



Magnetically Coupled Rodless Cylinder High Precision Guide Type

Series *CY1H*

ø10, ø15, ø20, ø25, ø32

How to Order

CY1H **25** — **300** **Y7BW**

High precision guide type •

Guide •

Bore size (mm)		Guide				
		10	15	20	25	32
Nil	1 axis	●	●	●	●	—
T	2 axes	—	—	—	●	●

Bore size •

Bore size	mm
10	10 mm
15	15 mm
20	20 mm
25	25 mm
32	32 mm

Standard stroke (mm) •
Refer to "Standard Stroke" on page 8-15-69.

Number of auto switches

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

Auto switch

Nil	Without auto switch
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* For the applicable auto switch model, refer to the table below.
* Auto switches are shipped together, (but not assembled).

Adjustment type

Nil	With adjusting bolt
B	With shock absorbers (2 pcs.)
BS	With shock absorber (1 pc. on port side)

* The adjusting bolt is installed even when B or BS is selected.
(Except ø10)

Applicable Auto Switch/Refer to page 8-30-1 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-wire connector	Applicable load		
					DC	AC		Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)		IC circuit	Relay, PLC	
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	—	Z76	●	●	—	—			—
				2-wire	24 V	12 V	100 V	—	Z73	●	●	●	—	—	—	—
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	Y69A	Y59A	●	●	○	○	—	IC circuit	Relay, PLC
				3-wire (PNP)				Y7PV	Y7P	●	●	○	○	—	IC circuit	
				2-wire				Y69B	Y59B	●	●	○	○	—	—	
				3-wire (NPN)				Y7NWV	Y7NW	●	●	○	○	—	IC circuit	
				3-wire (PNP)				Y7PWV	Y7PW	●	●	○	○	—	—	
				2-wire				Y7BWV	Y7BW	●	●	○	○	—	—	

* Lead wire length symbols: 0.5 m Nil (Example) Y59A
3 m L (Example) Y59AL
5 m Z (Example) Y59AZ

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

- Since there are other applicable auto switches than listed, refer to page 8-15-80 for details.
- For details about auto switches with pre-wire connector, refer to page 8-30-52.

Magnetically Coupled Rodless Cylinder High Precision Guide Type Series CY1H



Made to Order Specifications
(For details, refer to page 8-31-1.)

Symbol	Specifications
-X168	Helical insert thread specifications

Specifications

Bore size (mm)	10	15	20	25	32
Fluid	Air				
Action	Double acting				
Maximum operating pressure	0.7 MPa				
Minimum operating pressure	0.2 MPa				
Proof pressure	1.05 MPa				
Ambient and fluid temperature	-10 to 60°C				
Piston speed	70 to 1000 mm/s				
Cushion (External stopper)	Urethane bumpers on both ends (Standard), Shock absorber (Option)				
Lubrication	Non-lube				
Stroke length tolerance	0 to 1.8 mm				
Piping	Centralized piping type				
Piping port size	M5 x 0.8		Rc 1/8		

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Data

Standard Stroke

Bore size (mm)	Number of axes	Standard stroke (mm)	Maximum ^(Note) available stroke (mm)
10	1 axis	100, 200, 300	500
15		100, 200, 300, 400, 500	
20		100, 200, 300, 400, 500, 600	
25		100, 200, 300, 400, 500, 600, 800	
25	2 axes	100, 200, 300, 400, 500,	1200
32		600, 800, 1000	
			1500

Note) Please contact SMC if it is used by exceeding the maximum stroke length.

Magnetic Holding Force

Bore size (mm)	10	15	20	25	32
Holding force (N)	53.9	137	231	363	588

Theoretical Output

Bore size (mm)	Piston area (mm ²)	Operating pressure (MPa)					
		0.2	0.3	0.4	0.5	0.6	0.7
10	78	15	23	31	39	46	54
15	176	35	52	70	88	105	123
20	314	62	94	125	157	188	219
25	490	98	147	196	245	294	343
32	804	161	241	322	402	483	563

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm²)

Weight

Model	Standard stroke (mm)							
	100	200	300	400	500	600	800	1000
CY1H10	1.0	1.3	1.6	—	—	—	—	—
CY1H15	2.2	2.7	3.2	3.6	4.1	—	—	—
CY1H20	3.0	3.5	4.0	4.4	4.9	5.4	—	—
CY1H25	4.6	5.3	6.0	6.6	7.3	8.0	9.4	—
CY1HT25	5.1	6.2	7.3	8.3	9.4	10.4	12.5	14.6
CY1HT32	8.4	9.6	10.7	11.9	13.0	14.2	16.5	18.8

Shock Absorber Specifications

For detailed specifications about shock absorber, refer to "Series RB" of Best Pneumatics Vol. 10.

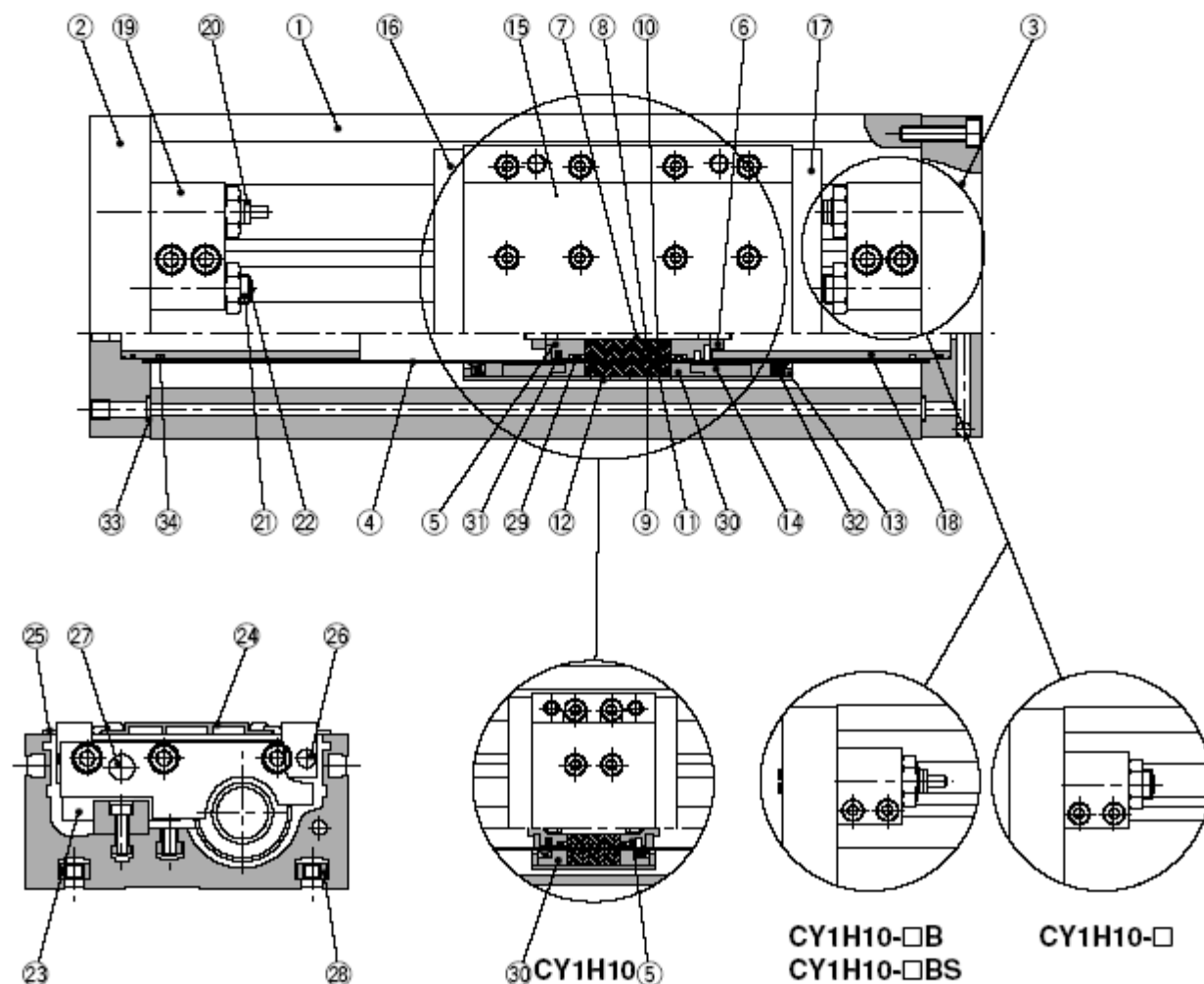
Applicable cylinder size (mm)	10	15	20	25	32	
Shock absorber model	RB0805	RB0806	RB1006	RB1411	RB2015	
Maximum energy absorption (J)	0.98	2.94	3.92	14.7	58.8	
Weight equivalent to impact object	* Select a model from data link page for Shock Absorber (Series RB).					
Stroke absorption (mm)	5	6	6	11	15	
Collision speed (m/s) ⁺	0.05 to 5					
Max. operating frequency (cycle/min)	80		70	45	25	
Spring force (N)	Extended		1.96	4.22	6.86	8.34
	Retracted		3.83	22	6.18	15.30
Weight (g)	15		25	65	150	

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

Magnetically Coupled Rodless Cylinder High Precision Guide Type Series CY1H

Construction

Single axis type: CY1H



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Data

Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Plate A	Aluminum alloy	Hard anodized
③	Plate B	Aluminum alloy	Hard anodized
④	Cylinder tube	Stainless steel	
⑤	Piston	Brass	Blackless nickel plated (CY1H10/15)
		Aluminum alloy	Chromated (CY1H20/25)
⑥	Piston nut	Carbon steel	Zinc chromated (Except CY1H10/15)
⑦	Shaft	Stainless steel	
⑧	Piston side yoke	Rolled steel plate	Zinc chromated
⑨	External slider side yoke	Rolled steel plate	Zinc chromated
⑩	Magnet A	Rare earth magnet	
⑪	Magnet B	Rare earth magnet	
⑫	External slider tube	Aluminum alloy	
⑬	Spacer	Rolled steel plate	Nickel plated
⑭	Space ring	Aluminum alloy	Chromated (Except CY1H10)
⑮	Slide table	Aluminum alloy	Hard anodized
⑯	Side plate A	Aluminum alloy	Hard anodized
⑰	Side plate B	Aluminum alloy	Hard anodized

No.	Description	Material	Note
⑱	Internal stopper	Aluminum alloy	Anodized
⑲	Stopper	Aluminum alloy	Anodized
⑳	Shock absorber	—	Series RB
㉑	Adjusting bolt	Chrome molybdenum steel	Nickel plated
㉒	Adjusting bumper	Urethane rubber	
㉓	Linear guide	—	
㉔	Top cover	Aluminum alloy	Hard anodized
㉕	Dust cover	Special resin	
㉖	Magnet (For auto switch)	Rare earth magnet	
㉗	Parallel pin	Carbon steel	Nickel plated
㉘	Square nut for body mounting	Carbon steel	Nickel plated
㉙*	Wear ring A	Special resin	
㉚*	Wear ring B	Special resin	
㉛*	Piston seal	NBR	
㉜*	Scraper	NBR	
㉝*	O-ring	NBR	
㉞*	O-ring	NBR	

Replacement Parts: Seal Kit

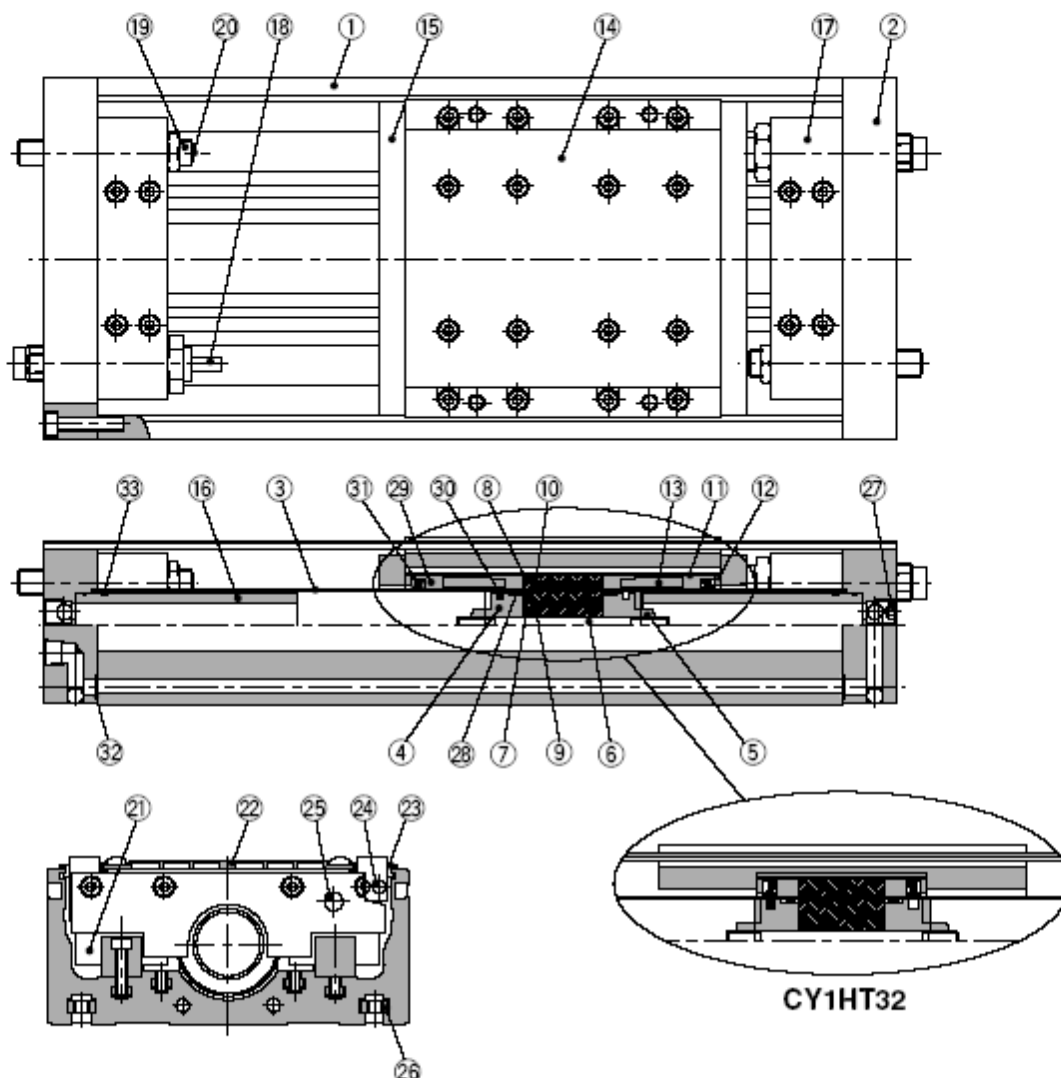
Bore size (mm)	Kit no.	Contents
10	CY1H10-PS	Set of the above nos. ㉙, ㉚, ㉛, ㉜, ㉝, ㉞
15	CY1H15-PS	
20	CY1H20-PS	
25	CY1H25-PS	

* Seal kit includes ㉙ to ㉞. Order the seal kit, based on each bore size.

Series CY1H

Construction

Double axes type: CY1HT



Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Plate	Aluminum alloy	Hard anodized
③	Cylinder tube	Stainless steel	
④	Piston	Aluminum alloy	Chromated
⑤	Piston nut	Carbon steel	Zinc chromated
⑥	Shaft	Stainless steel	
⑦	Piston side yoke	Rolled steel plate	Zinc chromated
⑧	External slider side yoke	Rolled steel plate	Zinc chromated
⑨	Magnet A	Rare earth magnet	
⑩	Magnet B	Rare earth magnet	
⑪	External slider tube	Aluminum alloy	
⑫	Spacer	Rolled steel plate	Nickel plated
⑬	Space ring	Aluminum alloy	Chromated (Except CY1HT32)
⑭	Slide table	Aluminum alloy	Hard anodized
⑮	Side plate	Aluminum alloy	Hard anodized (Except CY1HT32)
⑯	Internal stopper	Aluminum alloy	Anodized
⑰	Stopper	Aluminum alloy	Anodized

No.	Description	Material	Note
⑱	Shock absorber	—	Series RB
⑲	Adjusting bolt	Chrome molybdenum steel	Nickel plated
⑳	Adjusting bumper	Urethane rubber	
㉑	Linear guide	—	
㉒	Top cover	Aluminum alloy	Hard anodized
㉓	Dust cover	Special resin	
㉔	Magnet (For auto switch)	Rare earth magnet	
㉕	Parallel pin	Stainless steel	
㉖	Square nut for body mounting	Carbon steel	Nickel plated
㉗	Hexagon socket head taper plug	Carbon steel	Nickel plated
㉘*	Wear ring A	Special resin	
㉙*	Wear ring B	Special resin	
㉚*	Piston seal	NBR	
㉛*	Scraper	NBR	
㉜*	O-ring	NBR	
㉝*	O-ring	NBR	

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
25	CY1HT25-PS	Set of the above nos.
32	CY1HT32-PS	㉘, ㉙, ㉚, ㉛, ㉜, ㉝

* Seal kit includes ㉘ to ㉝. Order the seal kit, based on each bore size.

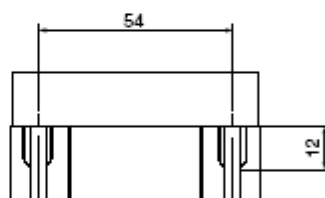
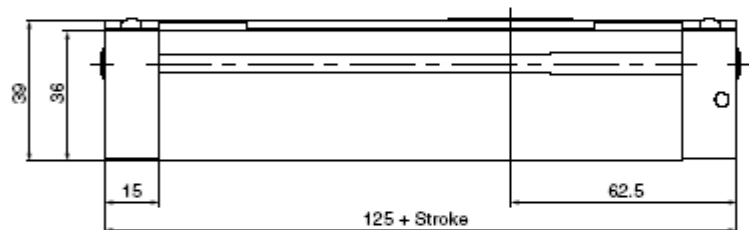
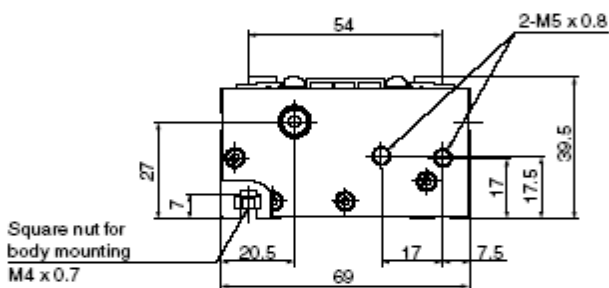
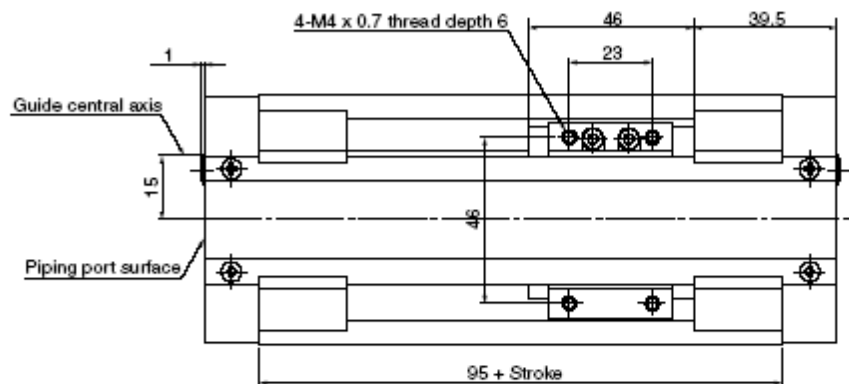
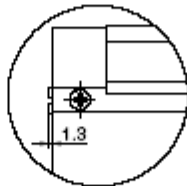
Magnetically Coupled Rodless Cylinder High Precision Guide Type **Series CY1H**

Dimensions

Single axis type: $\phi 10$

CY1H10

CY1H10-□B



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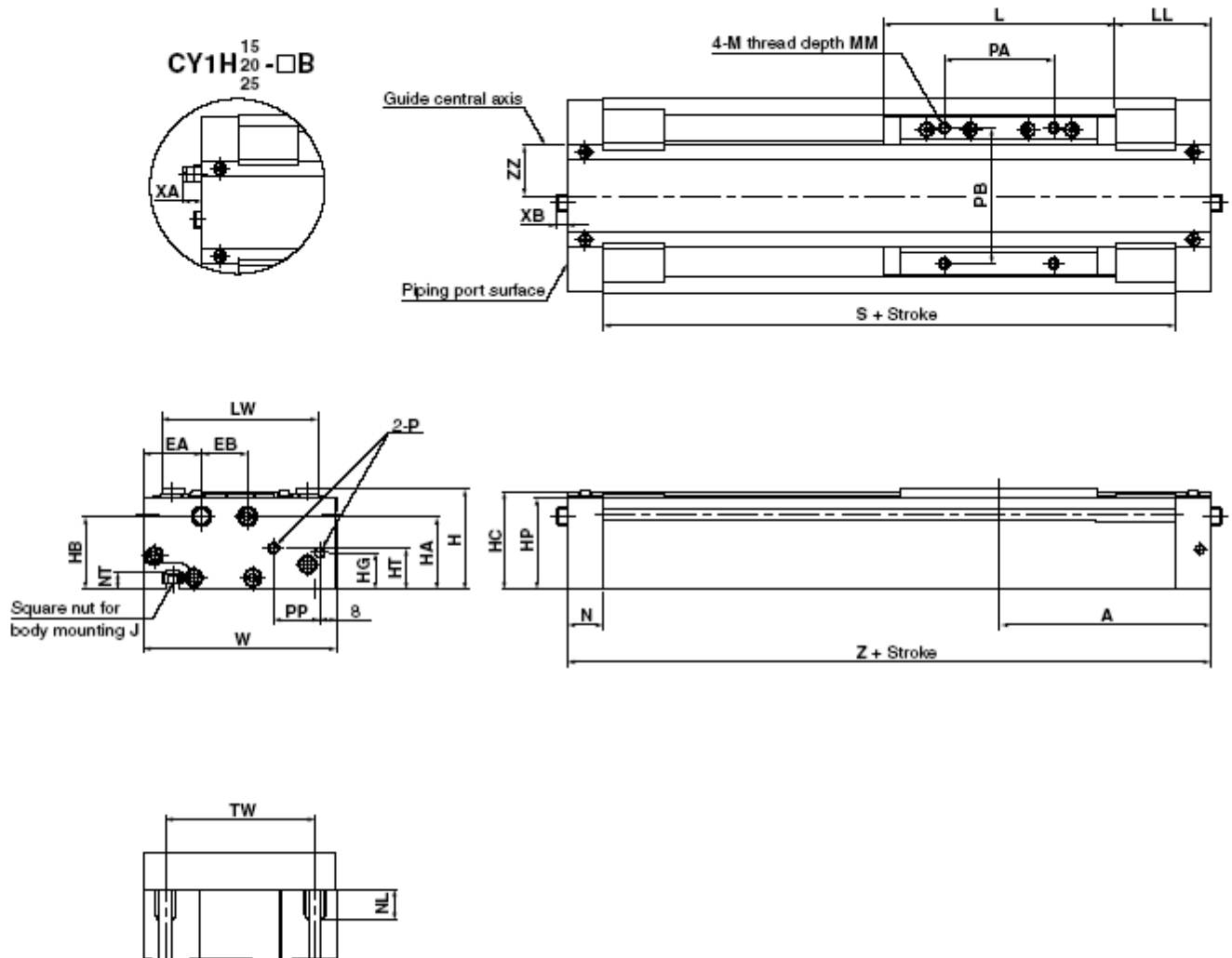
Data

Series CY1H

Dimensions

Single axis type: $\phi 15$, $\phi 20$, $\phi 25$

CY1H15/20/25



(mm)

Model	A	EA	EB	H	HA	HB	HC	HG	HP	HT	J	L	LL	LW	M	MM	N	NL	NT
CY1H15	97	26.5	21	46	33.5	33.5	45	17	42	19	M5 x 0.8	106	44	71.5	M5 x 0.8	8	16.5	15	8
CY1H20	102.5	26.5	22	54	42.5	41.5	53	16	50	23.5	M5 x 0.8	108	48.5	75.5	M5 x 0.8	8	18	15	8
CY1H25	125	29	24	63	46	46	61.5	25	58.5	28	M6 x 1.0	138	56	86	M6 x 1.0	10	20.5	18	9

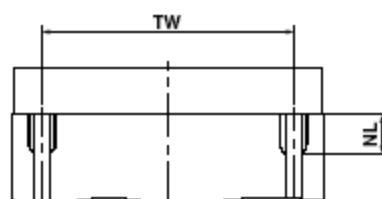
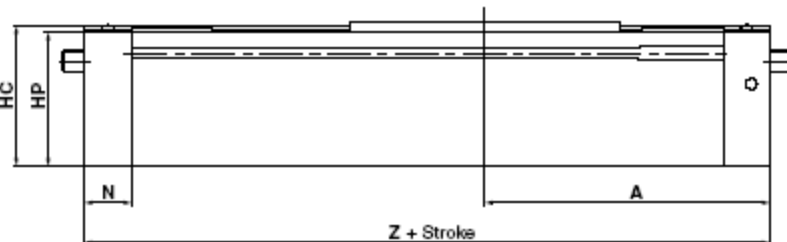
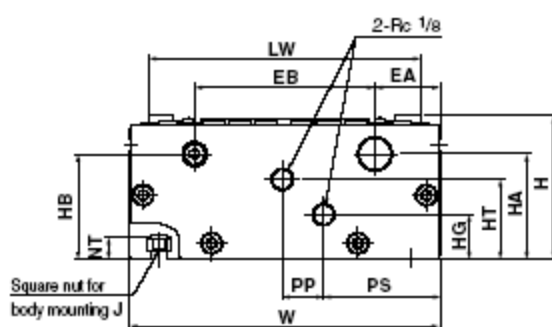
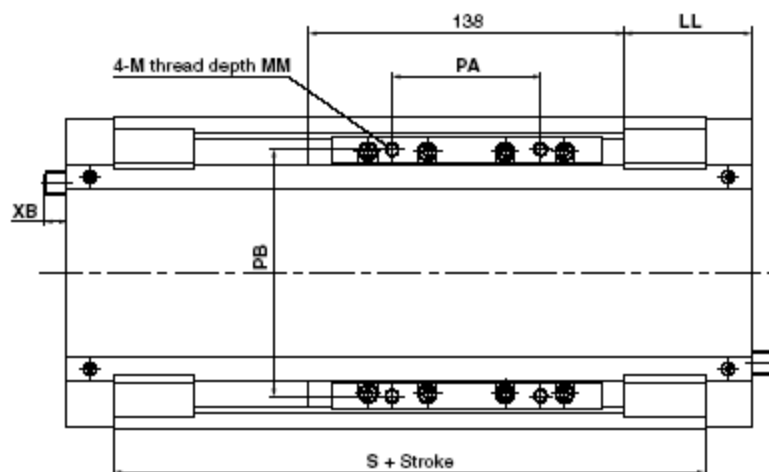
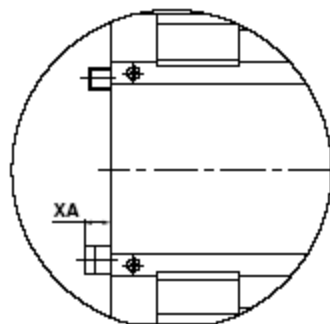
Model	P	PA	PB	PP	S	TW	W	XA	XB	Z	ZZ
CY1H15	M5 x 0.8	50	62	21	161	65	88.5	—	—	194	17.5
CY1H20	Rc 1/8	50	65	23	169	70	92.5	—	—	205	19.5
CY1H25	Rc 1/8	65	75	27	209	75	103	11.3	9.5	250	23.5

Magnetically Coupled Rodless Cylinder High Precision Guide Type **Series CY1H**

Double axes type: $\phi 25$, $\phi 32$

CY1HT25/32

CY1HT²⁵/₃₂-□B



MX□

MTS

MY□

CY□

MG□

CX□

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Data

(mm)

Model	A	EA	EB	H	HA	HB	HC	HG	HP	HT	J	LL	LW	M	MM	N	NL	NT	PA
CY1HT25	125	28.5	79	63	46	46	61.5	19.5	58.5	35	M6 x 1.0	56	119	M6 x 1.0	10	20.5	18	9	65
CY1HT32	132.5	30	90	75	52.5	57.5	72.5	25	69.5	43	M8 x 1.25	63.5	130	M8 x 1.25	12	23	22.5	12	66

Model	PB	PP	PS	S	TW	W	XA	XB	Z
CY1HT25	108	18	51	209	110	136	11.3	9.5	250
CY1HT32	115	14	61	219	124	150	9.7	2	265