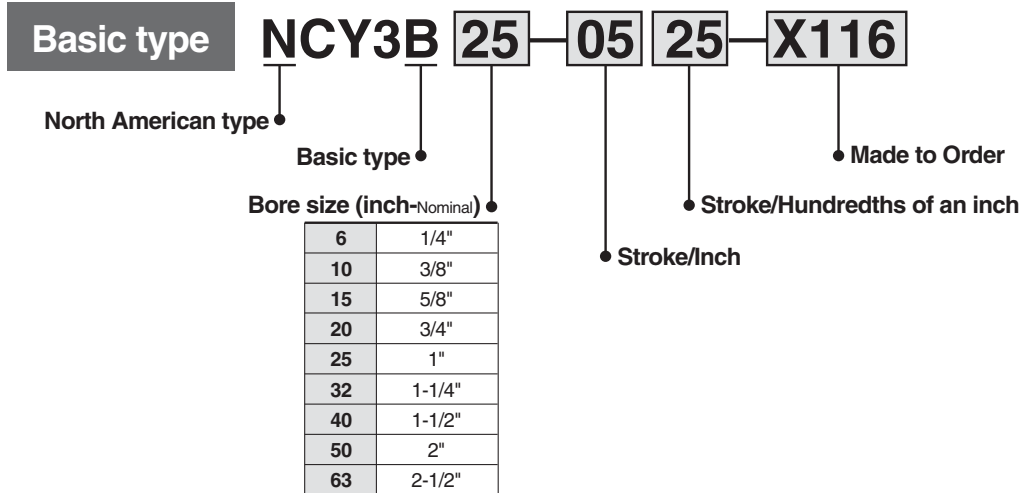


# Magnetically Coupled Rodless Cylinder Basic Type

## Series **NCY3B**

ø6(1/4"), ø10(3/8"), ø15(5/8"), ø20(3/4"), ø25(1"), ø32(1-1/4"), ø40(1-1/2"), ø50(2"), ø63(2-1/2")

### How to Order



### Standard Stroke

Bore size		Standard stroke (inch)	Max. stroke (inch)
(mm)	(inch-Nominal)		
6	1/4"	2, 3, 4, 5, 6, 8, 10	12
10	3/8"	2, 3, 4, 5, 6, 8, 10	20
15	5/8"	5, 10, 15, 20, 25, 30	40
20	3/4"	5, 10, 15, 20, 25, 30, 40	60
25	1"	5, 10, 15, 20, 25, 30, 40	80
32	1-1/4"	5, 10, 15, 20, 25, 30, 40	80
40	1-1/2"	5, 10, 15, 20, 25, 30, 40	80
50	2"	5, 10, 15, 20, 25, 30, 40	80
63	2-1/2"	5, 10, 15, 20, 25, 30, 40	80

Note) The longer the stroke, the larger the amount of deflection in a cylinder tube. Pay attention to the mounting bracket and clearance value.

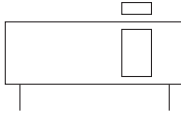
### Magnetic Holding Force (lbf)

Bore size	(mm)	6	10	15	20	25	32	40	50	63
	(inch-Nominal)	1/4"	3/8"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
Magnetic holding force		4.41	12.12	30.80	51.93	81.60	132.18	207.27	330.68	507.15

**Specifications**



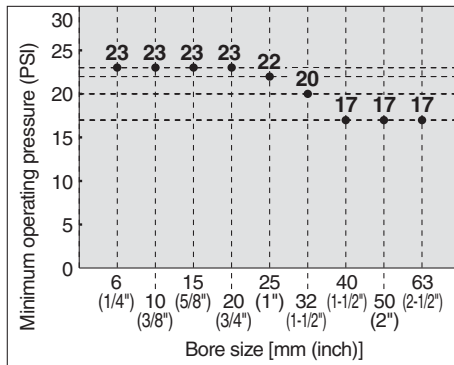
JIS symbol



**Made to Order**  
(Refer to pages 9 for details.)

Symbol	Specifications
XB6	Heat resistant specification
XB9	Low speed specification (0.6 to 2.0 inch/s)
XB13	Low speed specification (0.3 to 2.0 inch/s)
X116	Air Hydro specification
X132	Axial ports
X160	High speed specification
X168	Helical insert thread specification
X206	Added mounting tap positions for slider
X210	Oil-free exterior specification
X322	Outside of cylinder tube with hard chrome plating
X324	Oil-free exterior specification (with dust seal)
X1468	Interchangeable specification with NCY2B6
XC24	With magnetic shielding plate
XC57	With floating joint

**Minimum Operating Pressure**



Note) Values show when the cylinder is driving without load.

**Main Material**

Description	Material	Note
Head cover	Aluminum alloy	Electroless nickel plated
Cylinder tube	Stainless steel	
Body	Aluminum alloy	Hard anodized
Magnet	Rare earth magnet	

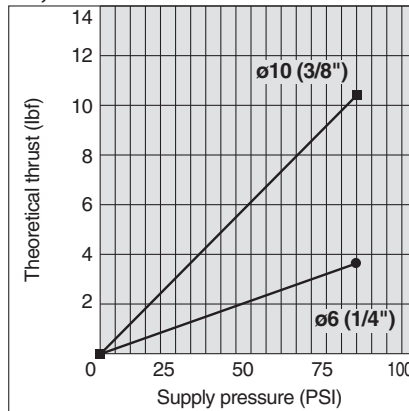
Note) For details, refer to the construction drawings on page 7.

Fluid	Air
Proof pressure	152 PSI (1.05 MPa)
Max. operating pressure	101 PSI (0.7MPa)
Min. operating pressure	Refer to the minimum operating pressure table.
Ambient and fluid temperature	14 to 140°F (-10 to 60°C) (No freezing)
Piston speed	2 to 20 inch/s (50 to 500 mm/s)
Cushion	Rubber bumper on both ends
Lubrication	Non-lube
Stroke length tolerance	0 to 10 st (inch): 0 to 0.04 inch (1.0 mm) 10.01 to 40 st (inch): 0 to 0.06 inch (1.4 mm) 40.01 st (inch): 0 to 0.07 inch (1.8 mm)
Mounting orientation	Horizontal, Inclined, Vertical <sup>Note</sup>
Mounting nut (2 pcs.)	Standard equipment (accessory)

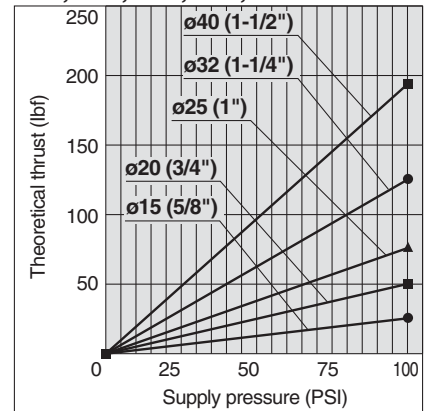
Note) When vertically mounting, it is impossible to perform an intermediate stop by pneumatic circuit.

**Theoretical Cylinder Thrust** **⚠ Caution** When calculating the actual thrust, design should consider the minimum actuating pressure.

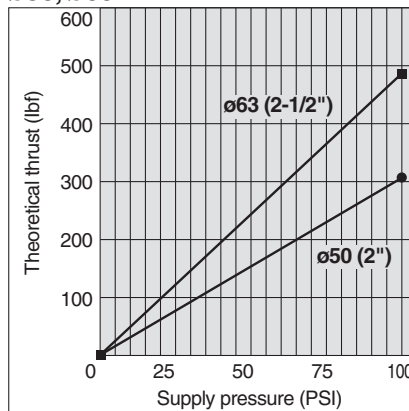
**ø6, ø10**



**ø15, ø20, ø25, ø32, ø40**



**ø50, ø60**



**Weight**

Bore size	Unit: oz									
	(mm)	6	10	15	20	25	32	40	50	63
(inch-nominal)	1/4"	3/8"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	
Basic weight (at 0 st)	1.83	2.82	9.70	12.38	23.70	45.40	73.02	112.88	186.95	
Additional weight per 1 inch stroke	0.07	0.25	0.27	0.36	0.41	0.59	0.72	1.38	1.72	

Calculation method/Example: NCY3B32-2000

$$\left. \begin{array}{l} \text{Basic weight} \dots\dots\dots 45.40 \text{ (oz)} \\ \text{Additional weight} \dots\dots 0.59 \text{ (oz/inch)} \\ \text{Cylinder stroke} \dots\dots\dots 20 \text{ (inch)} \end{array} \right\} 45.40 + (0.59 \times 20) = 57.20 \text{ (oz)}$$

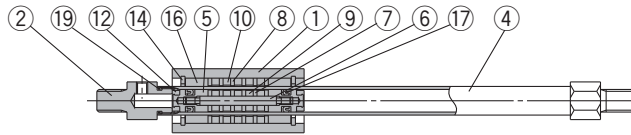


# Series NCY3B

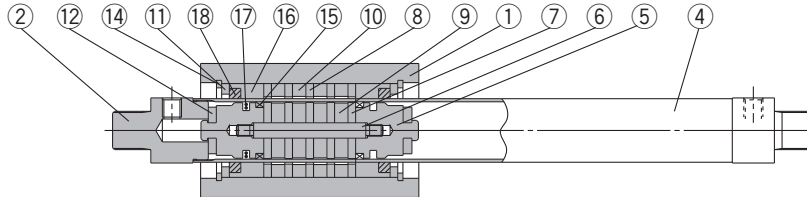
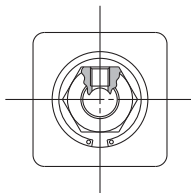
## Construction

### Basic type

#### NCY3B6

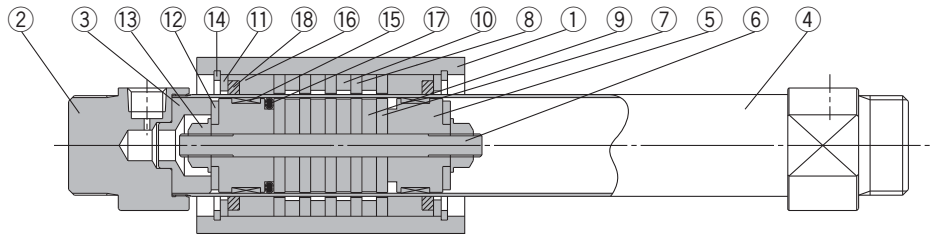
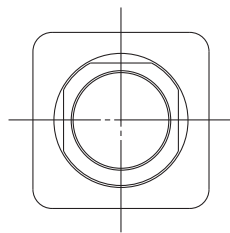


#### NCY3B10, 15

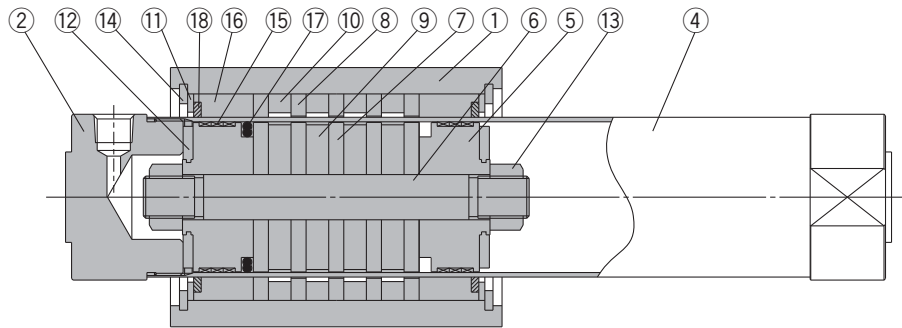
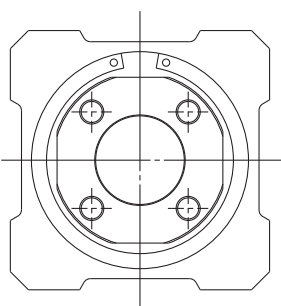


\* The above drawing is  $\phi 15$ . (3 magnets are used in  $\phi 10$ .)

#### NCY3B20 to 40



#### NCY3B50, 63



### Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Hard anodized
2	Head cover	$\phi 6, \phi 10$ Brass	Electroless Ni plated
		$\phi 15$ to $\phi 63$ Aluminum alloy	
3	End collar	Aluminum alloy	$\phi 20$ to $\phi 40$ only
4	Cylinder tube	Stainless steel	
5	Piston	$\phi 6$ to $\phi 15$ Brass	$\phi 6$ to $\phi 15$ Electroless Ni plated
		$\phi 20$ to $\phi 63$ Aluminum alloy	$\phi 20$ to $\phi 63$ Chromated
6	Shaft	Stainless steel	
7	Piston side yoke	Rolled steel	Zinc chromated
8	External slider side yoke	Rolled steel	Zinc chromated
9	Magnet A	Rare earth magnet	
10	Magnet B	Rare earth magnet	
11	Spacer	Aluminum alloy	$\phi 6$ : not available
12	Damper	Urethane rubber	
13	Piston nut	Carbon steel	$\phi 6$ to $\phi 15$ : not available
14	C type snap ring for hole	Carbon tool steel	Nickel plated
15	Wear ring A	Special resin	
16	Wear ring B	Special resin	
17	Piston seal	NBR	
18	Lubretainer	Special resin	$\phi 6$ : not available
19	Cylinder tube gasket	NBR	$\phi 6, \phi 10$ only

### Replacement Parts: Seal Kit

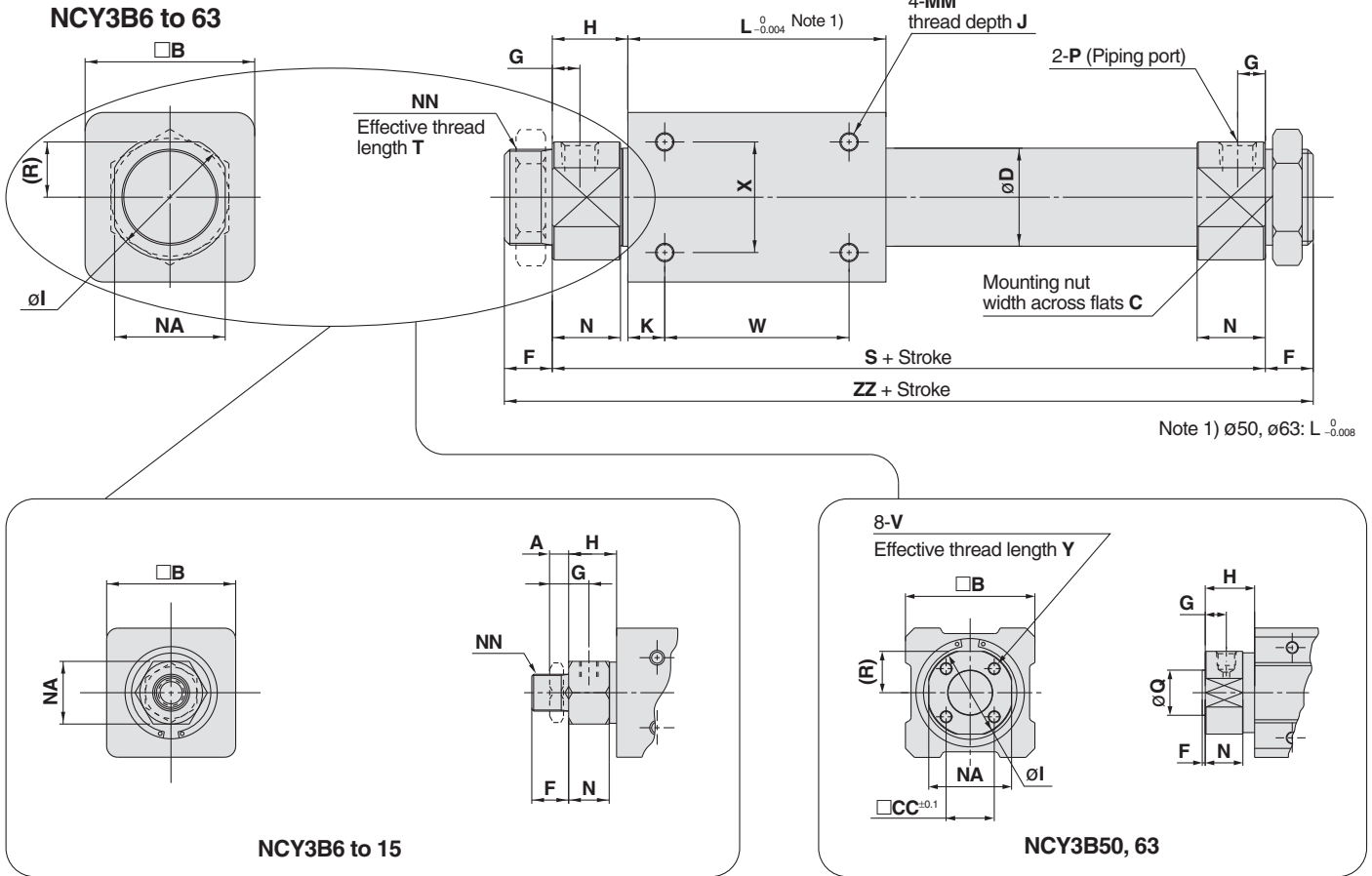
Bore size (mm)	Bore size (inch-nominal)	Kit no.	Contents
			6
10	3/8"	CY3B10-PS	Numbers 15, 16, 17, 18, 19 above
15	5/8"	CY3B15-PS	Numbers 15, 16, 17, 18 above
20	3/4"	CY3B20-PS	
25	1"	CY3B25-PS	
32	1-1/4"	CY3B32-PS	
40	1-1/2"	CY3B40-PS	
50	2"	CY3B50-PS	
63	2-1/2"	CY3B63-PS	

Note 1) Seal kits are sets consisting of numbers 15 through 19. Order using the kit number corresponding to each bore size.

Note 2) Adhesives are applied to the secured portion of the head cover and the cylinder tube. For bore sizes of more than  $\phi 32(1-1/4")$  of the cylinder removing the head cover can be difficult.

**Dimensions**

**Basic type**

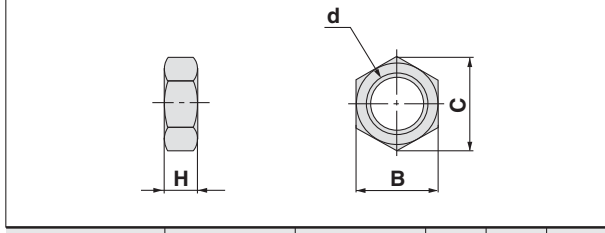


Model	Symbol	A	B	C	CC	D	F	G	H	I	J	K	L	MM	N	NA	NN	P
NCY3B6		0.16	0.67	0.44*	—	0.30	0.31*	0.20	0.53*	—	0.16	0.19	1.38	5-40UNC	0.37*	0.39*	1/4-28UNF*	M3 x 0.5 *
NCY3B10		0.12	0.98	0.55	—	0.47	0.37	0.20	0.50	—	0.18	0.19	1.50	5-40UNC	0.44	0.55	3/8-24UNF	10-32UNF
NCY3B15		0.12	1.38	0.55	—	0.65*	0.37	0.21	0.50	—	0.24	0.37	2.24	8-32UNC	0.43	0.67	3/8-24UNF	10-32UNF
NCY3B20		0.38	1.42	0.94	—	0.85*	0.51	0.30*	0.79	1.10	0.24	0.31	2.60	8-32UNC	0.71*	0.94	5/8-18UNF	NPT1/8
NCY3B25		0.31	1.81	1.22	—	1.04*	0.50	0.30*	0.81	1.34	0.31	0.38	2.76	10-32UNF	0.73*	1.18	1-12UNF	NPT1/8
NCY3B32		0.31	2.36	1.22	—	1.32*	0.63	0.31*	0.87	1.58	0.31	0.51	3.15	1/4-28UNF	0.79*	1.42	1-12UNF	NPT1/8
NCY3B40		0.43	2.76	1.61	—	1.64*	0.63	0.41*	1.13	1.97	0.39	0.56	3.62	1/4-28UNF	1.00*	1.81	1-1/4-12UNF	NPT1/4
NCY3B50		—	3.39	—	1.26	2.06*	0.08	0.55	1.25	2.28*	0.47	1.00	4.50	5/16-24UNF	1.02	2.17	—	NPT1/4
NCY3B63		—	3.94	—	1.50	2.57*	0.08	0.55	1.25	2.83*	0.47	1.00	5.00	5/16-24UNF	1.02	2.72	—	NPT1/4

Model	Symbol	Q	R	S	T	V	W	X	Y	ZZ
NCY3B6		—	—	2.44*	0.26	—	1.00	0.39	—	3.07*
NCY3B10		—	—	2.50	0.30	—	1.13	0.63	—	3.24
NCY3B15		—	—	3.25	0.30	—	1.50	0.75	—	3.99
NCY3B20		—	0.47*	4.17	0.39	—	2.00	1.00	—	5.19
NCY3B25		—	0.59*	4.38	0.39	—	2.00	1.25	—	5.38
NCY3B32		—	0.71*	4.88	0.51	—	2.13	1.63	—	6.14
NCY3B40		—	0.91*	5.88	0.51	—	2.50	1.63	—	7.14
NCY3B50		1.18	1.08*	7.00	—	5/16-24UNF	2.50	2.25	0.63	7.16
NCY3B63		1.26	1.36*	7.50	—	3/8-24UNF	3.00	2.75	0.63	7.66

Note 1) The asterisk denotes the dimensions which are different from the NCY2B series.  
Note 2) When installing cylinder, a mounting bracket may be used.

**Mounting Nut/Included in the package (2 pcs).**



Applicable model	Part no.	d	H	B	C
NCY3B6	JM-025	1/4-28UNF	0.16	0.44	0.51
NCY3B10, 15	NSNJ-015	3/8-24UNF	0.12	0.55	0.64
NCY3B20	JM-08	5/8-18UNF	0.38	0.94	1.09
NCY3B25, 32	NSN-03	1-12UNF	0.31	1.22	1.41
NCY3B40	NSN-04	1-1/4-12UNF	0.43	1.61	1.86

Note) Not available for ø50 and ø63.