



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

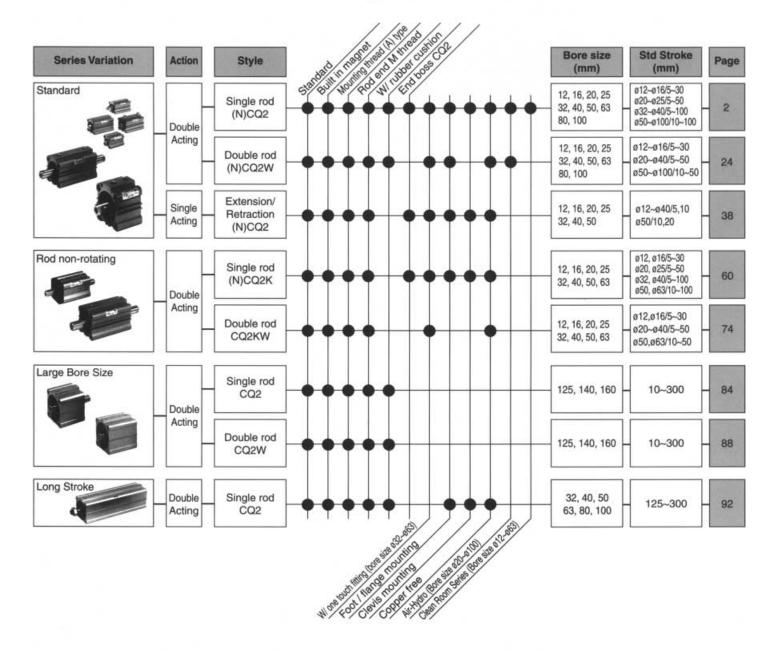
The product series in this catalog utilizes SMC's Preferred Option Program, a unique program intended to emphasize the model configurations that are most readily available where the catalog presents an extensive variety of choices. All other options are available, whereas they may be stocked in lesser 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.



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

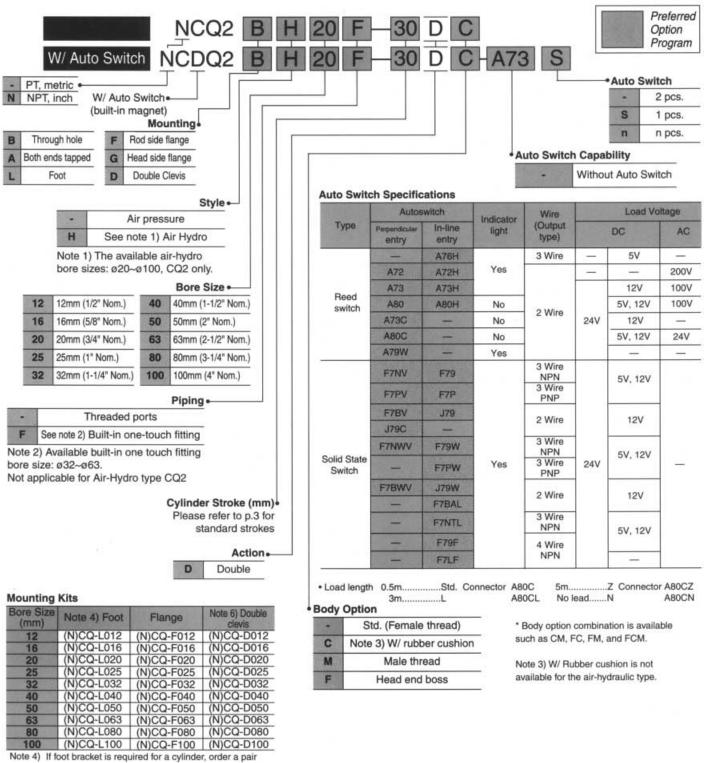




Switch specifications see pg. 13

#### Compact Cylinder: Standard/ Double Acting Single Rod NCQ2 / CQ2 Series ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How To Order



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 / Double Acting Single rod

# (N)CQ2 Series

#### Model



SMC

	Bore	Size	12	16	20	25	32	40	50	63	80	100
	Mounting	Through hole (std)	•	•	•	•	•	•	•	٠	٠	٠
3.85	Mounting	Both ends tapped		•	•		•	٠	۲	•	۲	•
Type	Buil	t-In Magnet	٠	•	•	•	•	٠	•	•	•	•
	Piping	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
Air-Pressure	Method	Built-In One Touch Fitting	-	-	-	-	Note 2 6/4	6/4	8/6	8/6	-	-
4	Rod En	d Male Thread	٠	•	•	•	•	٠	۲	٠	•	•
	W/Ru	bber Cushion	•	•	٠	٠	•	•	•	•	٠	•
202	W/Head End boss		۲	٠	•	٠	•		•	•	•	•
100	Mounting	Through hole (std)	-	-	•	٠	•	٠	۲	•	۲	•
	Mounting	Both ends tapped	-	-	•	٠	•	٠	•	۲	•	٠
Type	Buil	t-In Magnet	-	-	•	•	•	•	•	۲	•	•
Air-Hydro	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
Air-	Rod En	d Male Thread	-	-	•	۲	•	٠	٠	•	•	٠
	W/He	ad End boss	-	-	•	•	•	•	۲	•	٠	۲

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 Model Air Pro

Model	Air Pressure (Non-Lube)	Air-hydraulic				
Media	Air	Hydraulic oil				
Proof Pressure	217psi {1	5.3kgf/cm <sup>2</sup> }				
Max. Operating Pressure	145psi {1(	145psi {10.2kgf/cm <sup>2</sup> }				
Ambient and Media temp.	15~160°F{-10°C~+70°C} (At f	reezing temp. air must be dry)				
Rubber cushion	None	-				
Rod end thread	Female TI	Female Thread (std.)				
Rod end thread tolerance	JIS C	JIS Class II				
Stroke Length tolerance	+1.0 mm					
Mounting	Through	hole (std.)				
Piston Speed	2~20in/s (50~500mm/s)	.002~8 in/s(0.5~200mm/s)				

#### Min. Operating Pressure

min operating										
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

psi

mm

#### Standard stroke

ir pressure	type (non-lube) mm	Air-Hydro	
Bore size	Standard stroke	Bore size	Standard stroke
12,16	5,10,15,20,25,30		5,10,15,20,25,30,35,
	5,10,15,20,25,30,35,	20,25	40,45,50
20,25	40,45,50	22.42	5,10,15,20,25,30,35
	5,10,15,20,25,30,35	32,40	40,45,50,75,100
32,40	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	45,50,75,100
80,100	45,50,75,100		

Available intermediate stroke.

Intermediate strokes in1mm 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] CQ2B50-57D can be made by installing a 18 mm (w)spacer into the std. cylinder CQ2B50-75D. 5mm Incremental Stroke (spacers) done as standard.

Double acting/ Single rod



Head end boss



#### Cautions

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

• 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.

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



lbs

#### In Out

**Double Acting Single Rod** lbf Bore Rod Operating pressures PSI direction size 50 75 100 OUT 13.1 17.5 8.7 12 IN 6.6 9.8 13.1 31.2 23.4 OUT 23.4 17.5 15.6 16 IN 11.7 OUT 24.3 36.5 48.6 20 36.5 IN 18.2 27.3 OUT 38.0 57.0 76.0 25 IN 29.3 43.9 58.5 OUT 62.3 12.5 93.5 32 70.1 IN 46.8 93.5 OUT 195 97.4 146 40 IN 81.8 123 164 OUT 228 304 152 50 256 IN 128 192 OUT 242 362 483 63 IN 217 326 434 OUT 390 584 779 80 IN 352 703 527 OUT 609 913 1217 100 IN 554 831 1108

#### Weight/Double acting: Single rod type

<u> </u>				-	-			10100				100
Bore	121.00			1940 L	20.00	Str	oke		3632		28 N	134
size	5	10	15	20	25	30	35	40	45	50	75	100
12	0.088	0.104	0.119	0.135	0.150	0.165	-	-	•	•		
16	0.135	0.159	0.183	0.207	0.232	0.256	-	-		•	•	-
20	0.021	0.247	0.291	0.335	0.381	0.426	0.470	0.516	0.560	0.604	2	- 54
25	0.260	0.306	0.353	0.399	0.448	0.494	0.540	0.587	0.633	0.681	8	-
32	0.346	0.397	0.445	0.496	0.547	0.595	0.644	0.697	0.747	0.798	1.15	1.40
40	0.600	0.648	0.697	0.745	0.794	0.842	0.891	0.939	0.988	1.04	1.37	1.62
50	-	0.884	0.968	1.05	1.13	1.21	1.30	1.38	1.46	1.55	2.11	2.43
63		1.43	1.51	1.60	1.69	1.78	1.87	1.96	2.04	2.13	2.77	3.23
80	•	3.18	3.38	3.58	3.78	3.98	4.18	4.38	4.58	4.78	6.24	7.27
100	•	4.87	5.10	5.34	5.57	5.80	6.04	6.27	6.50	6.74	8.38	9.52

Wt.

#### Weight Adder

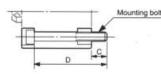
Bore size		12	16	20	25	32	40	50	63	80	100
Both ends tapped		0.004	0.004	0.013	0.013	0.013	0.013	0.013	0.042	0.099	0.099
Rod end M thread	Thread	0.003	0.007	0.013	0.026	0.057	0.060	0.117	0.117	0.265	0.386
nou enu minieau	Nut	0.002	0.004	0.009	0.018	0.037	0.037	0.071	0.071	0.108	0.256
Head end boss	1000	0.002	0.003	0.004	0.007	0.011	0.015	0.029	0.055	0.099	0.212
W/ rubber cushion		0.000	0.000	-0.004	-0.007	-0.007	-0.015	-0.020	-0.040	-0.068	-0.123
W/ one touch fitting		-	•	-	-	0.026	0.026	0.046	0.046	-	-
Foot mounting*	and the second	0.121	0.148	0.362	0.410	0.315	0.342	0.536	0.714	1.535	2.342
Rod side flange*		0126	0.152	0.306	0.355	0.397	0.472	0.822	1.233	2.328	3.010
Head side flange*		0.119	0.143	0.293	0.335	0.364	0.437	0.767	1.177	2.242	2.886
Double clevis**		0.071	0.086	0.194	0.271	0.333	0.432	0.867	1.222	2.445	4.161

#### How to obtain the total weight (lbs) NCQ2D32-20DCM Std

wt.:	NCQ2B32-20D	.496
adder:	Mounting end (both) tap	0.013
	Rod end M thread	.057
	W/ rubber cushion	-0.007
	Double clevis	.333
	Total	.892

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	С	D	Mounting bolt
(N)CQ2B12-5D		25	M3x25L
-10D		30	x30L
-15D	6.5	35	x35L
-20D	0.5	40	x40L
-25D		45	x45L
-30D		50	x50L
(N)CQ2B16-5D		25	M3x25L
-10D		30	x30L
-15D	5	35	x35L
-20D		40	x40L
-25D		45	x45L
-30D		50	x50L
(N)CQ2B20-5D		25	M5x25L
-10D	7.5	30	x30L
-15D		35	x35L
-20D		40	x50L
-25D		45	x45L
-30D		50	x50L
-35D		55	x55L
-40D		60	x60L
-45D		65	x65L
-50D		70	x70L
(N)CQ2B25-5D		30	M5x30L
-10D		35	x35L
-15D		40	x40L
-20D		45	x45L
-25D	10-05-0	50	x50L
-30D	9.5	55	x55L
-35D		60	x60L
-40D		65	x65L
-45D		70	x70L
-50D		75	x75L

Model	с	D	Mounting bolt
(N)CQ2B32-5D		30	M5x30L
-10D	i i	35	x35L
-15D		40	x40L
-20D		45	x45L
-25D		50	x50L
-30D	9	55	x55L
-35D	9	60	x60L
-40D		65	x65L
-45D		70	x70L
-50D		75	x75L
-75D		110	x110L
-100D	-	135	x135L
(N)CQ2B40-5D		35	M5x35L
-10D		40	x40L
-15D		45	x45L
-20D		50	x50L
-25D		55	x55L
-30D	7.5	60	x60L
-35D	1.5	65	x65L
-40D		70	x70L
-45D		75	x75L
-50D		80	x80L
-75D		115	x115L
-100D		140	x140L
(N)CQ2B50-10D		45	M6x45L
-15D		50	x50L
-20D		55	x55L
-25D		60	x60L
-30D		65	x65L
-35D	12.5	70	x70L
-40D		75	x75L
-45D		80	x80L
-50D		85	x85L
-75D		120	x120L
-100D		145	x145L

Model	С	D	Mounting bolt
(N)CQ2B63-10D		50	M8x50L
-15D		55	x55L
-20D		60	x60L
-25D	1	65	x65L
-30D	1 3	70	x70L
-35D	14.5	75	x75L
-40D		80	x80L
-45D		85	x85L
-50D	1 1	90	x90L
-75D		125	x125L
-100D		150	x150L
(N)CQ2B80-10D		55	M10x55L
-15D		60	x60L
-20D		65	x65L
-25D		70	x70L
-30D		75	x75L
-35D	15	80	x80L
-40D	1.000	85	x85L
-45D		90	x90L
-50D		95	x95L
-75D		130	x130L
-100D		155	x155L
(N)CQ2B100-10D		65	M10x65L
-15D		70	x70L
-20D		75	x75L
-25D		80	x80L
-30D		85	x85L
-35D	15.5	90	x90L
-40D		95	x95L
-45D		100	x100L
-50D	1 1	105	x105L
-75D		140	x140L
-100D		165	x165L

#### Clean Room Series Air Cylinder



- 10- Relief type
- ø32, ø40, ø50, ø63 11- Vacuum type

The double sealing structure of the rod end is designed to exhaust the air through a relief port directly to the outside of clean room. Can be used for class 100 clean room application.



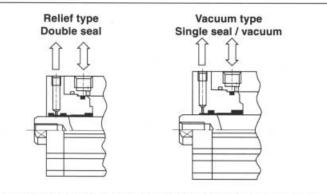
#### Specifications

Action	Double acting single rod
Bore Size	ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63
Proof pressure	217psi,{15.3kgf / cm <sup>2</sup> }
Max. operating pressure	145psi {10.2kgf / cm2}
Rubber cushion	None
Piping	Threaded piping
Piston speed	2~20 in / sec (50~500mm / s)
Mounting	Through hole
Auto switch capability	Capable

#### Consult SMC for more detailed information.

Note) In case of ø12 with auto switch, rubber cushion is standard.

#### Construction

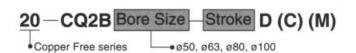


The relief porting type exhusts the air between the two rod seals, offering less dust and contamination (1/20 of conventional cylinders).

The Vacuum type structure is exactly the same as 10 Series. However, removing the outer seal allows atmospheric air to be drawn out by vacuum through the clearance between the rod and cover.

By doing so, the dust generated from the outside becomes almost non-existant. Can be used for higher degree of cleanliness than a standard cylinder.

#### Copper Free Series Air Cylinder



Changed surface treatment and material to electroless nickel plated and copper free, respectively, to remove copper ion so that no interferance will occur when used in cathode ray tube manufacturing process.

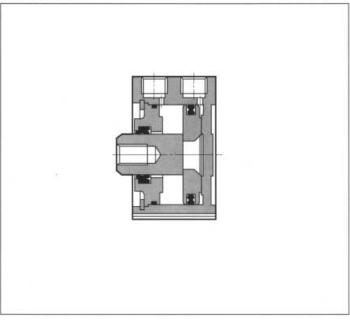


#### Specifications

Action	Double acting single rod
Bore Size	ø50, ø63, ø80, ø100
Proof pressure	217psi,{15.3kgf / cm <sup>2</sup> }
Max. operating pressure	145psi {10.2kgf / cm <sup>2</sup> }
Rubber cushion	With & without
Piping	Threaded piping
Piston speed	2~20 in / sec (50~500mm / s)
Mounting	Through hole, both ends tapping
Auto switch capability	Capable

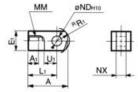
#### Consult SMC for more detailed information.

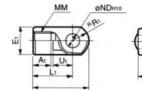
#### Construction

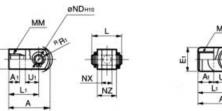


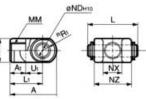
#### SINGLE ROD CLEVIS (ROD EYE)

#### DOUBLE ROD CLEVIS (ROD EYE)









#### CQ2 - Single Rod Clevis

Part Number	Applicable bore size	A	Aı	Eı	L	ММ	RR1	Uı	NDHID	NX
I-G012	12	21.5	6	□10	16	M5x0.8	6.3	7	5 +0.048	5 -0.2
I-Z015	16	32	8	012	25	M6x1	8.1	14	5 +0.048	6.4 -0.1
I-G02	20	34	8.5	□16	25	M8x1.25	10.3	11.5	8 +0.058 0	8 -0.2
I-G03	25	41	10.5	20	30	M10x1.25	12.8	14	10 +0.058	10 -0.2
I-G04	32,40	42	14	ø22	30	M14x1.5	12	14	10 +0.058	18 -0.3
I-G05	50,63	56	18	ø28	40	M18x1.5	16	20	14 +0.070	22 -0.3
I-G08	80	71	21	ø38	50	M22x1.5	21	27	18 +0.070	28 -0.3
I-G10	100	79	21	ø44	55	M26x1.5	24	31	22 +0.084	32 -0.3

#### CQ2 - Double Rod Clevis

mm

mm

CQ2	- Dou	Die	R	oa		evis							mm
Part Number	Applicable bore size	A	Aı	E١	Li	MM	RI	Uı	NDHIO	a contraction	NZ	L	PIN PART NO.
Y-G012	12	21.5	6	010	16	M5x0.8	6.3	7	5 +0.048	5 -0.2	10	14.6	IY-G012
Y-Z015A	16	28	11	012	21	M6x1	8.1	10	5 +0.048	6.5-0.2	12	16.6	IY-J015
Y-G02	20	34	8.5	□16	25	M8x1.25	10.3	11.5	8 +0.058	8 -0.2	16	21	IY-G02
Y-G03	25	41	10.5	20	30	M10x1.25	12.8	14	10+0.058	10-0.2	20	25.6	IY-G03
Y-G04	32,40	42	16	ø22	30	M14x1.5	12	14	10+0.058	18-0.3	36	41.6	IY-G04
Y-G05	50,63	56	20	ø28	40	M18x1.5	16	20	14+0.070	22-0.3	44	50.6	IY-G05
Y-G08	80	71	23	ø38	50	M22x1.5	21	27	18+0.070	28-0.3	56	64	IY-G08
Y-G10	100	79	24	ø44	55	M26x1.5	24	31	22+0.084	32-0.3	64	72	IY-G10

Clevis, Pin and Snap Ring are in the package

#### NCQ2 - Single Rod Clevis

Part Number	Applicable bore size	A	Aı	Eı	Lı	ММ	R1	Ut	NDH10 Inch	NX	(
RCS-01	12	21.5	6	□10	16	#8-32UNC	6.3	7	3/16 +0.002	5	0.2
RCS-015	16	32	6	012	25	#8-32UNC	12	14	3/16 +0.002	6.4	0.1
RCS-02	20	34	6	□16	25	#10-32UNF	10.3	11.5	5/16 +0.002	8 :	0.2
RCS-025	25	41	8	□20	30	1/4-28UNF	18	14	3/8 +8.002	10 :	0.2
RCS-03	32	42	16	ø22	30	5/16-24UNF	12	14	3/8 *0.002	18 :	0.3
RCS-04	40	42	11	ø22	30	3/8-24UNF	12	14	3/8 +0.002	18	0.3
RCS-05	50, 63	56	18	ø28	40	1/2-20UNF	16	20	1/2 +0.003	22 :	0.3
RCS-08	80	71	21	ø38	50	5/8-18UNF	21	27	3/4 +8.003	28	0.3
RCS-10	100	79	21	ø44	55	3/4-16UNF	24	31	7/8 +0.003	32 :	0.3

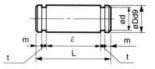
Clevis Pin and Retaining Rings not included, see RCSK "xx" on page 7

#### NCQ2 - Double Rod Clevis

Part Number	Applicable bore size	A	Aı	Eı	Li	MM	R1	Uı	NDH10 Inch	NX	NZ	L
RCD-01	12	21.5	6	010	16	#8-32UNC	6.3	7	3/16 +0.002	5 -0.2	10	14
RCD-015	16	28	6	012	21	#8-32UNC	12	10	3/16 +0.002	6.5 <sup>+0.2</sup>	12	16
RCD-02	20	34	6	016	25	#10-32UNF	10.3	11.5	5/18 +8.002	8 -0.2	16	21
RCD-025	25	41	8	20	30	1/4-28UNF	18	14	3/8 +8.002	10-0.2	20	25
RCD-03	32	42	16	ø22	30	5/16-24UNF	12	14	3/8 +8.002	18+0.5	36	41
RCD-04	40	42	16	ø22	30	3/8-24UNF	12	14	3/8 +0.002	18+0.5	36	41
RCD-05	50,63	56	20	ø28	40	1/2-20UNF	16	20	1/2 +8.003	22+0.5 +0.3	44	50
RCD-08	80	71	23	ø38	50	5/8-18UNF	21	27	3/4 +0.003	28+0.5 +0.3	50	64
RCD-10	100	79	24	ø44	55	3/4-16UNF	24	31	7∕6 +8.003	32+0.5 +0.3	64	72

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

mm



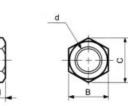
#### CQ2 - Double Rod Clevis Pin

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

mm

#### NCQ2 - Double Rod Clevis Pin

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



mm

mm

#### CQ2 - Jam Nut

Part Number	Applicable bore size	d	н	в	С
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

Model	Applicable bore size	d	H	В	С
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 otion "M" is ordered

#### Kits

#### NCQ2 Double Rod Clevis

Kit Part	Applicable	Includes						
Number	bore size	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)

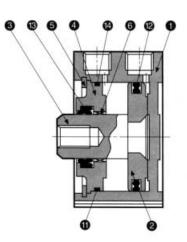
Kit Part	Applicable	8877 (S. 8)	Includes	Stall.
Number	bore size	Clevis (1)	Pin (1)	Retaining Rings (2)
RCSK-01	12	RCS-01	PS-01	PC-01
RCSK-015	16	RCS-015	PS-015	PC-01
RCSK-02	20	RCS-02	PS-02	PC-02
RCDK-025	25	RCS-025	PS-025	PC-03
RCSK-03	32	RCS-03	PS-03	PC-03
RCSK-04	40	RCS-04	PS-03	PC-03
RCSK-05	50,63	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	Applicable	Includes				
Number	bore size	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			

#### Compact Cylinder: Standard / Double Acting Single Rod

#### Construction / Part List

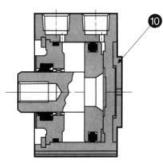


**Double Acting / Single Rod** 

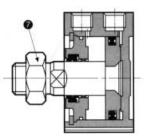
With Cushion

**One Touch Fittings** 

0



End Boss Head End



Male Thread With Jam Nut

Parts	s list		One Touch
No.	Description	Material	Remarks
1	Cylinder tube	Aluminum alloy	Hard anodized
2	*Piston	Aluminum alloy	Chromate
3	*Piston rod	Stainless steel	ø12~25
3	Piston rou	Carbon steel	ø32~100, hard chrome plated
and the second	0	Bearing grade aluminum	ø12~40, black anodized
4	Collar	Aluminum alloy casting	ø50~100, black painted
5	Retaining ring	Carbon tool steel	Phosphate coating

No.	Description	Material	Remarks
6	Bushing	Leaded tin bronze casting	Used for only ø50 and above
7	Rod end nut	Carbon steel	Nickel plated
8	Bumper A	polyurethane rubber	6 ·
9	Bumper B	polyurethane rubber	
10	End boss	Aluminum alloy	Hard anodizing
11	One touch fittings		ø32~ø63

X Piston and piston rod are connected (one-piece).

For bore size 12~ø25 rubber cushion using stainless steel piston rod.

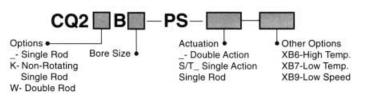
#### Seal List

Harry Co.		a startes		Parts No.										
No.	Description	Material	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100		
12	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B	NLP-80B	NLP-100E		
13	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z	PDU-25Z	PDU-302		
14	Gasket	NBR	SP-013-6	C14	C18	C22	C29	C36	C46	C60	C75	C95		

#### Air Hydro (CQ2 only)

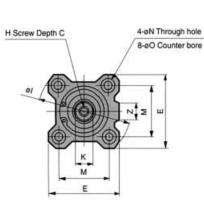
2.000			Parts No.										
No.	Description	Material	ø20	ø25	ø32	040	ø50	ø63	ø80	ø100			
12	Piston seal	NBR	RPS-20A	RPS-25A	RPS-32A	RPS-40A	RPS-50A	RPS-63A	RPS-80A	RPS-100A			
13	Rod seal	NBR	PS-10	PS-12	PS-16	HDU-16	HDU-20	HDU-20	HDU-25	HDU-30			
14	Gasket	NBR	C18	C22	C29	C36	C46	C60	C75	C95			

#### Seal Kit Part Numbers



#### Bore Size ø12~ø25

#### Through Hole / (N)CQ2B



#### 

Both ends tapped

0

#### (N)CQ2A Both Ends Tapped

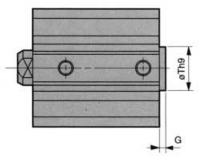
DOUI	Enus la	ppeu	mm
Bore size	CQ2 O	NCQ2 inch O	R
12	M4x0.7	8-32 UNC	7
16	M4x0.7	8-32 UNC	7
20	M6x1.0	1/4 - 20 UNC	10
25	M6x1.0	1/4 - 20 UNC	10

mm

#### Standard

Bore size	Stroke	A	в	CQ2 C	NCQ2 C	D	E	F	CQ2 H	NCQ2 inch H	1	к	L	м	N	0	Q	z
12	5~30	20.5	17	6	5.4	6	25	5	M3x0.5	#8-32	32	5	3.5	15.5	3.5	6.5 depth 3.5	7.5	100
16	5~30	22	18.5	8	5.4	8	29	5.5	M4x0.7	#8-32	38	6	3.5	20	3.5	6.5 depth 3.5	8	10
20	5~50	24	19.5	7	7	10	36	5.5	M5x0.8	#10-32	47	8	4.5	25.5	5.5	9 depth 7	9	10
25	5~50	27.5	22.5	12	10	12	40	5.5	M6x1.0	1/4 - 28 UNF	52	10	5	28	5.5	9 depth 7	11	10

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



#### End Boss (CQ2 only) mm

Bore size	G	Th9						
12	1.5	15 -0.043						
16	1.5	20 -0.052						
20	2	13 -0.043						
25	2	15 -0.043						

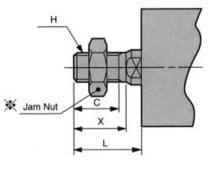
Note 1) Rod side End Boss is offered as an option. (Add - XC36 at the end of part no.) ĸ

**Piston Rod** 

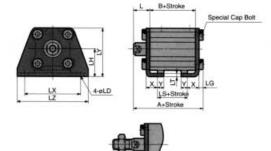
#### NCQ2 Male Rod End mm

Bore size	x	H inch	L	к
12	8	#8-32UNC	11.5	5
16	8	#8-32UNC	11.5	6
20	8	#10-32UNF	12.5	8
25	9.5	1/4-28UNF	14.5	10

Rod end nut and accessories detail: see p. 6. "C" dim. not applicable.



15-21 French	-		Rod End		-
Bore size	С	×	н	L	к
12	9	10.5	M5x0.8	14	5
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

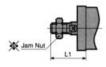


#### Foot / (N)CQ2L

Bore size	Stroke	A	в	L	CQ2	NCQ2	LD	LG	LH	LS	LT	LX	LY	LZ	x	Y
(mm) 12	(mm) 5~30	35.3	17	13.5	L1 24	L1 21.5	4.5	2.8	17	5	2	34	29.5	44	8	4.5
16	5~30	-				21.5				6.5	2	38	33.5	48	8	5
20	5~50	41.2	19.5	14.5	28.5	22.5	6.6	4	24	7.5	3.2	48	42	62	9.2	5.8
25	5~50	44.7	22.5	15	32.5	24.5	6.6	4	26	7.5	3.2	52	46	66	10.7	5.8

## 

💥 Jam



#### Rod Side Flange / (N)CQ2F

Bore size (mm)	Stroke range (mm)	A	в	FD	FT	FV	FX	FZ	L	CQ2 L1	NCQ2
12	5~30	30.5	17	4.5	5.5	25	45	55	13.5	24	21.5
16	5~30	32	18.5	4.5	5.5	30	45	55	13.5	25.5	21.5
20	5~50	34	19.5	6.6	8	39	48	60	14.5	28.5	22.5
25	5~50	37.5	22.5	6.6	8	42	52	64	15	32.5	24.5

# 

2-øFD

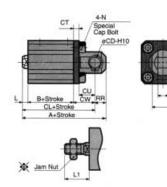
CZ 41

#### Head Side Flange / (N)CQ2G mm

Bore size (mm)	Stroke range (mm)	A	-	CQ2 L1	NCQ2
12	5~30	26	3.5	14	11.5
16	5~30	27.5	3.5	15.5	11.5
20	5~50	32	4.5	18.5	12.5
25	5~50	35.5	5	22.5	14.5

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

mm



#### Double Clevis / (N)CQ2D

Bore size (mm)	Stroke range (mm)	A	в	CQ2 CD	NCQ2 inch CD	CL	ст	cu	cw	сх	cz	L	CQ2 L1	NCQ2 L1	CQ2 N	NCQ2 inch N	RR
12	5~30	40.5	17	5	3/16	34.5	4	7	14	5	10	3.5	14	11.5	M4x0.7	8-32	6
16	5~30	43	18.5	5	3/16	37	4	10	15	6.5	12	3.5	15.5	11.5	M4x0.7	8-32	6
20	5~50	51	19.5	8	5/16	42	5	12	18	8	16	4.5	18.5	12.5	M6x1.0	1/4-20	9
25	5~50	57.5	22.5	10	3/8	47.5	5	14	20	10	20	5	22.5	14.5	M6x1.0	1/4-20	10

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

★★ Clevice pin and snap rings are included in the package.

mm

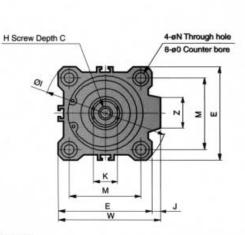
mm

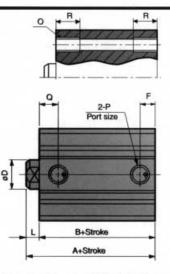
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@Th9

►G

#### Bore Size ø32~ø100





#### (N)CQ2A Both Ends Tapped

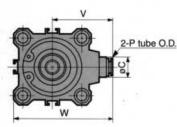
Bore size	CQ2 O	NCQ2 inch O	R
32	M6x1.0	1/4 20 UNC	10
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18
80	M12x1.75	1/2 - 13 UNC	22
100	M12x1.75	1/2 - 13 UNC	22

#### Standard

Bore size	Stroke (mm)	A	в	CQ2 C	NCQ2 C	D	E	F	CQ2 H	NCQ2 Inch H	1	J	к	L	м	N	0	Ρ	Orifice	Q	w	z
There	5	30	23					5.5										M5x0.8		11.5		
32	10~50			13	13.3	16	45	7.5	M8x1.25	5/16-24UNF	60	4.5	14	7	34	5.5	9 depth 7	1/8	1.7	10.5	49.5	14
	75, 100	40	33	5-0				1.5					(					1/8		10.5		
40	5~50		29.5		18.3	16	52	8	M8x1.25	3/8-24UNF	69	5	14	7	40	5.5	9 depth 7	1/8	2	11	57	14
a series	75, 100		39.5	1 C C C	10.5	10	JE	•	MOX1.20	00-24014	03	5	14	'	40	0.0	3 depui 7	1/8			57	
50	10~50		30.5		17.6	20	64	10.5	M10x1.5	1/2-20UNF	86	7	17	8	50	6.6	11 depth 8	1/4	2.2	10.5	71	19
-	75, 100	_	40.5	15	17.0	20	04	10.5	WITOAT.5	112-20014	00	'			50	0.0	in departo	1/4		10.5		
63	10~50	44	36	15	17.6	20	77	10.5	M10x1.5	1/2-20UNF	103	7	17	8	60	9	14 depth 10.5		3	15	84	19
1000	75, 100	54	46		17.0	20		10.5	WITOAT.5	1/2-20011	100	1			00		14 00001 10.0	1/4	Ŭ	10	04	
80	10~50		43.5		24.3	25	98	12.5	MIGy2 0	5/8-18UNF	132	6	22	10	77	11	17.5 depth 13.5	0.00	4	16	104	26
00	75, 100		53.5	21	24.0	20	30	12.0	WIGAZ.U	3/0-100141	132	0	22	10	"		17.5 deput 15.5	3/8		10	104	20
100	10~50	65	53	27	27	30	117	13	M20x2.5	3/4-16UNF	150	6.5	27	12	94	11	17.5 depth 13.5	0.10	5	23	123.5	26
	75, 100	75	63	21	21	30	111	13	M20X2.5	3/4-10UNF	150	0.5	21	12	94		17.5 ueput 13.5	3/8	5	23	123.3	20

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 ø32, 5 stroke has the same external dimensions as 10 stroke.



**One Touch Fittings** 

P

8 50 82

V W

38 60.5

68

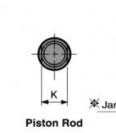
C

13 6

13 6 42

16

16 8 56.5 95



NCQ2 Male Rod End

н

Inch

5/16-24UNF

3/8-24UNF

1/2-20UNF

1/2-20UNF

5/8-18UNF

3/4-16UNF

Bore

size

32

40

50

63

80

X

12.7

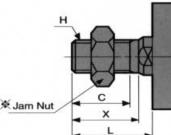
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19.5

19.5

25.5

100 28.5



mm

ĸ L

14

19.7 14

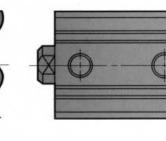
23

27.5 17

27.5 17

35.5 22

40.5 27



#### CQ2 Male Rod End mm

Bore size	c	x	н	L	к
32	20.5	23.5	M14x1.5	28.5	14
40	20.5	23.5	M14x1.5	28.5	14
50	26	28.5	M18x1.5	33.5	17
63	26	28.5	M18x1.5	33.5	17
80	32.5	35.5	M22x1.5	43.5	22
100	32.5	35.5	M26x1.5	43.5	27

#### End Boss (CQ2 only)mm

Bore size	G	Th9
32	2	21 -0.052
40	2	28 -0.052
50	2	35 -0.062
63	2	35 -8.062
80	2	43 -8.062
100	2	59 -0.074

"C" dimension not applicable

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

Note) With rod end inlets an option. (Add - XC36 at the end of part no.).

Bore

size

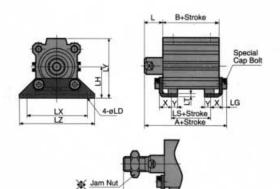
32

40

50

63

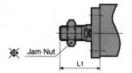
### Compact Cylinder: Standard / Double Acting Single Rod



#### Foot / (N)CQ2L

																1000
Bore size	Stroke	A	в	L	CO2 L1	NCQ2	LD	LG	LH	LS	LT	LX	LY	LZ	x	Y
20	5~50	47.2	23	17	38.5	00.7	6.6		30	7	3.2	57	57	71	11.2	5.8
32	75, 100	57.2	33	17	30.5	29.1	0.0	4	30	17	3.2	5/	5/	1	11.2	5.0
40	5~50	53.7	29.5	17	20 5	20	00		22	13.5	2.0	04	64	78	44.0	7
40	75, 100	63.7	39.5	17	38.5	33	6.6	4	33	13.5 23.5	3.2	64	64	10	11.2	1
=0	10~50	56.7	30.5	18	40.5	07.5	0		20	7.5	2.0	70	78	95	14.7	8
50	75,100	66.7	40.5	10	43.5	37.5	9	5	39	17.5	3.2	79	10	95	14.7	0
00	10~50	62.2	36	10	40.5	07.5		-	40	10	0.0	05	04.5	110	100	9
63	75,100	72.2	46	18	43.5	31.5	11	5	46	20	3.2	95	91.5	113	16.2	9
00	10~50	75	43.5	00	FOF	45.5	40	-	50	13.5	4.5	110	114	140	10.5	44
80	75,100	85	53.5	20	53.5	45.5	13	7	59	13.5 23.5	4.5	118	114	140	19.5	11
100	10~50	88	53	00	FOF	FOF	10	-	74	19		107	100	100	00	10.5
100	75, 100	98	63	22	53.5	50.5	13	1	71	29	6	137	136	162	23	12.5

# B+Str



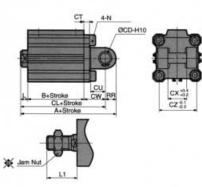
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Bore	Stroke	A	в	FD	FT	FV	FX	FZ	L	CQ2 L1	NCQ2	М
32	5~50	40	23		8	48	50	OF	17	00.5	00.7	34
32	75, 100	50	33	5.5	8	48	56	65	17	38.5	29.7	34
40	5~50	46.5	29.5		8	54	62	70	17	20 5	22	40
40	75, 100	56.5	39.5	5.5	0	54	02	72	17	38.5	33	40
	10~50	48.5	30.5	0.0	~	07	70	00	10	10.5	07.5	50
50	75,100	58.5	40.5	6.6	9	67	76	89	18	43.5	37.5	50
00	10~50	54	36	~	~	00	00	100	10	10.5	07.5	00
63	75,100	64	46	9	9	80	92	108	18	43.5	37.5	60
80	10~50	63.5	43.5			00	440	104	00	50.5	45.5	
80	75,100	73.5	53.5	11	11	99	116	134	20	53.5	45.5	77
100	10~50	75	53			447	100	454		50.5	FOF	04
100	75, 100	85	63	11	11	117	136	154	22	53.5	50.5	94

#### Head Flange / (N)CQ2G<sub>mm</sub>

Rod Flange / (N)CQ2F

Bore size	Stroke	A	L	CQ2 L1	NCQ2
32	5~50	38	7	28.5	19.7
32	75, 100	48	'	20.5	19.7
40	5~50	44.5	7	28.5	23
40	75, 100	54.5	'	20.5	23
50	10~50	47.5	8	20 5	27.5
50	75,100	57.5	0	33.5	21.5
63	10~50	53	8	20 5	07.5
03	75,100	63	8	33.5	27.5
00	10~50	64.5	10	40.5	25.5
80	75,100	74.5	10	43.5	35.5
100	10~50	76	12	40.5	40.5
100	75, 100	86	12	43.5	40.5

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



💥 Jam Nut

L

#### Double Clevis / (N)CQ2D

4-ØFD

-	-	-	<u> </u>		10000		-	-			-		Contractory of the	and the second		1000	1
Bore	Stroke	A	В	CQ2 CD	NCQ2 Inch CD	CL	СТ	CU	cw	сх	cz	L	L1	NCQ2	CQ2 N	NCQ2 Inch N	RA
32	5~50 75,100	60 70	23 33	10	3/8	50 60	5	14	20	18	36	7	28.5	19.7	M6x1.0	1/4-20	10
40	5~50	68.5	29.5	10	3/8	58.5	6	14	22	18	36	7	28.5	23	M6x1.0	1/4-20	10
1000	75, 100		39.5 30.5	1.546		68.5 66.5	100										
50	75,100	90.5	40.5	14	1/2	76.5	7	20	28	22	44	8	33.5	27.5	M8x1.25	5/16-18	14
63	10~50	88 98	36	14	1/2	74 84	8	20	30	22	44	8	33.5	27.5	M10x1.5	7/16-14	14
80	10~50	109.5	43.5	18	5/8	91.5 101.5	10	27	38	28	56	10	43.5	35.5	M12x1.75	1/2-13	18
Elog	75,100	119.5		10.50	11000	101.5	Type: U									100000	
100	75, 100	142		22	7/8	120	13	31	45	32	64	12	43.5	40.5	M12x1.75	1/2-13	22

K Rod end nut and accesories detail: see p. 6.

₩ ¥ Clevis pin and snap ring are included in the package.

mm

### SNC Compact Cylinder With Autoswitch

## (N)CDQ2 Series

#### Standard Specifications

Model	Air pressure type (Non-lube type)	Air-hydro type
Media	Air	Hydraulic oil
Ambient and fluid temp.	15~140°F{-10°C~+60°C}(At free	ezing temp. air must be dry)

The rest of the specifications are the same as that of standard (See p. 3).

#### Auto Switch Mounting Available / Minimum Stroke

# of Auto Switch Mounting	D-F7DV D-J79C	D-A7 D-A8 D-A73C D-A80C	D-F70WV	D-A7 IH D-A80H D-F7 I D-J79	D-A79W	D-F7DW D-J79W D-F7BAL D-F79F	D-F7LF
1pcs	5mm	5mm	10mm	15mm	15mm	20mm	25mm
2pcs	5mm	10mm	15mm	15mm	20mm	20mm	25mm

#### Auto Switch Mounting / Parts No.

Bore size (mm)	Part No.	Note	Applicable auto switch
12•16•20•25	BQ-1	•Auto switch mounting screw (M3x0.5x8L) •Square nut	D-A7 • A8 D-A7OH • A80H
32•40•50• 63•89•100• 125•140•160	BQ-2	•Auto switch mounting screw (m3x0.5x8L) •Auto switch spacer •Auto switch mounting nut	D-AOC • A80C D-F79 D-F79W J-J79C

How To Order

Auto Switch How To Order: See p. 2

#### Auto Switch Specification Reed switch type

Auto switch model	D-A72 A72H	D-A73	8,A73H	D-A76H	D-A80,A80H		D-A73C	D-A80C	Two color indicator lamp D-A79W	
Application	F	Relay, PLC I		IC circuit	Relay, PLC, IC circuit			Relay, PLC	Relay, PLC, IC circuit	Relay, PLC
Load voltage	200VAC	100VAC	24VDC	4~8VDC	24VAC/ VDC or less	48VAC/	100VAC/ VDC	24VDC	24VAC/ VDC	24VDC
Max. load current or load current range	5~10mA	5~20mA	5~40mA	Max. 20mA	Max. 50mA	Max. 40mA	Max. 20mA	5~40mA		5~40mA
Internal voltage drop		2.4V or less			0		2.4V or less	0	4V or less	
Leak current						0				
Response time						1.2ms				
Indicator lamp	ON:	ON: Red light emitting o		diode	None		ON: Red light emitting diode	None	Response position: Red light emitting diod Best response position Green light emitting diode	
Lead wire entry		Grom	net (D-A7	0 H, 80H	Horizon	tial cable	access	÷.	Connector	Grommet
Lead wire				Note)	Oil proo	f vinyl ø 3	.4, 0.2mr	m²,0.5m		
Impact resistance						30G				
Insulation resistance		5	0MΩ or n	nore under	the test	voltage 5	00 VDC	(Between	case and	cable)
Withstand voltage				1500 V	AC 1 mir	n (Betwee	n case a	nd cable)		
Ambient temperature						-10°~60°	с			
Protection structure				IEC spec	P67, JIS	C0920 (V	Vater pro	of). Oil pro	of	

Note) • D-A76H: 3 wires {Brown (red), Black (white), Blue (black)},

Others: 2 wires {Brown (red), Black (white)} - Lead wire length: 0.5m(Standard), 3m(Option)

#### Solid State Switch Type

Auto switch model	PNP 3 wire type D-F7P	2 wire type D-F7BV	2 wire type D-J79(C)	PNP 3 wire type two color indicator lamp D-F79W	2 wire type two color indicator lamp D-F7BWV	
Application	Relay, PLC		Relay, PLC PLC, IC circuit		Relay, PLC	
Power source	5, 12, 24VDC (4.5~28VDC)		•	4.5~28VDC	-	
Current consumption	OFF:1mA or less ON:15mA or less			OFF:1mA or less ON:12mA or less	5 <b>.</b>	
Load voltage	-		/DC 8VDC)	28VDC or less	24VDC (10~28VDC)	
Max. load current or load current range	Max. 80mA	5~4	0mA	Max. 40mA	5~40mA	
Internal voltage drop	0.8V or less	4V c	r less	1.5V or less (0.8V or less at 10mA of load current)	4V or less	
Leak current	24VDC: 100 µA or less	24VDC: 0.8mA or less		100µA or less at 24VDC	24VDC: 0.8mA or less	

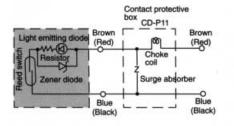
Auto switch model	NPN 3 wire type D-F7NV	NPN 4 wire type two color indicator lamp D-F79F	NPN 4 wire type two color indicator lamp D-F7LF	NPN 3 wire type two color indicator lamp D-F79W	2 wire type two color indicator lamp D-J79W	
Application	Relay, PLC, IC circuit	Rel PL IC ci	.C,	Relay, PLC, IC circuit	Relay, PLC	
Power source	5, 12, 24VDC (4.5~28VDC)	4.5~28VDC	24VDC (20~26VDC)	12V, 24VDC		
Current consumption	OFF:1mA or less ON:12mA or less	OFF:1mA or less ON:10mA or less	20mA or less	10mA		
Load voltage	28VDC or less	28VDC or less	26VDC or less	28VDC or less	24VDC (10~28VDC)	
Max. load current or load current range	Max. 40mA	Max.	40mA	Max. 40mA	5~40mA	
Internal voltage drop	1.5V or less (0.8V or less at 10mA of load current)	1.5V or less (0.8V or less at 10mA of load current)	0.8V or less	1.5V or less (0.8V or less at 10mA of load current)	4V or less	
Leak current	100µA or less at 24VDC	100µA or les	ss at 24VDC	100µA or less at 24VDC	0.8mA or less at 24VDC	

Auto switch model	NPN 3 wire type D-F79	PNP 3 wire type D-F7PV	NPN 3 wire type D-F7NTL	2 wire type D-F7BAL	NPN 3 wire type two color indicator lamp D-F7NWV
Application	Relay, PLC, IC circuit	Relay, PLC, IC circuit	Relay, PLC, IC circuit	Relay, PLC	Relay, PLC
Power source	5, 12, 24VDC (4.5~28VDC)	4.5~28VDC	4.5~28VDC	•	12~24VDC
Current consumption	OFF:1mA or less ON:12mA or less	15mA or less	OFF:1mA or less ON:10mA or less	-	10mA or less
Load voltage	28VDC or less	-	28VDC or less	24VDC (10~28VDC)	28VDC or less
Max. load current or load current range	Max. 40mA	Max. 80mA	Max. 80mA	5~40mA	Max. 40mA
Internal voltage drop	1.5V or less (0.8V or less at 10mA of load current)	0.8V or less	2V or less (0.8V or less at 10mA)	4V or less	1.5V or less (0.8V or less at 10mA of load current)
Leak current	100µA or less at 24VDC	100µA or less at 24VDC	100µA or less at 24VDC	0.8mA at 24VDC	100µA or less at 24VDC
Response time		<u>.</u>	1ms or less		
Indicator lamp	ON	: Red light emitting die	ode	Best respon	ed light emitting diode use position: mitting diode
Lead wire entry		G	rommet ("C" Connecto	or)	
Lead wire		Note: Oil proof viny	ø 3.4, 0.2mm²,05.m l	ength (L, 3m option)	
Impact resistance			100G		
Insulation resistance	5	$0M\Omega$ or more under the	e test voltage 500VD0	C (Between case and c	able)
Withstand voltage		1000 VAC	1 min (Between case	and cable)	
Ambient temperature			-10°~60°C		
Protection structure		IEC spec IP6	7, JISC0920 (Water p	roof). Oil proof	

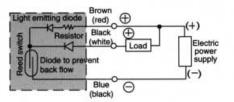
#### Auto Switch Internal Circuit

#### **Reed Switch Type**

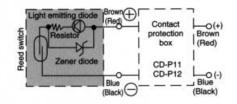
#### D-A72, D-A72H



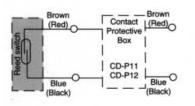
#### D-A76H



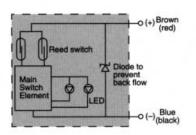
#### D-A73, D-A73H, D-A73C



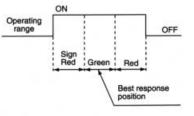
#### D-A80, D-A80H, D-A80C



#### Two color indicator lamp, D-A79W

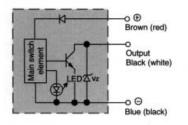


#### Indicator lamp / How to sign



#### Solid State Type

#### D-F79, D-F7NTL, D-F7NV, 3 wire type



Two color indicator lamp,

O⊕ Brown (red)

bΘ

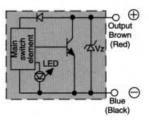
Output Black (white)

Blue (black)

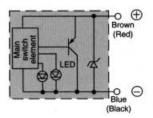
D-F7NWV, D-F79W

LED

#### D-J79, D-J79C, D-F7BV, 2 wire type



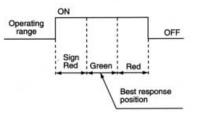
#### Two color indicator lamp, D-F7BAL, D-F7BWV



•Interchangeable with reed switch Solid state switches are interchangeable with reed switches. (Solid State Type) (Reed Switch Type)



#### Two Color Indicator lamp / How to sign

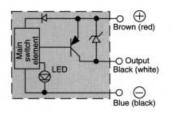


#### Auto Switch Series (N)CDQ2

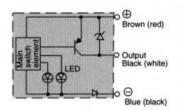
#### Auto Switch Internal Circuit

#### Solid State Type

#### D-F7P, D-F7PV



D-F7PW, D-J79W



Brown (red) lead wire:

with side of load. Black (white) lead wire: Connect to load (to input of

outlet relay). Blue (black) lead wire:

Connect to power source

(Power source () terminal) to

operate main circuit of switch. In

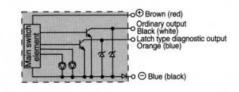
case of 2 wire systems connect

programmable controller and

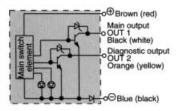
Connect to power source (

(Power source GND terminal).

#### D-F7LF

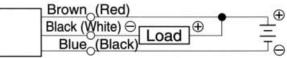


#### **D-F79F**

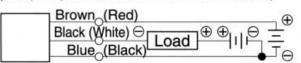


#### Auto Switch Connection / Solid State Type

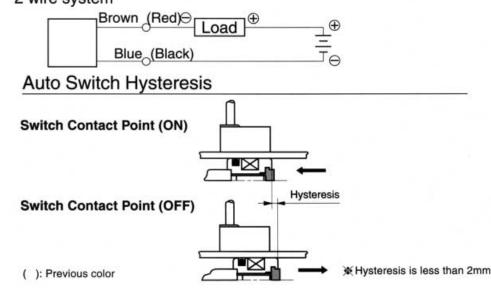
3 wire system (When power source for switch and load is commom)



3 wire system (When power source for switch and load is not commom)



2 wire system



#### Contact Protection

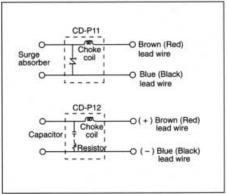
D-A7 type and D-A8 type have no built-in contact protection circuit.

Use this box for induction loads, 5 meters or more of lead wires, or 100VAC applications.

Model	Operating voltage	Length of lead wire
CD-P11	100VAC	Switch connecting side 0.5m
CD-P12	24VDC	Load connecting side 0.5m

X D-A8 type switches are used for 100VAC or less; since there is no voltage limitation, you can select a suitable model for your needs.

#### **Contact Protection Box / Internal Circuit**



#### Weight Chart

Bore	2	Cylinder Stroke											
size (mm)	5	10	15	20	25	30	35	40	45	50	75	100	
12	0.110	0.126	0.141	0.157	0.172	0.187	- 20		-27	-	2		
16	0.157	0.181	0.207	0.232	0.256	0.280		-	-	-	×		
20	0.229	0.271	0.315	0.359	0.406	0.450	0.494	0.540	0.584	0.631		•	
25	0.284	0.331	0.395	0.423	0.472	0.518	0.564	0.613	0.657	0.706	•	•	
32	0.571	0.598	0.624	0.650	0.701	0.750	0.800	0.851	0.902	0.961	1.22	1.47	
40	0.752	0.805	0.858	0.908	0.953	0.997	1.05	1.09	1.14	1.20	1.44	1.68	
50		1.10	1.17	1.25	1.34	1.43	1.50	1.58	1.66	1.78	2.18	2.50	
63	-	1.60	1.69	1.78	1.87	1.97	2.06	2.15	2.23	2.38	2.84	3.29	
80	-	3.53	3.74	3.95	4.16	4.36	4.57	4.78	4.99	5.28	6.31	7.33	
100		5.55	5.68	5.81	6.05	6.29	6.52	6.75	6.97	7.31	8.45	9.59	

Bore S	Size	ø12	ø16	020	025	ø32
Both ends	tapped	0.002	0.002	0.007	0.007	0.013
Rod end	Thread	0.003	0.007	0.013	0.026	0.057
nou enu	Nut	0.002	0.004	0.009	0.018	0.037
Boss mtg		0.002	0.003	0.004	0.007	0.011
W/ Cushio	n	0.000	-0.002	-0.004	-0.007	-0.007
W/ One to	uch	-	-	-	-	0.026
Foot	and the second	0.108	0.137	0.324	0.373	0.315
Rod flange	Э	0.119	0.148	0.289	0.337	0.397
Head flange		0.115	0.139	0.273	0.318	0.364
Double cle	uble clevis		0.077	0.172	0.251	0.333
Bore S	Size	ø40	ø50	ø63	080	ø100
Both ends	tapped	0.013	0.013	0.042	0.099	0.099
Rod end	Thread	0.060	0.117	0.117	0.265	0.386
Hod end	Nut	0.037	0.071	0.071	0.108	0.256
Boss mtg		0.015	0.029	0.055	0.099	0.212
W/ Cushio	n	-0.015	-0.020	-0.040	-0.068	-0.123
W/ One to	uch	0.026	0.046	0.046	-	-
Foot	Cred and	0.342	0.536	0.714	1.535	2.342
Rod flange	9	0.472	0.822	1.233	2.328	3.010
Head fland		0.437	0.767	1.177	2.242	2.886
Double cle	and the second se	0.432	0.867	1.222	2.445	4.161

#### How to calculate weight (lbs)

	(N)CDQ2D32-20DCM	
Std Wt .:	(N)CDQ2B32-20D	.65
Wt. adder:	Both ends tapped	013
	Jam nut	037
	W/ rubber cushion	007
	Clevice mounting	333
	Total	1.026

When	mou	nting	auto	switch,	add	for
additi	onal	mour	nting	bracket	weig	ht

Autoswitch Mounting Bracket Weight

Part no. BQ-1 BQ-2	Applicable cyllinder bore size	Weight Ibs.		
BQ-1	12~ 25	.003		
BQ-2	32~ 100	.003		

# Parts List

lbs

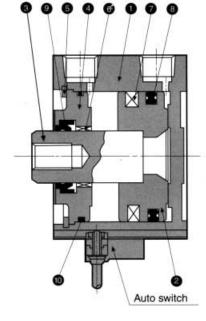
No.	Description	Material	Remarks			
1	Cylinder tube	Aluminum alloy	Hard anodized			
2	Piston	Aluminum alloy	Chromate			
	Dictor rod	Stainless steel	Bore ø12-ø25			
3	Piston rod	Carbon steel	Bore ø32~ø100, hard chrome plated			
-	Collar	Aluminum alloy	Bore ø12~ø40 , Black anodized			
4	Collar	Aluminum alloy casting	Bore ø50~ø100, Black paint			
5	Retaining ring	Carbon tool steel	Phosphate coating			
6	Bushing	Leaded tin bronze casting	Bore ø50~ø100			
7	Magnet					

#### Seals List

	Description	Material	Parts No.									- New York
	Description	Material	ø12	ø16	ø20	ø25	032	ø40	ø50	Ø63	080	ø100
8	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B	NLP-80B	NLP-100B
9	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z	PDU-25Z	PDU-30Z
10	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60	C75	C95

#### Air Hydro

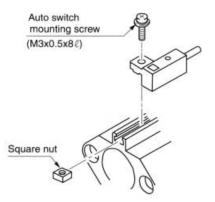
No.	Description	Matorial	Parts No.										
NO.	Description	Material	ø20	025	ø32	ø40	ø50	ø63	080	ø100			
8	Piston seal	NBR	RPS-20A	RPS-25A	RPS-32A	RPS-40A	RPS-50A	RPS-63A	RPS-80A	RPS-100A			
9	Rod seal	NBR	PS-10	PS-12	PS-16	HDU-16	HDU-20	HDU-20	HDU-25	HDU-30			
10	Gasket	NBR	C18	C22	C29	C36	C46	C60	C75	C95			



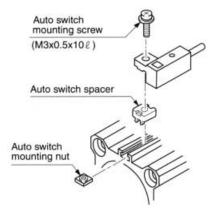
#### How To Install Auto Switch

#### Install auto switch in the following manner

ø12~ø25 (1/2~1Nom.) Bracket Kit BQ-1



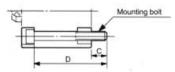
ø32~ø100 (1-1/4~4Nom.) Bracket Kit BQ-2



Mounting

#### Mounting Bolt For (N)CDQ2/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.



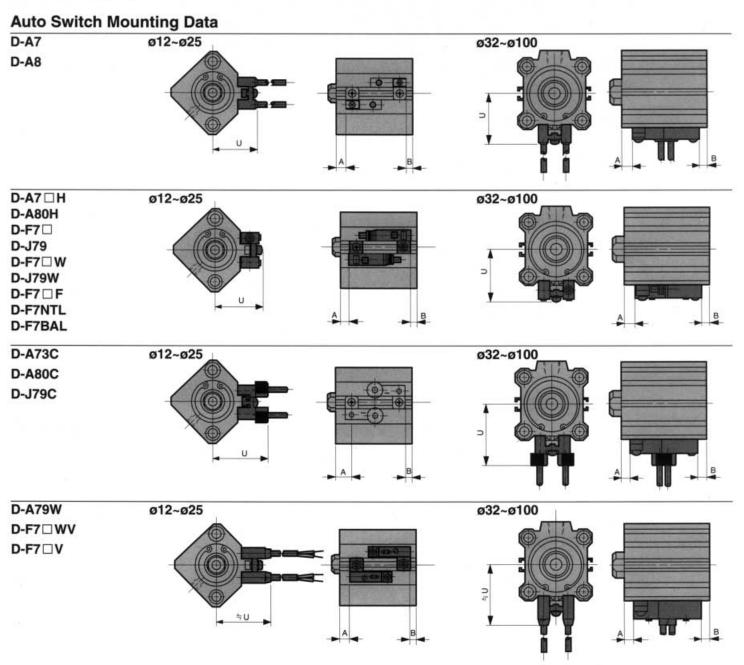
Thread	Pitch
M3	0.5
M5	0.8
M6	1.0
M8	1.25
M10	1.5

Model	С	D	Mounting bolt
(N)CDQ2B12-5D		35	M3x35L
-10D		40	x40L
-15D		45	x45L
-20D	5.5	50	x50L
-25D		55	x55L
-30D		60	x60L
(N)CDQ2B16-5D		40	M3x40L
-10D		45	x45L
-15D	8	50	x50L
-20D		55	x55L
-25D		60	x60L
-30D		65	x65L
(N)CDQ2B20-5D		40	M5x40L
-10D		45	x45L
-15D		50	x50L
-20D		55	x55L
-25D	10.5	60	x60L
-30D	10.5	65	x65L
-35D		70	x70L
-40D		75	x75L
-45D		80	x80L
-50D		85	x85L
(N)CDQ2B25-5D		40	M5x40L
-10D		45	x45L
-15D		50	x50L
-20D		55	x55L
-25D		60	x60L
-30D	9.5	65	x65L
-35D		70	x70L
-40D		75	x75L
-45D		80	x80L
-50D		85	x85L

Model	С	D	bolt
(N)CDQ2B32-5D		40	M5x40L
-10D		45	x45L
-15D		50	x50L
-20D		55	x55L
-25D		60	x60L
-30D	9	65	x65L
-35D	9	70	x70L
-40D		75	x75L
-45D		80	x80L
-50D		85	x85L
-75D		110	x110L
-100D		135	x135L
(N)CDQ2B40-5D		45	M5x45L
-10D		50	x50L
-15D		55	x55L
-20D		60	x60L
-25D		65	x65L
-30D	7.5	70	x70L
-35D	1.5	75	x75L
-40D		80	x80L
-45D		85	x85L
-50D		90	x90L
-75D		115	x115L
-100D		140	x140L
(N)CDQ2B50-10D		55	M6x55L
-15D		60	x60L
-20D		65	x65L
-25D		70	x70L
-30D		75	x75L
-35D	12.5	80	x80L
-40D		85	×85L
-45D		90	x90L
-50D		95	x95L
-75D		120	x120L
-100D		145	x145L

Model	с	D	Mountin bolt
(N)CDQ2B63-10D		60	M8x60
-15D	8 8	65	x65
-20D		70	x70
-25D	U 1	75	x75
-30D	I	80	x80
-35D	14.5	85	x85
-40D		90	x90
-45D	1 1	95	x95
-50D	1 1	100	x100
-75D	8 - 3	125	x125
-100D	_	150	x150
(N)CDQ2B80-10D		65	M10x65
-15D		70	x70
-20D		75	x75
-25D		80	x80
-30D	in the second second	85	x85
-35D	15	90	x90
-40D	1.1	95	x95
-45D		100	x100
-50D	1 3	105	x105
-75D -100D	1 3	130	x130
(N)CQ2B100-10D		155	x155 M10x75
-15D		80	
-20D	1 1	85	x80
-25D	5 Q	90	x90
-30D		95	x95
-35D	15.5	100	x100
-40D	10.0	105	x105
-45D	2 1	110	x110
-50D		115	x115
-75D		140	x140
-100D		165	x165

Auto Switch (N)CDQ2



#### Auto Switch Mounting Position

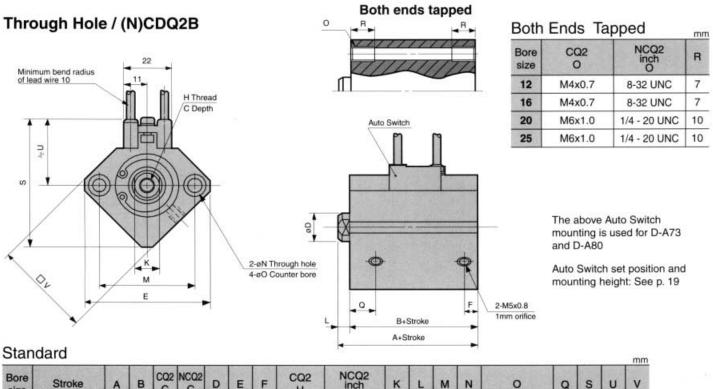
Bore Size (mm)	D-A7•A8		D-A70H+A80H D-A73C+A80C D-F70+J79 D-F70V+J79C		D-A79W		D-F7 D-F7 D-F7 D-J7	7PW	D-F79W D-F7□WV		
	A	4.5         5.5           7.5         5           7.5         6.5	A	В	A	В	A	В	A	В	
12	4.5	5.5	5	6	2	3	9	10	5.5	6.5	
16	7.5	5	8	5.5	5	2.5	12	9.5	8.5	6	
20	7.5	6.5	8	7	5	4	12	11	8.5	7.5	
25	7.5	7	8	7.5	5	4.5	12	11.5	8.5	8	
32	9.0	6	9.5	6.5	6.5	3.5	13.5	10.5	10	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	
80	17.5	18	18	18.5	15	15.5	22	22.5	18.5	19	
100	21	24	21.5	24.5	18.5	21.5	25.5	28.5	22	25	

#### Auto Switch Mounting Height

mm

Bore Size (mm)	D-A7 A8	D-A7 IH D-J79W D-A80H D-F7BAL D-F7 D-F7 IF D-J79 D-F7NTL D-F7 IW	D-A73C D-A80C D-F7□WV	D-F7⊡V	D-J79C	D-A79W
	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 ø12~ø25



Bore size	Stroke	A	в	CQ2 C	NCQ2 C	D	E	F	CQ2 H	NCQ2 inch H	к	L	м	N	0	Q	s	U	v
12	5~30	31.5	28	6	5.4	6	32	6.5	M3x0.5	#8-32	5	3.5	22	3.5	6.5 depth 3.5	11	35.5	19.5	25
16	5~30	34	30.5	8	5.4	8	38	5.5	M4x0.7	#8-32	6	3.5	28	3.5	6.5 depth 3.5	10	41.5	22.5	29
20	5~50	36	31.5	7	7	10	47	5.5	M5x0.8	#10-32	8	4.5	36	5.5	9 depth 7	10.5	48	24.5	36
25	5~50	37.5	32.5	12	10	12	52	5.5	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.



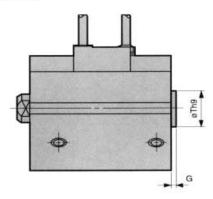
**Piston Rod** 

#### NCQ2 Male Rod End mm

Bore size	x	Н	L	к
12	8	#8-32UNC	11.5	5
16	8	#8-32UNC	11.5	6
20	8	#10-32UNF	12.5	8
25	9.5	1/4-28UNF	14.5	10

"C" dim. not applicable

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



#### End Boss (CQ2 only) mm

Bore size	G	Th9			
12	1.5	15 -0.043			
16	1.5	20 -0.052			
20	2	13 -0.043			
25	2	15 0.043			

Note 1) End Boss for Rod End is offered as an option. (Add - XC36 at the end of part no.) 20

н	
P-P-TR	
Mam Nut	

#### CC

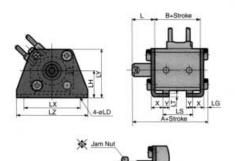
Bore size	с	x	н	L	к
12	9	10.5	M5x0.8	14	5
16	10	12	M6x1.0	15.5	6
20	12	14	M8x1.25	18.5	8
25	15	17.5	M10x1.25	22.5	10

M	ale F	Rod End		mm
с	x	н	L	к

22	M	ale R	od End		п
re	с	x	н	L	K

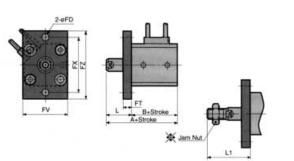
#### Series (N)CDQ2

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



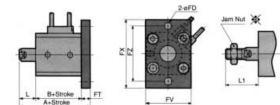
	DQ	2L													mm
Stroke range (mm)	A	в	L	CQ2 L1	NCQ2 L1	LD	LG	LH	LS	LT	LX	LY	LZ	×	Y
5~30	46.3	28	13.5	24	21.5	4.5	2.8	17	16	2	34	29.5	44	8	4.5
5~30	48.8	30.5	13.5	25.5	21.5	4.5	2.8	19	18.5	2	38	33.5	48	8	5
5~50	53.2	31.5	14.5	28.5	22.5	6.6	4	24	19.5	3.2	48	42	62	9.2	5.8
5~50	54.7	32.5	15	32.5	24.5	6.6	4	26	17.5	3.2	52	46	66	10.7	5.8
	Stroke range (mm) 5~30 5~30 5~50	Stroke range (mm)         A           5~30         46.3           5~30         48.8           5~50         53.2	range (mm)         A         B           5~30         46.3         28           5~30         48.8         30.5           5~50         53.2         31.5	Stroke range (mm)         A         B         L           5~30         46.3         28         13.5           5~30         48.8         30.5         13.5           5~50         53.2         31.5         14.5	Stroke range (mm)         A         B         L         C02 L1           5~30         46.3         28         13.5         24           5~30         48.8         30.5         13.5         25.5           5~50         53.2         31.5         14.5         28.5	Stroke range (mm)         A         B         L         C02 L1         NC02 L1           5~30         46.3         28         13.5         24         21.5           5~30         48.8         30.5         13.5         25.5         21.5           5~50         53.2         31.5         14.5         28.5         22.5	Stroke range (mm)         A         B         L         C02 L1         NC02 L1         LD           5~30         46.3         28         13.5         24         21.5         4.5           5~30         48.8         30.5         13.5         25.5         21.5         4.5           5~50         53.2         31.5         14.5         28.5         22.5         6.6	Stroke range (mm)         A         B         L         CQ2 L1         NCQ2 L1         LD         LG           5~30         46.3         28         13.5         24         21.5         4.5         2.8           5~30         48.8         30.5         13.5         25.5         21.5         4.5         2.8           5~50         53.2         31.5         14.5         28.5         22.5         6.6         4	Stroke range (mm)         A         B         L         C02 L1         NC02 L1         LD         LG         LH           5~30         46.3         28         13.5         24         21.5         4.5         2.8         17           5~30         48.8         30.5         13.5         25.5         21.5         4.5         2.8         19           5~50         53.2         31.5         14.5         28.5         22.5         6.6         4         24	Stroke range (mm)         A         B         L         C02 L1         NC02 L1         LD         LG         LH         LS           5~30         46.3         28         13.5         24         21.5         4.5         2.8         17         16           5~30         48.8         30.5         13.5         25.5         21.5         4.5         2.8         19         18.5           5~50         53.2         31.5         14.5         28.5         22.5         6.6         4         24         19.5	Stroke range (mm)         A         B         L         CO2 L1         NCO2 L1         LD         LG         LH         LS         LT           5~30         46.3         28         13.5         24         21.5         4.5         2.8         17         16         2           5~30         48.8         30.5         13.5         25.5         21.5         4.5         2.8         19         18.5         2           5~50         53.2         31.5         14.5         28.5         22.5         6.6         4         24         19.5         3.2	Stroke range (mm)         A         B         L         CO2 L1         NCO2 L1         LD         LG         LH         LS         LT         LX           5~30         46.3         28         13.5         24         21.5         4.5         2.8         17         16         2         34           5~30         48.8         30.5         13.5         25.5         21.5         4.5         2.8         19         18.5         2         38           5~50         53.2         31.5         14.5         28.5         22.5         6.6         4         24         19.5         3.2         48	Stroke range (mm)         A         B         L         CO2 L1         NC02 L1         LD         LG         LH         LS         LT         LX         LY           5~30         46.3         28         13.5         24         21.5         4.5         2.8         17         16         2         34         29.5           5~30         48.8         30.5         13.5         25.5         21.5         4.5         2.8         19         18.5         2         38         33.5           5~50         53.2         31.5         14.5         28.5         22.5         6.6         4         24         19.5         3.2         48         42	Stroke range (mm)         A         B         L         CO2 L1         NCO2 L1         LD         LG         LH         LS         LT         LX         LY         LZ           5~30         46.3         28         13.5         24         21.5         4.5         2.8         17         16         2         34         29.5         44           5~30         48.8         30.5         13.5         25.5         21.5         4.5         2.8         19         18.5         2         38         33.5         48           5~50         53.2         31.5         14.5         28.5         22.5         6.6         4         24         19.5         3.2         48         42         62	Stroke range (mm)         A         B         L         CO2 L1         NCO2 L1         LD         LG         LH         LS         LT         LX         LY         LZ         X           5~30         46.3         28         13.5         24         21.5         4.5         2.8         17         16         2         34         29.5         44         8           5~30         48.8         30.5         13.5         25.5         21.5         4.5         2.8         19         18.5         2         38         33.5         48         8           5~50         53.2         31.5         14.5         28.5         22.5         6.6         4         24         19.5         3.2         48         42         62         9.2





#### Rod Side Flange / (N)CDQ2F

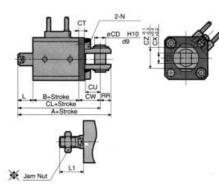
Bore size (mm)	Stroke range (mm)	A	в	FD	FT	FV	FX	FZ	L	CQ2 L1	NCQ2 L1
12	5~30	41.5	28	4.5	5.5	25	45	55	13.5	24	21.5
16	5~30	44	30.5	4.5	5.5	30	45	55	13.5	25.5	21.5
20	5~50	46	31.5	6.6	8	39	48	60	14.5	28.5	22.5
25	5~50	47.5	32.5	6.6	8	42	52	64	15	32.5	24.5



#### Head Side Flange / (N)CDQ2G mm

Bore size (mm)	Stroke range (mm)	A	L	CQ2 L1	NCQ2 L1
12	5~30	37	3.5	14	11.5
16	5~30	39.5	3.5	15.5	11.5
20	5~50	44	4.5	18.5	12.5
25	5~50	45.5	5	22.5	14.5

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



#### Double Clevis / (N)CDQ2D

Doub	le Cle	VIS /	(1)	)UL	JQ2	D											mn
Bore size (mm)	Stroke range (mm)	A	в	CO2 CD	NCQ2 inch CD	CL	ст	cu	cw	сх	cz	L	CQ2 L1	NCQ2 L1	CQ2 N	NCQ2 inch N	RR
12	5~30	51.5	28	5	3/16	45.5	4	7	14	5	10	3.5	14	11.5	M4x0.7	8-32	6
16	5~30	55	30.5	5	3/16	49	4	10	15	6.5	12	3.5	15.5	11.5	M4x0.7	8-32	6
20	5~50	63	31.5	8	5/16	54	5	12	18	8	16	4.5	18.5	12.5	M6x1.0	1/4-20	9
25	5~50	67.5	32.5	10	3/8	57.5	5	14	20	10	20	5	22.5	14.5	M6x1.0	1/4-20	10

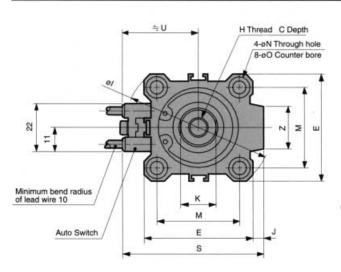
₩ Rod end nut and accessories detail: see p. 6.

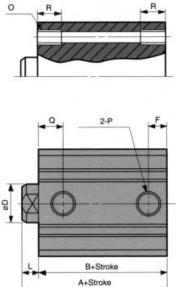
₩ ¥ Clevice pin and snap rings are included in the package.

mm

mm

#### Bore Size ø32~ø100





(N)CDQ2A	
Both Ends Tapped	

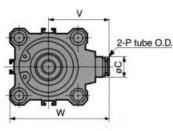
Bore size	CQ2 0	NCQ2 inch O	R
32	M6x1.0	1/4 20 UNC	10
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18
80	M12x1.75	1/2 - 13 UNC	22
100	M12x1.75	1/2 - 13 UNC	22

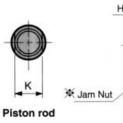
The above Auto Switch mounting is used for D-A73 and D-A80. Standard The Autoswitch set position and mounting height: See p.19

Bore size	Stroke (mm)	A	в	CQ2 C	NCQ2 C	D	E	F	CQ2 H	NCQ2 Inch H	L	J	к	L	м	N	0	Ρ	Orifice	Q	s	U	z
32	5~50 75, 100	40	33	13	13.3	16	45	7.5	M8x1.25	5/16-24UNF	60	4.5	14	7	34	5.5	9 depth 7	1/8	1.7	10.5	58.5	31.5	14
40	5~50 75, 100	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	2	11	66	35	14
50	10~50 75, 100	48.5	40.5	15	17.6	20	64	10.5	M10x1.5	1/2-20UNF	86	7	17	8	50	6.6	11 depth 8	1/4	2.2	10.5	80	41	19
63	10~50 75, 100	54	46	15	17.6	20	77	10.5	M10x1.5	1/2-20UNF	103	7	17	8	60	9	14 depth 10.5	1/4	3	15	93	47.5	19
80	10~50 75, 100	63.5	53.5	21	24.3	25	98	12.5	M16x2.0	5/8-18UNF	132	6	22	10	77	11	17.5 depth 13.5	3/8	4	16	112.5	57.5	26
100	10~50 75, 100	75	63	27	27	30	117	13	M20x2.5	3/4-16UNF	156	6.5	27	12	94	11	17.5 depth 13.5	3/8	5	23	132.5	67.5	26

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

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





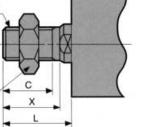
#### One Touch Fittings NCDQ2 Male Rod End

100 28.5

			_		
Bore size	С	P	v	w	Bor
32	13	6	38	60.5	32
40	13	6	42	68	40
50	16	8	50	82	50
63	16	8	56.5	95	63
					80

-		Maie Hot		mm
e	x	н	L	к
i.	12.7	5/16-24UNF	19.7	14
8	16	3/8-24UNF	23	14
	19.5	1/2-20UNF	27.5	17
1	19.5	1/2-20UNF	27.5	17
1	25.5	5/8-18UNE	35.5	22

3/4-16UNF



#### CDQ2 Male Rod End

Bore size	с	x	н	L	к
32	20.5	23.5	M14x1.5	28.5	14
40	20.5	23.5	M14x1.5	28.5	14
50	26	28.5	M18x1.5	33.5	17
63	26	28.5	M18x1.5	33.5	17
80	32.5	35.5	M22x1.5	43.5	22
100	32.5	35.5	M26x1.5	43.5	27

►G End Boss (CDQ2 only)

øTh9

mm

ħ9

-0.052 -0.052 -0.062

-0.062 -8.062

-0.074

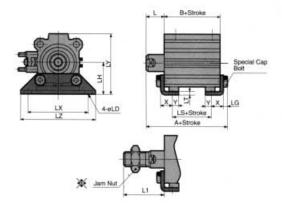
		mm			
	L	к	Bore size	G	Т
.5	28.5	14	32	2	21
.5	28.5	14	40	2	28
.5	33.5	17	50	2	35
.5	33.5	17	63	2	35
.5	43.5	22	80	2	43
.5	43.5	27	100	2	59

ℜ Rod end nut and accessories are detailed on p. 6. "C" dim. not applicable

40.5 27

Note) With End Boss is offered as an option. (Add - XC36 at the end of part no.).

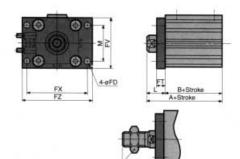
#### Compact Cylinder: Standard / Double Acting Single Rod With Switches



#### Foot / (N)CDQ2L

	1															mm
Bore size	Stroke	A	в	L	CQ2	NCQ2	LD	LG	LH	LS	LT	LX	LY	LZ	x	Y
32	5~50 75, 100	57.2	33	17	38.5	29.7	6.6	4	30	17	3.2	57	57	71	11.2	5.8
40	5~50 75, 100	63.7	39.5	17	38.5	33	6.6	4	33	23.5	3.2	64	64	78	11.2	7
50	10~50 75,100	66.7	40.5	18	43.5	37.5	9	5	39	17.5	3.2	79	78	95	14.7	8
63	10~50 75,100	72.2	46	18	43.5	37.5	11	5	46	20	3.2	95	91.5	113	16.2	9
80	10~50 75,100	85	53.5	20	53.5	45.5	13	7	59	23.5	4.5	118	114	140	19.5	11
100	10~50 75, 100	98	63	22	53.5	50.5	13	7	71	29	6	137	136	162	23	12.5

#### Rod Flange / (N)CDQ2F



6

CX.

4-øFD

Ж

Bore size	Stroke	A	в	FD	FT	FV	FX	FZ	L	C02	NCQ2	м
32	5~50 75, 100	50	33	5.5	8	48	56	65	17	38.5	29.7	34
40	5~50 75, 100	56.5	39.5	5.5	8	54	62	72	17	38.5	33	40
50	10~50 75,100	58.5	40.5	6.6	9	67	76	89	18	43.5	37.5	50
63	10~50 75,100	64	46	9	9	80	92	108	18	43.5	37.5	60
80	10~50 75,100	73.5	53.5	11	11	99	116	134	20	53.5	45.5	77
100	10~50 75, 100	85	63	11	11	117	136	154	22	53.5	50.5	94

#### Head Flange / (N)CDQ2G\_mm

Bore size	Stroke	A	L	CQ2	NCQ2 L1
32	5~50 75, 100	48	7	28.5	19.7
40	5~50 75, 100	54.5	7	28.5	23
50	10~50 75,100	57.5	8	33.5	27.5
63	10~50 75,100	63	8	33.5	27.5
80	10~50 75,100	74.5	10	43.5	35.5
100	10~50 75, 100	86	12	43.5	40.5

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

#### CT 4-N aCD H10 aCD

-Stroke

Jam Nut

#### Double Clevis / (N)CDQ2D

Bore	Stroke	A	в	CQ2 CD	NCQ2 Inch CD	CL	СТ	cu	cw	сх	cz	L	CQ2	NCQ2 L1	CQ2 N	NCQ2 Inch	RR
32	5~50	70	33	10	3/8	60	5	14	20	18	36	7	28.5	19.7	M6x1.0	1/4-20	10
40	5~50	78.5	39.5	10	3/8	68.5	6	14	22	18	36	7	28.5	23	M6x1.0	1/4-20	20
50	10~50	90.5	40.5	14	1/2	76.5	7	20	28	22	44	8	33.5	27.5	M8x1.25	5/16-18	14
63	10-50 75,100	98	46	14	1/2	84	8	20	30	22	44	8	33.5	27.5	M10x1.5	7/16-14	14
80	10~50 75,100	119.5	53.5	18	5/8	101.5	10	27	38	28	56	10	43.5	35.5	M12x1.75	1/2-13	18
100	10~50	142	63	22	7/8	120	13	31	45	32	64	12	43.5	40.5	M12x1.75	1/2-13	22

mm

₩Rod end nut and accesories detail: see p. 6.

¥ ¥ Clevis pin and snap ring are included in the package.

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

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

B

F

50

63

80

100

(N)CQ-L050 (N)CQ-F050

(N)CQ-L080 (N)CQ-F080

(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;

(N)CQ-F063

Foot / Flange; Body mounting bolt

(N)CQ-L063

How To Order Preferred NCQ2W B 30 Option Program NCDQ2W B W/ Auto Switch D C - A73 30 20 Auto Switch PT. metric W/ Auto Switch . 2 pcs. N NPT, inch (built-in magnet) S 1 pcs. n n pcs. Mounting. Through hole F Rod side flange Auto Switch Capability Both ends tapped Foot Without Auto Switch Style Autoswitch Load Voltage Wire . Air pressure Indicator Туре (Output In-line light DC AC H See note 1) Air Hydro entry type) entry Note 1) The available air-hydro A76H 3 Wire 5V bore sizes: ø20~ø100, CQ2 only. Yes A72 A72H \_ 200V A73 A73H 12V 100V Bore Size . Reed A80 5V, 12V ABOH 100V No 12 12mm (1/2" Nom.) 40 40mm (1-1/2" Nom.) switch 2 Wire A73C 24V 12V No 16 16mm (5/8" Nom.) 50 50mm (2" Nom.) A80C 5V, 12V 24V No 20 20mm (3/4" Nom.) 63 63mm (2-1/2" Nom.) A79W Yes \_ 25 25mm (1\* Nom.) 80mm (3-1/4" Nom.) 80 3 Wire F7NV F79 NPN 32 32mm (1-1/4" Nom.) 100 100mm (4" Nom.) 5V, 12V 3 Wire F7PV F7P PNP Piping F7BV J79 2 Wire 12V Threaded ports J79C See note 2) Built-in one-touch fitting 3 Wire **F7NWV** F79W NPN Note 2) Available built-in one touch fitting Solid State 5V, 12V 3 Wire 24V Yes F7PW bore sizes: ø32~ø63. Switch PNP Not applicable for Air-Hydro type, F7BWV J79W CQ2. 2 Wire 12V F7BAL Cylinder Stroke (mm)+ 3 Wire Please refer to p.25 for F7NTL NPN 5V. 12V standard strokes **F79F** 4 Wire NPN Action F7LF Double D Load length 0.5m..... .Std. Connector A80C 5m..... Z Connector A80CZ **Mounting Kits** 3m.....L A80CL No lead ..... N A80CN **Body Option** Bore Size Note 4) Foot Flange (mm) . Std. (Female thread) \* Body option combination is available (N)CQ-L012 (N)CQ-F012 12 such as CM, FC, FM, and FCM. C Note 3) W/ rubber cushion (N)CQ-L016 (N)CQ-F016 16 20 (N)CQ-L020 (N)CQ-F020 M Male thread Note 3) W/ Rubber cushion is not (N)CQ-L025 25 (N)CQ-F025 available for the air-hydraulic type. (N)CQ-L032 32 (N)CQ-F032 (N)CQ-L040 40 (N)CQ-F040

Standard / Double Acting Double rod

Model

# (N)CQ2W Series



SMC

	Bore	e Size	12	16	20	25	32	40	50	63	80	100
1.5	Mounting	Through hole (std)	•	•	•	•	•	٠	٠	•	٠	•
14	Mounting	Both ends tapped	•	٠	٠	۲	•	•	•	٠	•	•
Type	Buil	t-In Magnet	•	•	•	٠	•	•	•	•	•	۰
ssure T	Piping	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
Air-Pressure	Method	Built-In One Touch Fitting	-	-	-	-	Note 2 6/4	6/4	8/6	8/6	-	-
1	Rod E	End M Thread	•	•	•	٠	•	٠	۲	•	•	•
	W/Ru	bber Cushion	•	•	•	•	•	•	•	•	•	•
22	Mounting	Through hole (std)	-	-	•	٠	•	•	•	۲	•	•
ype	Mounting	Both ends tapped	-	-	•	•	•	•	•	۲	•	•
10	Buil	t-In Magnet			•	•	•	•	•	•	•	•
Air-Hydro Type	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 E	End M Thread	-	-	•	•	•	٠	٠	•	٠	•

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

Model	Air Pressure (Non-Lube)	Air-hydro						
Media	Air	Hydraulic oil						
Proof Pressure	217psi {15	5.3kgf/cm <sup>2</sup> }						
Max. Operating Pressure	145psi {1(	0.2kgf/cm <sup>2</sup> }						
Ambient and Media temp.	15~160°F{-10°C~+70°C} (At f	5~160°F{-10°C~+70°C} (At freezing temp. air must be dry)						
Rubber cushion	None	-						
Rod end thread	Female Th	nread (std.)						
Rod end thread tolerance		Class II						
Stroke Length tolerance	+	1.0 0 mm						
Mounting		hole (std.)						
Piston Speed	2~20in/s (50~500mm/s)	.002~8 in/s(0.5~200mm/s)						

#### Min. Operating Pressure

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		

DSI

#### Cautions

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

• 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.

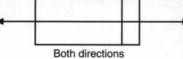
Servent damage to the piston rod. A damaged piston rod will lead to damage of the rod seal and result in leakage.

#### Standard Stroke

Air pressure	e 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.

Double acting/ Double rod



<b>Double Act</b>	ing Double	Rod		lbf
Bore	Rod	Operatin	ng press	ures PSI
size	direction	50	75	100
12	BOTH	6.6	9.8	13.1
16	вотн	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

#### Weight/Double Acting: Double Rod Type

Bore	1 87 32	Stroke													
size	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

Veight Adde	er										lbs.
Bore size	- Ver	12	16	20	25	32	40	50	63	80	100
Both ends tapped	100	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										
	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*				0.306							

#### How to obtain the total weight (lbs) NCQ2WL32-20DCM

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

\*(incld. mounting bolt)

#### Mounting Bolt For (N)CQ2

Special long m through hole m	ounting bolt for ounting is	Model	С	D	Mounting bolt	Model	С	D	Mounting bolt	Model	С	D	Mounting bolt
available as an	option.	(N)CQ2WB12-5D		35	M3x35L	(N)CQ2WB32-5D	1	35	M5x35L	(N)CQ2WB63-10D	-	55	M8x55L
How to Order:		-10D		40	x40L	-10D		40	x40L	-15D	S	60	x60L
Specify the req	uired bolts	-15D	8.3	45	x45L	-15D	1	45	x45L	-20D		65	x65L
Example) Bolt		-20D	0.3	50	x50L	-20D		50	x50L	-25D		70	x70L
		-25D		55	x55L	-25D	6.5	55	x55L	-30D	13.5	75	x75L
		-30D		60	x60L	-30D	0.5	60	x60L	-35D		80	x80L
		(N)CQ2WB16-5D		35	M3x35L	-35D		65	x65L	-40D		85	x85L
	+ Mounting bolt	-10D		40	x40L	-40D	1	70	x70L	-45D		90	x90L
8	Mounting bolt	-15D	7.5	45	x45L	-45D		75	x75L	-50D	1	95	x95L
	- <b>L</b>	-20D	1.5	50	x50L	-50D		80	x80L	(N)CQ2WB80-10D		60	M10x60L
	<b>J</b>	-25D		55	x55L	(N)CQ2WB40-5D		45	M5x45L	-15D	2.1	65	x65L
D	le-	-30D		60	x60L	-10D		50	x50L	-20D		70	x70L
-	-	(N)CQ2WB20-5D		30	M5x30L	-15D		55	x55L	-25D		75	x75L
		-10D		35	x35L	-20D	1	60	x60L	-30D	12.5	80	x80L
		-15D		40	x40L	-25D	7	65	x65L	-35D		85	x85L
		-20D		45	x45L	-30D		70	x70L	-40D		90	x90L
Thread	Pitch	-25D	6	50	x50L	-35D		75	x75L	-45D		95	x95L
M3	0.5	-30D		55	x55L	-40D		80	x80L	-50D	-	100	x100L
M5	0.8	-35D		60	x60L	-45D		85	x85L	(N)CQ2WB100-10D		70	M10x70L
		-40D		65	x65L	-50D		90	x90L	-15D		75	x75L
M6	1.0	-45D		70	x70L	(N)CQ2WB50-10D		55	M6x55L	-20D		80	x80L
M8	1.25	-50D		75	x75L	-15D		60	x60L	-25D		85	x85L
M10	1.5	(N)CQ2WB25-5D		35	M5x35L	-20D		65	x65L	-30D	13	90	x90L
		-10D		40	x40L	-25D		70	x70L	-35D		95	x95L
		-15D		45	x45L	-30D	12.5	75	x75L	-40D		100	x100L
		-20D		50	x50L	-35D		80	x80L	-45D		105	x105L
		-25D	8	55	x55L	-40D	1	85	x85L	-50D		110	x110L
		-30D	1926	60	x60L	-45D		90	x90L				
		-35D		65	x65L	-50D		95	x95L				
		-40D		70	x70L								
		-45D		75	x75L								
		-50D		80	x80L								26

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

Construction / Part L	ist		•		•
			W / Cus	hion & Male Rod T	Thread
		Pa	rts List		
Double Acting	/ Double Rod	No.	Description	Material	Remarks
	•	1	Cylinder tube	Aluminum alloy	Hard annodized
14/	W	2	Piston	Aluminum alloy	Chromate
		3	Piston rod A	Stainless steel	Bore ø12~ø25
		and the second		Carbon steel	Bore ø32~ø100, hard chrome plated
n -		1	Piston rod B	Stainless steel	Bore ø12~ø25
3		1000	riston for D	Carbon steel	Bore ø32~ø100, hard chrome plated
		5	Collar	Bearing grade aluminum	Bore ø12~ø40 , Black annodized
				Aluminum alloy casting	Bore ø50~ø100, Black paint
		6	Retaining ring	Carbon tool steel	Phosphate coating
		7	Bushing	Leaded tin bronze casting	Used for only ø50 and above
		8	Rod end nut	Carbon steel	Nickel plated
		9	Bumper	Polyurethane rubber	-
		10	One touch fittings	-	Bore ø32~ø63

**One Touch Fittings** 

#### Seals List

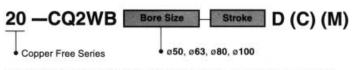
No	Description	Material	CO & Low	and the state		and the second	Parts	s No.	all and the		D. Land	
	Description	Material	@12	ø16	ø20	025	@32	ø40	ø50	063	080	@100
11	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B	NLP-80B	NLP-100B
12	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	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

Piston gasket

#### Air Hydro (CQ2 only)

No	Description	Matorial	Contract of	State State	and a state	Sandar an	2-1-1-1-1-1		The second	6 10 Parts
	Description	Material	ø20	025	032	640	ø50	Ø63	Ø80	ø100
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**



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: ø12~ø40

#### Seal Kit Part Numbers

#### CQ2 B PS Options -Actuation • Bore Size . - Single Rod - Double Action S/T- Single Action K- Non-Rotating

NBR

Single Rod W- Double Rod Single Rod

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

\_

27

#### Bore Size ø12~ø25

#### Through Hole / (N)CQ2WB

H Screw Depth C

Both ends tapped

2-M5x0.8 Port size 1mm orifice

L+Stroke

6 - 8

K across flat

R.

0

ſ

81 🛛 G

4-øN Through hole

8-øO Counter bore

∑ w

М

E

#### (N)CQ2WA Both Ends Tapped

Douit		ppea	mm
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

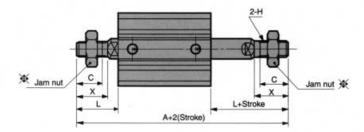


Bore size	Stroke	A	в	CQ2 C	NCQ2 C	D	E	CQ2 H	NCQ2 inch H	1	к	L	м	N	0	Q	z
12	5~30	32.2	25.2	6	5.4	6	25	M3x0.5	#8-32	32	5	3.5	15.5	3.5	6.5 depth 3.5	10	-
16	5~30	33	26	8	5.4	8	29	M4x0.7	#8-32	38	6	3.5	20	3.5	6.5 depth 3.5	10	10
20	5~50	35	26	7	7	10	36	M5x0.8	#10-32	47	8	4.5	25.5	5.5	9 depth 7	9.5	10
25	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

B+Stroke

A+2(Stroke)

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



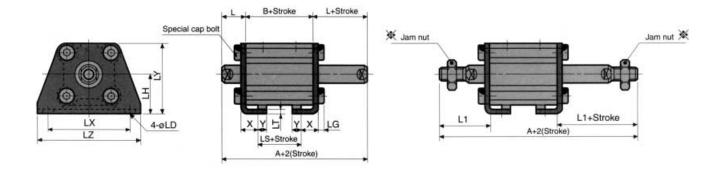
#### NCQ2 Male Rod End

Bore size	×	H inch	L	к	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

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

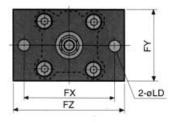
"C" dim. not applicable

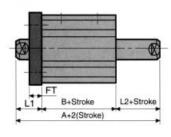
CQ2	2 M	ale F	Rod End			mm
Bore size	С	x	н	L	к	A
12	9	10.5	M5x0.8	14	5	53.2
16	10	12	M6x1.0	15.5	6	57
20	12	14	M8x1.25	18.5	8	63
25	15	17.5	M10x1.25	22.5	10	74

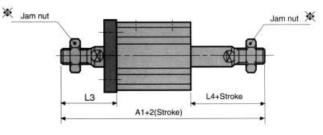


#### Foot / (N)CQ2WL

FOOL	/(N)CQ2	ZVVL																m
Bore size	Stroke	A	CQ2 A1	NCQ2 A1	в	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





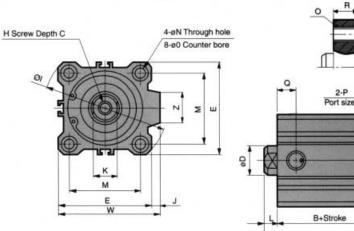


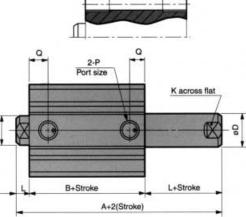
#### Flange / (N)CQ2WF

Bore size	Stroke	A	CQ2 A1	NCQ2 A1	в	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

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

#### Bore Size ø32~ø100





#### (N)CQ2WA **Both Ends Tapped**

Both	Ends la	opea	mn
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

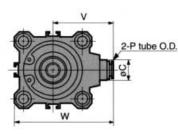
#### Standard

Bore size	Stroke (mm)	A	в	CQ2 C	NCQ2 C	D	E	CQ2 H	NCQ2 Inch H	1	J	к	L	м	N	0	Р	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

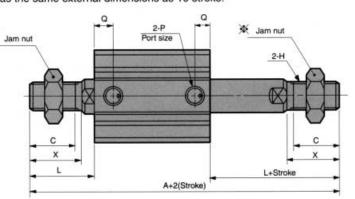
mm

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 ø32, 5 stroke has the same external dimensions as 10 stroke.

×







#### **One Touch Fittings**

	_	_	-	
Bore size	С	Ρ	v	w
32	13	6	38	60.5
40	13	6	42	68
50	16	8	50	82
63	16	8	56.5	95

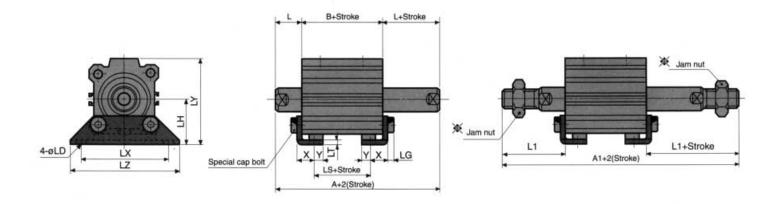
#### NCQ2 Male Rod End

Bore size	x	H Inch	L	к	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

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

#### CQ2 Male Rod End

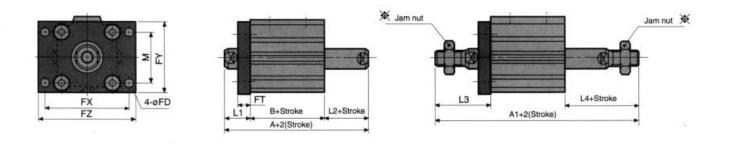
U Gez	- 1910		Rod End		10000	mm
Bore size			н	L	ĸ	A
32	20.5	23.5	M14x1.5	28.5	14	87.5
40	20.5	23.5	M14x1.5	28.5	14	97
50	26	28.5	M18x1.5	33.5	17	107.5
63	26	28.5	M18x1.5	33.5	17	109
80	32.5	35.5	M22x1.5	43.5	22	138
100	32.5	35.5	M26x1.5	43.5	27	147.5



#### Foot / (N)CQ2WL

Bore size	Stroke	A	CQ2 L1	NCQ2 A1	в	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

mm



#### Flange / (N)CQ2WF

Bore	Stroke	A	A1	NCQ2 A1	в	FD	FT	FV	FX	FZ	L1	L2	L3	NCQ2 L3	L4	NCQ2 L4	м
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	Part Number for Auto Switches	NOTE	Auto Switch Minimum Strokes and Specifications
1	Please refer to p. 24 for part order sequence	2	Please refer to p. 13 for minimum stroke with Auto Switches and Specifications

#### Weight Adder

Bore size	C. Carrie	12	16	20	25	32	40	50	63	80	100
Both ends tapped	Part La			0.007							
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
Hod end M Infead	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	-0.042	-0.075	-0.126
W/ one touch fitting			-	-			0.026				-
Foot mounting*	1 the second			0.337							
Rod side flange*		0.119	0.148	0.289	0.337	0.397	0.472	0.822	1.233	2.328	3.010

\*(incld. mounting bolt)

#### Weight / Double Acting: Double Rod Type

Bore	20,20				Str	oke	Cargare a	1	- Trunit	and the second
size	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								0.968	
40	0.816	0.884	0.953	1.021	1.089	1.158	1.226	1.294	1.363	1.431
50	-								2.121	
63	-	1.837	1.923	2.009	2.095	2.181	2.267	2.353	2.439	2.525
80		3.308	3.493						4.604	
100	•	5.515	5.777	6.039	6.302	6.564	6.827	7.089	7.351	7.614

(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

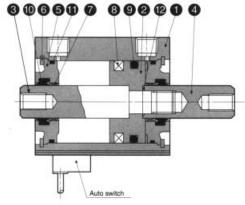
How to calculate weight (lbs)

When mounting auto switch, add for additional mounting bracket weight

lbe

Auto Switch Mounting Bracket Weight

Part no.	Applicable cylinder bore size	Weight Ibs.
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
-	Piston rod A	Stainless steel	Bore ø12~ø25
3	FISION TOU A	Carbon steel	Bore ø32~ø100, hard chrome plated
1	Piston rod B	Stainless steel	Bore ø12~ø25
4	4 Piston rod B	Carbon steel	Bore ø32~ø100, hard chrome plated
5	Collar	Aluminum alloy	Bore ø12~ø40, Black anodized
9	Collar	Aluminum alloy casting	Bore ø50~ø100, Black paint
6	Retaining ring	Carbon tool steel	Phosphate coating
7	Bushing	Leaded tin bronze casting	Bore ø50~ø100
8	Magnet		
12	Piston Gasket	NBR	1

#### Seals List

No.	Description	Matorial	aterial Parts No.														
NU.	Description	Material	012	ø16	020	ø25	032	ø40	ø50	ø63	Ø80	ø100					
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					

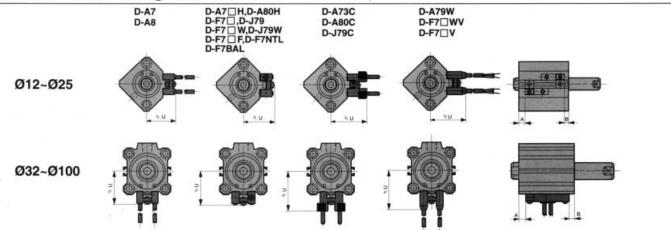
#### Air Hydro (CQ2 only)

No.	Desseriation	Matarial														
140.	Description	Material	020	025	032	ø40	ø50	ø63	080	ø100						
9	Piston seal	NBR	RPS-20A	RPS-25A	RPS-32A	RPS-40A	RPS-50A	RPS-63A	RPS-80A	<b>RPS-100</b>						
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						

#### Auto Switch (N)CDQ2W Mounting Bolt For (N)CDQ2W/ With Auto Switch

Special long mounting bolt for	Model	с	D	Mounting bolt	Model	c	D	Mounting bolt	Model	с	D	Mounting bolt
through hole mounting is	(N)CDQ2WB12-5DC		40	M3x40L	(N)CDQ2WB32-5D		45	M5x45L	(N)CDQ2WB63-10D		65	M8x65L
available as an option.	-10DC		45	x45L	-10D		50	x50L	-15D		70	x70L
How to Order:	-15DC	6.1	50	x50L	-15D		55	x55L	-20D		75	x75L
Specify the required bolts	-20DC	6.1	55	x55L	-20D		60	x60L	-25D		80	x80L
Example) Bolt M3x35L 4pcs.	-25DC		60	x60L	-25D	6.5	65	x65L	-30D	13.5	85	x85L
	-30DC		65	x65L	-30D	0.5	70	x70L	-35D		90	x90L
	(N)CDQ2WB16-5D		45	M3x45L	-35D		75	x75L	-40D		95	x95L
Mounting	-10D		50	x50L	-40D		80	x80L	-45D		100	x100L
Mounting bolt	-15D	7.5	55	x55L	-45D		85	x85L	-50D		105	x105L
	-20D		60	x60L	-50D		90	x90L	(N)CDQ2WB80-10D		70	M10x70L
	-25D		65	x65L	(N)CDQ2WB40-5D		55	M5x55L	-15D	0 1	75	x75L
	-30D		70	x70L	-10D		60	x60L	-20D	i - i	80	x80L
	(N)CDQ2WB20-5D		45	M5x45L	-15D		65	x65L	-25D		85	x85L
	-10D		50	x50L	-20D		70	x70L	-30D	12.5	90	x90L
	-15D		55	x55L	-25D	7	75	x75L	-35D		95	x95L
	-20D		60	x60L	-30D		80	x80L	-40D		100	x100L
Thread Pitch	-25D	9	65	x65L	-35D		85	x85L	-45D		105	x105L
M3 0.5	-30D	, in the second se	70	x70L	-40D		90	x90L	-50D		110	x110L
M5 0.8	-35D		75	x75L	-45D		95	x95L	(N)CQ2WB100-10D		80	M10x80L
	-40D		80	x80L	-50D		100	x100L	-15D		85	x85L
M6 1.0	-45D		85	x85L	(N)CDQ2WB50-10D		65	M6x65L	-20D		90	x90L
M8 1.25	-50D	_	90	x90L	-15D		70	x70L	-25D	1	95	x95L
M10 1.5	(N)CDQ2WB25-5D		45	M5x45L	-20D		75	x75L	-30D	13	100	x100L
	-10D		50	x50L	-25D		80	x80L	-35D		105	x105L
	-15D		55	x55L	-30D	12.5	85	x85L	-40D		110	x110L
	-20D		60	x60L	-35D		90	x90L	-45D		115	
	-25D	8	65	x65L	-40D		95	x95L	-50D		120	x120L
	-30D		70	x70L	-45D		100	x100L				
	-35D		75	x75L	-50D		105	x105L				
	-40D		80	x80L								
	-45D		85	x85L								
	-50D		90	x90L								

#### Auto Switch Mounting Data



#### Auto Switch Mounting Position

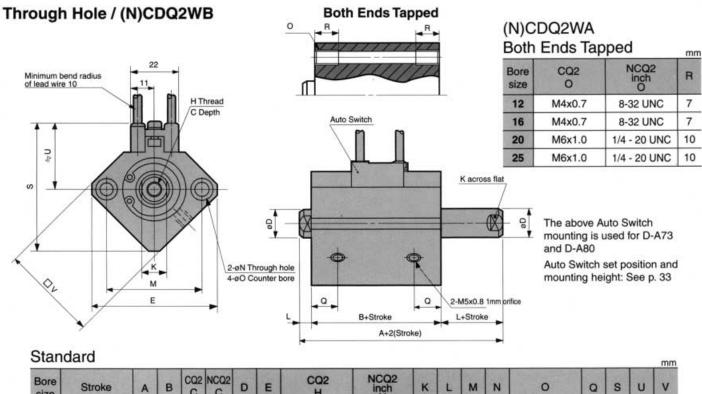
Bore Size (mm)	D-A	7•A8	D-A730	H-A80H -A80C -J79 V-J79C	D-A	79W	D-F7 D-F7 D-F7 D-J7	TOF	D-F79W D-F7⊡WV		
	A	в	A	В	A	в	A	в	A	В	
12	4.5	10	5	10.5	2	7.5	9	14.5	5.5	11	
16	7.5	10.5	8	11	5	8	12	15	8.5	11.5	
20	7.5	7.5 13		13.5	5	10.5	12	17.5	8.5	14	
25	7.5 13		8	13.5	5	10.5	12	17.5	8.5	14	
32	9.0	13.5	9.5	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

Auto S	witch i	Nounting Heig	Int			m
Bore Size (mm)	D-A7 A8	D-A7 IH D-J79W D-A80H D-F7BAL D-F7 ID D-F7 IF D-J79 D-F7NTL D-F7 IW	D-A73C D-A80C D-F7□WV	D-F7 🗆 V	D-J79C	D-A79W
	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

### (N)CDQ2W Series

#### Bore Size ø12~ø25



Bore size	Stroke	A	в	CQ2 C	NCQ2 C	D	E	CQ2 H	NCQ2 inch H	к	L	м	N	0	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	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

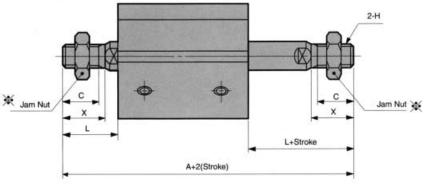
Note 2) The external dimensions of cylinder with rubber cushion are the same as that of the above standard.

mm

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



**Piston Rod** 



#### NCQ2 Male Rod End

Bore size	x	H Inch	L	к	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

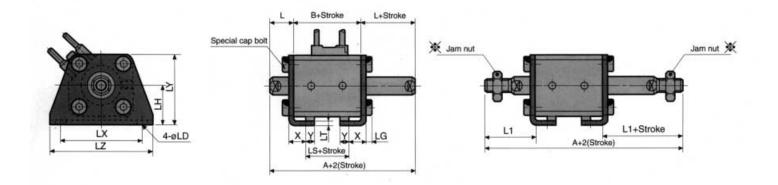
#### CQ2 Male Rod End

Bore size	с	x	н	L	к	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

"C" dim. not applicable

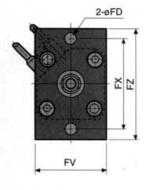
mm

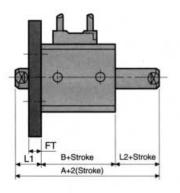
#### Compact Cylinder: Standard / Double Acting Double Rod With Switches

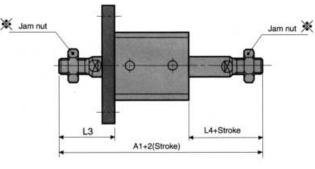


#### Foot / (N)CDQ2WL

Bore size	Stroke	A	CQ2 A1	NCQ2 A1	в	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







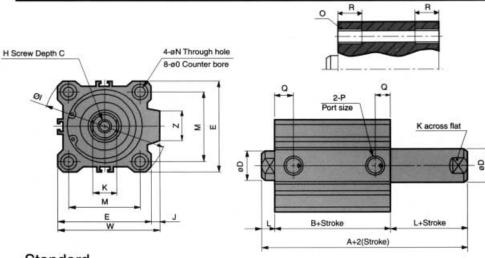
mm

#### Flange / (N)CDQ2WF

Bore size	Stroke	A	A1	NCQ2 A1	в	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 ø32~ø100



#### (N)CDQ2WA **Both Ends Tapped**

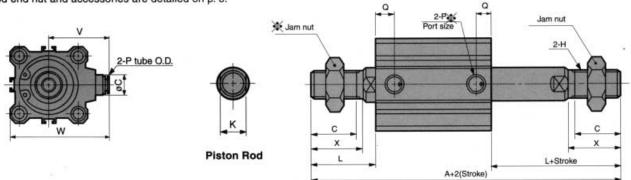
Both	Ends la	opea	mm
Bore size	CQ2 O	NCQ2 inch O	R
32	M6x1.0	1/4 - 20 UNC	10
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18
80	M12x1.75	1/2 - 13 UNC	22
100	M12x1.75	1/2 - 13 UNC	22

#### Standard

Jiai	dard		_	_	_	_	_			_	_	_	-		-		_	No.	-	-	-	m
Bore size	Stroke (mm)	A	в	CQ2 C	NCQ2 C	D	E	CQ2 H	NCQ2 Inch H	1	J	к	L	м	N	0	Ρ	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.

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



#### **One Touch Fittings**

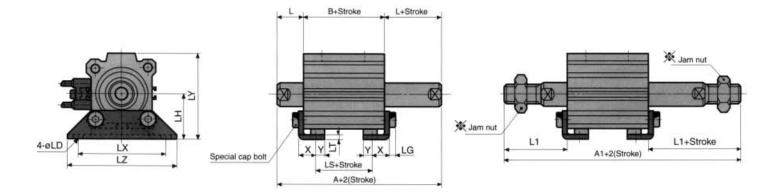
Bore size	С	Ρ	v	w
32	13	6	38	60.5
40	13	6	42	68
50	16	8	50	82
63	16	8	56.5	95

#### NCQ2 Male Rod End

Bore size	x	H Inch	L	к	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

1 1 1 K	1		Rod End	1000	000	mn
Bore size	C	×	Н	L	к	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

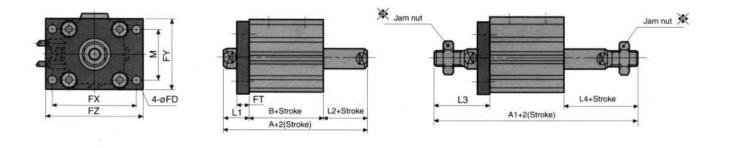


#### Foot / (N)CDQ2WL

Bore size	Stroke	A	CQ2 A1	NCQ2 A1	в	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

mm

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



#### Flange / (N)CDQ2WF

Bore size	Stroke	A	A1	NCQ2 A1	в	FD	FT	FV	FX	FZ	L1	L2	L3	NCQ2 L3	L4	NCQ2 L4	М
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.

### SNC Compact Cylinder: Standard/ Single Acting Single Rod NCQ2 / CQ2 Series

How To Order Preferred NCQ2 B 20 Option Program 10 S M-A73 B 20 NCDQ2 W/ Auto Switch Auto Switch PT, metric • 2 pcs. N NPT, inch W/ Auto Switch . S 1 pcs. (built-in magnet) n n pcs. Auto Switch Capability Mounting. Without Auto Switch F Rod side flange Through hole B **Auto Switch Specifications** G Head side flange Both ends tapped A Autoswitch Load Voltage Wire Indicator **Double Clevis** D Type (Output Foot L In-line light DC AC type) entry entry Bore Size -3 Wire 5V A76H \_ \_ 12mm (1/2" Nom.) 32mm (1-1/4" Nom.) 12 32 Yes A72 200V A72H 16 16mm (5/8" Nom.) 40 40mm (1-1/2" Nom.) 12V 100V A73 A73H Reed 20 20mm (3/4" Nom.) 50 50mm (2" Nom.) A80 ASOH No 5V, 12V 100V switch 2 Wire A73C No 24V 12V \_ -25 25mm (1" Nom.) ABOC No 5V. 12V 24V Piping. A79W Yes \_ 3 Wire ..... Threaded ports F7NV F79 NPN 5V, 12V F See note 2) Built-in one-touch fitting 3 Wire F7PV F7P PNP Note 2) Available built-in one touch fitting F7BV J79 bore size: ø32~ø50. 2 Wire 12V J79C Cylinder Stroke (mm)+ 3 Wire F7NWV **F79W** Please refer to p.39 for NPN 5V, 12V Solid State 3 Wire 24V standard strokes Yes F7PW \_ Switch PNP Action F7BWV J79W 2 Wire 12V Spring return F7BAL S \_ 3 Wire Spring extended Т F7NTL NPN 5V, 12V F79F 4 Wire NPN F7LF Load length 0.5m..... .Std. Connector A80C 5m..... Z Connector A80CZ **Mounting Kits** 3m.....L A80CL No lead ..... N A80CN **Body Option** Bore Size Note 4) Foot Note 6) Double Flance Std. (Female thread) ..... M Male thread F Head end boss

\* Body option combination is available such as FM.

(mm)		1	cievis
12	(N)CQ-L012	(N)CQ-F012	(N)CQ-D012
16	(N)CQ-L016	(N)CQ-F016	(N)CQ-D016
20	(N)CQ-L020	(N)CQ-F020	(N)CQ-D020
25	(N)CQ-L025	(N)CQ-F025	(N)CQ-D025
32	(N)CQ-L032	(N)CQ-F032	(N)CQ-D032
40	(N)CQ-L040	(N)CQ-F040	(N)CQ-D040
50	(N)CQ-L050	(N)CQ-F050	(N)CQ-D050
63	(N)CQ-L063	(N)CQ-F063	(N)CQ-D063
80	(N)CQ-L080	(N)CQ-F080	(N)CQ-D080
100	(N)CQ-L100	(N)CQ-F100	(N)CQ-D100

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.

### SNC<sup>•</sup> Compact Cylinder: Standard / Single Acting Single Rod (N)CQ2 Series



Single Acting/ Spring Return



Single Acting/ Spring Extend



Head end boss



#### Cautions

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

O • 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.

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

#### Model

	Bon	e Size	12	16	20	25	32	40	50
100	Mounting	Through hole (std)	•	•	•	•	•	٠	•
	Mounting	Both ends tapped	•	•	•	•	•	•	
Type	Buil	t-in Magnet	•	•	•	•	•	•	
ssure Ty	Piping	Threaded PT on NPT	M5x 0.8	M5x 0.8	M5x 0.8	M5x 0.8	Note 1 M5x 0.8 1/8	1/8	1/4
Air-Pree	Method	Built-In One Touch Fitting	-	-	-	-	Note 2 6/4	6/4	8/6
	Rod En	d Male Thread		•	•	•	•	٠	
	W/He	ad End boss	•	•	•		•	•	

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**

Model	Air Pressure (Non-Lube)
Media	Air
Proof Pressure	217psi {15.3kgt/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 mm
Mounting	Through hole (std.)
Piston Speed	2~20in/s (50~500mm/s)

#### Theoretical Output Force Ibs.

Time	Bore size	Operati	ng Press	ure (psi)
Туре	(mm)	43	72	100
22.9	12	4.7	9.9	14.8
	16	10.1	19.3	28.3
P	20	17.8	31.9	46.1
Extend	25	28.3	50.4	72.6
ĥ	32	47.4	83.6	119.8
	40	76.0	132.4	189.1
	50	120.3	208.6	295.8
	12	3.1	7.0	10.8
	16	5.4	12.1	19.1
t	20	16.0	26.5	37.1
Retract	25	25.4	42.5	59.3
ä	32	40.7	67.9	94.9
	40	71.3	118.7	166.1
	50	111.3	185.5	258.5

Standard Stroke

Stroke

5,10

10,20

Bore size

12, 16, 20

25, 32, 40

50

Type	Bore size	Spring	Force
Type	(mm)	Comp.	Rest
	12	2.9	0.9
	16	3.4	1.3
DE	20	3.4	1.3
Spring	25	4.7	2.5
SE	32	6.7	3.6
	40	8.8	4.7
1-2	50	12.1	5.6
	12	2.5	5.6
	16	4.7	0.6
BP	20	6.1	1.2
prin	25	6.5	2.2
5	32	6.5	4.5
	40	6.5	4.5
	50	18.7	5.6

psi

#### Min. Operating Pressure

Bore size	Single Acting (extend, retract)
12	36
16	36
20	26
25	26
32	25
successive the second sec	

#### Weight Adder

Weight Adde	er							lbs.
Bore size	12	16	20	25	32	40	50	
Both ends tapped		0.004	0.004	0.013	0.013	0.013	0.013	0.013
Dard and Managed	Thread	0.003	0.007	0.013	0.026	0.057	0.060	0.117
Rod end M thread	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
W/ one touch fitting		-	-	-	-	0.013	0.013	0.023
Foot mounting		0.121	0.148	0.362	0.410	0.315	0.342	0.536
Rod side flange		0.126	0.152	0.306	0.355	0.397	0.472	0.822
Head side flange		0.119	0.143	0.293	0.335	0.364	0.437	0.767
Double rear clevis		0.071	0.086	0.194	0.271	0.333	0.432	0.867

#### Weight/Single Acting:

-	Bore size	Bore size Stroke						
Type	(mm)	5	10	20				
Spring Extend	12	0.06	0.08					
	16	0.09	0.11	-				
	20	0.14	0.17	•				
	25	0.19	0.22					
	32	0.29	0.34					
	40	0.45	0.50					
	50		0.81	0.97				
	12	0.06	0.08	•				
act	16	0.09	0.11					
Retract	20	0.15	0.17					
H	25	0.20	0.23					
ring	32	0.31	0.35	•				
Sp	40	0.48	0.52	-				
	50	•	0.88	1.01				

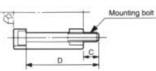
#### How to obtain the total weight (lbs) (N)CQ2D32-10SM

	Male rod end Double rear clevis	0.057
Std wt.: Wt. adder:	(N)CQ2B32-20S Both ends tapped	0.34

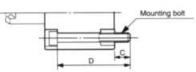
#### Mounting Bolt For (N)CQ2

Special long mounting bolt for through hole mounting is available as an option. How to Order: Specify the required bolts Example) Bolt M3x25L 4pcs.

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

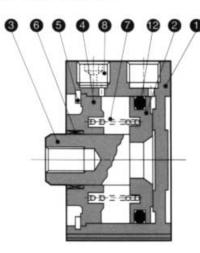


Model	С	D	Mounting bolt
(N)CQ2B12-5S	6.5	25	M3x25L
-105	0.5	30	x30L
(N)CQ2B16-5S		25	M3x25L
-105	5	30	x30L
(N)CQ2B20-5S	7.5	25	M5x25L
-105	1.5	30	x30L
(N)CQ2B25-5S	0.5	30	M5x30L
-105	9.5	35	x35L
(N)CQ2B32-5S		30	M5x30L
-105	9	35	x35L
(N)CQ2B40-5S		35	M5x35L
-105	7.5	40	x40L
(N)CQ2B50-10S	10.5	45	M6x45L
-205	12.5	55	x55L

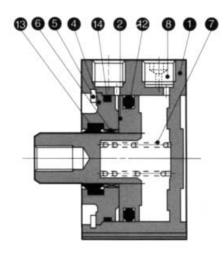


Model	С	D	Mounting bolt
(N)CQ2B12-5T	6.5	25	M3x25L
-10T	0.5	30	x30L
(N)CQ2B16-5T	5	25	M3x25L
-10T	5	30	x30L
(N)CQ2B20-5T	7.5	25	M5x25L
-10T	1.5	30	x30L
(N)CQ2B25-5T	0.5	30	M5x30L
-10T	9.5	35	x35L
(N)CQ2B32-5T		30	M5x30L
-10T	9	35	x35L
(N)CQ2B40-5T	7.0	35	M5x35L
-10T	7.5	40	x40L
(N)CQ2B50-10T	10.5	45	M6x45L
-20T	12.5	55	x55L

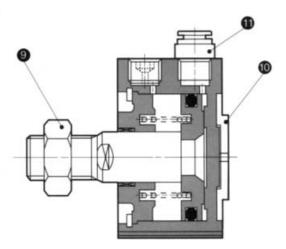
#### Construction / Part List



**Spring Return** 



Spring Extend



One Touch Fitting End Boss Rod End Nut

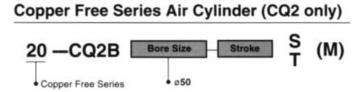
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No.	Description	Material	Remarks				
1	Cylinder tube	Aluminum alloy	Hard annodized				
2	*Piston	Aluminum alloy	Chromate				
	Distance and	Stainless steel	Bore ø12-ø25				
3	Piston rod	Carbon steel	Bore ø32-ø50, hard chrome plated				
Git	Coller	Bearing grade aluminum	Bore ø12~ø40 , Black annodized				
4	Collar	Aluminum alloy casting	Bore ø50, Black paint				
5	Retaining ring	Carbon tool steel	Phosphate coating				
6	Bushing	Leaded tin bronze casting	Used for only ø50				
7	Return spring	Piano wire	Zinc chromate				
8	Plug	Steel alloy	Black zinc chromate				
9	Rod end nut	Carbon steel	Nickel plated				
10	End boss	Aluminum alloy	ø20~ø50 Anodized				
11	One touch fittings	-	Bore ø32~ø50				
14	Piston gasket	NBR					

 The Piston and Piston rod (T type) is one piece construction made of stainless steel

#### Seals List

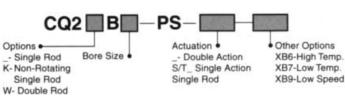
No.	Description	Material	Contraction of	1	And the second second	Parts N	0.		and the second second
	Description	Material	012	ø16	020	025	032	040	050
12	Piston seal	NBR	NLP-12-7L	NLP-16L	NLP-20L	NLP-25L	NLP-32L	NLP-40L	NLP-50L
13	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	DYR-16Z	DYR-20Z
14	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46



To protect against adverse effects on the cathode ray tybes 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: ø12-ø40

#### Seal Kit Part Numbers



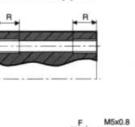
#### Bore Size ø12~ø25 Spring Return

#### Through Hole / (N)CQ2B

#### **Both Ends Tapped**

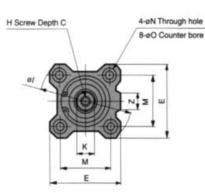
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8



#### (N)CQ2A Both Ends Tapped

	Dour Endo rapped								
	Bore size	CQ2 O	NCQ2 inch O	R					
	12	M4x0.7	8-32 UNC	7					
	16	M4x0.7	8-32 UNC	7					
M5x0.8	20	M6x1.0	1/4 - 20 UNC	10					
Port size 1mm orifice	25	M6x1.0	1/4 - 20 UNC	10					

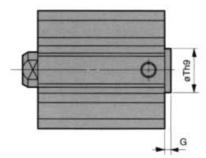


#### Standard / Spring Return (S)

Bore	ore out	1	Ą	1221	в	CO2	NCQ2	120	12		CQ2	NCQ2	335		and a	-	-		-
Bore size	Stroke	5st	10st	5st	10st	C		H	inch H		ĸ	-	M	N	0	Z			
12	5, 10	25.5	30.5	22	27	6	5.4	6	25	5	M3x0.5	#8-32	32	5	3.5	15.5	3.5	6.5 depth 3.5	-
16	5, 10	27	32	23.5	28.5	8	5.4	8	29	5.5	M4x0.7	#8-32	38	6	3.5	20	3.5	6.5 depth 3.5	10
20	5, 10	29	34	24.5	29.5	7	7	10	36	5.5	M5x0.8	#10-32	47	8	4.5	25.5	5.5	9 depth 7	10
25	5, 10	32.5	37.5	27.5	32.5	12	10	12	40	5.5	M6x1.0	1/4-28 UNF	52	10	5	28	5.5	9 depth 7	10

в

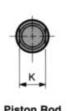
A



#### End Boss (CQ2)<sub>mm</sub>

Bore size	G	Th9
12	1.5	15 -0.043
16	1.5	20 -8.052
20	2	13 -8.043
25	2	15 .0.043

Note 1) Rod side End Boss is offered as an option. (Add - XC36 at the end of part no.)

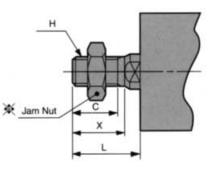


Piston Rod

#### NCQ2 Male Rod End mm

Bore size	×	H inch	L	к	
12	8	#8-32UNC	11.5	5	
16	8	#8-32UNC	11.5	6	
20	8	#10-32UNF	12.5	8	
25	9.5	1/4-28UNF	14.5	10	

Rod end nut and accessories detail: see p. 6. "C" dim. not applicable

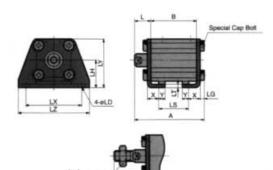


CQ2	2 M	CQ2 Male Rod End										
Bore size	С	x	н	L	к							
12	9	10.5	M5x0.8	14	5							
16	10	12	M6x1.0	15.5	6							
20	12	14	M8x1.25	18.5	8							
25	15	17.5	M10x1.25	22.5	10							

mm

#### Series (N)CQ2

#### Compact Cylinder: Standard / Single Acting Single Rod (S)



Bore	Stroke	-	4	E	3	m		NCO2	10	LG	LH	L	_
size	SHOKE	5st	10st	5st	10st	L	L1	L1	LD	LG		5st	10st
12	5, 10	40.3	45.3	22	27	13.5	24	21.5	4.5	2.8	17	10	15
16	5, 10	41.8	46.8	23.5	28.5	13.5	25.5	21.5	4.5	2.8	19	11.5	16.5
20	5, 10	46.2	51.2	24.5	29.5	14.5	28.5	22.5	6.6	4	24	12.5	17.5
25	5, 10	49.7	54.7	27.5	32.5	15	32.5	24.5	6.6	4	26	12.5	17.5
Bore size	Stroke	LT	LX	LY	LZ	x	Y						
12	5, 10	2	34	29.5	44	8	4.5						
16	5, 10	2	38	33.5	48	8	5						
20	5, 10	3.2	48	42	62	9.2	5.8						
25	5, 10	3.2	52	46	66	10.7	5.8						

#### Rod Side Flange / (N)CQ2F

Bore	Stroke		A	E	3	FD	FT	EV	EV	FZ		CO2	NCO2
(mm)	(mm)	5st	10st	5st	10st	and the second s	-	FV	FA	FZ		L1	L1
12	5, 10	35.5	40.5	22	27	4.5	5.5	25	45	55	13.5	24	21.5
16	5, 10	37	42	23.5	28.5	4.5	5.5	30	45	55	13.5	25.5	21.5
20	5, 10	39	44	24.5	29.5	6.6	8	39	48	60	14.5	28.5	22.5
25	5, 10	42.5	47.5	27.5	32.5	6.6	8	42	52	64	15	32.5	24.5

#### Head Side Flange / (N)CQ2G mm

Bore	Stroke	1	4		CQ2	NCO2	
(mm)	range (mm)	5st	10st	-	L1	L1	
12	5, 10	31	36	3.5	14	11.5	
16	5, 10	32.5	37.5	3.5	15.5	11.5	
20	5, 10	37	42	4.5	18.5	12.5	
25	5, 10	40.5	45.5	5	22.5	14.5	

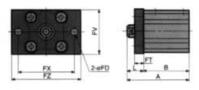
\*Dimensions for the head flange cylinder are the same as rod flange except A, L, L1.

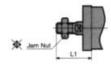
#### Double Clevis / (N)CQ2D

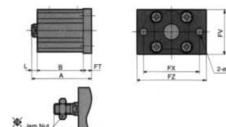
Dere	Name of Street, Street	1	4		3	CQ2	INCO2	C	L	and the second	THE OWNER	Sec. 1	1 French	and the second	100 C
Bore	Stroke	5st	10st	5st	10st	CD	NCOL	5st		CT	CU	CW	CX	CZ	L
12	5, 10	45.5	50.5	22	27	5	3/16	39.5	44.5	4	7	14	5	10	3.5
16	5, 10	48	53	23.5	28.5	5	3/16	42	47	4	10	15	6.5	12	3.5
20	5, 10	56	61	24.5	29.5	8	5/16	47	52	5	12	18	8	16	4.5
25	5, 10	62.5	67.5	27.5	32.5	10	3/8	52.5	57.5	5	14	20	10	20	5
Bore size	Stroke	CQ2 L1	NCQ2		02 N	1.377	N N		CD	RR					
12	5, 10	14	11.5	M4:	x0.7	8	-32	8-	32	6					
16	5, 10	15.5	11.5	M4:	x0.7	8	-32	8-	32	6					
20	5, 10	18.5	12.5	M6:	x1.0	1/4	4-20	1/4	-20	9					
25	5, 10	22.5	14.5	M6	x1.0	1/4	4-20	1/4	-20	10					

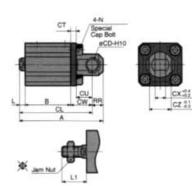
KRod end nut and accessories detail: see p. 6.

₩ ¥ Clevice pin and snap rings are included in the package.



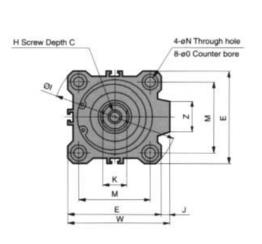


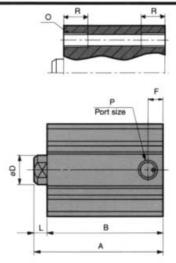






#### Bore Size ø32~ø50 Spring Return

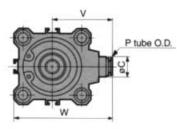


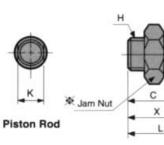


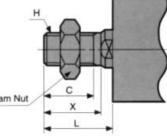
(N)C Both	Q2A Ends Ta	pped	mn
Bore size	CQ2 O	NCQ2 inch O	R
32	M6x1.0	1/4 20 UNC	10
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14

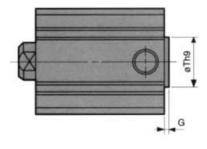
#### Standard / Spring Return(s)

Bore	Ctroke	1.60	A			В		CQ2	NCQ2	-	-		F		CQ2	NCQ2			к
size	Stroke	5st	10st	20st	5st	10st	20st	С	C	D	E	5st	10st	20st	н	Inch H	1	3	~
32	5, 10	35	40	-	28	33	-	13	13.3	16	45	5.5	7.5	-	M8x1.25	5/16-24UNF	60	4.5	14
40	5, 10	41.5	46.5		34.5	39.5	-	13	18.3	16	52	8	8	•	M8x1.25	3/8-24UNF	69	5	14
50	10, 20		48.5	58.5		40.5	50.5	15	17.6	20	64		10.5	10.5	M10x1.5	1/2-20UNF	86	7	17
Bore	Stroke	L	м			-	1	Ρ	32,54	Orifice		z							
size	Sticke	-	IVI	N	199	0	5st	10st	20st	Onnice	vv	4							
32	5, 10	7	34	5.5	9de	pth7	M5x 0.8	1/8	-	1.7	49.5	14							
40	5, 10	7	40	5.5	9de	pth7	1/	/8		2	57	14							
50	10, 20	8	50	6.6	11de	epth8		1	/4	2.2	71	19							









mm

#### One Touch Fittings mm

Ν

E

Bore size	с	Ρ	v	w
32	13	6	38	60.5
40	13	6	42	68
50	16	8	50	82

ACC	12 IV	ale Rod I	=na	mm
Bore size	x	H Inch	L	к
32	12.7	5/16-24UNF	19.7	14
40	16	3/8-24UNF	23	14
50	19.5	1/2-20UNF	27.5	17

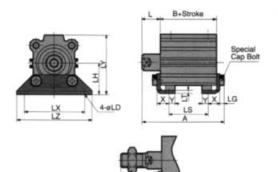
#### CQ2 Male Rod End

Bore size	С	x	н	L	ĸ
32	20.5	23.5	M14x1.5	28.5	14
40	20.5	23.5	M14x1.5	28.5	14
50	26	28.5	M18x1.5	33.5	17

#### End Boss (CQ2 only) mm

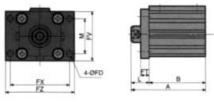
Bore size	G	Th9
32	2	21 -8.052
40	2	28 -8.052
50	2	35 -8.062

Note) With rod end inlets an option. (Add - XC36 at the end of part no.).

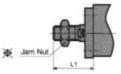


#### Foot / (N)CQ2L

	()0		·										_			mm
Bore	Stroke	1000	A		The Case	B	dine i	1000	CO2	NCQ2	LD	LG	LH	5-55	LS	
size	STORE	5st	10st	20st	5st	10st	20st	L	L1	L1	LD	LG	LI	5st	10st	20st
32	5, 10	52.2	57.2	•	28	33	2	17	38.5	29.7	6.6	4	30	12	17	-
40	5, 10	58.7	63.7		34.5	39.5		17	38.5	33	6.6	4	33	18.5	23.5	-
50	10, 20	•	66.7	76.7	-	40.5	50.5	18	43.5	37.5	9	5	39		17.5	27.5
Bore size	Stroke	LT	LX	LY	LZ	x	Y									
32	5, 10	3.2	57	57	71	11.2	5.8									
40	5, 10	3.2	64	64	78	11.2	7									
50	10, 20	3.2	79	78	95	14.7	8									



M Jam Nut



#### Bod Flange / (N)CO2F

Bore	Stroko	and the second	A			B			ET	EV	EV	67	100	CO2	NCO2	
size	Stroke	5st	10st	20st	5st	10st	20st	FD	100	FV	FA	F2		L1	LT	M
32	5, 10	45	50	-	28	33	-	5.5	8	48	56	65	17	38.5	29.7	34
40	5, 10	51.5	56.5	•	34.5	39.5	-	5.5	8	54	62	72	17	38.5	33	40
50	10, 20		58.5	68.5		40.5	50.5	6.6	9	67	76	89	18	43.5	37.5	50

#### Head Flange / (N)CQ2G

Bore	Stroke	-	A	and and		CQ2	NCO2
size	SHOKE	5st	10st	20st	-	L1	L1
32	5, 10	43	48	-	7	28.5	19.7
40	5, 10	49.5	54.5	-	7	28.5	23
50	10, 20		57.5	67.5	8	33.5	27.5

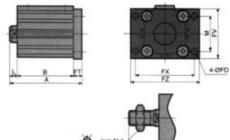
✗ Dimensions for the head flange cylinder are the same as rod flange except A, L, L1.

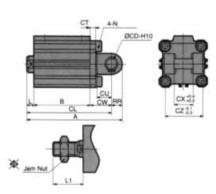
#### Double Clevis / (N)CQ2D

Bore	Stroke	1	A		The state	B	the state of	CQ2	NCQ2	in the second se	CL	(Arta)	OT	CU	CW	av
size	STOKE	5st	10st	20st	5st	10st	20st	CD	CD	5st	10st	20st	CT	CU	CVV	U.A
32	5, 10	65	70	-	28	33	Ξ.	10	3/8	55	60		5	14	20	18
40	5, 10	73.5	78.5	•	34.5	39.5	•	10	3/8	63.5	68.5		6	14	22	18
50	10, 20		90.5	100.5		40.5	50.5	14	1/2		76.5	86.5	7	20	28	22
Bore size	Stroke	cz	CQ2 L	L1	NCO2		22		Q2 h N	RR				,		
32	5, 10	36	7	28.5	19.7	M6	x1.0	1/4	-20	10						
40	5, 10	36	7	28.5	23	M6	x1.0	1/4	-20	10						
50	10, 20	44	8	33.5	27.5	M8x	1.25	5/16	6-18	14						

Kent Rod end nut and accesories detail: see p. 6.

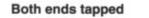
★ ★ Clevis pin and snapring are included in the package.

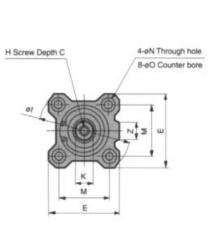


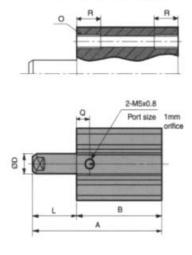


### Bore Size ø12~ø25 Spring Extended

#### Through Hole / (N)CQ2B







#### (N)CQ2A Both Ends Tapped

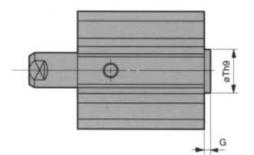
CQ2 0	NCQ2 inch O	R
M4x0.7	8-32 UNC	7
M4x0.7	8-32 UNC	7
M6x1.0	1/4 - 20 UNC	10
M6x1.0	1/4 - 20 UNC	10
	O M4x0.7 M4x0.7 M6x1.0	O         inch O           M4x0.7         8-32 UNC           M4x0.7         8-32 UNC           M6x1.0         1/4 - 20 UNC

mm

#### Standard / Spring Extend (T)

Bore	Ohistor	1	4	В		CQ2	NCQ2	0	-	CQ2	NCQ2		4		L	
size	Stroke	5st	10st	5st	10st	C	C	D	E	H	inch H		K	5st	10st	
12	5, 10	30.5	40.5	22	27	6	5.4	6	25	M3x0.5	#8-32	32	5	8.5	13.5	
16	5, 10	32	42	23.5	28.5	8	5.4	8	29	M4x0.7	#8-32	38	6	8.5	13.5	
20	5, 10	34	44	24.5	29.5	7	7	10	36	M5x0.8	#10-32	47	8	9.5	14.5	
25	5, 10	37.5	47.5	27.5	32.5	12	10	12	40	M6x1.0	1/4-28 UNF	52	10	10	15	
Bore	Stroke	м	N		0	(	zz									

Bore size	Stroke	м	N	0	Q	z
12	5, 10	15.5	3.5	6.5 depth 3.5	7.5	•
16	5, 10	20	3.5	6.5 depth 3.5	8	10
20	5, 10	25.5	5.5	9 depth 7	9	10
25	5, 10	28	5.5	9 depth 7	11	10



#### End Boss (CQ2)mm

_	
G	Th9
1.5	15 -8.043
1.5	20 -8.052
2	13 -8.043
2	15 -8.043
	1.5 1.5 2

Note 1) Rod side End Boss is offered as an option. (Add - XC36 at the end of part no.)



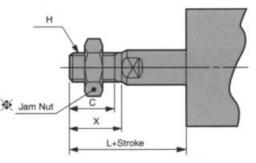
Piston Rod

#### NCQ2 Male Rod End mm

Bore size	×	H inch	L	к	
12	8	#8-32UNC	11.5	5	
16	8	#8-32UNC	11.5	6	
20	8	#10-32UNF	12.5	8	
25	9.5	1/4-28UNF	14.5	10	

"C" dim. not applicable

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



#### CQ2 Male Rod End

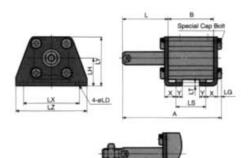
	Bore size	с	x	н	L	к
1	12	9	10.5	M5x0.8	14	5
1	16	10	12	M6x1.0	15.5	6
1	20	12	14	M8x1.25	18.5	8
1	25	15	17.5	M10x1.25	22.5	10

mm

#### Series (N)CQ2

#### Compact Cylinder: Standard / Single Acting Single Rod (T)

F



001	/ (N)C	QZL		_	_	_					-			_		mm
Bore	Stroke	1	A	1	B		-	CQ		NCQ	_	LD	LG	LH		S
size	-1000	5st	10st	551	10st	5st	10st	5st	10st	551	10st	1963	oligation of	Sec	551	10st
12	5, 10	45.3	55.3	22	27	18.5	23.5	29	34	26.5	31.5	4.5	2.8	17	10	15
16	5, 10	46.8	56.8	23.5	28.5	18.5	23.5	30.5	35.5	26.5	31.5	4.5	2.8	19	11.5	16.5
20	5, 10	51.2	61.2	24.5	29.5	19.5	24.5	33.5	38.5	27.5	32.5	6.6	4	24	12.5	17.5
25	5, 10	54.7	64.7	27.5	32.5	20	25	37.5	42.5	29.5	34.5	6.6	4	26	12.5	17.5
Bore size	Stroke	LT	LX	LY	LZ	x	Y									
12	5, 10	2	34	29.5	44	8	4.5									
16	5, 10	2	38	33.5	48	8	5									
20	5, 10	3.2	48	42	62	9.2	5.8									
25	5, 10	3.2	52	46	66	10.7	5.8									

#### Rod Flange / (N)CQ2F

Bore	Stroke	1	A		B		ET.	EV	EV	FZ	1000		CQ		NCQ2 L1	
size		5st	10st	5st	10st	FD	1.10	FV	10	F4	5st	10st	5st	10st	5st	10st
12	5, 10	40.5	50.5	22	27	4.5	5.5	25	45	55	18.5	23.5	29	34	26.5	31.5
16	5, 10	42	52	23.5	28.5	4.5	5.5	30	45	55	18.5	23.5	30.5	35.5	26.5	31.5
20	5, 10	44	54	24.5	29.5	6.6	8	39	48	60	19.5	24.5	33.5	38.5	27.5	32.5
25	5, 10	47.5	57.5	27.5	32.5	6.6	8	42	52	64	20	25	37.5	42.5	29.5	34.5

#### Head Flange / (N)CQ2G

Bore	Stroke	1 1	A.				2 L 1	NCQ2 L1		
size	Suoke	5st	10st	5st	10st	5st	10st	5st	105	
12	5, 10	36	46	8.5	13.5	19	24	16.5	21.5	
16	5, 10	37.5	47.5	8.5	13.5	20.5	25.5	16.5	21.5	
20	5, 10	42	52	9.5	14.5	23.5	28.5	17.5	22.5	
25	5, 10	45.5	55.5	10	15	27.5	32.5	19.5	24.5	

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

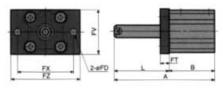
> mm 10st 13.5 13.5 14.5 15

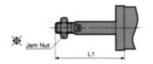
#### Double Clevis / (N)CQ2D

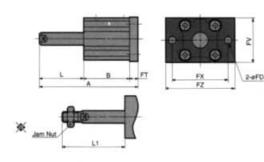
Bore	Stroke	1	A	1	3	CQ2	NCO2	C	L	OT	CII	CW	CY.	07	1	ĺ
size	Suoke	5st	10st	5st	10st	CD	NCO2 Inch	5st	10st	UI	cu	CW	CA	02	5st	
12	5, 10	50.5	60.5	22	27	5	3/16	44.5	54.5	4	7	14	5	10	8.5	
16	5, 10	53	63	23.5	28.5	5	3/16	47	57	4	10	15	6.5	12	8.5	
20	5, 10	61	71	24.5	29.5	8	5/16	52	62	5	12	18	8	16	9.5	
25	5, 10	67.5	77.5	27.5	32.5	10	3/8	57.5	67.5	5	14	20	10	20	10	
Bore size	Stroke	and the owner where the party is not the party of the par	2 L1 10st	NCC 5st	2 L1 10st		Q2 N		D2 hN	RR						
12	5, 10	19	24	16.5	21.5	M4	x0.7	8-	32	6						
16	5, 10	20.5	25.5	16.5	21.5	M4	x0.7	8-	32	6						
20	5, 10	23.5	28.5	17.5	22.5	M6	x1.0	1/4	-20	9						
25	5, 10	27.5	32.5	19.5	24.5	M6	x1.0	1/4	-20	10						

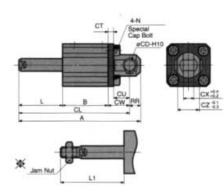
₩ Rod end nut and accesories detail: see p. 6.

 ${\mathbf X}$   ${\mathbf X}$  Clevis pin and snap rings are included in the package.

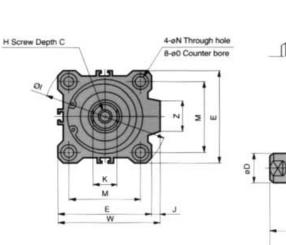


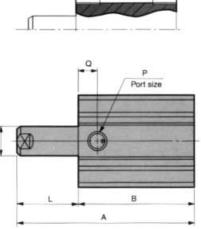






#### Bore Size ø32~ø50 Spring Extend





R.

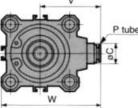
0 1

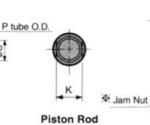
R,

#### (N)CQ2A Both Ends Tapped

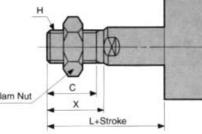
Both	Ends la	ppea	mm
Bore size	CQ2 O	NCQ2 inch O	R
32	M6x1.0	1/4 20 UNC	10
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14

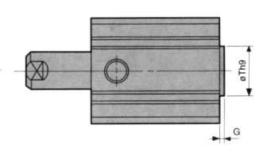
#### Standard / Spring Extend (T) mm A в L CO2 CQ2 H Bore NCQ2 NCQ2 Stroke D Е 1 J ĸ C C Inch H 10st 20st 5st 10st 20st size 5st 5st 10st 20st 32 5, 10 M8x1.25 5/16-24UNF 60 4.5 14 12 17 40 50 28 33 13 . . 45 -13.3 16 M8x1.25 3/8-24UNF . 40 5, 10 46.5 56.5 34.5 39.5 13 69 5 14 12 17 -. 18.3 16 52 M10x1.5 1/2-20UNF 50 10, 20 58.5 78.5 40.5 50.5 15 86 7 17 18 28 -. 17.5 20 64 . P Q Bore Stroke M N 0 Orifice W z 20st size 5st 10st 20st 10st 5st M5x 5.5 32 5, 10 34 9depth7 1/8 11.5 10.5 1.7 49.5 14 -. 0.8 2 40 1/8 11 11 57 14 5, 10 40 5.5 9depth7 . . 10.5 2.2 71 50 10,20 50 6.6 11depth8 . 1/4 . 10.5 19





١





One	Touch	Fittings	mm

Bore size	с	Ρ	v	w
32	13	6	38	60.5
40	13	6	42	68
50	16	8	50	82

1CC	2 N	lale Rod E	End	mm
Bore size	×	H Inch	L	к
32	12.7	5/16-24UNF	19.7	14
40	16	3/8-24UNF	23	14
50	19.5	1/2-20UNF	27.5	17

CQ2	M	ale	Rod	End
Bore	0	×	10.30	

с	×	н	L	к	Bon
20.5	23.5	M14x1.5	28.5	14	32
20.5	23.5	M14x1.5	28.5	14	40
26	28.5	M18x1.5	33.5	17	50
-			_		-

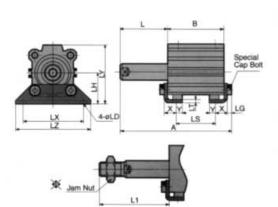
mm

End E	Boss	CQ2	only	)mm
-------	------	-----	------	-----

Bore size	G	Th9
32	2	21 -0.052
40	2	28 -8.052
50	2	35 -8.062

#### Series (N)CQ2

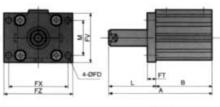
### Compact Cylinder: Standard / Single Acting Single Rod (T)

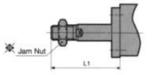


#### Foot / (N)CQ2L

Bore	Stroke	1	A	-	and the	В		1	L		0	021	1	N	CO2 L	1
size	Stroke	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st
32	5, 10	57.2	67.2	•	28	33	-	22	27	-	43.5	48.5	•	34.7	39.7	-
40	5, 10	63.7	73.7		34.5	39.5	-	22	27	-	43.5	48.5	•	38	43	•
50	10, 20	•	76.7	96.7	-	40.5	50.5	•	28	38		53.5	63.5	-	47.5	57.5
Bore size	Stroke	LD	LG	LH	5st	LS 10st	20st	LT	LX	LY	LZ	x	Y			
32	5, 10	6.6	4	30	12	17	-	3.2	57	57	71	11.2	5.8			
40	5, 10	6.6	4	33	18.5	23.5	•	3.2	64	64	78	11.2	7			
50	10, 20	9	5	39	-	17.5	27.5	3.2	79	78	95	14.7	8			

#### Rod Flange / (N)CQ2F





Bore	Stroke	12.10	A	100	12.10	B		-	ET	DV	EV		Sec. 1	L	
size	STOKE	5st	10st	20st	5st	10st	20st	FD	FT	FV	FX	FZ	5st	10st	20st
32	5, 10	50	60	-	28	33	-	5.5	8	48	56	65	22	27	-
40	5, 10	56.5	66.5		34.5	39.5	-	5.5	8	54	62	72	22	27	•
50	10, 20		68.5	88.5	-	40.5	50.5	6.6	9	67	76	89	-	28	38
Bore	Stroke	C	Q2	L1		CO2 L		M					-	-	
size	SHOKE	5st	10st	20st	5st	10st	20st	IVI							
32	5, 10	43.5	48.5	-	34.7	39.7	-	34							
40	5, 10	43.5	48.5	-	38	43	-	40							
50	10, 20		53.5	63.5	42.5		57.5	50							

#### Head Flange / (N)CQ2G

Bore	Stroke	-	A			L		CO	22	L1	N	CO2 L	1
size	SHOKE	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st
32	5, 10	48	58	•	12	17	•	33.5	38.5	-	24.7	29.7	-
40	5, 10	45.5	64.5	5 - C	12	17	•	33.5	38.5		28	33	×
50	10, 20		67.5	87.5	-	18	28		43.5	53.5	-	37.5	47.5

X Dimensions for the head flange cylinder are

the same as rod flange except A, L, L1.

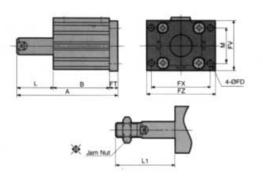
#### Double Clevis / (N)CQ2D

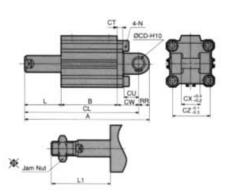
Bore	Stroke	Service .	A	1 miles	Sec. a.	B	Service and	CQ2	NCO2	1. mar	CL	1.	OT	CIL	CIN	av
size	Suoke	5st	10st	20st	5st	10st	20st	CD	CD	5st	10st	20st	СТ	CU	CW	CX
32	5, 10	70	80	•	28	33		10	3/8	60	70		5	14	20	18
40	5, 10	78.5	88.5	-	34.5	39.5		10	3/8	68.5	78.5	•	6	14	22	18
50	10, 20		100.5	120.5		40.5	50.5	14	1/2	-	86.5	106.5	7	20	28	22
Bore	Stroke	07	-	L	2.22	C	Q2 L	1	N	CQ2 L	1	CC	22	NC	02	RR
size	SHOKE	CZ	5st	10st	20st	5st	10st	20st	5st	10st	20st	N	1	inc	h N	nn
32	5, 10	36	12	17		33.5	38.5	-	24.7	29.7	-	M6x	1.0	1/4	-20	10
40	5, 10	36	12	17	-	33.5	38.5	-	28	33	-	M6x	(1.0	1/4	-20	10
50	10, 20	44		18	28		43.5	53.5		37.5	47.5	M8x	1.25	5/1	6-18	14

mm

K Rod end nut and accesories detail: see p. 6.

★ ★ Clevis pin and snap ring are included in the package.







How To Order

Auto Switch How To Order: See p. 38

lbs

#### Weight/Single Acting: Single Bod

Туре	Bore size	Cylind	er Stroke	(mm)
Type	(mm)	5	10	20
	12	0.11	0.12	
B	16	0.16	0.18	
Extend	20	0.24	0.27	
	25	0.32	0.36	· •
Spring	32	0.42	0.47	
Sp	40	0.62	0.67	
	50	-	1.07	1.23
111	12	0.12	0.15	
E	16	0.16	0.18	
Return	20	0.27	0.29	
	25	0.35	0.39	
Spring	32	0.44	0.48	
Sp	40	0.64	0.69	
	50	-	1.14	1.27

#### Compact Cylinder: Single Rod Single Acting With Auto Switch

# (N)CDQ2 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 Avaible / Minimum Stroke

# of Auto Switch Mounting	D-F7DV D-J79C	D-A7 D-A8 D-A73C D-A80C	D-F70WV	D-A70H D-A80H D-F70 D-J79	D-A79W	D-F7DW 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 page 13 for Auto Switch Specifications

/veight Adde	er							lbs
Bore size		12	16	20	25	32	40	.50
Both ends tapped		0.002	0.002	0.007	0.007	0.013	0.013	0.013
Rod end M thread	Thread	0.003	0.007	0.013	0.026	0.057	0.060	0.117
Hoo end M Dread	Nut	0.002	0.004	0.009	0.018	0.037	0.037	0.071
Head end boss	Constant of the	0.002	0.003	0.004	0.007	0.011	0.015	0.029
W/ one touch fitting		•	-		-	0.013	0.013	0.023
Foot mounting		0.108	0.137	0.324	0.373	0.315	0.342	0.536
Rod side flange		0.119	0.148	0.289	0.337	0.397	0.472	0.822
Head side flange		0.115	0.139	0.273	0.318	0.364	0.437	0.767
Double rear clevis		0.064	0.077	0.172	0.251	0.333	0.432	0.867

5

#### When mounting auto switch, add for additional mounting bracket weight

Auto Switch Mounting

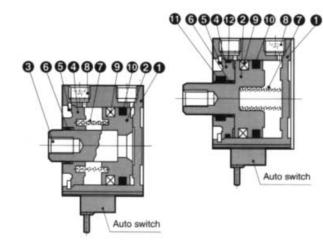
Bracket Weight

Part no.	Applicable cyllinder bore size	Weight Ibs.
BQ-1	12~ 25	.003
BQ-2	32~ 50	.003

### How to obtain the total weight (lbs) (N)CDQ2D32-10SM

Std wt.: Wt. adder:	(N)CQ2B32-20S Both ends tapped Male rod end Double rear clevis	0.47
	Total	0.873

#### Construction / Parts List



No.	Description	Material	Remarks
1	Cylinder tube	Aluminum alloy	Hard anodized
2	*Piston	Aluminum alloy	Chromate
~	Piston rod	Stainless steel	Bore ø12~ø25
3	Piston rod	Carbon steel	Bore ø32~ø100, hard chrome plated
-	Collar	Brass	Bore ø12~ø40 , Black annodized
4	Collar	Aluminum alloy	Bore ø50, Black paint
5	Retaining ring	Carbon tool steel	Phosphate coating
6	Bushing	Leaded tin bronze casting	Used for ø50 only
7	Return spring	Piano wire	Zinc chromate
8	Plug	Steel alloy	Black zinc chromate
9	Magnet	-	

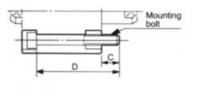
Note) The Piston and Piston rod assembly is made of one piece of stainless steel. (T-Type) 20–50 bore.

#### Seals List

No	Description	Material	and the second second	Contraction of the local distance	NY ROLLING	Parts No.	Designation of the second	a la la come	2 (a. 198) 2.1
140.	Description	Material	012	ø16	020	025	032	040	050
10	Piston seal	NBR	NLP-12-7L	NLP-16L	NLP-20L	NLP-25L	NLP-32L	NLP-40L	NLP-50L
11	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z
12	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46

Spring Return

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



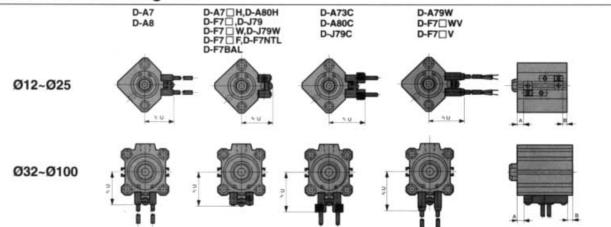
Thread	Pitch			
M3	0.5			
M5	0.8			
M6	1.0			
M8	1.25			
M10	1.5			

Model	С	D	Mounting bolt
(N)CDQ2B12-55		35	M3x35L
-10S	5.5	40	x40L
(N)CDQ2B16-5S		40	M3x40L
-105	8	45	x45L
(N)CDQ2B20-5S	10.5	40	M5x40L
-105	10.5	45	x45L
(N)CDQ2B25-5S	0.5	40	M5x40L
-10S	9.5	45	x45L
(N)CDQ2B32-55	9	40	M5x40L
-105	9	45	x45L
(N)CDQ2B40-5S	70	45	M5x45L
-105	7.5	50	x50L
(N)CDQ2B50-10S	10.5	55	M6x55L
-205	12.5	65	x65L

#### Spring Extend

Model	с	D	Mounting bolt
(N)CDO2B12-5T	6.1	40	M3x40L
-10T	0.1	45	x45L
(N)CDQ2B16-5T	8	40	M3x40L
-10T	•	45	x45L
(N)CDQ2B20-5T	10.5	40	M5x40L
-10T	10.5	45	x45L
(N)CDQ2B25-5T	0.5	40	M5x40L
-10T	9.5	45	x45L
(N)CDQ2B32-5T		40	M5x40L
-10T	9	45	x45L
(N)CDQ2B40-5T	70	45	M5x45L
-10T	7.5	50	x50L
(N)CDQ2B50-10T	10.5	55	M6x55L
-20T	12.5	65	x65L

#### Auto Switch Mounting Data



#### Auto Switch Mounting Position / S (T)

Bore Size (mm)	D-A	7•A8	D-A73	H+A80H C+A80C +J79 V+J79C	D-A	79W	D-F	BAL 7PW 7DF 79W	D-F D-F7	
	A	в	A	В	A	В	A	в	A	B
12	4.5	5.5(10)	5	6(10.5)	2	3(7.5)	9	10(14.5)	5.5	6.5(11)
16	7.5(5.5)	5(7)	8(6)	5.5(7.5)	5(3)	2.5(4.5)	12(10)	9.5(11.5)	8.5(6.5)	6(8)
20	7.5	6.5	8	7	5	4	12	11	8.5	7.5
25	7.5	7	8	7.5	5	4.5	12	11.5	8.5	8
32	9	6	9.5	6.5	6.5	3.5	13.5	10.5	10	7
40	13	8.5	13.5	9	10.5	6	17.5	13	14	9.5
50	11	11	11.5	12	8.5	9	15.5	16	12	12.5

Dimensions in parenthesis refer to spring extend (T) versions

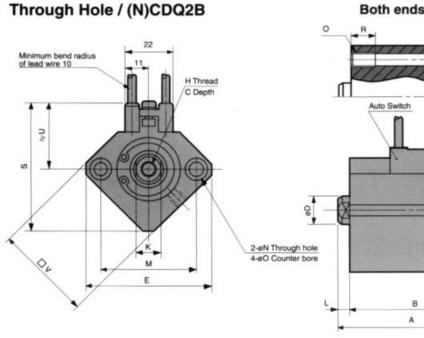
#### Auto Switch Mounting Height

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 WV	D-F7¤V	D-J79C	D-A79W
200	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

mm

### (N)CDQ2 Series

#### Bore Size ø12~ø25 Spring Return



oth	ends	tapped	
-----	------	--------	--

F

M5x0.8 1mm orifice

#### (N)CDQ2A **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

mm

The above Auto Switch mounting is used for D-A73 and D-A80 Auto Switch set position and mounting height: See p. 51

Standard / Spring Return (S)

Bore	Otralia	100	4	1	В	CO2	NCQ2	-	1		CQ2	NCQ2	~							
size	Stroke	5st	10st	5st	10st	C	C	D	E	F	н	inch H	ĸ	L	м	N	0	S	U	V
12	5, 10	36.5	41.5	33	38	6	5.4	6	32	6.5	M3x0.5	#8-32	5	3.5	22	3.5	6.5 depth 3.5	35.5	19.5	25
16	5, 10	39	44	35.5	40.5	8	5.4	8	38	5.5	M4x0.7	#8-32	6	3.5	28	3.5	6.5 depth 3.5	41.5	22.5	29
20	5, 10	41	46	36.5	41.5	7	7	10	47	5.5	M5x0.8	#10-32	8	4.5	36	5.5	9 depth 7	48	24.5	36
25	5, 10	42.5	47.5	37.5	42.5	12	10	12	52	5.5	M6x1.0	1/4-28 UNF	10	5	40	5.5	9 depth 7	53.5	27.5	40

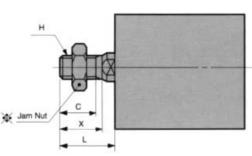
**Piston Rod** 

#### NCQ2 Male Rod End mm

Bore size	x	H Inch	L	к
12	8	#8-32UNC	11.5	5
16	8	#8-32UNC	11.5	6
20	8	#10-32UNF	12.5	8
25	9.5	1/4-28UNF	14.5	10

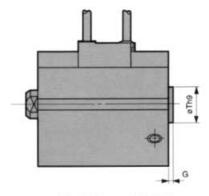
"C" dim. not applicable

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



#### CQ2 Male Rod End

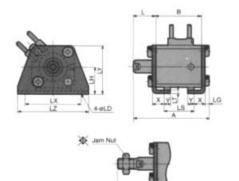
Bore size	С	x	н	L	ĸ
12	9	10.5	M5x0.8	14	5
16	10	12	M6x1.0	15.5	6
20	12	14	M8x1.25	18.5	8
25	15	17.5	M10x1.25	22.5	10



#### End Boss (CQ2)

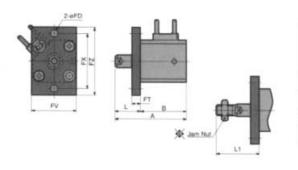
Bore size	G	Th9
12	1.5	15 8.043
16	1.5	20 -0.052
20	2	13 -8.043
25	2	15 -0.043

Note 1) End Boss for Rod End is offered as an option. (Add - XC36 at the end of part no.)



#### Foot / (N)CDO2L

Bore	Stroke	1	4	E	3	1.5	CQ2	NCO2	10	10	1.8.8	L	S
size	Stroke	5st	10st	5st	10st	L	L1	L1	LD	LG	гч	5st	10st
12	5, 10	51.3	56.3	33	38	13.5	24	21.5	4.5	2.8	17	21	26
16	5, 10	53.8	58.8	35.5	40.5	13.5	25.5	21.5	4.5	2.8	19	23.5	28.5
20	5, 10	58.2	63.2	36.5	41.5	14.5	28.5	22.5	6.6	4	24	24.5	29.5
25	5, 10	59.7	64.7	37.5	42.5	15	32.5	24.5	6.6	4	26	22.5	27.5
Bore size	Stroke	LT	LX	LY	LZ	x	Y						
12	5, 10	2	34	29.5	44	8	4.5						
16	5, 10	2	38	33.5	48	8	5						
20	5, 10	3.2	48	42	62	9.2	5.8						
25	5, 10	3.2	52	46	66	10.7	5.8						



2-#FD

#### Rod Side Flange / (N)CDQ2F

Bore	Stroke		A	E	В		В		В		FT	FV	EV	FZ		002	NCO2
(mm)	(mm)	5st	10st	5st	10st	FD		FV	FX	FZ		LI	L1				
12	5, 10	46.5	51.5	33	38	4.5	5.5	25	45	55	13.5	24	21.5				
16	5, 10	49	54	35.5	40.5	4.5	5.5	30	45	55	13.5	25.5	21.5				
20	5, 10	51	56	36.5	41.5	6.6	8	39	48	60	14.5	28.5	22.5				
25	5, 10	52.5	57.5	37.5	42.5	6.6	8	42	52	64	15	32.5	24.5				



Bore	Stroke	1	A		CO2	NCO2	
(mm)	range (mm)	5st	10st	-	L1		
12	5, 10	46.4	51.4	3.5	14	11.5	
16	5, 10	44.5	49.5	3.5	15.5	11.5	
20	5, 10	49	54	4.5	18.5	12.5	
25	5, 10	50.5	55.5	5	22.5	14.5	

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

#### Double Clevis / (N)CDQ2D

60 65

68

L

3.5

3.5

4.5

5

56.5 61.5

73

Stroke

5, 10

5, 10

5, 10

5, 10

Stroke

5,10

5, 10

5, 10

5, 10

Bore

12

16

20

25

Bore

12

16

20

25

2 . W. 16.					
Ost C	T		CW 0	cx	cz
5.5	4	7	14	5	10

12

15 6.5

₩ Jam Nut

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

★ 承 Clevice pin and snap rings are included in the package.

A B CQ2 5st 10st 5st 10st CD

33

72.5 77.5 37.5 42.5 10

L1 E1

14 11.5

15.5 11.5

18.5 12.5

22.5 14.5

35.5 40.5

36.5 41.5 8

CO2

N

M4x0.7

M4x0.7

M6x1.0

M6x1.0

38

5

5 3/16 54

3/16 50.5 5

3/8 62.5 67.5

5/16 59 64 5 12 18 8 16

NCQ2

Inch N

8-32

8-32

1/4-20

1/4-20

59 4 10

RR

6

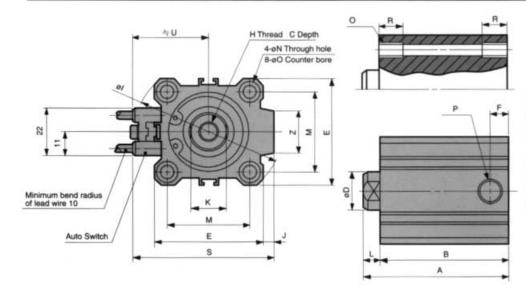
6

9

10

5 14 20 10 20

#### Bore Size ø32~ø50 Spring Return

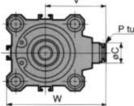


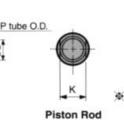
(N)C	DQ2A		
Both	Ends	Tap	ped

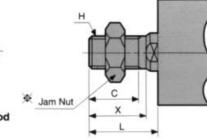
Bore size	CQ2 O	NCQ2 inch O	R
32	M6x1.0	1/4 20 UNC	10
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14

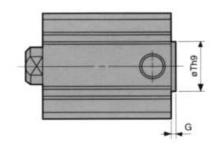
Standard / Spring Return (S) The Auto Switch mounting is used for D-A73 and D-A80. The Auto Switch set position and mounting height: See p.51

Bore	Charles .	1 120	A		1	В	100	CO2	NCC	22	-	-	-	CQ2	NCQ2			V	
size	Stroke	5st	10st	20st	5st	10st	20st	С	C	C D E	E	F	н	Inch H		3	ĸ	L	
32	5, 10	45	50	-	38	43	-	13	13.	3 1	6	45	7.5	M8x1.25	5/16-24UNF	60	4.5	14	7
40	5, 10	51.5	56.5		44.5	49.5	•	13	18.	3 1	6	52	8	M8x1.25	3/8-24UNF	69	5	14	7
50	10, 20		58.5	68.5	-	50.5	60.5	15	17.	6 2	20	64	10.5	M10x1.5	1/2-20UNF	86	7	17	8
Bore size	Stroke	м	N	(	D	Ρ	Orific	00	s	U		z							
32	5, 10	34	5.5	9de	pth7	1/8	1.7	5	58.5	31.5		14							
40	5, 10	40	5.5	9de	pth7	1/8	2	+	66	35	t	14							
50	10, 20	50	6.6	11de	pth8	1/4	2.2		80	41	1	19							









One T	ouc	h Fit	ting	S mm
Bore size	С	Ρ	v	w

size			3.	- STOTE	
32	13	6	38	60.5	
40	13	6	42	68	
50	16	8	50	82	

NCD	Q2	Male Rod B	End	mm	CDC	221	Male	Rod En	d
Bore size	×	H Inch	L	к	Bore size	с	x	н	
32	12.7	5/16-24UNF	19.7	14	32	20.5	23.5	M14x1.5	2
40	16	3/8-24UNF	23	14	40	20.5	23.5	M14x1.5	2
50	19.5	1/2-20UNF	27.5	17	50	26	28.5	M18x1.5	3

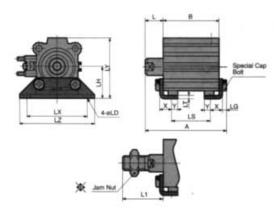
N	Male	Rod En	d	mm	End Boss (CQ2)					
	x	н	L	к	Bore size	G	Th9			
5	23.5	M14x1.5	28.5	14	32	2	21 -8.052			
5	23.5	M14x1.5	28.5	14	40	2	28 -0.052			
	28.5	M18x1.5	33.5	17	50	2	35 -8.062			

35 -8.062 2 50 Note) With rod end inlets an option.

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

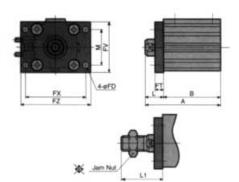
(Add - XC36 at the end of part no.).

#### Compact Cylinder: Standard / Single Acting Single Rod (S) With Switches



### Foot / (N)CDO2

Bore	Stroke	and the second	A		Sec. 2	B	4.1.1.2	1230	CQ2	NCO2	10	LG	114	1.1.1.2	LS	
size	STOKE	5st	10st	20st	5st	10st	20st		L1	L1	LD	LG	LA	5st	10st	20st
32	5, 10	62.2	67.2		38	43	•	17	38.5	29.7	6.6	4	30	22	27	
40	5, 10	68.7	73.7	•	44.5	49.5	-	17	38.5	33	6.6	4	33	28.5	33.5	•
50	10, 20		76.7	86.7	-	50.5	60.5	18	43.5	37.5	9	5	39		27.5	37.5
lore	Stroke	LX	LY	LZ	x	Y										
32	5, 10	57	57	71	11.2	5.8										
40	5, 10	64	64	78	11.2	7										
50	10,20	79	78	95	14.7	8										



#### Rod Flange / (N)CDQ2F

mm

Bore	Stroke	1	A		B 5st 10st 20st			50	ET	EV	EY	=7	14	C02	NCO2	
Bore size	SHOKE	5st	10st	20st	5st	10st	20st	FD		FV	FA	F2	-	LI	L1	IM
32	5, 10	55	60	-	38	43	•	5.5	8	48	56	65	17	38.5	29.7	34
40	5, 10	61.5	66.5	•	44.5	49.5	-	5.5	8	54	62	72	17	38.5	33	40
50	10, 20		68.5	78.5		50.5	60.5	6.6	9	67	76	89	18	43.5	37.5	50

#### Head Flange / (N)CDQ2G

Bore	Stroke	1 Same	A	12.50	100	CQ2	NCO2	
size	SHOKE	5st	10st	20st		L1	L1	
32	5, 10	53	58		7	28.5	19.7	
40	5, 10	59.5	64.5	•	7	28.5	23	
50	10, 20	•	67.5	77.5	8	33.5	27.5	

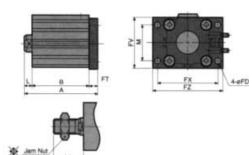
\* Dimensions for the head flange cylinder are the same as rod flange except A, L, L1.

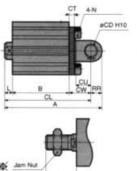
#### Double Clevis / (N)CDQ2D

Bore	Stroke	1 mars	A		and an	B	202	CO2	002	1 all	CL	- desert	CT	CU	CW
size	SILOKE	5st	10st	20st	5st	10st	20st	CD	838	5st	10st	20st	СТ	cu	CW
32	5, 10	75	80	-	38	43	•	10	3/8	65	70	•	5	14	20
40	5, 10	83.5	88.5	•	44.5	49.5	-	10	3/8	73.5	78.5	•	6	14	22
50	10, 20		100.5	110.5		50.5	60.5	14	1/2	-	86.5	96.5	7	20	28
Bore size	Stroke	CX	cz	L	CO2 L1	NCQ2	ALC: NO. OF TAXABLE	22		Q2 h N	RR				
32	5, 10	18	36	7	28.5	19.7	M6	x1.0	1/4	-20	10				
40	5, 10	18	36	7	28.5	23	M6)	x1.0	1/4	-20	10				
50	10,20	22	44	8	33.5	27.5	M8x	1.25	5/1	6-18	14				

★ Rod end nut and accesories detail: see p. 6.

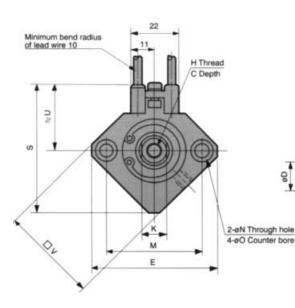
 $\mathfrak{K}$   $\mathfrak{K}$  Clevis pin and snap ring are included in the package.

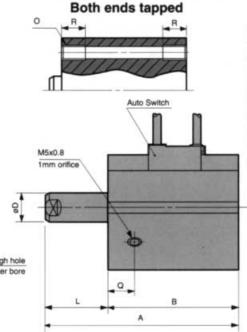






#### Through Hole / (N)CDQ2B





#### (N)CDQ2A **Both Ends Tapped**

			1000
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 Autoswitch mounting is used for D-A73 and D-A80

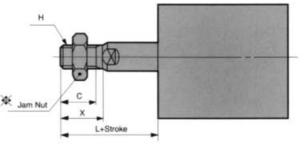
Autoswitch set position and mounting height: See p. 51

#### Standard / Spring Extend (T)

Bore	Charles	1	A	ł	В	CO2	NCQ2	-	-	CQ2	NCQ2	~		L	
size	Stroke	5st	10st	5st	10st	C	C	D	E	н	inch H	к	5st	10st	м
12	5, 10	45.9	55.9	37.4	42.4	6	5.4	6	32	M3x0.5	#8-32	5	8.5	13.5	22
16	5, 10	44	54	35.5	40.5	8	5.4	8	38	M4x0.7	#8-32	6	8.5	13.5	28
20	5, 10	46	56	36.5	41.5	7	7	10	47	M5x0.8	#10-32	8	9.5	14.5	36
25	5, 10	47.5	57.5	37.5	42.5	12	10	12	52	M6x1.0	1/4-28 UNF	10	10	15	40
Bore	Stroke	N	1	0	C	2 8	s U	V							

Bore size	Stroke	N	0	Q	S	U	v
12	5, 10	3.5	6.5 depth 3.5	11	35.5	19.5	25
16	5, 10	3.5	6.5 depth 3.5	10	41.5	22.5	29
20	5, 10	5.5	9 depth 7	10.5	48	24.5	36
25	5, 10	5.5	9 depth 7	11	53.5	27.5	40





CQ2 Male Rod End

н

M5x0.8

M6x1.0

M8x1.25

M10x1.25

Bore

size 12

16

20

25

C X

9 10.5

10 12

12 14

15 17.5 mm

L K

14 5

15.5 6

18.5 8

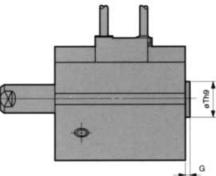
22.5 10

#### NCQ2 Male Rod End mm

Bore size	x	H Inch	L	к
12	8	#8-32UNC	11.5	5
16	8	#8-32UNC	11.5	6
20	8	#10-32UNF	12.5	8
25	9.5	1/4-28UNF	14.5	10

"C' dim. not applicable

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



#### End Boss (CQ2)

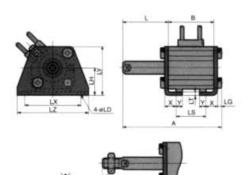
Bore size	G	Th9
12	1.5	15 -8.043
16	1.5	20 -8.052
20	2	13 -0.043
25	2	15 -8.043

Note 1) End Boss for Rod End is offered as an option. 56 (Add - XC36 at the end of part no.)

X

#### Series (N)CDQ2

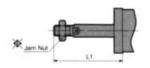
#### Compact Cylinder: Standard / Single Acting Single Rod (T) With Switches

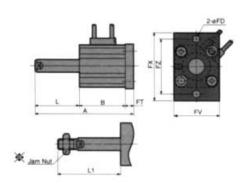


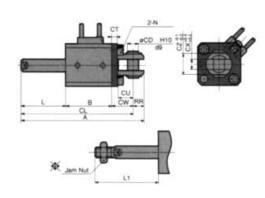
Bore	Stroke	1000	A	1	В	Section 2	a contraction	CQ	2 L1	NCQ	2 L1	LD	LG	LH	L	S
size	Suoke	5st	10st	5st	10st	5st	10st	5st	10st		10st	LD	LG	LH	5st	10st
12	5, 10	60.7	70.7	37.4	42.4	18.5	23.5	29	34	26.5	31.5	4.5	2.8	17	21	26
16	5, 10	58.8	68.8	35.5	40.5	18.5	23.5	30.5	35.5	26.5	31.5	4.5	2.8	19	23.5	28.5
20	5, 10	63.2	73.2	36.5	41.5	19.5	24.5	33.5	38.5	27.5	32.5	6.6	4	24	24.5	29.5
25	5, 10	64.7	74.7	37.5	42.5	20	25	37.5	42.5	29.5	34.5	6.6	4	26	22.5	27.5
Bore size	Stroke	LT	LX	LY	LZ	x	Y									
12	5, 10	2	34	29.5	44	8	4.5									
16	5, 10	2	38	33.5	48	8	5									
20	5, 10	3.2	48	42	62	9.2	5.8									
25	5, 10	3.2	52	46	66	10.7	5.8									

# FT

2-øFD







#### Rod Flange / (N)CDQ2F

Bore	Stroke	1	A	1000	B		mar .	-	EV	57	1		CO	2 11	NCO	2 L 1
size	Shoke	5st	10st	5st	10st	FD	FI	FV	FA	72	5st	10st	5st	10st	5st	10st
12	5, 10	55.9	65.9	37.4	42.4			25	45		18.5				26.5	
16	5, 10	54	64	35.5	40.5	4.5	5.5	30	45	55	18.5	23.5	30.5	35.5	26.5	31.5
20	5, 10	56	66	36.5	41.5	6.6	8	39	48	60	19.5	24.5	33.5	38.5	27.5	32.5
25	5, 10	57.5	67.5	37.5	42.5	6.6	8	42	52	64	20	25	37.5	42.5	29.5	34.5

#### Head Flange / (N)CDQ2G

Bore	Stroke	1000	A	100	1930	CQ2	2 L1	NCQ	2 L 1
size	Stroke	5st	10st	5st	10st	5st	10st	5st	10st
12	5, 10	51.4	61.4	8.5	13.5	19	24	16.5	21.5
16	5, 10	49.5	59.5	8.5	13.5	20.5	25.5	16.5	21.5
20	5, 10	54	64	9.5	14.5	23.5	28.5	17.5	22.5
25	5, 10	55.5	65.5	10	15	27.5	32.5	19.5	24.5

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

mm

mm st 10st

#### Double Clevis / (N)CDQ2D

Bore	Stroke	1	A		B	CO2	NCQ2	C	L	OT	CIL	CW	av	CZ		L
size	Suoke	5st	10st	5st	10st	CD	NEG	5st	10st	CT	cu	Cw	CA	62	5st	105
12	5, 10	65.9	75.9	37.4	42.4	5	3/16	59.9	69.9	4	7	14	5	10	8.5	13.5
16	5, 10	65	75	35.5	40.5	5	3/16	59	69	4	10	15	6.5	12	8.5	13.5
20	5, 10	73	83	36.5	41.5	8	5/16	64	74	5	12	18	8	16	9.5	14.5
25	5, 10	77.5	87.5	37.5	42.5	10	3/8	67.5	77.5	5	14	20	10	20	10	15
Bore size	Stroke	Party of the local division in which the local division in the loc	2 L1 10st		2 L1 10st		Q2 N		D2 h N	RR						
12	5, 10	19	24	16.5	21.5	M4	x0.7	8-	32	6						
16	5, 10	20.5	25.5	16.5	21.5	M4	x0.7	8-	32	6						
20	5, 10	23.5	28.5	17.5	22.5	M6	x1.0	1/4	-20	9						
25	5, 10	27.5	32.5	19.5	24.5	M6	x1.0	1/4	-20	10						

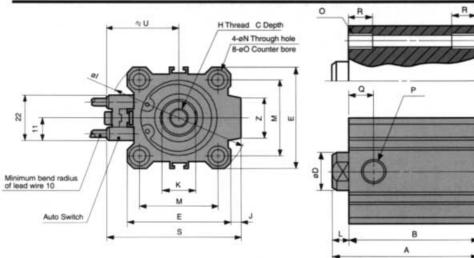
K Rod end nut and accesories detail: see p. 6.

 ${\bf K}$   ${\bf K}$  Clevis pin and snap rings are included in the package.

#### Bore Size ø32~ø50 Spring Extend

mm

mm

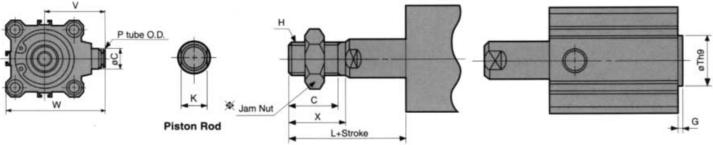


#### (N)CDQ2A **Both Ends Tapped**

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

Standard / Spring Extend (T) The above Auto Switch mounting is used for D-A73 and D-A80. The Auto Switch set position and mounting height: See p.51

Bore	-		A	1		В	Setter 1	CQ2	NCQ2		115	CQ2	NCQ2	3-5-7	1500		1250	L	
size	Stroke	5st	10st	20st	5st	10st	20st	С	C	D	E	Н	Inch H		1	ĸ	5st	10st	20st
32	5, 10	50	60		38	43		13	13.3	16	45	M8x1.25	5/16-24UNF	60	4.5	14	12	17	5
40	5, 10	56.5	66.5		44.5	49.5	•	13	18.3	16	52	M8x1.25	3/8-24UNF	69	5	14	12	17	•
50	10, 20		68.5	88.5	-	50.5	60.5	15	17.5	20	64	M10x1.5	1/2-20UNF	86	7	17	•	18	28
Bore size	Stroke	м	N	(	c	P	Orifi	ce	٩	s	U	z							
32	5, 10	34	5.5	9de	pth7	1/8	1.7		10.5	58.5	31.5	14							
40	5, 10	40	5.5	9de	pth7	1/8	2	-	11	66	35	14							
50	10, 20	50	6.6	11de	epth8	1/4	2.2	2	10.5	80	41	19							



One	Touc	h Fi	tting	S mm	NCD	Q2	Male Rod I	End	mm	CDC	221	Mal
Bore size	С	P	v	w	Bore size	x	Н	L	к	Bore	c	x
32	13	6	38	60.5	32	12.7	5/16-24UNF	19.7	14	32	20.5	23.5
40	13	6	42	68	40	16	3/8-24UNF	23	14	40	20.5	23.5
50	16	8	50	82	50	19.5	1/2-20UNF	27.5	17	50	26	28.5

$\bigcirc$		È	8	Tb
к ж	Jam Nu		÷,	-
ton Rod		-		+Stroke

le	Rod	End	mm
100		Statement Statement	ADD ALCON

к	Bore	С	x	н	L	к
14	32	20.5	23.5	M14x1.5	28.5	14
14	40	20.5	23.5	M14x1.5	28.5	14
17	50	26	28.5	M18x1.5	33.5	17

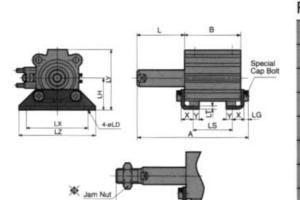
#### End Boss (CQ2)

Bore size	G	Th9
32	2	21 -8.052
40	2	28 -0.052
50	2	35 -0.062

"C" dim. not applicable

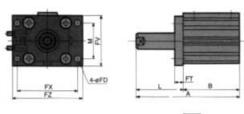
K Rod end nut and accessories are detailed on p. 6.

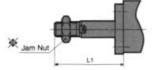
Note) With End Boss is offered as an option. (Add - XC36 at the end of part no.).



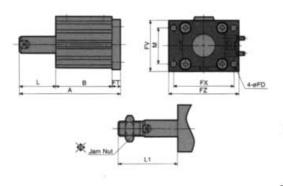
Bore	Stroke	000	A			B			L		C	Q2 1	1	N	CO2 L	1
size	SUOKE	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20st
32	5, 10	67.2	77.2	-	38	43	-	22	27	-	43.5	48.5	•	34.7	39.7	-
40	5, 10	73.7	83.7	•	44.5	49.5	-	22	27	•	43.5	48.5	÷.	38	43	2
50	10, 20		86.7	106.7		50.5	60.5		28	38		53.5	63.5	-	47.5	57.5
Bore size	Stroke	LD	LG	LH	5st	LS 10st	20st	LT	LX	LY	LZ	x	Y			
32	5, 10	6.6	4	30	22	27	-	3.2	57	57	71	11.2	5.8			
40	5, 10	6.6	4	33	28.5	33.5		3.2	64	64	78	11.2	7			
50	10, 20	9	5	39		27.5	37.5	3.2	79	78	95	14.7	8			

#### Rod Flange / (N)CDQ2F





Bore	Stroke	and states	A		-	B		FD	FT	FV	EV	FZ		6	
size	STOKE	5st	10st	20st	5st	10st	20st	FD		FV	EA	64	5st	10st	20s
32	5, 10	60	70	4	38	43	-	5.5	8	48	56	65	22	27	-
40	5, 10	66.5	76.5		44.5	49.5		5.5	8	54	62	72	22	27	*
50	10, 20		78.5	98.5	•	50.5	60.5	6.6	9	67	76	89		28	38
Bore	Stroke	C	Q2 L	1		CO2 L		M							
size	DITORO	5st	10st	20st	5st	10st	20st	IVI							
32	5, 10	43.5	48.5	-	34.7	39.7		34							
40	5, 10	43.5	48.5		38	43	-	40							
50	10, 20		53.5	63.5		47.5	57.5	50							

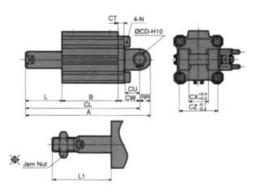




Bore	Stroke	10260	A			L		C	Q2 L	1/	N	CO2 L	1
size	STOKE	5st	10st	20st	5st	10st	20st	5st	10st	20st	5st	10st	20s
32	5, 10	58	68	•	12	17	-	33.5	38.5	•	24.7	29.7	
40	5, 10	64.5	74.5	-	12	17	•	33.5	38.5	-	28	33	÷
50	10, 20		77.5	97.5		18	28		43.5	53.5	-	37.5	47.5

X Dimensions for the head flange cylinder are

the same as rod flange except A, L, L1.



#### Double Clevis / (N)CDQ2D

Bore	Stroke	100	A			B		CO2	NCO2	1000	CL	10.000	CT	CU	CW	CV
size	Suoke	5st	10st	20st	5st	10st	20st	CD	CD	5st	10st	20st	UI	CU	CW	UA.
32	5, 10	80	90	•	38	43	-	10	3/8	70	80	•	5	14	18	20
40	5, 10	88.5	98.5		44.5	49.5	-	10	3/8	78.5	88.5	116.5	6	14	18	22
50	10, 20		110.5	130.5	-	50.5	60.5	14	1/2		96.5		7	20	22	28
Bore	Stroke	CZ	1	L		C	Q2 L	1	N	CQ2 L	1	CC	22	NC	Q2	RR
size	SHOKE	02	5st	10st	20st	5st	10st	20st	5st	10st	20st	N	1	1	V	nn
32	5, 10	36	12	17	-	33.5	38.5		24.7	29.7	-	M6x	1.0	1/4	-20	10
40	5, 10	36	12	17	÷	33.5	38.5		28	33		M6>	(1.0	1/4	-20	10
50	10, 20	44	-	18	28		43.5	53.5		37.5	47.5	M8x	1.25	5/16	6-18	14

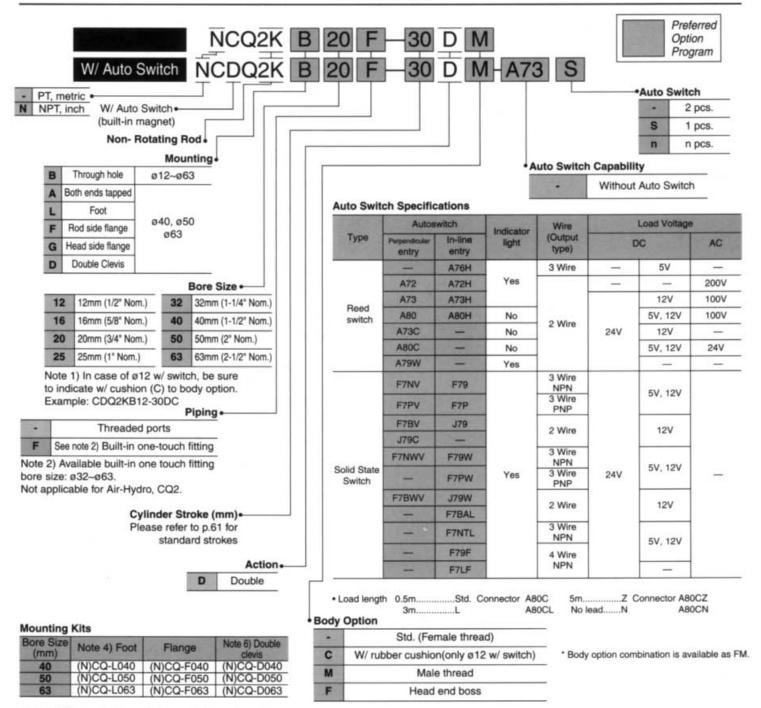
mm

★ Rod end nut and accesories detail: see p. 6.

★ ★ Clevis pin and snap ring are included in the package.

# SNC Compact Cylinder: Standard/ Double Acting Single Rod Non-Rotating NCQ2K / CQ2K Series ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63

How To Order



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 / Standard Non-Ling Single Rod

# (N)CQ2K Series

	MO	aei		
100	100	Bore	e Size	
	100.00	Mounting	Through hole (std)	
		Mounary	Both ends tapped	
	be	Buil	t-In Magnet	
- Bart	sure T	Piping	Threaded PT or NPT	
	Air-Pres	Method	Built-In One Touch Fitting	
			A	-

Double acting/ Single rod non-rotating



SMC



#### Precautions

Flush away dust and cutting particles thoroughly in the porting tube to prevent the contamination of cylinder inside.

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

Use C type snap ring pliers when removing an orifice snap ring during disassemby.

SWhen 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.

	Bor	e Size	12	16	20	25	32	40	50	63
15.1	Mounting	Through hole (std)	•	•	•	•	•	•	•	٠
	Mounting	Both ends tapped	-	-	-	-	-	•	•	•
Ape	Buil	t-In Magnet	۲	•	•	۲	•	٠	•	٠
sure Ty	Piping	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
Vir-Pres	Method	Built-In One Touch Fitting	-	-		-	Note 2 6/4	6/4	8/6	8/6
10	Rod En	d Male Thread	•	•	•	•	•	٠	•	•
0	W/He	ad End Boss	۲	۲	•	•	•	•	۲	•

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/cm²}
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 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

Min. Operating Pressure psi									
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	

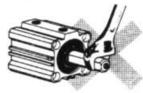
Non-Rotating Tolerance ps									
Bore size	12	16	20	25	32	40	50	63	
Accuracy	±2'		±1°			±0	.8"		

#### Standard Stroke

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

lbs.

lbs.

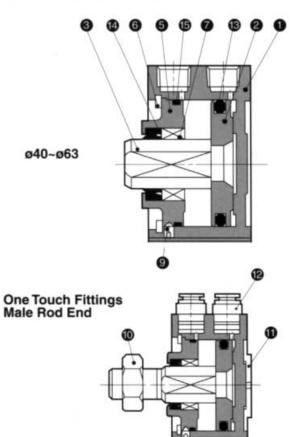
#### Weight / Double Acting: Single Rod Non-Rotating

Bore size	1		Testing	C	ylinde	r Strok	e (mm	)		Carpon	100000	00000
(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

#### Weight Adder

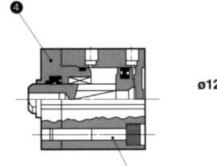
Bore size		12	16	20	25	32	40	50	63
Both ends tapped	1001 0		-	•	-	•	0.013	0.013	0.042
Rod end M thread	Thread	0.003	0.007	0.013	0.026	0.057	0.060	0.117	0.117
Hoo end in thread	Nut	0.002	0.004	0.009	0.018	0.037	0.037	0.071	0.071
Head end boss		0.002	0.003	0.004	0.007	0.011	0.015	0.029	0.055
W/ one touch fitting		-	-	-	-	0.026	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	1000	-	•	-			0.432	0.867	1.222

#### Construction / Parts List



## How to obtain the total weight (lbs) (N)CQ2KD40-20DM

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



a

#### ø12~ø32

#### Parts List

No.	Description	Material	Charles and a state				
1	Cylinder tube	Aluminum alloy	Hard anodized				
2	Piston	Aluminum alloy	Chromate				
-	Piston rod	Stainless steel	Bore ø12~ø25				
3	Piston rod -	Carbon steel	Bore ø32~ø63, hard chrome plated				
	Caller	Brass	Bore ø12 Black anodized				
4	Collar	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	Boreø40~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	Decariotion	Matarial		and the second second		Parts	No.		and the second second	
140.	Description	Watenai	012	ø16	ø20	ø25	032	040	050	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

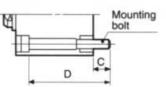
#### Mounting Bolt For (N)CQ2K

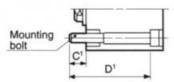
Special long mounting bolt for through hole mounting is available as an option. How to Order: Specify the required bolts

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

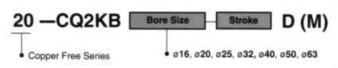




Model	С	D	Mounting bolt	C'	D'	Mounting bolt
(N)CQ2KB12-5D		30	M3x30L	_	30	M3x30L
-10D		35	x35L		35	x35L
-15D	6.5	40	x40L		40	x40L
-20D	0,5	45	x45L	6.5	45	x45L
-25D		50	x50L		50	x50L
-30D	_	55	x55L		55	x55L
(N)CQ2KB16-5D		30	x30L		30	x30L
-10D		35	x35L		35	x35L
-15D	5	40	x40L	5	40	x40L
-20D	~	45	x45L	~	45	x45L
-25D		50	x50L		50	x50L
-30D		55	x55L		55	x55L
(N)CQ2KB20-5D		35	M5x35L		35	M5x35L
-10D		40	x40L		40	x40L
-15D		45	x45L		45	x45L
-20D		50	×50L		50	x50L
-25D	8	55	x55L	9.5	55	x55L
~30D	0	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		45	x45L		40	x40L
-15D		50	x50L		45	x45L
-20D		55	x55L		50	x50L
-25D	10	60	x60L		55	x55L
-30D	10	65	x65L	6.5	60	x60L
-35D		70	x70L		65	x65L
-40D		75	x75L		70	x70L
-45D		80	x80L		75	x75L
-50D		85	x85L		80	×80L
(N)CQ2KB32-5D		40	M5x40L		40	M5x40L
-10D		45	x45L		45	x45L
-15D		50	x50L		50	x50L
-20D		55	x55L		55	x55L
-25D		60	x60L		60	x60L
-30D		65	x65L	10	65	x65L
-35D	8.5	70	x70L	10	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	с	D	Mounting bolt	C'	D'	Mounting bolt
(N)CQ2KB40-5D		35	M5x35L		35	M5x35L
-10D		40	x40L		40	x40L
-15D		45	x45L		45	x45L
-20D		50	x50L		50	x50L
-25D		55	x55L		55	x55L
-30D	7.5	60	x60L	7.5	60	x60L
-35D	7.5	65	x65L	1.5	65	x65L
-40D		70	x70L		70	x70L
-45D		75	x75L		75	x75L
-50D		80	x80L		80	x80L
-75D		115	x155L		115	x155L
-100D		140	x140L		140	x140L
(N)CQ2KB50-10D		45	M6x45L		45	M6x45L
-15D	12.5	50	x50L		50	x50L
-20D		55	x55L		55	x55L
-25D		60	x60L		60	x60L
-30D		65	x65L		65	x65L
-35D		70	x70L	12.5	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		55	x55L		55	x55L
-20D		60	x60L		60	x60L
-25D		65	x65L		65	x65L
-30D		70	x70L		70	x70L
-35D	14.5	75	x75L	14.5	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**



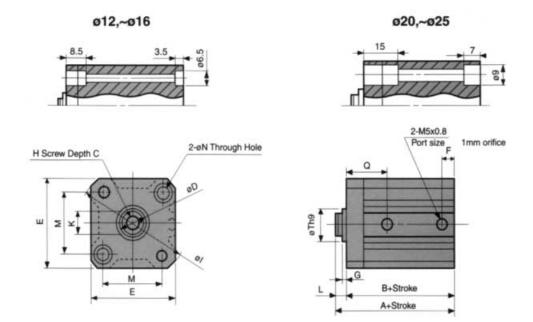
To protect against adverse effects on cathode ray tubes due to copper ion and fluorine contained in resin, the copper free series uses electroless nickel plated material, no copper is exposed allowing the generation of copper ions.

#### Standard Specifications

Model	20- Non-Rotating
Bore Size	ø16, ø20, ø25, ø32, ø40, ø50, ø63
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

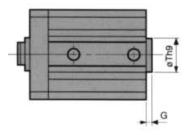
#### Bore Size ø12~ø25

#### Through Hole / (N)CQ2KB



#### Standard

Bore size	Stroke	A	в	CQ2 C	NCQ2 C	D	E	F	G	CQ2 H	NCQ2 inch H	Ĩ	L	м	N	٥	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 -8.043
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 -8.052
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 -8.043
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 -8.043



End	Boss	(CQ2)	

Bore size	G	Th9
12	1.5	15 -8.043
16	1.5	20 -8.052
20	2	13 -0.043
25	2	15 -8.043



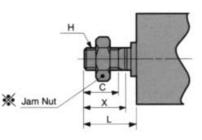
**Piston Rod** 

#### NCQ2 Male Rod End mm

Bore size	×	H inch	L	к
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

"C" dim. not applicable

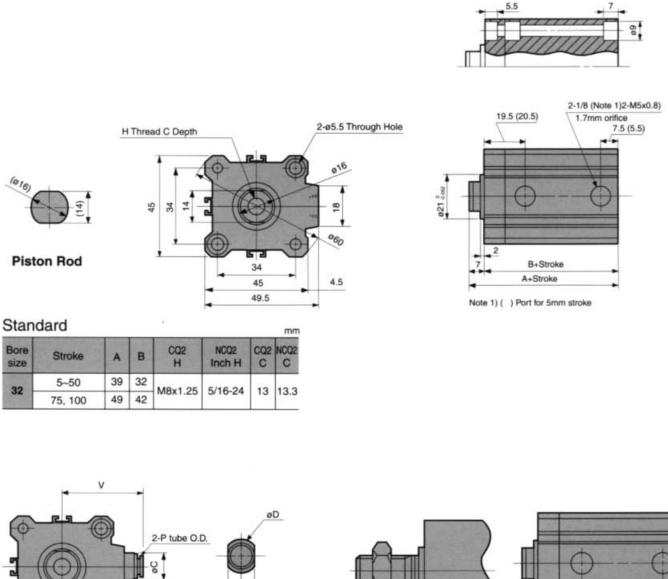
₩ Rod end nut and accessories detail: see p. 6.



CQ2	2 M	ale F	Rod End		mr
Bore size	С	x	н	L	к
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

#### Bore Size ø32

#### Through Hole / (N)CQ2KB

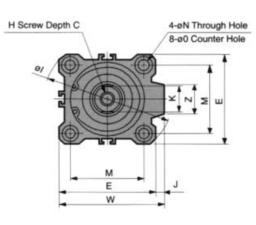


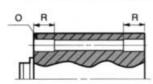
							K Piston Ro		lam Nut		C X L			)		¢	)		G
One <sup>-</sup>	Touc	h Fi	tting	S mm	NCO	22 M	Male Rod	End	mm	CQ2	2 Ma	ale f	Rod End		mm	End I	Boss	(CQ2 only)m	m
Bore size	с	P	v	w	Bore size	x	H Inch	L	к	Bore	с	×	н	L	к	Bore size	G	Th9	
32	13	6	38	60.5	32	12.7	5/16-24UNF	17.7	14	32	20.5	23.5	M14x1.5	28.5	14	32	2	21 -8.052	
					"C" di	m. no	t applicable												

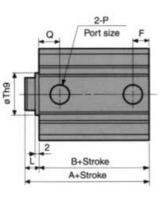
\*Rod end nut and accessories are detailed on p. 6.

#### Bore Size ø40~ø63

#### Through Hole / (N)CQ2KB





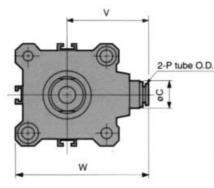


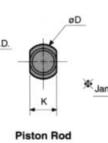
#### (N)CQ2KA **Both Ends Tapped**

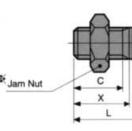
Bore size	CQ2 O	NCQ2 inch O	R
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18

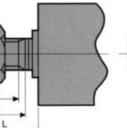
#### Standard

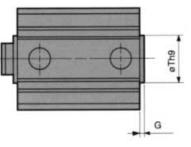
dard																					mn
Stroke (mm)	A	в	c c	NCQ2 C	D	E	F	CQ2 H	NCQ2 Inch H	1	J	L	м	N	0	P	Orifice	Q	Th9	w	z
5~50	36.5	29.5	13	18.3	16	52	8	M8x1.25	3/8-24UNF	69	5	7	40	5.5	9 depth 7	1/8	2	11	28 -0.052	57	14
5~50	38.5	30.5	15	17.6	20	64	10.5	M10x1.5	1/2-20UNF	86	7	8	50	6.6	11 depth 8	1/4	2.2	10.5	35 -0.062	71	19
10~50	44		-								7	8	-			1/4		-	0	84	19
and	Stroke (mm) 5~50 75, 100 5~50 75, 100	Stroke (mm)         A           5~50         36.5           75, 100         46.5           5~50         38.5           75, 100         48.5           10~50         44	Stroke (mm)         A         B           5~50         36.5         29.5           75, 100         46.5         39.5           5~50         38.5         30.5           75, 100         48.5         40.5           10~50         44         36	Stroke (mm)         A         B         CO2 C           5~50         36.5         29.5         13           5~50         38.5         30.5         13           5~50         38.5         30.5         15	Stroke (mm)         A         B         CO2 C         NC02 C           5~50         36.5         29.5         13         18.3           5~50         38.5         30.5         15         17.6	Stroke (mm)         A         B         CO2 C         NC02 C         D           5~50         36.5         29.5         13         18.3         16           5~50         38.5         30.5         15         17.6         20           5~50         38.5         30.5         15         17.6         20	Stroke (mm)         A         B         CO2 C         NC02 C         D         E           5~50         36.5         29.5         13         18.3         16         52           5~50         38.5         30.5         15         17.6         20         64	Stroke (mm)         A         B         CO2 C         NC02 C         D         E         F           5~50         36.5         29.5         13         18.3         16         52         8           5~50         38.5         30.5         15         17.6         20         64         10.5	Stroke (mm)         A         B         CO2 C         NC02 C         D         E         F         CO2 H           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25           5~50         38.5         30.5         15         17.6         20         64         10.5         M10x1.5	Stroke (mm)         A         B         CO2 C         NCQ2 C         D         E         F         CQ2 H         NCQ2 Inch H           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         38-24UNF           5~50         38.5         30.5         15         17.6         20         64         10.5         M10x1.5         1/2-20UNF	Stroke (mm)         A         B         CC2 C         NCQ2 C         D         E         F         CQ2 H         NCQ2 Inch H         I           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         3/8-24UNF         69           5~50         38.5         30.5         15         17.6         20         64         10.5         M10x1.5         1/2-20UNF         86	Stroke (mm)         A         B         CC2 C         NCQ2 C         D         E         F         CQ2 H         NCQ2 H         I         J           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         3/8-24UNF         69         5           5~50         38.5         30.5         15         17.6         20         64         10.5         M10x1.5         1/2-20UNF         86         7	Stroke (mm)         A         B         CO2 C         NCQ2 C         D         E         F         CO2 H         NCQ2 H         I         J         L           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         38-24UNF         69         5         7           5~50         38.5         30.5         15         17.6         20         64         10.5         M10x1.5         1/2-20UNF         86         7         8	Stroke (mm)         A         B         CO2 C         NCQ2 C         D         E         F         CQ2 H         NCQ2 Inch H         I         J         L         M           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         38-24UNF         69         5         7         40           5~50         38.5         30.5         15         17.6         20         64         10.5         M10x1.5         1/2-20UNF         86         7         8         50	Stroke (mm)         A         B         CO2 C         NCO2 C         D         E         F         CO2 H         NCO2 H         I         J         L         M         N           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         3/8-24UNF         69         5         7         40         5.5           5~50         38.5         30.5         15         17.6         20         64         10.5         M10x1.5         1/2-20UNF         86         7         8         50         6.6	Stroke (mm)         A         B         CO2 C         NCQ2 C         D         E         F         CQ2 H         NCQ2 H         I         J         L         M         N         O           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         38-24UNF         69         5         7         40         5.5         9 depth 7           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	Stroke (mm)         A         B         CQ2 C         NCQ2 C         D         E         F         CQ2 H         NCQ2 Inch H         I         J         L         M         N         O         P           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           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	Stroke (mm)         A         B         CO2 C         NC02 C         D         E         F         CO2 H         NCO2 H         I         J         L         M         N         O         P         Orifice           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         38-24UNF         69         5         7         40         5.5         9 depth 7         1/8         2           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	Stroke (mm)         A         B         CO2 C         NCQ2 C         I         J         L         M         N         O         P         Orifice         Q           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           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	Stroke (mm)         A         B         CO2 C         NC02 C         D         E         F         CO2 H         NCO2 H         I         J         L         M         N         O         P         Orifice         Q         Th9           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         38-24UNF         69         5         7         40         5.5         9 depth 7         1/8         2         11         28         -0.062           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         -0.062	Stroke (mm)         A         B         CO2 C         NCO2 C         D         E         F         CO2 H         NCO2 H         I         J         L         M         N         O         P         Orifice         Q         Th9         W           5~50         36.5         29.5         13         18.3         16         52         8         M8x1.25         3%-24UNF         69         5         7         40         5.5         9 depth 7         1/8         2         11         28 $\frac{9}{-0.052}$ 57           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 $\frac{9}{-0.062}$ 71











### One Touch Fittings NCQ2 Male Rod End

		_	_	11011	_
ze	с	Ρ	v	w	Bo
0	13	6	42	68	4
0	16	8	50	82	5
3	16	8	56.5	95	6
_		_			_

Bore size	x	н	L	к
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

#### CQ2 Male Rod End

	_				mm
Bore size	с	x	н	L	к
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 -0.052
50	2	35 -0.062
63	2	35 -0.062

CQ2 only

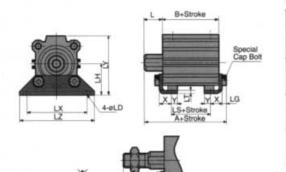
Bo siz 4 5 6

#### "C" dim. not applicable

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

#### Series (N)CQ2K

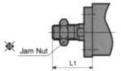
### Compact Cylinder: Standard / Double Acting Single Rod Non-Rotating



#### Foot / (N)CQ2KL

001	/ (11)0					_	_	_		_	_	_	_	_	_	m
Bore size (mm)	Stroke range (mm)	A	в	L	002 L1	NCQ2	LD	LG	LH	LS	LT	LX	LY	LZ	x	Y
	5~50	53.7	29.5			~	6.6	4	33	13.5	3.2	64	64	70	11.2	7
40	75, 100	63.7	39.5	17	38.5	31	0.0	-	33	23.5	3.2	04	04	10	11.2	'
50	10~50	56.7	30.5	10	40.5	33.5		-	20	7.5	3.2	79	78	95	14.7	8
50	75, 100	66.7	40.5	18	43.5	33.5	9	5	39	17.5	3.2	19	10	95	14.7	0
62	10-50	62.2	36	10	40.5	22.5			40	10	2.2	05	01 5	112	16.0	9
63	75, 100	72.2	46	18	43.5 33	33.5	11	11 5	46	20 3.4	3.2	95	91.5	113	16.2	9

#### PX FZ FZ FZ FZ



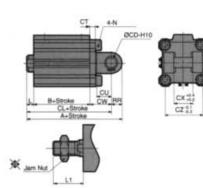
4-ØFD

Rod	Flange	e / (N	V)C	Q21	KF							mn
Bore size (mm)	Stroke range (mm)	A	в	FD	FT	FV	FX	FZ	L	CQ2 L1	NCQ2 L1	м
40	5~50	46.5	29.5					70	17	20.5	21	40
40	75, 100	56.5	39.5	5.5	8	54	62	72	17	38.5	31	40
	10-50	48.5	30.5				70		10	40.5	22.5	50
50	75, 100	58.5	40.5	6.6	9	67	76	89	18	43.5	33.5	50
	10~50	54	36				00	100	10	40.5	00 F	-
63	75, 100	64	46	9	9	80	92	108	18	43.5	33.5	60

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

Bore size (mm)	Stroke range (mm)	A	L	CQ2 L1	NCQ2 L1
40	5~50	44.5	7	28.5	01
40	75, 100	54.5	'	28.5	21
50	10~50	47.5		20.5	23.5
50	75, 100	57.5	8	33.5	23.5
63	10~50	53		22.5	22.5
03	75, 100	63	8	33.5	23.5

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



FT

#### Double Clevis / (N)CQ2KD

Bore size (mm)	Stroke range (mm)	A	в	CO2 CD	NCQ2 Inch CD		ст	cu	cw	сх	cz	L	CQ2 L1	NCQ2 L1	CQ2 N	NCQ2 Inch N	RR
40	5~50	68.5	29.5		0/0	58.5				10	20	-	00.5		Mext 0	1/4.00	10
40	75, 100	78.5	39.5	10	3/8	68.5	6	14	22	18	36	7	28.5	21	M6x1.0	1/4-20	10
50	10~50	80.5	30.5		10	66.5	-	-					00.5	00.5	M0-1 05	E/10 10	
50	75, 100	90.5	40.5	14	1/2	76.5	1	20	28	22	44	8	33.5	23.5	M8x1.25	5/16-18	14
	10-50	88	36		10	74			0.0				00.5	00.5	MIOULE	7/16-14	14
63	75, 100	98	46	14	1/2	84	8	20	30	22	44	8	33.5	23.5	M10x1.5	//10-14	14

mm

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

 $\cancel{K} \not \propto$  Clevice 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-F7DV D-J79C	D-A7 D-A8 D-A73C D-A80C	D-F7DWV	D-A70H D-A80H D-F70 D-J79	D-A79W	D-F7DW D-J79W D-F7BAL D-F79F	D-F7LF
1pcs	5mm	5mm	10mm	15mm	15mm	20mm	25mm
2pcs	5mm	10mm	15mm	15mm	20mm	20mm	25mm

Weight Chart

How To Order

Auto Switch How To Order: See p. 60

te)	See	pg.	13	for	Auto	Swit	ch	Specifications.
	1	20		W	/eig	ght	A	dder

Bore		Cylinder Stroke (mm)														
size (mm)	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				

/veight Adde	r								lbs.
Bore size	and the second s	12	16	20	25	32	40	50	63
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
Hod end M thread	Nut	0.002	0.004	0.009	0.018	0.037	0.037	0.071	0.071
Head end boss	(manual )	0.002	0.003	0.004	0.007	0.011	0.015	0.029	0.055
W/ one touch fitting	- C- (1	-	-		-	0.011	0.026	0.046	0.046
Foot mounting	Sec. 1			•	-		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	199 a 10 mil		-	-	-		0.432	0.867	1.222

When mounting auto switch, add for additional mounting bracket weight

Auto Switch Mounting

**Bracket Weight** 

No

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

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

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

#### Construction / Parts List

Ø ø12~25		No.	Description	Material	Remarks
		1	Cylinder tube	Aluminum alloy	Hard anodized
		2	Piston	Aluminum alloy	Chromate
K	ø40~63	-	Diston rod	Stainless steel	Bore ø12-ø25
	040-00	3	Piston rod	Carbon steel	Bore ø32-ø63, hard chrome plated
	0000000000	1	0-11-1	Brass	Bore ø12, Black chromate
0 ø32		4	Collar	Aluminum alloy	Bore ø16~ø32, Black anodized
032		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
U (0)		11	Magnet		

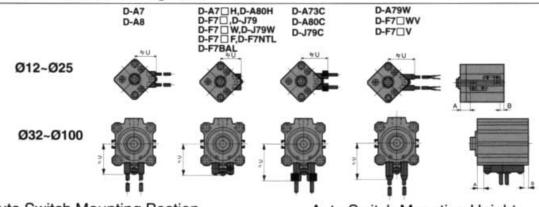
#### Seals List

No	No Description	Matarial	Parts No.										
No. Description	Materia	012	ø16	020	ø25	032	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			

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

Special long mounting bolt for through hole mounting	Model	с	D	Mounting bolt	C'	D	Mounting bolt	Model	с	D	Mounting bolt	C'	D	Mounting bolt
is available as an option.	(N)CDQ2KB12-5DC	_	35	M3x35L		40	M3x40L	(N)CDQ2KB32-40D		85	M5x85L		85	M5x85L
How to Order:	-10DC		40	x40L		45	x45L	-45D		90	x90L		90	x90L
Specify the required bolts	-15DC	5.5	45		50	x50L	-50D	8.5	95	x95L	10	95	x95L	
	-20DC	5.5	50	x50L	5.5	55	x55L	-75D		120	x120L		120	x120L
Example)	-25DC		55	x55L		60	x60L	-100D		145	x145L		145	x145L
Bolt M3x35L @12~@32 2pc.	-30DC		60	x60L	_	65	x65L	(N)CDQ2KB40-5D		45	M5x45L		45	M5x45L
ø40~ø63 4pc.	(N)CDQ2KB16-5D		40	M3x40L		45	M3x45L	-10D		50	x50L		50	x50L
	-10D		45	x45L		50	x50L	-15D		55	x55L		55	x55L
	-15D	8	50	x50L	8	55	x55L	-20D		60	x60L		60	x60L
Thread Pitch	-20D	U.S.	55	x55L		60	x60L	-25D		65	x65L		65	x65L
M3 0.5	-25D		60	x60L		65	x65L	-30D	7.5	70	x70L	7.5	70	x70L
	-30D		65	x65L		70	x70L	-35D	1.5	75	X/SL	75	x75L	
	(N)CDQ2KB20-5D		40	M5x40L		45	M5x45L	-40D		80	x80L		80	x80L
M6 1.0	-10D		45	x45L		50	x50L	-45D		85	x85L		85	x85L
M8 1.25	-15D		50	x50L		55	x55L	-50D		90	x90L		90	x90L
M10 1.5	-20D		55	x55L		60	x60L	-75D		115	x115L		115	x115L
	-25D	10.5	60	x60L	7.5	65	x65L	-100D		140	x140L		140	x140L
	-30D		65	x65L	1.0	70	x70L	(N)CDQ2KB50-10D		55	M6x55L		55	M6x55L
Mounting bolt	-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
D	-50D		85	x85L		90	x90L	-30D		75	x75L	0.02.2	75	x75L
	(N)CDQ2KB25-5D		40	M5x40L		45	M5x45L	-35D	12.5	80	x80L	12.5	80	x80L
	-10D		45	x45L		50	x50L	-40D		85	x85L		85	x85L
	-15D		50	x50L	-	55	x55L	-45D		90	x90L		90	x90L
2	-20D		55	x55L		60	x60L	-50D		95	x95L		95	x95L
Mounting	-25D	9.5	60	x60L	6.5	65	x65L	-75D		120	x120L x145L		120	x120L x145L
bolt	-30D		65	x65L x70L		70	x70L x75L	-100D	-	60	M8x60L		60	M8x60L
C' D'	-35D		70	x70L x75L		75		(N)CDQ2KB63-10D		65	x65L		65	x65L
	-40D	-	75			80 85	x80L x85L	-15D		70	x65L x70L		70	xooL x70L
	-45D	-	85	x80L x85L		90	x85L x90L	-20D		75	x70L x75L		75	x70L
	-50D	-	50	M5x50L		50	M5x50L	-25D		80	x75L x80L		80	x80L
	(N)CDQ2KB32-5D		50	x55L		50	x55L	-30D -35D	14.5	-	x80L x85L	14.5	85	x80L
	-10D		60	x55L x60L		60	x55L x60L	the second se	14.5	90	x85L x90L	14.5	90	x85L x90L
	-15D -20D	8.5	60	x60L x65L	10	60	x60L x65L	-40D -45D		90	x90L x95L		90	x90L x95L
		0.5	70	xosL x70L	10	70	x05L x70L	the second se		100	x95L x100L		100	x95L x100L
	-25D		70	x70L x75L		70	x70L x75L	-50D		100	x100L x125L		125	x100L x125L
	-30D		80	x75L x80L		80	x75L x80L	-75D -100D		125			125	
	-35D		1.90	XOUL		00	XOUL	-100D		1150	XISUL		1150	XIDUL

#### Auto Switch Mounting Data



#### Auto Switch Mounting Postion

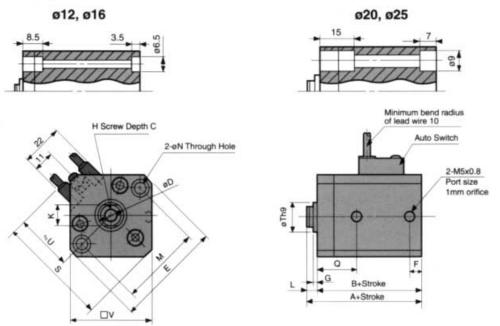
Bore Size (mm)	D-A7•A8		D-A70 D-A730 D-F70 D-F70	J79	D-A	79W	D-F7 D-F7 D-F7 D-J7	PW	D-F79W D-F70WV		
	A	в	A	В	A	в	A	в	A	В	
12	9.5	5.5	10	6	7	3	14	10	10.5	6.5	
16	12.5	5	13	5.5	10	2.5	17	9.5	13.5	6	
20	15.5	6.5	16	7	13	4	20	11	16.5	7.5	
25	15.5	7	16	7.5	13	4.5	20	11.5	16.5	8	
32	18	6	15.5	6.5	15.5	3.5	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-A70H D-J79W D-A80H D-F7BAL D-F70 D-F70F D-J79 D-F7NTL D-F70W	D-A73C D-A80C D-F7□WV	D-F70V	D-J79C	D-A79W
	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 ø12~ø25

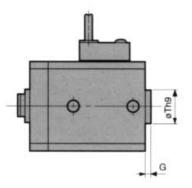
#### Through Hole / (N)CDQ2KB



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.

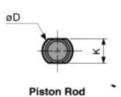
#### Standard

Bore size	Stroke	A	в	CQ2 C	NCQ2 C	D	E	F	G	CQ2 H	NCQ2 inch H	L	м	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 -8.043	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 -8.052	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 -8.043	24.5	36
25	5~50	45.5	40.5	12	10	12	52	5.5	2	M6x1.0	1/4 - 28 UNF	5	40	5.5	19	53.5	15 -8.043	27.5	40



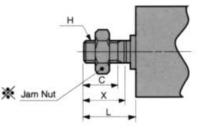
End	Boss	(CQ2) <sub>mm</sub>
-----	------	---------------------

Bore size	G	Th9					
12	1.5	15 -8.043					
16	1.5	20 -0.052					
20	2	13 -8.043					
25	2	15 -8.043					



### NCDQ2 Male Rod End

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



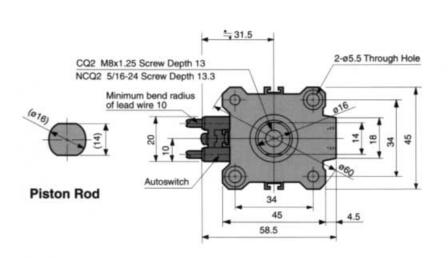
CDQ2 Male Rod End										
Bore size	С	x	н	L	к					
12	9	10.5	M5x0.8	14	5.2					
16	10	12	M6x1.0	15.5	6					
20	12	14	M8x1.25	18.5	8					
25	15	17.5	M10x1.25	22.5	10					

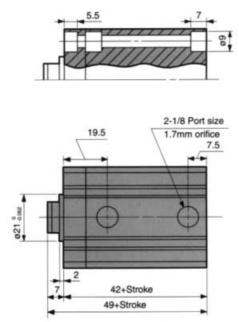
"C" dim. not applicable.

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

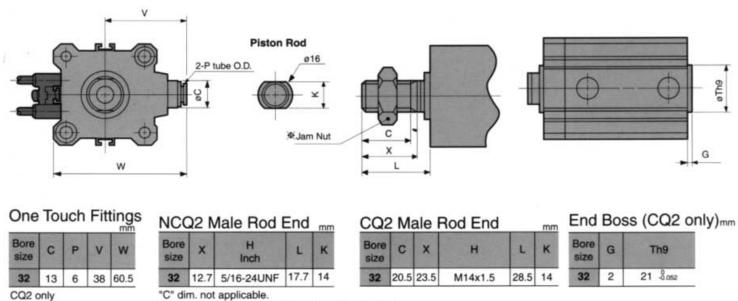
#### Bore Size ø32

#### Through Hole / (N)CDQ2KB



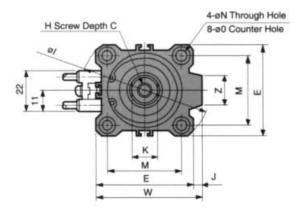


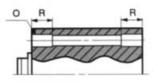
The Auto Switch mounting is used for D-A73 and D-A80. The Auto Switch set position and mounting height: See p.69.



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

# Through Hole / (N)CDQ2KB





2-P Port size

B+Stroke A+Stroke

## (N)CDQ2KA **Both Ends Tapped**

Both Ends Tapped m									
Bore size	CQ2 0	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.

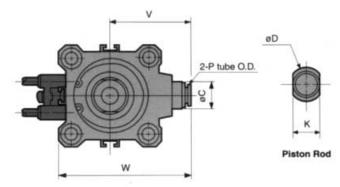
The Auto Switch set position and mounting height: See p.69.

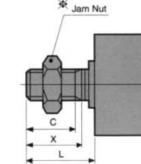
mm

# Standard

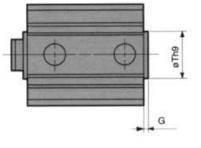
Bore size	Stroke (mm)	A	в	002 C	NCQ2 C	D	E	F	CQ2 H	NCQ2 Inch H	L	J	к	L	м	N	0	P	Q	Orifice	s	Th	9	U	z
40	5~50 75, 100	46.5	39.5	13	18.3	16	52	8	M8x1.25	3/8-24UNF	69	5	14	7	40	5.5	9 depth 7	1/8	11	2	66	28 -	0.052	35	14
50	10~50	48.5	40.5	15	17.5	20	64	10.5	M10x1.5	1/2-20UNF	86	7	18	8	50	6.6	11 depth 8	1/4	10.5	2.2	80	35	0.062	41	19
63	10~50 75, 100	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 -	0.062	47.5	19

ette





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# One Touch Fittings NCDQ2 Male Rod End

		-		mm					mr
Bore size	С	P	v	w	Bore size	x	н	L	к
40	13	6	42	68	40	16	3/8-24UNF	21	14
50	16	8	50	82	50	19.5	1/2-20UNF	23.5	18
63	16	8	56.5	95	63	19.5	1/2-20UNF	23.5	18
_					"C" di	m not	applicable		

"C" dim. not applicable.

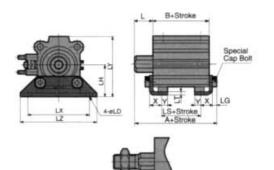
Rod end nut and accessories are detailed on p. 6.

# CDQ2 Male Rod End

Bore size	c	x	н	L	ĸ
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 mm

Bore size	G	Th9
40	2	28 -0.052
50	2	35 -0.062
63	2	35 -8.062



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B+Stroku

4-eFD

# Foot / (N)CDO2KI

F001	/(N)C	DQ	ZNL	<u>í</u>										_		mm
Bore size (mm)	Stroke range (mm)	A	B	L	002 L1	NCQ2	LD	LG	LH	LS	LT	LX	LY	LZ	x	Y
40	5~50	00.7	00.5	17	38.5	21	6.6	4	33	00.5		64	64	78	11.2	7
40	75, 100	63.7	39.5	17	38.5	31	0.0	4	33	23.5	3.2	04	04	/0	11.2	<i>'</i>
50	10-50	66.7	10.5	18	42.5	33.5	9	5	20	17.5	2.0	79	78	95	14.7	8
50	75, 100	00.7	40.5	18	43.5	33.5	9	5	39	17.5	3.2	19	10	95	14.7	0
63	10~50	70.0	40	18	42.5	33.5	11	5	46	20	3.2	95	01.5	112	16.2	9
03	75, 100	72.2	46	18	43.5	33.5		5	40	20	3.2	95	91.5	113	10.2	9

## Bod Flange / (N)CDO2KE

Bore size (mm)	Stroke range (mm)	A	в	FD	FT	FV	FX	FZ	L	002 L1	NCQ2 L1	м
40	5~50		00.5					70		00.5	31	40
40	75, 100	56.5	39.5	5.5	8	54	62	72	17	38.5	31	40
	10~50						70		10	10.5	00.5	
50	75, 100	58.5	40.5	6.6	9	67	76	89	18	43.5	33.5	50
	10-50		40	~			00	100	10	10.5	00.5	
63	75, 100	64	46	9	9	80	92	108	18	43.5	33.5	60

# Head Flange / (N)CDQ2KG

Bore	Stroke	A	U	002	<b>Underland</b>	
(mm)	(mm)			L1	LI	
40	5~50	54.5	7	28.5	21	
40	75, 100	54.5	7	20.5	21	
50	10-50	57.5	8	33.5	23.5	
	75, 100	57.5	Ŭ	00.0	20.0	
63	10~50	63	8	33.5	23.5	
-	75, 100	~	~	00.0	23.5	

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

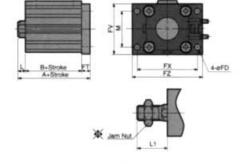
# Double Clevis / (N)CDQ2KD

Bore size (mm)	Stroke range (mm)	A	в	CD	NCQ2 Inch CD	CL	ст	CU	cw	сх	cz	L	CC22 L1	NCQ2 L1	CQ2 N	NCQ2 Inch N	RR
40	5~50	70.5										-			M6x1.0	1/4-20	10
40	75, 100	/8.5	39.5	10	3/8	68.5	6	14	22	18	36	7	28.5	21	MOX1.0	1/4-20	10
50	10~50	00.5	10.5			70.5	-					~	00.5	00.5	M0v1 05	5/16-18	14
50	75, 100	90.5	40.5	14	1/2	76.5	7	20	28	22	44	8	33.5	23.5	M8x1.25	5/10-10	14
63	10-50							-	-				00.5	00.5	M10+1 5	7/16-14	14
03	75, 100	98	46	14	1/2	84	8	20	30	22	44	8	33.5	23.5	M10x1.5	7/10-14	14

DCD-H10

KRod end nut and accessories detail: see p. 6.

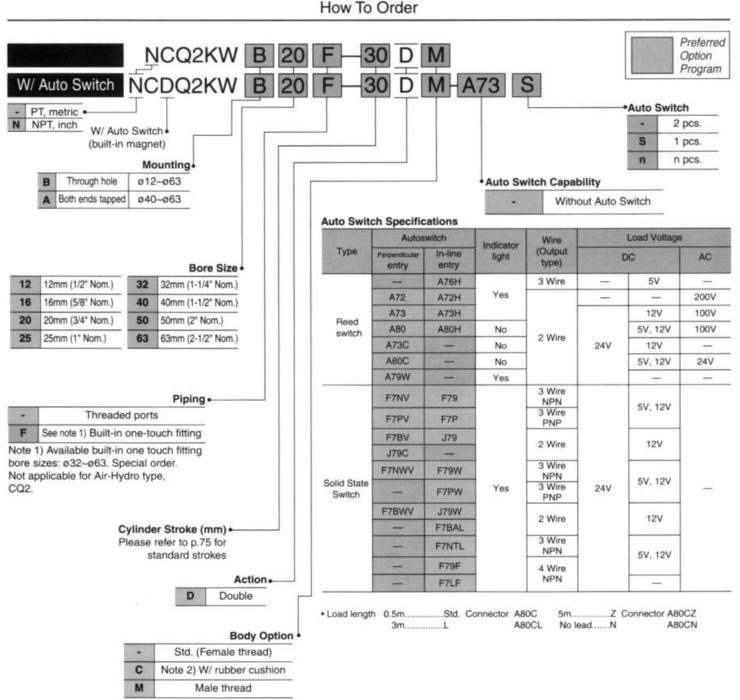
★ ★ Clevice pin and snap rings are included in the package.





# SNC Compact Cylinder: Standard/ Double Acting Double Rod Non-Rotating NCQ2KW / CQ2KW Series

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



Note 2) ø12 w/ switches must have rubber cushion.

Standard / Non-Rotating Double rod

# (N)CQ2KW Series



SMC

# Non-rotating Double rod



## Precautions

Flush away dust and cutting particles thoroughly in the porting tube to prevent the contamination of cylinder inside.

- 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.

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

OUse C type snap ring pliers when removing an orifice snap ring during disassembly.

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 the parallel to a cylinder axial.

### When piping

 When fixing a workpiece at the piston rod end, be sure the piston rod is fully retracted. Then, tighten the rod flat extended to the outgide using a wrench

75 outside using a wrench.

### Model

	Bon	e Size	12	16	20	25	32	40	50	63
	Manualian	Through hole (std)	٠	•	•	•	•	٠	•	٠
	Mounting	Both ends tapped	٠	•	•	•	•	٠	•	
Type	Buil	t-in Magnet	•	•	•	٠	•	•	•	•
essure	Piping	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
Air-Pre	Method	Built-In One Touch Fitting	-	-	-	-	Note 2 6/4	6/4	8/6	8/6
531	Rod End	d Male Thread	•	•	•	•	•		•	•

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 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		16						
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

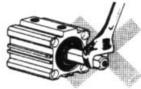
Air pressure	type (non-lube)	mm
Bore size	Standard stroke	dan h
12,16	5,10,15,20,25,30	
20,25	5,10,15,20,25,30,35,40,45,50	
32,40	5,10,15,20,25,30,35,40,45,50	
50,63	10,15,20,25,30,35,40,45,50	

 Available intermediate stroke. Intermediate strokes in 1mm increments are available by installing a spacer into the STD. stroke cylinder. Contact an SMC representative for ø40ø100 intermediate stroke cylinder with bumper. Example] (N)CQ2KWB50-48D can be made by installing a 2 mm (w)spacer into the std. cylinder (N)CQ2KWB50-50D. 5mm Incremental Stroke (spacers) done as standard.

nsi

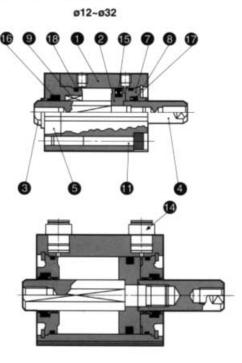
psi

For theoretical output see chart on p26.



# Standard / Double Acting Double Rod Non-Rotating (N)CQ2KW Series

# Construction / Part List



### Weight / Single Acting: Single Rod

Bore	-			-	Str	oke		- Anna		
size	5	10	15	20	25	30	35	40	45	50
12	0.14	0.15	0.17	0.18	0.20	0.21	-	-	-	-
16	0.14	0.16	0.19	0.21	0.23	0.26	-	-	-	-
20	0.22	0.26	0.29	0.32	0.36	0.39	0.42	0.45	0.49	0.52
25	0.30	0.34	0.38	0.42	0.45	0.49	0.53	0.57	0.60	0.64
32	0.53	0.59	0.64	0.69	0.75	0.80	0.85	0.90	0.96	1.01
40	0.77	0.84	0.91	0.97	1.04	1.11	1.18	1.25	1.32	1.38
50	-	1.21	1.31	1.41	1.51	1.61	1.70	1.80	1.90	2.00
63		1.70	1.79	1.87	1.96	2.05	2.13	2.22	2.30	2.39

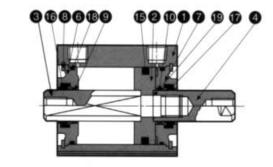
### Weight Adder

Bore size		12	16	20	25	32	40	50	63
Both ends tapped			-	-	-	-	0.013	0.015	0.037
	Thread	0.007	0.013	0.022	0.049	0.110	0.110	0.229	0.229
Rod end M thread	Nut	0.004	0.009	0.018	0.035	0.075	0.075	0.141	0.141
W/ one touch fitting			-	-		0.011	0.011	0.021	0.021

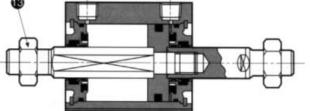
# How to obtain the total weight (lbs)

Std wt.: Wt. adder:	(N)CQ2KWB40-20D Both ends tapped Male rod end	0.97
	Total	1.168

### ø40~ø63







### Parts List

No.	Description	Material	Remarks			
1	Cylinder tube	Aluminum alloy	Hard anodized			
2	Piston	Aluminum alloy	Chromate			
	Piston rod A	Stainless steel	Bore ø12~ø25			
3	FISION TOU A	Carbon steel	Bore #32-#63, hard chrome plated			
4	Piston rod B	Stainless steel	Bore ø12-ø25			
	Piston rou B	Carbon steel	Bore #32-#63, hard chrome plated			
5	Collar	Brass	Bore ø12 Black chromate			
2	Collar	Aluminum alloy	Bore ø16-ø32, Black anodized			
6	Collar	Aluminum alloy	Bore ø40-ø63, Black anodized			
7	Celler	Bearing grade aluminum	Bore ø12-ø40, Black anodized			
	Collar	Aluminum alloy	Bore ø50~ø63, Black anodized			
8	Retaining ring	Carbon tool steel	phosphate coating			
9	Bushing	Sintered alloy	ø16~ø63			
10	Bushing	Lead tin bronze casting	ø12~ø25, Black chromate			
11	Bolt	Steel alloy	ø12~ø32, Black chromate			
12	Set screw	Steel alloy	ø40~ø63, Black coating			
13	Rod end nut	Carbon steel	Nickel plated			
14	One touch fittings		ø32~ø63			
19	Piston gasket	NBR	-			

# Seals List

No.	Description	Material	A COLUMN TO A C			Parts	s No.		and the second second	
and the second s	Description	Material	012	016	020	Ø25	032	ø40	050	063
15	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B
15 16	Rod seal	NBR	SS-6X5.2Q	SS-8X6K2Q	SS-10X8Q	SS-12	SS-16S	SS-16S	SS-20S	SS-20S
17	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z
18	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60

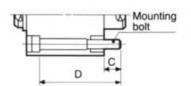
lbs.

# Mounting Bolt For (N)CDQ2KW

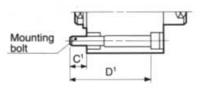
Special long mounting bolt for through hole mounting is available as an option. How to Order: Specify the required bolts

Example) Bolt M3x35Lø12~ø32 2pc. ø40~ø63 4pc.

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



Model	С	D	Mounting bolt	C'	ים	Mounting bolt
(N)CQ2KWB12-5D		40	M3x40L		40	M3x40L
-10D		45	x45L		45	x45L
-15D		50	x50L	8.3	50	x50L
-20D	8.3	55	x55L	0.3	55	x55L
-25D		60	x60L		60	x60L
-30D		65	x65L		65	x65L
(N)CQ2KWB16-5D		40	M3x40L	-	40	M3x40L
-10D		45	x45L		45	x45L
-15D	7.5	50	x50L	7.5	50	x50L
-20D	1.5	55	x55L	1.5	55	x55L
-25D		60	x60L		60	x60L
-30D	· · · · ·	65	x65L		65	x65L
(N)CQ2KWB20-5D		40	M5x40L		40	M5x40L
-10D		45	x45L		45	x45L
-15D		50	x50L		50	x50L
-20D		55	x55L	8	55	x55L
-25D		60	x60L		60	x60L
-30D	6.5	65	x65L		65	x65L
-35D		70	x70L		70	x70L
-40D		75	x75L		75	x75L
-45D	1	80	x80L		80	x80L
-50D		85	x85L		85	x85L
N)CQ2KWB25-5D		45	M5x45L		45	M5x45L
-10D		50	x50L		50	x50L
-15D		55	x55L		55	x55L
-20D		60	x60L		60	x60L
-25D		65	x65L	4.0	65	x65L
-30D	8.5	70	x70L	10	70	x70L
-35D		75	x75L		75	x75L
-40D		80	x80L		80	x80L
-45D		85	x85L		85	x85L
-50D		90	x90L		90	x90L
(N)CQ2KWB32-5D		50	M5x50L		45	M5x45L
-10D		55	x55L		50	x50L
-15D		60	x60L		55	x55L
-20D		65	x65L		60	x60L
-25D		70	x70L		65	x65L
-30D	11	75	x75L	7.5	70	x70L
-35D		80	×80L		75	x75L
-40D		85	x85L		80	x80L
-45D		90	×90L		85	x85L
-50D		95	x95L		90	x90L



Model	С	D	Mounting bolt
(N)CQ2KWB40-5D		45	M5x45L
-10D		50	x50L
-15D		55	x55L
-20D		60	x60L
-25D		65	x65L
-30D	7	70	x70L
-35D	1	75	x75L
-40D		80	x80L
-45D		85	x85L
-50D		90	x90L
(N)CQ2KWB50-10D	12.5	55	M6x55L
-15D		60	x60L
-20D		65	x65L
-25D		70	x70L
-30D		75	x75L
-35D	12.5	80	x80L
-40D		85	x85L
-45D		90	x90L
-50D		95	x95L
(N)CQ2KWB63-10D		55	M8x55L
-15D		60	x60L
-20D		65	x65L
-25D		70	x70L
-30D	10.5	75	x75L
-35D	13.5	80	x80L
-40D		85	x85L
-45D		90	x90L
-50D		95	x95L

# **Copper Free Series Air Cylinder**

20 -CQ2KWB Bore Size

ize Stroke D (M)

• 016, 020, 025, 032, 040, 050, 063

To protect against adverse effects on cahode 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**

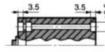
Model	20- Non-Rotating
Bore Size	ø16, ø20, ø25, ø32, ø40, ø50, ø63
Proof Pressure	217psi {15.3kgf/cm <sup>2</sup> }
Max. Operating Pressure	145psi {10.2kgf/cm <sup>2</sup> }
Rubber cushion	None
Porting	Threaded
Piston Speed	2~20in/s (50~500mm/s)
Mounting	Through hole
Auto Switch	Capable
lounting	Through hole

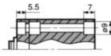
# Through Hole / (N)CQ2KWB

012~025

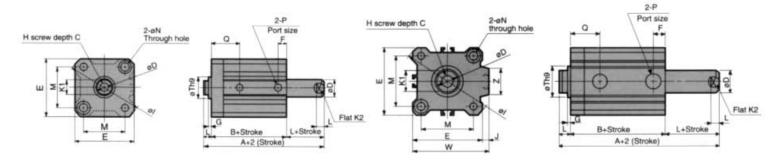








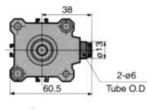
ø32

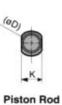


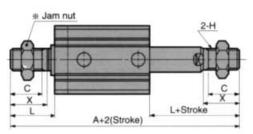
### Standard

Bore size	Stroke	A	в	œ₽ C	NCQ2 C	D	E	F	G	CQ2 H	NCQ2 inch H	1	J	К1	к2	L	м	N	Ρ	Orifice	a	Th	9	w	z
12	5~30	37.2	30.2	6	5.4	6	25	10	1.5	M3x0.5	#8-32	32	-	5.2	5	3.5	15.5	3.5	M5x0.8	1	15	15 .8	.043	•	ŀ
16	5~30	38	31	8	5.4	8	29	10	1.5	M4x0.7	#8-32	38	-	6	6	3.5	20	3.5	M5x0.8	1	15	20 .8	.052		ŀ
20	5~50	43	34	7	7	10	36	9.5	2	M5x0.8	#10-32	47	•	8	8	4.5	25.5	5.5	M5x0.8	1	17.5	13 .8	.043		ŀ
25	5~50	47	37	12	10	12	40	11	2	M6x1.0	1/4-28 UNF	52	-	10	10	5	28	5.5	M5x0.8	1	19	15 -8	.043		-
	5	F0 F	00.5	40		40	45	10.5											M5x0.8			04 0	,		
32	10~50	53.5	39.5	13	13.3	16	45	12.5	2	M8x1.25	5/16-24UNF	60	4.5	14	14	7	34	5.5	1/8	1.7	21.5	21 -0	0.052	49.5	14

# One Touch Fitting / ø32







mm

# NCQ2 Male Rod End

Bore size	×	H Inch	L	К1	A
12	8	#8-32UNC	11.5	5.2	53.2
16	8	#8-32UNC	11.5	6	54
20	8	#10-32UNF	12.5	8	59
25	9.5	1/4-28UNF	14.5	10	66
32	12.7	5/16-24UNF	19.7	14	78.9

"C" dim. not applicable.

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

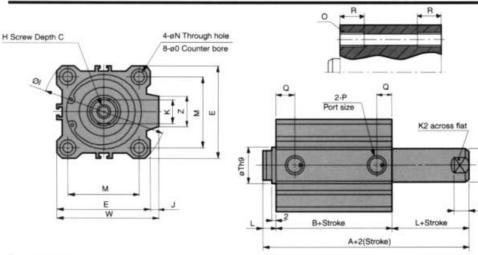
# CQ2 Male Rod End

Bore size	с	x	н	L	К1	A
12	9	10.5	M5x0.8	14	5.2	58.2
16	10	12	M6x1.0	15.5	6	62
20	12	14	M8x1.25	18.5	8	71
25	15	17.5	M10x1.25	22.5	10	82
32	20.5	23.5	M14x1.5	28.5	14	96.5

mm

mm

# Bore Size ø40~ø63



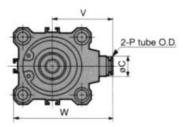
(N)CQ2KWA	
Both Ends Tap	ped
Comments of the second s	1 California

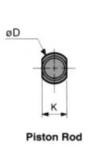
9

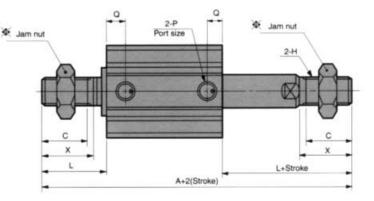
Bore size	CQ2 O	NCQ2 inch O	R
40	M6x1.0	1/4 - 20 UNC	10
50	M8x1.25	5/16 - 18 UNC	14
63	M10x1.5	7/16 - 14 UNC	18

# Standard

Bore size	Stroke (mm)	A	в	CQ2	NCQ2 C	D	E	CQ2 H	NCQ2 Inch H	L	J	к	К2	L	м	N	0	P	Orifice	Q	Т	h9	w	z
40	5~50	54	40	13	18.3	16	52	M8x1.25	3/8-24UNF	69	5	14	14	7	40	5.5	9 depth 7	1/8	2	14	28	8.052	57	14
50	10~50	56.5	40.5	15	17.6	20	64	M10x1.5	1/2-20UNF	86	7	18	17	8	50	6.6	11 depth 8	1/4	2.2	14	35	-8.062	71	19
63	10~50	58	42	15	17.6	20	77	M10x1.5	1/2-20UNF	103	7	18	17	8	60	9	14 depth 10.5	1/4	3	15.5	35	-8.062	84	19







# 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

# NCQ2 Male Rod End

Bore size	x	H Inch	L	к	A
40	16	3/8-24UNF	23	14	86
50	19.5	1/2-20UNF	27.5	18	95.5
63	19.5	1/2-20UNF	27.5	18	97

mm

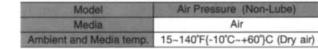
\* Rod end nut and accessories are detailed on p. 6.

CQ2	2 Ma	ale F	Rod End			mm
Bore size	С	x	н	L	к	A
40	20.5	23.5	M14x1.5	28.5	14	97
50	26	28.5	M18x1.5	33.5	18	107.5
63	26	28.5	M18x1.5	33.5	18	109

# SNC Standard / Double Acting Double Rod Non-Rotating

# (N)CDQ2KW Series

# **Standard Specifications**



NOTE Part Number for Auto Switches

Please refer to p. 74 for part order sequence

ø12~ø25

ø32

The rest of the specifications are the same as that of standard (See p. 75)

### Weight Adder

Bore size	10.10	12	16	20	25	32	40	50	63
Both ends tapped			-				0.013	0.013	0.042
Rod end M thread	Thread	0.007	0.013	0.026	0.053	0.115	0.119	0.234	0.234
Hoo end M inread	Nut	0.004	0.009	0.018	0.035	0.075	0.075	0.141	0.141
W/ one touch fitting		-	-	-	-	0.026	0.026	0.046	0.046

### Auto Switch Mounting Avaible / Minimum Stroke

# of Auto Switch Mounting	D-F7DV D-J79C	D-A7 D-A8 D-A73C D-A80C	D-F70WV	D-A70H D-A80H D-F70 D-J79	D-A79W	D-F7DW 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.

# Weight / Single Acting: Single Rod

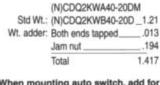
Bore														
size	5	10	15	20	25	30	35	40	45	50				
12	0.18	0.20	0.22	0.23	0.25	0.27	•	•	-	-				
16	0.23	0.25	0.28	0.30	0.32	0.35	-	•	•	•				
20	0.37	0.41	0.45	0.49	0.52	0.56	0.60	0.64	0.67	0.71				
25	0.51	0.55	0.58	0.62	0.66	0.70	0.73	0.77	0.81	0.85				
32	0.60	0.65	0.70	0.75	0.81	0.86	0.91	0.97	1.02	1.07				
40	1.01	1.08	1.15	1.21	1.28	1.35	1.42	1.49	1.56	1.63				
50	-	1.50	1.60	1.70	1.80	1.90	2.00	2.09	2.19	2.29				
63	-	2.00	2.08	2.17	2.26	2.34	2.43	2.51	2.60	2.69				

### Parts List

No.	Description	Material	Remarks			
1	Cylinder tube	Aluminum alloy	Hard anodized			
2	Piston	Aluminum alloy	Chromate			
0	Piston rod A	Stainless steel	Bore ø12~ø25			
3	FISION TOU A	Carbon steel	Bore #32-#63, hard chrome plate			
4	Piston rod B	Stainless steel	Bore ø12~ø25			
	FISION TOU B	Carbon steel	Bore #32-#63, hard chrome plated			
5	Collar	Brass	Bore ø12 Black chromate			
0	Collar	Aluminum alloy	Bore ø16~ø32, Black anodized			
6	Collar	Aluminum Alloy	Bore ø40~ø63, Black anodized			
7	Collar	Bearing grade aluminum	Bore ø12~ø40, Black anodized			
-	Collar	Aluminum Alloy	Bore ø50~ø63, Black anodize			
8	Retaining ring	Carbon tool steel	phosphate coating			
9	Bushing	Sintered alloy	Bore ø16~ø63			
10	Bushing	Lead tin bronze casting	ø12~ø25, Black chromate			
11	Bolt	Steel alloy	ø12~ø25, Black chromate			
12	Bolt	Steel alloy	ø32, Nickel plated			
13	Set screw	Steel alloy	ø40~ø63, Black coating			
14	Magnet	-	•			
19	Piston gasket	NBR				

### Seals List

No.	Description	Material	Parts No.										
140.	Description	WRITELISE	012	016	020	025	032	040	050	063			
15	Piston seal	NBR	NLP-12-7L	NLP-16A	NLP-20A	NLP-25A	NLP-32A	NLP-40A	NLP-50A	NLP-63B			
16	Rod seal	NBR	SS-6X5.2Q	SS-8X6K2Q	SS-10X8Q	SS-12	SS-16S	SS-16S	SS-20S	SS-20S			
17	Rod seal	NBR	DYR-6K	DYR-8K	DYR-10SK	DYR-12	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z			
18	Gasket	NBR	SO-013-6	C14	C18	C22	C29	C36	C46	C60			

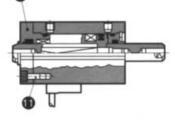


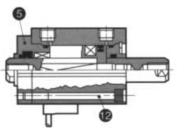
How to calculate weight (lbs.)

When mounting auto switch, add for additional mounting bracket weight

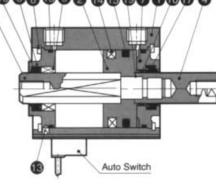
Auto Switch Mounting Bracket Weight

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





3 6 68 8 8 8 8 8 6 8 9 6 8 9 6 8 9



### Auto Switch (N)CDQ2KW Series Mounting Bolt For (N)CDQ2KWB / with Auto Switch

Special long mounting or through hole mounti s available as an option	ng Model	c	D	Mounting - bolt	C'	D'	Mounting	Model	С	D	Mounting bolt
How to Order:	(N)CDQ2KWB12-5D0	2	40	M3x40L	_	45	M3x45L	(N)CDQ2KWB40-5D		55	M5x55L
Specify the required bo	and the second se		45	x45L		50	x50L	-10D		60	x60L
	-15D0		50	x50L	6.1	55	x55L	-15D		65	x65L
xample)	-2000		55	x55L	1000	60	x60L	-20D		70	x70L
olt M3x40L Ø12~Ø32			60 65	x60L x65L		65 70	x65L x70L	-25D		75	x75L
	ALL OR OBJECT OF	5	45	M3x45L		50	M3x50L	-30D	7	80	x80L
ø40-ø63	-100		50	x50L		55	x55L	-35D		85	x85L
	-150	7.5	55	x55L	7.5	60	x60L	-40D		90	x90L
-	-200		60	x60L	1.0	65	x65L	-45D		95	x95L
Thread Pitch	-250	2	65 70	x65L x70L		70	x70L	-50D		100	x100L
M3 0.5	(N)CDQ2KWB20-50		45	M5x45L		55	x75L M5x55L	(N)CDQ2KWB50-10D	-	65	M6x65L
M5 0.8	-100		50	x50L		60	x60L	-15D		70	x70L
	-150	>	55	x55L		65	x65L	-10D		75	x75L
	-200		60	x60L		70	x70L	-250		80	x80L
M8 1.25	-251	9	65	x65L	11	75	x75L			85	
M10 1.5	-300	2	70	x70L	0.00	80	x80L	-30D	12.5	90	x85L
	-350		75 80	x75L x80L		85 90	x85L x90L	-35D			x90L
	-450		85	x85L		95	x95L	-40D		95	x95L
		5	90	x90L		100		-45D		100	x100L
Mour bolt	(N)CDQ2KWB25-5	5	45	M5x45L	-	55		-50D		105	x105L
	-100	)	50	×50L		60	x60L	(N)CDQ2KWB63-10D		65	M8x65L
	-15		55	x55L		65	x65L	-15D		70	x70L
D C	-201		60	x60L		70	x70L	-20D		75	x75L
	-250		65 70	x65L x70L	10	75 80		-25D		80	x80L
	-35		75	x75L		85	x85L	-30D	13.5	85	x85L
	-401		80	x80L		90	x90L	-35D		90	x90L
	-451		85	x85L		95	x95L	-40D		95	x95L
18	-50		90	x90L		100		-45D		100	x100L
	(N)CDQ2KWB32-5		60	M5x60L		55		-50D		105	x105L
Aounting	-10		65	x65L		60 65	x60L				
C'	-15		70	x70L x75L		70	x65L x70L				
D	-25	2	80	x75L x80L		75	x75L				
	-30		85	x85L	7.5	80					

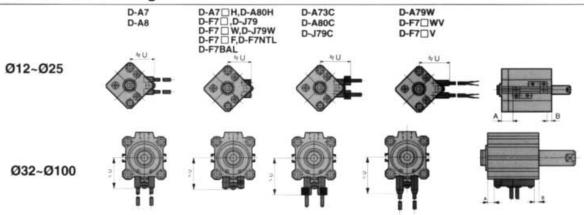
85

90 95 100 x85L

x901 x951

×100

# Auto Switch Mounting Data



90

95 100

105

x90L

x95L x100L x105L

# Auto Switch Mounting Postion

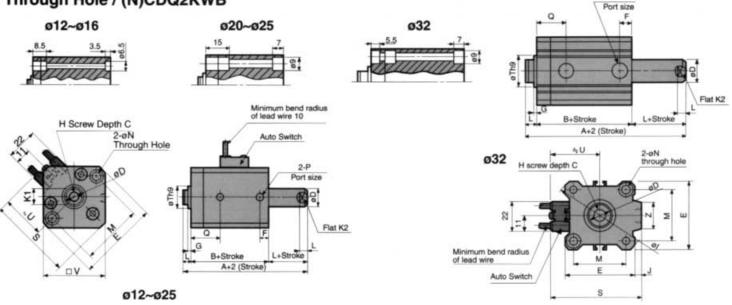
Bore Size (mm)	D-A	7•A8	D-A730	Constant of the later	D-A	79W	D-F7 D-F7 D-F7 D-J7	DF	D-F79W D-F7⊡WV		
	A	в	A	В	A	В	A	в	A	в	
12	9.5	10	10	10.5	7	7.5	14	14.5	10.5	11	
16	12.5	10.5	13	11	10	8	17	15	13.5	11.5	
20	15.5	13	16	13.5	13	10.5	20	17.5	16.5	14	
25	15.5	13	16	13.5	13	10.5	20	17.5	16.5	14	
32	18	13.5	18.5	14	15.5	11	22.5	18	19	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	

### Auto Switch Mounting Height

Bore Size (mm)	D-A7 A8	D-A70H D-J79W D-A80H D-F7BAL D-F70 D-F70F D-J79 D-F7NTL D-F70W	D-A73C D-A80C D-F7 WV	D-F7□V	D-J79C	D-A79W
	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

2-P

# Through Hole / (N)CDQ2KWB

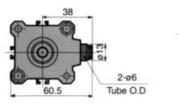


### Standard

Bore size	Stroke	A	в	CQ2 C	NCQ2 C	D	E	F	G	CQ2 H	NCQ2 inch H	1	J	К2	L	м	N	Р.	Q	s	Th9	U	v	z
12	5~30	44.4	37.4	6	5.4	6	32	10.5	1.5	M3x0.5	#8-32	•	•	5	3.5	22	3.5	M5x0.8	15.5	35.5	15 .8.04	19.5	25	-
16	5~30	48	41	8	5.4	8	38	10	1.5	M4x0.7	#8-32		•	6	3.5	28	3.5	M5x0.8	15	41.5	20 .8.05	22.5	29	-
20	5~50	55	46	7	7	10	47	10.5	2	M5x0.8	#10-32		-	8	4.5	36	5.5	M5x0.8	18.5	48	13 -8.04	24.5	36	-
25	5~50	57	47	12	10	12	52	11	2	M6x1.0	1/4-28 UNF	•	-	10	5	40	5.5	M5x0.8	19	53.5	15 -8.04	27.5	40	-
32	5-~50	63.5	49.5	13	13.3	16	45	12.5	2	M8x1.25	5/16-24UNF	60	4.5	14	7	34	5.5	1/8	21.5	58.5	21 -8.05	2 31.5	-	18

\* Orifice size ø12-ø25: 1mm, ø32: 1.7mm

# One Touch Fitting / ø32





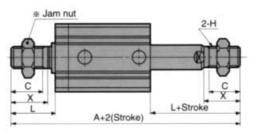
**Piston Rod** 

# NCDQ2 Male Rod End mm

Bore size	x	H Inch	L	К1	A
12	8	#8-32UNC	11.5	5.2	60.4
16	8	#8-32UNC	11.5	6	64
20	8	#10-32UNF	12.5	8	71
25	9.5	1/4-28UNF	14.5	10	76
32	12.7	5/16-24UNF	19.7	14	88.9

"C" dim. not applicable.

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



mm

# CDQ2 Male Rod End

Bore size	С	x	н	L	К1	A
12	9	10.5	M5x0.8	14	5.2	65.4
16	10	12	M6x1.0	15.5	6	72
20	12	14	M8x1.25	18.5	8	83
25	15	17.5	M10x1.25	22.5	10	92
32	20.5	23.5	M14x1.5	28.5	14	106.5

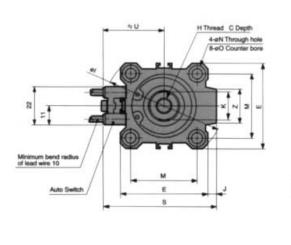
5/16 - 18 UNC

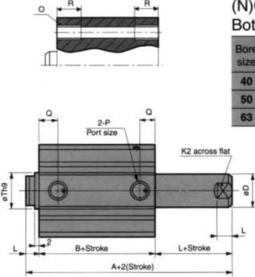
7/16 - 14 UNC

14

18

# Bore Size ø40~ø63





#### (N)CDQ2KWA **Both Ends Tapped** mm NCQ2 CQ2 Bore R 0 size M6x1.0 1/4 - 20 UNC 10 40

M8x1.25

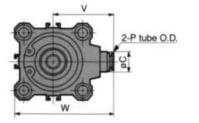
M10x1.5

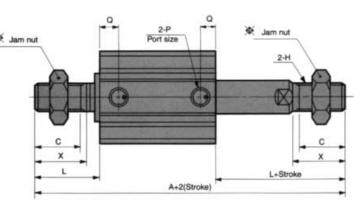
S	ta	nd	la	rd	

Dana	Stroke	1.51		000			1000	000	NCQ2		1000	100	0.00	all and			12 - 12 - 2	100	-		1000	1	mr
Bore	(mm)	A	в	C	C	D	E	CQ2 H	Inch	E	J	к	K2	L	м	N	0	P*	Q	S	Th9	U	z
40	5~50	64	50	13	18.3	16	52	M8x1.25	3/8-24UNF	69	5	14	14	7	40	5.5	9 depth 7	1/8	14	66	28 -8.052	35	14
50	10~50	66.5	50.5	15	17.6	20	64	M10x1.5	1/2-20UNF	86	7	18	17	8	50	6.6	11 depth 8	1/4	14	80	35 -8.062	41	19
63	10~50	68	52	15	17.6	20	77	M10x1.5	1/2-20UNF	103	7	18	17	8	60	9	14 depth 10.5	1/4	15.5	93	35 -8.062	47.5	19

\*Orifice size: ø40=2mm, ø50=2.2mm, ø63=3mm The above Auto Switch is used for D-A73 and D-A80.

The Auto Switch set position and mounting height: See p.81





# **One Touch Fittings**

_	_	_	_	
Bore size	С	P	v	w
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	к	A
40	16	3/8-24UNF	23	14	96
50	19.5	1/2-20UNF	27.5	18	105.5
63	19.5	1/2-20UNF	27.5	18	107

<sup>&</sup>quot;C" dim. not applicable.

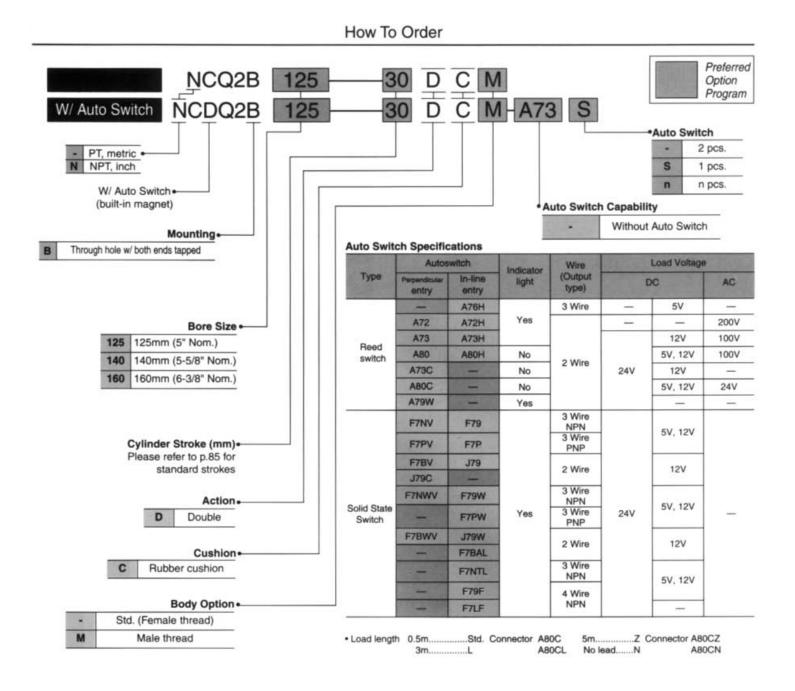
₩ Rod end nut and accessories are detailed on p. 6.

CQ2 Male Rod End							
Bore size	С	x	н	L	к	A	
40	20.5	23.5	M14x1.5	28.5	14	107	
50	26	28.5	M18x1.5	33.5	18	117.5	
63	26	28.5	M18x1.5	33.5	18	119	



# SNC Large Bore Compact Cylinder: Standard / Double Acting Single Rod NCQ2 / CQ2 Series

ø125, ø140, ø160





# Compact Cylinder: Standard / Large Bore Double Acting Single Rod

# (N)CQ2 Series

# Model

	Bore Size		125	140	160
Type	Mounting	Through hole (std) Both ends tapped	•	•	•
fel	Buil	t-In Magnet	٠	•	٠
ressu	Piping Method	Threaded PT or NPT	3/8	3/8	3/8
Air-	Rod Er	d Male Thread	٠	•	•
	W/Ru	bber Cushion	٠	•	•

# Standard Specifications

Media	and the second	Air		
Proof Pressure	and the second second	217psi {15.3kgf/cm <sup>2</sup> }		
Max. Operating Pressure	COLUMN STREET	145psi {10.2kgf/cm <sup>2</sup> }		
Min. Operating Pressure		7.23{0.51kgf/cm <sup>2</sup> }		
Ambient and Madia temp	w/out Autoswitch	15~160°F{-10°C-+70°C} (At freezing temp. air must be dry)		
Ambient and Media temp.	w/ Autoswitch	15~140°F{-10°C-+60°C} (At freezing temp. air must be dry)		
Rubber cushion		Rubber Cushion (std.)		
Rod end thread	Demonstration of the second	Female Thread (std.)		
Rod end thread tolerance		JIS Class 2		
Stroke Length tolerance		+1,4 mm		
Mounting		Through hole, both ends tapped		
Piston Speed	10 10 1820	2~20in/s (50~500mm/s)		

### Double acting/ Single rod

1	Т

Standard St	Stroke
-------------	--------

Bore size	Standard stroke		
125, 140,	10, 20, 30, 40, 50, 75, 100,		
160	125, 150, 175, 200, 250, 300		

 Available intermediate strokes
 Intermediate strokes in 5mm increments are available by installing a spacer into the STD, stroke cylinder.
 Example] (N)CQ2B125-160DCis done by installing a 15mm (w)spacer into the std, cylinder in (N)CQ2B125-175DC.

lbs.

lbs.

# Weight / Large Bore Single Acting: Single Rod

Bore Size							Stroke (mm)						
(mm)	10	20	30	40	50	75	100	125	150	175	200	250	300
125	12.08	12.66	13.23	13.80	14.38	15.81	17.22	18.65	20.09	21.52	22.95	25.82	28.69
140	14.31	14.95	15.61	16.27	16.93	18.57	20.22	21.85	23.51	25.14	26.79	30.08	33.36
160	19.76	20.53	21.32	22.12	22.91	24.89	26.88	28.86	30.85	32.83	34.82	38.79	42.73

mm

# Cautions

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

O • 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.

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

# (N)CQ2 Large Bore Min. Stroke w/ Switches

Switch Qty	D-F7CIV D-J79C D-F7C D-J79	D-A7, D-A8 D-A73C,D-A80C D-A7 IH D-A80H	D-F70 WV D-F70 W, D-J79W D-F7BAL D-F7NF, D-F7LF	D-A79W
1 pc	5mm	5mm	10mm	15mm
2 pcs	5mm	10mm	15mm	20mm

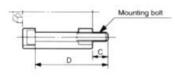
### **Theoretical Force**

Bore size	Rod	Rod Operating Pressure				
(mm)	direction	50	75	100		
105	IN	872	1308	1743		
125	OUT	951	1426	1901		
140	IN	1114	1670	2227		
	OUT	1192	1789	2385		
160	IN	1479	2218	2957		
	OUT	1557	2336	3115		

Madel CO2

# Mounting Bolt For CQ2

Special long mounting bolt for through hole mounting is available as an option. How to Order: Specify the required bolts Example) Bolt M12x100L 4pcs.



Model Bore Stroke	CQ2 @125•140 *C	D	Mounting bolt	Model Bore Stroke	CQ2 #160 *C	D	Mounting bolt
10		100	M12x100L	10		110	M14x110L
20		110	x110L	20		120	x120L
30		120	x120L	30		130	x130L
40		130	x130L	40		140	x140L
50		140	x140L	50	27.7	150	x150L
75		165	x165L	75		175	x175L
100	22.9	190	x190L	100		200	x200L
125		215	x215L	125		225	x225L
150		240	x240L	150		250	x250L
175		265	x265L	175		275	x275L
200		290	x290L	200		300	×300L
250		340	x340L	250		350	x350L
300		390	x390L	300		400	x400L

Madal CO2

### **Mounting Washers**

	0125, 140	ø160
CQ2	M12S(CQ2)	M14S(CQ2)
NCQ2	M12S(CQ2)	UIUSP-96025

۶r. \*\* Mounting bolt and dimensions are the same for switch capable design.

### How to obtain the total weight (lbs) (N)CDQ2B125-30DCM

Std wt.: Wt. adder:	(N)CDQ2B125-30DC Magnet Male rod w/ nut	13.23 0.132 1.037
	Total	14.399 lbs.

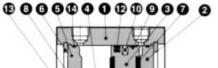
Weight Adde	er			lbs.
Bore size		ø125	ø140	ø160
Rod end M thread	Thread	0.684	0.684	1.058
Hou enu minieau	Nut	0.353	0.353	0.573
Auto switch magnel		0.132	0.154	0.176

Pitch
1.72
2

When mounting auto switch, add for additional mounting bracket weight Auto Switch Mounting Bracket Weight

Part no.	Applicable cyllinder bore size	Weight Ibs.
BQ-2	125~160	.003

# Construction / Parts List

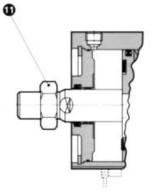


### Parts List

No.	Description	Material	Remarks
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover	Aluminum alloy	Black anodized
3	Piston	Aluminum alloy	Chromate
4	Piston rod	Carbon steel	Hard chrome plated
5	Collar	Aluminum alloy	Black anodized
6	Retaining ring	Carbon tool steel	Phosphate coating
7	Bumper	Polyurethane rubber	
8	Bushing	Sintered alloy	Oil impregnated
9	Wear ring	Phenolic	
10	Magnet	-	(N)CDQ2 only
11	Rod end nut	Carbon steel	

### **Double Acting / Single Rod**

Auto switch

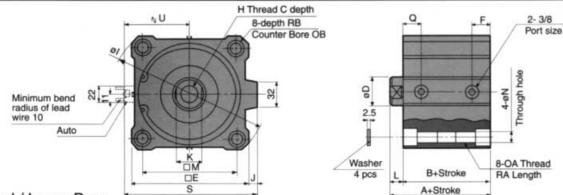


Male Thread with Jam Nut

### Seals List

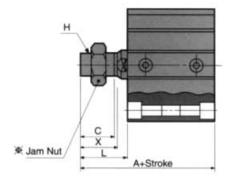
No.	Description	Material	Parts No.			
INO.	Description	Materiai	ø125	ø140	ø160	
12	Piston seal	NBR	NLP-125A	NLP-140A	NLP-150A	
13	Rod seal	NBR	PDU-36Z	PDU-36Z	PDU-40Z	
14	Gasket	NBR	C120	C135	C155	

# Series (N)CQ2 Large Bore Compact Cylinder: Standard / Double Acting Single Rod



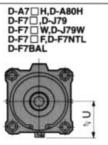
# Standard / Large Bore

Bore size	Stroke	A	в	CQ2 C	NCQ2 C	D	E	F	CQ	2	NCQ2 Inch H	1
125	10, 20, 30, 40,	99	83	30	30	36	142	24.5	M22x	2.5	3/4-16	190
140	50, 75, 100, 125, 150, 175,	99	83	30	30	36	158	24.5	M22x	2.5	3/4-16	210
160	200, 250, 300	108	91	33	33	40	178	27.5	M24	х3	3/4-16	238
Bore	Stroke		Q2	OB	Q	RA	RB	s	U	0	rifice	Note
125	10, 20, 30, 40,	9/16	6-12	21.2	24.5	25	18.4	163	81		6	
140	50, 75, 100, 125, 150, 175,	9/16	6-12	21.2	24.5	25	18.4	178	89		7	Note
160	200, 250, 300	5/8	-11	24.2	27.5	28	21.2	198	99		8	C



# Auto Switch Mounting Data

D-A7 D-A8 



# Auto Switch Mounting Postion

Bore D-A7 Size D-A8 (mm)		D-A70 H-A80H D-A73C-A80C D-F70 +F70 V D-J79C, J79	D-A79W	D-F7NTL	D-F7PW D-J79W D-F79F D-F7LF D-F7BAL	D-F79W D-F7⊡WV	
	A	A	A	A	A	A	
125	32.5	33	30	38	37	33.5	
140	32.5	33	30	38	37	33.5	
160	36.5	37	34	42	41	37.5	

Note 1) When mounting cylinder with through hole, be sure to use washer.

CQ2

N

12.5

12.5

14.5

M

114

128

144

NCQ2

N

12.2

12.2

13.7

mm

mm

CQ2

OA

M14x2

M14x2

M16x2

Note 2) Dimensions are the same for standard and switch capable.

L

16

16

17

J

11

10

10

ĸ

32

32

36

### CQ2 Male Rod End

Bore A		c	н	L	×	
125			M30x1.5	58	45	
140	141	42	M30x1.5	58	45	
160	155	47	M36x1.5	64	50	

### NCQ2 Male Rod End

Bore size	A C		NCQ2 H Inch	L	×
125	141	42	1-1/4"-12	58	45
140	141	42	1-1/4"-12	58	45
160	155	47	1-3/8"-12	64	50

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



**D-A79W** 

D-F7 WV D-F7 V



### Auto Switch Mounting Height

luto S	witch	Mounting H	eignt			m
Bore Size (mm)	D-A7 H D-J79 D-A80H D-F7B D-A7 D-F7 D-F77 D-A8 D-J79 D-F7N D-F7 W		D-A73C D-A80C D-F7	D-F7□V	D-J79C	D-A79W
	U	U	U	U	U	U
125	80	81	87	83.5	85.5	82.5
140	88	89	95	91.5	93.5	90.5
160	98	99	105	101.5	103.5	100.5

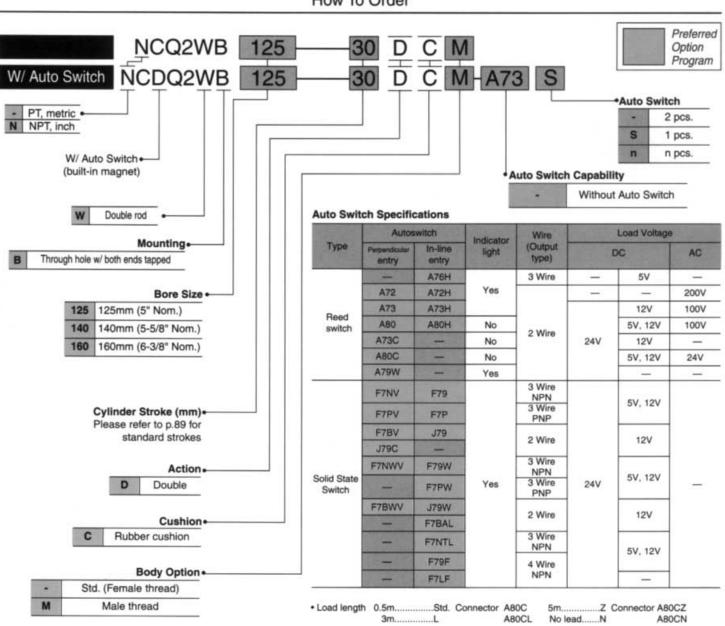
D-A73C

D-A80C D-J79C



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

ø125, ø140, ø160





Compact Cylinder: Standard / Large Bore Double Acting Double Rod

# (N)CQ2W Series



	Bon	e Size	125	140	160	
Air-Pressure Type	Mounting	Through hole (std) Both ends tapped	•	•	•	•
	Built-In Magnet		۲	۲	•	
	Piping Method	Threaded PT or NPT	3/8	3/8	3/8	
	Rod End Male Thread W/Rubber Cushion		•	•	۲	
			۲	•	•	

# Standard Specifications

Media	Charles of the	Air
Proof Pressure	CONTRACTOR OF	217psi {15.3kgf/cm <sup>2</sup> }
Max. Operating Pressure		145psi {10.2kgf/cm <sup>2</sup> }
Min. Operating Pressure		7.23{0.51kgf/cm <sup>2</sup> }
Ambient and Madia temp	w/out Autoswitch	15~160'F{-10'C~+70'C} (At freezing temp. air must be dry)
Ambient and Media temp	w/ Autoswitch	15~140°F{-10°C~+60°C} (At freezing temp. air must be dry)
		Rubber Cushion (std.)
Rubber cushion Rod end thread		Female Thread (std.)
Rod end thread tolerance	22/3/22/2012/11	JIS Class 2
Stroke Length tolerance		+1.4 0 <sup>4</sup> mm
Mounting		Through hole, both ends tapped
Piston Speed	The second second	2~20in/s (50~500mm/s)

Double acting/ Double rod



## Standard Stroke

Bore size	Standard stroke				
125, 140,	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300				

# Weight / Large Bore Single Acting: Double Rod

Bore Size	Size Stroke (mm)											The second second	
(mm)	10	20	30	40	50	75	100	125	150	175	200	250	300
125	12.59	13.27	13.98	14.73	15.48	17.35	19.21	21.08	22.95	24.83	26.70	30.45	34.18
140	14.84	15.59	16.38	17.20	18.04	20.13	22.20	24.28	26.37	28.44	30.52	34.68	38.85
160	20.42	21.37	22.31	23.33	24.34	26.86	29.39	31.91	34.44	36.96	39.49	44.54	49.59

mm

# Cautions

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

• 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.

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

### (N)CQ2 Large Bore Min. Stroke w/ Switches

Switch Qty	D-F70V D-J79C D-F70 D-J79	D-A7, D-A8 D-A73C,D-A80C D-A7 IH D-A80H	D-F7 WV D-F7 W, D-J79W D-F7BAL D-F7NF, D-F7LF	D-A79W
1 pc	5mm	5mm	10mm	15mm
2 pcs	5mm	10mm	15mm	20mm

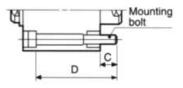
### Theoretical Force

Bore size	Operating Pressure (psi)							
(mm)	50	75	100					
125	872	1308	1743					
140	1114	1670	2227					
160	1479	2218	2957					

lbs.

# Mounting Bolt For CQ2W

Special long mounting bolt for through hole mounting is available as an option. How to Order: Specify the required bolts. Example) Bolt M12x100L 4pcs.



Bore	0125•140 *C	D	Mounting bolt	Bore	ø160	D	Mounting bolt
10		100	M12x100L	10		110	M14x110L
20		110	x110L	20		120	x120L
30	22.9	120	x120L	30		130	x130L
40		130	x130L	40		140	x140L
50		140	x140L	50		150	x150L
75		165	x165L	75		175	x175L
100		190	x190L	100	27.7	200	x200L
125		215	x215L	125		225	x225L
150		240	x240L	150		250	x250L
175		265	x265L	175		275	x275L
200		290	x290L	200		300	x300L
250		340	x340L	250		350	x350L
300		390	x390L	300		400	x400L

**Mounting Washers** 

	e125, 140	ø160
CQ2	M12S(CQ2)	M14S(CQ2)
		UIUSP-96025

\* The "C" dimension includes the thickness of the standard mounting washe \*\* Mounting bolt and dimensions are the same for switch capable design.

# How to obtain the total weight (lbs) (N)CDQ2WB125-30DCM



Neight Adder Ibs.									
Bore size	ø125	ø140	ø160						
Rod end M thread	Thread	1.367	1.367	2.117					
	Nut	0.706	0.706	1.147					
Autoswitch magnet	0.132	0.154	0.176						

Thread	Pitch
M12	1.72
M14	2

Ī

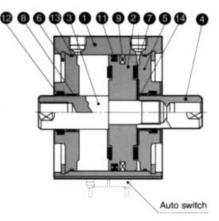
When mounting autoswitch, add for additional mounting bracket weight Autoswitch Mounting

 
 Bracket Weight

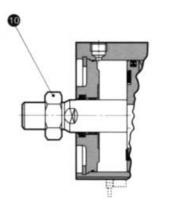
 Part no.
 Applicable cyllinder bore size
 Weight Ibs.

 BQ-2
 125 ~ 160
 .003

# Construction / Parts List



Double Acting / Double Rod



Male Thread with Jam Nut

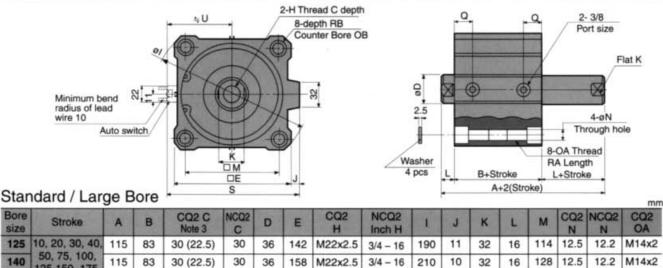
### Parts List

No.	Description	Material	Remarks
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Chromate
3	Piston rod A	Carbon steel	Hard chrome plated
4	Piston rod B	Carbon steel	Hard chrome plated
5	Collar	Aluminum alloy	Black anodized
6	Retaining ring	Carbon tool steel	Phosphate coating
7	Bumper	Polyurethane rubber	-
8	Bushing	Lead bronze alloy	
9	Magnet	-	(N)CDQ2 only
10	Rod end nut	Rolled steel	Nickel plated
14	Gasket	NBR	

### Seals List

No.	Description	Material	Parts No.				
	Description	Materia	ø125	ø140	ø160		
11	Piston seal	NBR	NLP-125A	NLP-140A	<b>NLP-160A</b>		
12	Rod seal	NBR	PDU-36Z	PDU-36Z	PDU-40Z		
13	Gasket	NBR	C120	C135	C155		

# Large Bore Compact Cylinder: Standard / Double Acting Double Rod



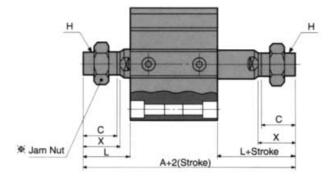
16

238

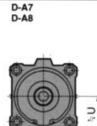
10

125 150 175	115	03	30 (2	(2.5)	30	30	120	MZZ	X2.5	3/4	-
				33 (26.5)		40	178	M24x3		3/4	-
te Stroke		and the second	ОВ	Q	RA	RB	s	U	Orif	lice	1
10, 20, 30, 40.	9/16	- 12	21.2	24.5	25	18.4	163	81	6	;	
	9/16	- 12	21.2	24.5	25	18.4	178	89	7		1
200, 250, 300	5/8	- 11	24.2	27.5	28	21.2	198	99	8	1	
	200, 250, 300 Stroke 10, 20, 30, 40, 50, 75, 100, 125, 150, 175,	200, 250, 300         125           Stroke         NC           10, 20, 30, 40,         9/16           50, 75, 100,         9/16           125,150, 175,         9/16	200, 250, 300         125         91           Stroke         NCQ2 Inch OA           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12	200, 250, 300         125         91         33 (2           Stroke         NCQ2 Inch OA         OB           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12         21.2	200, 250, 300         125         91         33 (26.5)           Stroke         NCQ2 Inch OA         OB         Q           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12         21.2         24.5	200, 250, 300         125         91         33 (26.5)         33           Stroke         NCQ2 Inch OA         OB         Q         RA           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12         21.2         24.5         25	200, 250, 300         125         91         33 (26.5)         33         40           Stroke         NCQ2 Inch OA         OB         Q         RA         RB           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12         21.2         24.5         25         18.4	200, 250, 300         125         91         33 (26.5)         33         40         178           Stroke         NCQ2 Inch OA         OB         Q         RA         RB         S           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12         21.2         24.5         25         18.4         163	200, 250, 300         125         91         33 (26.5)         33         40         178         M24           Stroke         NCQ2 Inch OA         OB         Q         RA         RB         S         U           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12         21.2         24.5         25         18.4         163         81	200, 250, 300         125         91         33 (26.5)         33         40         178         M24x3           Stroke         NCQ2 Inch OA         OB         Q         RA         RB         S         U         Orif           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12         21.2         24.5         25         18.4         163         81         6	NCQ2         OB         Q         RA         RB         S         U         Orifice           10, 20, 30, 40, 50, 75, 100, 125, 150, 175,         9/16 - 12         21.2         24.5         25         18.4         163         81         6

Note 3) Thread depth for 10 stroke ( )



Auto Switch Mounting Data



Auto Switch Mounting Position

D-A7 H+A80H

D-A73C+A80C

D-F70+F70V

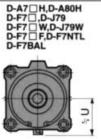
A

33

33

37

D-J79C, J79





D-A73C

D-A80C

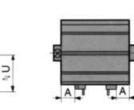
D-J79C



**D-A79W** 

D-F7 V

D-F7 WV



### Auto Switch Mounting Height

huito c	WILCI	i wounting i i	eigin			mm
Bore Size (mm)	D-A7 D- 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 I WV	D-F7 🗆 V	D-J79C	D-A79W
	U	U	U	U	U	U
125	81	81	87	83.5	85.5	82.5
140	89	89	95	91.5	93.5	90.5
160	99	99	105	101.5	103.5	100.5

Note 1) When mounting cylinder with through hole, be sure to use washer.

17

144

14.5

13.7

mm

mm

M16x2

Note 2) Dimensions are the same for standard and switch capable.

36

### CQ2 Male Rod End

Bore size	A	c	н	L	×
125	199	42	M30x1.5	58	45
140	199	42	M30x1.5	58	45
160	219	47	M36x1.5	64	50

### NCQ2 Male Rod End

Bore size	A	c	н	L	x
125	199	42	1-1/4 - 12	58	45
140	199	42	1-1/4 - 12	58	45
160	219	47	1-3/8 - 12	64	50

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

D-A79W D-F7NTL

A

38

38

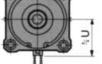
42

A

30

30

34





D-F79W

D-F7OW

A

33.5

33.5

37.5

F7P D-J79W D-F79F D-F7LF D-F7BAL

A

37

37

41



Bore

Size

(mm)

125

140

160

D-A7

D-A8

A

32.5

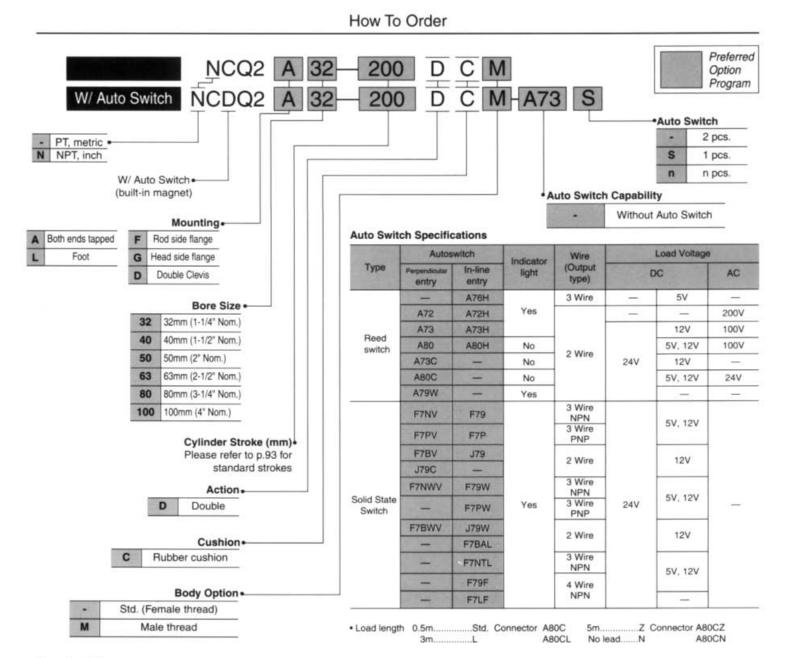
32.5

36.5



# SNC Long Stroke Compact Cylinder: Standard / Double Acting Single Rod NCQ2 / CQ2 Series

ø32, ø40, ø50, ø63, ø80, ø100



### Mounting Kit

Bore Size (mm)	Note 1) Foot	Flange	Note 3) Double clevis	
32	(N)CQ-L032	(N)CQ-F032	(N)CQ-D032	
40	(N)CQ-L040	(N)CQ-F040	(N)CQ-D040	
50	(N)CQ-L050	(N)CQ-F050	(N)CQ-D050	
63	(N)CQ-L063	(N)CQ-F063	(N)CQ-D063	
80	(N)CQ-L080	(N)CQ-F080	(N)CQ-D080	
100	(N)CQ-L100	(N)CQ-F100	(N)CQ-D100	

Note 1) If foot bracket is required for a cylinder, order a pair

Note 2) 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 3) The double-clevis is packaged with clevis pin and snap ring.

# Long Stroke Compact Cylinder Standard / Double Acting Single Rod

# (N)CQ2 Series

Model

Bore Size		32	40	50	63	80	100	
8	Built-In Ma	agnet	•	٠	•	٠	•	•
T.	Piping Method	Threaded PT or NPT	1/8	1/8	1/4	1/4	3/8	3/8
Air	Rod End Mal	e Thread	•	•	•	•	•	•

### Standard Specifications

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		
Lubrication	Non-Lube	
Rubber cushion	Rubber Cushion (std.)	
Rod end thread	Female Thread (std.)	
Rod end thread tolerance	JIS Class 2	
Stroke Length tolerance	*0 <sup>4</sup> mm	
Mounting	Both ends tapped	
Piston Speed 2~20 in/sec (50~500mm/s)		

psi

mm

Double acting/ Single rod

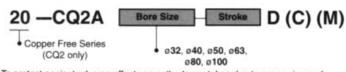
SMC



### Standard Stroke

Bore size	Standard stroke				
32, 40, 50, 63, 80, 100	125, 150, 175, 200, 250, 300				

# Copper Free Series Air Cylinder



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.



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

• 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.

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

# Min. Operating Pressure

Bore size	Min. Operating Pressure
32, 40, 50, 63, 80, 100	7.25

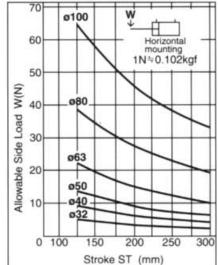
### · Available intermediate strokes

Intermediate strokes in 5mm increment are available by installing a spacer into the STD. stroke cylinder. Example] (N)CQ2B50-165DC is done by installing a 10mm spacer into the std. cylinder in (N)CQ2B50-175DC.

### Specifications (Copper Free)

Operating	Double Acting Single Rod.
Bore size	ø32, ø40, ø50, ø63, ø80, ø100
Proof pressure	217 psi {15.3kgf/cm <sup>2</sup> }
Max. operating pressure	145 psi {10.2kgf/cm <sup>2</sup> }
Rubber cushion	Available Standard
Piping method	Threaded
Piston speed	2 ~20 in/sec (50~500mm/s)
Mounting	Through Hole - Both Ends Tapped
Auto Switch	Auto Switch Capable

### Rod End Allowable Side Load



# Long Stroke Compact Cylinder: Standard / Double Acting Single Rod

#### Weight / Long Stroke Single acting: Single rod lbs

-						100		
Bore	Stroke							
size (mm)	125	150	175	200	250	300		
32	1.66	1.89	2.13	2.36	2.82	3.29		
40	2.08	2.34	2.60	2.86	3.38	3.90		
50	3.24	3.64	4.04	4.43	5.24	6.04		
63	3.99	4.45	4.91	5.38	6.29	7.21		
80	6.88	7.62	8.36	9.10	10.59	12.07		
100	10.93	11.85	12.77	13.27	15.53	17.36		

### How to obtain the total weight (lbs) (N)CQ2D32-200DCM

Std wt.: Wt. adder:	(N)CQ2A32-200DC Rod end male w/ nut Double clevis	0.094
	Total	2.787 lbs.

### Weight Adder

weight Adder							
Bore size		32	40	50	63	80	100
Rod end M thread Thread				0.117			
Nut Nut		0.037	0.037	0.071	0.071	0.108	0.256
Foot mounting		0.324	0.351	0.558	0.785	1.510	2.476
Rod side flange		0.364	0.437	0.767	1.177	2.242	2.886
Head side flange		0.364	0.437	0.767	1.177	2.242	2.886
Double rear clevis		0.333	0.432	0.867	1.222	2.445	4.161
Auto switch magnet		0.020	0.030	0.032	0.052	0.053	0.084

#### When mounting auto switch, add for additional mounting bracket weight Auto Switch Mounting Bracket Weight

Part no.	Applicable cyllinder bore size	Weight Ibs.
BQ-2	32 ~ 100	.003

# Construction / Parts List

		No. Description	Material	Remarks
		1 Cylinder tube	Aluminum alloy	Hard anodized
		2 Piston	Aluminum alloy	Chromate
Q		3 Piston rod	Carbon steel	Hard chrome plated
	_II	4 Collar	Aluminum alloy	Black anodized
_0		5 Head cover	Aluminum alloy	Black anodized
+		6 Retaining ring	Carbon tool steel	Phosphate coating
		7 Bumper A	Polyurethane rubber	
	1.1	8 Bumper B	Polyurethane rubber	
		9 Bushing	Sintered alloy	ø16~ø63, oil impregnated
		10 Wear ring	Phenolic	
		11 Rod end nut	Carbon steel	Nickel plated
Seals List		12 Magnet		•
No. Description	Material	Parts No.		

### S

No.	Description	Material	the state of the s		Parts	NO.		
140.	Description	Material	032	040	ø50	063	080	ø100
13	Rod seal	NBR	DYR-16	PDU-16Z	PDU-20Z	PDU-20Z	PDU-25Z	PDU-30Z
14	Piston seal	NBR	NLP-32A	NLP-40A	NLP-50A	NLP-63B	NLP-80B	<b>NLP-100B</b>
15	Gasket	NBR	C29	C36	C46	C60	C75	C95

# Seal Kit Part Numbers







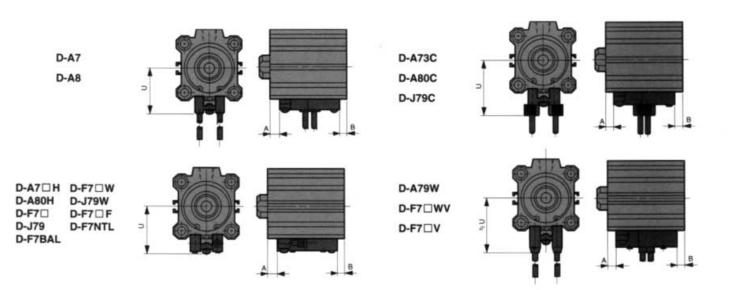
Standard Specifications

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

# How To Order

Auto Switch How To Order: See p. 92

# Auto Switch Mounting Data



### Auto Switch Mounting Position

Bore Size (mm)	D-A	7•A8	D-A730	H-A80H -A80C -J79 V-J79C	D-A	79W	D-F	DF	D-F7	
	A	B	A	B	A	В	A	В	A	В
32	9.5	17.5	10	18	7	15	14	22	10.5	18.5
40	13	23.5	13.5	24	10.5	21	17.5	28	14	24.5
50	11	24	11.5	24.5	8.5	21.5	15.5	28.5	12	25
63	13.5	25.5	14	26	11	23	18	30	14.5	26.5
80	16.5	31.5	17	32	14	29	21	36	17.5	32.5
100	19.5	38	20	38.5	17	35.5	24	42.5	20.5	39

### Auto Switch Mounting Height

Bore Size (mm)	D-A7 A8	D-A70 H D-J79W D-A80H D-F7BAL D-F70 D-F70 F D-J79 D-F7NTL D-F70 W	D-A73C D-A80C D-F7CIWV	D-F7□V	D-J79C	D-A79W
	U	U	U	U	U	U
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

### H Thread Depth C Bore Size ø32~ø100 ₹U 2-P 8-0 Thread R Depth etthe ≥ ш N 9 Wire lead bend radius 10 Auto switch κ М E B+Stroke s A+Stroke

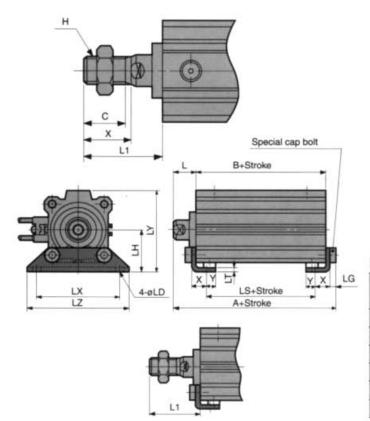
# Long Stroke Compact Cylinder: Standard / Double Acting Single Rod

### Standard / Long Stroke

Bore size	Stroke (mm)	A	в	CQ2	NCQ2 C	D	E	CQ2 H	NCQ2 Inch H	I	J	к	L	м	CQ2 O	NCQ2 Inch O	P*	Q	R	s	Th9	U	z
32		62.5	45.5	13	13.3	16	45	M8x1.25	5/16-24UNF	60	4.5	14	17	34	M6x1.0	1/4-20UNC	1/8	12.5	10	58.5	22 -8.052	31.5	14
40	125,150	72	55	13	18.3	16	52	M8x1.25	3/8-24UNF	69	5	14	17	40	M6x1.0	1/4-20UNC	1/8	14	10	66	28 -8.052	35	14
50	175, 200	73.5	55.5	15	17.6	20	64	M10x1.5	1/2-20UNF	86	7	17	18	50	M8x1.25	5/16-18UNC	1/4	14	14	80	35 -8.062	41	19
63	250, 300	75	57	15	17.6	20	77	M10x1.5	1/2-20UNF	103	7	17	18	60	M10x1.5	7/16-14UNC	1/4	16.5	18	93	35 -8.062	47.5	19
80	200, 300	86	66	21	24.3	25	98	M16x2.0	5/8-18UNF	132	6	22	20	77	M12x1.75	1/2-13UNC	3/8	19	22	112.5	43 -8.062	57.5	26
100		97.5	75.5	27	27	30	117	M20x2.5	3/4-16UNF	156	6.5	27	22	94	M12x1.75	1/2-13UNC	3/8	23	22	132.5	59 -8.074	67.5	26

\*Orifice for bore size ø32=1.7, ø40=2, ø50=2.2, ø63=3, ø80=4, and ø100=5

Note 1) Dimensions are the same for Standard and Switch Capable.



# NCQ2 Male Rod End

Bore size	×	H	LI
32	12.7	5/16-24UNF	29.7
40	16	3/8-24UNF	33
50	19.5	1/2-20UNF	37.5
63	19.5	1/2-20UNF	37.5
80	25.5	5/8-18UNF	45.5
100	28.5	3/4-16UNF	50.5

### CQ2 Male Rod End

Bore	с	x	н	L1
32	20.5	23.5	M14x1.5	38.5
40	20.5	23.5	M14x1.5	38.5
50	26	28.5	M18x1.5	43.5
63	26	28.5	M18x1.5	43.5
80	32.5	35.5	M22x1.5	53.5
100	32.5	35.5	M26x1.5	53.5

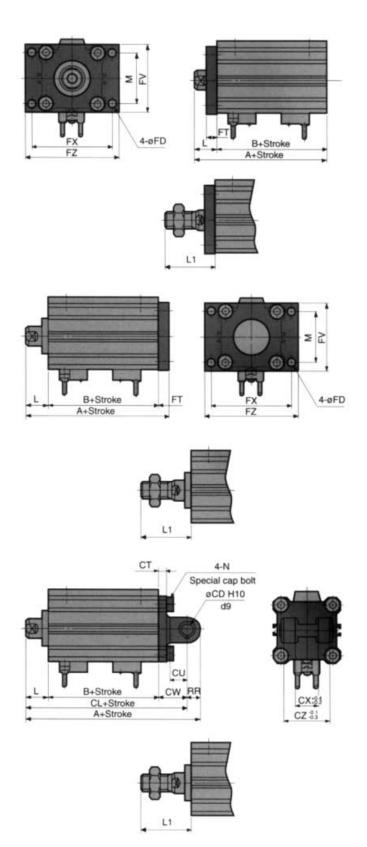
K Rod end nut and accessories are detailed on p. 6. NCQ2 "C" dim. not applicable.

# Foot / (N)CQ2L

00	t / (F	•,•	_			_		-		_	-			-	mm
Bore size	A	в	L	CQ2 L1	NCO2	LD	LG	LH	LS	LT	LX	LY	LZ	x	Y
32	69.7	45.5	17	38.5	29.7	6.6	4	30	29.5	3.2	57	57	71	11.2	5.8
40	79.2	55	17	38.5	33	6.6	4	33	39	3.2	64	64	78	11.2	7
50	81.7	55.5	18	43.5	37.5	9	5	39	32.5	3.2	79	78	95	14.7	8
63	83.2	57	18	43.5	37.5	11	5	46	31	3.2	95	91.5	113	16.2	9
80	97.5	66	20	53.5	45.5	13	7	59	36	4.5	118	114	140	19.5	11
100	110.5	75.5	22	53.5	50.5	13	7	71	41.5	6	137	136	162	23	12.5

Note 1) Dimensions are the same for Standard and Switch Capable.

# Long Stroke Compact Cylinder: Standard / Double Acting Single Rod



# Rod Flange / (N)CQ2F

Bore size	Stroke (mm)	A	в	FD	FT	FV	FX	FZ	L	CQ2 L1	NCQ2 L1	м
32	800	62.5	45.5	5.5	8	48	56	65	17	38.5	29.7	34
40	105 150	72	55	5.5	8	54	62	72	17	38.5	33	40
50	125,150	73.5	55.5	6.6	9	67	76	89	18	43.5	37.5	50
63		75	57	9	9	80	92	108	18	43.5	37.5	60
80	250, 300	86	66	11	11	99	116	134	20	53.5	45.5	77
100	2200	97.5	75.5	11	11	117	136	154	22	53.5	50.5	94

# Head Flange / (N)CQ2G

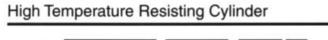
Bore size	Stroke (mm)	A	CQ2 L1	
32	1.	70.5	38.5	29.7
40	105 150	80	38.5	33
50	125,150	82.5	43.5	37.5
63	175, 200	84	43.5	37.5
80	250, 300	97	53.5	45.5
100		108.5	53.5	50.5

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

# Double Clevis / (N)CQ2D

Bore	Stroke	1000	1	CQ2	NCO2	1000	300	-	13	1360	1900	1 de
size	(mm)	A	в	CD	Inch	CL	СТ	CU	cw	CX	CZ	L
32	de Sala	92.5	45.5	10	3/8	82.5	5	14	20	18	36	17
40	125,150	104	55	10	3/8	94	6	14	22	18	36	17
50	175, 200	115.5	55.5	14	1/2	101.5	7	20	28	22	44	18
63	250, 300	119	57	14	1/2	105	8	20	30	22	44	18
80		142	66	18	5/8	124	10	27	38	28	56	20
100		164.5	75.5	22	7/8	142.5	13	31	45	32	64	22
Bore size	Stroke (mm)	CQ2 L1	NCQ2 L1		CQ2 N			co2 ich N	RR			
32	Sec. 2	38.5	29.7	N	/6x1	.0	1/4-20		10			
40	105 150	38.5	33	N	16x1.	.0	0 1/4		10			
50	125,150 175,200 250,300	43.5	37.5	M	8x1.	25	5/16-18		14			
63		43.5	37.5	M	10x1	.5	7/16-14		14			
80		53.5	45.5	M	12x1	.75	1/2	-13	18			
100	S. Le The	53.5	50.5	M	12x1	75	1/2	-13	22			

策 Rod end nut and accesories detail: see p. 6. 策 策 Clevis pin and snap ring are included in the package.





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

### Specifications

Bore Size	e12,e16,e20,e25,e32,e40,e50,e63,e80,e100					
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



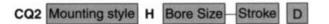
The cylinder seals have been changed to be of cold-resistant material and special grease has been added to enable its use under low-temperature conditions of down to (-40°C).

### 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



### Specifications

Bore Size	ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100
Action	Double acting
Fluid	Air
Proof pressure	213 psi {15kfg/cm <sup>2</sup> }
Max. operating pressure	140 psi {9.9kfg/cm²}
Min. operating pressure	26 psi {1.8kfg/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



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	e12,e16,e20,e25,e32,e40,e50,e63,e80,e100
Action	Double acting
Fluid	Air
Max. operating pressure	140psi {9.9kfg/cm2}
Min. operating pressure	7psi {0.5kfg/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.



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	012,016,020,025,032,040,050,063,080,010					
Action	Double acting					
Fluid	Air					
Max. operating pressure	140psi {9.9kfg/cm <sup>2</sup> }					
Min. operating pressure	7psi {0.5kfg/cm <sup>2</sup> }					
Piston velocity	.2~2 in/sec {5~50mm/sec}					

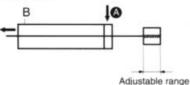
Major dimensions are the same as that of the double acting single rod, and auto switch can be attached.

# 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  $0{\sim}10$  mm.

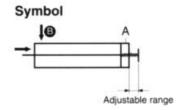
### Symbol



### Adjustable Stroke Cylinder / Retract Type



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

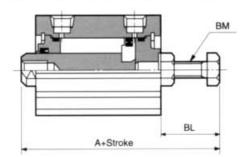


### Specifications

Bore Size	e12,e16,e20,e25,e32,e40,e50,e63,e80,e100
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 rang		
12	52 (59.2)	23.3	M5x0.8	30		
16	53 (63)	23.5	M6x1	30		
20	61 (73)	30.5	M8x1.25			
25	63.5 (73.5)	29.5	M8x1.25			
32	65.5 (75.5)	28	M8x1.25			
40	84 (94)	37	M12x1.5	50		
50	84.5 (94.5)	36	M12x1.5	30		
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			

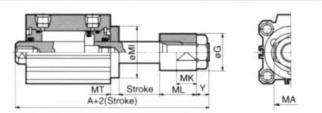
( ) Dimension for Auto Switch capable

### Specifications

Bore Size	e12,e16,e20,e25,e32,e40,e50,e63,e80,e100
Action	Double acting
Lubrication	Non-Lube
Fluid	Air
Stroke adjustment system	Adjusting bolt
Stroke adjustment range	10mm
Mounting style	Through hole

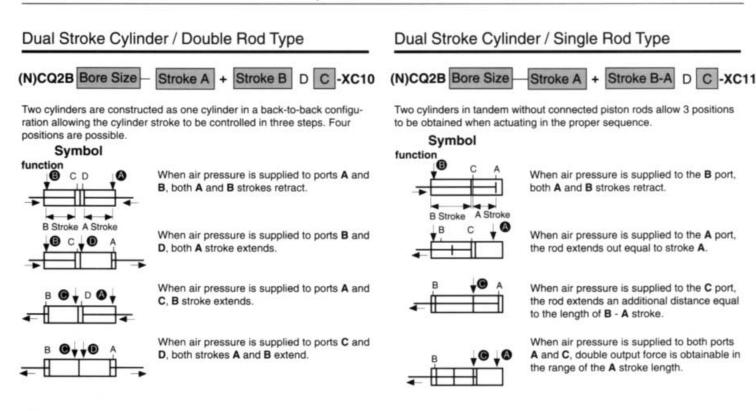
Note) Seal Kit is the same as that of the Double rod (W) option on page 27.

### Construction / Major Dimensions



Bore Size (mm)	A		Y	Y MA	MI	МК	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	30	
20	67.5	(79.5)	6.5	17		10	22.5	20		
25	71	(81)	6.5	17	□40	10	22.5	20	1	
32	78.5	(88.5)	9	24	Ø38	14	26	27		
40	88	(98)	9	24	Ø46	14	26	27	50	
50	100.5	(110.5)	14	30	Ø57	16	30	35	- 50	
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



Specifications

Bore Size

Lubrication

Mounting style

**Rubber cushion** 

Note) Seal Kit CQ2B - PS-XC11

Bore Size

(mm)

12

16

20

25

32 40

50 63

80

100

Construction / Major Dimensions

Stroke range

S1 & S2

5~30

5-50

Stroke S2

Action

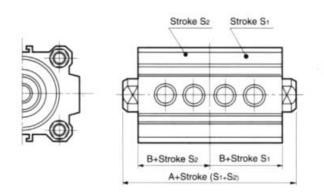
Fluid

### 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	Stroke range		+	1		B				
(mm)	S1 & S2	50 stroke or less		75,100		50 strok	e 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	5~50	55 (	75)			22.5	(32.5)	-		
32	5 400	60 (	80)	80	(80)	23	(33)	33	(33)	
40	5~100	73 (	93)	93	(93)	29.5	(39.5)	39.5	(39.5)	
50		77 (	97)	97	(97)	30.5	(40.5)	40.5	(40.5)	
63	10~100	88 (1	08)	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

### 10~50 104.5(124.5) 43.5 (53.5) 51 (61)

B2+Stroke S2

A

A+Stroke (S1+S2)

56.5 (76.5) 22.5 (32.5)

B1

45.7 (63.9) 17 (28) 25.2 (32.4)

48 (70) 18.5 (30.5) 26 (36)

50 (74) 19.5 (31.5) 26 (38)

60.5 (80.5) 23 (33) 30.5 (40.5)

125.5(145.5) 53 (63) 60.5 (70.5)

 76.5
 (96.5)
 29.5
 (39.5)
 40
 (50)

 79
 (99)
 30.5
 (40.5)
 40.5
 (50.5)

 86
 (106)
 36
 (46)
 42
 (52)

( ) Dimension for Auto Switch capable

e12,e16,e20,e25,e32,e40,e50,e63,e80,e100 Double acting

Non-Lube

Air

Through hole

Available

Stroke S1

B1+Stroke S1

B2

29 (39)

# Series (N)CQ2 Other Options: XC6, XC35

Stainless Steel Piston Rod	Coil Scraper		
(N)CQ2 Mounting style Bore Size Stroke D -XC6	(N)CQ2 Mounting style Bore Size Stroke D -XC35		
(N)CQ2W Mounting style Bore Size Stroke D-XC6	This special rod scraper is designed to remove weld flash and other		

This is used for enhanced corrosion resistance in wet environments.

# Specifications

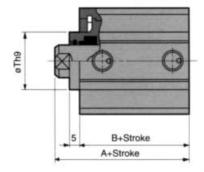
Bore Size	e12,e16,e20,e25,e32,e40,e50,e63,e80,e100 Double acting Air			
Action				
Fluid				
Lubrication Material	Non-lube			
	303 or 304 Stainless			
Mounting	Through hole (Standard) Both ends tapped			

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

undesirable contaminants.

## Specifications

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



(mm)

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

() Dimension for Auto Switch capable

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