

## Standard Type Basic Model Series WHZ2

### How to Order

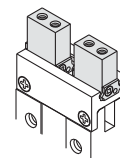
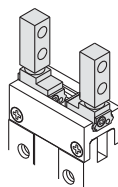
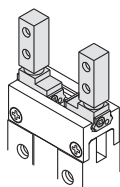
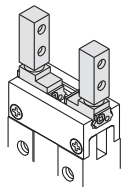
[Standard type]

Nil: Basic type

1: Side tapped mounting

2: Through holes in opening/  
closing direction

3: Flat type fingers



**ø6 WHZ2 - 6 D**

Number of fingers •

2 2 fingers

Bore size •

6 6mm

Action •

D	Double acting
S	Single acting (normally open)
C	Single acting (normally closed)

Finger option •

### How to Order

**ø10 to ø25 WHZ2 - 16 D**

Number of fingers •

2 2 fingers

Bore size •

10	10mm
16	16mm
20	20mm
25	25mm

Action •

D	Double acting
S	Single acting (normally open)
C	Single acting (normally closed)

Body option •

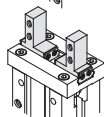
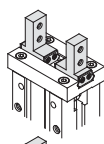
Finger position/Option •

**Standard type**

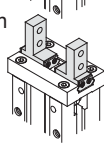
[MHQG2 compatible type]

Nil: Basic type

1: Side tapped  
mounting



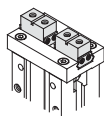
2: Through holes in  
opening/closing  
direction



3: Flat type fingers



The flat type fingers do not have standard and narrow options. When MHQG2/MHQ2 compatible types are required, see the -X51 order made specifications on page 5-60

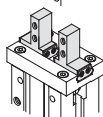
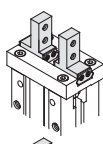


**Narrow type**

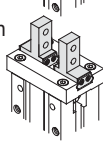
[MHQG2 compatible type]

N: Basic type

N1: Side tapped  
mounting



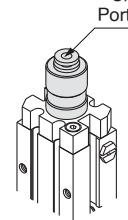
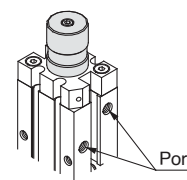
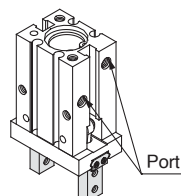
N2: Through holes in  
opening/closing  
direction



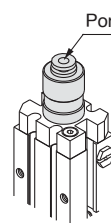
Nil: Basic type

E: End boss type  
Side ported (double  
acting/single acting)

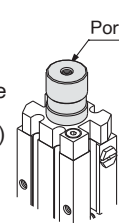
W: End boss type  
Axial port with ø4  
One-touch fitting for  
coaxial tubing  
(double acting)



K: End boss type  
Axial port with ø4  
One-touch fitting  
(single acting)



M: End boss type  
Axial M5 port  
(single acting)



## How to Order

**ø32 to ø40 WHZ2 — 32 D**

Number of fingers

2 2 fingers

Bore size

32	32mm
40	40mm

Action

D	Double acting
S	Single acting (normally open)
C	Single acting (normally closed)

Finger option

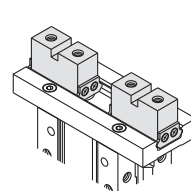
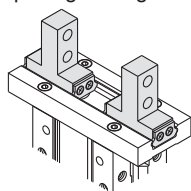
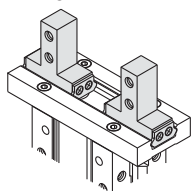
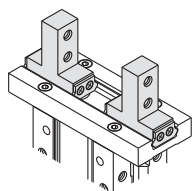
### Standard type

Nil: Basic type

1: Side tapped mounting

2: Through holes in opening/closing direction

3: Flat type fingers



## Specifications

ø6



ø10 to ø25



Fluid			Air
Operating pressure	Double acting		ø6: 0.15 to 0.7MPa ø10: 0.2 to 0.7MPa ø16 to ø40: 0.1 to 0.7MPa
	Single acting	Normally open	ø6: 0.3 to 0.7MPa ø10: 0.35 to 0.7MPa ø16 to ø40: 0.25 to 0.7MPa
		Normally closed	
Ambient and fluid temperature			−10 to 60°C
Repeatability			ø6 to ø25: ±0.01mm ø32, ø40: ±0.02mm
Maximum operating frequency			ø6 to ø25: 180c.p.m. ø32, ø40: 60c.p.m.
Lubrication			Non-lube
Action			Double acting, Single acting

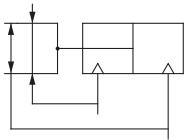
## Models

ø32, ø40

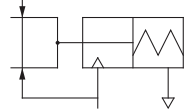


### Symbols:

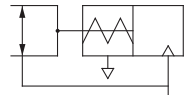
#### Double acting type



#### Single acting type, normally open



#### Single acting type, normally closed



Action	Model	Bore size (mm)	Gripping force <sup>Note 1)</sup>		Opening/ Closing stroke (both sides) mm	<sup>Note 2)</sup> Weight g	
			Gripping force per finger Effective value N				
			External gripping force	Internal gripping force			
Double acting	WHZ2-6D	6	3.3	6.1	4	27	
	WHZ2-10D(N)	10	11	17	4	55	
	MHZ2-16D(N)	16	34	45	6	115	
	WHZ2-20D(N)	20	42	66	10	235	
	WHZ2-25D(N)	25	65	104	14	430	
	WHZ2-32D	32	158	193	22	715	
	WHZ2-40D	40	254	318	30	1275	
Single acting	Normally open	WHZ2-6S	6	1.9	—	4	27
		WHZ2-10S(N)	10	7.1		4	55
		WHZ2-16S(N)	16	27		6	115
		WHZ2-20S(N)	20	33		10	240
		WHZ2-25D(N)	25	45		14	435
		WHZ2-32S	32	131		22	760
		WHZ2-40S	40	217		30	1370
	Normally closed	WHZ2-6C	6	—	3.7	4	27
		WHZ2-10C(N)	10		13	4	55
		WHZ2-16C(N)	16		38	6	115
		WHZ2-20C(N)	20		57	10	240
		WHZ2-25C(N)	25		83	14	430
		WHZ2-32C	32		161	22	760
		WHZ2-40C	40		267	30	1370

Note 1) Values based on pressure of 0.5MPa, gripping point L = 20mm, at center of stroke.

Note 2) Values excluding weight of auto switch.

## Options

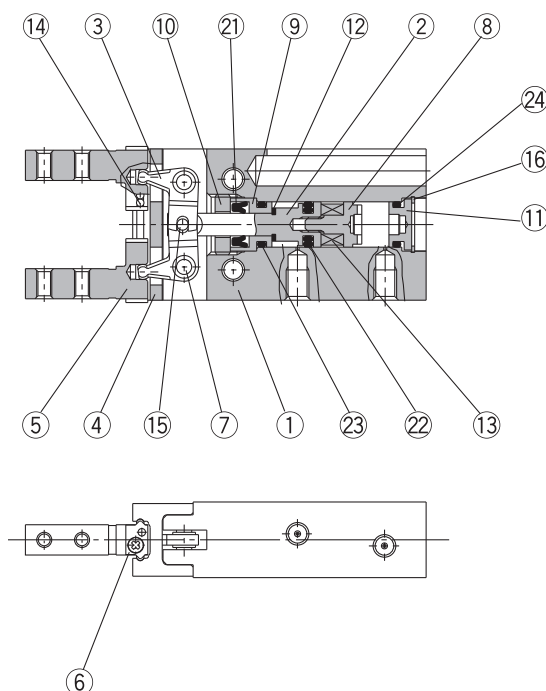
### • Body options/End boss type

Symbol	Piping port position	Type of piping port						Applicable model	
		WHZ2-6	WHZ2-10	WHZ2-16	WHZ2-20	WHZ2-25	WHZ2-32	WHZ2-40	Double acting
Nil	Basic type	M3		M5				●	●
E	Side ported	—	M3	M5			—	●	●
W	Axial port	—	With ø4 One-touch fitting for coaxial tube			—		●	—
K	Axial port	—	With ø4 One-touch fitting			—		—	●
M	Axial port	—	M5			—		—	●

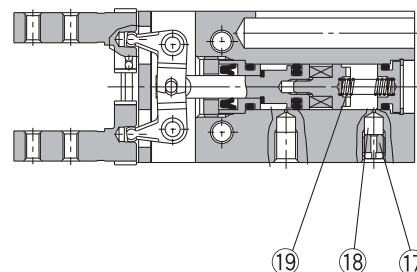
For detailed body option specifications, refer to option specifications on page 5-32

## Construction/WHZ2-6

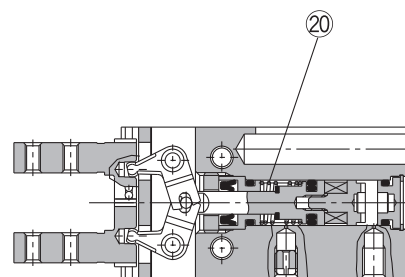
### Double acting/with fingers open



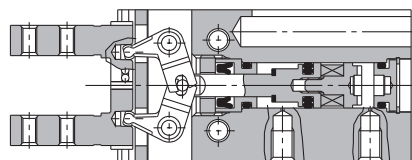
### Single acting/normally open



### Single acting/normally closed



### Double acting/with fingers closed



#### Parts list

No.	Description	Material	Note
1	<b>Body</b>	Aluminum alloy	Hard anodized
2	<b>Piston</b>	Stainless steel	
3	<b>Lever</b>	Stainless steel	Heat treated
4	<b>Guide</b>	Stainless steel	Heat treated
5	<b>Finger</b>	Stainless steel	Heat treated
6	<b>Roller stopper</b>	Stainless steel	
7	<b>Lever shaft</b>	Stainless steel	Nitrided
8	<b>Magnet holder</b>	Stainless steel	
9	<b>Holder</b>	Brass	Electroless nickel plated
10	<b>Holder lock</b>	Stainless steel	
11	<b>Cap</b>	Aluminum alloy	Clear anodized
12	<b>Bumper</b>	Urethane rubber	
13	<b>Magnet</b>	Rare earth magnet	Nickel plated

#### Parts list

No.	Description	Material	Note
14	<b>Steel balls</b>	High carbon chromium bearing steel	
15	<b>Needle roller</b>	High carbon chromium bearing steel	
16	<b>C type snap ring</b>	Carbon steel	Nickel plated
17	<b>Exhaust plug</b>	Brass	Electroless nickel plated
18	<b>Exhaust filter</b>	Polyvinyl formal	
19	<b>N.O. spring</b>	Stainless steel spring wire	
20	<b>N.C. spring</b>	Stainless steel spring wire	
21	<b>Rod seal</b>	NBR	
22	<b>Piston seal</b>	NBR	
23	<b>Gasket</b>	NBR	
24	<b>Gasket</b>	NBR	

#### Replacement parts: Seal kits

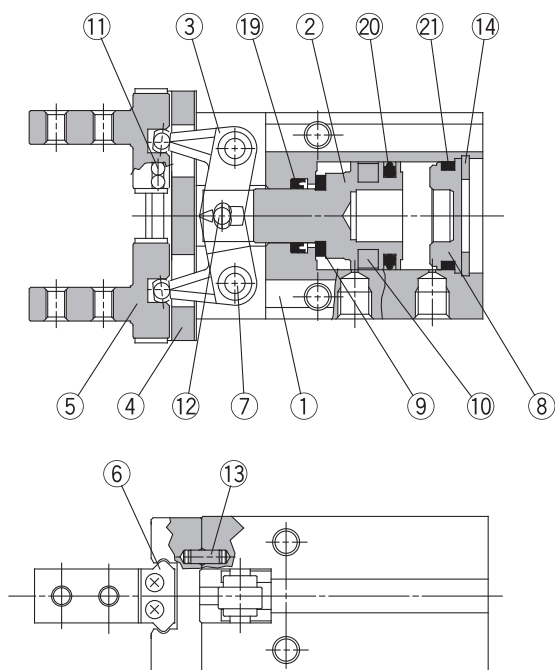
Seal kit no.	Description
WHZ6-PS	Kit includes items 21, 22, 23 and 24 from the table above.

\* Seal kits consist of items 21, 22, 23 and 24 in one kit, and can be ordered using the seal kit number.

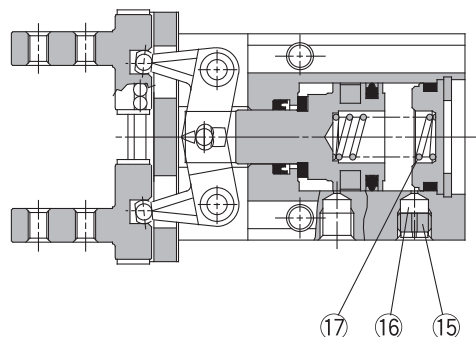
Note) Contact SMC when replacing seals.

## Construction/WHZ2-10□ to 40□

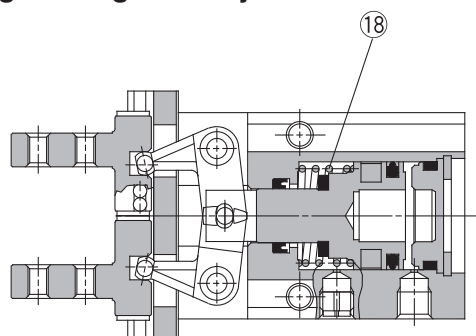
### Double acting/with fingers open



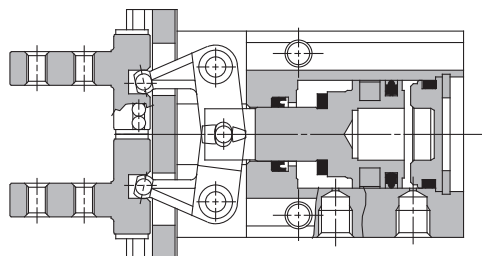
### Single acting/normally open



### Single acting/normally closed



### Double acting/with fingers closed



#### Parts list

No.	Description	Material	Note
1	<b>Body</b>	Aluminum alloy	Hard anodized
2	<b>Piston</b>	ø10, ø16: Stainless steel ø20 to ø40: Aluminum alloy	ø20 to ø40: Hard anodized
3	<b>Lever</b>	Stainless steel	Heat treated
4	<b>Guide</b>	Stainless steel	Heat treated
5	<b>Finger</b>	Stainless steel	Heat treated
6	<b>Roller stopper</b>	Stainless steel	
7	<b>Lever shaft</b>	Stainless steel	Nitrided
8	<b>Cap</b>	ø10 to ø25: Synthetic resin ø32, ø40: Aluminum alloy	ø32, ø40: Clear anodized
9	<b>Bumper</b>	Urethane rubber	
10	<b>Rubber magnet</b>	Synthetic rubber	

#### Parts list

No.	Description	Material	Note
11	<b>Steel balls</b>	High carbon chromium bearing steel	
12	<b>Needle roller</b>	High carbon chromium bearing steel	
13	<b>Parallel pin</b>	Stainless steel	
14	<b>C type snap ring</b>	Carbon steel	Nickel plated
15	<b>Exhaust plug A</b>	Brass	Electroless nickel plated
16	<b>Exhaust filter A</b>	Polyvinyl formal	
17	<b>N.O. spring</b>	Stainless steel spring wire	
18	<b>N.C. spring</b>	Stainless steel spring wire	
19	<b>Rod seal</b>	NBR	
20	<b>Piston seal</b>	NBR	
21	<b>Gasket</b>	NBR	

#### Replacement parts: Seal kits

Seal kit no.						Description
WHZ2-10D	WHZ2-16D	WHZ2-20D	WHZ2-25D	WHZ2-32D	WHZ2-40D	Kits include items 19, 20 and 21 from the table above.
WHZ10-PS	WHZ16-PS	WHZ20-PS	WHZ25-PS	WHZ32-PS	WHZ40-PS	

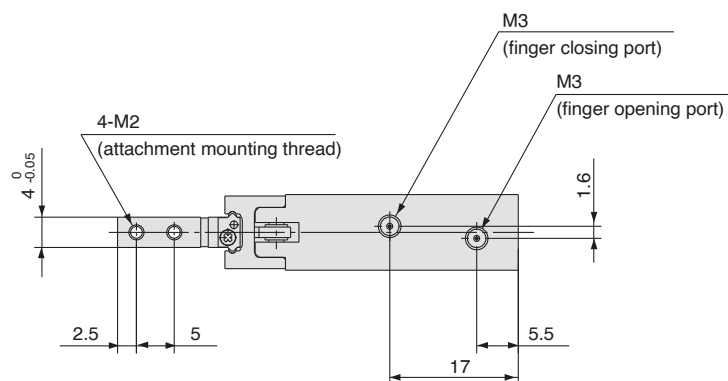
Seal kits consist of items 19, 20 and 21 in one kit, and can be ordered using the seal kit number for each cylinder bore size.

## Dimensions

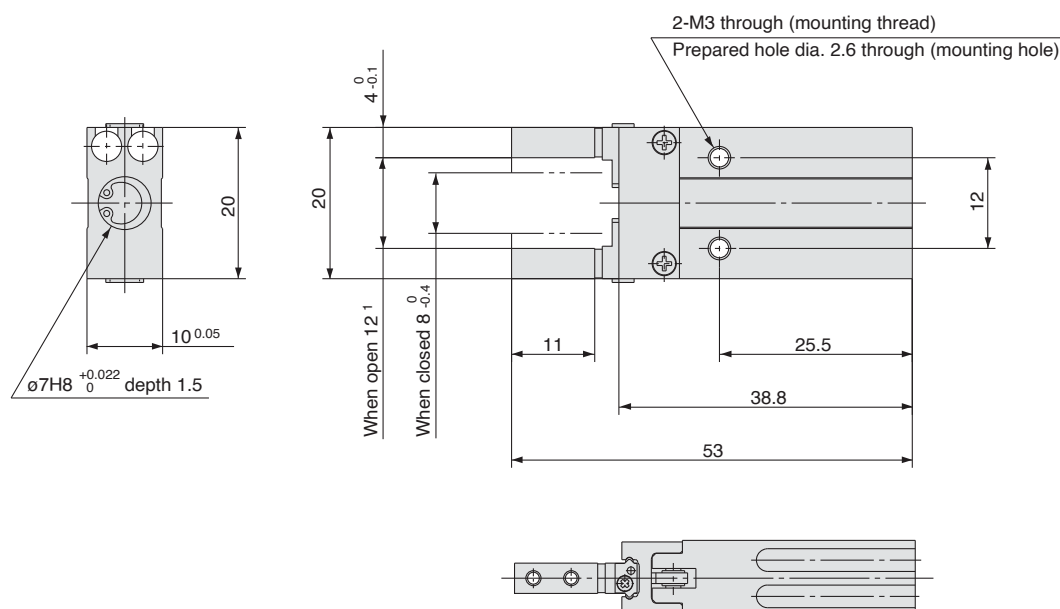
**WHZ2-6**

**Scale: 100%**

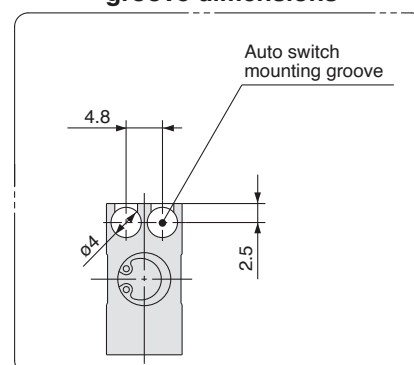
**Double acting/Single acting  
Basic type**



For single action, the port on one side is a breathing hole.



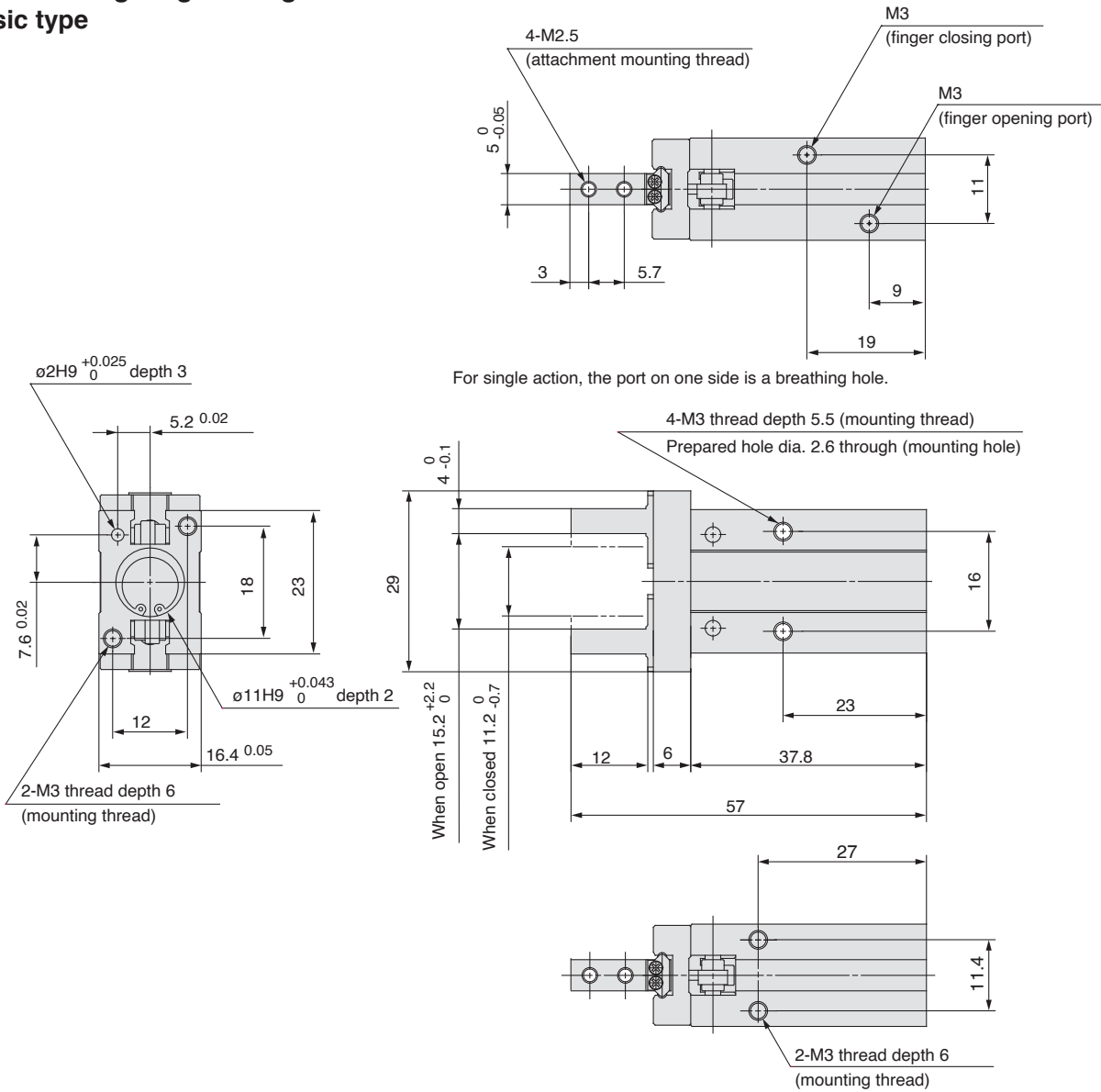
### Auto switch mounting groove dimensions



**WHZ2-10** □

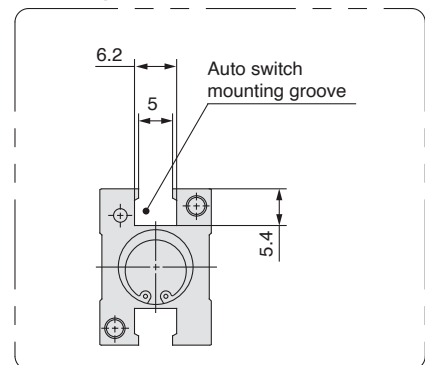
**Double acting/Single acting  
Basic type**

**Scale: 90%**



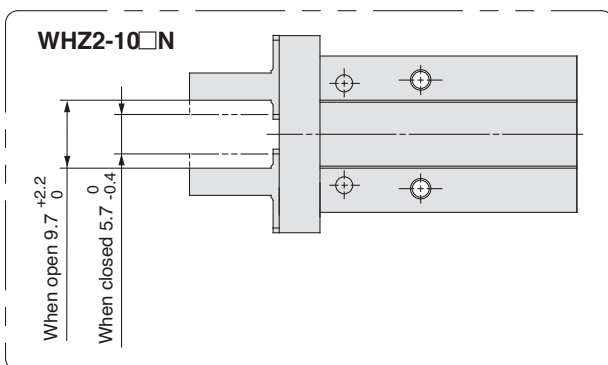
For single action, the port on one side is a breathing hole.

**Auto switch mounting  
groove dimensions**



Note) When using auto switches, through hole mounting is not possible.

**Finger position/Narrow type**

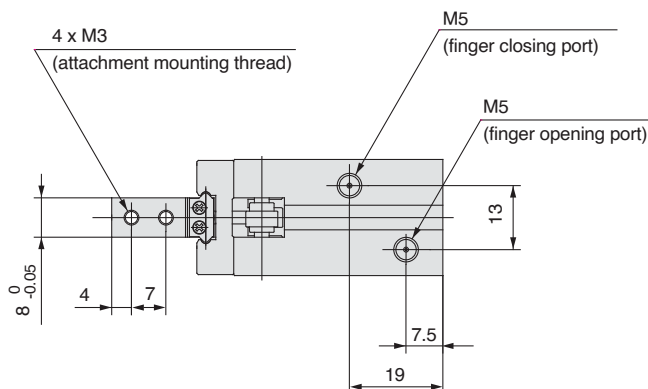


## Dimensions

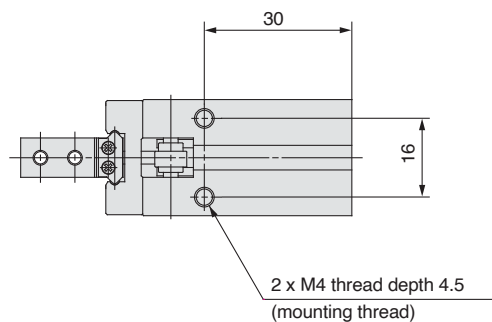
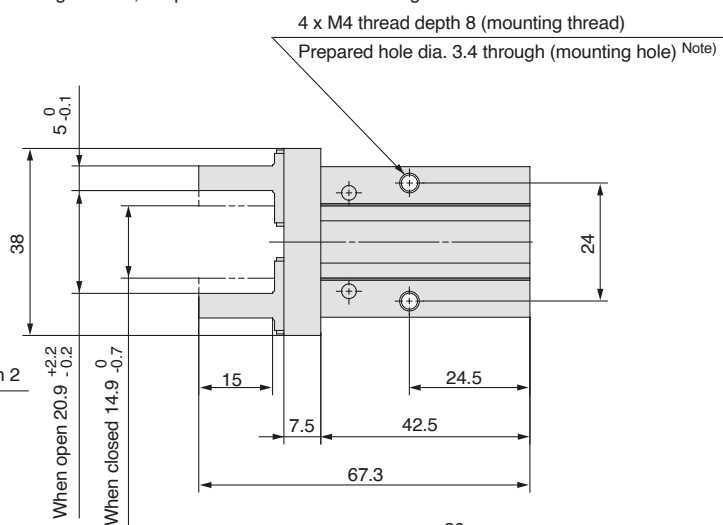
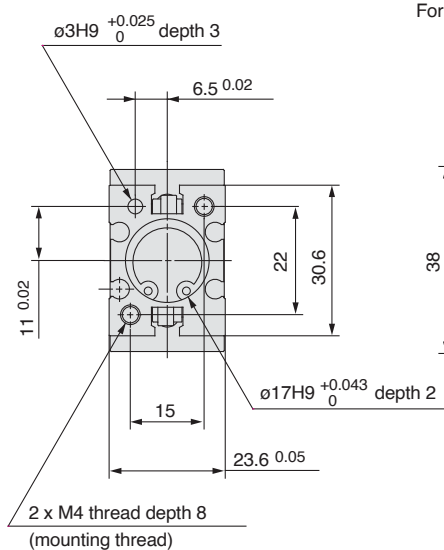
**WHZ2-16 □**

**Scale: 65%**

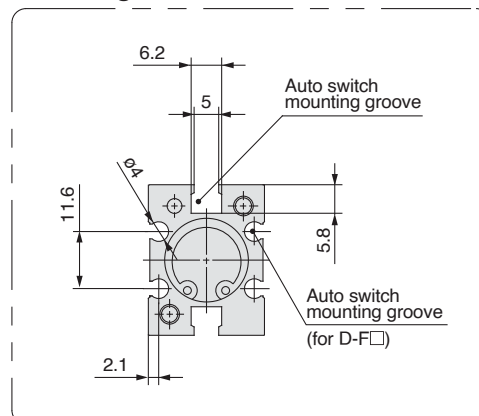
**Double acting/Single acting  
Basic type**



For single action, the port on one side is a breathing hole.



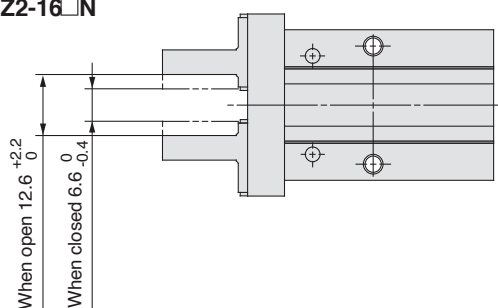
### Auto switch mounting groove dimensions



*Note*) When using auto switches, through hole mounting is not possible.

### Finger position/Narrow type

**WHZ2-16 □ N**

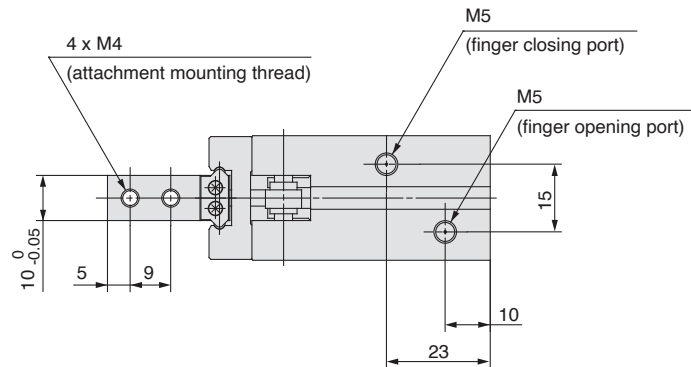




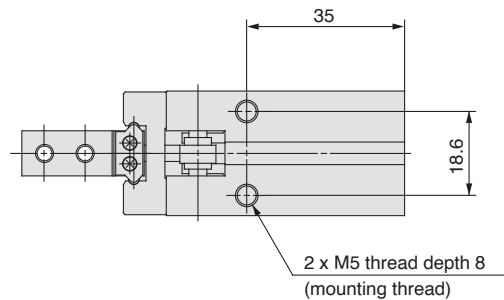
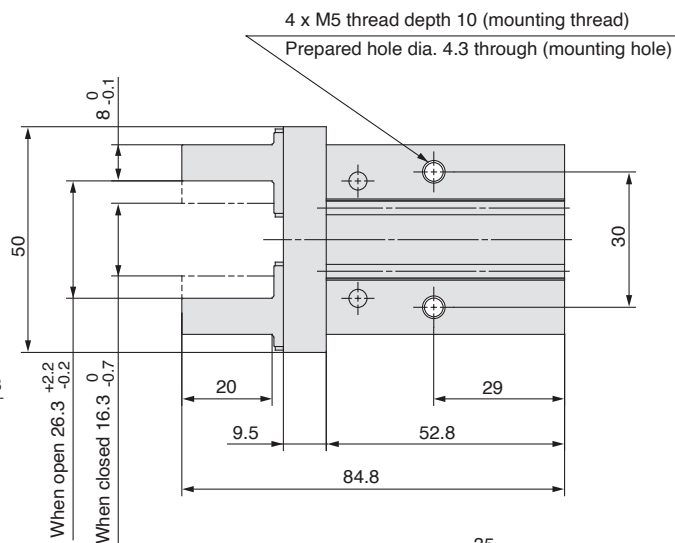
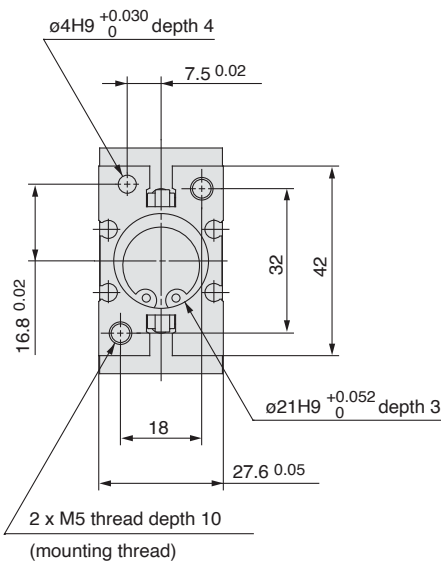
**WHZ2-20□**

**Double acting/Single acting  
Basic type**

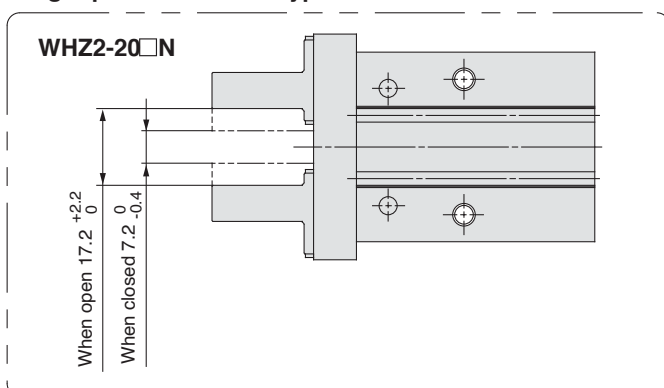
**Scale: 60%**



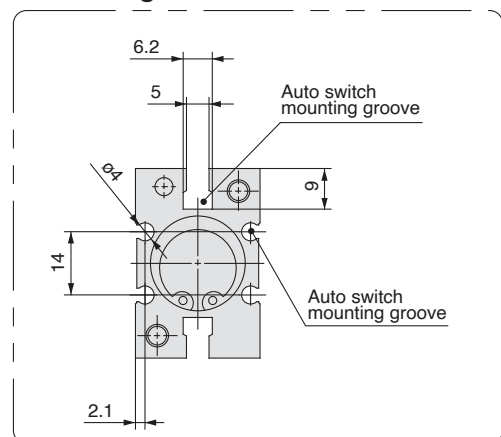
For single action, the port on one side is a breathing hole.



**Finger position/Narrow type**



**Auto switch mounting  
groove dimensions**



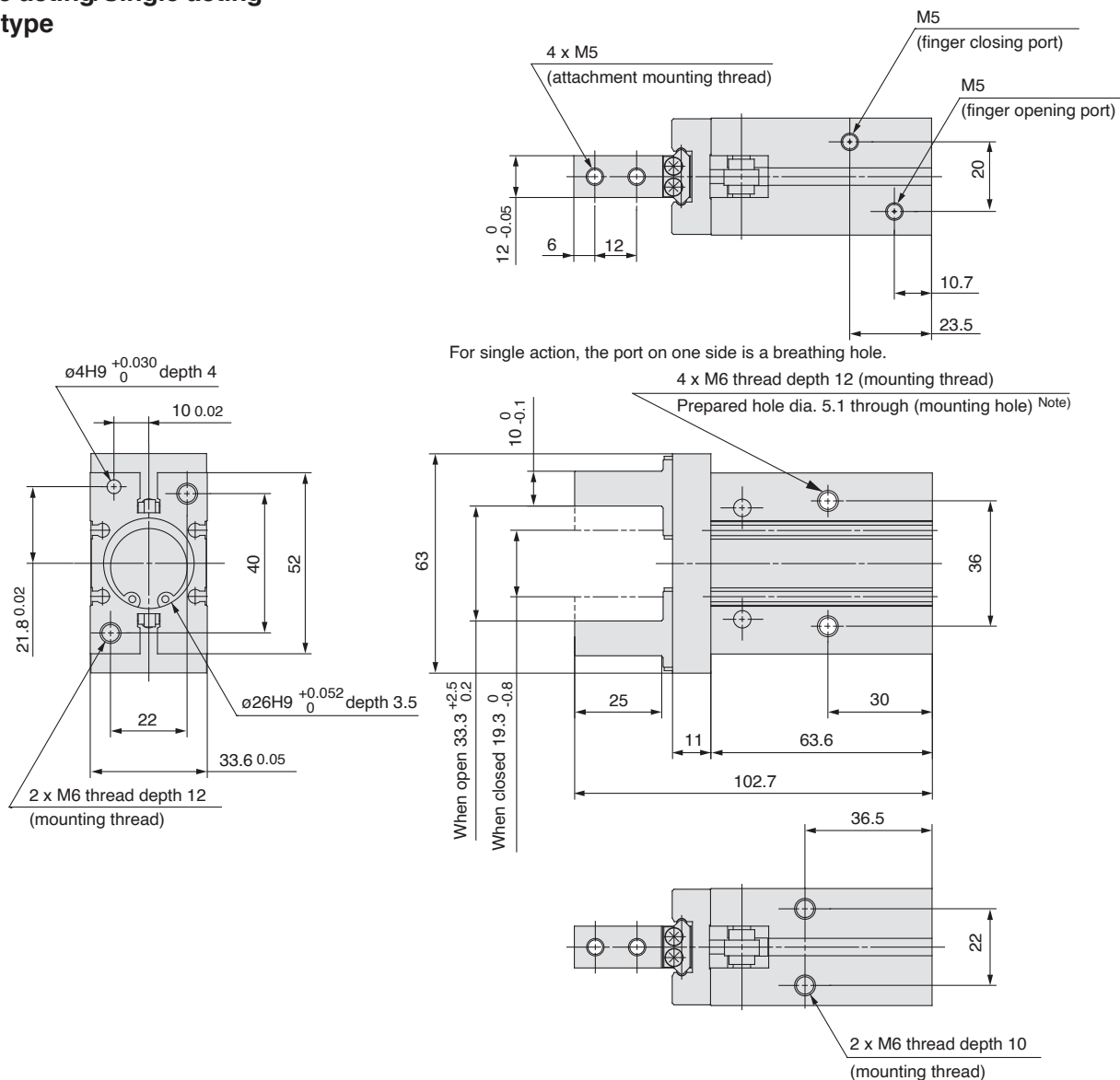
Note) When using auto switches, through hole mounting is not possible.

## Dimensions

WHZ2-25□

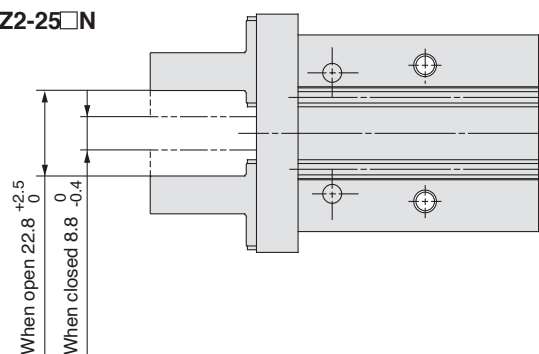
Scale: 50%

Double acting/Single acting  
Basic type

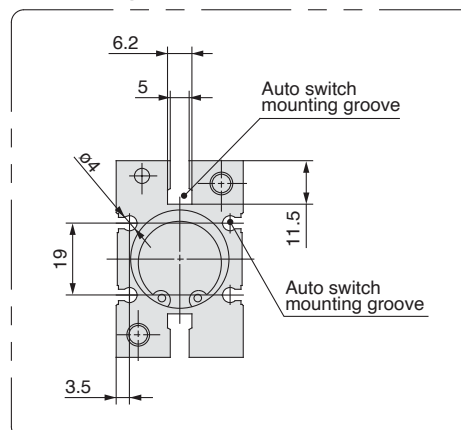


### Finger position/Narrow type

WHZ2-25□N



### Auto switch mounting groove dimensions



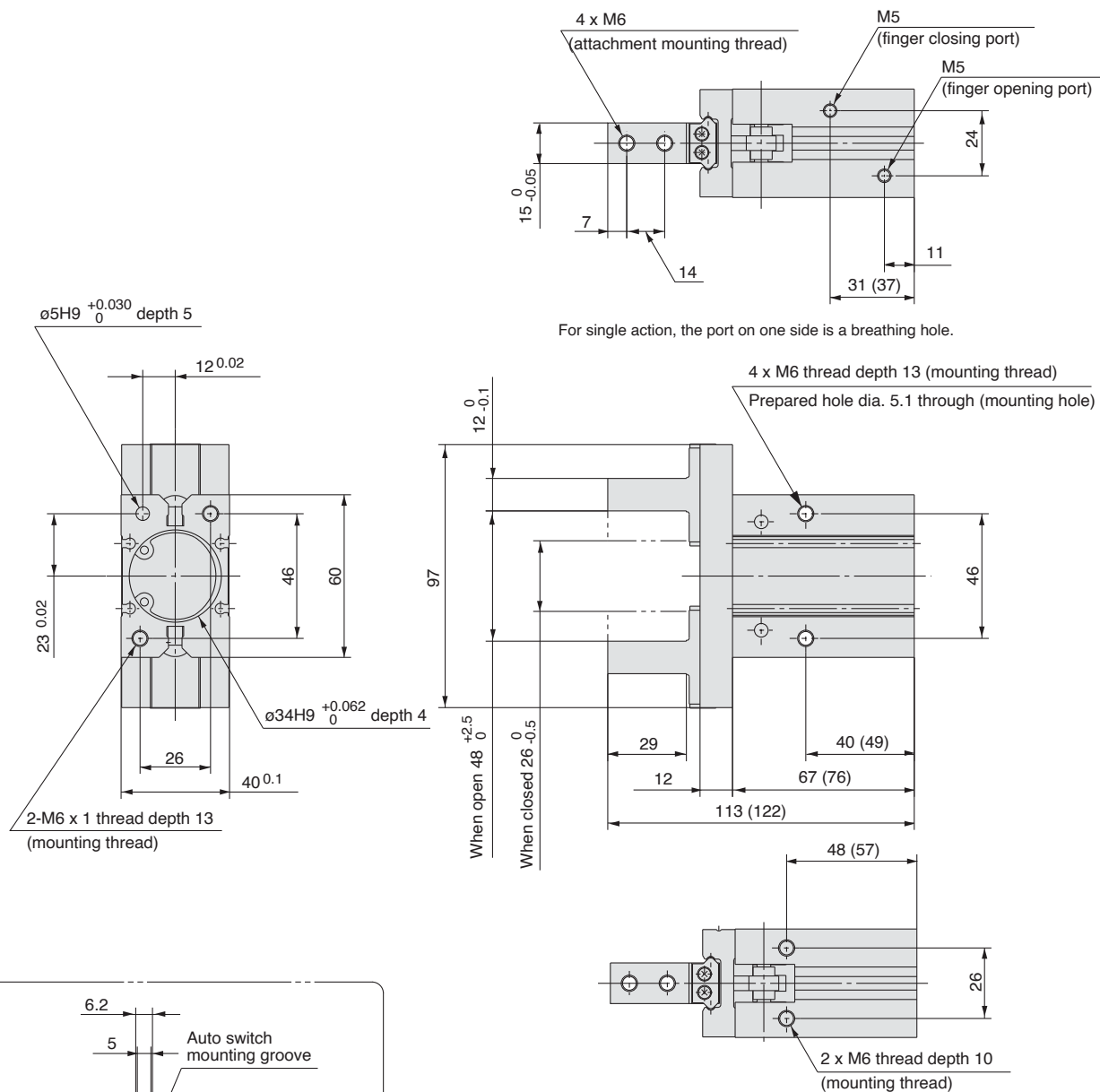
Note) When using auto switches, through hole mounting is not possible.

**WHZ2-32**

**Double acting/Single acting  
Basic Type**

**Scale: 40%**

The values inside ( ) are dimensions for the single acting type.



Note) When using auto switches, through hole mounting is not possible.

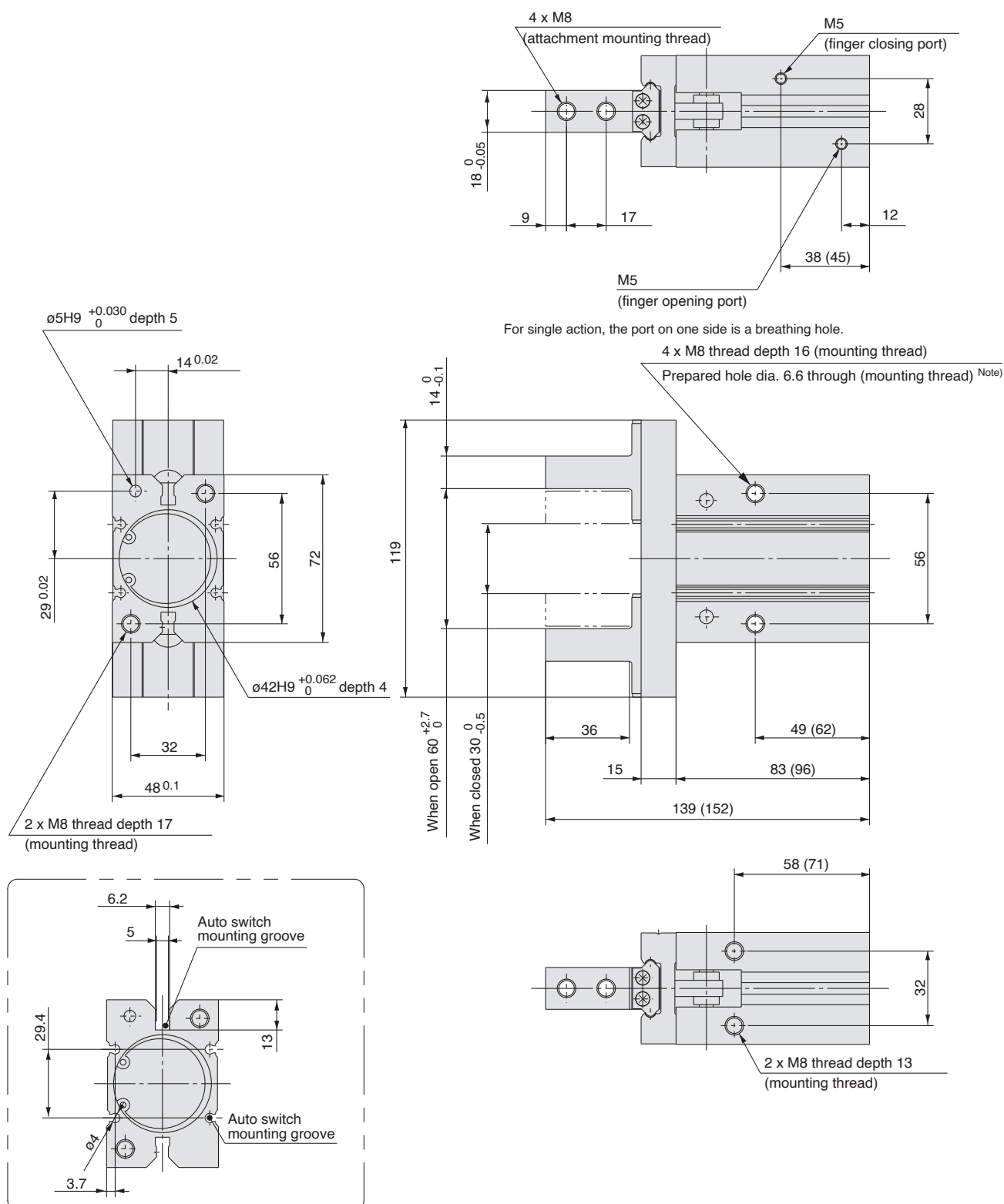
## Dimensions

**WHZ2-40**

**Double acting/Single acting**  
**Basic type**

**Scale: 40%**

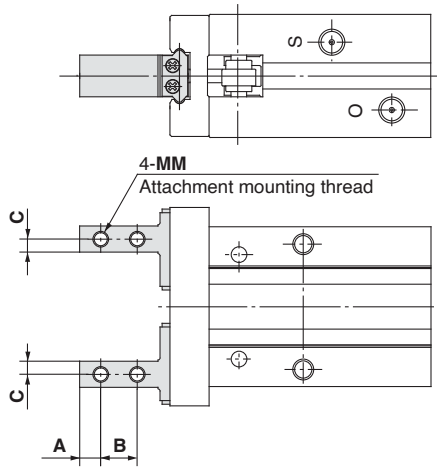
The values inside ( ) are dimensions for the single acting type.



*Note)* When using auto switches, through hole mounting is not possible.

## Finger Options

### Side Tapped Mounting [1/N1]

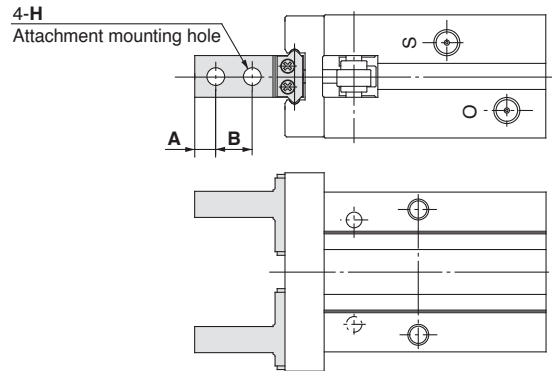


Unit: mm

Model	A	B	C	MM
WHZ2- 6□ 1	2.5	5	2	M2
WHZ2-10□ 1 N1 □	3	5.7	2	M2.5
WHZ2-16□ 1 N1 □	4	7	2.5	M3
WHZ2-20□ 1 N1 □	5	9	4	M4
WHZ2-25□ 1 N1 □	6	12	5	M5
WHZ2-32□ 1 □	7	14	6	M6
WHZ2-40□ 1 □	9	17	7	M8

\* Specifications and dimensions other than the above are the same as the basic type (including narrow type).

### Through Holes in Opening/Closing Direction [2/N2]

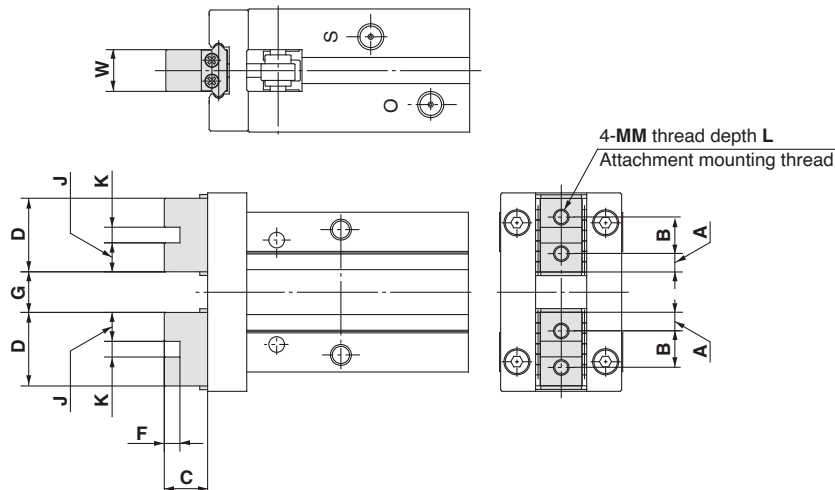


Unit: mm

Model	A	B	H
WHZ2- 6□ 2	2.5	5	2.4
WHZ2-10□ 2 N2 □	3	5.7	2.9
WHZ2-16□ 2 N2 □	4	7	3.4
WHZ2-20□ 2 N2 □	5	9	4.5
WHZ2-25□ 2 N2 □	6	12	5.5
WHZ2-32□ 2 □	7	14	6.6
WHZ2-40□ 2 □	9	17	9

\* Specifications and dimensions other than the above are the same as the basic type (including narrow type).

### Flat Type Fingers [3]



Unit: mm

Model	A	B	C	D	F	G		J	K	MM	L	W	Weight g
						Open	Closed						
WHZ2- 6□ 3 1)	2	3.5	7.2	7.5	—	5 <sup>+1.2 -0.8</sup>	1 <sup>+0.2 -0.2</sup>	—	—	M2	3	4 <sup>0 -0.05</sup>	26
WHZ2-10□ 3 2), 3)	2.45	6	5.2	10.9	2	5.4 <sup>+2.2 0</sup>	1.4 <sup>0 -0.2</sup>	4.45	2H9 <sup>+0.025 0</sup>	M2.5	5	5 <sup>0 -0.05</sup>	55
WHZ2-16□ 3 2), 3)	3.05	8	8.3	14.1	2.5	7.4 <sup>+2.2 0</sup>	1.4 <sup>0 -0.2</sup>	5.8	2.5H9 <sup>+0.025 0</sup>	M3	6	8 <sup>0 -0.05</sup>	115
WHZ2-20□ 3 2), 3)	3.95	10	10.5	17.9	3	11.6 <sup>+2.3 0</sup>	1.6 <sup>0 -0.2</sup>	7.45	3H9 <sup>+0.025 0</sup>	M4	8	10 <sup>0 -0.05</sup>	235
WHZ2-25□ 3 2), 3)	4.9	12	13.1	21.8	4	16 <sup>+2.5 0</sup>	2 <sup>0 -0.2</sup>	8.9	4H9 <sup>+0.030 0</sup>	M5	10	12 <sup>0 -0.05</sup>	420
WHZ2-32□ 3 □	7.3	20	18	34.6	5	25 <sup>+2.7 0</sup>	3 <sup>0 -0.2</sup>	14.8	5H9 <sup>+0.030 0</sup>	M6	12	15 <sup>0 -0.05</sup>	740 (785) 4)
WHZ2-40□ 3 □	8.7	24	22	41.4	6	33 <sup>+2.9 0</sup>	3 <sup>0 -0.2</sup>	17.7	6H9 <sup>+0.030 0</sup>	M8	16	18 <sup>0 -0.05</sup>	1335 (1430) 4)

- 1) To mount attachments, use M2 hexagon socket head cap screws with ø3.3 top diameter, or JISB1101 type M2 round head screws.
- 2) Specifications and dimensions other than the above are the same as the basic type (including narrow type).
- 3) The overall length is the same as the MHQ(G) flat finger type.
- 4) The values inside ( ) are for the single acting type.