <sup>-0.3</sup> <sub>-0.5</sub>
RCS-08	80	71	21	∅38	50	5/8-18UNF	21	27	3/4 <sup>+0.003</sup> <sub>0</sub>	28 <sup>-0.3</sup> <sub>-0.5</sub>
RCS-10	100	79	21	∅44	55	3/4-16UNF	24	31	7/8 <sup>+0.003</sup> <sub>0</sub>	32 <sup>-0.3</sup> <sub>-0.5</sub>

Clevis Pin and Retaining Rings not included, see RCSK "xx" on page 7

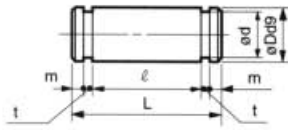
**NCQ2 - Double Rod Clevis**

mm

Part Number	Applicable bore size	A	A <sub>1</sub>	E <sub>1</sub>	L <sub>1</sub>	MM	<sup>R</sup> R <sub>1</sub>	U <sub>1</sub>	ND <sub>H10</sub> Inch	NX	NZ	L
RCD-01	12	21.5	6	□10	16	#8-32UNC	6.3	7	3/16 <sup>+0.002</sup> <sub>0</sub>	5 <sup>-0.2</sup> <sub>-0.4</sub>	10	14
RCD-015	16	28	6	□12	21	#8-32UNC	12	10	3/16 <sup>+0.002</sup> <sub>0</sub>	6.5 <sup>+0.2</sup> <sub>+0.1</sub>	12	16
RCD-02	20	34	6	□16	25	#10-32UNF	10.3	11.5	5/16 <sup>+0.002</sup> <sub>0</sub>	8 <sup>-0.2</sup> <sub>-0.4</sub>	16	21
RCD-025	25	41	8	□20	30	1/4-28UNF	18	14	3/8 <sup>+0.002</sup> <sub>0</sub>	10 <sup>-0.2</sup> <sub>-0.4</sub>	20	25
RCD-03	32	42	16	∅22	30	5/16-24UNF	12	14	3/8 <sup>+0.002</sup> <sub>0</sub>	18 <sup>+0.5</sup> <sub>+0.3</sub>	36	41
RCD-04	40	42	16	∅22	30	3/8-24UNF	12	14	3/8 <sup>+0.002</sup> <sub>0</sub>	18 <sup>+0.5</sup> <sub>+0.3</sub>	36	41
RCD-05	50,63	56	20	∅28	40	1/2-20UNF	16	20	1/2 <sup>+0.003</sup> <sub>0</sub>	22 <sup>+0.5</sup> <sub>+0.3</sub>	44	50
RCD-08	80	71	23	∅38	50	5/8-18UNF	21	27	3/4 <sup>+0.003</sup> <sub>0</sub>	28 <sup>+0.5</sup> <sub>+0.3</sub>	56	64
RCD-10	100	79	24	∅44	55	3/4-16UNF	24	31	7/8 <sup>+0.003</sup> <sub>0</sub>	32 <sup>+0.5</sup> <sub>+0.3</sub>	64	72

Clevis Pin and Retaining Rings not included, see RCSK "xx" on page 7





CQ2 - Double Rod Clevis Pin

mm

Part Number	Applicable bore size	Dd9	L	d	ℓ	m	t	Snap ring
IY-G012	12	5 <sup>-0.030</sup> / <sub>-0.060</sub>	14.6	4.8	10.2	1.5	0.7	Axial C style 5
IY-J015	16	5 <sup>-0.030</sup> / <sub>-0.060</sub>	16.6	4.8	12.2	1.5	0.7	Axial C style 5
IY-G02	20	8 <sup>-0.040</sup> / <sub>-0.076</sub>	21	7.6	16.2	1.5	0.9	Axial C style 8
IY-G03	25	10 <sup>-0.040</sup> / <sub>-0.076</sub>	25.6	9.6	20.2	1.55	1.15	Axial C style 10
IY-G04	32, 40	10 <sup>-0.040</sup> / <sub>-0.076</sub>	41.6	9.6	36.2	1.55	1.15	Axial C style 10
IY-G05	50, 63	14 <sup>-0.050</sup> / <sub>-0.093</sub>	50.6	13.4	44.2	2.05	1.15	Axial C style 14
IY-G08	80	18 <sup>-0.050</sup> / <sub>-0.093</sub>	64	17	56.2	2.55	1.35	Axial C style 18
IY-G10	100	22 <sup>-0.065</sup> / <sub>-0.117</sub>	72	21	64.2	2.55	1.35	Axial C style 22

NCQ2 - Double Rod Clevis Pin

mm

Part Number	Applicable bore size	D	L	d	ℓ	m	t
PS-01	12	4.77 <sup>-0.03</sup> / <sub>-0.06</sub>	14	4.45	10.2	1.44	0.46
PS-015	16	4.77 <sup>-0.03</sup> / <sub>-0.06</sub>	16	4.45	12.2	1.44	0.46
PS-02	20	7.94 <sup>-0.040</sup> / <sub>-0.076</sub>	21	7.37	16.2	1.66	0.74
PS-025	25	9.53 <sup>-0.046</sup> / <sub>-0.076</sub>	25	8.94	20.2	1.66	0.74
PS-03	32, 40	9.53 <sup>-0.040</sup> / <sub>-0.076</sub>	41	8.94	36.2	1.66	0.74
PS-05	50, 63	12.7 <sup>-0.05</sup> / <sub>-0.076</sub>	50	11.89	44.2	1.9	1.0
PS-08	80	19.05 <sup>-0.065</sup> / <sub>-0.117</sub>	64	17.89	56.2	2.73	1.17
PS-10	100	22.23 <sup>-0.065</sup> / <sub>-0.117</sub>	72	20.85	64.2	2.73	1.17

Kits

NCQ2 Double Rod Clevis

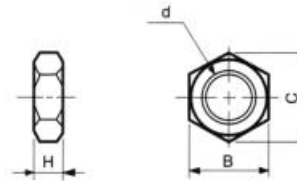
Kit Part Number	Applicable bore size	Includes		
		Clevis (1)	Pin (1)	Retaining Rings (2)
RCDK-01	12	RCD-01	PS-01	PC-01
RCDK-015	16	RCD-015	PS-015	PC-01
RCDK-02	20	RCD-02	PS-02	PC-02
RCDK-025	25	RCD-025	PS-025	PC-03
RCDK-03	32	RCD-03	PS-03	PC-03
RCDK-04	40	RCD-04	PS-04	PC-03
RCDK-05	50,63	RCD-05	PS-05	PC-05
RCDK-08	80	RCD-08	PS-08	PC-08
RCDK-10	100	RCD-10	PS-10	PC-10

NCQ2 Single Rod Clevis (Rod Eye)

Kit Part Number	Applicable bore size	Includes		
		Clevis (1)	Pin (1)	Retaining Rings (2)
RCSK-01	12	RCS-01	PS-01	PC-01
RCSK-015	16	RCS-015	PS-015	PC-01
RCSK-02	20	RCS-02	PS-02	PC-02
RCDK-025	25	RCS-025	PS-025	PC-03
RCSK-03	32	RCS-03	PS-03	PC-03
RCSK-04	40	RCS-04	PS-03	PC-03
RCSK-05	50,63	RCS-05	PS-05	PC-05
RCSK-08	80	RCS-08	PS-08	PC-08
RCSK-10	100	RCS-10	PS-10	PC-10

NCQ2 Rod Clevis Pin

Kit Part Number	Applicable bore size	Includes	
		Pin (1)	Retaining Rings (2)
PRA-01	12	PS-01	PC-01
PRA-015	16	PS-015	PC-01
PRA-02	20	PS-02	PC-02
PRA-025	25	PS-025	PC-03
PRA-03	32,40	PS-03	PC-03
PRA-05	50, 63	PS-05	PC-05
PRA-08	80	PS-08	PC-08
PRA-10	100	PS-10	PC-10



CQ2 - Jam Nut

mm

Part Number	Applicable bore size	d	H	B	C
NTJ-015A	12	M5x0.8	4	8	9.2
NT-015A	16	M6x1	5	10	11.5
NT-02	20	M8x1.25	5	13	15.0
NT-03	25	M10x1.25	6	17	19.6
NT-04	32, 40	M14x1.5	8	22	25.4
NT-05	50, 63	M18x1.5	11	27	31.2
NT-08	80	M22x1.5	13	32	37.0
NT-10	100	M26x1.5	16	41	47.3
NT-12	125,140	M30x1.5	18	46	53.1
NT-16	160	M36x1.5	21	55	63.5

NCQ2 - Jam Nut

mm

Model	Applicable bore size	d	H	B	C
JM-01	12, 16	8-32 UNC	3.3	8.7	10
JM-02	20	10-32 UNF	3.3	9.5	11
JM-025	25	1/4-28 UNF	4.1	11.2	13
JM-03	32	5/16-24 UNF	4.8	12.7	14.7
JM-04	40	3/8-24 UNF	5.6	14.3	16.5
JM-05	50, 63	1/2-20 UNF	7.9	19.1	22
JM-08	80	5/8-18 UNF	9.7	23.8	27.4
JM-10	100	3/4-16 UNF	10.7	28.7	33

NOTE: Jam Nut Included when option "M" is ordered



# Compact Cylinder: Standard/ Double Acting Double Rod NCQ2W / CQ2W Series

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

## How To Order

**NCQ2W** B H 20 F 30 D C

**W/ Auto Switch** **NCQDQ2W** B H 20 F 30 D C A73 S

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

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

**Mounting**  
B Through hole F Rod side flange  
A Both ends tapped L Foot

**Style**  
- Air pressure  
H See note 1) Air Hydro

Note 1) The available air-hydro bore sizes: ø20~ø100, CQ2 only.

**Bore Size**

12	12mm (1/2" Nom.)	40	40mm (1-1/2" Nom.)
16	16mm (5/8" Nom.)	50	50mm (2" Nom.)
20	20mm (3/4" Nom.)	63	63mm (2-1/2" Nom.)
25	25mm (1" Nom.)	80	80mm (3-1/4" Nom.)
32	32mm (1-1/4" Nom.)	100	100mm (4" Nom.)

**Piping**  
- Threaded ports  
F See note 2) Built-in one-touch fitting

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

**Cylinder Stroke (mm)**  
Please refer to p.25 for standard strokes

**Action**  
D Double

**Auto Switch**

-	2 pcs.
S	1 pcs.
n	n pcs.

**Auto Switch Capability**  
- Without Auto Switch

**Preferred Option Program**

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	—			12V	—
	A80C	—	No	24V	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	—		3 Wire NPN	24V	5V, 12V
	F7NWV	F79W				
	—	F7PW		2 Wire	12V	
	F7BWV	J79W		3 Wire NPN	24V	5V, 12V
	—	F7BAL				
	—	F7NTL		4 Wire NPN	—	
	—	F79F		3 Wire NPN	24V	5V, 12V
—	F7LF					

### Mounting Kits

Bore Size (mm)	Note 4) Foot	Flange
12	(N)CQ-L012	(N)CQ-F012
16	(N)CQ-L016	(N)CQ-F016
20	(N)CQ-L020	(N)CQ-F020
25	(N)CQ-L025	(N)CQ-F025
32	(N)CQ-L032	(N)CQ-F032
40	(N)CQ-L040	(N)CQ-F040
50	(N)CQ-L050	(N)CQ-F050
63	(N)CQ-L063	(N)CQ-F063
80	(N)CQ-L080	(N)CQ-F080
100	(N)CQ-L100	(N)CQ-F100

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

### Body Option

-	Std. (Female thread)
C	Note 3) W/ rubber cushion
M	Male thread

\* Body option combination is available such as CM, FC, FM, and FCM.

Note 3) W/ Rubber cushion is not available for the air-hydraulic type.

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





Standard /  
Double Acting Double rod

# (N)CQ2W Series



## Model

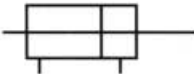
Bore Size		12	16	20	25	32	40	50	63	80	100	
Air-Pressure Type	Mounting	Through hole (std)	●	●	●	●	●	●	●	●	●	
		Both ends tapped	●	●	●	●	●	●	●	●	●	
	Built-In Magnet		●	●	●	●	●	●	●	●	●	
	Piping Method	Threaded PT or NPT	M5x 0.8	M5x 0.8	M5x 0.8	M5x 0.8	Note 1 M5x 0.8 1/8	1/8	1/4	1/4	3/8	3/8
		Built-In One Touch Fitting	-	-	-	-	Note 2 6/4	6/4	8/6	8/6	-	-
	Rod End M Thread		●	●	●	●	●	●	●	●	●	●
W/Rubber Cushion		●	●	●	●	●	●	●	●	●	●	
Air-Hydro Type	Mounting	Through hole (std)	-	-	●	●	●	●	●	●	●	
		Both ends tapped	-	-	●	●	●	●	●	●	●	
	Built-In Magnet		-	-	●	●	●	●	●	●	●	
	Piping Method	Threaded PT or NPT	-	-	M5x 0.8	M5x 0.8	Note 1 M5x 0.8 1/8	1/8	1/4	1/4	3/8	3/8
		Rod End M Thread		-	-	●	●	●	●	●	●	●

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

Note 2) In case of built-in fitting, the external tube dimension for ø 32, 5 stroke and 10 stroke are the same.

## Standard Specifications

Double acting/  
Double rod



Model	Air Pressure (Non-Lube)	Air-hydro
Media	Air	Hydraulic oil
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	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)	.002~8 in/s(0.5~200mm/s)

## Min. Operating Pressure

psi

Bore size	12	16	20	25	32	40	50	63	80	100
Air pressure type (non-lube)	10.15	10.15	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Air-hydro	-	-	26.1	26.1	26.1	14.5	14.5	14.5	14.5	14.5

## Cautions

① When mounting, completely flush piping and be careful that dust and chips do not enter the cylinder.

② • The Piston rod load should always be aligned with the cylinder axis.

• Cylinder installation requires accurate alignment.

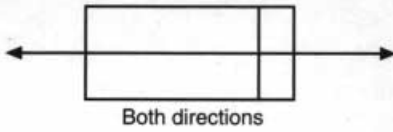
• When used as a stopper, avoid side loading of the piston rod.

③ Prevent damage to the piston rod. A damaged piston rod will lead to damage of the rod seal and result in leakage.

## Standard Stroke

Air pressure type (non-lube)		mm	Air-Hydro		mm
Bore size	Standard stroke		Bore size	Standard stroke	
12,16	5,10,15,20,25,30		20,25	5,10,15,20,25,30,35,	
20,25	5,10,15,20,25,30,35,40,45,50		32,40	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,	
50,63	10,15,20,25,30,35,40,		80,100	45,50	
80,100	45,50,75,100				

• Available with intermediate stroke. Available as special order.



**Weight/Double Acting: Double Rod Type**

Bore size	Rod direction	Operating pressures PSI		
		lb/		
		50	75	100
12	BOTH	6.6	9.8	13.1
16	BOTH	11.7	17.5	23.4
20	BOTH	18.2	27.3	36.5
25	BOTH	29.3	43.9	58.5
32	BOTH	46.8	70.1	93.5
40	BOTH	81.8	123	164
50	BOTH	128	192	256
63	BOTH	217	326	434
80	BOTH	352	527	703
100	BOTH	554	831	1108

Bore size	Stroke									
	5	10	15	20	25	30	35	40	45	50
12	0.093	0.108	0.123	0.139	0.154	0.170	-	-	-	-
16	0.130	0.150	0.170	0.190	0.209	0.229	-	-	-	-
20	0.196	0.229	0.262	0.295	0.329	0.362	0.395	0.428	0.461	0.494
25	0.262	0.300	0.337	0.375	0.412	0.450	0.487	0.525	0.562	0.600
32	0.423	0.485	0.538	0.591	0.644	0.697	0.750	0.803	0.856	0.908
40	0.644	0.712	0.781	0.849	0.917	0.986	1.054	1.122	1.191	1.259
50	-	1.164	1.263	1.363	1.462	1.561	1.660	1.760	1.859	1.958
63	-	1.491	1.574	1.660	1.746	1.832	1.918	2.004	2.090	2.176
80	-	2.736	2.922	3.107	3.292	3.477	3.663	3.838	4.033	4.218
100	-	4.644	4.906	5.169	5.431	5.693	5.956	6.218	6.480	6.743

**Weight Adder**

Bore size	12	16	20	25	32	40	50	63	80	100	
Both ends tapped	0.004	0.004	0.013	0.013	0.013	0.013	0.013	0.042	0.099	0.099	
Rod end M thread	Thread	0.007	0.013	0.026	0.053	0.115	0.119	0.234	0.234	0.529	0.772
	Nut	0.004	0.009	0.018	0.035	0.075	0.075	0.141	0.141	0.216	0.512
W/ rubber cushion	0.000	0.000	-0.004	-0.004	-0.007	-0.015	-0.026	-0.044	-0.075	-0.126	
W/ one touch fitting	-	-	-	-	0.026	0.026	0.046	0.046	-	-	
Foot mounting*	0.126	0.157	0.375	0.430	0.351	0.377	0.589	0.770	1.621	2.463	
Rod side flange*	0.126	0.152	0.306	0.355	0.397	0.472	0.822	1.233	2.328	3.010	

\*(Includ. mounting bolt)

lbs.

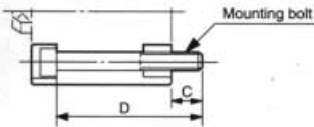
**How to obtain the total weight (lbs)**

NCQ2WL32-20DCM

<b>Std wt.:</b>	NCQ2B32-20D	_____	.591
<b>Wt. adder:</b>	Mounting end (both) tap	_____	.351
	Rod end M thread	_____	.115
	W/ rubber cushion	_____	-0.007
	Foot	_____	.351
	<b>Total</b>		<b>1.401</b>

**Mounting Bolt For (N)CQ2**

Special long mounting bolt for through hole mounting is available as an option.  
 How to Order:  
 Specify the required bolts  
 Example) Bolt M3x35L 4pcs.



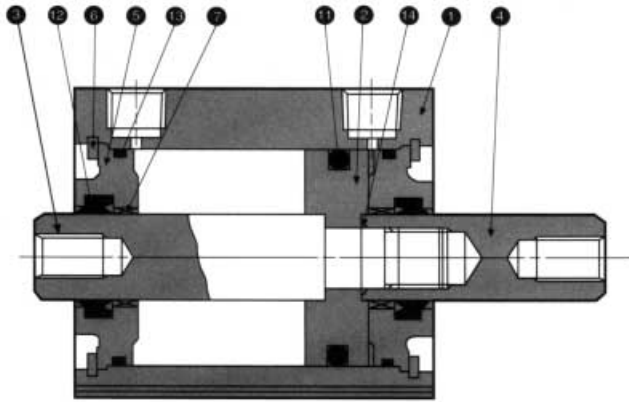
Thread	Pitch
M3	0.5
M5	0.8
M6	1.0
M8	1.25
M10	1.5

Model	C	D	Mounting bolt
(N)CQ2WB12-5D	8.3	35	M3x35L
-10D		40	x40L
-15D		45	x45L
-20D		50	x50L
-25D		55	x55L
-30D		60	x60L
(N)CQ2WB16-5D	7.5	35	M3x35L
-10D		40	x40L
-15D		45	x45L
-20D		50	x50L
-25D		55	x55L
-30D		60	x60L
(N)CQ2WB20-5D	6	30	M5x30L
-10D		35	x35L
-15D		40	x40L
-20D		45	x45L
-25D		50	x50L
-30D		55	x55L
(N)CQ2WB25-5D	8	35	M5x35L
-10D		40	x40L
-15D		45	x45L
-20D		50	x50L
-25D		55	x55L
-30D		60	x60L
(N)CQ2WB32-5D	6.5	35	M5x35L
-10D		40	x40L
-15D		45	x45L
-20D		50	x50L
-25D		55	x55L
-30D		60	x60L
(N)CQ2WB40-5D	7	45	M5x45L
-10D		50	x50L
-15D		55	x55L
-20D		60	x60L
-25D		65	x65L
-30D		70	x70L
(N)CQ2WB50-10D	12.5	55	M6x55L
-15D		60	x60L
-20D		65	x65L
-25D		70	x70L
-30D		75	x75L
-35D		80	x80L
(N)CQ2WB63-10D	13.5	55	M8x55L
-15D		60	x60L
-20D		65	x65L
-25D		70	x70L
-30D		75	x75L
-35D		80	x80L
(N)CQ2WB80-10D	12.5	60	M10x60L
-15D		65	x65L
-20D		70	x70L
-25D		75	x75L
-30D		80	x80L
-35D		85	x85L
(N)CQ2WB100-10D	13	70	M10x70L
-15D		75	x75L
-20D		80	x80L
-25D		85	x85L
-30D		90	x90L
-35D		95	x95L
(N)CQ2WB110-10D	13	100	x100L
-15D		105	x105L
-20D		110	x110L
-25D		115	x115L
-30D		120	x120L
-35D		125	x125L

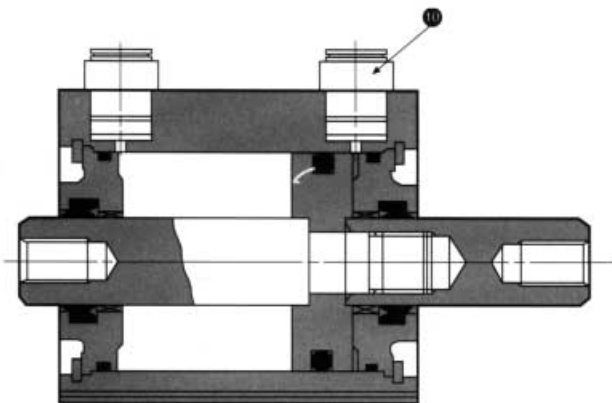


# Compact Cylinder: Standard / Double Acting Double Rod

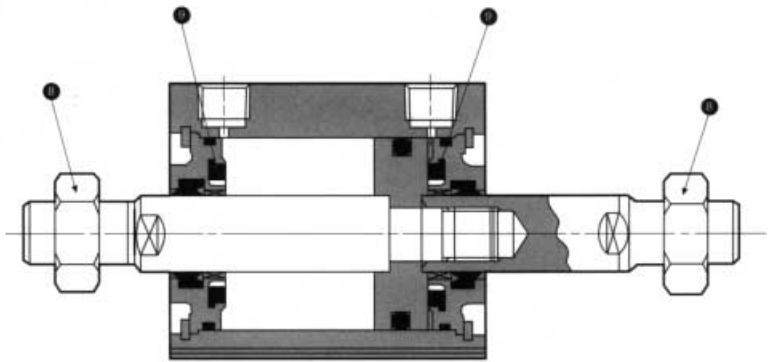
## Construction / Part List



**Double Acting / Double Rod**



**One Touch Fittings**



**W / Cushion & Male Rod Thread**

### Parts List

No.	Description	Material	Remarks
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Chromate
3	Piston rod A	Stainless steel	Bore $\phi 12-\phi 25$
		Carbon steel	Bore $\phi 32-\phi 100$ , hard chrome plated
4	Piston rod B	Stainless steel	Bore $\phi 12-\phi 25$
		Carbon steel	Bore $\phi 32-\phi 100$ , hard chrome plated
5	Collar	Bearing grade aluminum	Bore $\phi 12-\phi 40$ , Black anodized
		Aluminum alloy casting	Bore $\phi 50-\phi 100$ , Black paint
6	Retaining ring	Carbon tool steel	Phosphate coating
7	Bushing	Leaded tin bronze casting	Used for only $\phi 50$ and above
8	Rod end nut	Carbon steel	Nickel plated
9	Bumper	Polyurethane rubber	-
10	One touch fittings	-	Bore $\phi 32-\phi 63$
14	Piston gasket	NBR	-

### Seals List

No.	Description	Material	Parts No.										
			$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	
11	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B	NLP-80B	NLP-100B	
12	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z	PDU-25Z	PDU-30Z	
13	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60	C75	C95	

### Air Hydro (CQ2 only)

No.	Description	Material	Parts No.							
			$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
11	Piston seal	NBR	RPS-20A	RPS-25A	RPS-32A	RPS-40A	RPS-50A	RPS-63A	RPS-80A	RPS-100A
12	Rod seal	NBR	PS-10	PS-12	PS-16	HDU-16	HDU-20	HDU-20	HDU-25	HDU-30
13	Gasket	NBR	C18	C22	C29	C36	C46	C60	C75	C95

### Copper Free Series Air Cylinder

**20 — CQ2WB**    Bore Size    Stroke    D (C) (M)

• Copper Free Series

•  $\phi 50, \phi 63, \phi 80, \phi 100$

To protect against adverse effects on cathode ray tube, 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.

**Note)** Available as Standard Copper Free:  $\phi 12-\phi 40$

### Seal Kit Part Numbers

**CQ2**    Bore Size    PS    Actuation    Other Options

Options  
 - Single Rod  
 K- Non-Rotating  
 Single Rod  
 W- Double Rod

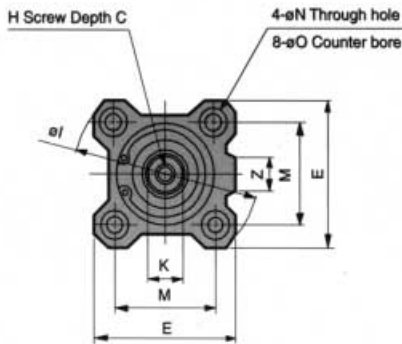
Actuation  
 - Double Action  
 S/T- Single Action  
 Single Rod

Other Options  
 XB6-High Temp.  
 XB7-Low Temp.  
 XB9-Low Speed

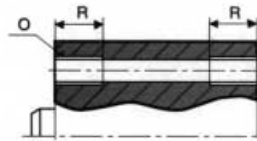


Bore Size  $\phi 12 \sim \phi 25$

Through Hole / (N)CQ2WB

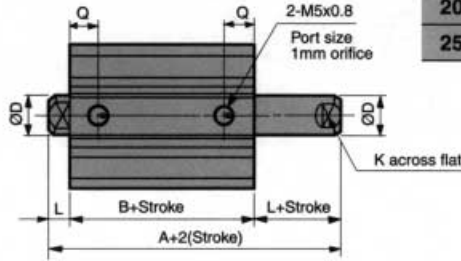


Both ends tapped



(N)CQ2WA  
Both Ends Tapped

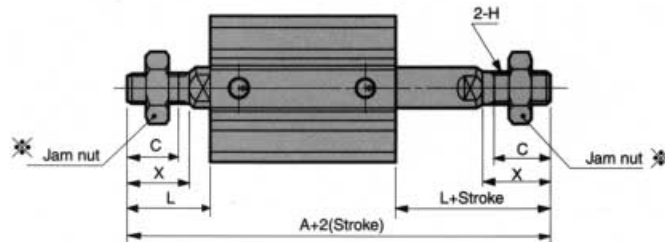
Bore size	CQ2 O	NCQ2 inch O	R
12	M4x0.7	8-32 UNC	7
16	M4x0.7	8-32 UNC	7
20	M6x1.0	1/4 - 20 UNC	10
25	M6x1.0	1/4 - 20 UNC	10



Standard

Bore size	Stroke	A	B	CQ2 C	NCQ2 C	D	E	CQ2 H	NCQ2 inch H	I	K	L	M	N	O	Q	Z
12	5~30	32.2	25.2	6	5.4	6	25	M3x0.5	#8-32	32	5	3.5	15.5	3.5	6.5 depth 3.5	10	-
16	5~30	33	26	8	5.4	8	29	M4x0.7	#8-32	38	6	3.5	20	3.5	6.5 depth 3.5	10	10
20	5~50	35	26	7	7	10	36	M5x0.8	#10-32	47	8	4.5	25.5	5.5	9 depth 7	9.5	10
25	5~50	39	29	12	10	12	40	M6x1.0	1/4-28 UNF	52	10	5	28	5.5	9 depth 7	11	10

Note) The external dimension of cylinder with rubber cushion are the same as that of the above standard.



NCQ2 Male Rod End

Bore size	X	H inch	L	K	A
12	8	#8-32UNC	11.5	5	48.2
16	8	#8-32UNC	11.5	6	49
20	8	#10-32UNF	12.5	8	51
25	9.5	1/4-28UNF	14.5	10	58

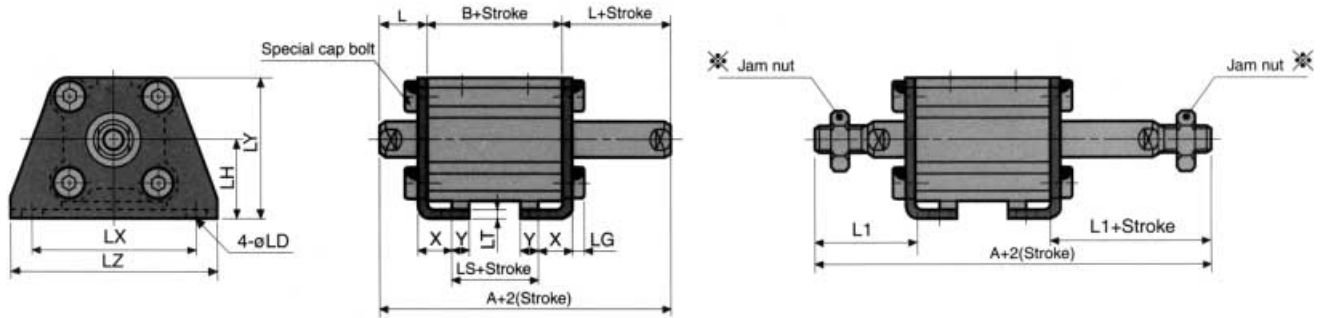
CQ2 Male Rod End

Bore size	C	X	H	L	K	A
12	9	10.5	M5x0.8	14	5	53.2
16	10	12	M6x1.0	15.5	6	57
20	12	14	M8x1.25	18.5	8	63
25	15	17.5	M10x1.25	22.5	10	74

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

"C" dim. not applicable

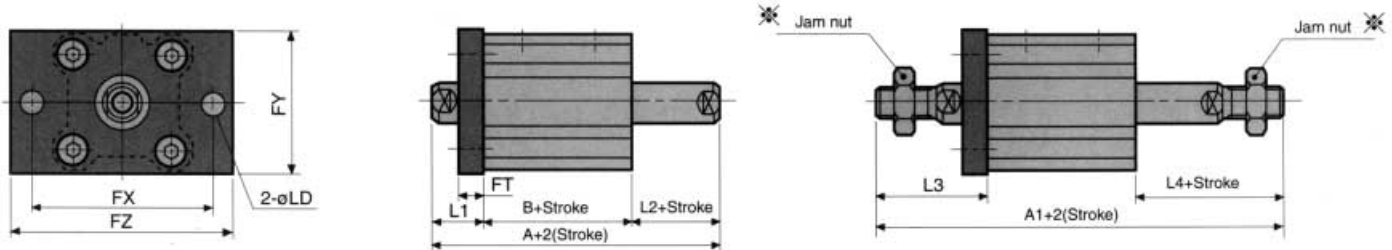
Series (N)CQ2W  
Compact Cylinder: Standard / Double Acting Double Rod



Foot / (N)CQ2WL

Bore size	Stroke	A	CQ2 A1	NCQ2 A1	B	L	CQ2 L1	NCQ2 L1	LD	LG	LH	LS	LT	LX	LY	LZ	X	Y
12	5-30	52.2	73.2	68.2	25.2	13.5	24	21.5	4.5	2.8	17	13.2	2	34	29.5	44	8	4.5
16	5-30	53	77	69	26	13.5	25.5	21.5	4.5	2.8	19	14	2	38	33.5	48	8	5
20	5-50	55	83	71	26	14.5	28.5	22.5	6.6	4	24	14	3.2	48	42	62	9.2	5.8
25	5-50	59	94	78	29	15	32.5	24.5	6.6	4	26	14	3.2	52	46	66	10.7	5.8

mm



Flange / (N)CQ2WF

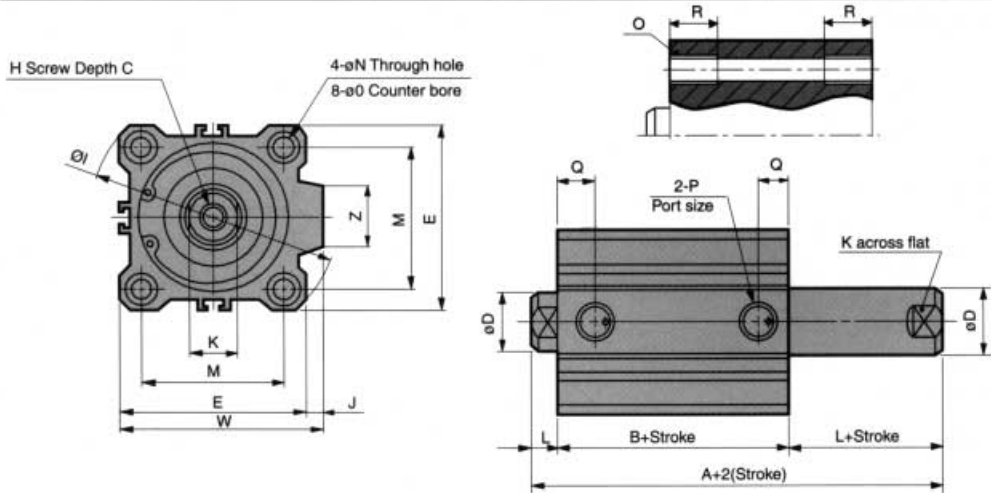
Bore size	Stroke	A	CQ2 A1	NCQ2 A1	B	FD	FT	FV	FX	FZ	L1	L2	CQ2 L3	NCQ2 L3	CQ2 L4	NCQ2 L4
12	5-30	42.2	63.2	58.2	25.2	4.5	5.5	25	45	55	13.5	3.5	24	21.5	14	11.5
16	5-30	43	67	59	26	4.5	5.5	30	45	55	13.5	3.5	25.5	21.5	15.5	11.5
20	5-50	45	73	61	26	6.6	8	39	48	60	14.5	4.5	28.5	22.5	18.5	12.5
25	5-50	49	84	68	29	6.6	8	42	52	64	15	5	32.5	24.5	22.5	14.5

mm

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



Bore Size  $\phi 32 \sim \phi 100$



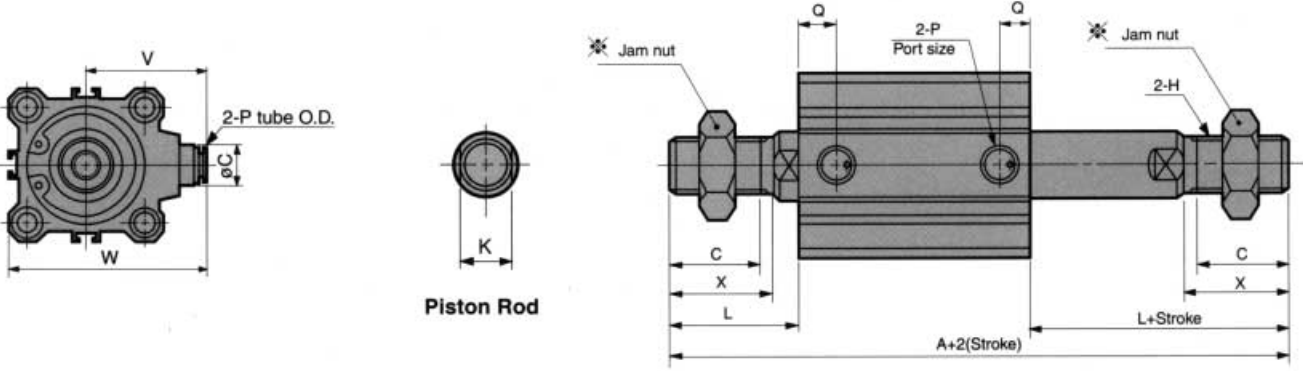
(N)CQ2WA  
Both Ends Tapped

Bore size	CQ2 O	NCQ2 inch O	R
32	M6x1.0	1/4 20 UNC	10
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18
80	M12x1.75	1/2 - 13 UNC	22
100	M12x1.75	1/2 - 13 UNC	22

Standard

Bore size	Stroke (mm)	A	B	CQ2 C	NCQ2 C	D	E	CQ2 H	NCQ2 Inch H	I	J	K	L	M	N	O	P	Orifice	Q	W	Z
32	5 10~50	44.5	30.5	13	13.3	16	45	M8x1.25	5/16-24UNF	60	4.5	14	7	34	5.5	9 depth 7	M5x0.8 1/8	1.7	12.5	49.5	14
40	5~50	54	40	13	18.3	16	52	M8x1.25	3/8-24UNF	69	5	14	7	40	5.5	9 depth 7	1/8	2	14	57	14
50	10~50	56.5	40.5	15	17.6	20	64	M10x1.5	1/2-20UNF	86	7	17	8	50	6.6	11 depth 8	1/4	2.2	14	71	19
63	10~50	58	42	15	17.6	20	77	M10x1.5	1/2-20UNF	103	7	17	8	60	9	14 depth 10.5	1/4	3	15.5	84	19
80	10~50	71	51	21	24.3	25	98	M16x2.0	5/8-18UNF	132	6	22	10	77	11	17.5 depth 13.5	3/8	4	18	104	26
100	10~50	84.5	60.5	27	27	30	117	M20x2.5	3/4-16UNF	156	6.5	27	12	94	11	17.5 depth 13.5	3/8	5	22	123.5	26

Note 1) The external dimensions of cylinder with rubber cushion are the same as that of the above standard.  
 2) In case of built-in fitting type, bore size  $\phi 32$ , 5 stroke has the same external dimensions as 10 stroke.



One Touch Fittings

Bore size	C	P	V	W
32	13	6	38	60.5
40	13	6	42	68
50	16	8	50	82
63	16	8	56.5	95

NCQ2 Male Rod End

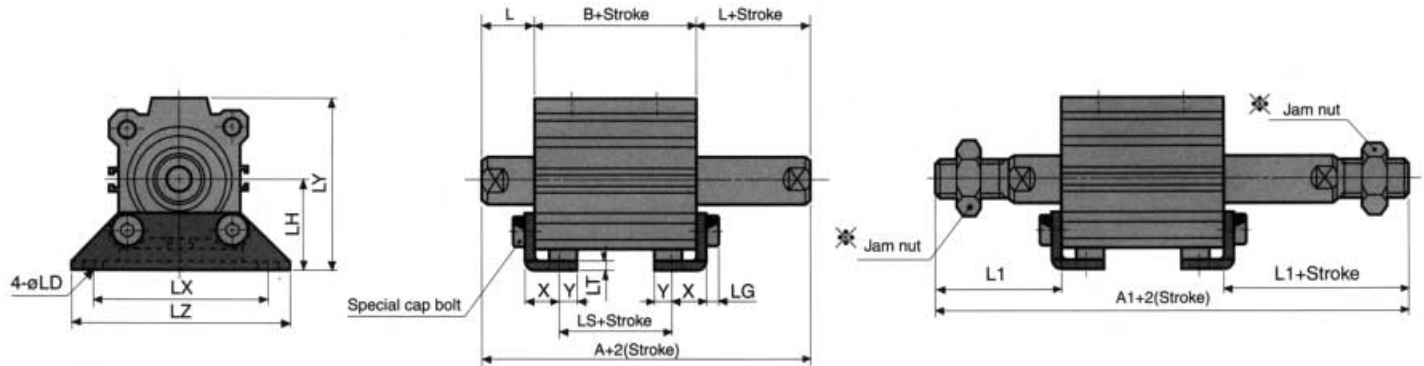
Bore size	X	H Inch	L	K	A
32	12.7	5/16-24UNF	19.7	14	69.9
40	16	3/8-24UNF	23	14	86
50	19.5	1/2-20UNF	27.5	17	95.5
63	19.5	1/2-20UNF	27.5	17	97
80	25.5	5/8-18UNF	35.5	22	122
100	28.5	3/4-16UNF	40.5	27	141.5

CQ2 Male Rod End

Bore size	C	X	H	L	K	A
32	20.5	23.5	M14x1.5	28.5	14	87.5
40	20.5	23.5	M14x1.5	28.5	14	97
50	26	28.5	M18x1.5	33.5	17	107.5
63	26	28.5	M18x1.5	33.5	17	109
80	32.5	35.5	M22x1.5	43.5	22	138
100	32.5	35.5	M26x1.5	43.5	27	147.5

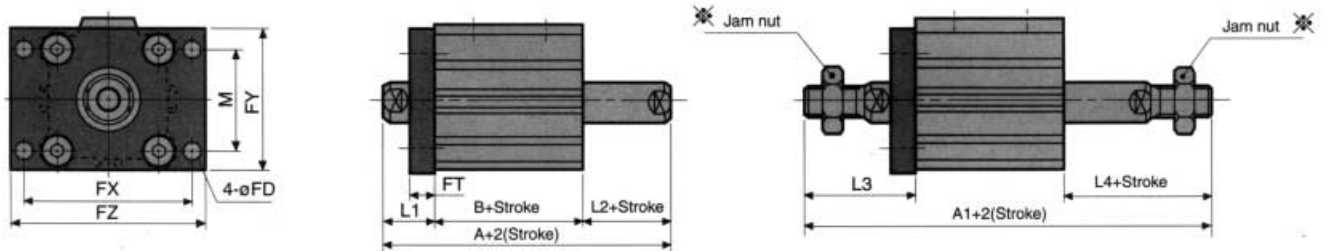
\* Rod end nut and accessories are detailed on pg. 6. "C" dim. not applicable

Compact Cylinder: Standard / Double Acting Double Rod



Foot / (N)CQ2WL

Bore size	Stroke	A	CQ2 L1	NCQ2 A1	B	L	CQ2 L1	NCQ2 L1	LD	LG	LH	LS	LT	LX	LY	LZ	X	Y
32	5-50	64.5	107.5	89.9	30.5	17	38.5	29.7	6.6	4	30	14.5	3.2	57	57	71	11.2	5.8
40	5-50	74	117	106	40	17	38.5	33	6.6	4	33	24	3.2	64	64	78	11.2	7
50	10-50	76.5	127.5	115.5	40.5	18	43.5	37.5	9	5	39	17.5	3.2	79	78	95	14.7	8
63	10-50	78	129	117	42	18	43.5	37.5	11	5	46	16	3.2	95	91.5	113	16.2	9
80	10-50	91	158	142	51	20	53.5	45.5	13	7	59	21	4.5	118	114	140	19.5	11
100	10-50	104.5	167.5	161.5	60.5	22	53.5	50.5	13	7	71	26.5	6	137	136	162	23	12.5



Flange / (N)CQ2WF

Bore size	Stroke	A	A1	NCQ2 A1	B	FD	FT	FV	FX	FZ	L1	L2	L3	NCQ2 L3	L4	NCQ2 L4	M
32	5-50	54.5	97.5	79.9	30.5	5.5	8	48	56	65	17	7	38.5	29.7	28.5	19.7	34
40	5-50	64	107	96	40	5.5	8	54	62	72	17	7	38.5	33	28.5	23	40
50	10-50	66.5	117.5	105.5	40.5	6.6	9	67	76	89	18	8	43.5	37.5	33.5	27.5	50
63	10-50	68	119	107	42	9	9	80	92	108	18	8	43.5	37.5	33.5	27.5	60
80	10-50	81	148	132	51	11	11	99	116	134	20	10	53.5	45.5	43.5	35.5	77
100	10-50	94.5	157.5	151.5	60.5	11	11	117	136	154	22	12	53.5	50.5	43.5	40.5	94

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





Standard /  
Double Acting Double rod

# (N)CDQ2W Series

## Standard Specifications

Model	Air Pressure (Non-Lube)	Air-hydraulic
Media	Air	Hydraulic oil
Ambient and Media 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. 24)

**NOTE 1** Part Number for Auto Switches  
Please refer to p. 24 for part order sequence

**NOTE 2** Auto Switch Minimum Strokes and Specifications  
Please refer to p. 13 for minimum stroke with Auto Switches and Specifications



## Weight Adder

Bore size	12	16	20	25	32	40	50	63	80	100
Both ends tapped	0.002	0.002	0.007	0.007	0.013	0.013	0.013	0.042	0.099	0.099
Rod end M thread	Thread	0.007	0.013	0.026	0.053	0.115	0.119	0.234	0.234	0.529
	Nut	0.004	0.009	0.018	0.035	0.075	0.075	0.141	0.141	0.216
W/ rubber cushion	0.000	0.000	-0.004	-0.004	-0.007	-0.015	-0.026	-0.042	-0.075	-0.126
W/ one touch fitting	-	-	-	-	0.026	0.026	0.046	0.046	-	-
Foot mounting*	0.115	0.143	0.337	0.390	0.351	0.377	0.589	0.770	1.621	2.463
Rod side flange*	0.119	0.148	0.289	0.337	0.397	0.472	0.822	1.233	2.328	3.010

\*(incl. mounting bolt)

## Weight / Double Acting: Double Rod Type

Bore size	Stroke									
	5	10	15	20	25	30	35	40	45	50
12	0.121	0.139	0.157	0.174	0.192	0.209	-	-	-	-
16	0.194	0.218	0.243	0.267	0.291	0.315	-	-	-	-
20	0.298	0.335	0.373	0.410	0.448	0.485	0.523	0.560	0.598	0.635
25	0.401	0.439	0.476	0.514	0.551	0.589	0.626	0.664	0.701	0.739
32	0.545	0.598	0.650	0.703	0.756	0.809	0.862	0.915	0.968	1.021
40	0.816	0.884	0.953	1.021	1.089	1.158	1.226	1.294	1.363	1.431
50	-	1.427	1.526	1.625	1.724	1.824	1.923	2.022	2.121	2.220
63	-	1.837	1.923	2.009	2.095	2.181	2.267	2.353	2.439	2.525
80	-	3.308	3.493	3.678	3.863	4.048	4.234	4.419	4.604	4.789
100	-	5.515	5.777	6.039	6.302	6.564	6.827	7.089	7.351	7.614

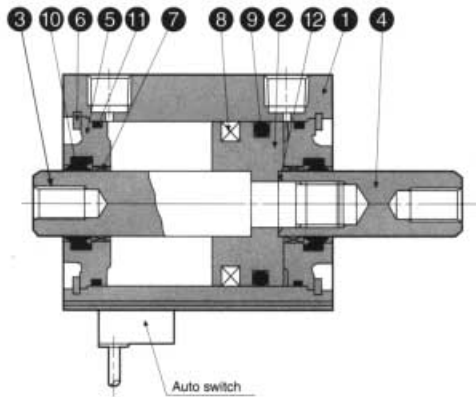
## How to calculate weight (lbs)

(N)CDQ2L32-20DCM  
Std Wt.: (N)CDQ2B32-20D\_.703  
Wt. adder: Both ends tapped\_.013  
Jam nut\_.075  
W/ rubber cushion\_.007  
Foot mounting\_.351  
Total 1.135

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	12~ 25	.003
BQ-2	32~ 100	.003



## Parts List

No.	Description	Material	Remarks
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Chromate
3	Piston rod A	Stainless steel	Bore $\phi$ 12- $\phi$ 25
		Carbon steel	Bore $\phi$ 32- $\phi$ 100, hard chrome plated
4	Piston rod B	Stainless steel	Bore $\phi$ 12- $\phi$ 25
		Carbon steel	Bore $\phi$ 32- $\phi$ 100, hard chrome plated
5	Collar	Aluminum alloy	Bore $\phi$ 12- $\phi$ 40, Black anodized
		Aluminum alloy casting	Bore $\phi$ 50- $\phi$ 100, Black paint
6	Retaining ring	Carbon tool steel	Phosphate coating
7	Bushing	Leaded tin bronze casting	Bore $\phi$ 50- $\phi$ 100
8	Magnet	----	
12	Piston Gasket	NBR	

## Seals List

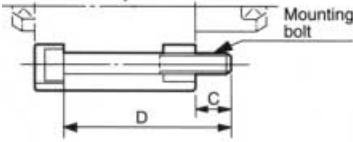
No.	Description	Material	Parts No.									
			$\phi$ 12	$\phi$ 16	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40	$\phi$ 50	$\phi$ 63	$\phi$ 80	$\phi$ 100
9	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B	NLP-80B	NLP-100B
10	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z	PDU-25Z	PDU-30Z
11	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60	C75	C95

## Air Hydro (CQ2 only)

No.	Description	Material	Parts No.							
			$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40	$\phi$ 50	$\phi$ 63	$\phi$ 80	$\phi$ 100
9	Piston seal	NBR	RPS-20A	RPS-25A	RPS-32A	RPS-40A	RPS-50A	RPS-63A	RPS-80A	RPS-100
10	Rod seal	NBR	PS-10	PS-12	PS-16	HDU-16	HDU-20	HDU-20	HDU-25	HDU-30
11	Gasket	NBR	C18	C22	C29	C36	C46	C60	C75	C95

### Mounting Bolt For (N)CDQ2W/ 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 4pcs.



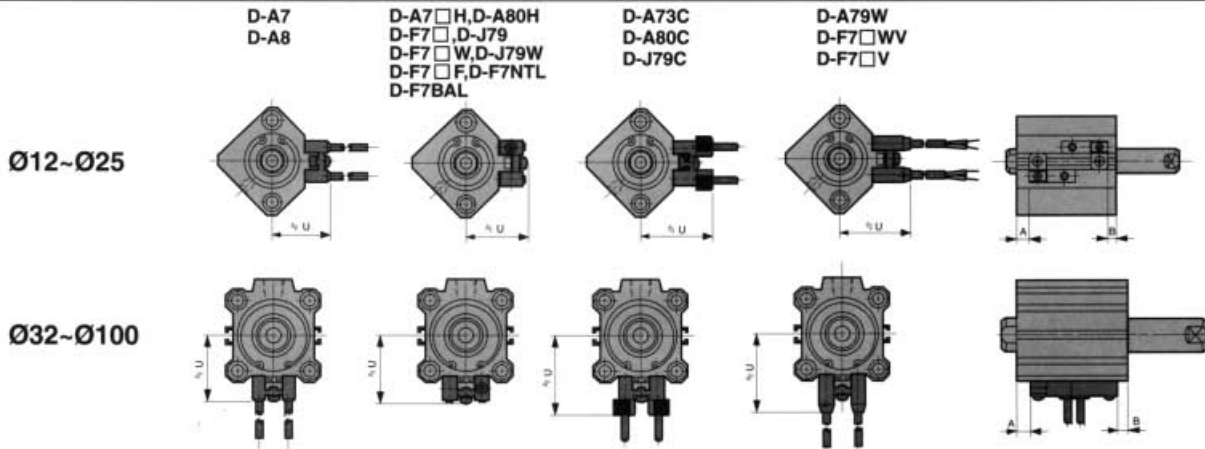
Thread	Pitch
M3	0.5
M5	0.8
M6	1.0
M8	1.25
M10	1.5

Model	C	D	Mounting bolt
(N)CDQ2WB12-5DC	6.1	40	M3x40L
-10DC		45	x45L
-15DC		50	x50L
-20DC		55	x55L
-25DC		60	x60L
-30DC		65	x65L
(N)CDQ2WB16-5D	7.5	45	M3x45L
-10D		50	x50L
-15D		55	x55L
-20D		60	x60L
-25D		65	x65L
-30D		70	x70L
(N)CDQ2WB20-5D	9	45	M5x45L
-10D		50	x50L
-15D		55	x55L
-20D		60	x60L
-25D		65	x65L
-30D		70	x70L
-35D		75	x75L
-40D		80	x80L
-45D		85	x85L
-50D		90	x90L
(N)CDQ2WB25-5D	8	45	M5x45L
-10D		50	x50L
-15D		55	x55L
-20D		60	x60L
-25D		65	x65L
-30D		70	x70L
-35D		75	x75L
-40D		80	x80L
-45D		85	x85L
-50D		90	x90L

Model	C	D	Mounting bolt
(N)CDQ2WB32-5D	6.5	45	M5x45L
-10D		50	x50L
-15D		55	x55L
-20D		60	x60L
-25D		65	x65L
-30D		70	x70L
-35D		75	x75L
-40D		80	x80L
-45D		85	x85L
-50D		90	x90L
(N)CDQ2WB40-5D	7	55	M5x55L
-10D		60	x60L
-15D		65	x65L
-20D		70	x70L
-25D		75	x75L
-30D		80	x80L
-35D		85	x85L
-40D		90	x90L
-45D		95	x95L
-50D		100	x100L
(N)CDQ2WB50-10D	12.5	65	M6x65L
-15D		70	x70L
-20D		75	x75L
-25D		80	x80L
-30D		85	x85L
-35D		90	x90L
-40D		95	x95L
-45D		100	x100L
-50D		105	x105L

Model	C	D	Mounting bolt
(N)CDQ2WB63-10D	13.5	65	M8x65L
-15D		70	x70L
-20D		75	x75L
-25D		80	x80L
-30D		85	x85L
-35D		90	x90L
-40D		95	x95L
(N)CDQ2WB80-10D	12.5	70	M10x70L
-15D		75	x75L
-20D		80	x80L
-25D		85	x85L
-30D		90	x90L
-35D		95	x95L
-40D		100	x100L
(N)CDQ2WB100-10D	13	80	M10x80L
-15D		85	x85L
-20D		90	x90L
-25D		95	x95L
-30D		100	x100L
-35D		105	x105L
-40D		110	x110L
-45D		115	x115L
-50D		120	x120L

### Auto Switch Mounting Data



### Auto Switch Mounting Position

Bore Size (mm)	D-A7•A8		D-A7□H•A80H D-A73C•A80C D-F7□•J79 D-F7□V•J79C		D-A79W		D-F7BAL D-F7PW D-F7□F D-J79W		D-F79W D-F7□VW	
	A	B	A	B	A	B	A	B	A	B
12	4.5	10	5	10.5	2	7.5	9	14.5	5.5	11
16	7.5	10.5	8	11	5	8	12	15	8.5	11.5
20	7.5	13	8	13.5	5	10.5	12	17.5	8.5	14
25	7.5	13	8	13.5	5	10.5	12	17.5	8.5	14
32	9.0	13.5	9.5	14	6.5	11	13.5	18	10	14.5
40	13	19	13.5	19.5	10.5	16.5	17.5	23.5	14	20
50	11	21.5	11.5	22	8.5	19	15.5	26	12	22.5
63	13.5	20.5	14	21	11	18	18	25	14.5	21.5
80	17.5	29	18	29.5	15	26.5	22	33.5	18.5	30
100	21	31.5	21.5	32	18.5	29	25.5	36	22	32.5

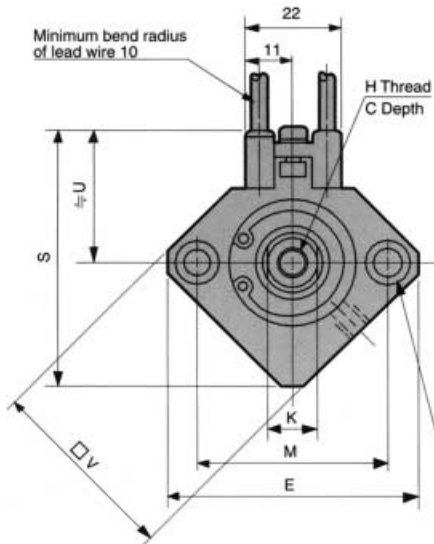
### Auto Switch Mounting Height

Bore Size (mm)	D-A7 A8	D-A7□H D-A80H D-F7□ D-J79 D-F7□W	D-J79W D-F7BAL D-F7□F D-F7NTL D-F7□V	D-A73C D-A80C D-F7□VW	D-F7□V	D-J79C	D-A79W
	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	
80	57.5	58.5	64.5	61	64	60	
100	67.5	68.5	74.5	71	74	70	

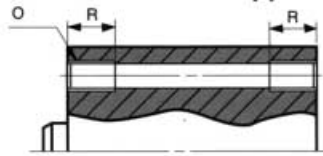


Bore Size  $\phi 12 \sim \phi 25$

## Through Hole / (N)CDQ2WB

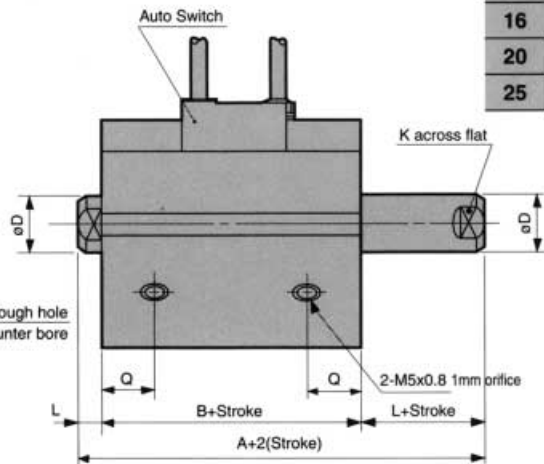


## Both Ends Tapped



## (N)CDQ2WA Both Ends Tapped

Bore size	CQ2 O	NCQ2 inch O	R
12	M4x0.7	8-32 UNC	7
16	M4x0.7	8-32 UNC	7
20	M6x1.0	1/4 - 20 UNC	10
25	M6x1.0	1/4 - 20 UNC	10



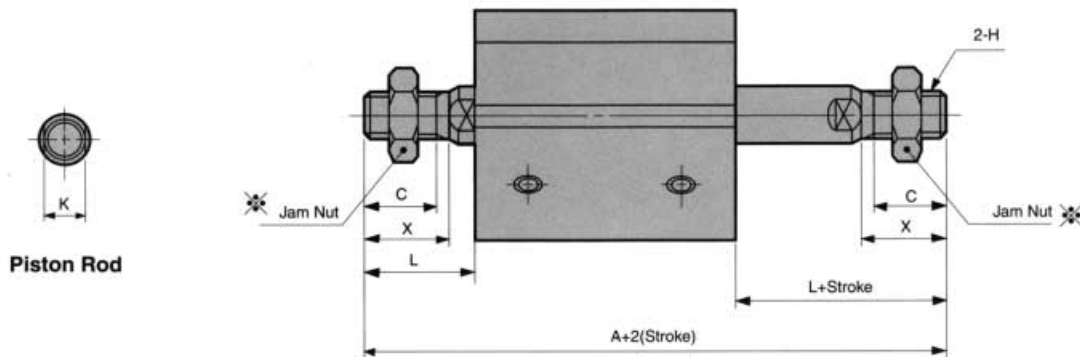
The above Auto Switch mounting is used for D-A73 and D-A80  
Auto Switch set position and mounting height: See p. 33

## Standard

Bore size	Stroke	A	B	CQ2 C	NCQ2 C	D	E	CQ2 H	NCQ2 inch H	K	L	M	N	O	Q	S	U	V	
12	5~30	39.4	32.4	6	5.4	6	32	M3x0.5	#8-32	5	3.5	22	3.5	6.5 depth 3.5	3.5	10.5	35.5	19.5	25
16	5~30	43	36	8	5.4	8	38	M4x0.7	#8-32	6	3.5	28	3.5	6.5 depth 3.5	10	41.5	22.5	29	
20	5~50	47	38	7	7	10	47	M5x0.8	#10-32	8	4.5	36	5.5	9 depth 7	10.5	48	24.5	36	
25	5~50	49	39	12	10	12	52	M6x1.0	1/4 - 28 UNF	10	5	40	5.5	9 depth 7	11	53.5	27.5	40	

Note 2) The external dimensions of cylinder with rubber cushion are the same as that of the above standard.

✳ For further info on Jam Nut and accessories detail: see p. 6.



Piston Rod

## NCQ2 Male Rod End

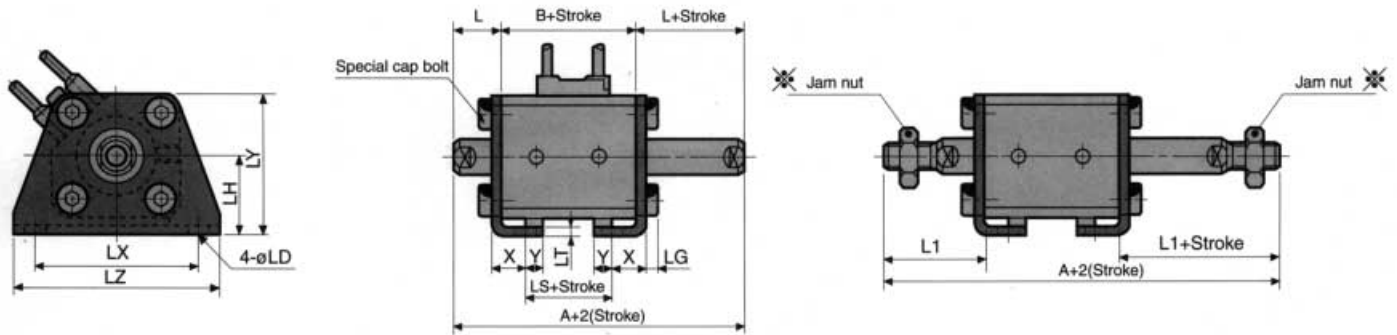
Bore size	X	H Inch	L	K	A
12	8	#8-32UNC	11.5	5	55.4
16	8	#8-32UNC	11.5	6	59
20	8	#10-32UNF	12.5	8	63
25	9.5	1/4-28UNF	14.5	10	68

"C" dim. not applicable

## CQ2 Male Rod End

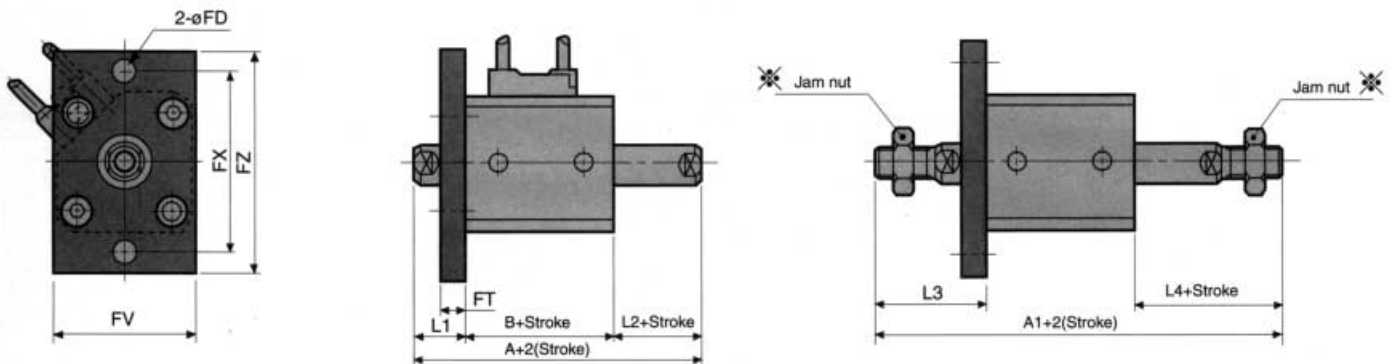
Bore size	C	X	H	L	K	A
12	9	10.5	M5x0.8	14	5	60.4
16	10	12	M6x1.0	15.5	6	67
20	12	14	M8x1.25	18.5	8	75
25	15	17.5	M10x1.25	22.5	10	84

Compact Cylinder: Standard / Double Acting Double Rod With Switches



Foot / (N)CDQ2WL

Bore size	Stroke	A	CQ2 A1	NCQ2 A1	B	L	CQ2 L1	NCQ2 L1	LD	LG	LH	LS	LT	LX	LY	LZ	X	Y
12	5-30	59.4	80.4	75.4	32.4	13.5	24	21.5	4.5	2.8	17	20.4	2	34	29.5	44	8	4.5
16	5-30	63	87	79	36	13.5	25.5	21.5	4.5	2.8	19	24	2	38	33.5	48	8	5
20	5-50	67	95	83	38	14.5	28.5	22.5	6.6	4	24	26	3.2	48	42	62	9.2	5.8
25	5-50	69	104	88	39	15	32.5	24.5	6.6	4	26	24	3.2	52	46	66	10.7	5.8



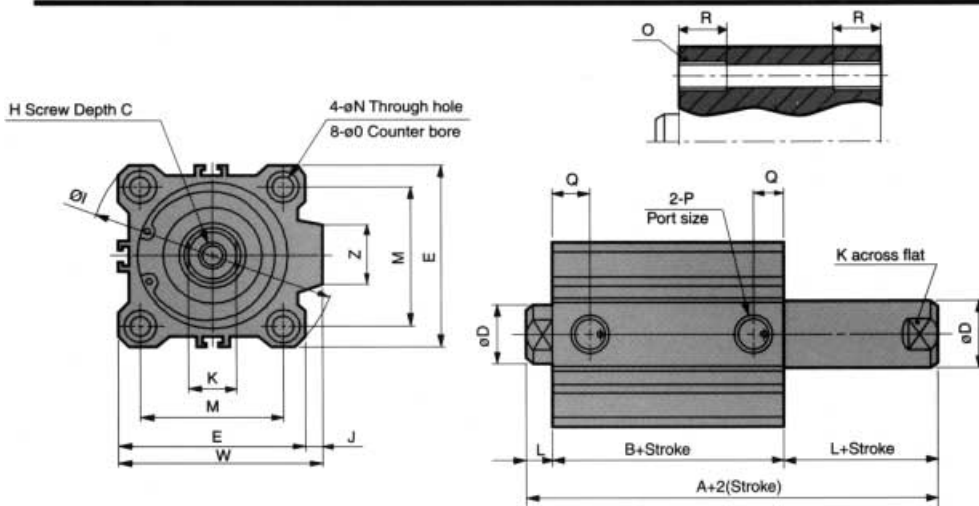
Flange / (N)CDQ2WF

Bore size	Stroke	A	A1	NCQ2 A1	B	FD	FT	FV	FX	FZ	L1	L2	L3	NCQ2 L3	L4	NCQ2 L4
12	5-30	49.4	70.4	65.4	32.4	4.5	5.5	25	45	55	13.5	3.5	24	21.5	14	11.5
16	5-30	53	77	69	36	4.5	5.5	30	45	55	13.5	3.5	25.5	21.5	15.5	11.5
20	5-50	57	85	73	38	6.6	8	39	48	60	14.5	4.5	28.5	22.5	18.5	12.5
25	5-50	59	94	78	39	6.6	8	42	52	64	15	5	32.5	24.5	22.5	14.5

※ Rod end nut and accessories are detailed on p. 6.



## Bore Size $\phi 32 \sim \phi 100$



(N)CDQ2WA  
Both Ends Tapped

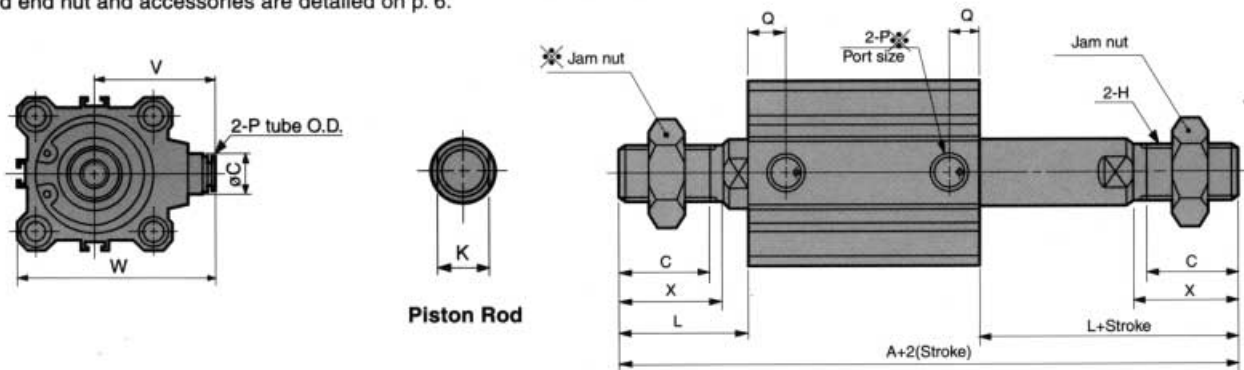
Bore size	CQ2 O	NCQ2 inch O	R
32	M6x1.0	1/4 - 20 UNC	10
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18
80	M12x1.75	1/2 - 13 UNC	22
100	M12x1.75	1/2 - 13 UNC	22

### Standard

Bore size	Stroke (mm)	A	B	CQ2 C	NCQ2 C	D	E	CQ2 H	NCQ2 Inch H	I	J	K	L	M	N	O	P	Orifice	Q	S	U	Z
32	5~50	54.5	40.5	13	13.3	16	45	M8x1.25	5/16-24UNF	60	4.5	14	7	34	5.5	9 depth 7	1/8	1.7	12.5	58.5	31.5	14
40	5~50	64	50	13	18.3	16	52	M8x1.25	3/8-24UNF	69	5	14	7	40	5.5	9 depth 7	1/8	2	14	66	35	14
50	10~50	66.5	50.5	15	17.6	20	64	M10x1.5	1/2-20UNF	86	7	17	8	50	6.6	11 depth 8	1/4	2.2	14	80	41	19
63	10~50	68	52	15	17.6	20	77	M10x1.5	1/2-20UNF	103	7	17	8	60	9	14 depth 10.5	1/4	3	15.5	93	47.5	19
80	10~50	81	61	21	24.3	25	98	M16x2.0	5/8-18UNF	132	6	22	10	77	11	17.5 depth 13.5	3/8	4	18	112.5	57.5	26
100	10~50	94.5	70.5	27	27	30	117	M20x2.5	3/4-16UNF	156	6.5	27	12	94	11	17.5 depth 13.5	3/8	5	22	132.5	67.5	26

Note 2) The external dimensions of cylinder with rubber cushion are the same as that of the above standard.

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



### One Touch Fittings

Bore size	C	P	V	W
32	13	6	38	60.5
40	13	6	42	68
50	16	8	50	82
63	16	8	56.5	95

### NCQ2 Male Rod End

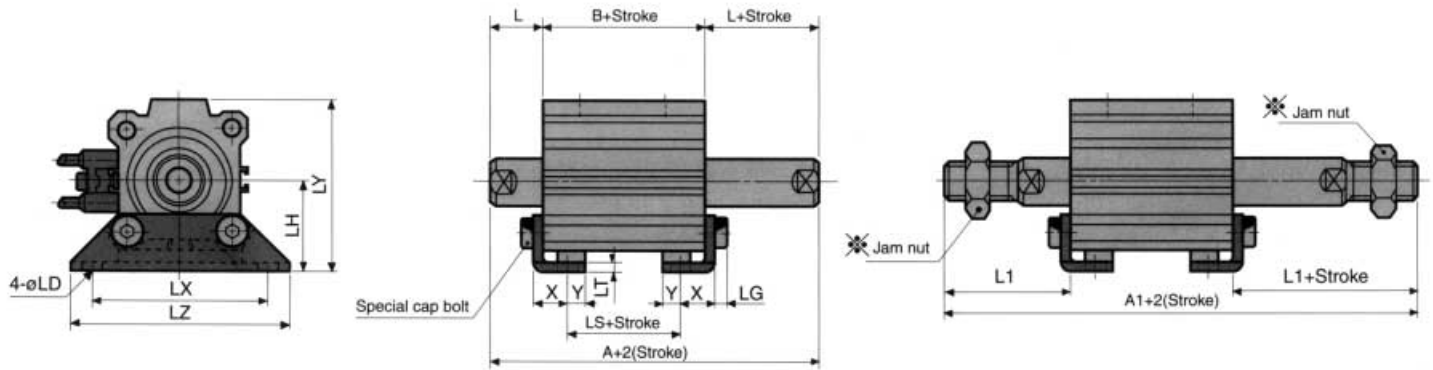
Bore size	X	H Inch	L	K	A
32	12.7	5/16-24UNF	19.7	14	79.9
40	16	3/8-24UNF	23	14	96
50	19.5	1/2-20UNF	27.5	17	105.5
63	19.5	1/2-20UNF	27.5	17	107
80	25.5	5/8-18UNF	35.5	22	132
100	28.5	3/4-16UNF	40.5	27	151.5

"C" dim. not applicable

### CQ2 Male Rod End

Bore size	C	X	H	L	K	A
32	20.5	23.5	M14x1.5	28.5	14	97.5
40	20.5	23.5	M14x1.5	28.5	14	107
50	26	28.5	M18x1.5	33.5	17	117.5
63	26	28.5	M18x1.5	33.5	17	119
80	32.5	35.5	M22x1.5	43.5	22	148
100	32.5	35.5	M26x1.5	43.5	27	157.5

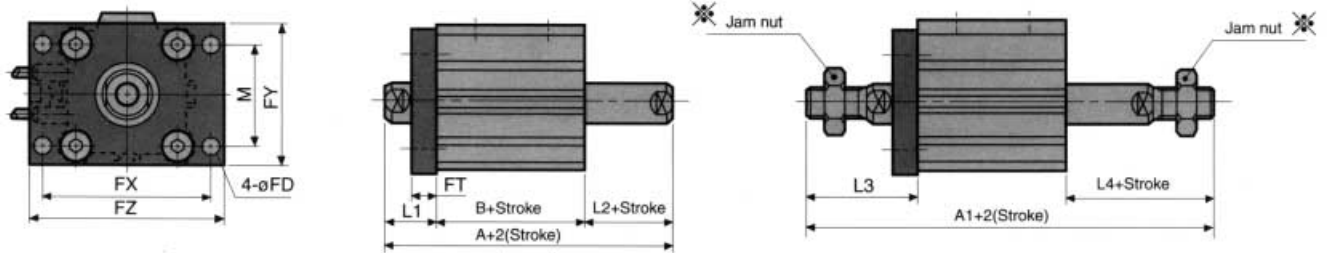
# Compact Cylinder: Standard / Double Acting Double Rod With Switches



## Foot / (N)CDQ2WL

Bore size	Stroke	A	CQ2 A1	NCQ2 A1	B	L	CQ2 L1	NCQ2 L1	LD	LG	LH	LS	LT	LX	LY	LZ	X	Y
32	5~50	74.5	117.5	99.9	40.5	17	38.5	29.7	6.6	4	30	24.5	3.2	57	57	71	11.2	5.8
40	5~50	84	127	116	50	17	38.5	33	6.6	4	33	34	3.2	64	64	78	11.2	7
50	10~50	86.5	137.5	125.5	50.5	18	43.5	37.5	9	5	39	27.5	3.2	79	78	95	14.7	8
63	10~50	88	139	127	52	18	43.5	37.5	11	5	46	26	3.2	95	91.5	113	16.2	9
80	10~50	101	168	152	61	20	53.5	45.5	13	7	59	31	4.5	118	114	140	19.5	11
100	10~50	114.5	177.5	171.5	70.5	22	53.5	50.5	13	7	71	36.5	6	137	136	162	23	12.5

※ Rod end nut and accessories are detailed on p. 6.



## Flange / (N)CDQ2WF

Bore size	Stroke	A	A1	NCQ2 A1	B	FD	FT	FV	FX	FZ	L1	L2	L3	NCQ2 L3	L4	NCQ2 L4	M
32	5~50	64.5	107.5	89.9	40.5	5.5	8	48	56	65	17	7	38.5	29.7	28.5	19.7	34
40	5~50	74	117	106	50	5.5	8	54	62	72	17	7	38.5	33	28.5	23	40
50	10~50	76.5	127.5	115.5	50.5	6.6	9	67	76	89	18	8	43.5	37.5	33.5	27.5	50
63	10~50	78	129	117	52	9	9	80	92	108	18	8	43.5	37.5	33.5	27.5	60
80	10~50	91	158	142	61	11	11	99	116	134	20	10	53.5	45.5	43.5	35.5	77
100	10~50	104.5	167.5	161.5	70.5	11	11	117	136	154	22	12	53.5	50.5	43.5	40.5	94

※ Rod end nut and accessories are detailed on p. 6.



## Other Options: XB6, XB7, XB9, Air Hydro

## High Temperature Resisting Cylinder

(N)CQ2  Mounting style  Bore Size  Stroke  D  -XB6

The cylinder seals have been changed to be of heat-resistant material and special grease has been added to enable its use under high-temperature conditions of up to (150°C.) 300°F.

## Specifications

Bore Size	ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100
Action	Double acting
Fluid	Air
Lubrication	Non-lube
Material	Packing-fluorocarbon
Mounting style	Through hole (Standard) Both ends tapped

\* Major dimensions are the same as that of the double acting single rod or double rod and no auto switch can be attached.

## Low Temperature Resisting Cylinder

(N)CQ2  Mounting style  Bore Size  Stroke  D  -XB7

The cylinder seals have been changed to be of cold-resistant material and special grease has been added to enable its use under low-temperature conditions of down to (-40°C).

## Specifications

Bore Size	ø12, ø16, ø20, ø25, ø32, ø40
Action	Double acting
Fluid	Air
Lubrication	Non-lube
Material	Packing-Low-nitrile rubber
Mounting style	Through hole (Standard) Both ends tapped

\* Major dimensions are the same as that of the double acting single rod and no auto switch can be attached.

## Air Hydro Cylinder

CQ2  Mounting style  H  Bore Size  Stroke  D 

## Specifications

Bore Size	ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100
Action	Double acting
Fluid	Air
Proof pressure	213 psi (15kgf/cm <sup>2</sup> )
Max. operating pressure	140 psi (9.9kgf/cm <sup>2</sup> )
Min. operating pressure	26 psi (1.8kgf/cm <sup>2</sup> )

\* Major dimensions are the same as that of the double acting single rod or double rod, and auto switch can be attached.

CQ2 only - Special order

## Low Speed Cylinder

(N)CQ2  Mounting style  Bore Size  Stroke  D  -XB9

There is no stick-slip phenomenon at a low-speed drive of 0.4~2 in/sec (10~50mm/sec), and all strokes drive at a constant speed smoothly.

## Specifications

Bore Size	ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100
Action	Double acting
Fluid	Air
Max. operating pressure	140psi (9.9kgf/cm <sup>2</sup> )
Min. operating pressure	7psi (0.5kgf/cm <sup>2</sup> )
Piston velocity	.4~2 in/sec (10~50mm/sec)

\* Major dimensions are the same as that of the double acting single rod, and auto switch can be attached.

(N)CQ2  Mounting style  Bore Size  Stroke  D  -XB13

There is no stick-slip phenomenon at a low-speed drive of 0.2~2 in/sec (5~50mm/sec), and all strokes drive at a constant speed smoothly.

## Specifications

Bore Size	ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100
Action	Double acting
Fluid	Air
Max. operating pressure	140psi (9.9kgf/cm <sup>2</sup> )
Min. operating pressure	7psi (0.5kgf/cm <sup>2</sup> )
Piston velocity	.2~2 in/sec (5~50mm/sec)

\* Major dimensions are the same as that of the double acting single rod, and auto switch can be attached.

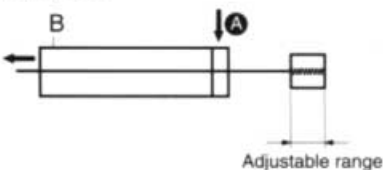
Series CQ2  
Stroke Adjustment Options: XC8, XC9

Adjustable Stroke Cylinder /  
Extend Type

(N)CQ2B Bore Size Stroke D -XC8

The extend stroke of the cylinder can be adjusted by the stop collar at the head side from full stroke 0~10mm.

Symbol

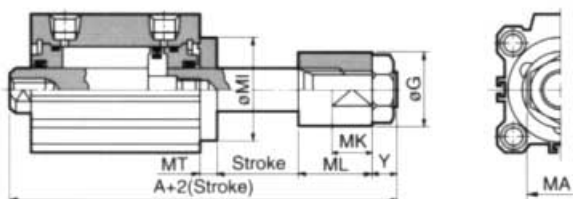


Specifications

Bore Size	ø12,ø16,ø20,ø25,ø32,ø40,ø50,ø63,ø80,ø100
Action	Double acting
Lubrication	Non-Lube
Fluid	Air
Stroke adjustment system	Adjusting bolt
Stroke adjustment range	10mm
Mounting style	Through hole

Note) Seal Kit is the same as that of the Double rod (W) option on page 27.

Construction / Major Dimensions



Bore Size (mm)	A	Y	MA	MI	MK	ML	øG	Standard stroke range
12	57.7 (64.9)	5	11	□25	7	19	14	30
16	58.5 (68.5)	5	11	□28	7	19	14	
20	67.5 (79.5)	6.5	17	□36	10	22.5	20	
25	71 (81)	6.5	17	□40	10	22.5	20	
32	78.5 (88.5)	9	24	Ø38	14	26	27	50
40	88 (98)	9	24	Ø46	14	26	27	
50	100.5 (110.5)	14	30	Ø57	16	30	35	
63	102 (112)	12	30	Ø68	16	30	35	
80	125 (135)	14	41	Ø90	20	38	48	
100	138.5 (148.5)	14	41	Ø110	20	38	48	

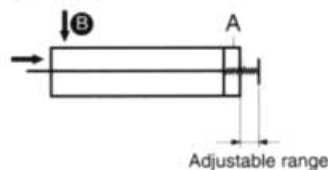
( ) Dimension for Auto Switch capable

Adjustable Stroke Cylinder /  
Retract Type

(N)CQ2 Mountingstyle Bore size Stroke D -XC9

The retract stroke of the cylinder can be adjusted from 0~10mm with the adjustment bolt.

Symbol

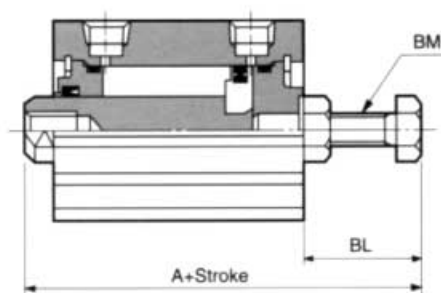


Specifications

Bore Size	ø12,ø16,ø20,ø25,ø32,ø40,ø50,ø63,ø80,ø100
Action	Double acting
Lubrication	Non-Lube
Fluid	Air
Stroke adjustment system	Adjusting bolt
Stroke adjustment range	10mm
Mounting style	Through hole (Standard), both ends tapped

Note) Seal Kit is the same as that of the Single rod kit on page 8.

Dimensions



Bore Size (mm)	A	BL	BM	Standard stroke range
12	52 (59.2)	23.3	M5x0.8	30
16	53 (63)	23.5	M6x1	
20	61 (73)	30.5	M8x1.25	
25	63.5 (73.5)	29.5	M8x1.25	
32	65.5 (75.5)	28	M8x1.25	50
40	84 (94)	37	M12x1.5	
50	84.5 (94.5)	36	M12x1.5	
63	88.5 (98.5)	38.5	M16x1.5	
80	109.5 (119.5)	48.5	M20x1.5	
100	125 (135)	52.5	M24x1.5	

( ) Dimension for Auto Switch capable

# Dual Stroke & 3 Position Tandem Options: XC10, XC11

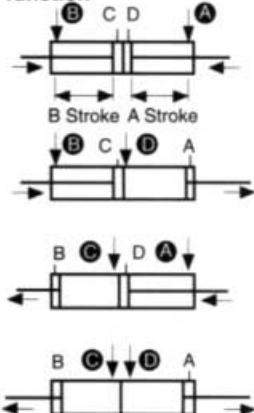
## Dual Stroke Cylinder / Double Rod Type

(N)CQ2B **Bore Size** — **Stroke A** + **Stroke B** D **C** -XC10

Two cylinders are constructed as one cylinder in a back-to-back configuration allowing the cylinder stroke to be controlled in three steps. Four positions are possible.

### Symbol

function



When air pressure is supplied to ports **A** and **B**, both **A** and **B** strokes retract.

When air pressure is supplied to ports **B** and **D**, both **A** stroke extends.

When air pressure is supplied to ports **A** and **C**, **B** stroke extends.

When air pressure is supplied to ports **C** and **D**, both strokes **A** and **B** extend.

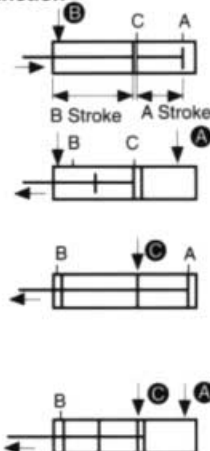
## Dual Stroke Cylinder / Single Rod Type

(N)CQ2B **Bore Size** — **Stroke A** + **Stroke B-A** D **C** -XC11

Two cylinders in tandem without connected piston rods allow 3 positions to be obtained when actuating in the proper sequence.

### Symbol

function



When air pressure is supplied to the **B** port, both **A** and **B** strokes retract.

When air pressure is supplied to the **A** port, the rod extends out equal to stroke **A**.

When air pressure is supplied to the **C** port, the rod extends an additional distance equal to the length of **B - A** stroke.

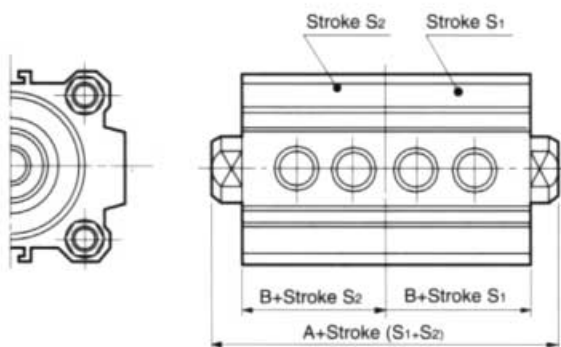
When air pressure is supplied to both ports **A** and **C**, double output force is obtainable in the range of the **A** stroke length.

## Specifications

Bore Size	ø12,ø16,ø20,ø25,ø32,ø40,ø50,ø63,ø80,ø100
Action	Double acting
Lubrication	Non-Lube
Fluid	Air
Mounting style	Tapped (one end only)
Rubber cushion	Available

Note) Seal Kit is the same as Qty 2 Single Rod Kits on p8.

## Dimensions



Bore Size (mm)	Stroke range S1 & S2	A		B	
		50 stroke or less	75,100	50 stroke or less	75,100
12	5-30	41 (63)	-	17 (28)	-
16		44 (68)	-	18.5 (30.5)	-
20	5-50	48 (72)	-	19.5 (31.5)	-
25		55 (75)	-	22.5 (32.5)	-
32	5-100	60 (80)	80 (80)	23 (33)	33 (33)
40		73 (93)	93 (93)	29.5 (39.5)	39.5 (39.5)
50	10-100	77 (97)	97 (97)	30.5 (40.5)	40.5 (40.5)
63		88 (108)	108 (108)	36 (46)	46 (46)
80		107 (127)	127 (127)	43.5 (53.5)	53.5 (53.5)
100		130 (150)	150 (150)	53 (63)	63 (63)

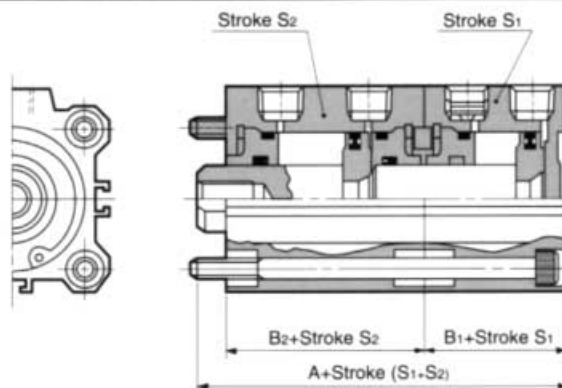
( ) Dimension for Auto Switch capable

## Specifications

Bore Size	ø12,ø16,ø20,ø25,ø32,ø40,ø50,ø63,ø80,ø100
Action	Double acting
Lubrication	Non-Lube
Fluid	Air
Mounting style	Through hole
Rubber cushion	Available

Note) Seal Kit CQ2B □ -PS-XC11

## Construction / Major Dimensions



Bore Size (mm)	Stroke range S1 & S2	A	B1	B2
		50 stroke or less	75,100	50 stroke or less
12	5-30	45.7 (63.9)	17 (28)	25.2 (32.4)
16		48 (70)	18.5 (30.5)	26 (36)
20	5-50	50 (74)	19.5 (31.5)	26 (38)
25		56.5 (76.5)	22.5 (32.5)	29 (39)
32	5-100	60.5 (80.5)	23 (33)	30.5 (40.5)
40		76.5 (96.5)	29.5 (39.5)	40 (50)
50	10-50	79 (99)	30.5 (40.5)	40.5 (50.5)
63		86 (106)	36 (46)	42 (52)
80		104.5 (124.5)	43.5 (53.5)	51 (61)
100		125.5 (145.5)	53 (63)	60.5 (70.5)

( ) Dimension for Auto Switch capable



### Stainless Steel Piston Rod

(N)CQ2  Mounting style  Bore Size  Stroke  D -XC6

(N)CQ2W  Mounting style  Bore Size  Stroke  D -XC6

This is used for enhanced corrosion resistance in wet environments.

### Specifications

Bore Size	ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100
Action	Double acting
Fluid	Air
Lubrication	Non-lube
Material	303 or 304 Stainless
Mounting	Through hole (Standard) Both ends tapped

✳ Major dimensions are the same as that of the double acting single rod and double rod.

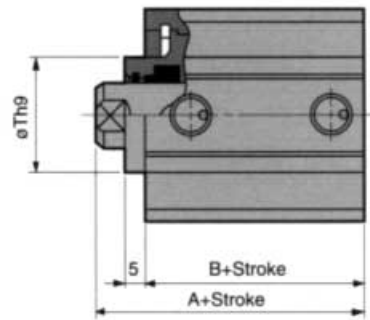
### Coil Scraper

(N)CQ2  Mounting style  Bore Size  Stroke  D -XC35

This special rod scraper is designed to remove weld flash and other undesirable contaminants.

### Specifications

See Standard Specifications p3	
Media	Air
Bore sizes	ø32, ø40, ø50, ø63, ø80, ø100



Bore size (mm)	A		B		Th9
	1-50 stroke	51-100 stroke	1-50 stroke	51-100 stroke	
32	35(45)	45(45)	23(33)	33(33)	23 <sup>0</sup> <sub>-0.052</sub>
40	41.5(51.5)	51.5(51.5)	29.5(39.5)	39.5(39.5)	28 <sup>0</sup> <sub>-0.052</sub>
50	43.5(53.5)	53.5(53.5)	30.5(40.5)	40.5(40.5)	35 <sup>0</sup> <sub>-0.062</sub>
63	49(59)	59(59)	36(46)	46(46)	35 <sup>0</sup> <sub>-0.062</sub>
80	58.5(68.5)	68.5(68.5)	43.5(53.5)	53.5(53.5)	43 <sup>0</sup> <sub>-0.062</sub>
100	70(80)	80(80)	53(63)	63(63)	59 <sup>0</sup> <sub>-0.074</sub>

( ) Dimension for Auto Switch capable

Note) Other dimensions are the same as those on pg. 11.