

# Magnetically Coupled Rodless Cylinder Slider Type: Slide Bearing

## Series CY1S

ø6, ø10, ø15, ø20, ø25, ø32, ø40

### How to Order

**CY1S 25 H - 300 -**

**With auto switch** **CDY1S 25 H - 300 - J79W -**

With switch rail

Slider type (Slide bearing)

Bore size

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

Port thread type

Symbol	Type	Bore size
Nil	M thread	ø6, ø10, ø15
	Rc	ø20, ø25, ø32, ø40
TN	NPT	
TF	G	

Magnetic holding force  
Refer to page 1195 for specifications.

Standard stroke  
Refer to "Standard Stroke" on page 1195.

Made to Order  
Refer to page 1195 for details.

Number of auto switches

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

Auto switch

Nil	Without auto switch (Built-in magnet)
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\* For the applicable auto switch model, refer to the table below.

Adjustment type

Nil	With adjusting bolt
B	With shock absorbers (2 pcs.)
BS	With shock absorber (With plate A) * Installed on Side A at time of shipment.

### Applicable Auto Switch/Refer to pages 1263 to 1371 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage			Auto switch model		Lead wire length (m) *				Pre-wired connector	Applicable load	
					DC	AC	Electrical entry direction		0.5 (Nil)	3 (L)	5 (Z)	None (N)				
							Perpendicular	In-line								
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	F7NV	F79	●	●	○	—	○	IC circuit	Relay, PLC
		3-wire (PNP)		F7PV				F7P	●	●	○	—	○			
	Connector	2-wire		12 V	F7BV	J79	●	●	○	—	○	—				
		3-wire (NPN)		5 V, 12 V	F7NWV	F79W	●	●	○	—	○	IC circuit				
	Diagnostic indication (2-color indication)	Grommet		3-wire (PNP)	—	F7PW	●	●	○	—	○	—				
				2-wire	12 V	F7BWV	J79W	●	●	○	—	○	—			
	Water resistant (2-color indication)	Grommet		4-wire (NPN)	5 V, 12 V	—	F79F	●	●	○	—	○	IC circuit			
	With diagnostic output (2-color indication)				—											
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	—	A76H	●	●	—	—	—	IC circuit	—
				2-wire	—	—	200 V	A72	A72H	●	●	—	—	—	—	
		24 V	12 V		100 V	A73	A73H	●	●	●	—	—	—	—		
			5 V, 12 V		100 V or less	A80	A80H	●	●	—	—	—	IC circuit			
			12 V		—	A73C	—	●	●	●	●	—	—	—		
			5 V, 12 V		—	A80C	—	●	●	●	●	—	IC circuit			
		Connector	No		No	2-wire	24 V	5 V, 12 V	—	A73C	—	●	●	●	●	—

\* Lead wire length symbols: 0.5 m..... Nil (Example) J79W  
3 m..... L (Example) J79WL  
5 m..... Z (Example) J79WZ  
None..... N (Example) J79CN

\* Solid state auto switches marked with "○" are produced upon receipt of order.

- Since there are other applicable auto switches than listed, refer to page 1199 for details.
- For details about auto switches with pre-wired connector, refer to pages 1328 and 1329.
- \* Auto switches are shipped together, (but not assembled).

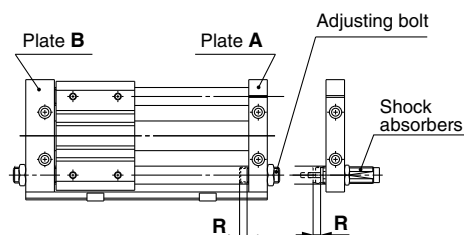
# Magnetically Coupled Rodless Cylinder Slider Type: Slide Bearing **Series CY1S**



**Made to Order Specifications**  
(For details, refer to pages 1395 to 1565.)

Symbol	Specifications
—XB9	Low speed cylinder (15 to 50 mm/s)
—XB13	Low speed cylinder (7 to 50 mm/s)
—X116	Hydro specifications rodless cylinder
—X168	Helical insert thread specifications
—X210	Non-lubricated exterior specifications
—X322	Outside of cylinder tube with hard chrome plated
—X324	Non-lubricated exterior specifications (With dust seal)
—X431	Auto switch rails on both side faces (with 2 pcs.)

## Amount of Adjustment for Adjusting Bolt and Shock Absorber



Bore size (mm)	R	Amount of adjustment by adjusting bolt (both ends: R x 2) (mm)
6	0 to 6	12
10	0 to 5.5	11
15	0 to 3.5	7
20	0 to 5.5	11
25	0 to 5	10
32	0 to 5.5	11
40	0 to 4.5	9

Bore size (mm)	Amount of adjustment by shock absorber: R (mm)	
	Plate A side	Plate B side
6	17	11
10	14	6
15	14	4
20	16	7
25	32	23
32	33	23
40	32	17

\* Since the cylinder is in an intermediate stop condition when stroke adjustment is performed, use caution regarding the operating pressure and the kinetic energy of the load.

\* The amount of adjustment for adjustment bolts is the total amount when adjusted on both plate ends. For the adjustment on a single plate end, the amount of adjustment is half of the figures in the table above.

\* The Plate A: Piping port side

## Specifications

Bore size (mm)		6	10	15	20	25	32	40
Fluid		Air						
Proof pressure		1.05 MPa						
Maximum operating pressure		0.7 MPa						
Minimum operating pressure		0.18 MPa						
Ambient and fluid temperature		−10 to 60°C						
Piston speed *		50 to 400 mm/s						
Cushion		Rubber bumper / Shock absorbers						
Lubrication		Non-lube						
Stroke length tolerance		0 to 250 st: $+1.0_0$ , 251 to 1000 st: $+1.4_0$ , 1001 st and up: $+1.8_0$						
Holding force	Type H	19.6	53.9	137	231	363	588	922
	Type L	—	—	81.4	154	221	358	569

\* In the case of setting an auto switch (CDY1S) at the intermediate position, the maximum piston speed is subject to restrict for detection upon the response time of a load (Relays, Sequence controller, etc.)

## Standard Stroke

Bore size (mm)	Standard stroke (mm)	Maximum manufacturable 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	750
20	100, 150, 200, 250, 300, 350 400, 450, 500, 600, 700, 800	1000
25		1500
32		1500
40	100, 150, 200, 250, 300, 350 400, 450, 500, 600, 700, 800 900, 1000	1500

Note) Intermediate stroke is available by the 1 mm interval.

## Mass

		(kg)						
		Bore size (mm)						
Number of magnets		6	10	15	20	25	32	40
Basic mass	CY1S□H	0.27	0.48	0.91	1.48	1.84	3.63	4.02
	CY1S□L	—	—	0.85	1.37	1.75	3.48	3.84
Additional mass per each 50 mm of stroke		0.044	0.074	0.104	0.138	0.172	0.267	0.406

Calculation

(Example) CY1S32H-500

• Basic mass ..... 3.63 kg • Additional mass ..... 0.267/50 st

• Cylinder stroke ..... 500 st  $3.63 + 0.267 \times 500 \div 50 = 6.3$  kg

## Shock Absorber Specifications

Refer to the Series RB in Best Pneumatics No. 3 for the details on shock absorbers.

Applicable rodless cylinder		CY1S <sup>6</sup> <sub>1015</sub>	CY1S20	CY1S25	CY1S <sup>32</sup> <sub>40</sub>
Shock absorber model		RB0805	RB1006	RB1411	RB2015
Maximum energy absorption: (J)		0.98	3.92	14.7	58.8
Stroke absorption: (mm)		5	6	11	15
Collision speed: (m/s)		0.05 to 5			
Max. operating frequency: (cycle/min) *		80	70	45	25
Ambient temperature range		-10 to 80 °C			
Spring force: (N)	Extended	1.96	4.22	6.86	8.34
	Retracted	3.83	6.18	15.3	20.50

\* It denotes the values at the maximum energy absorption per one cycle. Therefore, the operating frequency can be increased according to the energy absorption.

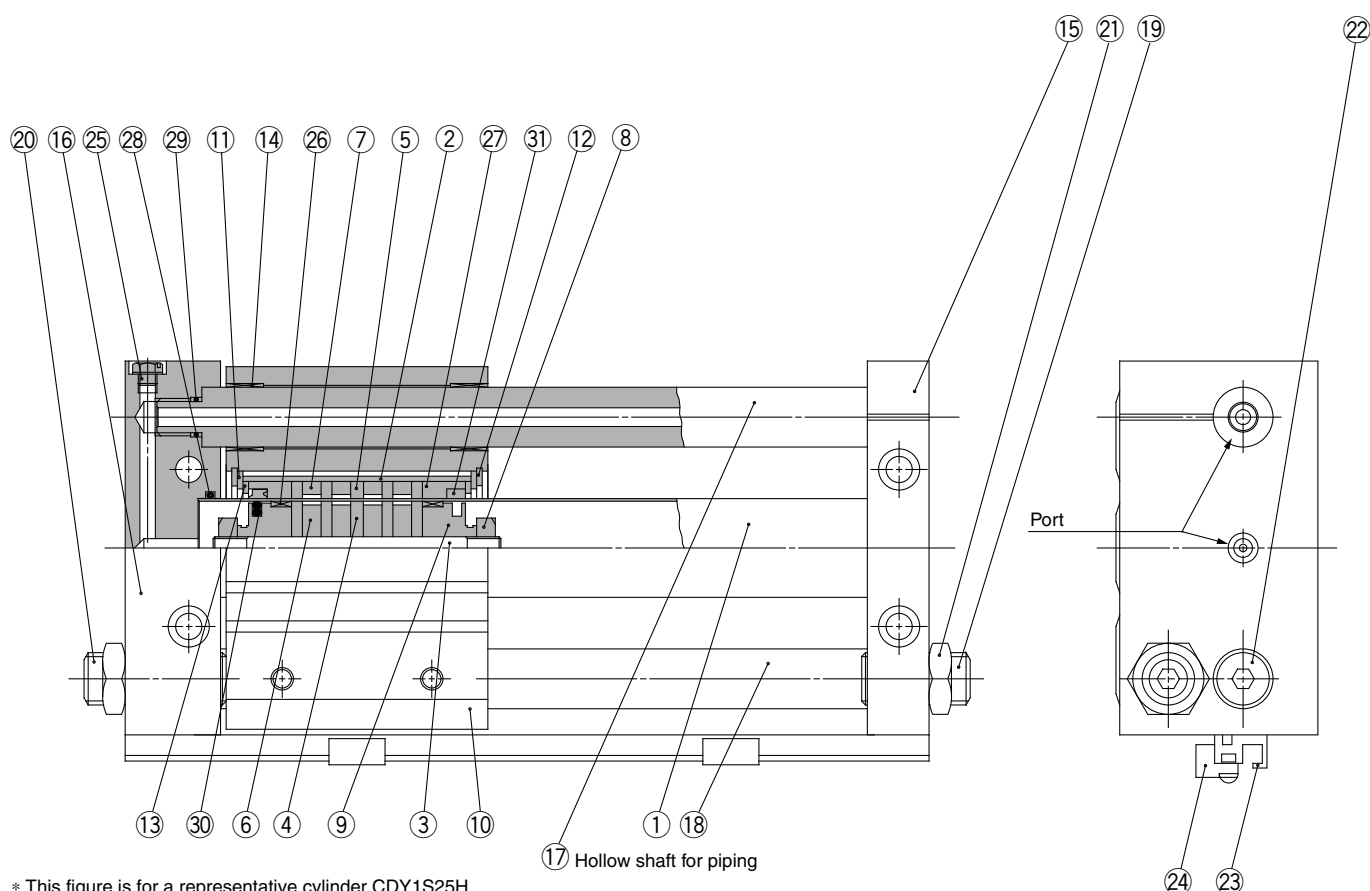
The shock absorber service life is different from that of the CY1S cylinder. Refer to the Specific Product Precautions for the replacement period.

# Series CY1S

## Construction

### Slider type/Slide bearing

#### CY1S6 to 40



\* This figure is for a representative cylinder CDY1S25H

### Component Parts

No.	Description	Material	Note
1	Cylinder tube	Stainless steel	
2	External slider tube	Aluminum alloy	
3	Shaft	Stainless steel	
4	Piston side yoke	Rolled steel	Zinc chromated
5	External slider side yoke	Rolled steel	Zinc chromated
6	Magnet A	—	
7	Magnet B	—	
8	Piston nut	Carbon steel	Zinc chromated
9	Piston	Aluminum alloy <sup>Note 1)</sup>	Chromated
10	Slide block	Aluminum alloy	Anodized
11	Slider spacer	Rolled steel	Nickel plated
12	Retaining ring	Carbon tool steel	Nickel plated
13	Spacer	Rolled steel	Nickel plated
14	Bushing	Oil retaining bearing material	
15	Plate A	Aluminum alloy	Anodized
16	Plate B	Aluminum alloy	Anodized
17	Guide shaft A	Carbon steel	Hard chrome plated
18	Guide shaft B	Carbon steel	Hard chrome plated
19	Adjusting bolt A	Chromium molybdenum steel	
20	Adjusting bolt B	Chromium molybdenum steel	
21	Hexagon nut	Carbon steel	Nickel plated
22	Hexagon socket head cap screw	Chromium molybdenum steel	
23	Switch mounting rail	Aluminum alloy	

Note 1) Brass for ø6, ø10 and ø15.

Note 2) Piston nuts are not included for ø6, ø10 and ø15.

No.	Description	Material	Note
24	Auto switch	—	
25	Plug	Brass	
26*	Wear ring A	Special resin	
27*	Wear ring B	Special resin	
28*	Cylinder tube gasket	NBR	
29*	Guide shaft gasket	NBR	
30*	Piston seal	NBR	
31*	Scraper	NBR	

### Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
6	CY1S6-PS-N	Set of nos. above 27, 28, 29, 30  Nos. above 26, 27, 28, 29, 30, 31
10	CY1S10-PS-N	
15	CY1S15-PS-N	
20	CY1S20-PS-N	
25	CY1S25-PS-N	
32	CY1S32-PS-N	
40	CY1S40-PS-N	

\* Seal kit includes 27 to 30 for ø6. 26 to 31 are for ø10 to ø40. Order the seal kit, based on each bore size.

\* Seal kit includes a grease pack (ø6, ø10: 5 and 10 g, ø15 to ø40: 10 g).

Order with the following part number when only the grease pack is needed.

**Grease pack part no. for ø6, ø10: GR-F-005 (5 g) for external sliding parts,**

**GR-S-010 (10 g) for tube interior**

**Grease pack part no. for ø15 to ø40: GR-S-010 (10 g)**