

# ▶ AHZ2 Series (Ø6~Ø40)



## Gripper (Parallel Type) AHZ2 Series Features

① Features an integrated linear guide design with high rigidity and high precision; utilizes high-quality stainless steel plate as the base material, specially treated for excellent rust resistance. (Japanese S Company uses powder metallurgy, which has lower costs, but the internal pores of the component pose potential safety risks.) Allows for multi-surface mounting, offering simple, convenient, and reliable installation with high positioning accuracy

② Cylinder body accuracy up to ±0.05mm

③ Two locating pin holes with H9 tolerance ensure precise mounting positioning; the larger pin holes not only provide precise positioning but also enhance rigidity.

④ Finger functional positions can be selected according to actual customer needs.

⑤ Locating pins installed at the bottom of the guide prevent deviation between the guide and cylinder body (Note: Japanese S models with bore sizes below 20 do not have these locating pins).

## Comparison with Similar Products from Other Companies

MAXAIR	Gripper and guide made from high-quality stainless steel plate; powder metallurgy offers good fatigue resistance on working surfaces and pores.	Optimized guide design; structurally superior, high precision, high rigidity	Wider Type
Company S (Japan)	Relatively poorer performance	Relatively poorer performance	Narrower

# Gripper (Parallel Opening/Closing Type)

# AHZ2 Series



## Specifications

Bore	6 mm	10mm	16mm	20mm	25mm	32mm	40mm
Working Medium	Air						
Operating Pressure Range	0.15~0.7MPa	0.2~0.7MPa	0.1~0.7MPa			0.1~0.7MPa	
Environment & Fluid Temp	-10~60°C(Non-freezing)						
Repeatability accuracy	±0.01mm				±0.02mm		
Max. Operating Freq. (c.p.m)	180				60		
Lubrication	Not Required						
Operation Type	Double-acting / Single-acting						
Magnetic Switch (Optional)	Non-contact magnetic switch						
Port Size	M3 x 0.5			M5 x 0.8			

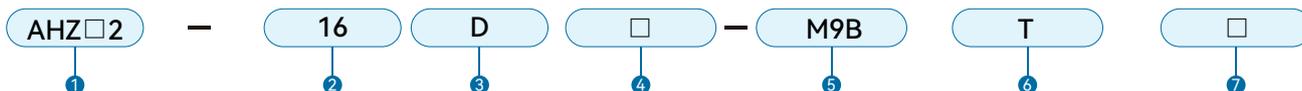
## Product Features

Integrated linear guide design for high rigidity and high precision;
Locating pins at the bottom of the guide prevent misalignment between the guide and cylinder body;
Cylinder body features multiple mounting/locating pin holes for compact and precise installation;
Initial position of the two fingers can be selected according to customer requirements to suit different working conditions;

## Magnetic Switch Table

Bore	Magnetic Switch Model	Magnetic Switch Qty
6	F8N	No mark: 2↑ S: 1↑ n: n↑
10	2-wire:T2H 3-wire:T3H (T2H/T3H standard, not for cable carriers;T2HT/T3HT suitable for cable carriers)	
16	2-wire: M9B 3-wire: M9N (M9B/M9Nstandard, not for cable carriers M9B T/M9N T suitable for cable carriers)	
20		
25		
32		
40		

## Model Selection



1 Option	2 Bore	3 Operation Type	4 Finger Mounting Type		5 Magnetic Switch Model	6 No	7 Magnetic Switch Quantity	
No mark: Standard type L: Long stroke	6	D	Double-acting	[Standard Type] No Mark Basic Type	Refer to Magnetic Switch Table	Blank: Standard (Not suitable for cable carrier)	Blank: 2↑ S: 1↑	
	10			[Narrow Type] N:Basic Type				
	16	S	Single-acting (Normally Open)	1:Side Tapped Hole Mounting				N1:Side Tapped Hole Mounting
	20			2:Thru-hole Mounting in Opening/Closing Direction				N2:Thru-hole Mounting in Opening/Closing Direction
	25							
	32	C	Single-acting (Normally Closed)	3:Flat Finger Type				[Note] Flat fingers only available for 10, 16, 20, 25mm bores.
	40							

[Note] 6mm bore uses RBN magnetic switches; 10mm bore uses T2H/T3H magnetic switches.

[Note] Standard cable length is 2m. For models requiring 1m, 3m, or 5m cable lengths, refer to the required magnetic switch series.

[Note] Finger components can be customized; please contact our company if needed.

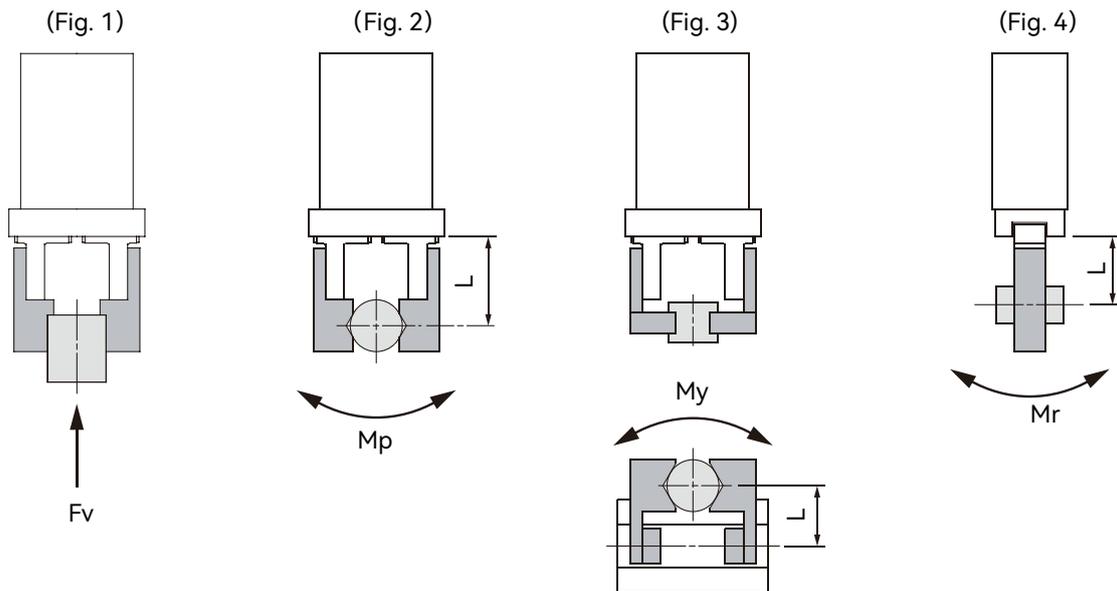
# Gripper (Parallel Opening/Closing Type)

# AHZ2 Series

## Ordering Example

Required Bore	16
Finger Position	Wide Gap, Double-acting
Correct Model	AHZ2-16D

## Load Capacity Calculation



Model	Maximum Allowable Thrust Fv(N)	Max. Allowable Moment		
		Mp (N-m)	My (N-m)	Mr (N-m)
AHZ2-6D	10	0.04	0.04	0.08
AHZ210D	58	0.26	0.26	0.53
AHZ2-16D	98	0.68	0.68	1.36
AHZ2-20D	147	1.32	1.32	2.65
AHZ2-25D	255	1.94	1.94	3.88
AHZ2-32D	343	3	3	6

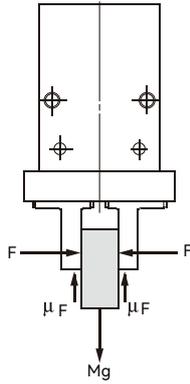
[Note] The load and moment values in the table represent static values.

Max. Load Force F at Distance L	Calculation Example (Selecting AHZ2-16D)
$\text{Max. Load Force } F \text{ (N)} = \frac{M}{L \times 10}$ <p>(*Pay attention to unit conversion during calculation)</p>	<p>If installed as shown in (Fig. 2), with a load force F=10N at a distance L=30mm from the guide plane, can the AHZ2-16D withstand this load?</p> $\text{Max. Allowable Force } F = \frac{0.68}{30 \times 10^{-3}} = 22.7(\text{N})$ <p>Actual load force f =10(N)&lt;22.7(N)</p> <p>Therefore, the AHZ2-16D is fully suitable;</p>

## Gripper (Parallel Opening/Closing Type)

## AHZ2 Series

### Gripping Force Selection and Calculation



Recommended Calculation Formula

F: Gripping force per

finger: Friction coefficient

m: Workpiece mass

g: Gravitational acceleration (=9.8 m/s<sup>2</sup>)

mg: Workpiece weight

$$2 \times \mu F > mg$$

Two Fingers

a: Safety Factor

$$F = \frac{mg}{2 \times \mu} \times a$$

(Recommended a=4)

### Gripping Force Reference Table

At theoretical pressure of 0.5MPa:

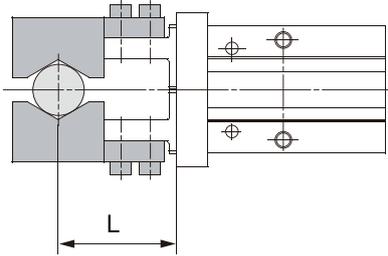
Operation Type	Model	Gripping Force N (Effective value per finger)		Open/Close Stroke (Both sides)mm
		External Gripping	Internal Gripping	
Double-acting	AHZ2-6D	3.3	6.1	4
	AHZ2-10D	11	17	4
	AHZ2-16D	34	45	6
	AHZ2-20D	42	66	10
	AHZ2-25D	65	104	14
	AHZ2-32D	158	193	22
	AHZ2-40D	254	348	30

# Gripper (Parallel Opening/Closing Type) AHZ2 Series

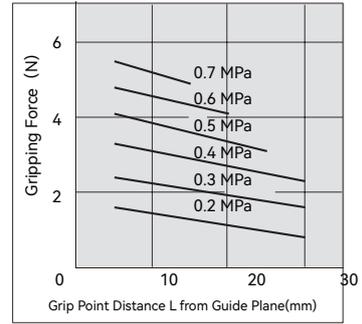
## Performance Parameters at Different Pressures

### External Gripping Force

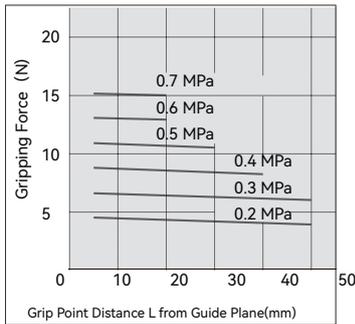
As shown in the figures below, when the fingers and accessories are in full contact with the workpiece, refer to the graphs on the right for the relationship between finger gripping force and distance L.



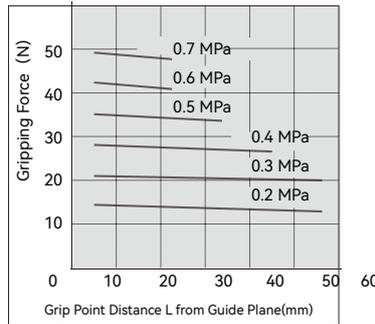
AHZ2-6D



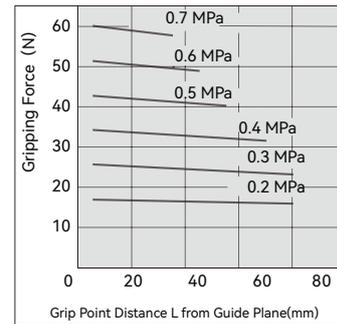
AHZ2-10D



AHZ2-16D

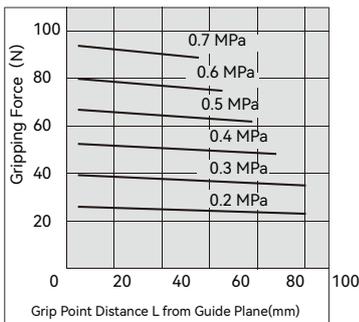


AHZ2-20D

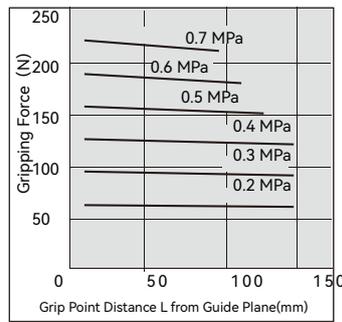


## Performance Parameters at Different Pressures

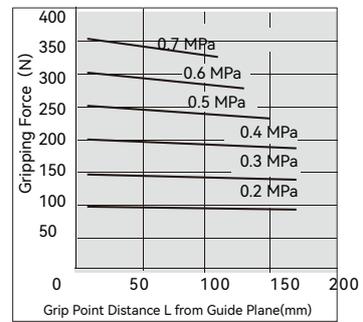
AHZ2-25D



AHZ2-32D



AHZ2-40D

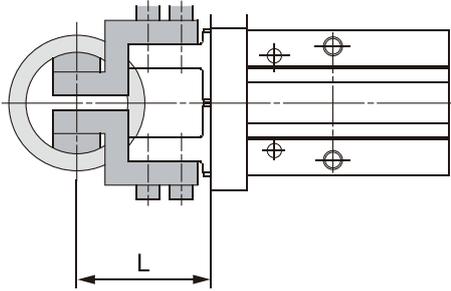


# Gripper (Parallel Opening/Closing Type)

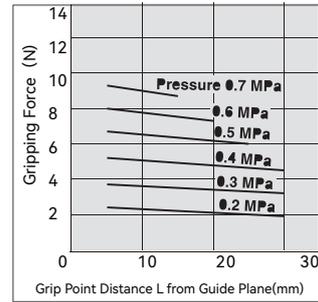
# AHZ2 Series

## Internal Gripping Force

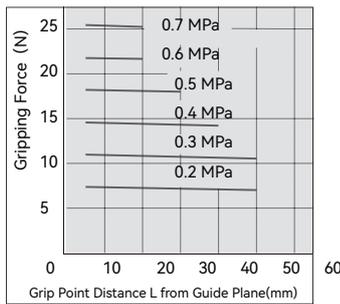
As shown in the figure below, when the fingers and attachment are in complete contact with the workpiece, the finger clamping force and the distance L should be referenced against the graph on the right.



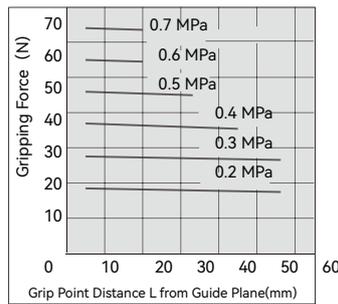
AHZ2-6D



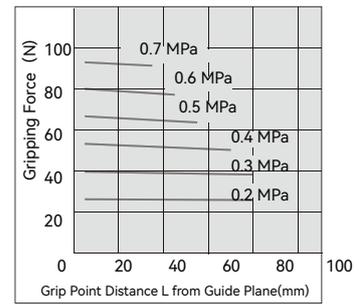
AHZ2-10D



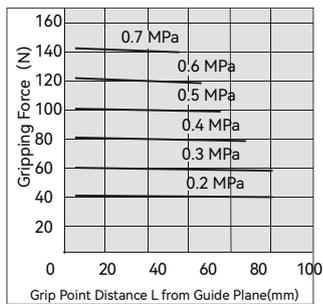
AHZ2-16D



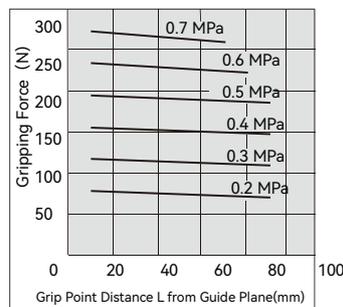
AHZ2-20D



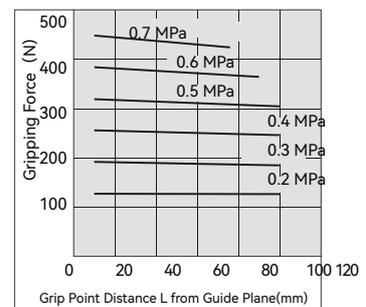
AHZ2-25D



AHZ2-32D



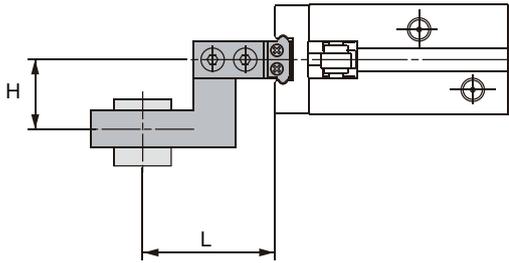
AHZ2-40D



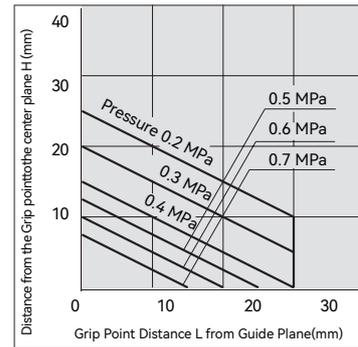
# Gripper (Parallel Opening/Closing Type) AHZ2 Series

## External Gripping Force

When installing and using the air gripper, the corresponding H and L values should comply with the curve in the right figure. Exceeding this range may affect the cylinder's service life.

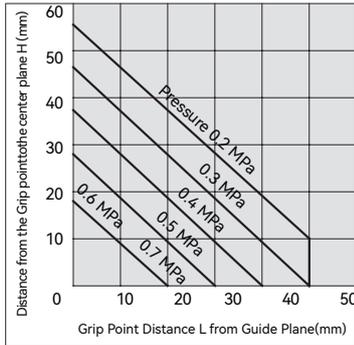


AHZ2-6D

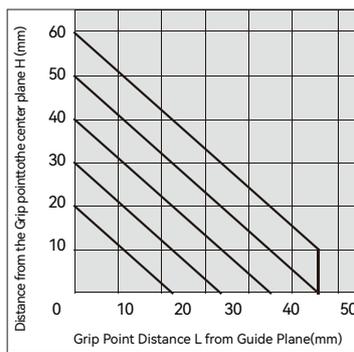


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AHZ2-10D

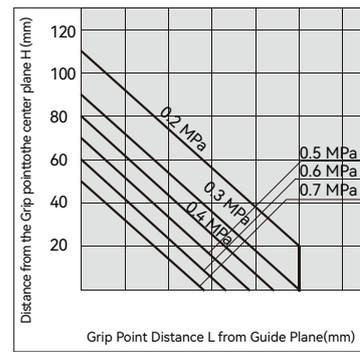


AHZ2-16D

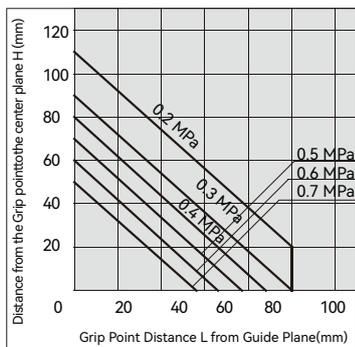


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AHZ2-20D

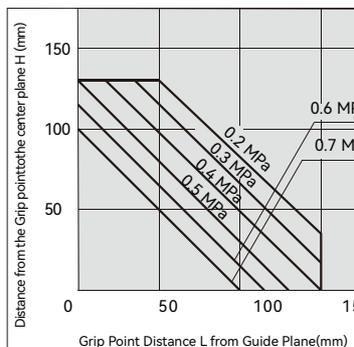


AHZ2-25D

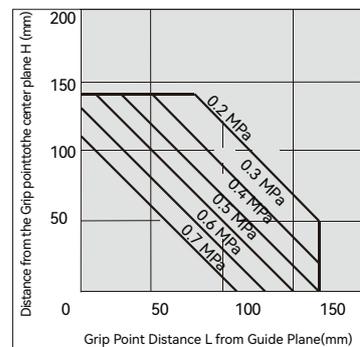


120

AHZ2-32D



AHZ2-40D

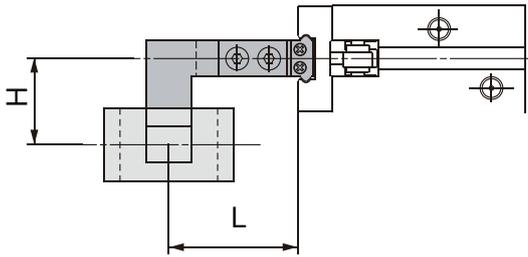


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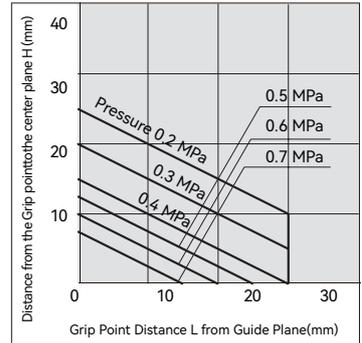
# Gripper (Parallel Opening/Closing Type) AHZ2 Series

## Internal Gripping Force

When installing and using the air gripper, the corresponding H and L values must conform to the curve shown in the diagram on the right. Exceeding this specified range may compromise the cylinder's service life.

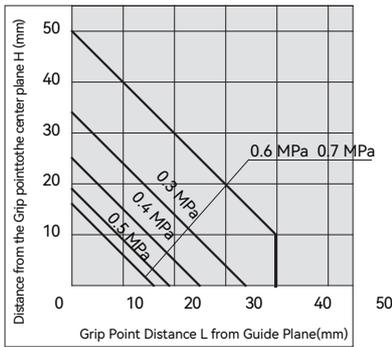


AHZ2-6D



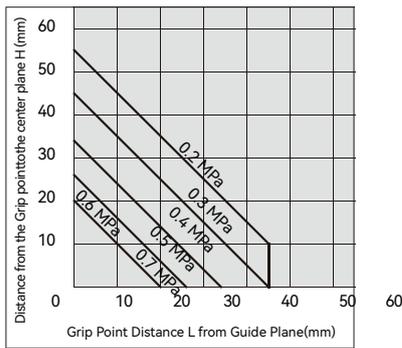
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AHZ2-10D



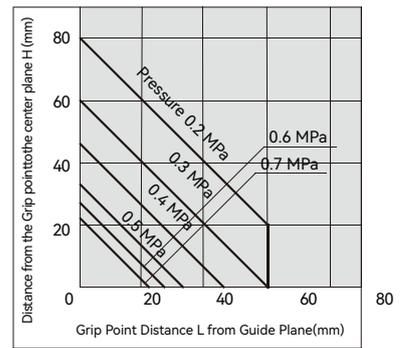
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AHZ2-16D



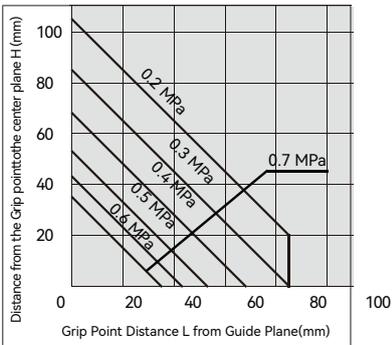
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AHZ2-20D



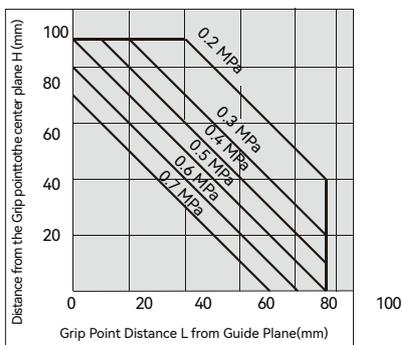
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AHZ2-25D



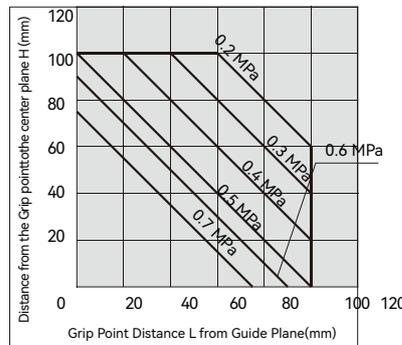
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AHZ2-32D



100

AHZ2-40D

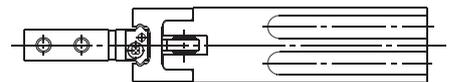
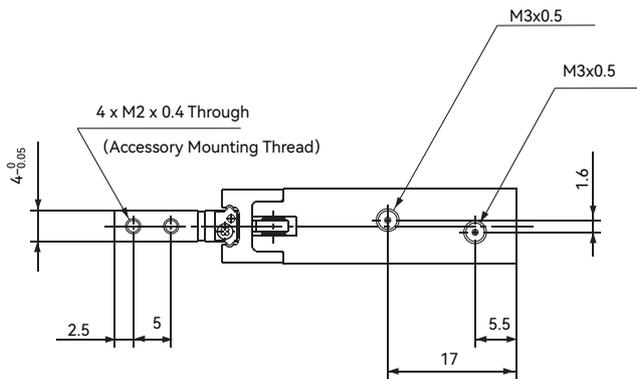
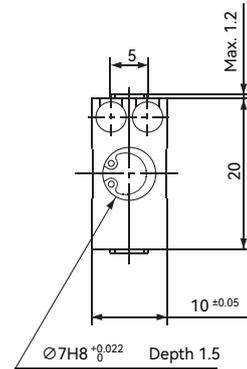
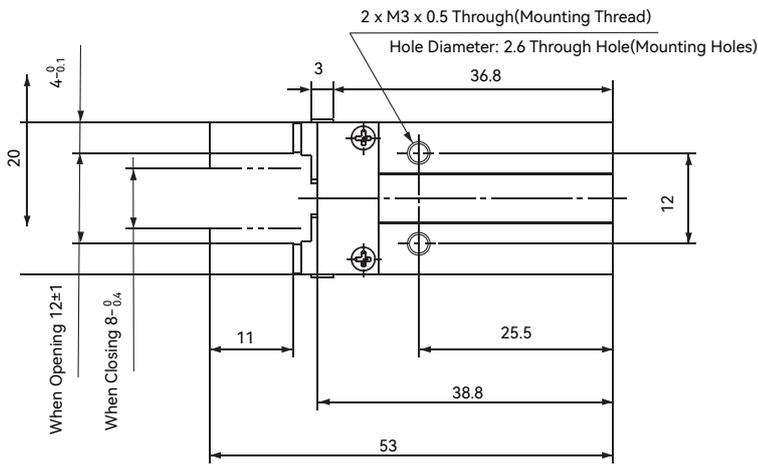


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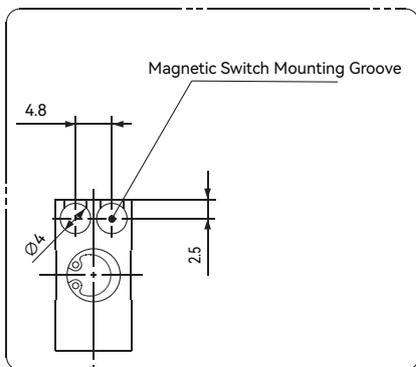
Gripper (Parallel Opening/Closing Type) AHZ2 Series

Outline Dimension Drawing (mm)

► Basic Type (Double-acting) AHZ2-6D



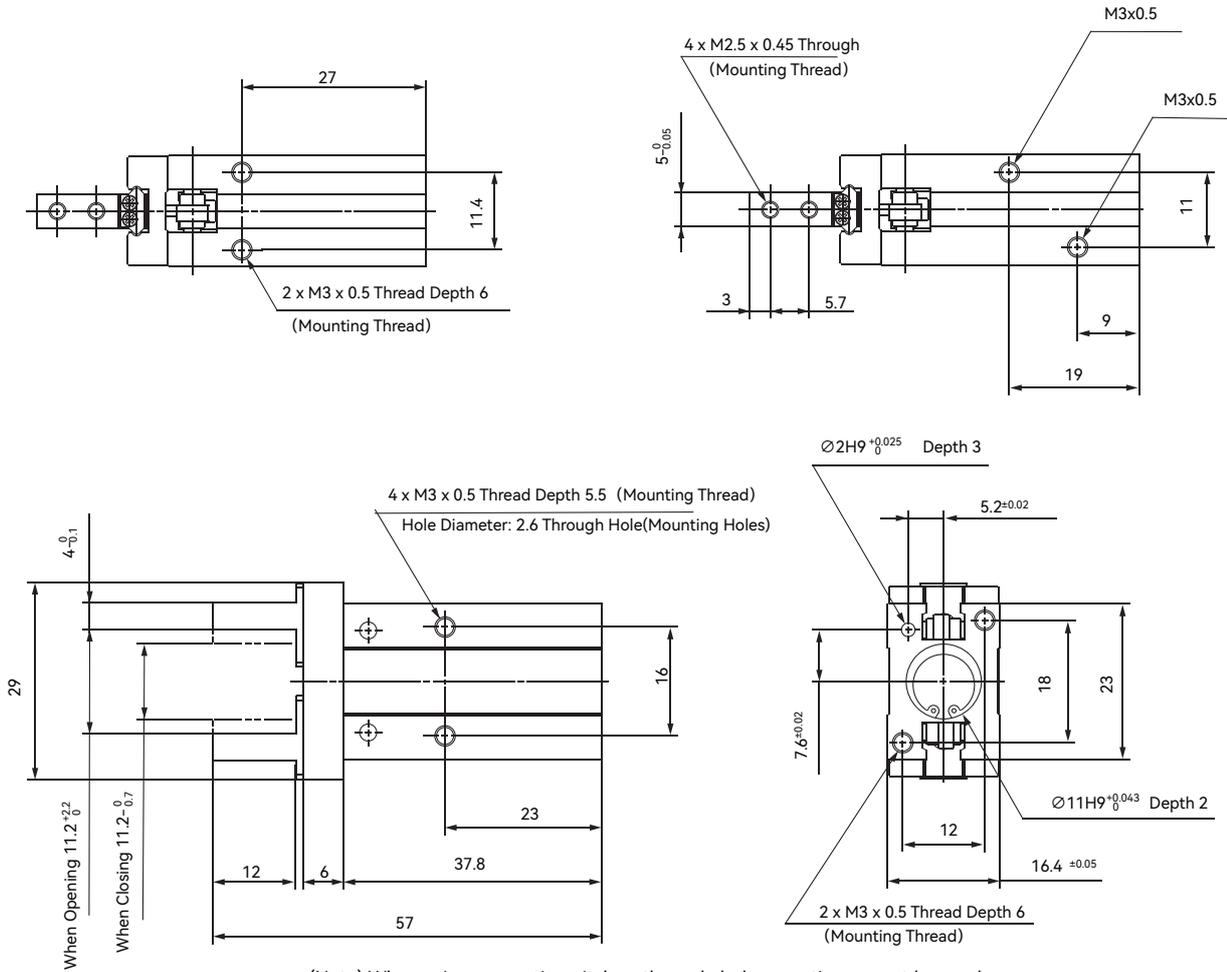
► Magnetic Switch Mounting Groove Dimensions



# Gripper (Parallel Opening/Closing Type) AHZ2 Series

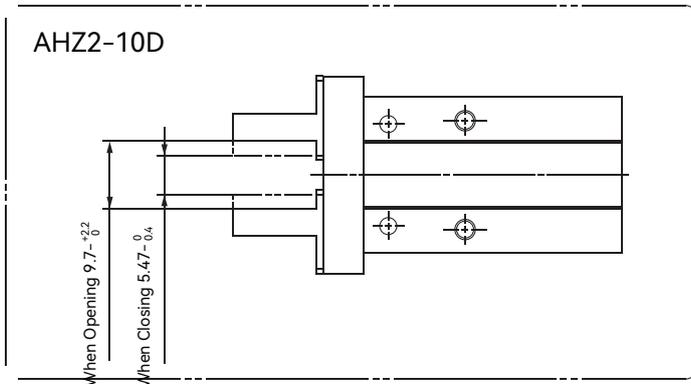
## Outline Dimension Drawing (mm)

### Basic Type (Double-acting) AHZ2-10D

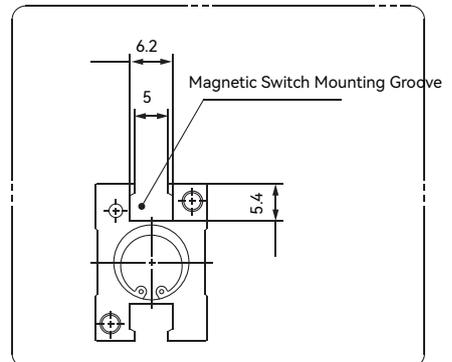


(Note) When using magnetic switches, through-hole mounting cannot be used.

### Finger Position / Narrow Type



### Magnetic Switch Mounting Groove Dimensions

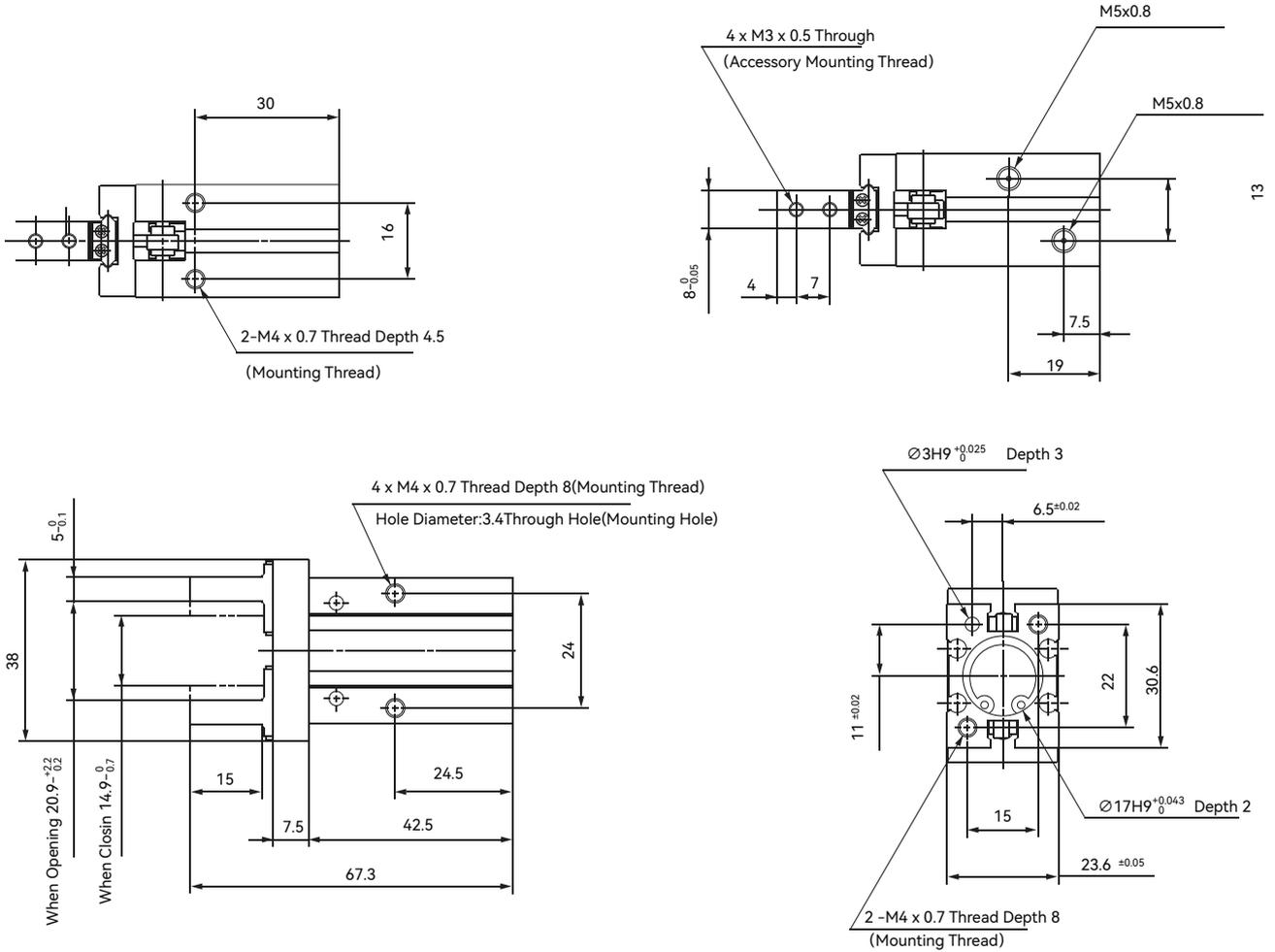


(Note) When using magnetic switches in the square groove section, through-hole mounting cannot be used.

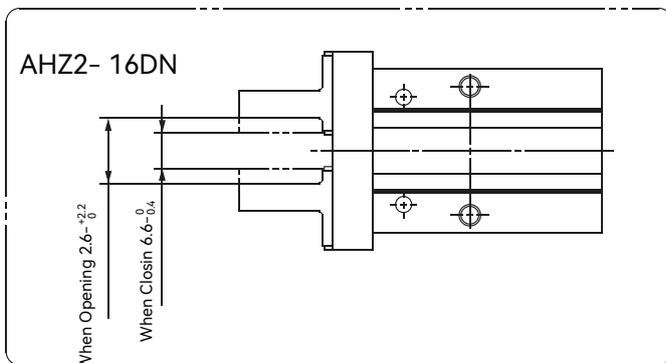
Gripper (Parallel Opening/Closing Type) AHZ2 Series

Outline Dimension Drawing (mm)

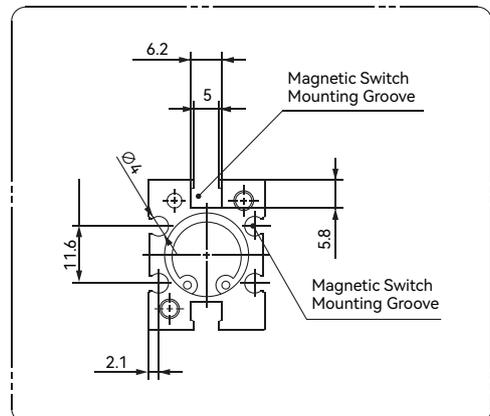
Basic Type (Double-acting) AHZ2-16D



Finger Position / Narrow Type



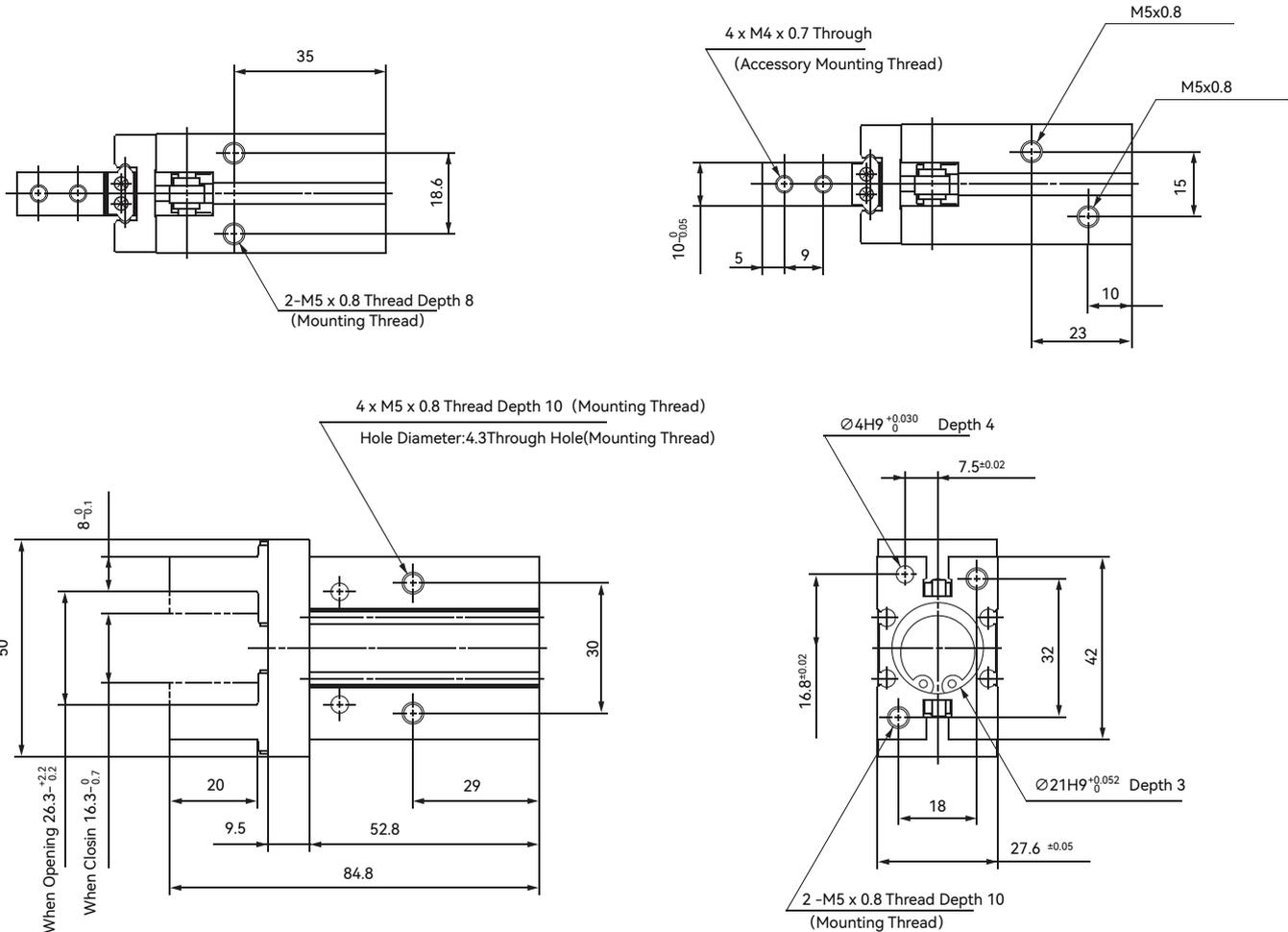
Magnetic Switch Mounting Groove Dimensions



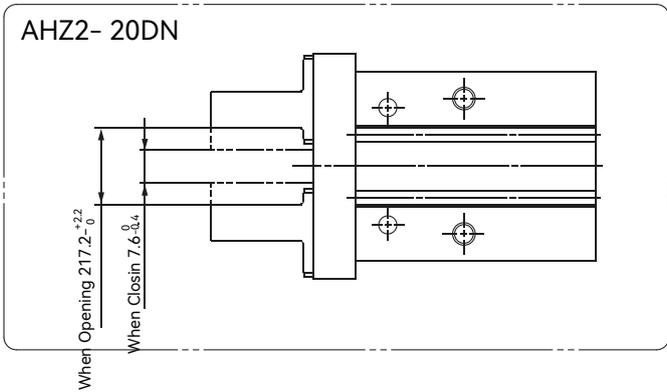
# Gripper (Parallel Opening/Closing Type) AHZ2 Series

## Outline Dimension Drawing (mm)

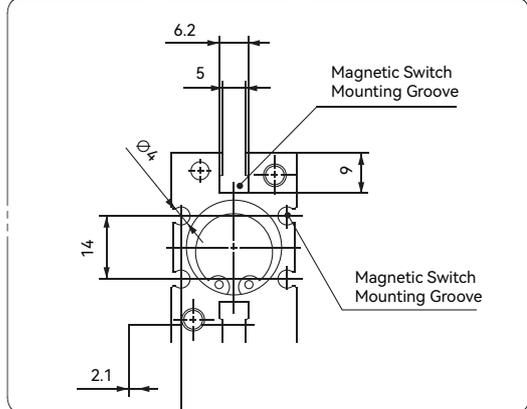
### ► Basic Type (Double-acting) AHZ2-20D



### Finger Position / Narrow Type



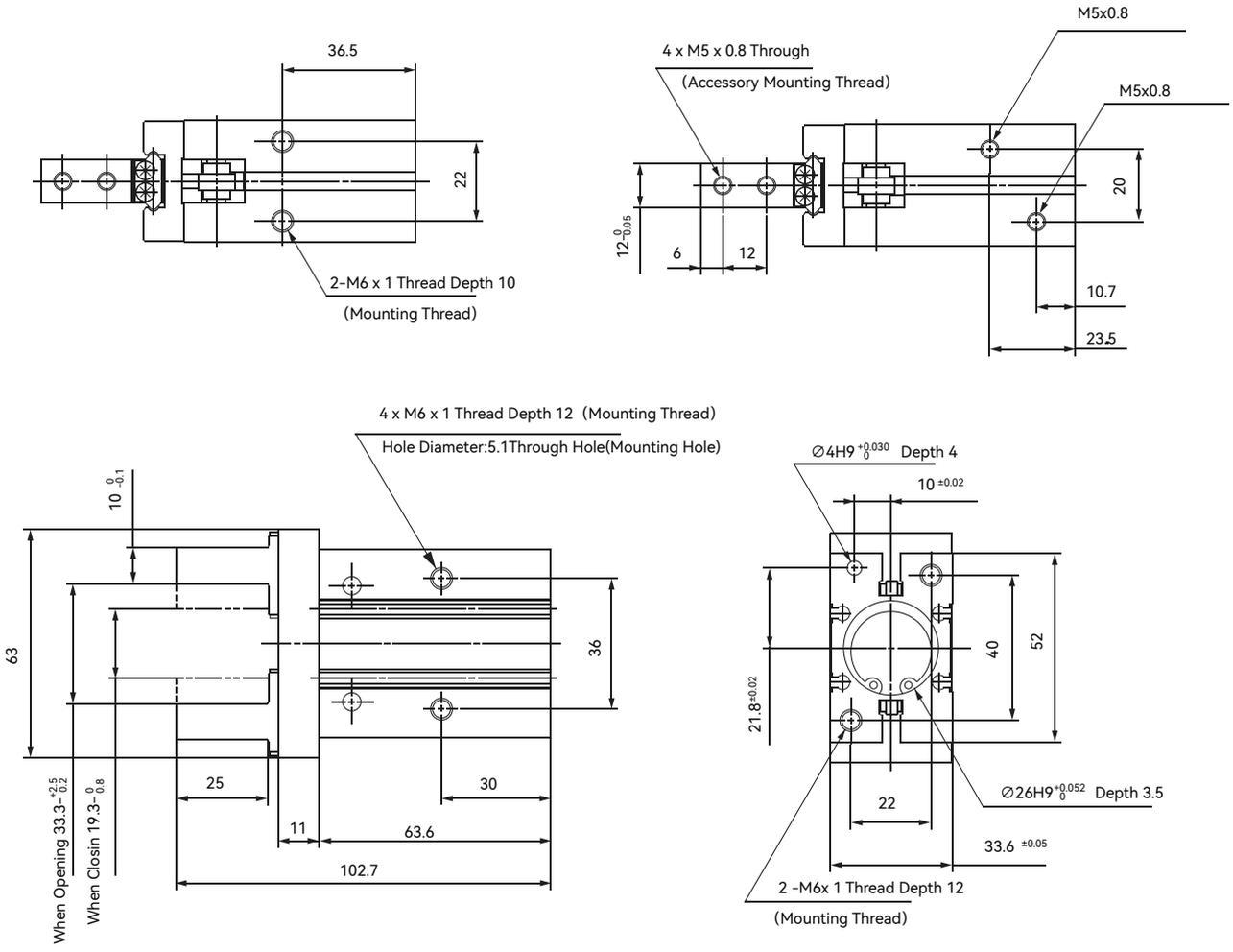
### Magnetic Switch Mounting Groove Dimensions



Gripper (Parallel Opening/Closing Type) AHZ2 Series

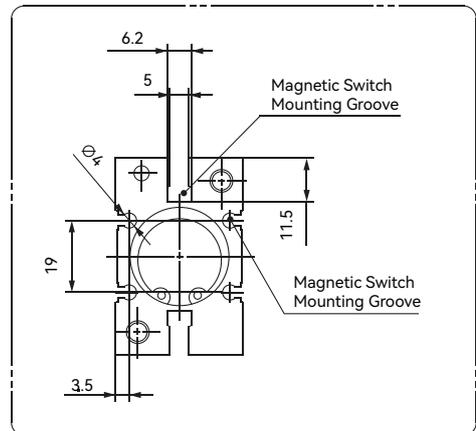
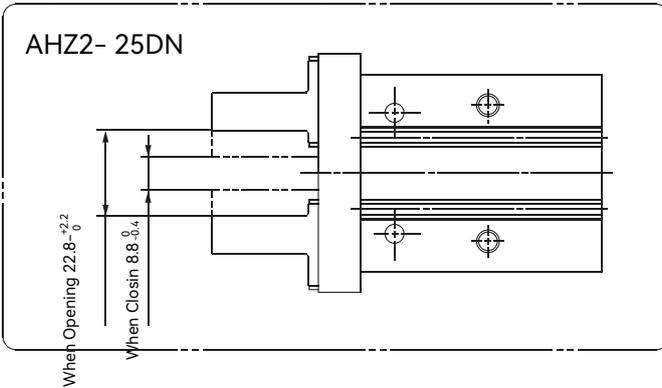
Outline Dimension Drawing (mm)

Basic Type (Double-acting) AHZ2-25DN



Magnetic Switch Mounting Groove Dimensions

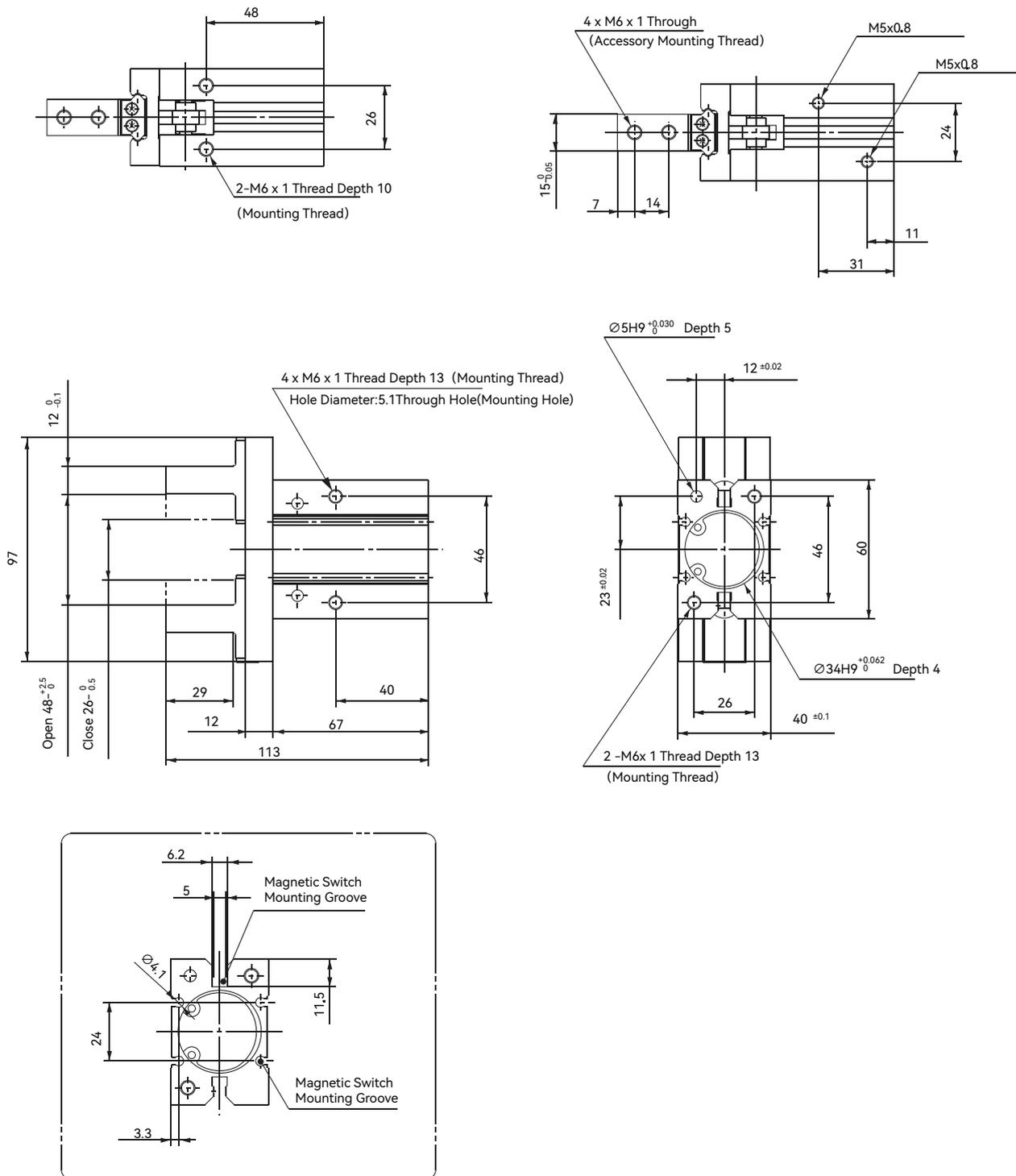
Finger Position / Narrow Type



# Gripper (Parallel Opening/Closing Type) AHZ2 Series

## Outline Dimension Drawing (mm)

### Basic Type (Double-acting) AHZ2-32D

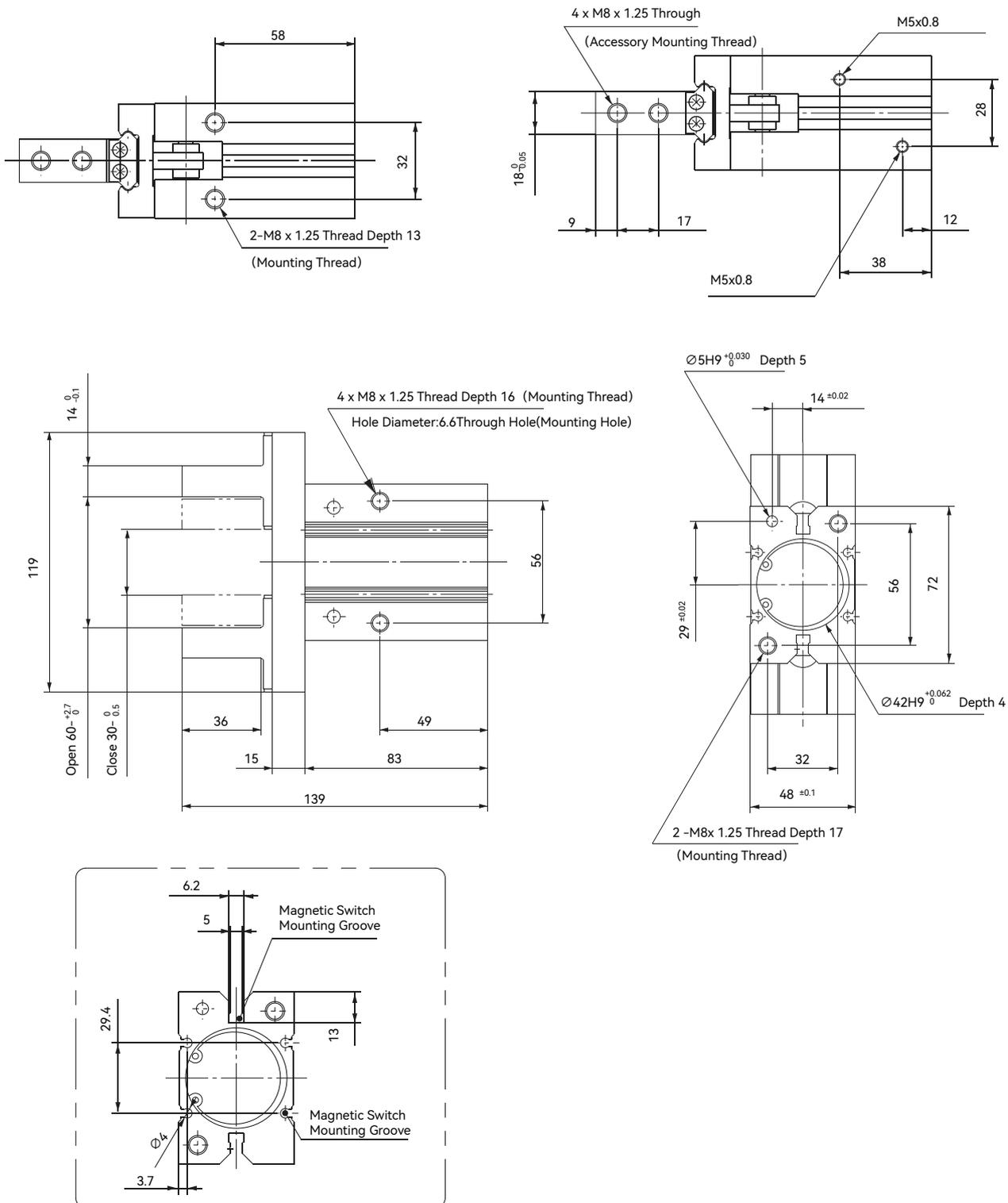


# Gripper (Parallel Opening/Closing Type)

# AHZ2 Series

## Outline Dimension Drawing (mm)

### ► Basic Type (Double-acting) AHZ2-40D



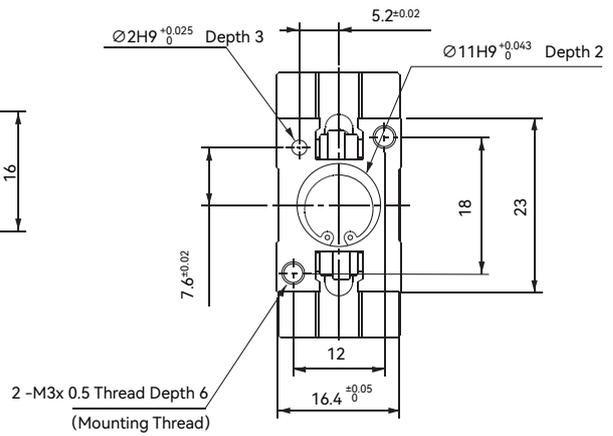
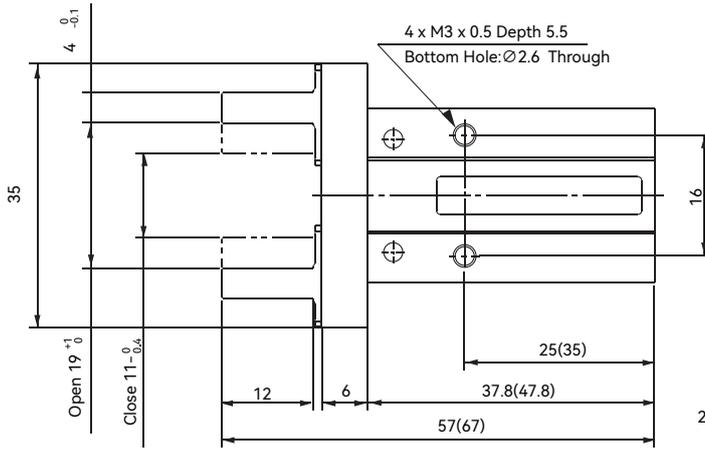
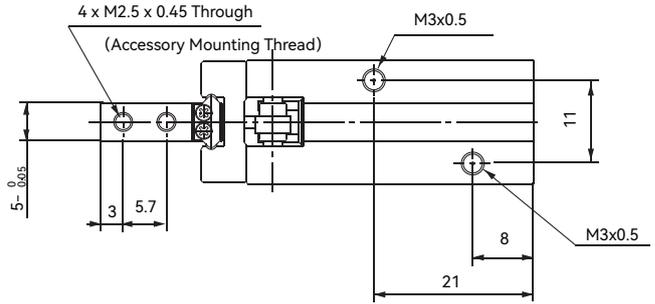
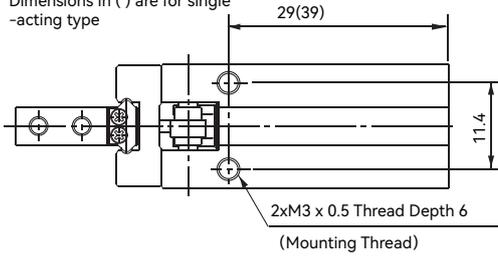
# Gripper (Parallel Opening/Closing Type)

# AHZ2 Series

## Outline Dimension Drawing (mm)

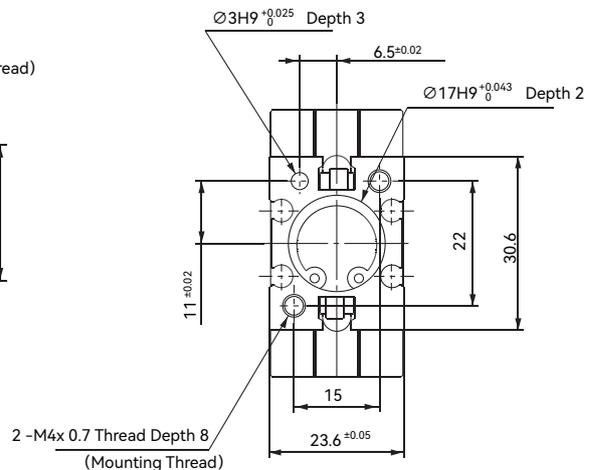
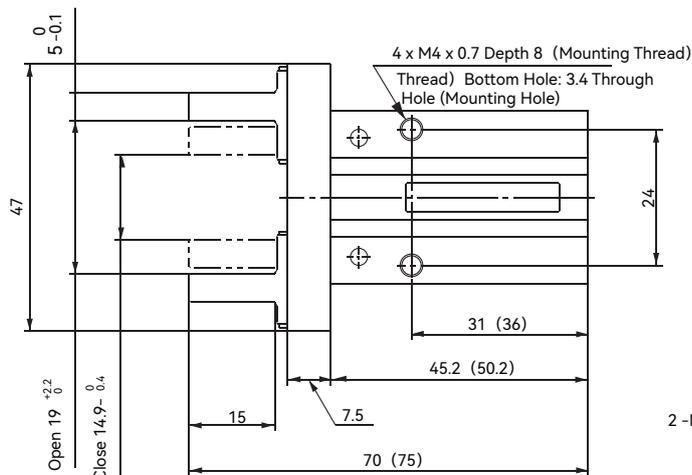
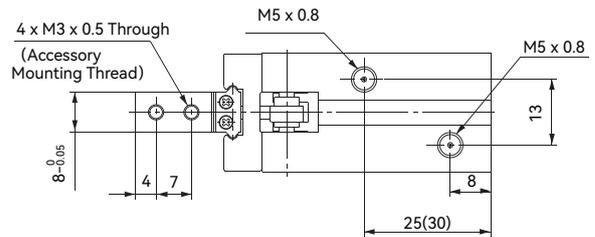
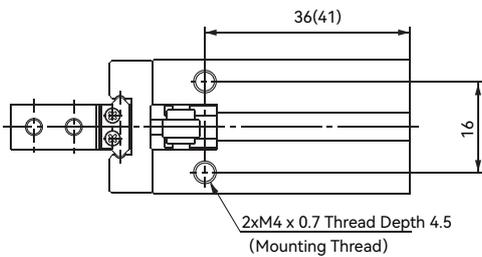
### Double-acting / Single-acting AHZL2-10

Dimensions in ( ) are for single-acting type



### Double-acting / Single-acting AHZL2-16

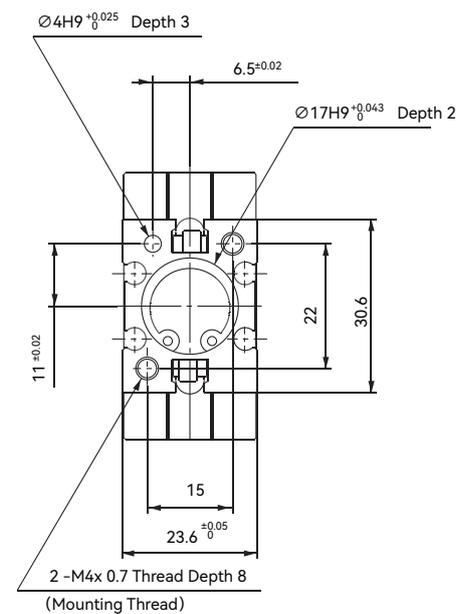
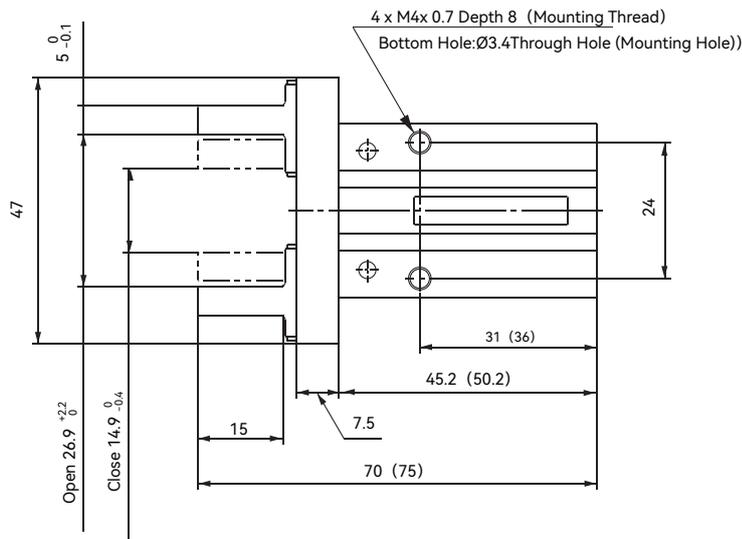
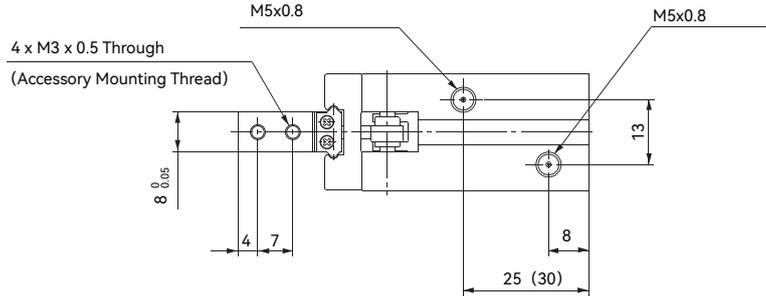
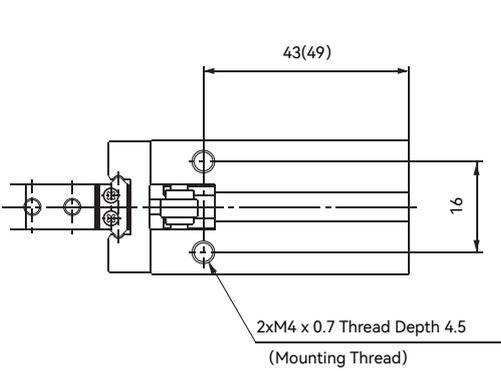
Dimensions in ( ) are for single-acting type



# Gripper (Parallel Opening/Closing Type) AHZ2 Series

## Outline Dimension Drawing (mm)

► Double-acting / Single-acting AHZL2-20  
 Dimensions in ( ) are for single-acting type



# Gripper (Parallel Opening/Closing Type) AHZ2 Series

## Outline Dimension Drawing (mm)

► Double-acting / Single-acting AHZL2-25  
 Dimensions in ( ) are for single-acting type

