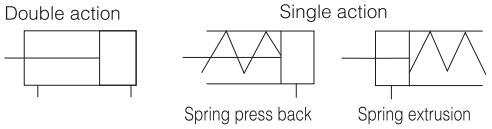
Specifications

Bore size(mm)		12	16	20	25	32	40	50	63	80	100
Fluid		Air (to be filtered by 40μm filter element)									
Action mode		Double action	Single action: spring press back/spring press out								
Minimum operating pressure	Single action	0.25		0.18		0.17	0.15	0.13	-		
	Double action	0.07				0.05					
Maximum operating pressure		1.0MPa									
Ambient and fluid temperature		Without auto switch: -10 to 70℃ (No freezing) With auto switch: -10 to 60℃ (No freezing)									
Rod end thread		Internal thread (standard), external thread (optional)									
Cushion		None									
Piston speed		50~500mm/s									
Stroke length tolerance		$^{+1.0}_{0}$									
Lubrication		Not required									
Installation form		Through hole(standard), screw hole at both ends(optional)									
Pipe size		M5×0.8				1/8"		1/4"		3/8"	

Note: If you need oil, please use turbine No.1 oil ISOVG32.

Symbol



Ordering code

N C D Q2 B □ 20 □ – 30 D □ – M9N □

Built in magnetic ring

Blank	No built-in magnetic ring
D	Built-in magnet ring

Installation form

B	Through hole (Standard)
A	Screw holes at both ends
L	Foot seat type
F	Rod side flange
G	Rodless side flange type
D	Binaural ring type

Form

Blank	Compressed air type

Bore size

12	12mm
16	16mm
20	20mm
25	25mm
32	32mm
40	40mm
50	50mm
63	63mm
80	80mm
100	100mm

Tube material

Blank	Thread piping
F*	Built-in quick-change connector

* It is only used for cylinder diameter Φ32~Φ63.
There is no built-in fast replacement mode for gas-liquid combination.

Stroke

(See table below)

Action mode

D	Double action
S	Single action (spring press back)
T	Single action (spring extrusion)

* The cylinder diameter of single acting mode is only Φ12~Φ50.

Body option

Blank	Standard (Rod end internal thread)
C	Rubber cushion Note)
M	Rod end male thread

* Combination of body options (“CM”, “FC”, “FM”, “FCM”) is available.
Note: Air-hydro type with rubber bumper is not available.

Magnetic switch type

Blank	Without magnetic switch

* Type of magnetic switch refer to itinerary/Model table of magnetic switch.
* No built-in magnetic ring.

Number of magnetic switches

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

Stroke/magnetic switch type table

Bore size (mm)	Standard stroke (mm)		*Magnetic switch type		
	Double action	Single action	Two wire contact control	Two wire contactless control	Three wire NPN
12, 16	5, 10, 15, 20, 25, 30	5, 10	3C-D-A93(V)L	M9D	M9B
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50				
32, 40	5,10,15,20,25, 30, 35, 40, 45, 50, 75, 100	10, 20			
50, 63, 80, 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100				

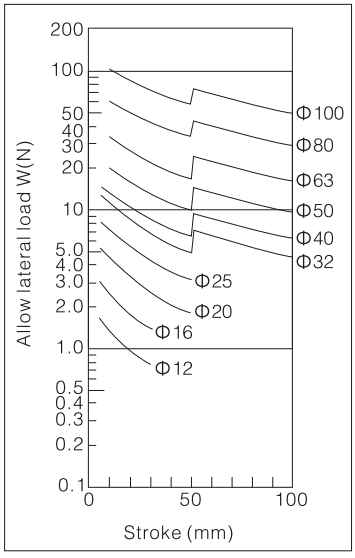
* The specifications and characteristics of magnetic switches can be referred to the magnetic open series. Behind the model of magnetic switch, the length of the attached wire indicates the mark: unlabeled-0.5m, L-3m, Z-5m
example: M9N, M9NL

Permissible kinetic energy (J)

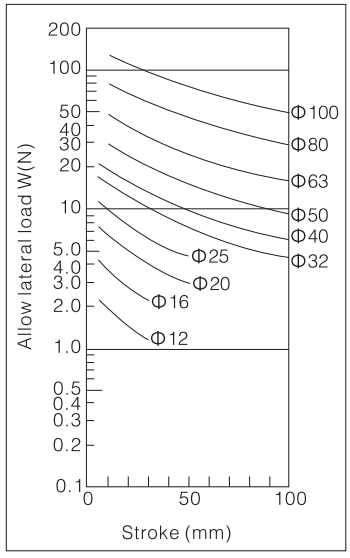
Bore size (mm)	12	16	20	25	32	40	50	63	80	100
Standard form	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
Cushioning pad	0.043	0.075	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54

Allowable lateral load at rod end

Without auto switch



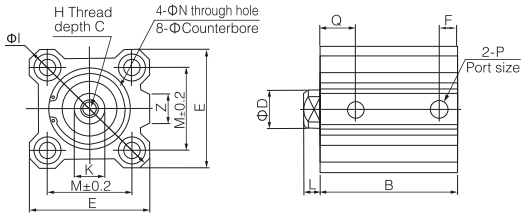
With auto switch



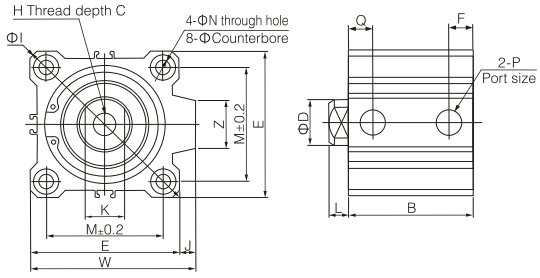
Dimensions

Through-hole Installation/NCQ2B

Φ12~Φ25



Φ32~Φ100



Double acting cylinder size table

Model	Stroke range(mm) Note 1)	B	ΦD	E	F	H	C	ΦI	J	K	L	M	ΦN	ΦO	P	Q	W	Z
NCQ2B12-□D	5~30	17	6	25	5	M3×0.5	6	32	-	5	3.5	15.5	3.5	6.5 deep 3.5	M5×0.8	7.5	-	-
NCQ2B16-□D	5~30	18.5	8	29	5.5	M4×0.7	8	38	-	6	3.5	20	3.5	6.5 deep 3.5	M5×0.8	8	-	10
NCQ2B20-□D	5~50	19.5	10	36	5.5	M3×0.5	7	47	-	8	4.5	25.5	5.5	9 deep 7	M5×0.8	9	-	10
NCQ2B25-□D	5~50	22.5	12	40	5.5	M6×1.0	12	52	-	10	5	28	5.5	9 deep 7	M5×0.8	11	-	10
NCQ2B32-□D	5	23	16	45	5.5	M8×1.25	13	60	4.5	14	7	34	5.5	9 deep 7	M5×0.8	11.5	49.5	14
	10~50				7.5										1/8"	10.5		
NCQ2B40-□D	5~50	29.5	16	52	8	M8×1.25	13	69	5	14	7	40	5.5	9 deep 7	1/8"	11	57	14
NCQ2B50-□D	10~50	30.5	20	64	10.5	M10×1.5	15	86	7	17	8	50	6.6	11 deep 8	1/4"	10.5	71	19
NCQ2B63-□D	10~50	36	20	77	10.5	M10×1.5	15	103	7	17	8	60	9	14 deep 10.5	1/4"	15	84	19
NCQ2B80-□D	10~50	43.5	25	98	12.5	M16×2.0	21	132	6	22	10	77	11	17.5 deep 13.5	3/8"	16	104	26
NCQ2B100-□D	10~50	53	30	117	13	M20×2.5	27	156	6.5	27	12	94	11	17.5 deep 13.5	3/8"	23	123.5	26

Long stroke Note 2)

Model	Stroke (mm)	B	F	P	Q
32	75,100	33	7.5	1/8"	10.5
40	75,100	39.5	8	1/8"	11
50	75,100	40.5	10.5	1/4"	10.5
63	75,100	46	10.5	1/4"	15
80	75,100	53.5	12.5	3/8"	16
100	75,100	63	13	3/8"	23

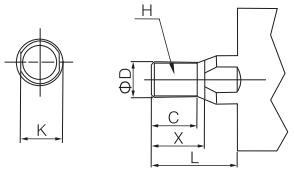
Note: 1. Standard stroke is 5 mm apart
2. Intermediate stroke (55, 60, 65, 70, 80, 85, 90, 95) between 55mm and 100mm plus 5, 10, 15 or 20mm thick pads.
3. Unless other specified, the dimensions of through-hole cylinders are the same as those of screw-hole cylinders at both ends.

Size table of single-acting cylinder

St= stroke

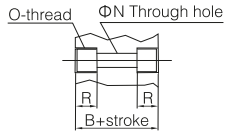
Model	B			ΦD	E	F		H	C	ΦI	J	K	L	M	ΦN	ΦO	P			Q		W	Z
	5st	10st	20st			5st	10st										5st	10st	20st	5st	10st		
NCQ2B12-□S	22	27	-	6	25	5	5	M3×0.5	6	32	-	5	3.5	15.5	3.5	6.5deep3.5	M5×0.8		-	7.5	7.5	-	-
NCQ2B16-□S	23.5	28.5	-	8	29	5.5	5.5	M4×0.7	8	38	-	6	3.5	20	3.5	6.5deep3.5	M5×0.8		-	8	8	-	10
NCQ2B20-□S	24.5	29.5	-	10	36	5.5	5.5	M5×0.8	7	47	-	8	4.5	25.5	5.5	9 deep 7	M5×0.8		-	9	9	-	10
NCQ2B25-□S	27.5	32.5	-	12	40	5.5	5.5	M6×1.0	12	52	-	10	5	28	5.5	9 deep 7	M5×0.8		-	11	11	-	10
NCQ2B32-□S	28	33	-	16	45	5.5	7.5	M8×1.25	13	60	4.5	14	7	34	5.5	9 deep 7	M5×0.8	1/8"	-	11.5	10.5	49.5	18
NCQ2B40-□S	34.5	39.5	-	16	52	8	8	M8×1.25	13	69	5	14	7	40	5.5	9 deep 7	1/8"		-	11	11	57	18
NCQ2B50-□S	-	40.5	50.5	20	64	10.5	10.5	M10×1.5	15	86	7	17	8	50	6.6	11 deep 8	-	1/4		10.5	10.5	71	22

Piston rod external thread



Bore size(mm)	C	X	ΦD	H	L	K
12	9	10.5	6	M5×0.8	14	5
16	10	12	8	M6×1.0	15.5	6
20	12	14	10	M8×1.25	18.5	8
25	15	17.5	12	M10×1.25	22.5	10
32	20.5	23.5	16	M14×1.5	28.5	14
40	20.5	23.5	16	M14×1.5	28.5	14
50	26	28.5	20	M18×1.5	33.5	17
63	26	28.5	20	M18×1.5	33.5	17
80	32.5	35.5	25	M22×1.5	43.5	22
100	32.5	35.5	30	M26×1.5	43.5	27

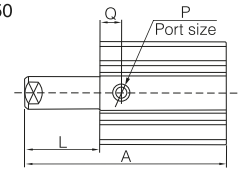
Two end screw hole installation type/NCQ2A



Bore size(mm)	O	R
12	M4×0.7	7
16	M4×0.7	7
20	M6×1.0	10
25	M6×1.0	10
32	M6×1.0	10
40	M6×1.0	10
50	M8×1.25	14
63	M10×1.5	18
80	M12×1.75	22
100	M12×1.15	22

Single action/Spring extrusion

Φ12~Φ50



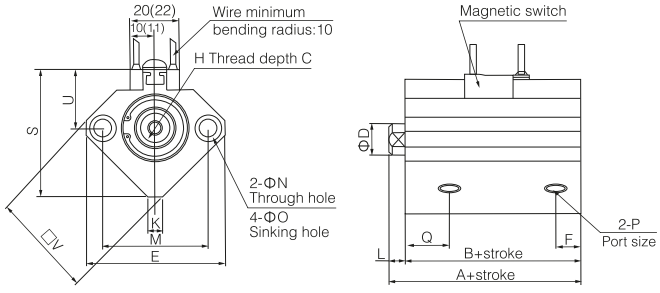
Bore size (mm)	A			L		
	5st	10st	20st	5st	10st	20st
12	30.5	40.5	-	8.5	13.5	-
16	32	42	-	8.5	13.5	-
20	34	44	-	9.5	14.5	-
25	37.5	47.5	-	10	15	-
32	40	50	-	12	17	-
40	46.5	56.5	-	12	17	-
50	-	58.5	78.5	-	18	28

Note: Unless other specified, the size of through-hole cylinders is same as that of screw-hole cylinders at both ends.

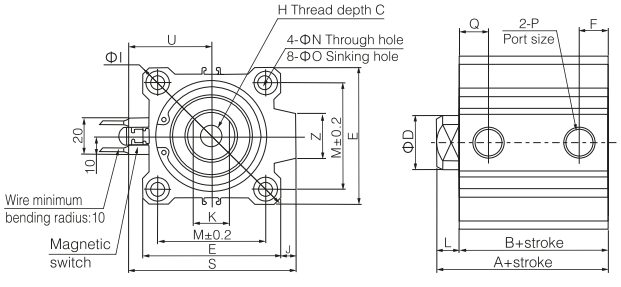
Dimensions

NCDQ2B

Φ12~Φ25



Φ32~Φ100



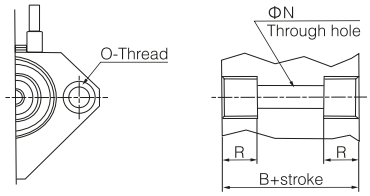
Model	Stroke range(mm) Note 1)	A	B	ΦD	E	F	H	C	ΦI	J	K	L	M	ΦN	ΦO	P	Q	S	U	V	Z
NCDQ2B12	5~30	31.5	28	6	32	6.5	M3×0.5	6	-	-	5	3.5	22	3.5	6.5 deep 3.5	M5×0.8	11	35.5	19.5	25	-
NCDQ2B16	5~30	34	30.5	8	38	5.5	M4×0.7	8	-	-	6	3.5	28	3.5	6.5 deep 3.5	M5×0.8	10	41.5	22.5	29	-
NCDQ2B20	5~50	36	31.5	10	46.8	5.5	M5×0.8	7	-	-	8	4.5	36	5.5	9 deep 7	M5×0.8	10.5	48	24.5	36	-
NCDQ2B25	5~50	37.5	32.5	12	52	5.5	M6×1.0	12	-	-	10	5	40	5.5	9 deep 7	M5×0.8	11	53.5	27.5	40	-
NCDQ2B32	5~50	40	33	16	45	7.5	M8×1.25	13	60	4.5	14	7	34	5.5	9 deep 7	1/8"	10.5	58.5	31.5	-	18
NCDQ2B40	5~50	46.5	39.5	16	52	8	M8×1.25	13	69	5	14	7	40	5.5	9 deep 7	1/8"	11	66	35	-	18
NCDQ2B50	10~50	48.5	40.5	20	64	10.5	M10×1.5	15	86	7	17	8	50	6.6	11 deep 8	1/4"	10.5	80	41	-	22
NCDQ2B63	10~50	54	46	20	77	10.5	M10×1.5	15	103	7	17	8	60	9	14 deep 10.5	1/4"	15	93	47.5	-	22
NCDQ2B80	10~50	63.5	53.5	25	98	12.5	M16×2.0	21	132	6	22	10	77	11	17.5 deep 13.5	3/8"	16	112.5	57.5	-	26
NCDQ2B100	10~50	75	63	30	117	13	M20×2.5	27	156	6.5	27	12	94	11	17.5 deep 13.5	3/8"	23	132.5	67.5	-	26

Long stroke Note 2)

Model	stroke(mm)	A	B	F	P	Q
32	75,100	40	33	7.5	1/8"	10.5
40	75,100	46.5	39.5	8	1/8"	11
50	75,100	48.5	40.5	10.5	1/4"	10.5
63	75,100	54	46	10.5	1/4"	15
80	75,100	63.5	53.5	12.5	3/8"	16
100	75,100	75	63	13	3/8"	23

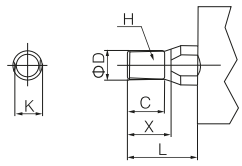
Note: 1. Standard stroke is 5 mm apart.
2. Intermediate stroke (55, 60, 65, 70, 80, 85, 90, 95) between 55mm and 100mm plus 5, 10, 15 or 20mm thick pads.
3. Unless other specified, the dimensions of through-hole cylinders are the same as those of screw-hole cylinders at both ends.
4. Only one magnetic switch can be installed in a 5 mm stroke cylinder.

Screw holes at both ends: NCDQ2A Note 3)



Bore size(mm)	O	R
12	M4×0.7	7
16	M4×0.7	7
20	M6×1.0	10
25	M6×1.0	10
32	M6×1.0	10
40	M6×1.0	10
50	M8×1.25	14
63	M10×1.5	18
80	M12×1.75	22
100	M12×1.75	22

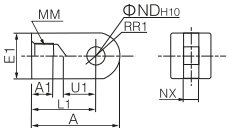
External threads at rod end



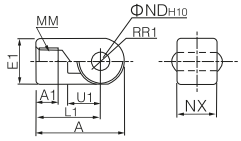
Bore size(mm)	C	X	ΦD	H	L	K
12	9	10.5	6	M5×0.8	14	5
16	10	12	6	M6×1.0	15.5	6
20	12	14	10	M8×1.25	18.5	8
25	15	17.5	12	M10×1.25	22.5	10
32	20.5	23.5	16	M14×1.5	28.5	14
40	20.5	23.5	16	M14×1.5	28.5	14
50	26	28.5	20	M18×1.5	33.5	17
63	26	28.5	20	M18×1.5	33.5	17
80	32.5	35.5	25	M22×1.5	43.5	22
100	32.5	35.5	30	M26×1.5	43.5	27

I Type single toggle joint

I-G012, I-Z015A
I-G012, I-G03A

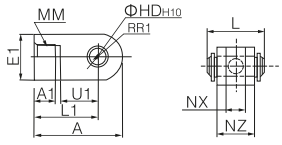


I-G04, I-G05
I-G08, I-G10

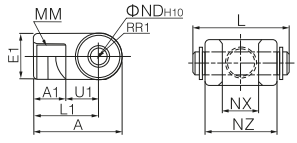


Y Type double toggle joint

Y-G012, Y-Z015A
AY-G02, Y-G03

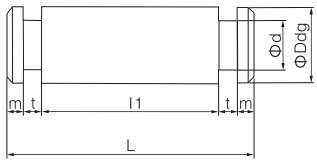


Y-G04, Y-G05
Y-G08, Y-G10



Applicable bore size (mm)	I Type single toggle joint										Y Type double toggle joint											
	Part No.	A	A1	E1	L1	MM	RR1	U1	NDH10	NX	Part No.	A	A1	E1	L1	MM	RR1	U1	ΦNDH10	NX	NZ	L
12	I-G012	21.5	6	□10	16	M5×0.8	6.3	7	$5^{+0.048}_{0}$	$5^{-0.2}_{-0.4}$	Y-G012	21.5	6	□10	16	M5×0.8	6.3	7	$5^{+0.048}_{0}$	$5^{+0.4}_{+0.2}$	10	14.6
16	I-Z015A	32	8	□12	25	M6×1	8.1	14	$5^{+0.048}_{0}$	$6.4^{-0.1}_{-0.3}$	Y-Z015A	28	11	□12	21	M6×1	8.1	10	$5^{+0.048}_{0}$	$6.5^{+0.4}_{+0.2}$	12	16.6
20	I-G02	34	8.5	□16	25	M8×1.25	10.3	11.5	$8^{+0.058}_{0}$	$8^{-0.2}_{-0.4}$	Y-G02	34	8.5	□16	25	M8×1.25	10.3	11.5	$8^{+0.058}_{0}$	$8^{+0.4}_{+0.2}$	16	21
25	I-G03	41	10.5	□20	30	M10×1.25	12.8	14	$10^{+0.058}_{0}$	$10^{-0.2}_{-0.4}$	Y-G03	41	10.5	□20	30	M10×1.25	12.8	14	$10^{+0.058}_{0}$	$10^{+0.4}_{+0.2}$	20	25.6
32,40	I-G04	42	14	Φ22	30	M14×1.5	12	14	$10^{+0.058}_{0}$	$18^{-0.3}_{-0.5}$	Y-G04	42	16	Φ22	30	M14×1.5	12	14	$10^{+0.058}_{0}$	$18^{+0.5}_{+0.3}$	36	41.6
50,63	I-G05	56	18	Φ28	40	M18×1.5	16	20	$14^{+0.070}_{0}$	$22^{-0.3}_{-0.5}$	Y-G05	56	20	Φ28	40	M18×1.5	16	20	$14^{+0.070}_{0}$	$22^{+0.5}_{+0.3}$	44	50.6
80	I-G08	71	21	Φ38	50	M22×1.5	21	27	$18^{+0.070}_{0}$	$28^{-0.3}_{-0.5}$	Y-G08	71	23	Φ38	50	M22×1.5	21	27	$18^{+0.070}_{0}$	$28^{+0.5}_{+0.3}$	56	64
100	I-G10	79	21	Φ44	55	M26×1.5	24	31	$22^{+0.084}_{0}$	$32^{-0.3}_{-0.5}$	Y-G10	79	24	Φ44	55	M26×1.5	24	31	$22^{+0.084}_{0}$	$32^{+0.5}_{+0.3}$	64	72

Toggle joint pins



Applicable bore size (mm)	Toggle joint pins						
	Part No.	ΦDdg	L	Φd	l	m	t
12	IY-G012	$5^{-0.030}_{-0.060}$	14.6	4.8	10.2	1.5	0.7
16	IY-J015	$5^{-0.030}_{-0.060}$	16.6	4.8	12.2	1.5	0.7
20	IY-G02	$8^{-0.040}_{-0.076}$	21	7.6	16.2	1.5	0.9
25	IY-G03	$10^{-0.040}_{-0.076}$	25.6	9.6	20.2	1.55	1.15
30, 40	IY-G04	$10^{-0.040}_{-0.076}$	41.6	9.6	36.3	1.55	1.15
50, 63	IY-G05	$14^{-0.050}_{-0.093}$	50.6	13.4	44.2	2.05	1.15
80	IY-G08	$18^{-0.050}_{-0.093}$	64	17	56.2	2.55	1.35
100	IY-G10	$22^{-0.065}_{-0.117}$	72	21	64.2	2.55	1.35