

**Standard Type Basic Model Series WHZ2**

**How to Order**

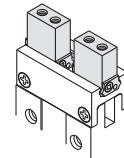
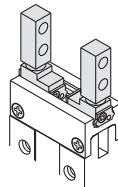
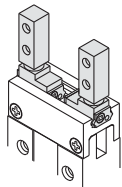
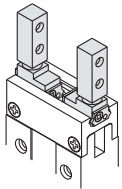
[Standard type]

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

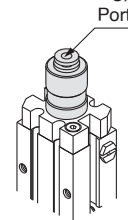
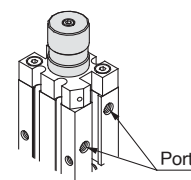
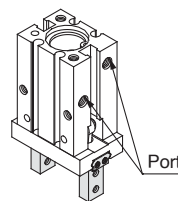
D	Double acting
S	Single acting (normally open)
C	Single acting (normally closed)

Body option

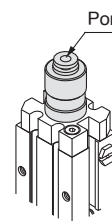
Nil: Basic type

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

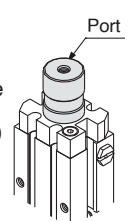
W: End boss type  
Axial port with Ø4  
One-touch fitting for  
coaxial tubing  
(double acting)



K: End boss type  
Axial port with Ø4  
One-touch fitting  
(single acting)



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

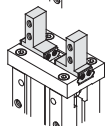
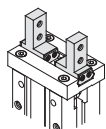


**Standard type**

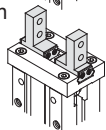
[MHQG2 compatible type]

Nil: Basic type

1: Side tapped  
mounting



2: Through holes in  
opening/closing  
direction

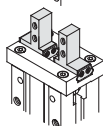
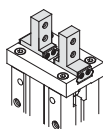


**Narrow type**

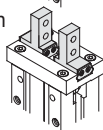
[MHQ2 compatible type]

N: Basic type

N1: Side tapped  
mounting



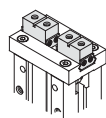
N2: Through holes in  
opening/closing  
direction



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



**How to Order**
**ø32 to ø40 WHZ2 – 32 D**

 Number of fingers  
 2 2 fingers

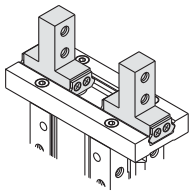
Bore size

32	32mm
40	40mm

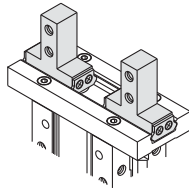
Action

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

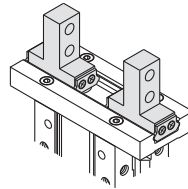
Finger option

**Standard type**  
 Nil: Basic type


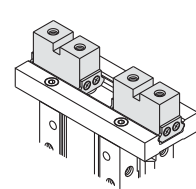
1: Side tapped mounting



2: Through holes in opening/closing direction



3: Flat type fingers



ø6



ø10 to ø25


**Specifications**

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

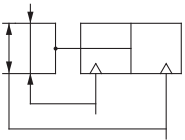
## Models

ø32, ø40

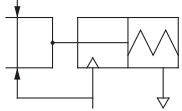


### Symbols:

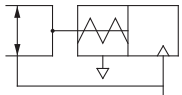
#### Double acting type



#### 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

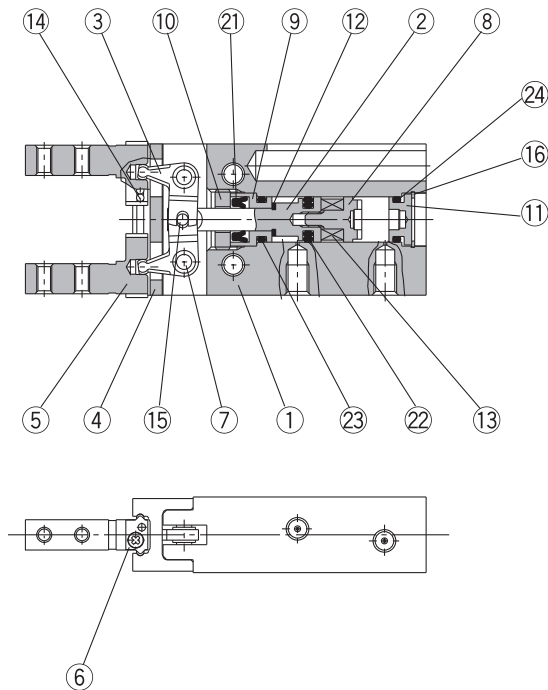
### • Body options/End boss type

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			—	—	—	●

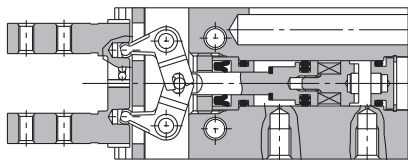
For detailed body option specifications, refer to option specifications on page 5-32

**Construction/WHZ2-6**

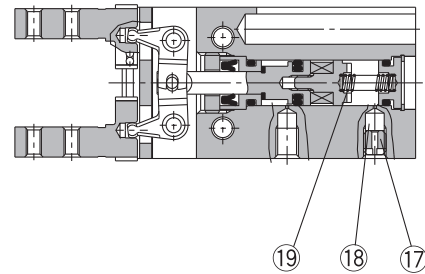
**Double acting/with fingers open**



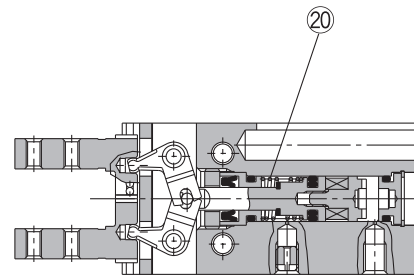
**Double acting/with fingers closed**



**Single acting/normally open**



**Single acting/normally 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**

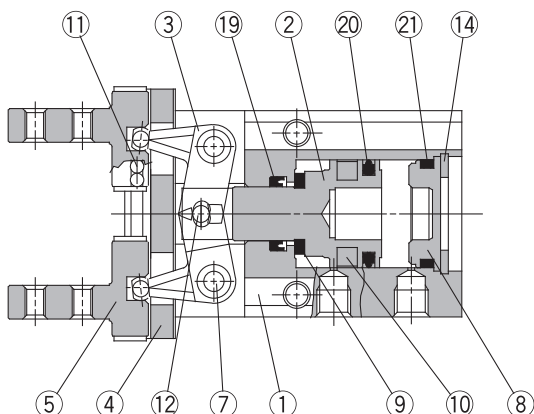
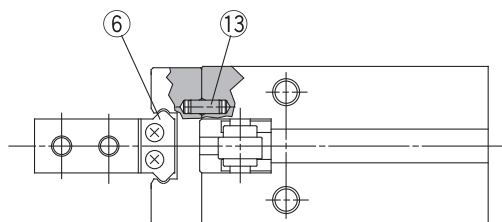
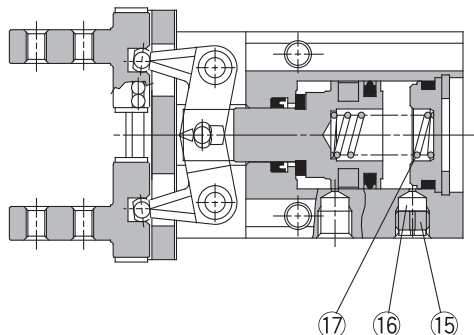
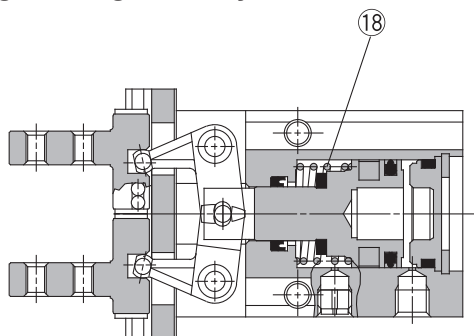
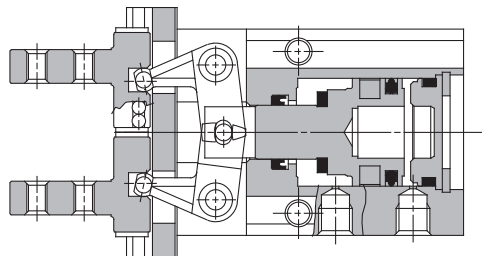
No.	Description	Material	Note
14	<b>Steel balls</b>	High carbon chromium bearing steel	
15	<b>Needle roller</b>	High carbon chromium bearing steel	
16	<b>C type snap ring</b>	Carbon steel	Nickel plated
17	<b>Exhaust plug</b>	Brass	Electroless nickel plated
18	<b>Exhaust filter</b>	Polyvinyl formal	
19	<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	

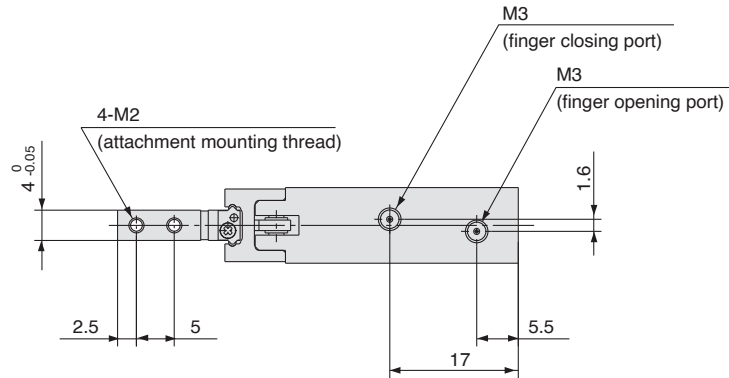
Seal kits consist of items 19, 20 and 21 in one kit, and can be ordered using the seal kit number for each cylinder bore size.

**Dimensions**

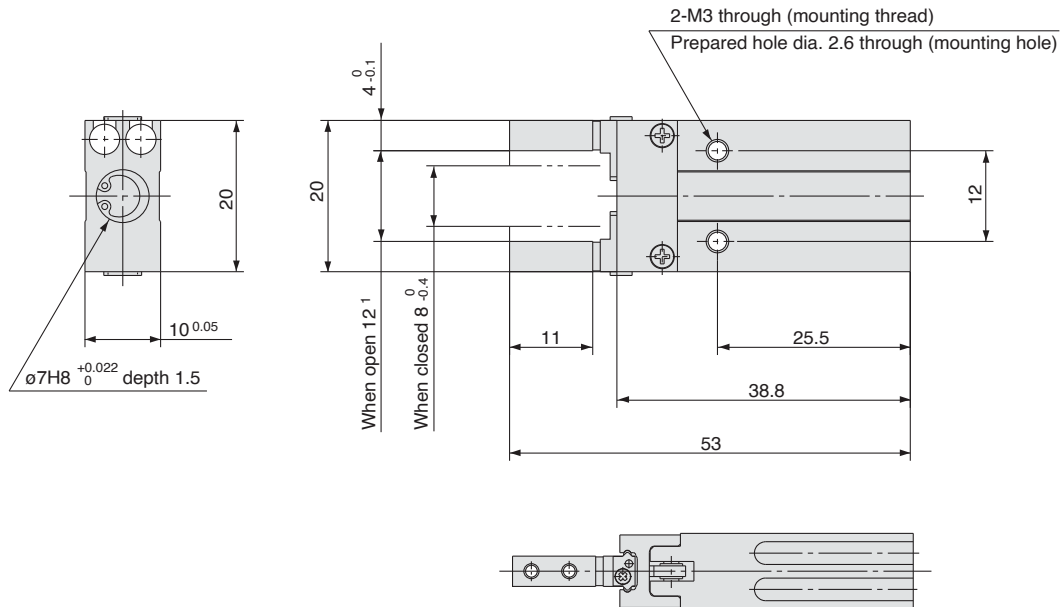
**WHZ2-6**

**Scale: 100%**

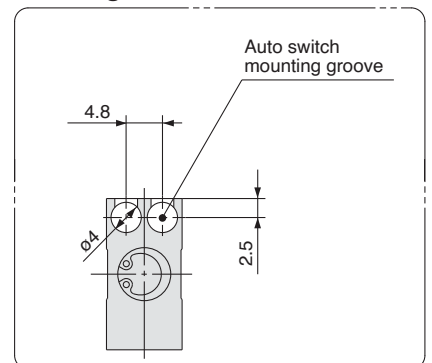
**Double acting/Single acting  
Basic type**



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



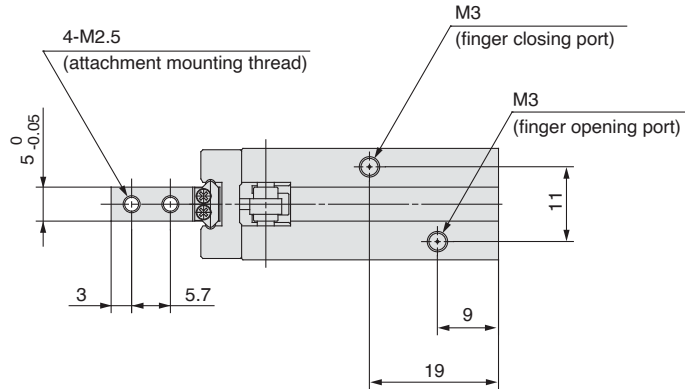
**Auto switch mounting groove dimensions**



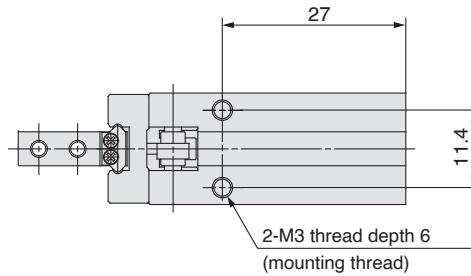
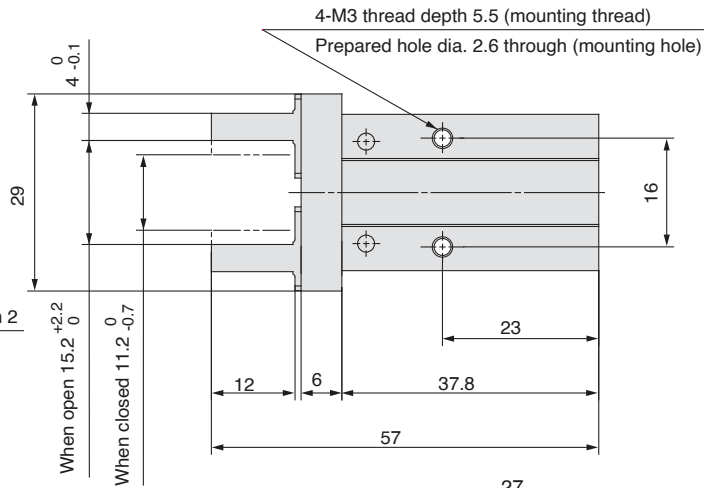
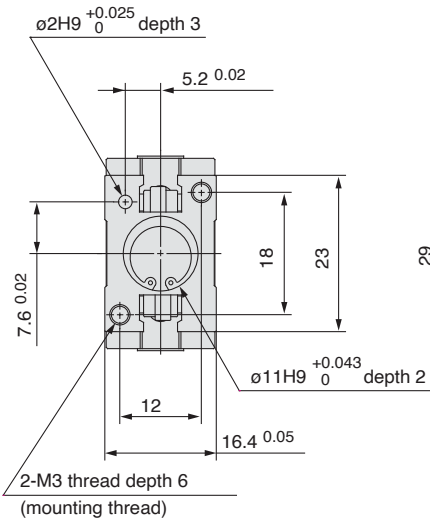
**WHZ2-10** □

**Double acting/Single acting  
Basic type**

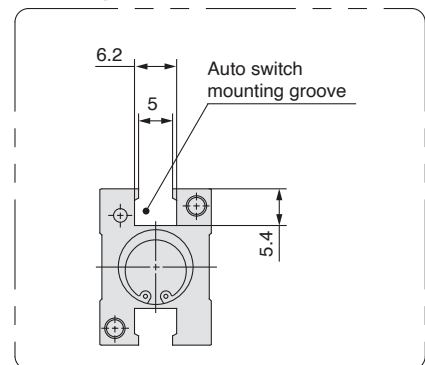
**Scale: 90%**



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

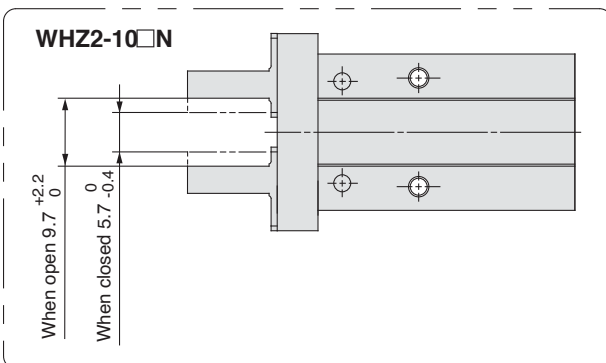


**Auto switch mounting  
groove dimensions**



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

**Finger position/Narrow type**

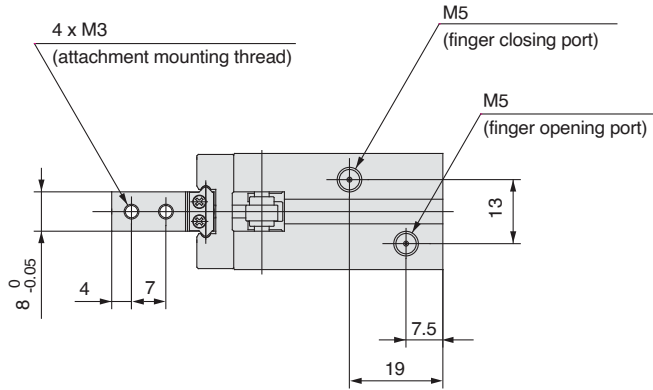


**Dimensions**

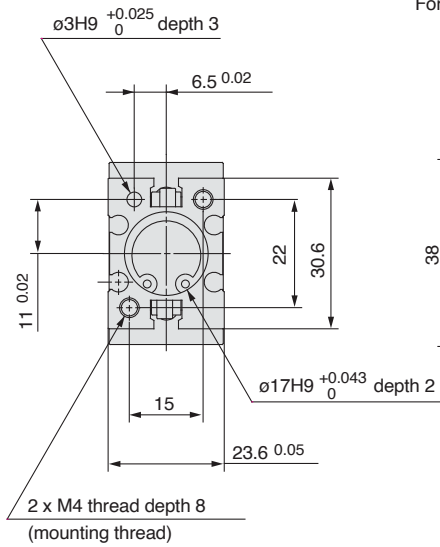
WHZ2-16 □

Scale: 65%

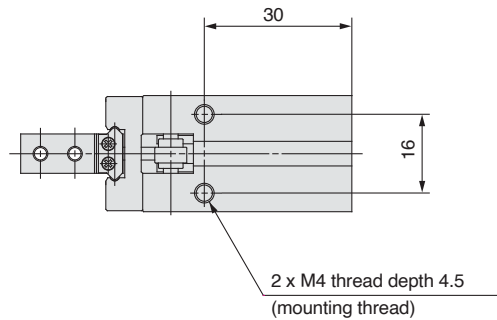
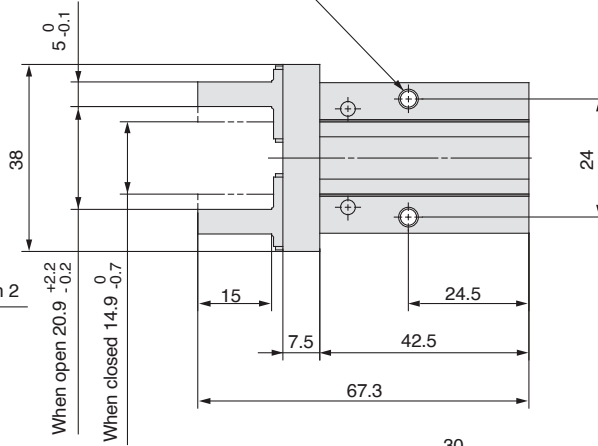
Double acting/Single acting  
Basic type



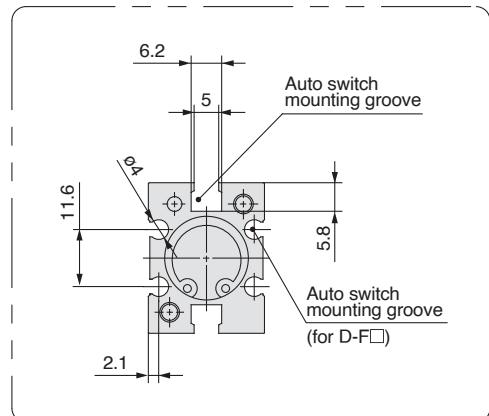
For single action, the port on one side is a breathing hole.



4 x M4 thread depth 8 (mounting thread)  
Prepared hole dia. 3.4 through (mounting hole) <sup>Note</sup>



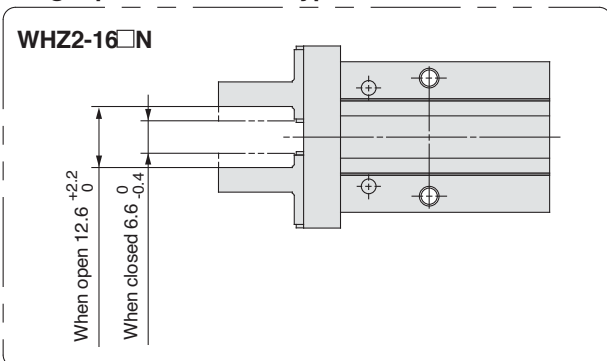
**Auto switch mounting groove dimensions**



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

**Finger position/Narrow type**

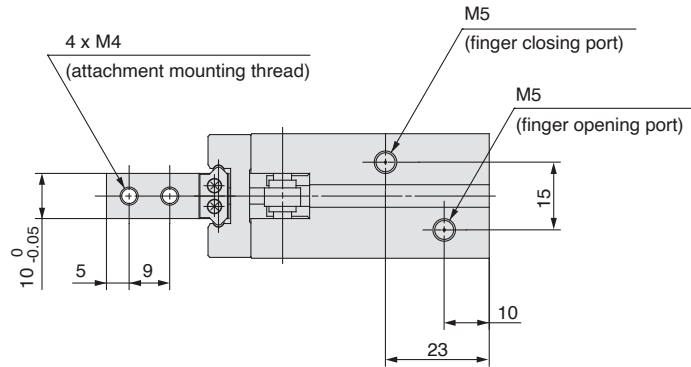
WHZ2-16 □ N



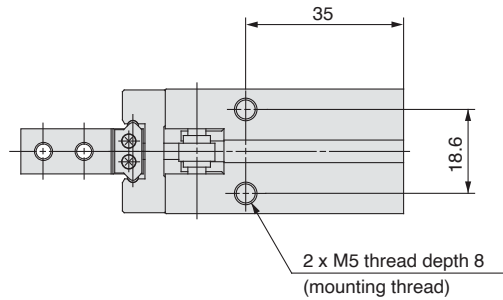
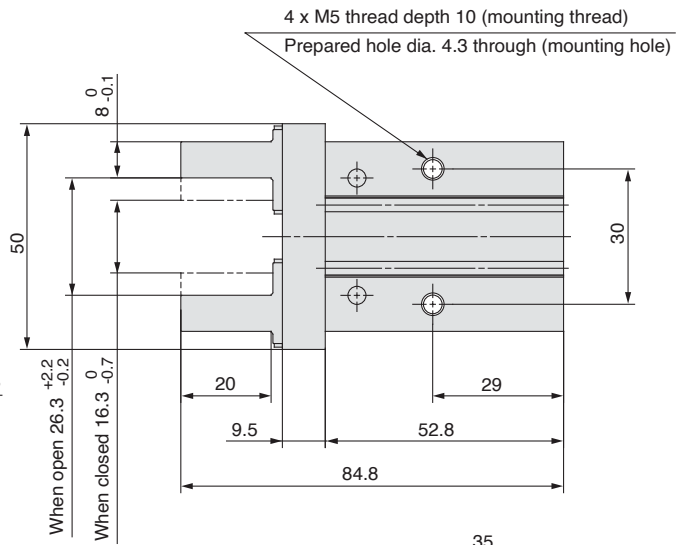
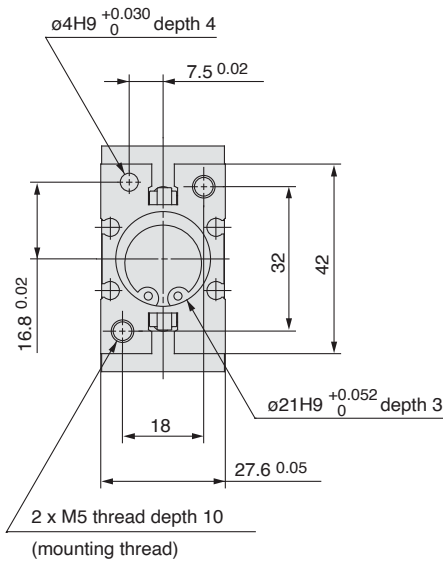
**WHZ2-20**

**Double acting/Single acting  
Basic type**

**Scale: 60%**

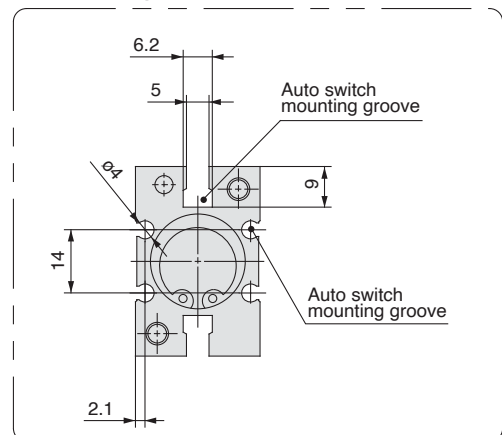
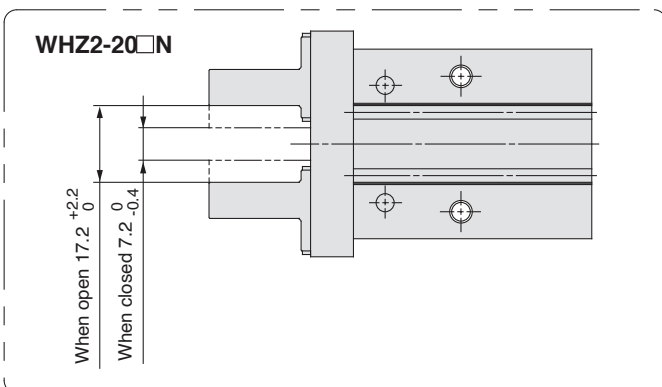


For single action, the port on one side is a breathing hole.



**Auto switch mounting groove dimensions**

**Finger position/Narrow type**



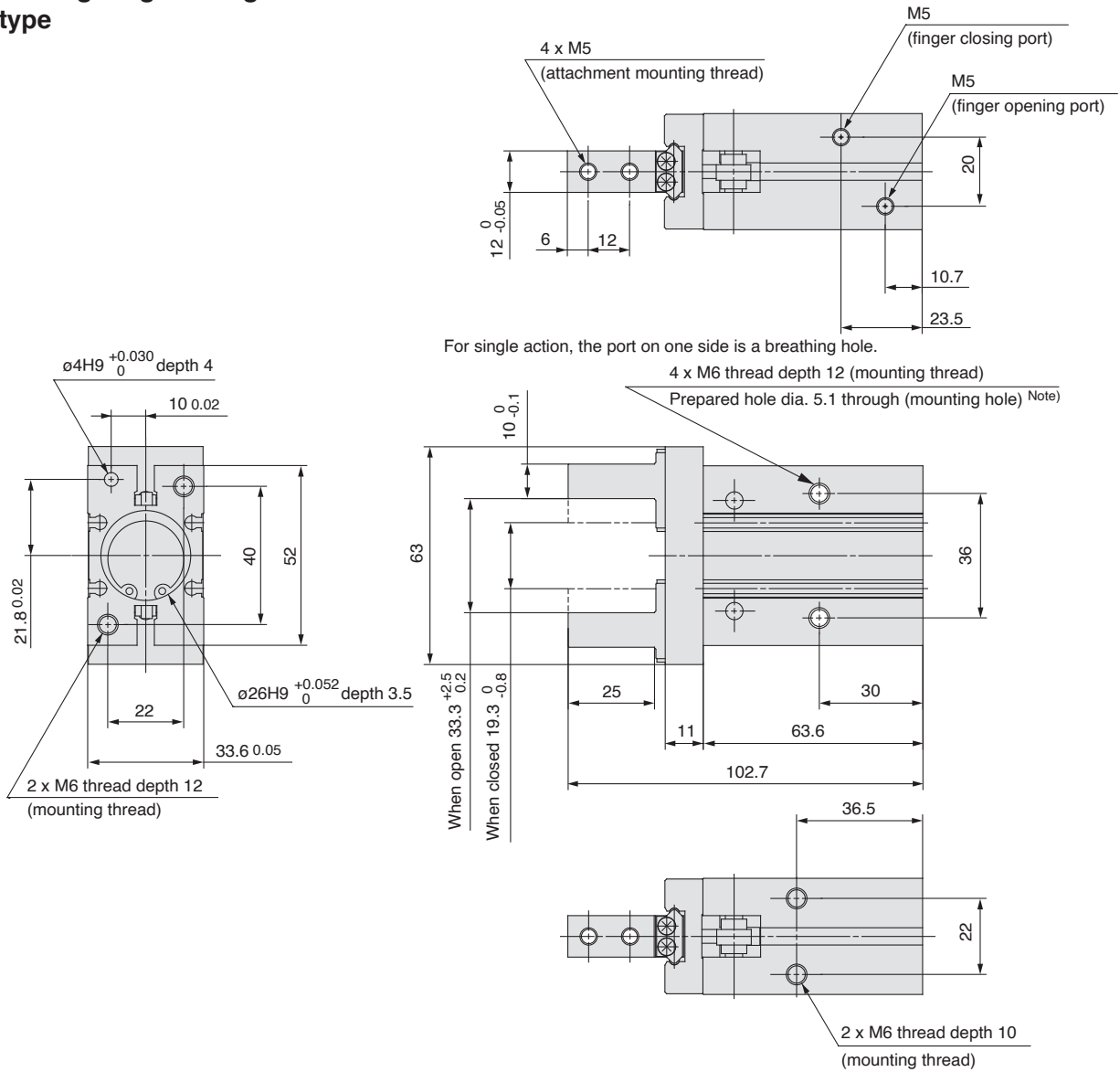
Note) When using auto switches, through hole mounting is not possible.

Dimensions

WHZ2-25□

Scale: 50%

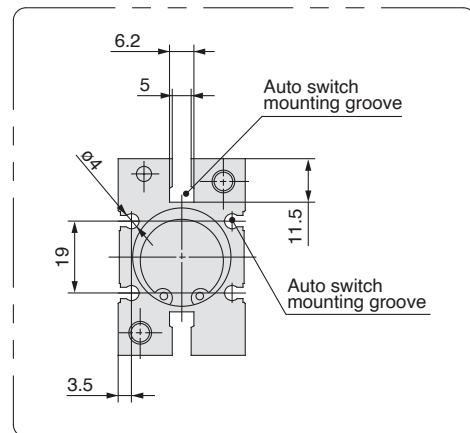
Double acting/Single acting  
Basic type



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

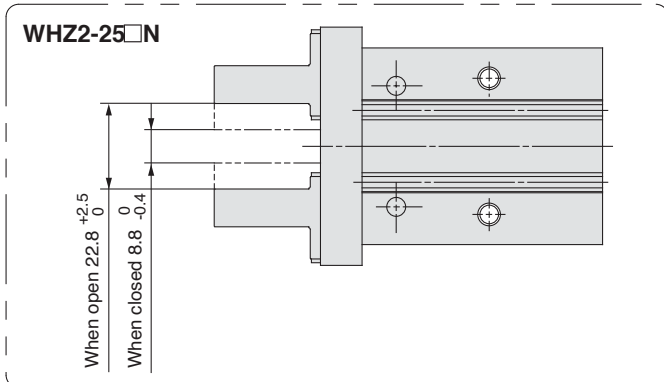
4 x M6 thread depth 12 (mounting thread)  
Prepared hole dia. 5.1 through (mounting hole) Note)

Auto switch mounting groove dimensions



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

Finger position/Narrow type

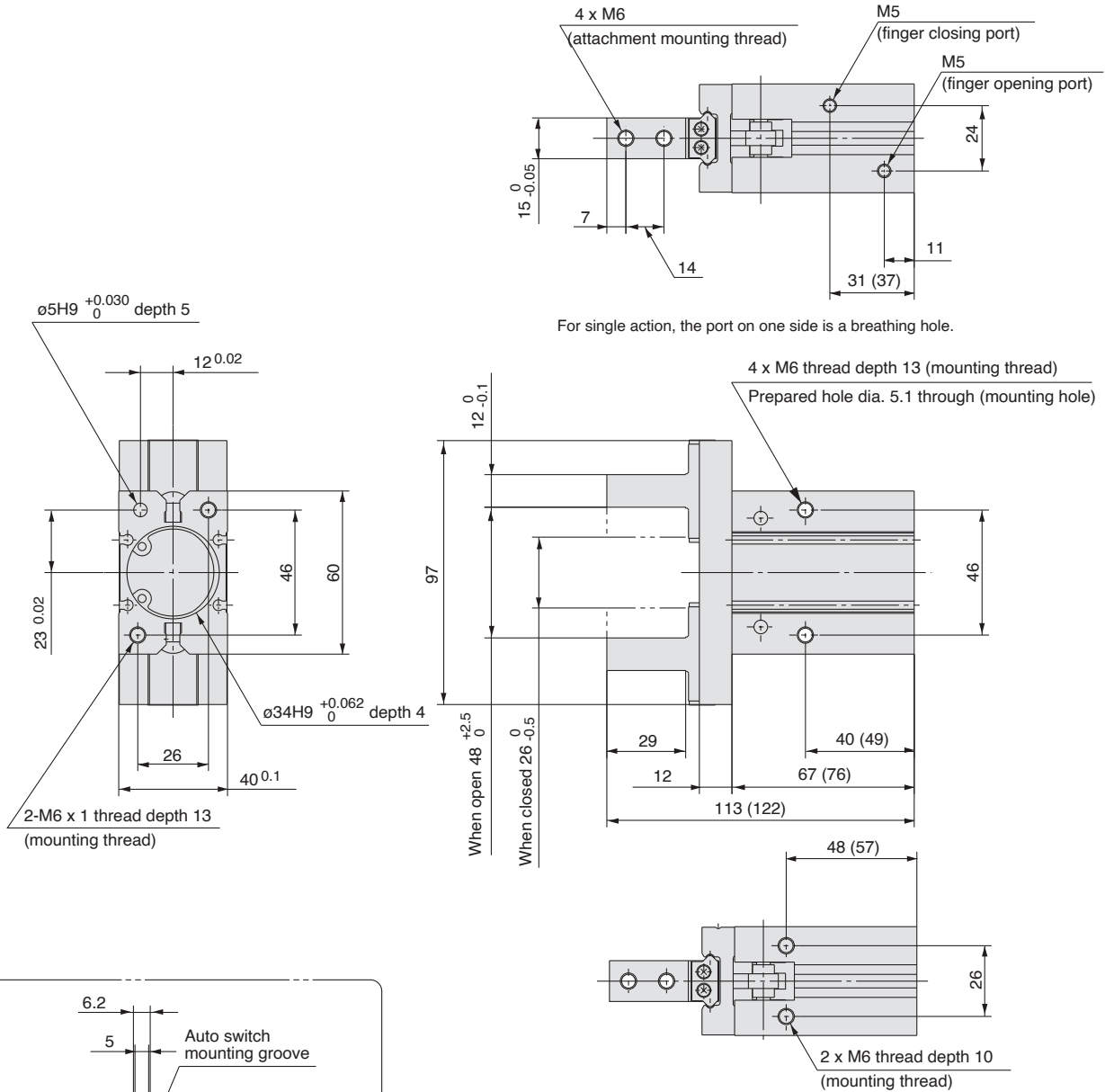


**WHZ2-32**

**Scale: 40%**

**Double acting/Single acting  
Basic Type**

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



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

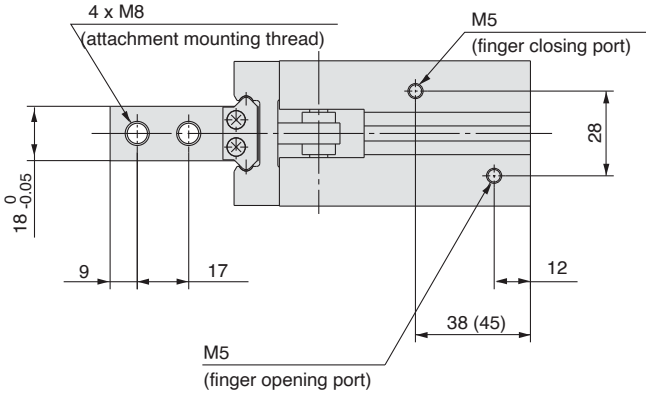
Dimensions

WHZ2-40

Double acting/Single acting  
Basic type

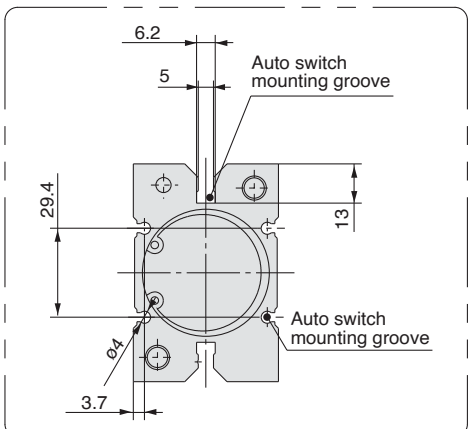
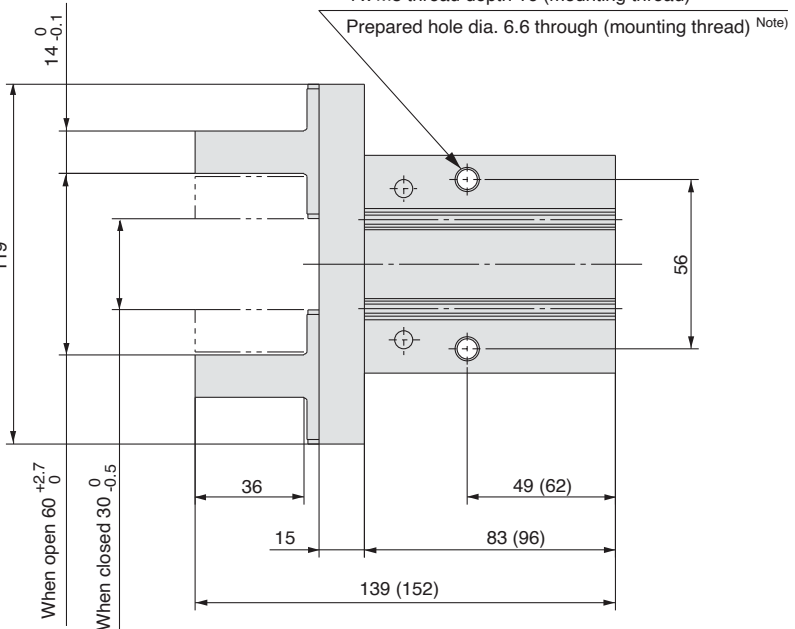
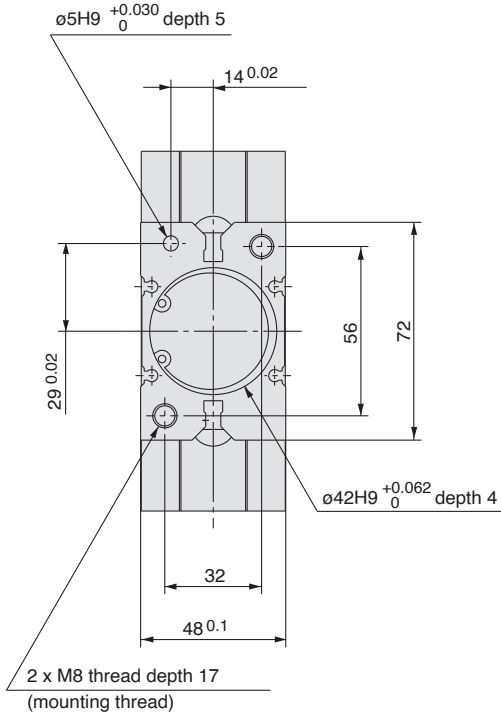
Scale: 40%

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

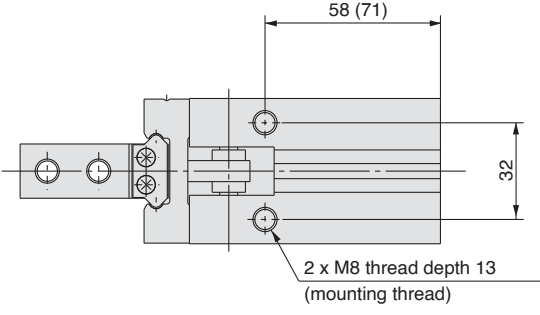


For single action, the port on one side is a breathing hole.

4 x M8 thread depth 16 (mounting thread)  
Prepared hole dia. 6.6 through (mounting thread) <sup>Note)</sup>

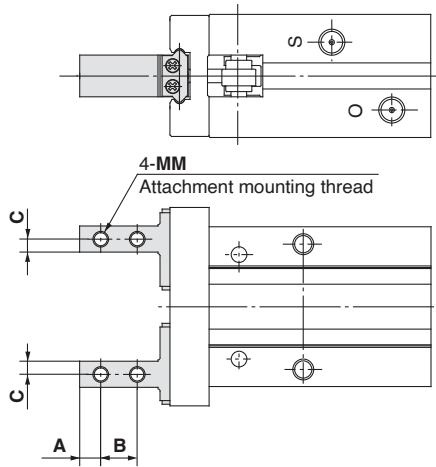


Note) When using auto switches, through hole mounting is not possible.



## Finger Options

### Side Tapped Mounting [1/N1]

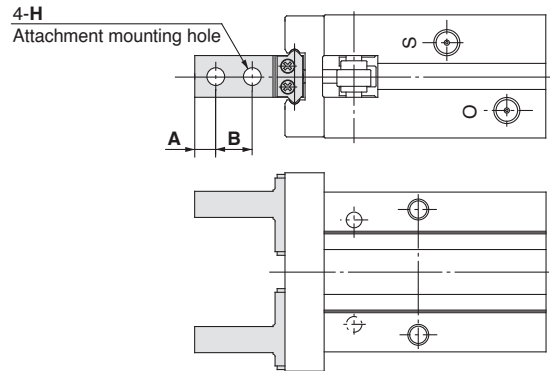


Unit: mm

Model	A	B	C	MM
WHZ2- 6□1	2.5	5	2	M2
WHZ2-10□ <sup>1</sup> <sub>N1</sub> □	3	5.7	2	M2.5
WHZ2-16□ <sup>1</sup> <sub>N1</sub> □	4	7	2.5	M3
WHZ2-20□ <sup>1</sup> <sub>N1</sub> □	5	9	4	M4
WHZ2-25□ <sup>1</sup> <sub>N1</sub> □	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]

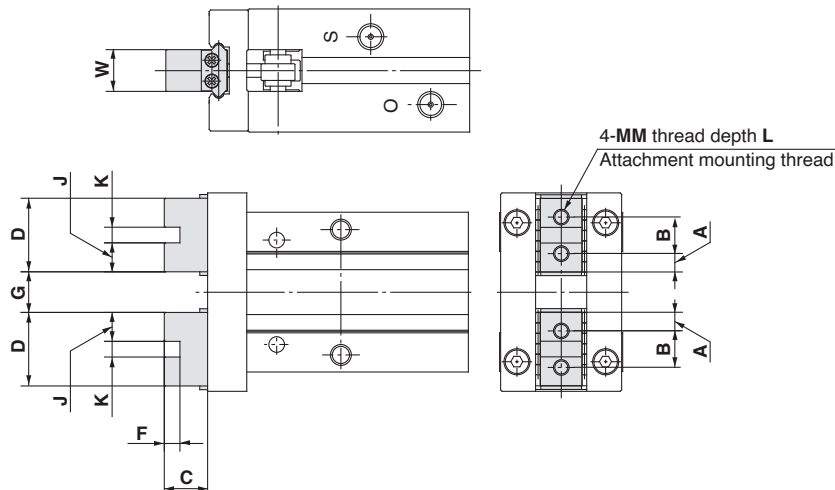


Unit: mm

Model	A	B	H
WHZ2- 6□2	2.5	5	2.4
WHZ2-10□ <sup>2</sup> <sub>N2</sub> □	3	5.7	2.9
WHZ2-16□ <sup>2</sup> <sub>N2</sub> □	4	7	3.4
WHZ2-20□ <sup>2</sup> <sub>N2</sub> □	5	9	4.5
WHZ2-25□ <sup>2</sup> <sub>N2</sub> □	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 <sup>1)</sup>	2	3.5	7.2	7.5	—	5 <sup>+1.2</sup> <sub>-0.8</sub>	1 <sup>+0.2</sup> <sub>0</sub>	—	—	M2	3	4 <sup>0</sup> <sub>-0.05</sub>	26
WHZ2-10□3 <sup>2), 3)</sup>	2.45	6	5.2	10.9	2	5.4 <sup>+2.2</sup> <sub>0</sub>	1.4 <sup>0</sup> <sub>-0.2</sub>	4.45	2H9 <sup>+0.025</sup> <sub>0</sub>	M2.5	5	5 <sup>0</sup> <sub>-0.05</sub>	55
WHZ2-16□3 <sup>2), 3)</sup>	3.05	8	8.3	14.1	2.5	7.4 <sup>+2.2</sup> <sub>0</sub>	1.4 <sup>0</sup> <sub>-0.2</sub>	5.8	2.5H9 <sup>+0.025</sup> <sub>0</sub>	M3	6	8 <sup>0</sup> <sub>-0.05</sub>	115
WHZ2-20□3 <sup>2), 3)</sup>	3.95	10	10.5	17.9	3	11.6 <sup>+2.3</sup> <sub>0</sub>	1.6 <sup>0</sup> <sub>-0.2</sub>	7.45	3H9 <sup>+0.025</sup> <sub>0</sub>	M4	8	10 <sup>0</sup> <sub>-0.05</sub>	235
WHZ2-25□3 <sup>2), 3)</sup>	4.9	12	13.1	21.8	4	16 <sup>+2.5</sup> <sub>0</sub>	2 <sup>0</sup> <sub>-0.2</sub>	8.9	4H9 <sup>+0.030</sup> <sub>0</sub>	M5	10	12 <sup>0</sup> <sub>-0.05</sub>	420
WHZ2-32□3□	7.3	20	18	34.6	5	25 <sup>+2.7</sup> <sub>0</sub>	3 <sup>0</sup> <sub>-0.2</sub>	14.8	5H9 <sup>+0.030</sup> <sub>0</sub>	M6	12	15 <sup>0</sup> <sub>-0.05</sub>	740 (785) <sup>4)</sup>
WHZ2-40□3□	8.7	24	22	41.4	6	33 <sup>+2.9</sup> <sub>0</sub>	3 <sup>0</sup> <sub>-0.2</sub>	17.7	6H9 <sup>+0.030</sup> <sub>0</sub>	M8	16	18 <sup>0</sup> <sub>-0.05</sub>	1335 (1430) <sup>4)</sup>

- 1) To mount attachments, use M2 hexagon socket head cap screws with  $\phi 3.3$  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.