

Magnetically Coupled Rodless Cylinder/ Basic Type

CY3B Series

Ø6, Ø10, Ø15, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63

How to Order

Basic type **CY3B** **25** **□** - **300** - **□**

Basic type •

Bore size •

6	6mm
10	10mm
15	15mm
20	20mm
25	25mm
32	32mm
40	40mm
50	50mm
63	63mm

Standard stroke •

Refer to the standard stroke table shown below.

Made to Order •

Refer to page 1469 for details.

Port thread type •

Symbol	Type	Bore size
Nil	M thread	6, 10, 15
	Rc	20, 25, 32, 40
TN	NPT	
TF	G	50, 63

Standard Stroke

Bore size (mm)	Standard stroke (mm)	Maximum available stroke (mm)
6	50, 100, 150, 200	300
10	50, 100, 150, 200, 250, 300	500
15	50, 100, 150, 200, 250, 300, 350, 400, 450, 500	1000
20	100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1500
25		3000
32		
40	100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000	3000
50		5000
63		

Note 1) Long stroke type (XB11) applies to the strokes exceeding 2000 mm. (Refer to page 1739.)

Note 2) The longer the stroke, the larger the amount of deflection in a cylinder tube. Pay attention to the mounting bracket and clearance value.

Note 3) Intermediate stroke is available in 1 mm increments.

Specifications



Symbol

Rubber bumper (Magnet type)



Made to Order: Individual Specifications
(For details, refer to pages 1480 to 1482.)

Symbol	Specifications
-X116	Hydro specifications
-X132	Axial ports
-X160	High speed specifications
-X168	Helical insert thread specifications
-X206	Added mounting tap positions for slider
-X210	Non-lubricated exterior specifications
-X322	Outside of cylinder tube with hard chrome plating
-X324	Non-lubricated exterior specifications (with dust seal)
-X1468	Interchangeable specification with CY1□6

Made to Order

[Click here for details](#)

Symbol	Specifications
-XB6	Head resistant cylinder (−10 to 150°C)
-XB9	Low-speed cylinder (15 to 50mm/s)
-XB11	Long stroke type
-XB13	Low-speed cylinder (7 to 50mm/s)
-XC24	With magnetic shielding plate
-XC57	With floating joint

For clean specifications, refer to "Pneumatic Clean Series" catalog (CAT.E02-23).

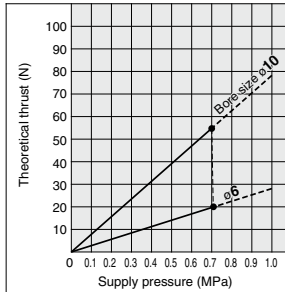
Bore size (mm)	6	10	15	20	25	32	40	50	63
Fluid	Air								
Proof pressure	1.05 MPa								
Max. operating pressure	0.7 MPa								
Min. operating pressure	0.16	0.16	0.16	0.16	0.15	0.14	0.12	0.12	0.12
Ambient and fluid temperature	−10 to 60°C (No freezing)								
Piston speed	50 to 500 mm/s								
Cushion	Rubber bumper								
Lubrication	Not required (Non-lube)								
Stroke length tolerance (mm)	0 to 250 st: $+1.0_0$, 251 to 1000 st: $+1.4_0$, 1001 st to: $+1.8_0$								
Mounting orientation	Horizontal, Inclined, Vertical (Note)								
Mounting nut (2 pcs.)	Standard equipment (accessory)								
Magnet holding force (N)	19.6	53.9	137	231	363	588	922	1471	2256

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

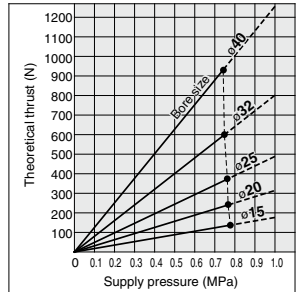
Theoretical Cylinder Thrust

⚠ Caution When calculating the actual thrust, design should consider the minimum actuating pressure.

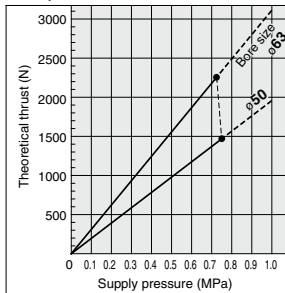
ø6, ø10



ø15, ø20, ø25, ø32, ø40



ø50, ø63



Weight

Bore size (mm)	6	10	15	20	25	32	40	50	63
Basic weight (at 0 st)	0.052	0.08	0.275	0.351	0.672	1.287	2.07	3.2	5.3
Additional weight per 50 mm of stroke	0.004	0.014	0.015	0.02	0.023	0.033	0.04	0.077	0.096

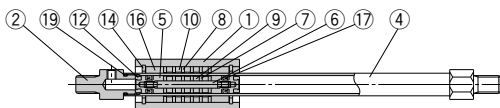
Calculation method/Example: **CY3B32-500**

Basic weight 1.287 kg
Additional weight 0.033/50 st } 1.287 + 0.033 × 500 ÷ 50 = 1.617 kg
Cylinder stroke 500 st

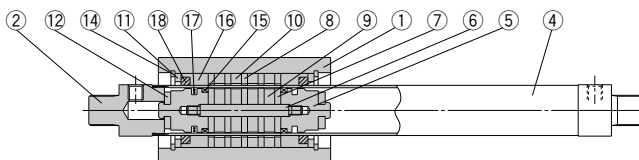
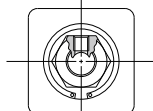
CY3B Series

Construction

Basic type CY3B6

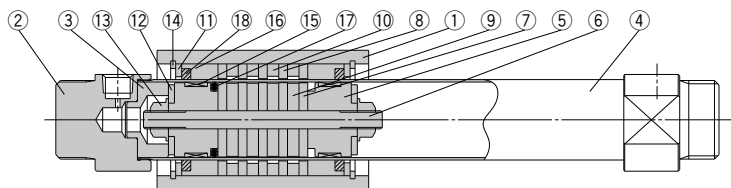
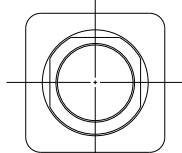


CY3B10, 15

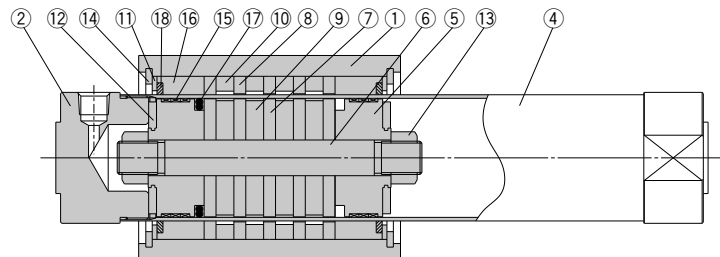
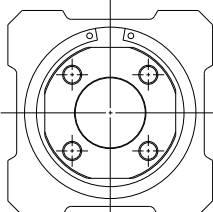


* The above drawing is ø15. (3 magnets are used in ø10.)

CY3B20 to 40



CY3B50, 63



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Hard anodized
2	Head cover	ø6, ø10 Brass ø15 to ø63 Aluminum alloy	
3	End collar	Aluminum alloy	ø20 to ø40 only
4	Cylinder tube	Stainless steel	
5	Piston	ø6 Brass ø10 to ø63 Aluminum alloy	ø6 Electroless Ni plated ø10 to ø63 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	—	
10	Magnet B	—	
11	Spacer	Aluminum alloy	ø6: not available
12	Bumper	Urethane resin	
13	Piston nut	Carbon steel	ø6 to ø15: not available
14	C type retaining ring for hole	Carbon tool steel	Phosphate coated
15	Wear ring A	Special resin	
16	Wear ring B	Special resin	
17	Piston seal	NBR	
18	Lube-retainer	Special resin	ø6: not available
19	Cylinder tube gasket	NBR	ø6, ø10 only

Replacement Parts/Seal Kit

Bore size (mm)	Kit no.	Contents
6	CY3B6-PS	Set of nos. above 16, 17, 19
10	CY3B10-PS	Set of nos. above 16, 17, 18, 19
15	CY3B15-PS	
20	CY3B20-PS	
25	CY3B25-PS	
32	CY3B32-PS	
40	CY3B40-PS	
50	CY3B50-PS	Set of nos. above 16, 17, 18
63	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) Adhesive glue is applied to the thread fixed section of the head cover and cylinder tube. Contact SMC if the head cover removal is difficult.

Note 3) For replacement of the ø10 wear ring A, contact SMC or your nearest sales representative.

* Seal kit includes a grease pack (ø6, ø10: 5 and 10 g, ø15 to ø63: 10 g). Order with the following part number when only the grease pack is needed.

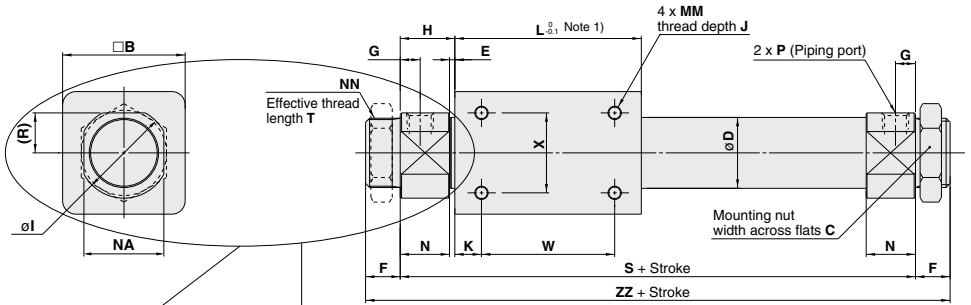
Grease pack part number for ø6, ø10: GR-F-005 (5 g) For external sliding sections
GR-S-010 (10 g) For tubing interior

Grease pack part number for ø15 to ø63: GR-S-010 (10 g)

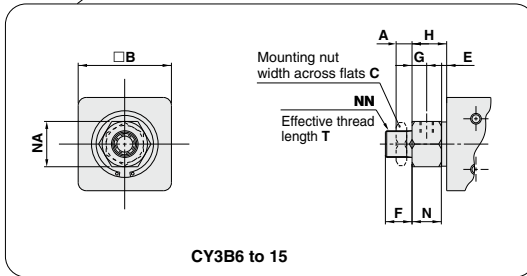
Dimensions

Basic type

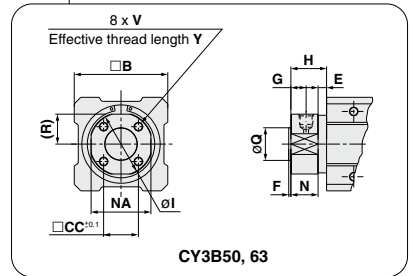
CY3B6 to 63



Note 1) $\phi 50$, $\phi 63$: $L \begin{smallmatrix} 0 \\ 0.2 \end{smallmatrix}$



CY3B6 to 15



CY3B50, 63

Model	A	B	C	CC	D	E	F	G	H	I	J	K	L	MM	N	NA	NN	Q	R	S	T	V
CY3B6	4	17	8*	—	7.6	4	8*	5	13.5*	—	4.5	5	35	M3 x 0.5	9.5*	10*	M6 x 1*	—	—	62*	6.5	—
CY3B10	4	25	14	—	12	1.5	9	5	12.5	—	4.5	4	38	M3 x 0.5	11	14	M10 x 1	—	—	63	7.5	—
CY3B15	4	35	14	—	16.6*	2	10	5.5	13	—	6	11	57	M4 x 0.7	11	17	M10 x 1	—	—	83	8	—
CY3B20	8	36	26	—	21.6*	2*	13	7.5*	20	28	6	8	66	M4 x 0.7	18*	24	M20 x 1.5	—	12*	106	10	—
CY3B25	8	46	32	—	26.4*	2*	13	7.5*	20.5	34	8	10	70	M5 x 0.8	18.5*	30	M26 x 1.5	—	15*	111	10	—
CY3B32	8	60	32	—	33.6*	2*	16	8*	22	40	8	15	80	M6 x 1	20*	36	M26 x 1.5	—	18*	124	13	—
CY3B40	10	70	41	—	41.6*	3*	16	11	29	50	10	16	92	M6 x 1	26*	46	M32 x 2	—	23*	150	13	—
CY3B50	—	86	—	32	52.4*	8	2	14	33	58*	12	25	110	M8 x 1.25	25	55	—	30 ^{-0.007/-0.007}	27.5*	176	—	M8 x 1.25
CY3B63	—	100	—	38	65.4*	8	2	14	33	72*	12	26	122	M8 x 1.25	25	69	—	32 ^{-0.007/-0.007}	34.5*	188	—	M10 x 1.5

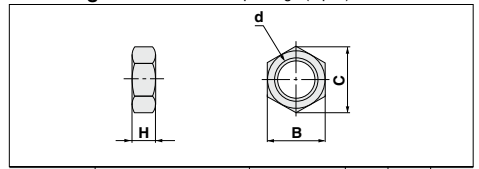
(mm)

Model	W	X	Y	ZZ	P (Piping port)		
					Nil	TN*	TF*
CY3B6	25	10	—	78*	M3 x 0.5*	—	—
CY3B10	30	16	—	81	M5 x 0.8	—	—
CY3B15	35	19	—	103	M5 x 0.8	—	—
CY3B20	50	25	—	132	Rc 1/8	NPT 1/8	G 1/8
CY3B25	50	30	—	137	Rc 1/8	NPT 1/8	G 1/8
CY3B32	50	40	—	156	Rc 1/8	NPT 1/8	G 1/8
CY3B40	60	40	—	182	Rc 1/4	NPT 1/4	G 1/4
CY3B50	60	60	16	180	Rc 1/4	NPT 1/4	G 1/4
CY3B63	70	70	16	192	Rc 1/4	NPT 1/4	G 1/4

Note 2) The asterisk denotes the dimensions which are different from the CY1B series.

Note 3) Mounting nuts can be screwed on only for the effective thread length of the head cover (T dimension). When mounting a cylinder, consider the thickness of flange, etc.

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



Part no.	Applicable bore size (mm)	d	H	B	C
SNJ-006B	6	M6 x 1.0	4	8	9.2
SNJ-016B	10, 15	M10 x 1.0	4	14	16.2
SN-020B	20	M20 x 1.5	8	26	30
SN-032B	25, 32	M26 x 1.5	8	32	37
SN-040B	40	M32 x 2.0	10	41	47.3

Note) Mounting nuts are not available for $\phi 50$ and $\phi 63$.

CY3B
CY3R

CY1S

CY1L

CY1H

CY1F

CYP

D-□

-X□

Technical
Data