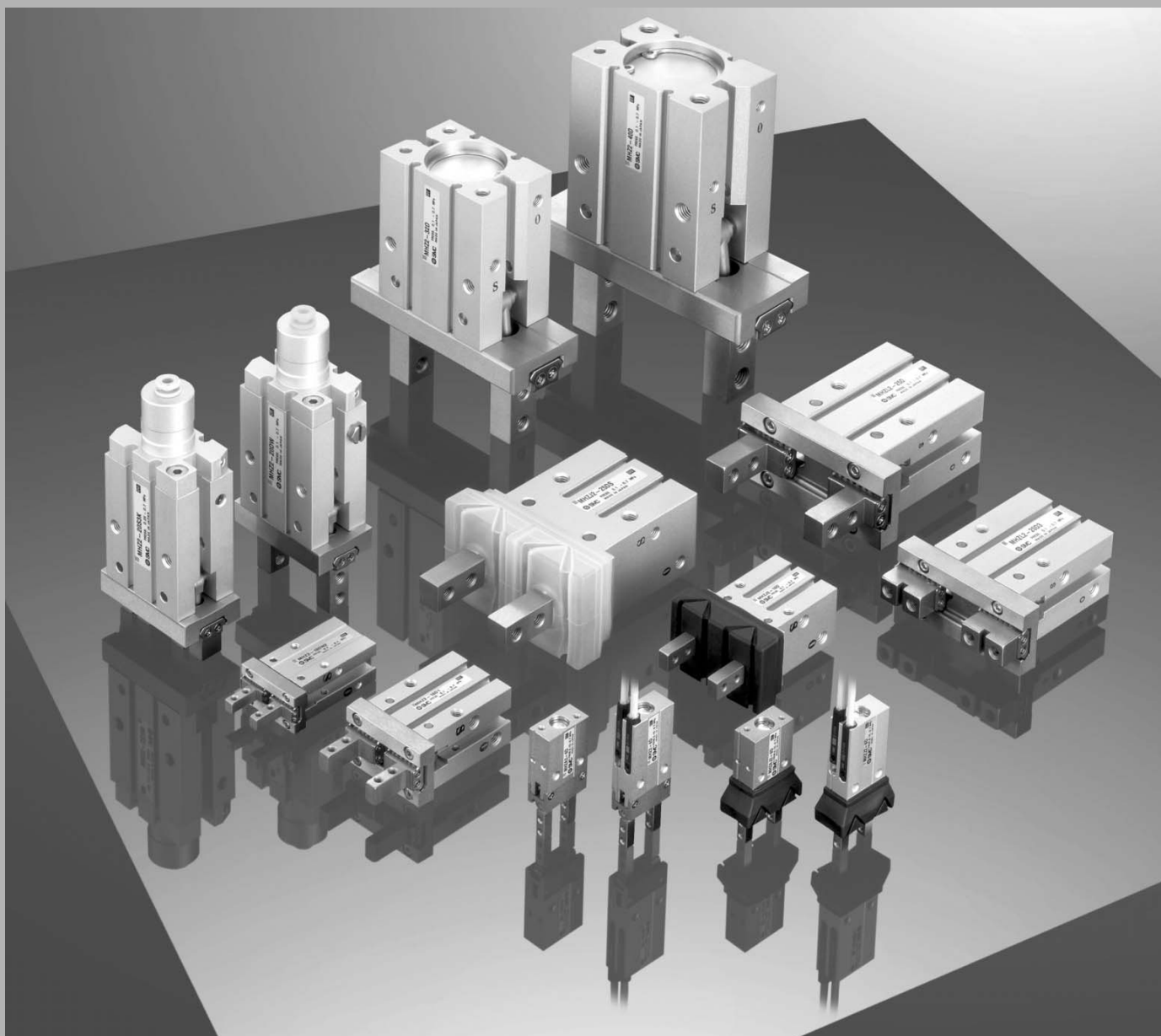


# Parallel Style Air Gripper *Series MHZ*



MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

D-

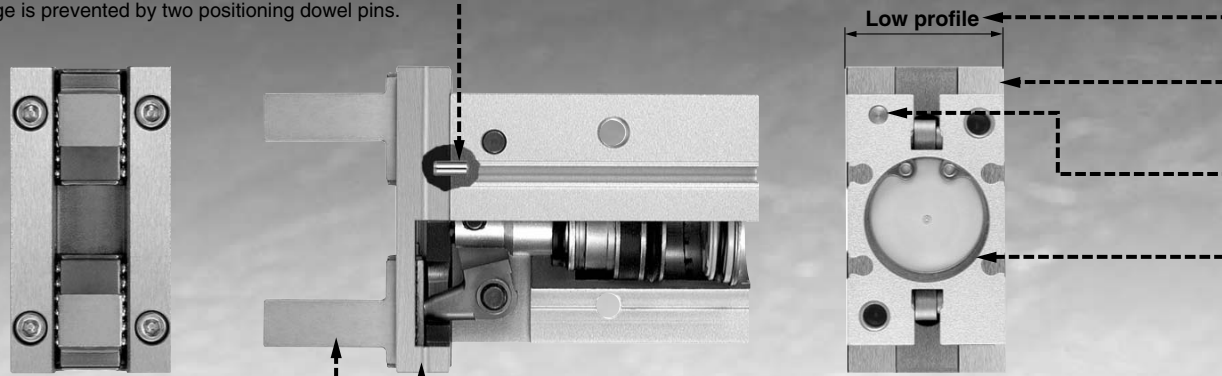
20-

# Integral linear guide used for high rigidity

- **Linear guide slippage prevention**

Guide slippage is prevented by two positioning dowel pins.

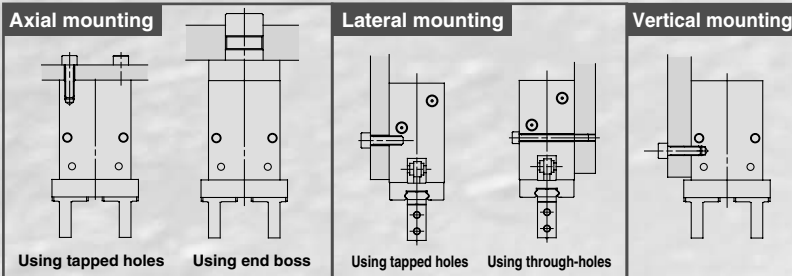
- **Repeatability:  $\pm 0.01\text{mm}$**



- **Martensitic stainless steel**

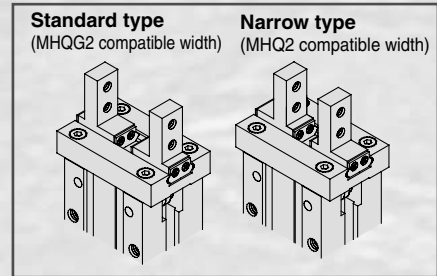
## High degree of mounting flexibility

Can be mounted five ways from three directions.



## Finger positions can be selected.

(Standard type/MHZ2)



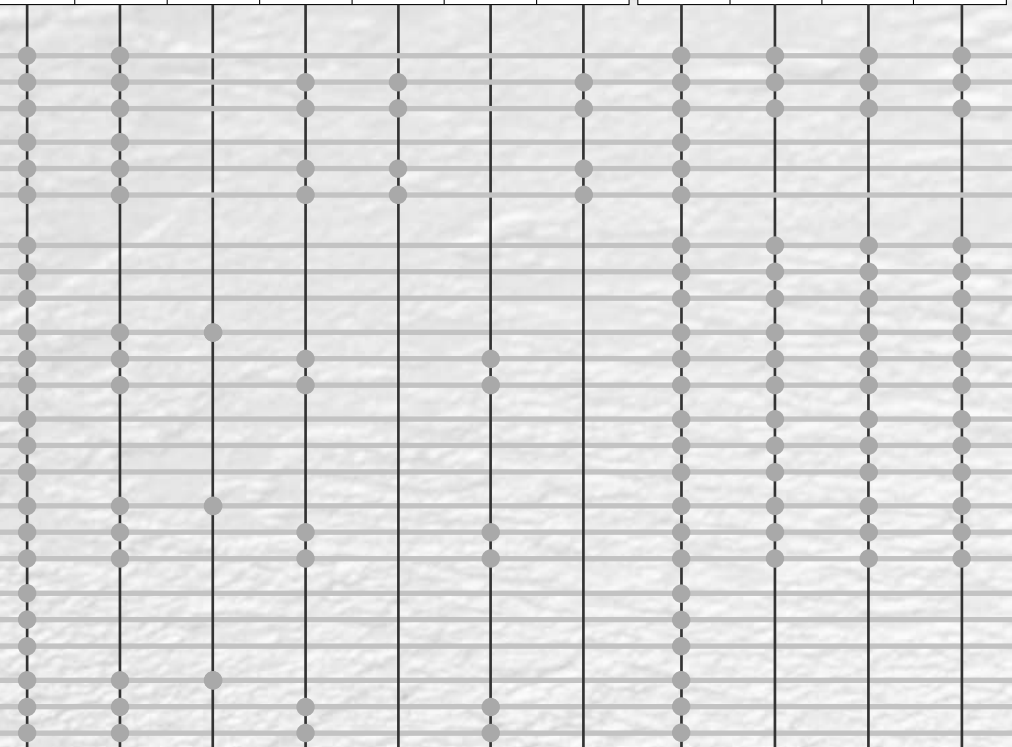
## Series Variations

Series	Bore size (mm)	Action
--------	----------------	--------

Body option							Finger option			
Basic type		End boss type					Finger option			
Side ported	Side ported	With One-touch fitting for coaxial tubing	With One-touch fitting	With M3 port	With M5 port	With hose nipple	Basic type (tapped in open/close direction)	Side tapped	Through-holes in open/close direction	Flat type finger

### Compact series

Standard <b>MHZA2-6</b>	6	Double acting
		Single acting (Normally open)
		Single acting (Normally closed)
With dust cover <b>MHZAJ2-6</b>	6	Double acting
		Single acting (Normally open)
		Single acting (Normally closed)
Standard <b>MHZ2</b>	6	Double acting
		Single acting (Normally open)
		Single acting (Normally closed)
	10, 16 20, 25	Double acting
		Single acting (Normally open)
		Single acting (Normally closed)
32, 40	Double acting	
	Single acting (Normally open)	
	Single acting (Normally closed)	
Long stroke <b>MHZL2</b>	10, 16 20, 25	Double acting
		Single acting (Normally open)
		Single acting (Normally closed)
With dust cover <b>MHZJ2</b>	6	Double acting
		Single acting (Normally open)
		Single acting (Normally closed)
	10, 16 20, 25	Double acting
		Single acting (Normally open)
		Single acting (Normally closed)



# and high precision

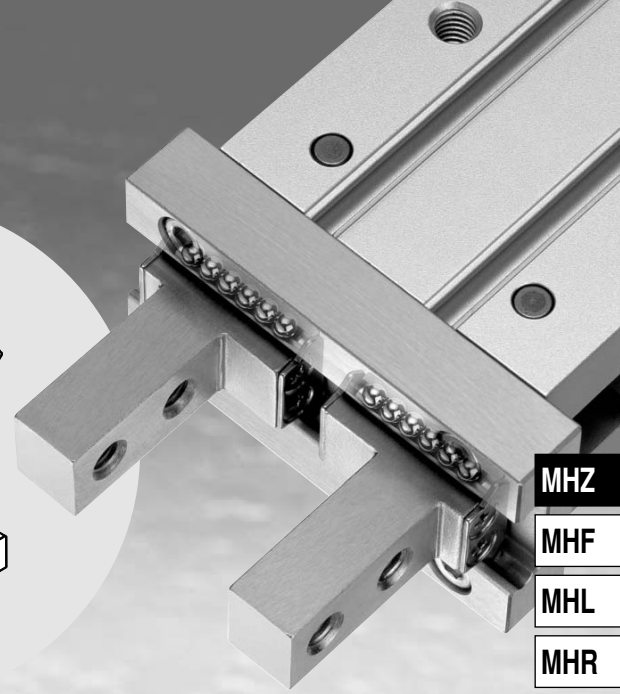
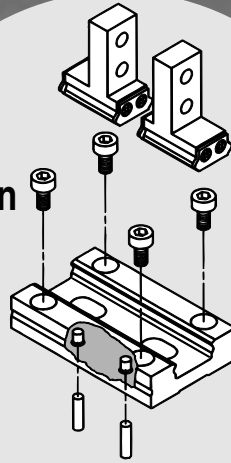
● Body thickness tolerance:  $\pm 0.05$  mm

● No guide protrusion in direction of body thickness

● Improved remounting accuracy  
Positioning dowel pin holes provided

● Top mounting centering location  
Mounting is more secure with a depth 0.5 to 2 mm greater than conventional types.

Integral guide rail construction



- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

## Accommodates diverse workpiece diameters with a single unit

- Nearly double the standard stroke
- Long stroke are also compact and lightweight

Series	Opening/Closing stroke (mm) (Open-Closed)	Weight (g)	Body thickness (mm)
MHZZL2-10	8 (4)	60	16.4
MHZZL2-16	12 (6)	135	23.6
MHZZL2-20	18 (10)	270	27.6
MHZZL2-25	22 (14)	470	33.6

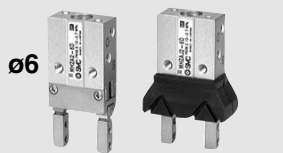
Values inside ( ) are for standard series MHZ2.

Long stroke  
**MHZZL2**

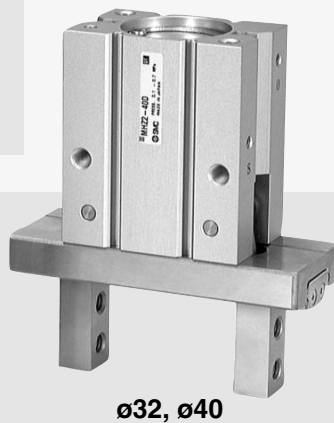


## A wide variety of types and broad size variations

Compact series (without auto switch)



Standard



With dust cover  
ø10 to ø25



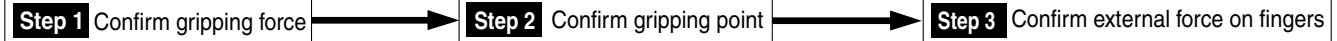
Long stroke  
ø10 to ø25



# Series MHZ Model Selection

## Model Selection

### Selection Procedure



### Step 1 Confirmation of Gripping Force



#### Example

Workpiece weight:  
0.1 kg

Gripping method:  
External gripping

#### Guidelines for the selection of the gripper with respect to component weight

- Although conditions differ according to the work piece shape and the coefficient of friction between the attachments and the work piece, select a model that can provide a gripping force of 10 to 20 times the workpiece weight, or more.  
Note) For further details, refer to the model selection illustration.

- If high acceleration, deceleration or impact forces are encountered during motion, a further margin of safety should be considered.

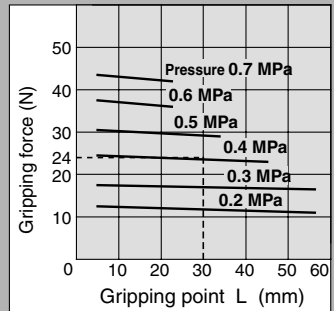
Example) When it is desired to set the gripping force at 20 times or more above the workpiece weight.

Required gripping force = 0.1 kg x 20 x 9.8 m/s<sup>2</sup> (≒) 19.6 N or more

Gripping point distance:  
L = 30 mm

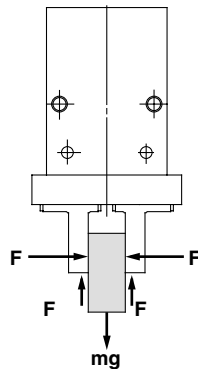
Operating pressure:  
0.4 MPa

#### MHZ□2-16 External Gripping Force



- Selecting MHZ□2-16D.  
A gripping force of 24 N is obtained from the intersection point of gripping point distance L = 30 mm and pressure of 0.4 MPa.
- The gripping force is 24.5 times greater than the workpiece weight, and therefore satisfies a gripping force setting value of 20 times or more.

### Model Selection Illustration



When gripping a workpiece as in the figure to the left, and with the following definitions,  
**F: Gripping force (N)**

**μ: Coefficient of friction between the attachments and the workpiece**

**m: Workpiece mass (kg)**

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

**mg: Workpiece weight (N)**

the conditions under which the workpiece will not drop are

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

↑  
Number of fingers

and therefore,

$$F > \frac{mg}{2 \times \mu}$$

With "a" representing the extra margin, "F" is determined by the following formula:

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

#### "Gripping force at least 10 to 20 times the workpiece weight"

The "10 to 20 times or more of the workpiece weight" recommended by SMC is calculated with a safety margin of a = 4, which allows for impacts that occur during normal transportation, etc.

When $\mu = 0.2$	When $\mu = 0.1$
$F = \frac{mg}{2 \times 0.2} \times 4$ $= 10 \times mg$	$F = \frac{mg}{2 \times 0.1} \times 4$ $= 20 \times mg$

10 x Workpiece weight

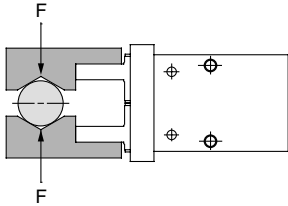
20 x Workpiece weight

Note) • Even in cases where the coefficient of friction is greater than  $\mu = 0.2$ , for reasons of safety, select a gripping force which is at least 10 to 20 times greater than the workpiece weight, as recommended by SMC.

• If high acceleration, deceleration or impact forces are encountered during motion, a further margin of safety should be considered.

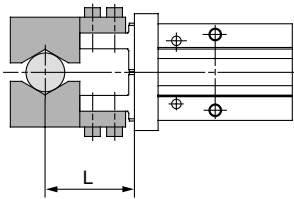
**Step 1 Effective Gripping Force: Series MHZ /Double Acting/External Gripping Force**

- Indication of effective gripping force  
The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



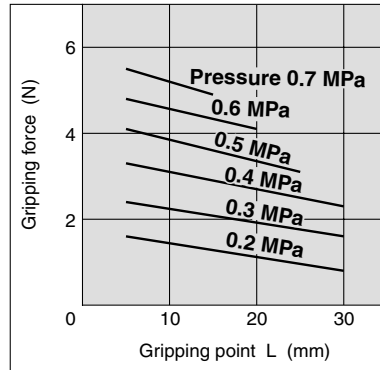
**External Grip**

MHZA2, MHZ2, MHZL2

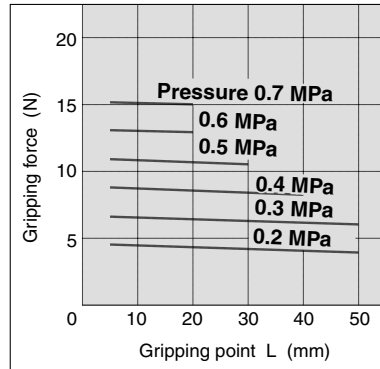


**External Gripping Force**

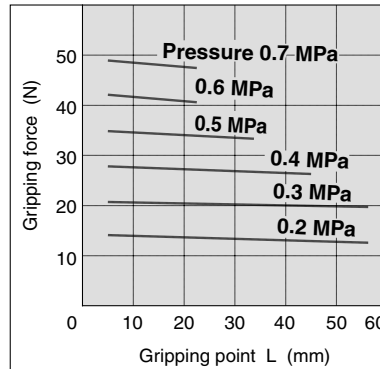
**MHZ2-6D/MHZA2-6D**



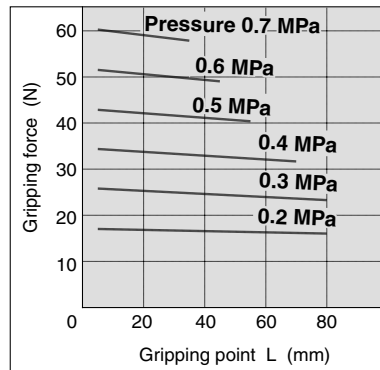
**MHZ2-10D/MHZL2-10D**



**MHZ2-16D/MHZL2-16D**

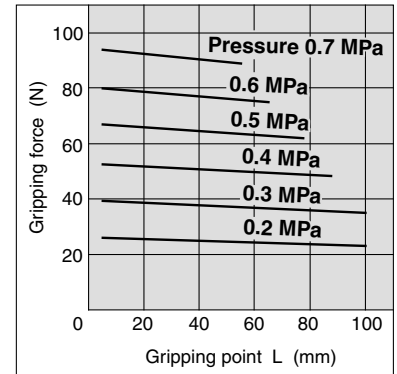


**MHZ2-20D/MHZL2-20D**

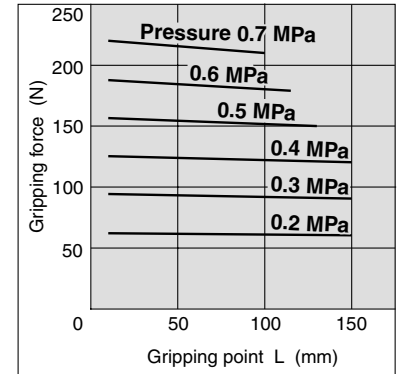


**External Gripping Force**

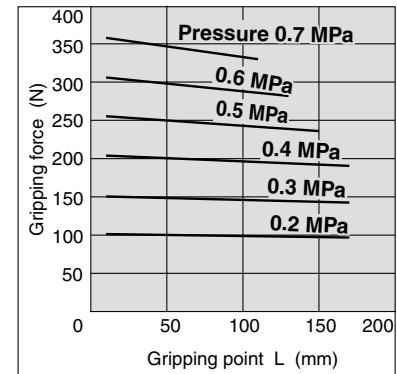
**MHZ2-25D/MHZL2-25D**



**MHZ2-32D**



**MHZ2-40D**



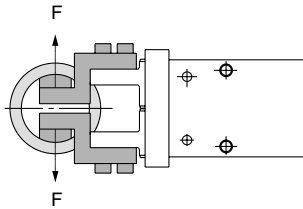
- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

# Series MHZ

## Model Selection

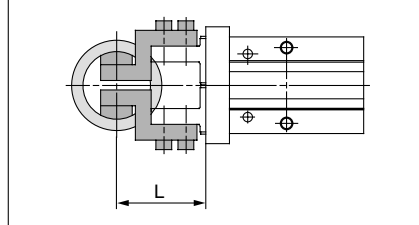
### Step 1 Effective Gripping Force: Series MHZ 2/Double Acting/Internal Gripping Force

- Indication of effective gripping force  
The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



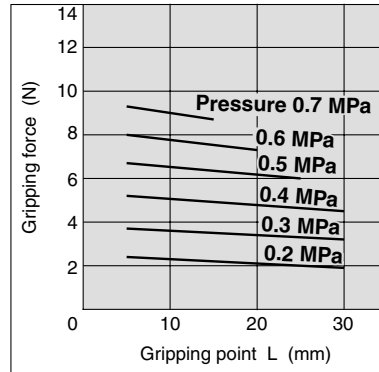
#### Internal Grip

MHZA2, MHZ2, MHZL2

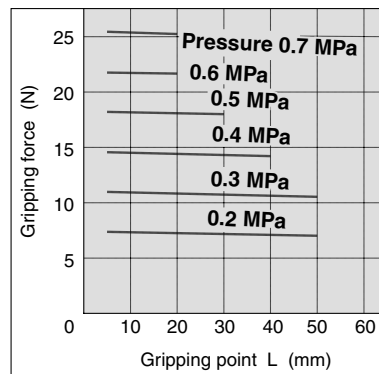


#### Internal Gripping Force

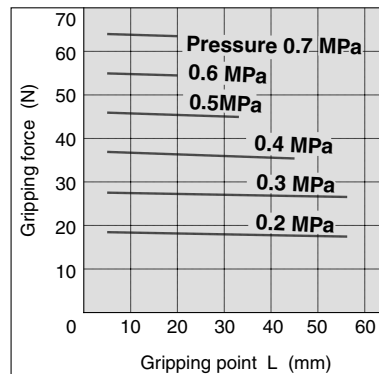
##### MHZ2-6D/MHZA2-6D



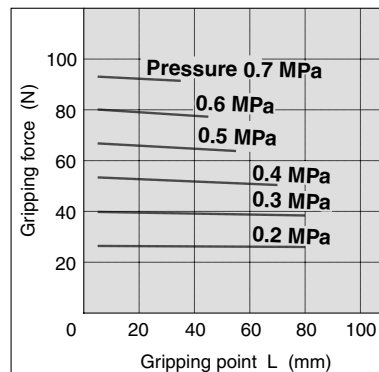
##### MHZ2-10D/MHZL2-10D



##### MHZ2-16D/MHZL2-16D

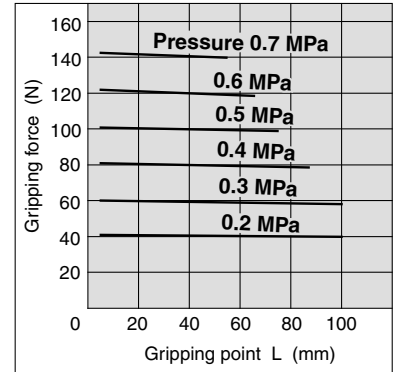


##### MHZ2-20D/MHZL2-20D

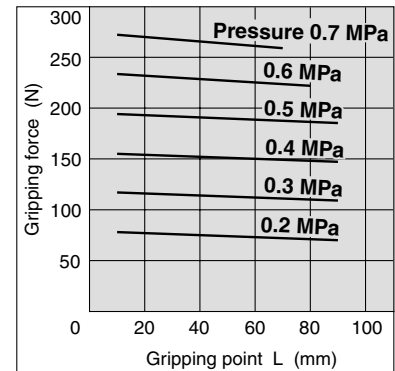


#### Internal Gripping Force

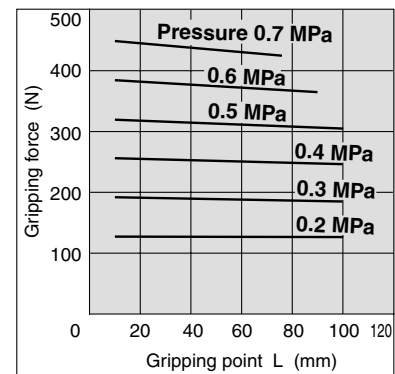
##### MHZ2-25D/MHZL2-25D



##### MHZ2-32D



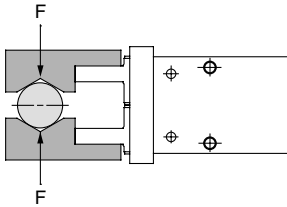
##### MHZ2-40D



**Step 1 Effective Gripping Force: Series MHZ /Single Acting/External Gripping Force**

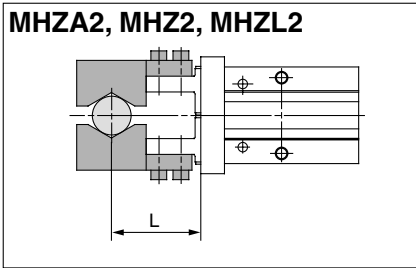
- Indication of effective gripping force

The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



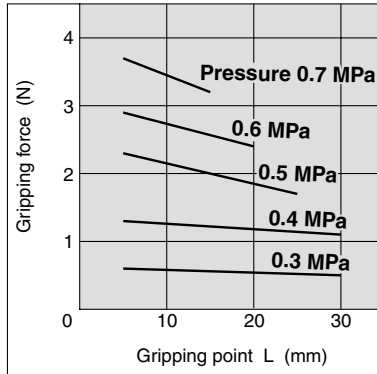
**External Grip**

MHZA2, MHZ2, MHZL2

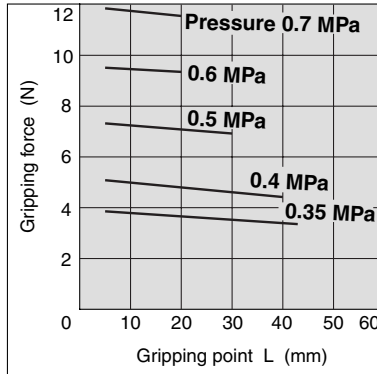


**External Gripping Force**

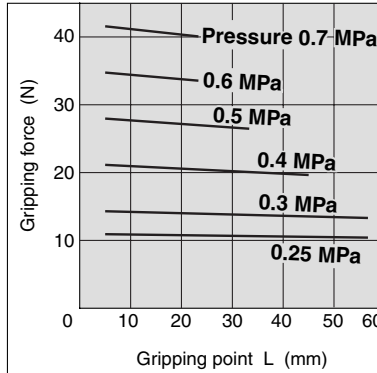
**MHZ2-6S/MHZA2-6S**



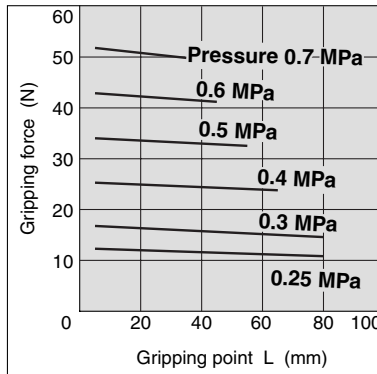
**MHZ2-10S/MHZL2-10S**



**MHZ2-16S/MHZL2-16S**

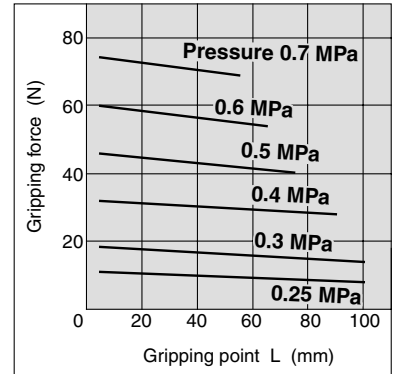


**MHZ2-20S/MHZL2-20S**

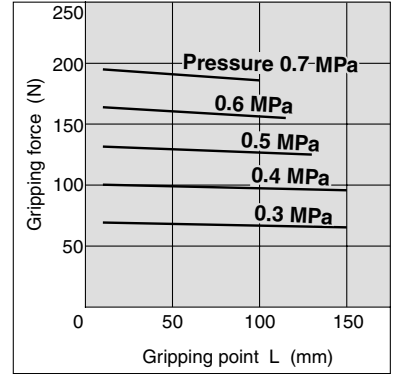


**External Gripping Force**

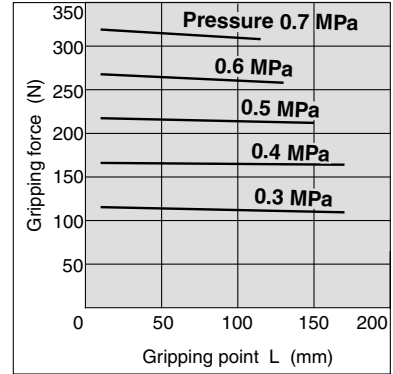
**MHZ2-25S/MHZL2-25S**



**MHZ2-32S**



**MHZ2-40S**



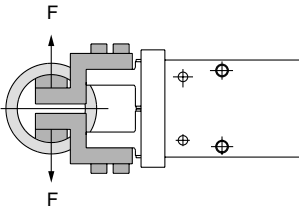
- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

## Model Selection

### Step 1 Effective Gripping Force: Series MHZ 2/Single Acting/Internal Gripping Force

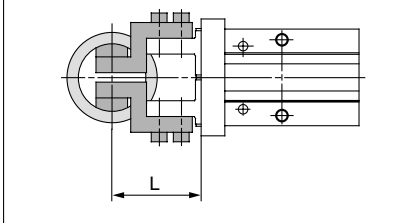
- Indication of effective gripping force

The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



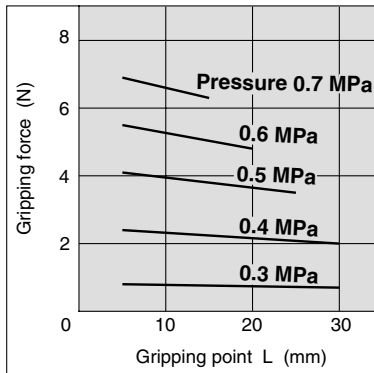
### Internal Grip

MHZA2, MHZ2, MHZL2

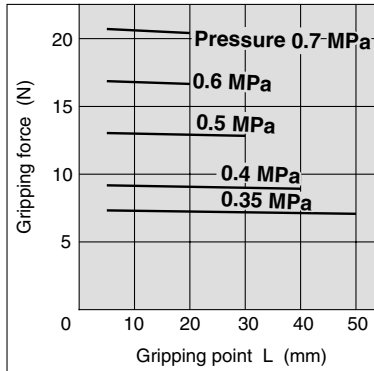


### Internal Gripping Force

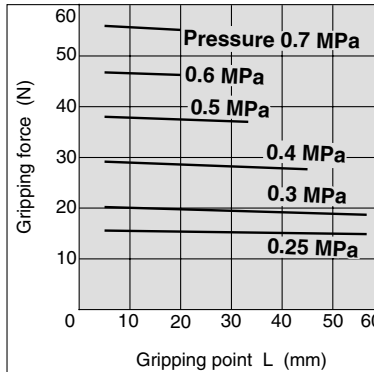
#### MHZ2-6C/MHZA2-6C



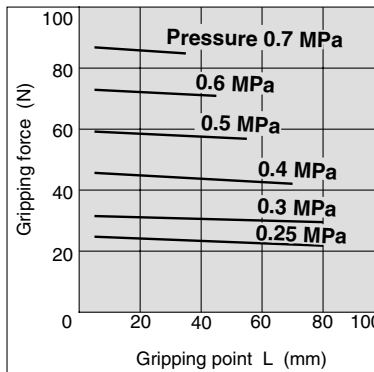
#### MHZ2-10C/MHZL2-10C



#### MHZ2-16C/MHZL2-16C

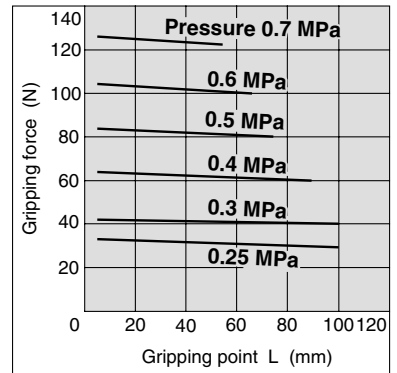


#### MHZ2-20C/MHZL2-20C

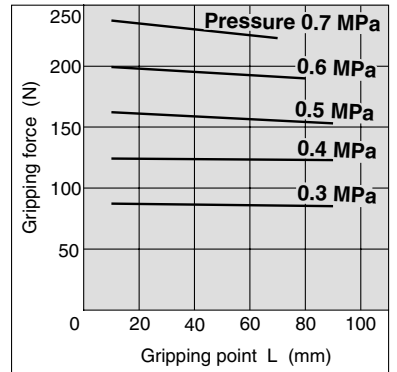


### Internal Gripping Force

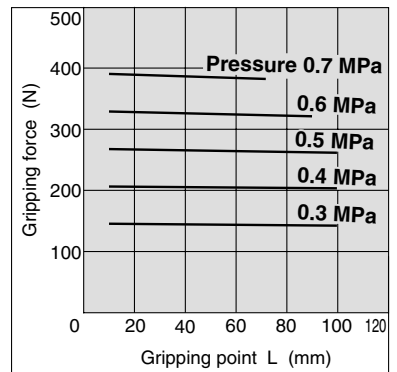
#### MHZ2-25C/MHZL2-25C



#### MHZ2-32C



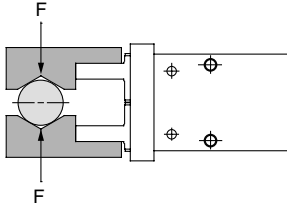
#### MHZ2-40C



**Step 1 Effective Gripping Force: Series MHZ□2/Double Acting/External Gripping Force**

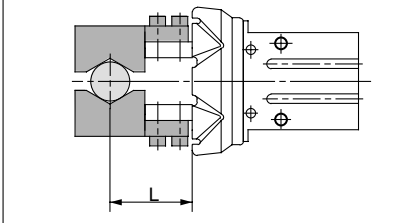
- Indication of effective gripping force

The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



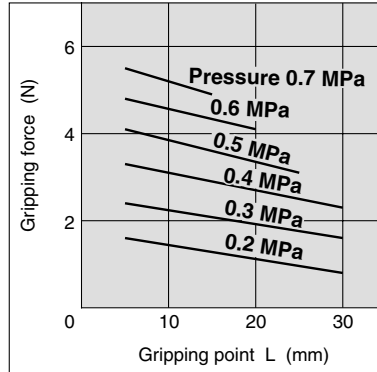
**External Grip**

**MHZAJ2, MHZJ2, 11-MHZ2**



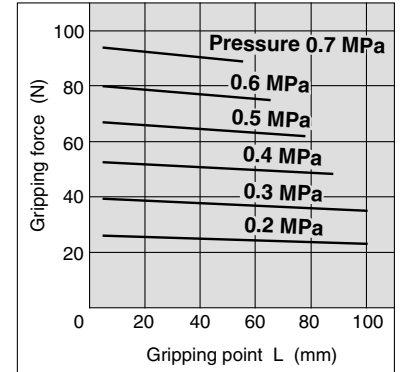
**External Gripping Force**

**MHZJ2-6D/MHZAJ2-6D**

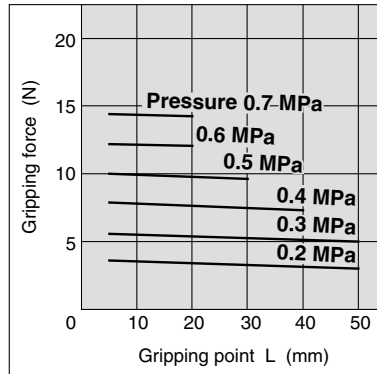


**External Gripping Force**

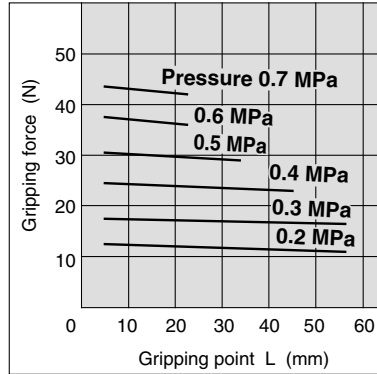
**MHZJ2-25D/11-MHZ2-25D**



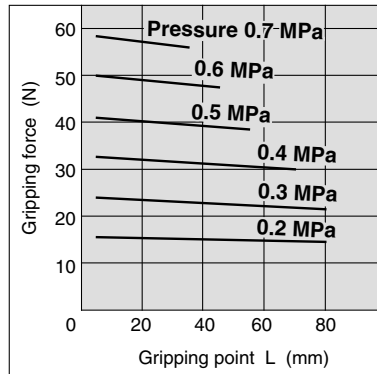
**MHZJ2-10D/11-MHZ2-10D**



**MHZJ2-16D/11-MHZ2-16D**



**MHZJ2-20D/11-MHZ2-20D**



- MHZ**
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

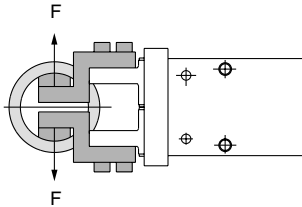
# Series MHZ□

## Model Selection

### Step 1 Effective Gripping Force: Series MHZ□2/Double Acting/Internal Gripping Force

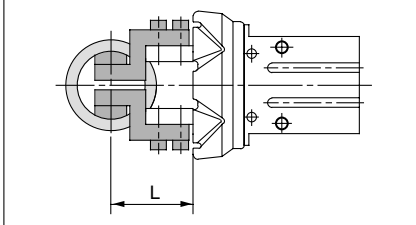
- Indication of effective gripping force

The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



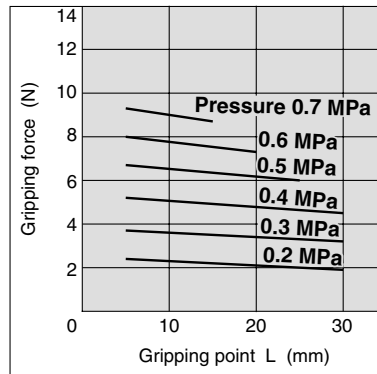
### Internal Grip

MHZAJ2, MHZJ2, 11-MHZ2



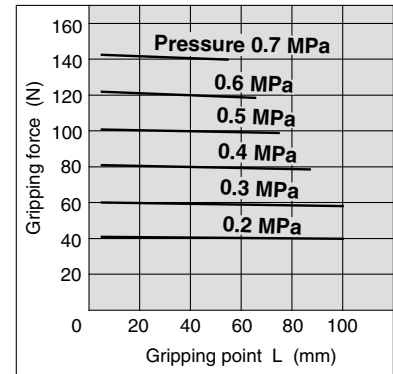
### Internal Gripping Force

MHZJ2-6D/MHZAJ2-6D

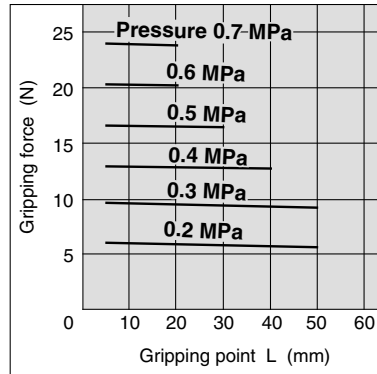


### Internal Gripping Force

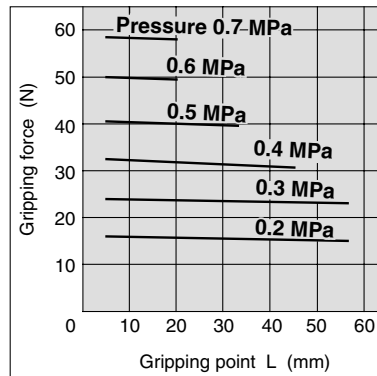
MHZJ2-25D/11-MHZ2-25D



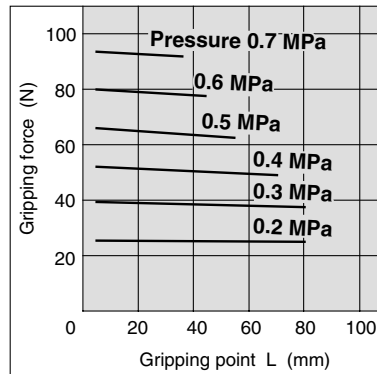
MHZJ2-10D/11-MHZ2-10D



MHZJ2-16D/11-MHZ2-16D



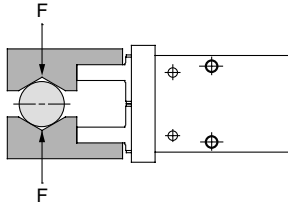
MHZJ2-20D/11-MHZ2-20D



**Step 1 Effective Gripping Force: Series MHZ□2/Single Acting/External Gripping Force**

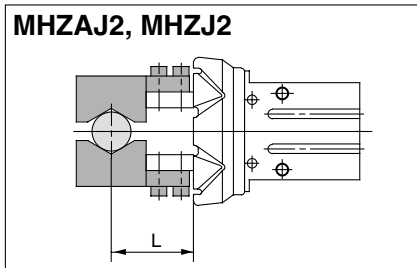
- Indication of effective gripping force

The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



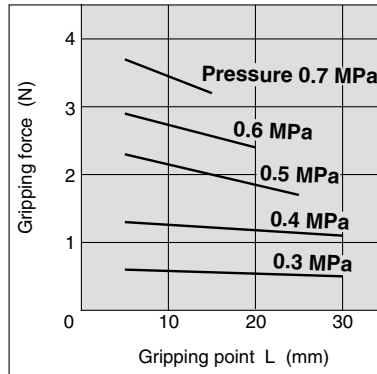
**External Grip**

**MHZAJ2, MHZJ2**



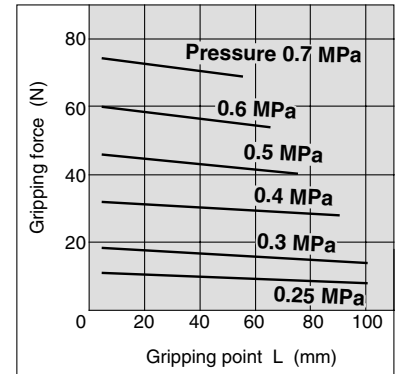
**External Gripping Force**

**MHZJ2-6S/MHZAJ2-6S**

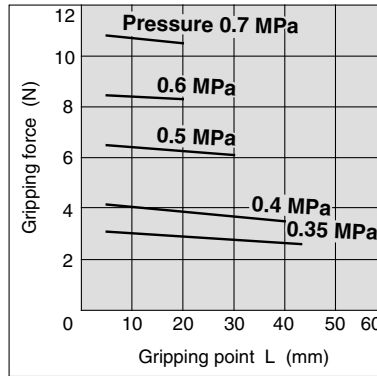


**External Gripping Force**

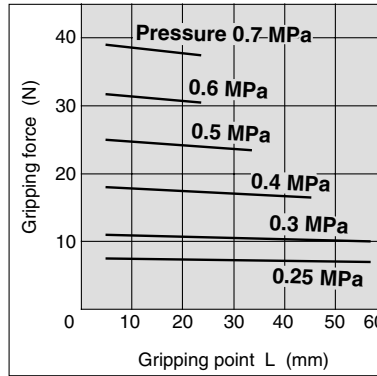
**MHZJ2-25S**



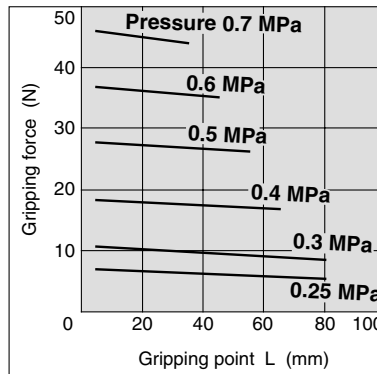
**MHZJ2-10S**



**MHZJ2-16S**



**MHZJ2-20S**



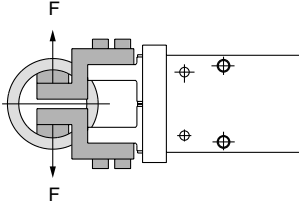
- MHZ**
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

## Model Selection

### Step 1 Effective Gripping Force: Series MHZ 2/Single Acting/Internal Gripping Force

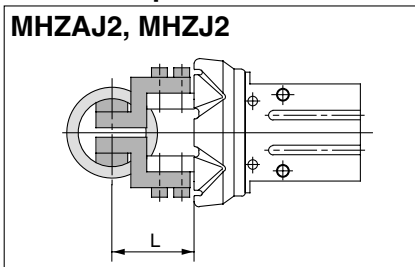
- Indication of effective gripping force

The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



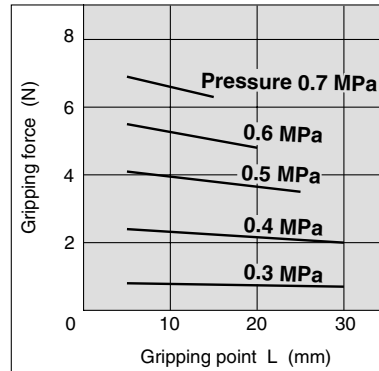
### Internal Grip

MHZAJ2, MHZJ2



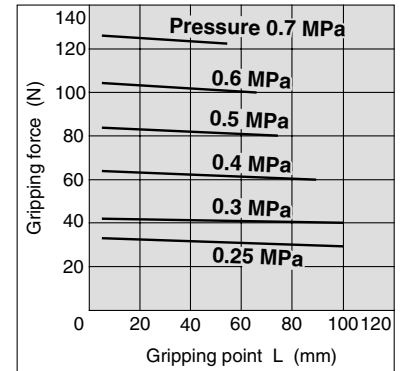
### Internal Gripping Force

MHZJ2-6C/MHZAJ2-6C

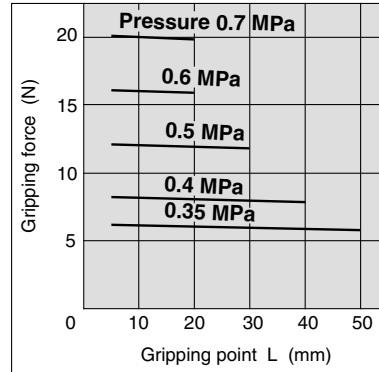


### Internal Gripping Force

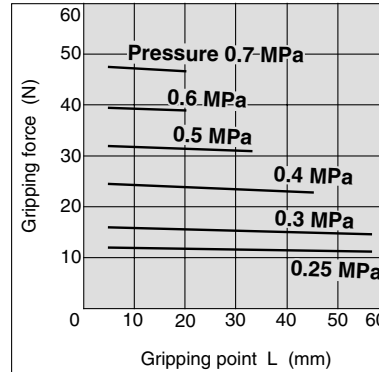
MHZJ2-25C



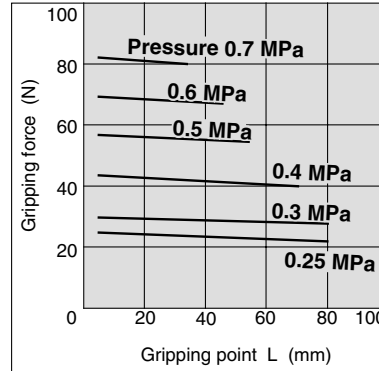
MHZJ2-10C



MHZJ2-16C

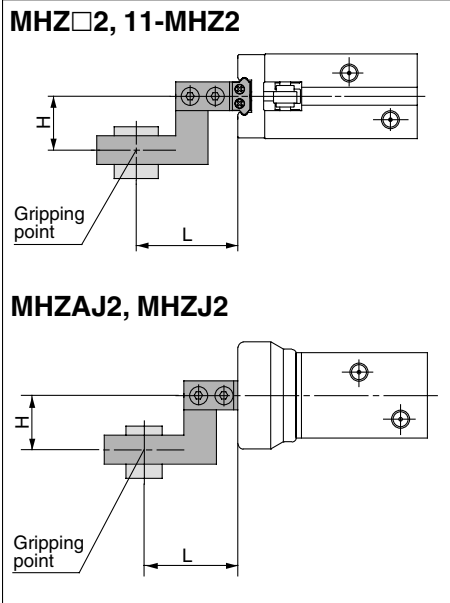


MHZJ2-20C



**Step 2 Confirmation of Gripping Point: Series MHZ□/External Grip**

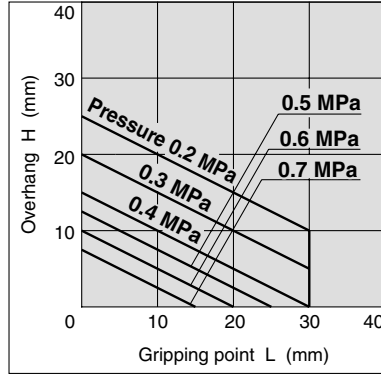
**External Grip**



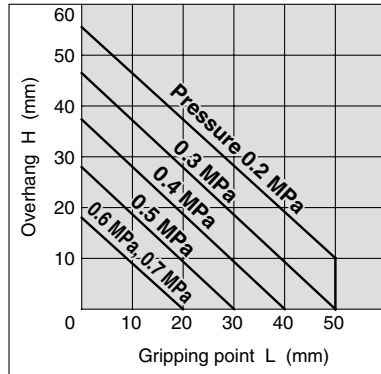
- The air gripper should be operated so that the workpiece gripping point "L" and the amount of overhang "H" stay within the range shown for each operating pressure given in the graphs to the right.
- If the workpiece gripping point goes beyond the range limits, this will have an adverse effect on the life of the air gripper.

**External Grip**

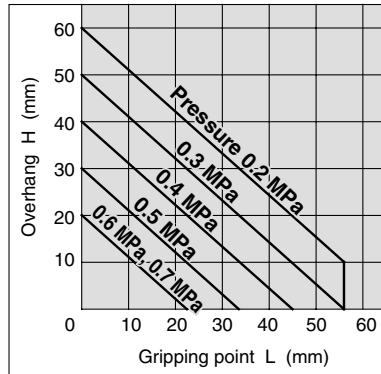
**MHZ□2-6□**



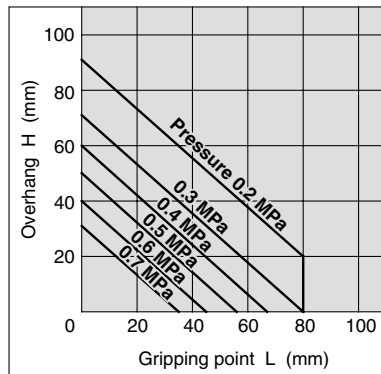
**MHZ□2-10□/11-MHZ2-10□**



**MHZ□2-16□/11-MHZ2-16□**

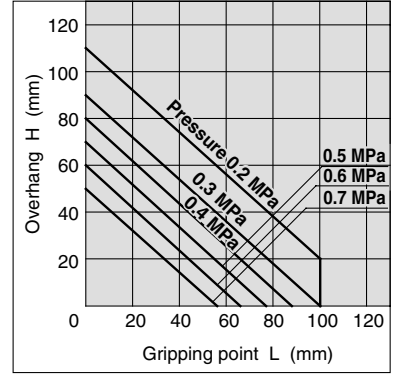


**MHZ□2-20□/11-MHZ2-20□**

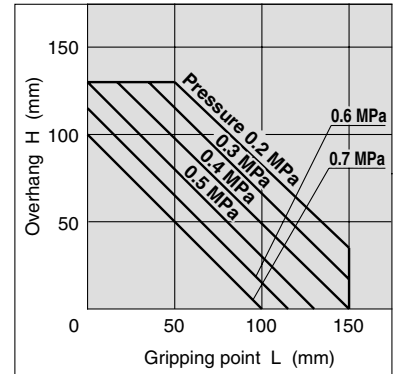


**External Grip**

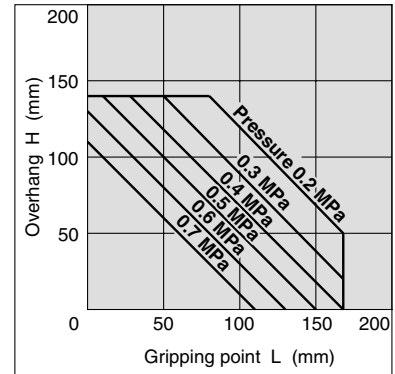
**MHZ□2-25□/11-MHZ2-25□**



**MHZ2-32□**



**MHZ2-40□**



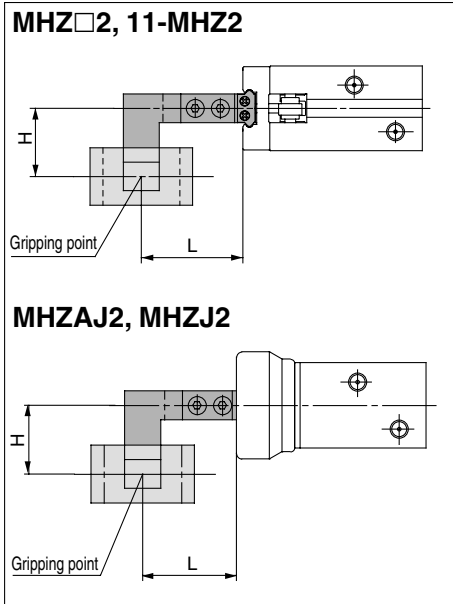
- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

# Series MHZ□

## Model Selection

### Step 2 Confirmation of Gripping Point: Series MHZ□/Internal Grip

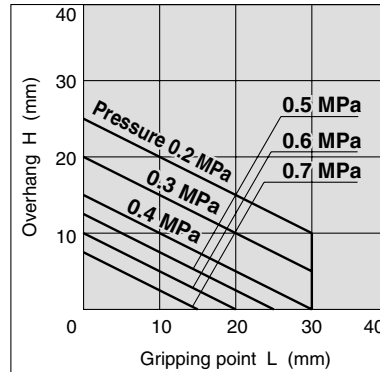
#### Internal Grip



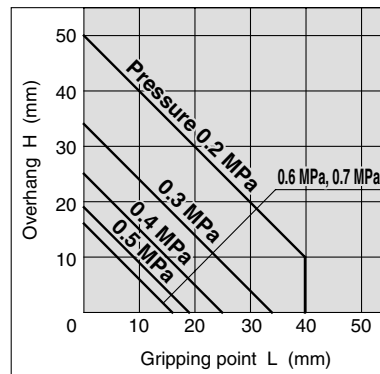
- The air gripper should be operated so that the workpiece gripping point “L” and the amount of overhang “H” stay within the range shown for each operating pressure given in the graphs to the right.
- If the workpiece gripping point goes beyond the range limits, this will have an adverse effect on the life of the air gripper.

#### Internal Grip

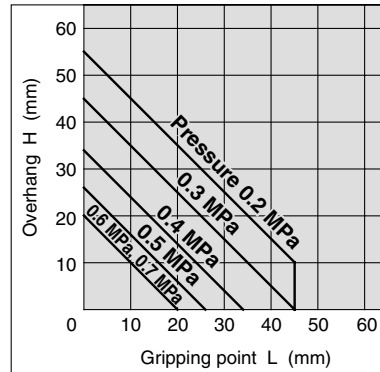
MHZ□2-6□



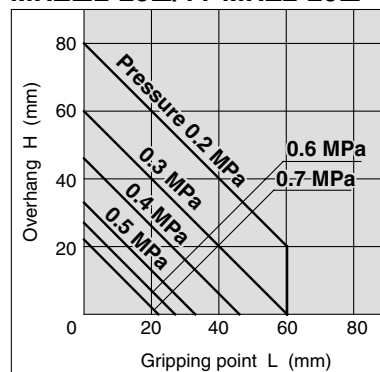
MHZ□2-10□/11-MHZ2-10□



MHZ□2-16□/11-MHZ2-16□

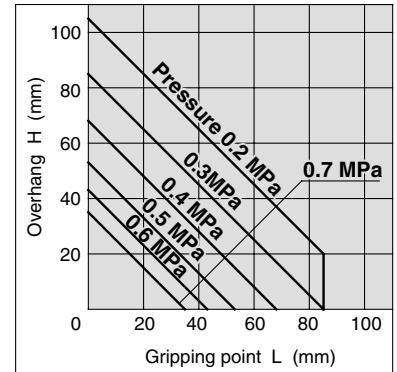


MHZ□2-20□/11-MHZ2-20□

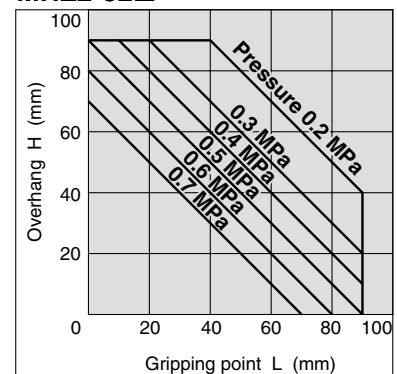


#### Internal Grip

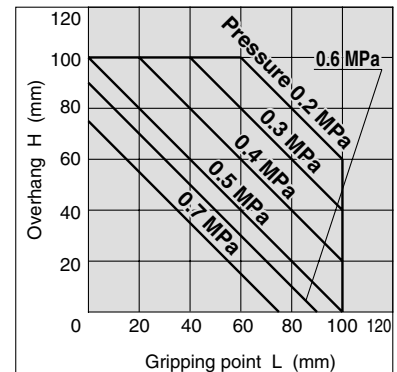
MHZ□2-25□/11-MHZ2-25□



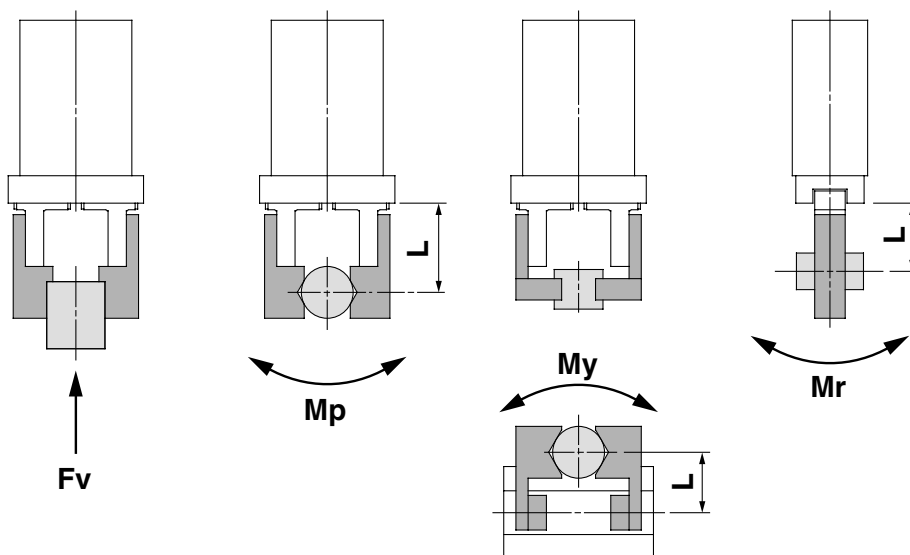
MHZ2-32□



MHZ2-40□



Step 3 Confirmation of External Force on Fingers: Series MHZ□2



L: Distance to the point at which the load is applied (mm)

Model	Allowable vertical load Fv (N)	Maximum allowable moment		
		Pitch moment: Mp (N·m)	Yaw moment: My (N·m)	Roll moment: Mr (N·m)
MHZ□2-6	10	0.04	0.04	0.08
MHZ□2-10	58	0.26	0.26	0.53
MHZ□2-16	98	0.68	0.68	1.36
MHZ□2-20	147	1.32	1.32	2.65
MHZ□2-25	255	1.94	1.94	3.88
MHZ□2-32	343	3	3	6
MHZ□2-40	490	4.5	4.5	9

Note) Values for load and moment in the table indicate static values.

Calculation of allowable external force (when moment load is applied)	Calculation example
$\text{Allowable load } F \text{ (N)} = \frac{M \text{ (maximum allowable moment)(N·m)}}{L \times 10^{-3}}$ <p>(*: Constant for unit conversion)</p>	<p>When a static load of <math>f = 10 \text{ N}</math> is operating, which applies pitch moment to point <math>L = 30 \text{ mm}</math> from the MHZ□2-16D guide. Therefore, it can be used.</p> $\text{Allowable load } F = \frac{0.68}{30 \times 10^{-3}} = 22.7 \text{ (N)}$ <p>Load <math>f = 10 \text{ (N)} &lt; 22.7 \text{ (N)}</math></p>

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

D-

20-



# Parallel Style Air Gripper Compact Series (Without Auto Switch)

## Series *MHZA2-6/MHZAJ2-6*

Size: 6

### How to Order

**MHZA** 2 - 6 D

**MHZA J** 2 - 6 D

With dust cover

Number of fingers

2 2 fingers

Bore size

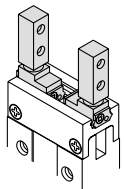
6 6 mm

Action

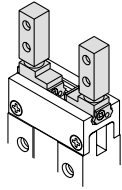
<b>D</b>	Double acting
<b>S</b>	Single acting (Normally open)
<b>C</b>	Single acting (Normally closed)

Finger option

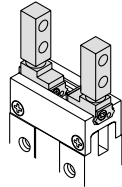
Nil: Basic type



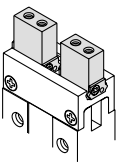
1: Side tapped mounting



2: Through-holes in opening/closing direction



3: Flat type fingers

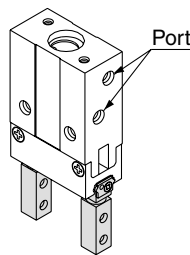


Dust cover type

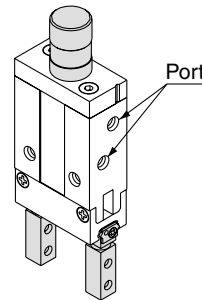
<b>Nil</b>	Chloroprene rubber (CR)
<b>F</b>	Fluoro rubber (FKM)
<b>S</b>	Silicon rubber (Si)

Body option

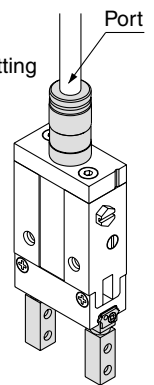
Nil: Basic type



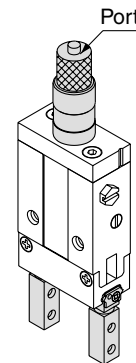
**E**: End boss type  
Side ported  
(Double acting/Single acting)



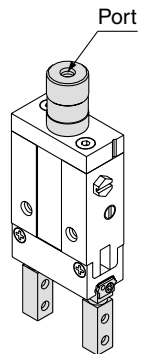
**K**: End boss type  
Axial ported  
with  $\phi 4$  One-touch fitting  
(Single acting)



**H**: End boss type  
Axial ported  
with  $\phi 4$  hose nipple  
(Single acting)



**M**: End boss type  
Axial ported  
with M3 port  
(Single acting)



# Parallel Style Air Gripper Compact Series (Without Auto Switch) Series **MHZA2-6/MHZAJ2-6**



## Specifications

Fluid	Air	
Operating pressure	Double acting	
	Single acting	Normally open
		Normally closed
		0.15 to 0.7 MPa
		0.3 to 0.7 MPa
Ambient and fluid temperature		-10 to 60°C
Repeatability		±0.01 mm
Max. operating frequency		180 c.p.m.
Lubrication		Not required
Action		Double acting/Single acting

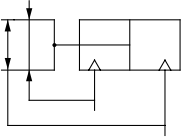
## Model

Action	Model	Bore size (mm)	Gripping force <sup>Note)</sup>		Opening/Closing (Both sides) (mm)	Weight (g)	
			Gripping force per finger				
			External	Internal			
Double acting	<b>MHZA2-6D</b>	6	3.3	6.1	4	26	
	<b>MHZAJ2-6D</b>	6					
Single acting	Normally open	<b>MHZA2-6S</b>	1.9	—	4	26	
		<b>MHZAJ2-6S</b>					6
	Normally closed	<b>MHZA2-6C</b>	6	—	3.7	4	26
		<b>MHZAJ2-6C</b>	6				
			6				

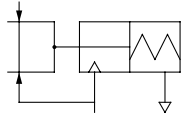
Note) Values based on pressure of 0.5 MPa, gripping point L = 20 mm, at center of stroke.

### JIS Symbol

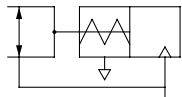
Double acting



Single acting type, Normally open



Single acting type, Normally closed



## Option

### ● Body Option/End Boss Type

Symbol	Piping port location	Type of piping port	Applicable model	
		<b>MHZA2-6/MHZAJ2-6</b>	Double acting	Single acting
<b>Nil</b>	Basic type	M3 x 0.5	●	●
<b>E</b>	Side ported	M3 x 0.5	●	●
<b>K</b>	Axial ported	With ø4 One-touch fitting	—	●
<b>H</b>		With ø4 hose nipple	—	●
<b>M</b>		M3 x 0.5	—	●

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

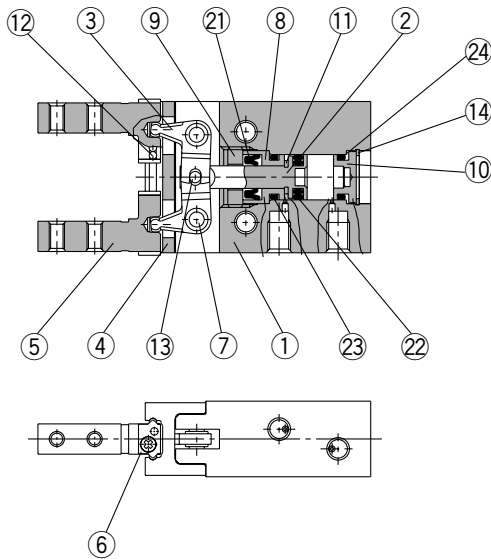
D-

20-

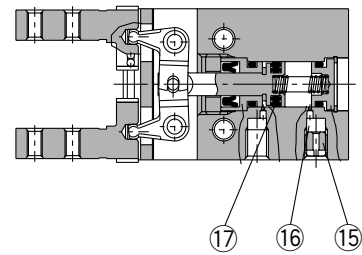
# Series MHZA2-6/MHZAJ2-6

## Construction: Standard Type MHZA2-6

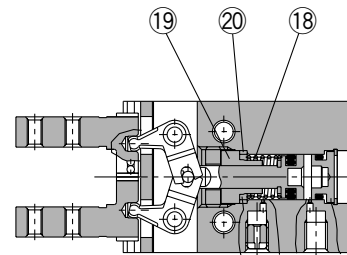
### Double acting/With fingers open



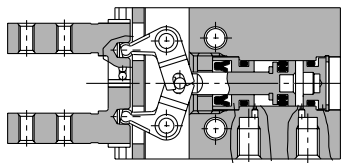
### Single acting/Normally open



### Single acting/Normally closed



### Double acting/With fingers closed



## Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Piston	Stainless steel	
③	Lever	Stainless steel	Heat treated
④	Guide	Stainless steel	Heat treated
⑤	Finger	Stainless steel	Heat treated
⑥	Roller stopper	Stainless steel	
⑦	Lever shaft	Stainless steel	Nitrided
⑧	Holder	Brass	Electroless nickel plated
⑨	Holder lock	Stainless steel	
⑩	Cap	Aluminum alloy	Clear anodized
⑪	Bumper	Urethane rubber	
⑫	Steel balls	High carbon chrome bearing steel	
⑬	Needle roller	High carbon chrome bearing steel	

No.	Description	Material	Note
⑭	Type C snap ring	Carbon steel	Nickel plated
⑮	Exhaust plug	Brass	Electroless nickel plated
⑯	Exhaust filter	Polyvinyl formal	
⑰	N.O. spring	Stainless steel spring wire	
⑱	N.C. spring	Stainless steel spring wire	
⑲	N.C. holder	Brass	Electroless nickel plated
⑳	N.C. spacer	Stainless steel	
㉑	Rod seal	NBR	
㉒	Piston seal	NBR	
㉓	Gasket	NBR	
㉔	Gasket	NBR	

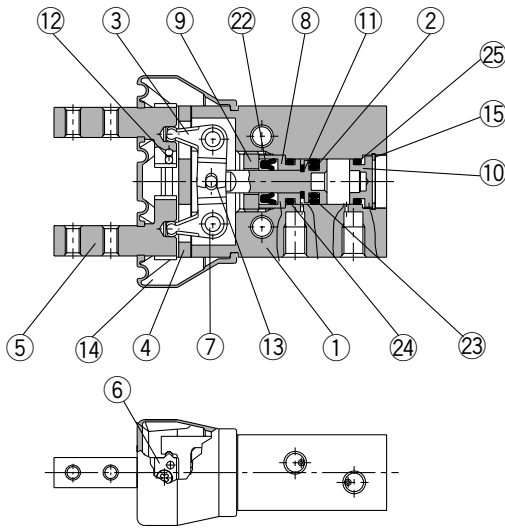
## Replacement Parts

Description		MHZA2-6□	Main parts
Seal kit		MHZA6-PS	㉑/㉒/㉓/㉔
Finger assembly		Please contact SMC to replace finger assembly	
Piston assembly	MHZA2-6D□	MHZA-A0603	②/⑧/⑨/⑪/⑬/㉑/㉒/㉓
	MHZA2-6S□		
	MHZA2-6C□	MHZA-A0603C	②/⑨/⑪/⑬/⑱/⑲/㉑/㉒
End boss assembly	MHZA2-6□□H	MHZA-A0607	Main body of adaptor Mounting screw for adaptor Seal kit
	MHZA2-6□□K	MHZA-A0608	
	MHZA2-6□□M	MHZA-A0609	
	MHZA2-6□□E	MHZA-A0610	

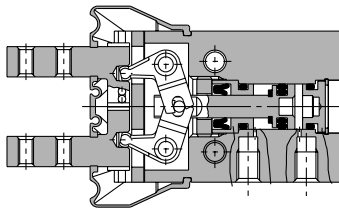
# Parallel Style Air Gripper Compact Series (Without Auto Switch) Series MHZA2-6/MHZAJ2-6

## Construction: With Dust Cover MHZAJ2-6

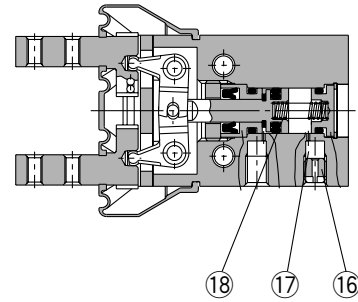
### Double acting/With fingers open



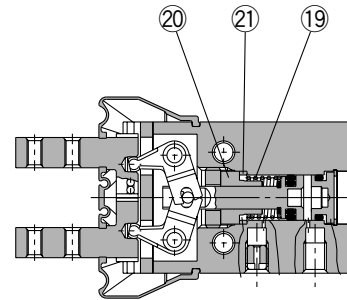
### Double acting/With fingers closed



### Single acting/Normally open



### Single acting/Normally closed



## Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Piston	Stainless steel	
③	Lever	Stainless steel	Heat treated
④	Guide	Stainless steel	Heat treated
⑤	Finger	Stainless steel	Heat treated
⑥	Roller stopper	Stainless steel	
⑦	Lever shaft	Stainless steel	Nitrided
⑧	Holder	Brass	Electroless nickel plated
⑨	Holder lock	Stainless steel	
⑩	Cap	Aluminum alloy	Clear anodized
⑪	Bumper	Urethane rubber	
⑫	Steel balls	High carbon chrome bearing steel	
⑬	Needle roller	High carbon chrome bearing steel	

No.	Description	Material	Note
⑭	Dust cover	CR	Chloroprene rubber
		FKM	Fluoro rubber
		Si	Silicon rubber
⑮	Type C snap ring	Carbon steel	Nickel plated
⑯	Exhaust plug	Brass	Electroless nickel plated
⑰	Exhaust filter	Polyvinyl formal	
⑱	N.O. spring	Stainless steel spring wire	
⑲	N.C. spring	Stainless steel spring wire	
⑳	N.C. holder	Brass	Electroless nickel plated
㉑	N.C. spacer	Stainless steel	
㉒	Rod seal	NBR	
㉓	Piston seal	NBR	
㉔	Gasket	NBR	
㉕	Gasket	NBR	

## Replacement Parts

Description		MHZAJ2-6	Main parts
Seal kit		MHZAJ6-PS	㉒㉓㉔㉕
Dust cover	Material	CR	⑭
		FKM	
		Si	
Finger assembly		Please contact SMC to replace Finger assembly.	
Piston assembly	MHZAJ2-6D□	MHZAJ-A0603	②⑧⑨⑪⑬⑲⑳㉑㉒
	MHZAJ2-6S□		
	MHZAJ2-6C□	MHZAJ-A0603C	②⑨⑪⑬⑱⑲⑳㉑㉒
End boss assembly	MHZAJ2-6□□H	MHZAJ-A0607	Main body of adaptor Mounting screw for adaptor Seal kit
	MHZAJ2-6□□K	MHZAJ-A0608	
	MHZAJ2-6□□M	MHZAJ-A0609	
	MHZAJ2-6□□E	MHZAJ-A0610	

\* End boss type

H = With hose nipple, K = With One-touch fitting, M = With M3 port, E = Side ported

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

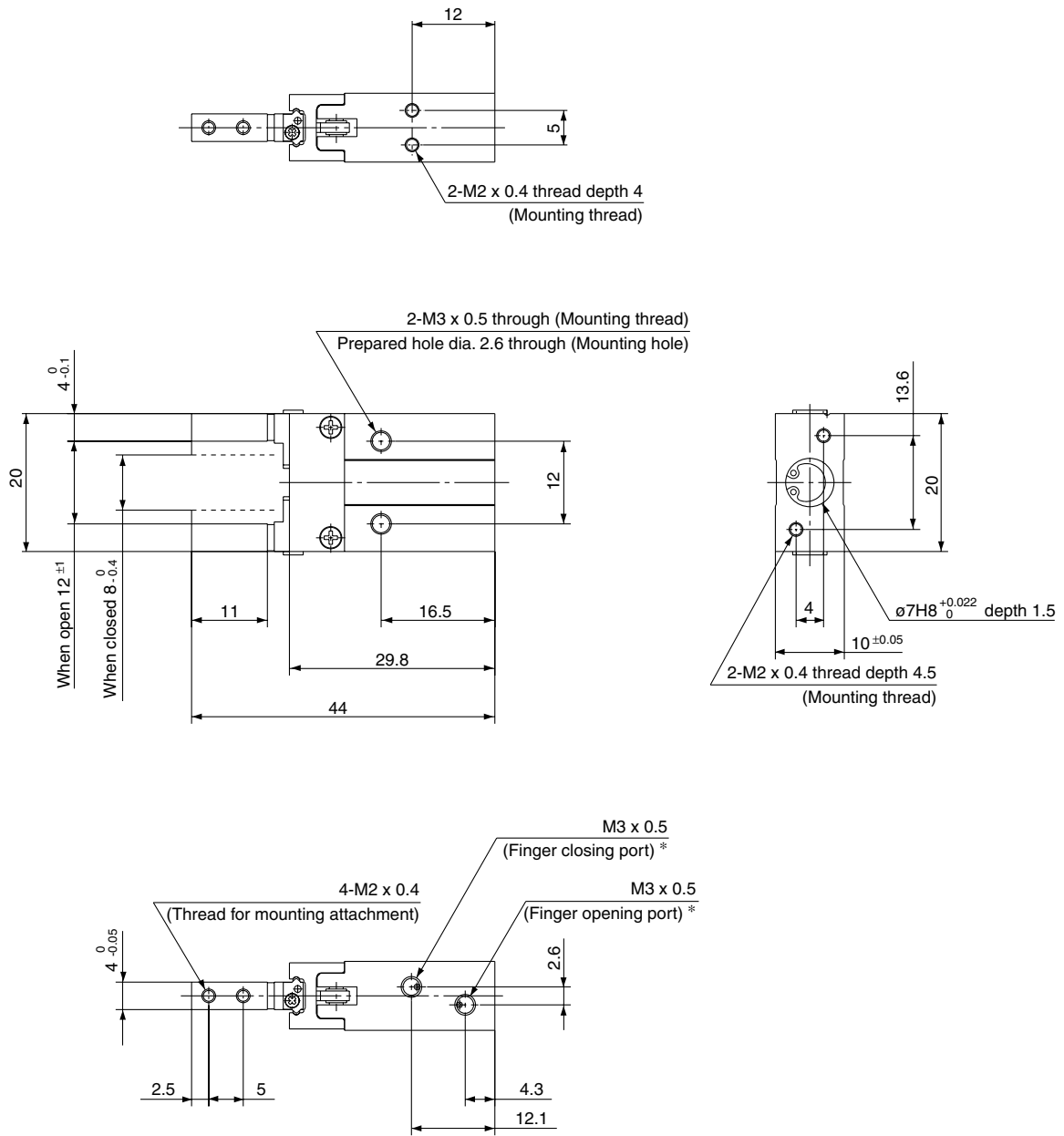
D-

20-

# Series MHZA2-6/MHZAJ2-6

## Construction: Standard Type

MHZA2-6 □ Double acting/Single acting  
Basic type

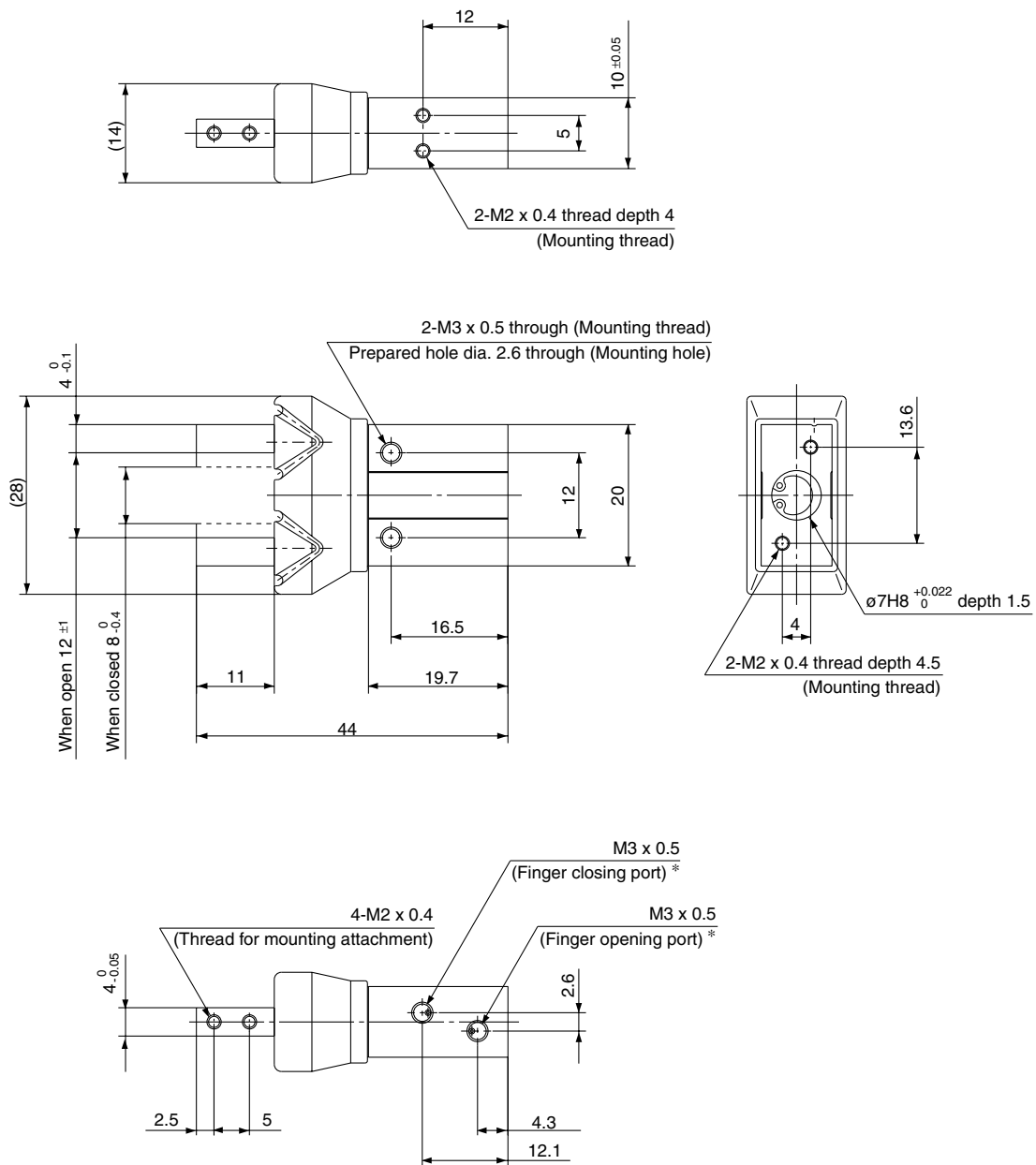


\* For single action, the port on one side is a breathing hole.

# Parallel Style Air Gripper Compact Series (Without Auto Switch) Series MHZA2-6/MHZAJ2-6

## Dimensions: With Dust Cover

MHZAJ2-6 □ Double acting/Single acting  
Basic type

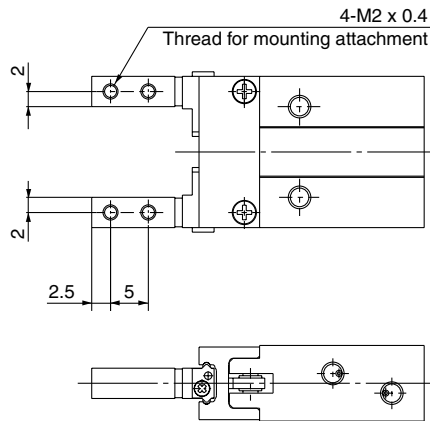


\* For single action, the port on one side is a breathing hole.

MHZ
MHF
MHL
MHR
MHK
MHS
MHC
MHT
MHY
MHW
MRHQ
Misc.
D-
20-

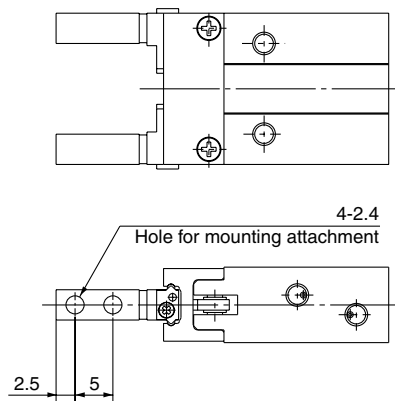
# Series MHZA2-6 Finger Option

## Side Tapped Mounting [1]



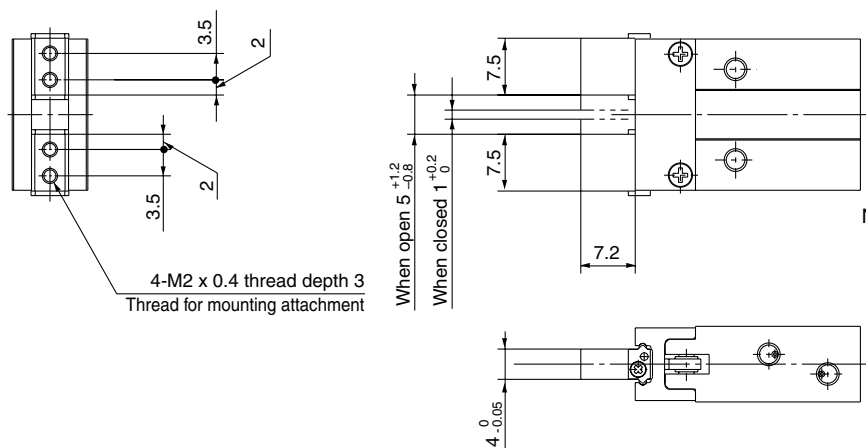
\* Specifications and dimensions other than the above are the same as the basic type.

## Through-holes in Opening/Closing Direction [2]



\* Specifications and dimensions other than the above are the same as the basic type.

## Flat Type Fingers [3]



Note) To mount attachments, use M2 hexagon socket head cap screws with  $\phi 3.3$  top diameter, or JIS B 1101 type M2 round head screws.

Weight: 25 g

\* Specifications and dimensions other than the above are the same as the basic type.

# Series MHZA2-6/MHZAJ2-6

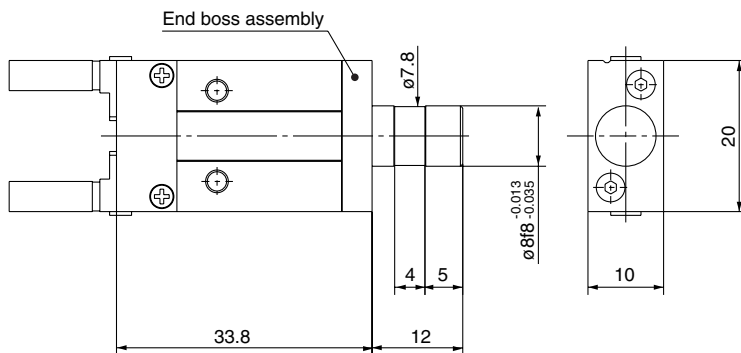
## Body Option: End Boss Type

### Applicable Model

Symbol	Piping port location	Type of piping port		Applicable model	
		MHZA2	MHZAJ2	Double acting	Single acting
E	Side ported	M3 x 0.5		●	●
H	Axial ported	With ø4 hose nipple		—	●
K		With ø4 One-touch fitting		—	●
M		M3 x 0.5		—	●

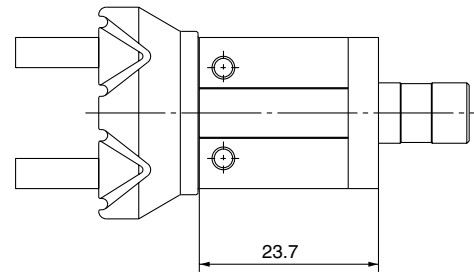
### Side Ported [E]

MHZA2-6□□E



\* Specifications and dimensions other than the above are the same as the basic type.

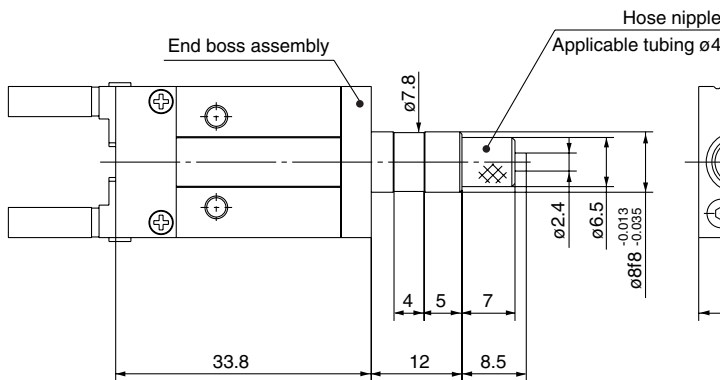
MHZAJ2-6□□E



\* Specifications and dimensions other than the above are the same as the basic type or the end boss dimensions of the MHZA type.

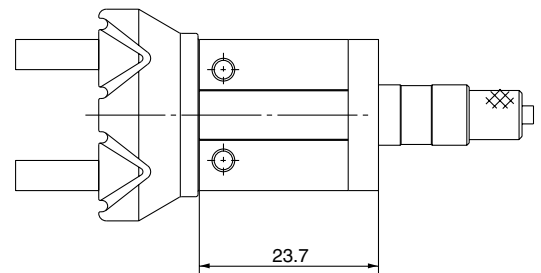
### Axial Ported (with hose nipple) [H]

MHZA2-6<sup>S</sup>□□H



\* Specifications and dimensions other than the above are the same as the basic type.

MHZAJ2-6<sup>S</sup>□□H



\* Specifications and dimensions other than the above are the same as the basic type or the end boss dimensions of the MHZA type.

### Applicable Tubing

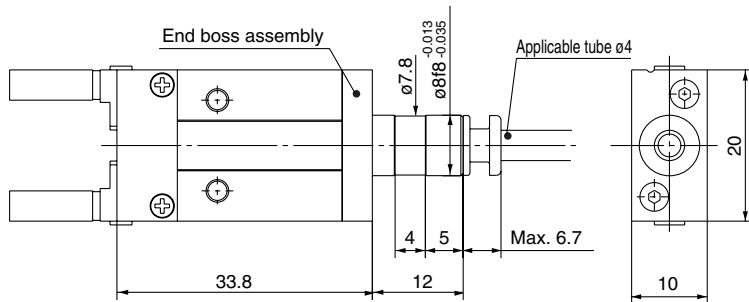
Description/ Model	Nylon tubing	Soft nylon tubing	Polyurethane tubing	Polyurethane coil tubing
	T0425	TS0425	TU0425	TCU0425B-1
Outside diameter (mm)	4	4	4	4
Max. operating pressure (MPa)	1.0	0.8	0.5	0.5
Min. bending radius (mm)	13	12	10	—
Operating temperature (°C)	-20 to 60	-20 to 60	-20 to 60	-20 to 60
Material	Nylon 12	Nylon 12	Polyurethane	Polyurethane

Refer to "Best Pneumatics Vol. 15" regarding One-touch fittings and tubing.

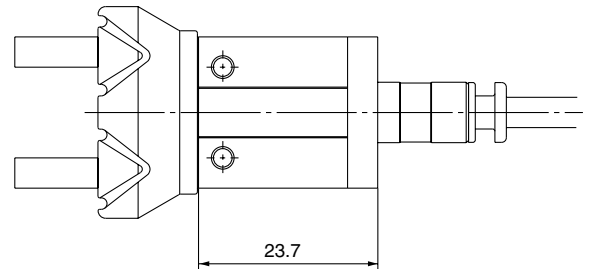
# Series MHZA2-6/MHZAJ2-6

## Axial Ported (with One-touch fitting) [K]

MHZA2-6  $\frac{S}{C}$ □K



MHZAJ2-6  $\frac{S}{C}$ □K



\* Specifications and dimensions other than the above are the same as the basic type.

\* Specifications and dimensions other than the above are the same as the basic type or the end boss dimensions of the MHZA type.

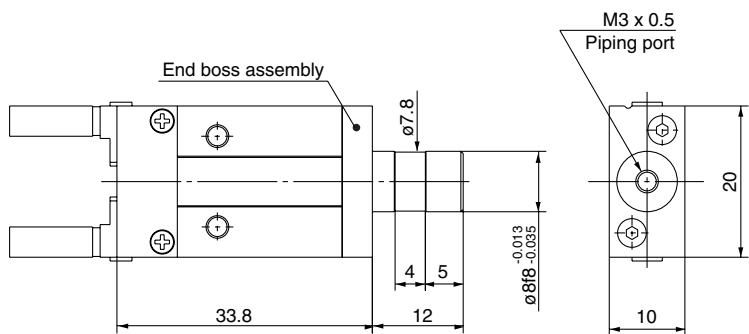
### Applicable Tubing

Specifications	Description/Model	Nylon tubing	Soft nylon tubing	Polyurethane tubing	Polyurethane coiled tubing
		T0425	TS0425	TU0425	TCU0425B-1
Outside diameter (mm)		4	4	4	4
Max. operating pressure (MPa)		1.0	0.8	0.5	0.5
Min. bending radius (mm)		13	12	10	—
Operating temperature (°C)		-20 to 60	-20 to 60	-20 to 60	-20 to 60
Material		Nylon 12	Nylon 12	Polyurethane	Polyurethane

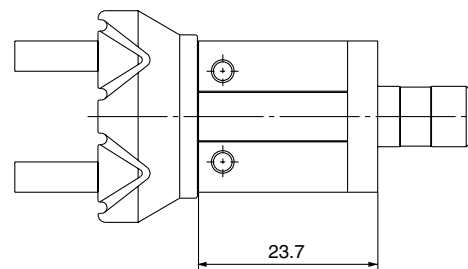
Refer to "Best Pneumatics Vol. 15" regarding One-touch fittings and tubing.

## Axial Ported (with M3 port) [M]

MHZA2-6  $\frac{S}{C}$ □M



MHZAJ2-6  $\frac{S}{C}$ □M



\* Specifications and dimensions other than the above are the same as the basic type.

\* Specifications and dimensions other than the above are the same as the basic type or the end boss dimensions of the MHZA type.

### Weight

Model	End boss type (Symbol)			
	E	H	K	M
MHZA2-6□□	28	28	28	28
MHZAJ2-6□□	29	29	29	29

(g)

# Parallel Style Air Gripper Standard Type

# Series *MHZ2*

Size: 6, 10, 16, 20, 25, 32, 40

## How to Order

**ø6 MHZ2 - 6 D - M9B**

**Number of fingers**

2	2 fingers
---	-----------

**Bore size**

6	6 mm
---	------

**Action**

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

**Auto switch**

Nil	Without auto switch (Built-in magnet)
S	1 pc.
	2 pcs.

\* For the applicable auto switch model, refer to the table below.

**Finger option**

[Standard] Nil: Basic type

1: Side tapped mounting

2: Through-holes in opening/closing direction

3: Flat type fingers

### Applicable Auto Switch/Refer to page 12-13-1 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	Electrical entry		0.5 (Nil)	3 (L)	5 (Z)		Flexible lead wire <sup>(2)</sup> (-61)	IC circuit	Relay, PLC
							Perpendicular	In-line							
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V 12 V	—	M9NV	M9N	●	●	○	Standard	○	
								F8N	—	●	●	○	○	—	
				M9PV				M9P	●	●	○	Standard	○		
				F8P				—	●	●	○	○	—		
				M9BV				M9B	●	●	○	Standard	○		
				F8B				—	●	●	○	○	—		

\* Lead wire length symbols: 0.5 m..... Nil (Example) M9BV  
3 m..... L (Example) M9NL  
5 m..... Z (Example) M9NZ

\* Auto switches marked with a "○" symbol are produced upon receipt of order.

Note 1) When using a D-F8□ switch, mount it at a distance of 10 mm or more from magnetic substances such as iron, etc.

Note 2) Add "-61" at the end of the part number for the flexible lead wire.

(Example)

When ordering with an air gripper

**MHZ □ 2-16D-F8NS-61**

● Flexible lead wire

When ordering auto switches only

**D-F8PL-61**

● Flexible lead wire



Refer to page 12-13-28 in for solid state switch with pre-wire connector.

# Series MHZ2

## How to Order

**ø10 to ø25 MHZ2 — 16 D — F9BW**

**Number of fingers**  

2	2 fingers
---	-----------

**Bore size**  

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

**Action**  

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

**Number of auto switches**  

Nil	2 pcs.
S	1 pc.

**Auto switch**  

Nil	Without auto switch (Built-in magnet)
-----	---------------------------------------

\* For the applicable auto switch model, refer to the table below.

**Finger position/option**

**Body option**

**Standard (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 made-to-order specifications on page 12-2-58.

**Narrow type (MHQ2 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 ported ø4 One-touch fitting for coaxial tubing (Double acting)

**K:** End boss type Axial ported with ø4 One-touch fitting (Single acting)

**M:** End boss type Axial ported with M5 port (Single acting)

### Applicable Auto Switch/Refer to page 12-13-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m) <sup>*</sup>			Flexible lead wire <sup>(2)</sup> (-61)	Pre-wire connector	Applicable load	Applicable model					
					DC	AC	Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)				ø10	ø16	ø20	ø25		
																			Electrical entry	Electrical entry
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	Y69A	Y59A	●	●	○	Standard	○	IC circuit	●	●	●	●	
								M9NV	M9N	●	●	○	Standard	○		●	●	●	●	
								F8N	—	●	●	○	○	—		—	●	●	●	●
								Y7PV	Y7P	●	●	○	Standard	○		●	●	●	●	
				M9PV	M9P	●	●	○	Standard	○	—	—	●	●		●	●			
				F8P	—	●	●	○	○	—	—	●	●	●		●				
				Y69B	Y59B	●	●	○	Standard	○	Relay, PLC	●	●	●		●				
				M9BV	M9B	●	●	○	Standard	○		●	●	●		●				
	F8B	—	●	●	○	○	—	—	●	●		●	●							
	Y7NVV	Y7NV	●	●	○	Standard	○	—	—	●		●	●							
	Diagnosis (2-color indicator)	—	—	—	2-wire	12 V	5 V, 12 V	—	F9NWV	F9NW	●	●	○	Standard	○	IC circuit	—	—	—	—
									F9NVV	F9NV	●	●	○	Standard	○		—	—	—	—
									F9PWV	F9PW	●	●	○	Standard	○		—	—	—	—
									F9WV	F9W	●	●	○	Standard	○		—	—	—	—
F7BVV									F7BV	●	●	○	Standard	○	—		—	—	—	
F9BWW									F9BW	●	●	○	Standard	○	—		—	—	—	

\* Lead wire length symbols: 0.5 m.....Nil (Example) M9BV  
 3 m..... L (Example) M9NL  
 5 m..... Z (Example) F59AZ

\* Auto switches marked with a "○" symbol are produced upon receipt of order.  
 Note 1) Take note of hysteresis with 2 color indication type switches. Refer to page 12-2-53 for detailed auto switch specifications.  
 Note 3) Through-hole mounting is not possible when using auto switch types D-Y59, D-Y69, or D-Y7.

Note 4) D-M9□, D-M9□V switch types are not possible to mount on size 10.

Note 2) Add "-61" at the end of the part number for the flexible lead wire. (Example)

When ordering with an air gripper

MHZ□ 2-16D-F8NS-61

When ordering auto switches only

D-F8PL-61

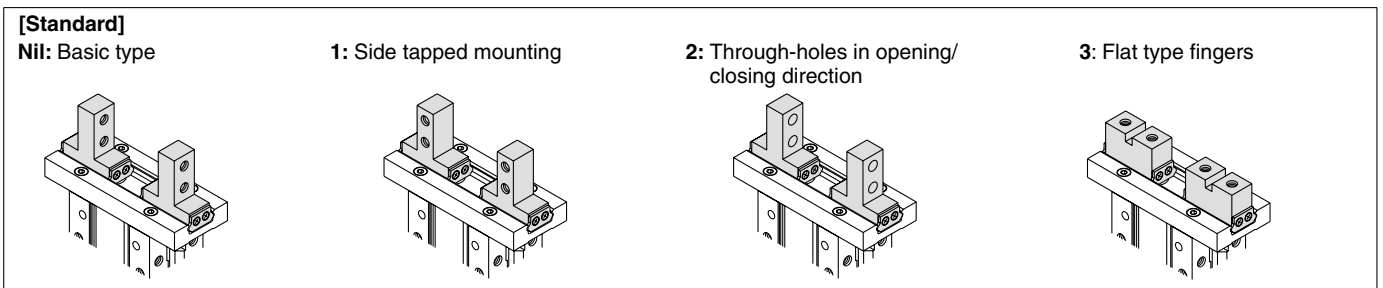
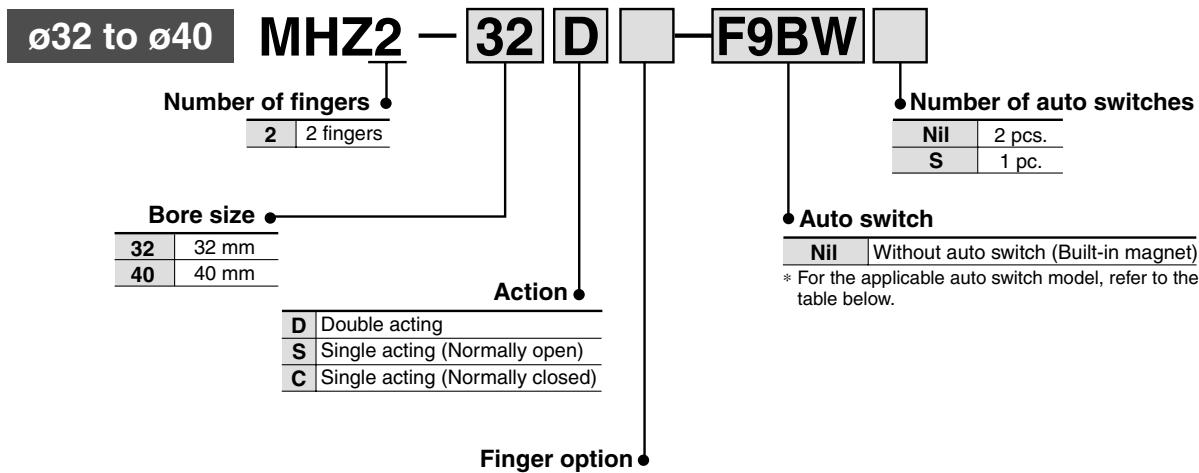
● Flexible lead wire

● Flexible lead wire



\* Refer to page 12-13-28 for solid state switch with pre-wire connector.

## How to Order



### Applicable Auto Switch/Refer to page 12-13-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m) *			Flexible lead wire <sup>(2)</sup> (-61)	Pre-wire connector	Applicable load	Applicable model						
					DC	AC	Electrical entry		0.5 (Nil)	3 (L)	5 (Z)				ø32	ø40					
							Perpendicular	In-line													
Solid state switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	Y69A	Y59A	●	●	○	Standard	○	IC circuit	●	●					
							M9NV	M9N	●	●	○						Standard	○			
				3-wire (PNP)	24 V	—	F8N	—	●	●	○	○	—		—						
							Y7PV	Y7P	●	●	○	Standard				○					
				2-wire	12 V	—	M9PV	M9P	●	●	○		Standard		○		—	—			
							F8P	—	●	●	○	○				—			—		
				Diagnosis (2-color indicator)	—	—	—	3-wire (NPN)	5 V, 12 V	—	Y69B	Y59B	●		●		○	Standard		○	Relay, PLC
											M9BV	M9B	●		●	○	Standard		○		
	3-wire (PNP)	12 V	—					F8B	—	●	●	○	○	—	—						
								Y7NWV	Y7NW	●	●	○	Standard			○					
	2-wire	—	—					F9NWV	F9NW	●	●	○		○	—		—				
								Y7PWV	Y7PW	●	●	○	Standard	○							
	—	—	—	Y7BWV	Y7BW	●	●	○	Standard	○	—	—									
				F9BWV	F9BW	●	●	○					○	—	—						

\* Lead wire length symbols: 0.5 m..... Nil (Example) M9N  
 3 m..... L (Example) M9NL  
 5 m..... Z (Example) Y59AZ

\* Auto switches marked with a "○" symbol are produced upon receipt of order.

Note 1) Take note of hysteresis with 2-color indication type switches. Refer to page 12-2-53 for detailed auto switch specifications.  
 Note 2) Add "-61" at the end of the part number for the flexible lead wire.

(Example)

When ordering with an air gripper

**MHZ □ 2-16D-F8NS-61**

● Flexible lead wire

When ordering auto switches only

**D-F8PL-61**

● Flexible lead wire

Note 3) Through-hole mounting is not possible when using auto switch types D-Y59, D-Y69, or D-Y7.



Refer to page 12-13-28 for solid state switch with pre-wire connector.

# Series MHZ2

ø6



ø10 to ø25

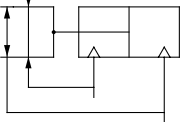


ø32, ø40

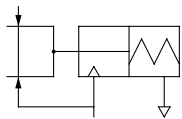


### JIS Symbol

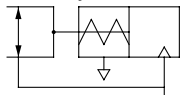
Double acting



Single acting type,  
Normally open



Single acting type,  
Normally closed



## Specifications

Fluid		Air
Operating pressure	Double acting	ø6: 0.15 to 0.7 MPa ø10: 0.2 to 0.7 MPa ø16 to ø40: 0.1 to 0.7 MPa
	Single acting	Normally open ø6: 0.3 to 0.7 MPa ø10: 0.35 to 0.7 MPa ø16 to ø40: 0.25 to 0.7 MPa
Ambient and fluid temperature		-10 to 60°C
Repeatability		ø6 to ø25: ±0.01 mm ø32, ø40: ±0.02 mm
Max. operating frequency		ø6 to ø25: 180 c.p.m. ø32, ø40: 60 c.p.m.
Lubrication		Not required
Action		Double acting/Single acting
Auto switch (Option) <sup>Note)</sup>		Solid state switch (3-wire, 2-wire)

Refer to page 12-13-1 for further information on auto switches.

## Model

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

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

Note 2) Except auto switch.

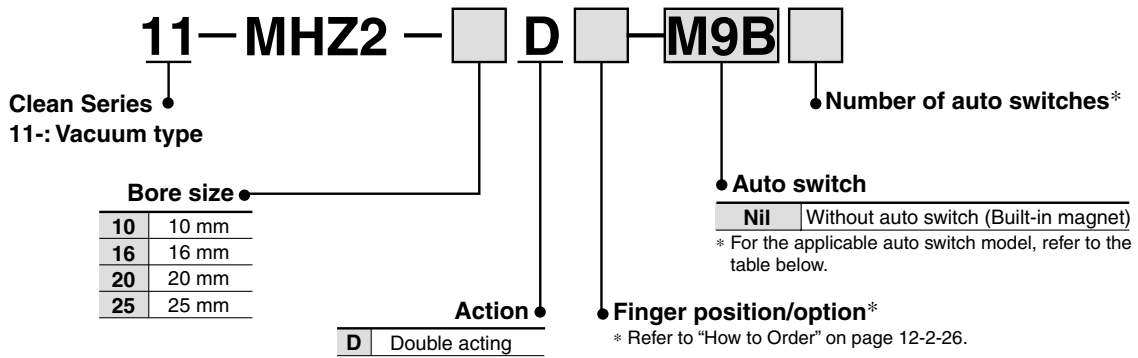
## Option

### ● Body Option/End Boss Type

Symbol	Piping port location	Type of piping port						Applicable model	
		MHZ2-6	MHZ2-10	MHZ2-16	MHZ2-20	MHZ2-25	MHZ2-32	MHZ2-40	Double acting
Nil	Basic type	M3 x 0.5	M5 x 0.8					●	●
E	Side ported	—	M3 x 0.5	M5 x 0.8		—		●	●
W	Axial ported	—	With ø4 One-touch fitting for coaxial tubing			—		●	—
K	Axial ported	—	With ø4 One-touch fitting			—		—	●
M	Axial ported	—	M5 x 0.8			—		—	●

\* For detailed body option specifications, refer to option specifications on page 12-2-40.

## Clean Series: Air Gripper



**Applicable Auto Switch/**Refer to page 12-13-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m) *			Flexible lead wire <sup>(2)</sup> (-61)	Pre-wire connector	Applicable load					
					DC	AC	Perpendicular	In-line	0.5(Nil)	3 (L)	5 (Z)			IC circuit	Relay, PLC				
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V 12 V	—	M9NV	M9N	●	●	○	Standard	○	—	—			
				3-wire (PNP)				M9PV	M9P	●	●	○					Standard	○	—
				2-wire				F8P	—	●	●	○					Standard	○	—
				2-wire				M9BV	M9B	●	●	○					Standard	○	—
					12 V			F8B	—	●	●	○	○	—	—				

\* Lead wire length symbols: 0.5 m..... Nil (Example) M9N  
3 m..... L (Example) M9NL  
5 m..... Z (Example) M9NZ

\* Auto switches marked with a "○" symbol are produced upon receipt of order.  
\* Refer to page 12-13-25 for details on auto switch with pre-wire connector.

Note 1) When using a D-F8□ switch, mount it at a distance of 10 mm or more from magnetic substances such as iron, etc.  
Note 2) Add "-61" at the end of the part number for the flexible lead wire.

(Example)

When ordering with an air gripper

MHZ□2-16D-F8NS-61

● Flexible lead wire

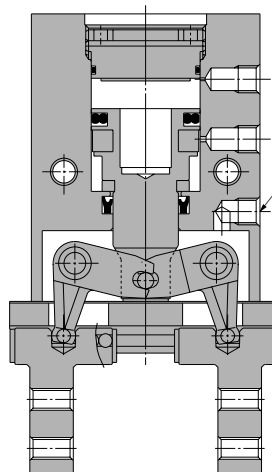
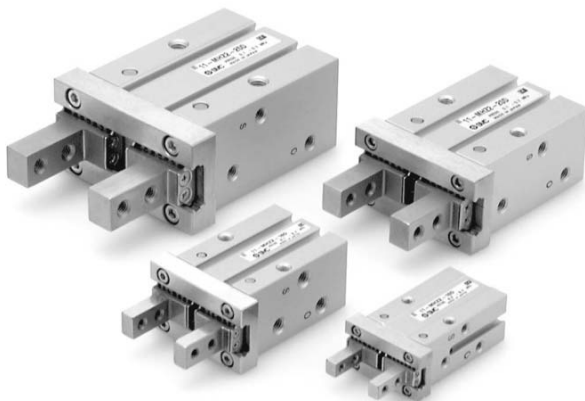
When ordering auto switches only.

D-F8PL-61

● Flexible lead wire

## Specifications

Fluid	Air
Operating pressure	ø10: 0.2 to 0.7 MPa ø16 to ø25: 0.1 to 0.7 MPa
Ambient and fluid temperature	-10 to 60°C
Repeatability	±0.01 mm
Max. operating frequency	180 c.p.m.
Lubrication	Not required
Action	Double acting
Particulate generation grade	Grade 2
Auto switch (Option)	Solid state switch (3-wire, 2-wire)



### Relief port

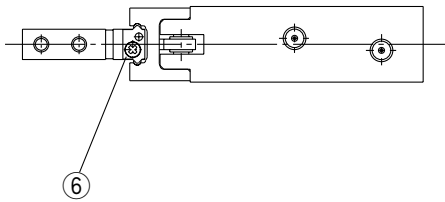
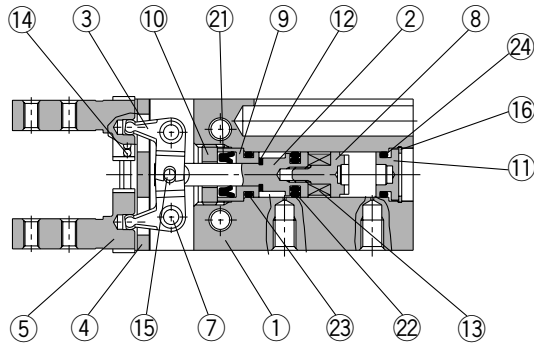
The concentrated vacuuming of internally generated particulates prevents them from spreading into the clean room.

For details, refer to "Pneumatic Clean Series" catalog.

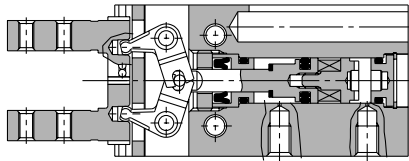
# Series MHZ2

## Construction: MHZ2-6□

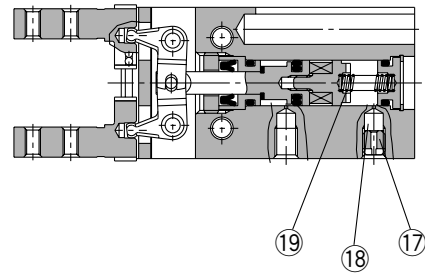
### Double acting/With fingers open



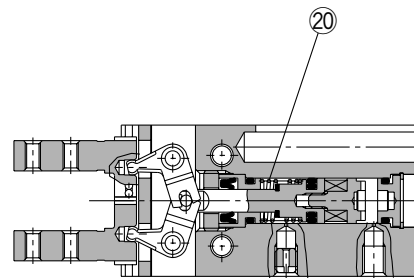
### Double acting/With fingers closed



### Single acting/Normally open



### Single acting/Normally closed



## Component Parts

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

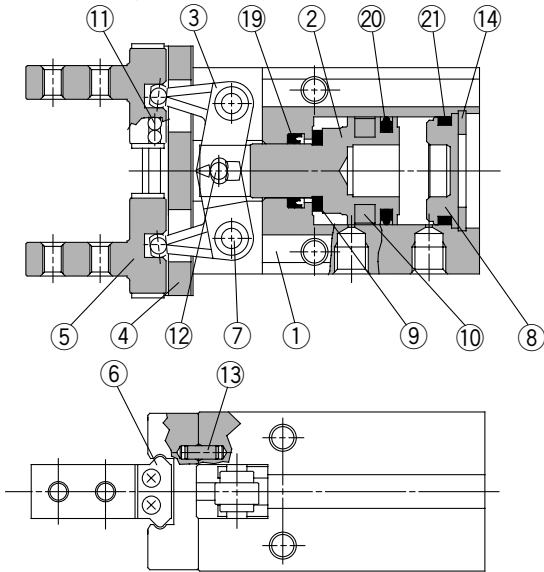
No.	Description	Material	Note
⑭	Steel balls	High carbon chrome bearing steel	
⑮	Needle roller	High carbon chrome bearing steel	
⑯	Type C snap ring	Carbon steel	Nickel plated
⑰	Exhaust plug	Brass	Electroless nickel plated
⑱	Exhaust filter	Polyvinyl formal	
⑲	N.O. spring	Stainless steel spring wire	
⑳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

## Replacement Parts

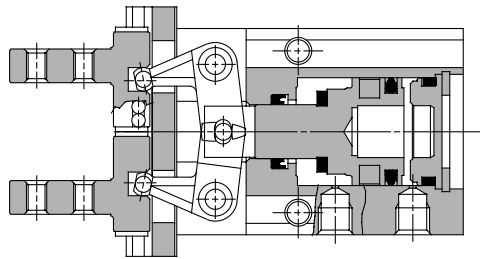
Description	MHZ2-6	Main parts	
Seal kit	MHZ6-PS	㉑ ㉒ ㉓ ㉔	
Finger assembly	Please contact SMC to replace finger assembly.		
Piston assembly	MHZ2-6D□	MHZ-A0603	
	MHZ2-6S□		② ⑧ ⑨ ⑫ ⑬ ⑮ ⑲ ㉑ ㉒ ㉓
	MHZ2-6C□		② ⑧ ⑨ ⑩ ⑫ ⑬ ⑮ ㉑ ㉒ ㉓

**Construction: MHZ2-10□ to 40□**

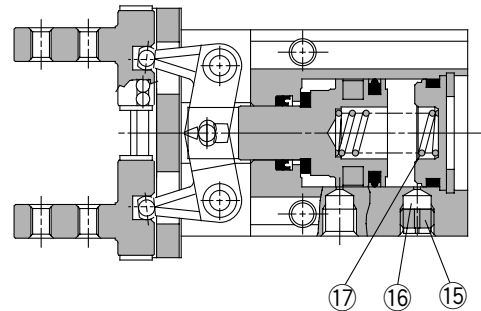
**Double acting/With fingers open**



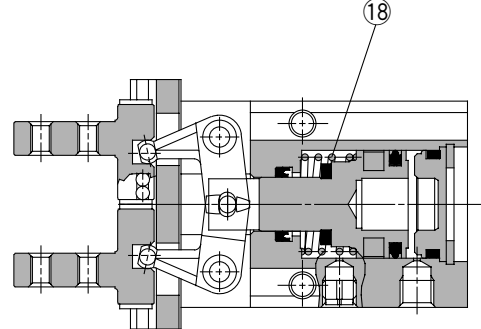
**Double acting/With fingers closed**



**Single acting/Normally open**



**Single acting/Normally closed**



**Component Parts**

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

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

**Replacement Parts**

Description		MHZ2-10	MHZ2-16	MHZ2-20	MHZ2-25	MHZ2-32	MHZ2-40	Main parts
Seal kit		MHZ10-PS	MHZ16-PS	MHZ20-PS	MHZ25-PS	MHZ32-PS	MHZ40-PS	⑰⑲⑳㉑
Finger assembly	MHZ2-□□□(N)	MHZ-A1002(N)	MHZ-A1602(N)	MHZ-A2002(N)	MHZ-A2502(N)	MHZ-A3202	MHZ-A4002	④⑤⑥⑪⑬
	MHZ2-□□□(N)1	MHZ-A1002(N)-1	MHZ-A1602(N)-1	MHZ-A2002(N)-1	MHZ-A2502(N)-1	MHZ-A3202-1	MHZ-A4002-1	
	MHZ2-□□□(N)2	MHZ-A1002(N)-2	MHZ-A1602(N)-2	MHZ-A2002(N)-2	MHZ-A2502(N)-2	MHZ-A3202-2	MHZ-A4002-2	
	MHZ2-□□□3	MHZ-A1002-3	MHZ-A1602-3	MHZ-A2002-3	MHZ-A2502-3	MHZ-A3202-3	MHZ-A4002-3	
Piston assembly	MHZ2-□□□□	MHZ-A1003	MHZ-A1603	MHZ-A2003	MHZ-A2503	MHZ-A3203	MHZ-A4003	②⑨⑩⑫⑳
	MHZ2-□□□S					MHZ-A3203S	MHZ-A4003S	
	MHZ2-□□□C							
End boss assembly	MHZ2-□□□□W	MHZ-A1007	MHZ-A1607	MHZ-A2007	MHZ-A2507	—	—	Main body of adaptor, Mounting screw for adaptor, Seal kit
	MHZ2-□□□□K	MHZ-A1008	MHZ-A1608	MHZ-A2008	MHZ-A2508	—	—	
	MHZ2-□□□□M	MHZ-A1009	MHZ-A1609	MHZ-A2009	MHZ-A2509	—	—	
	MHZ2-□□□□E	MHZ-A1010	MHZ-A1610	MHZ-A2010	MHZ-A2510	—	—	

\* Finger option

1 = Side tapped, 2 = Through-hole, 3 = Flat type fingers

\* End boss type

W = One-touch-fitting for coaxial tubing, K = With One-touch fitting, M = With M3 port, E = Side ported

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

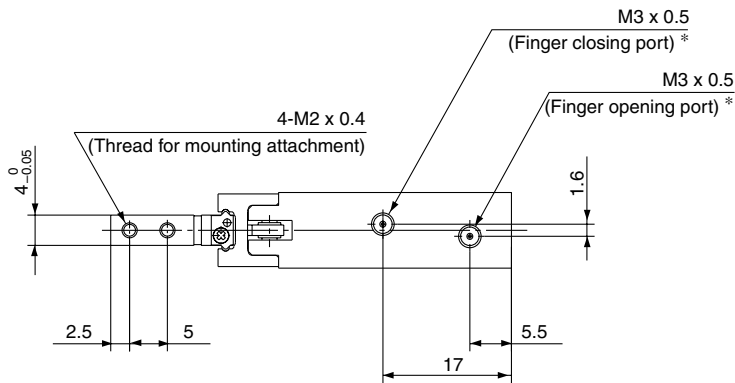
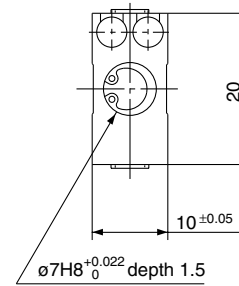
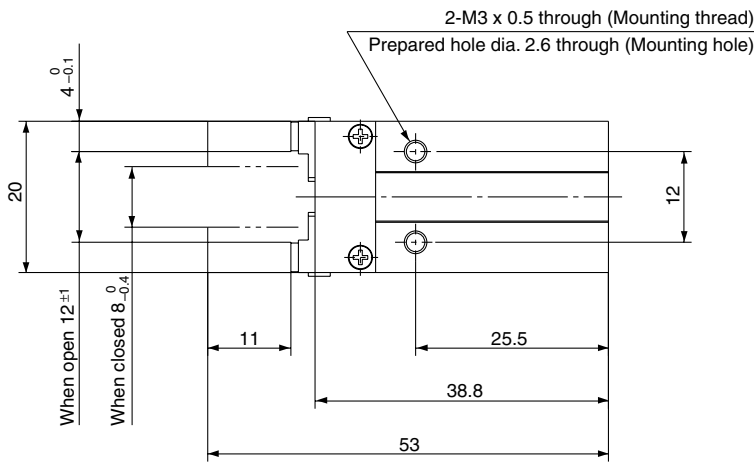
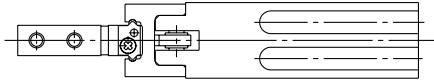
D-

20-

# Series MHZ2

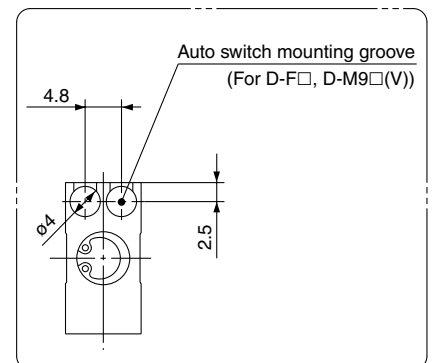
## Dimensions

MHZ2-6 □ Double acting/Single acting  
Basic type

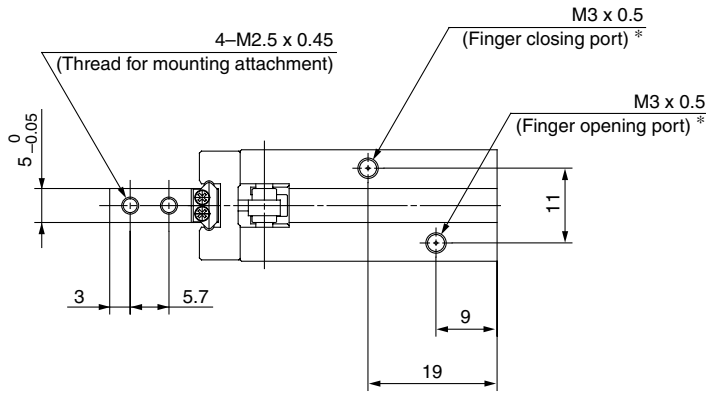
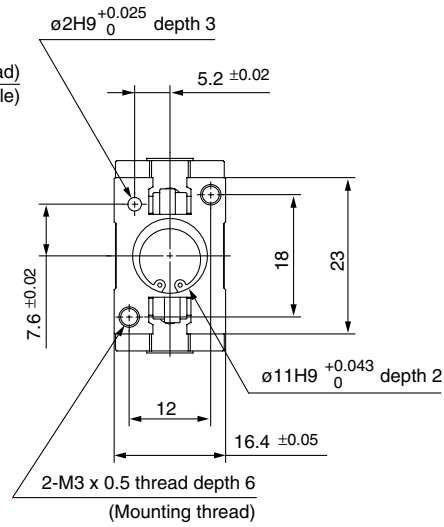
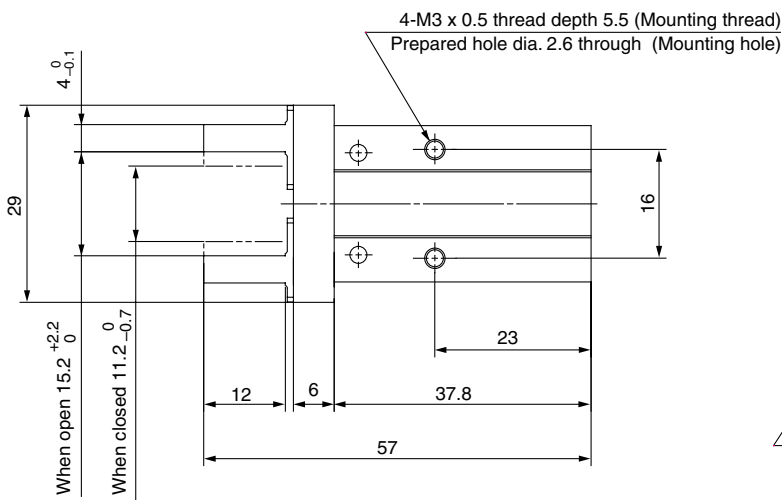
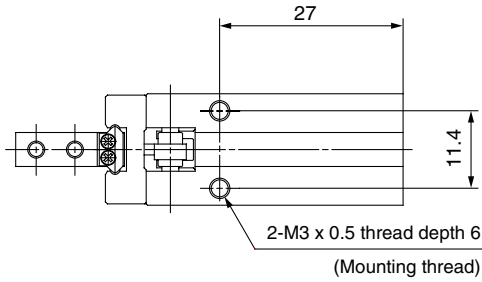


\* For single action, the port on one side is a breathing hole.

### Auto Switch Mounting Groove Dimensions

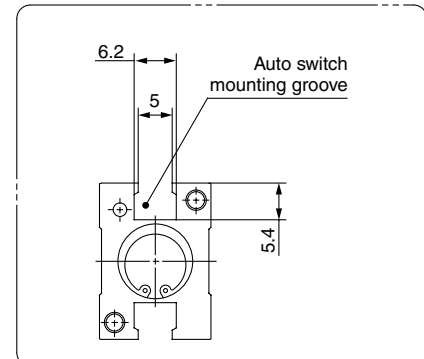


**MHZ2-10□ Double acting/Single acting  
Basic type**



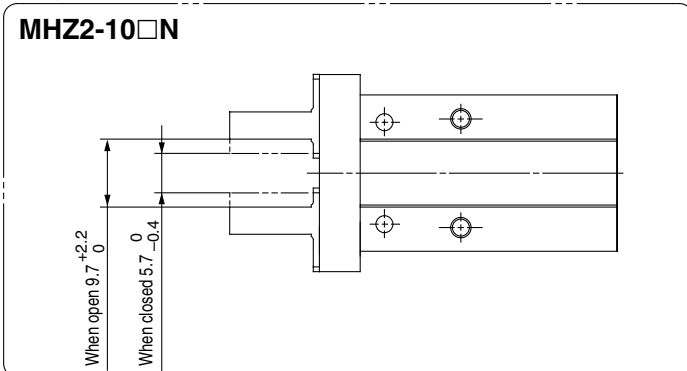
\* For single action, the port on one side is a breathing hole.

**Auto Switch Mounting  
Groove Dimensions**



Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

**Finger Position/Narrow Type**

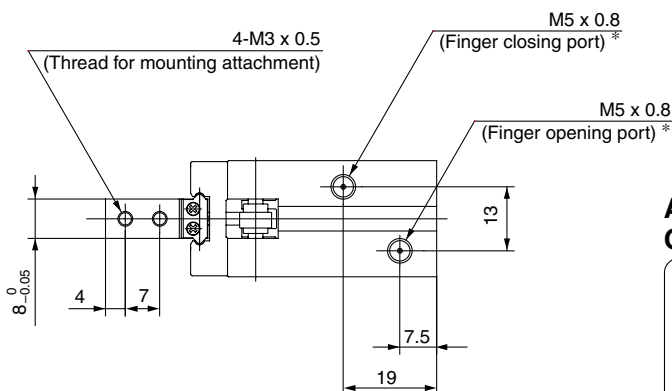
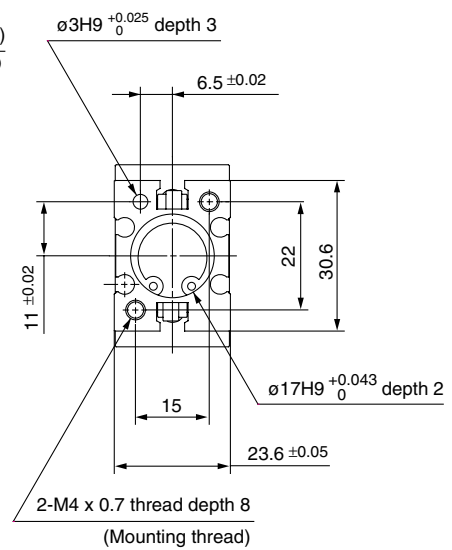
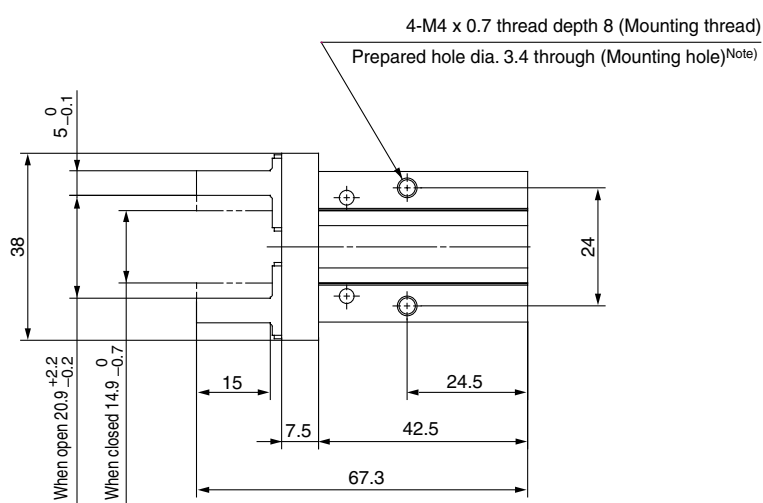
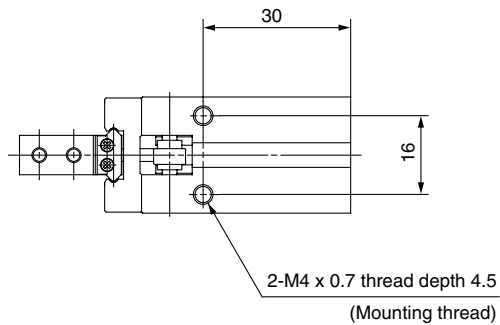


- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

# Series MHZ2

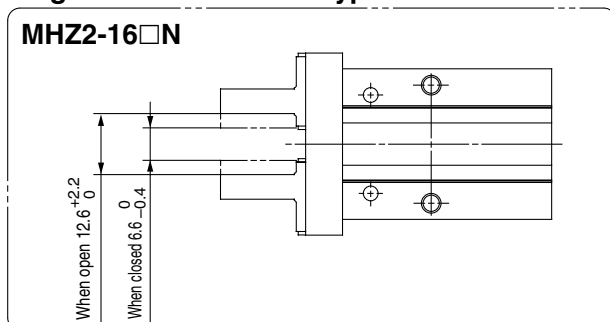
## Dimensions

### MHZ2-16□ Double acting/Single acting Basic type

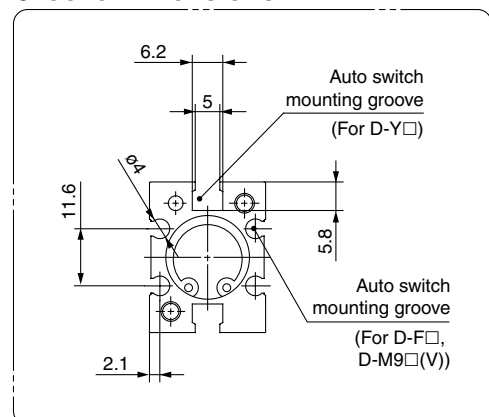


\* For single action, the port on one side is a breathing hole.

### Finger Position/Narrow Type

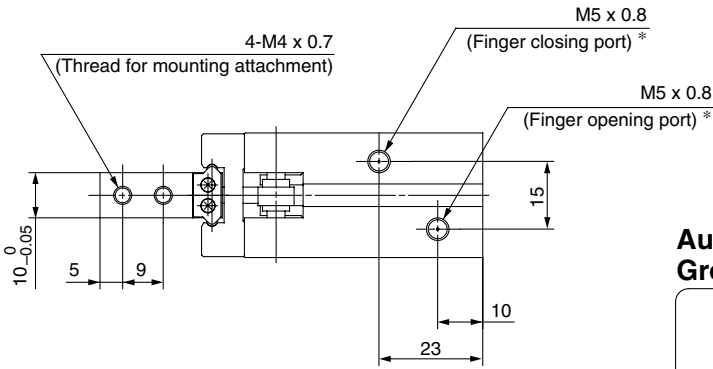
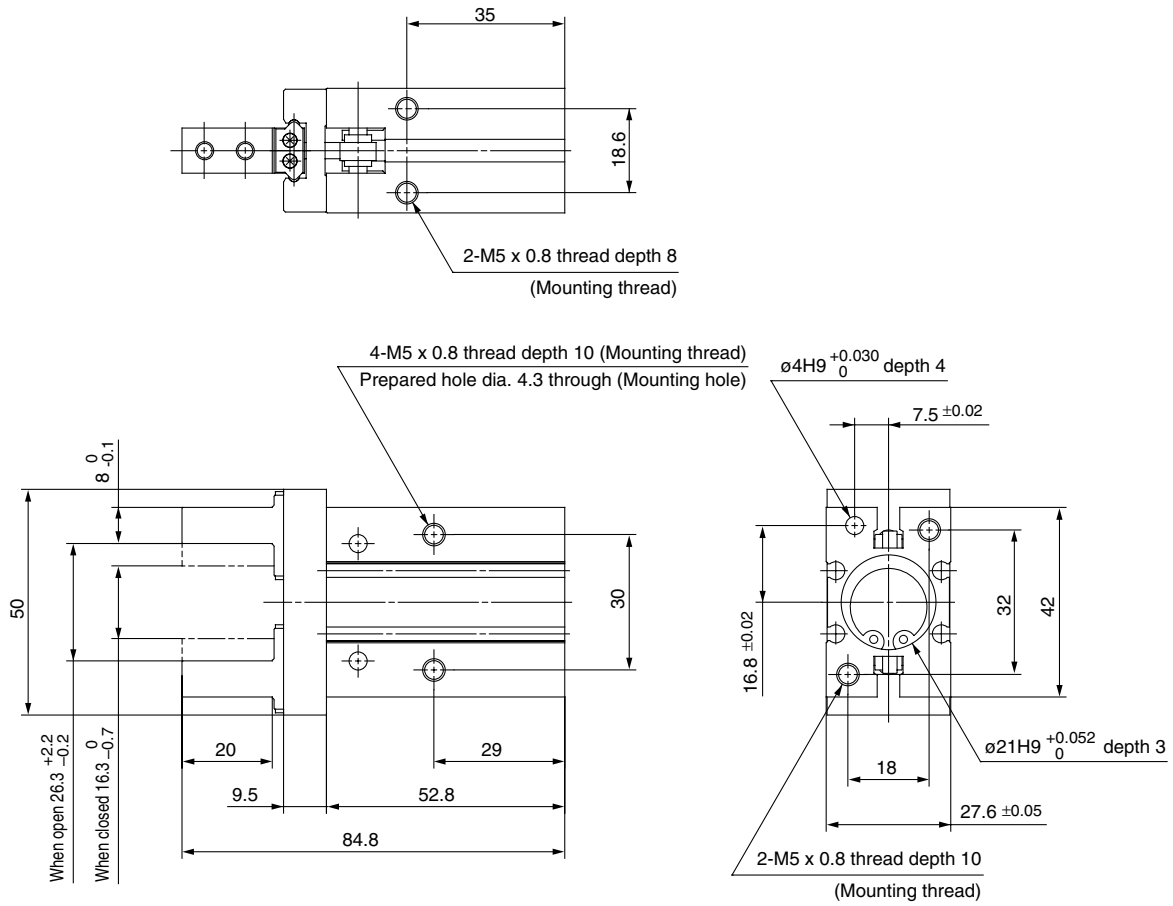


### Auto Switch Mounting Groove Dimensions



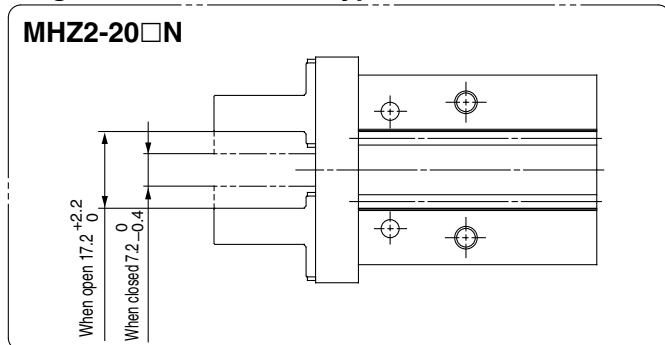
Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

**MHZ2-20□ Double acting/Single acting  
Basic type**

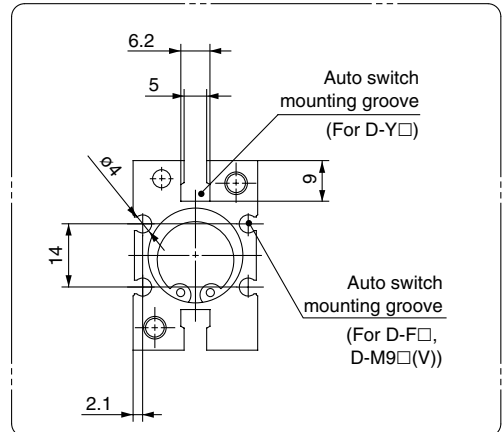


\* For single action, the port on one side is a breathing hole.

**Finger Position/Narrow Type**



**Auto Switch Mounting  
Groove Dimensions**



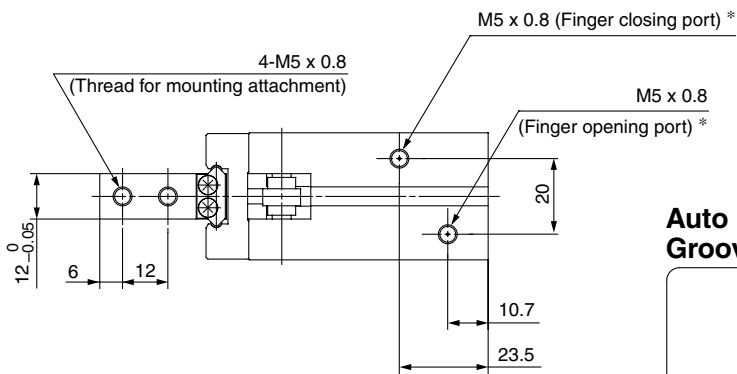
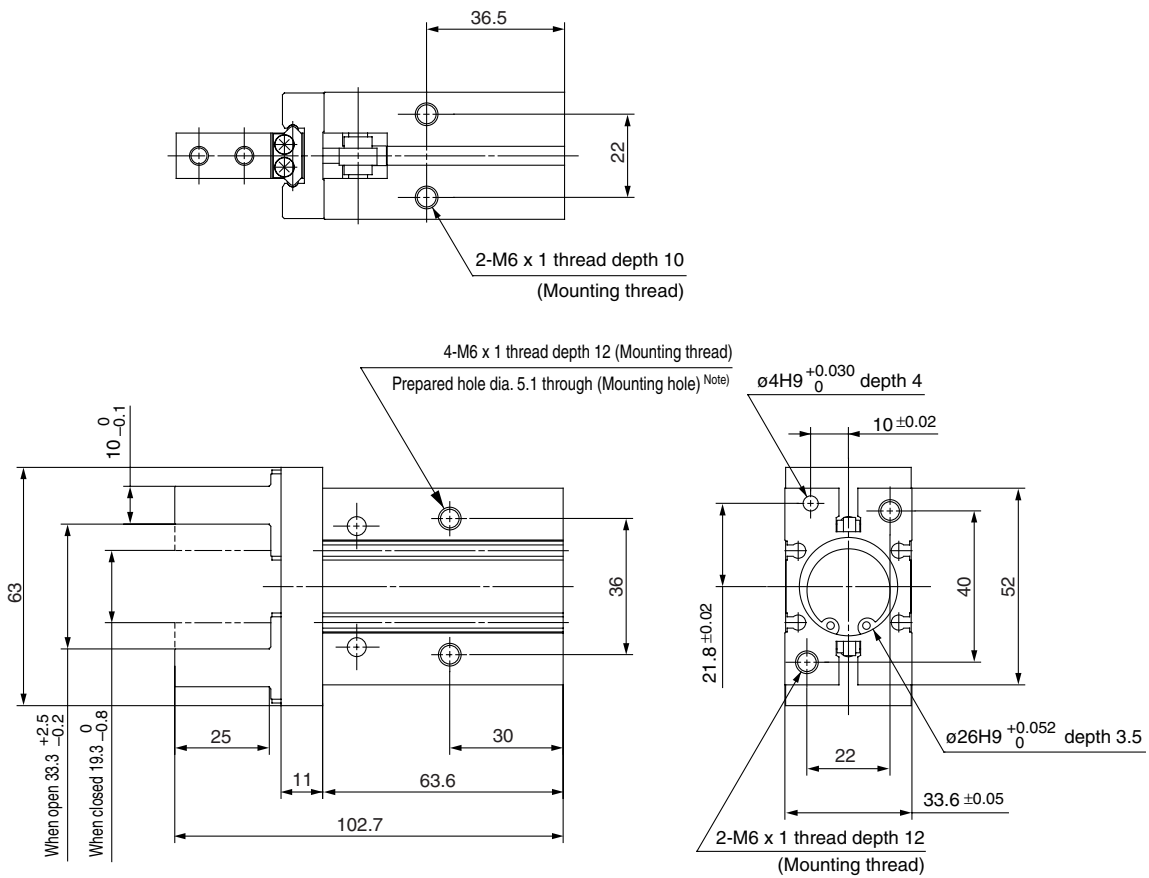
Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

MHZ
MHF
MHL
MHR
MHK
MHS
MHC
MHT
MHY
MHW
MRHQ
Misc.
D-
20-

# Series MHZ2

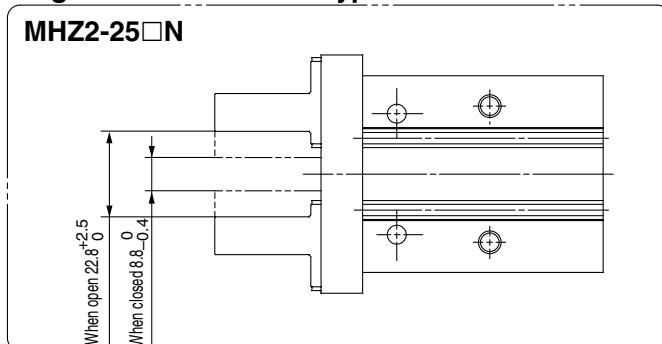
## Dimensions

### MHZ2-25 □ Double acting/Single acting Basic type

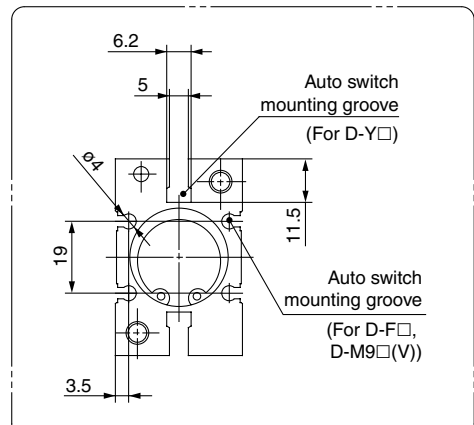


\* For single action, the port on one side is a breathing hole.

### Finger Position/Narrow Type

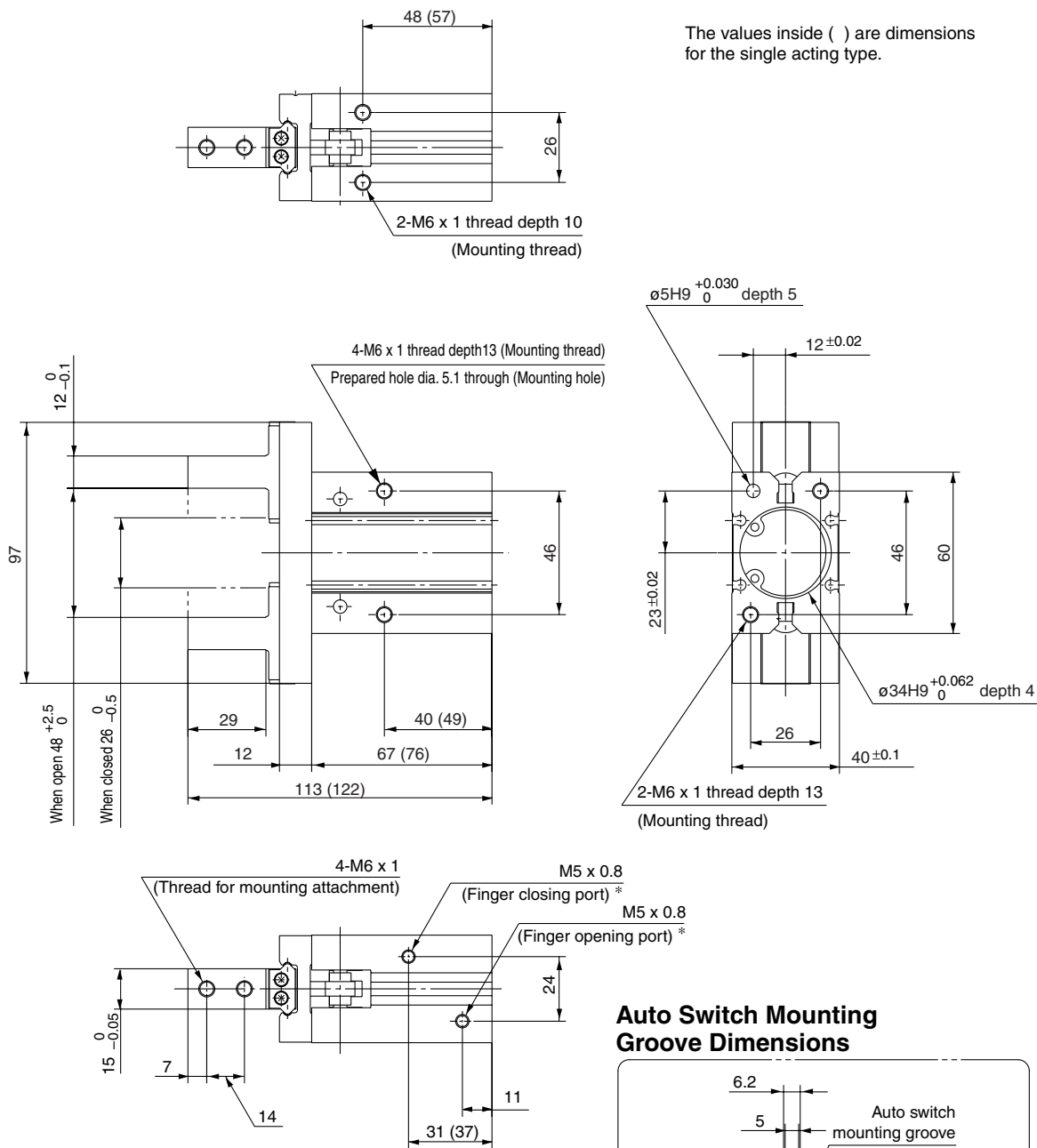


### Auto Switch Mounting Groove Dimensions



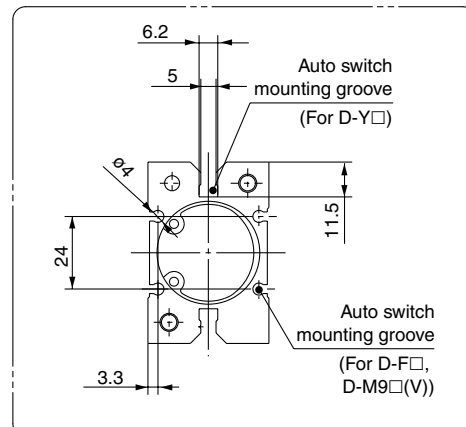
Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

**MHZ2-32□ Double acting/Single acting  
Basic type**



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

**Auto Switch Mounting Groove Dimensions**



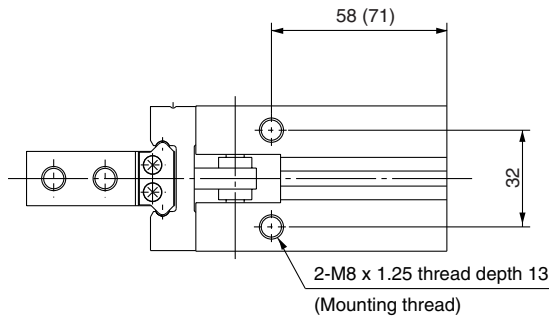
Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

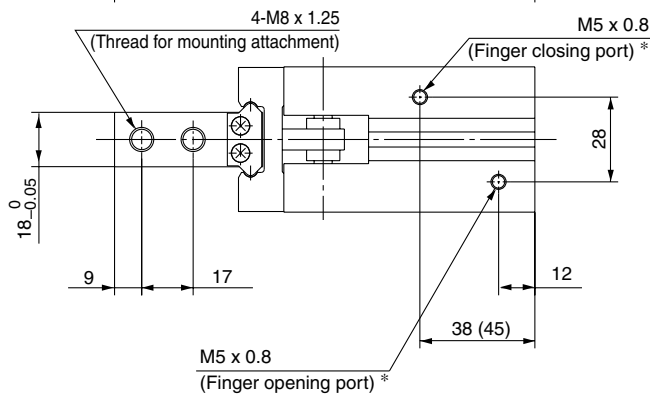
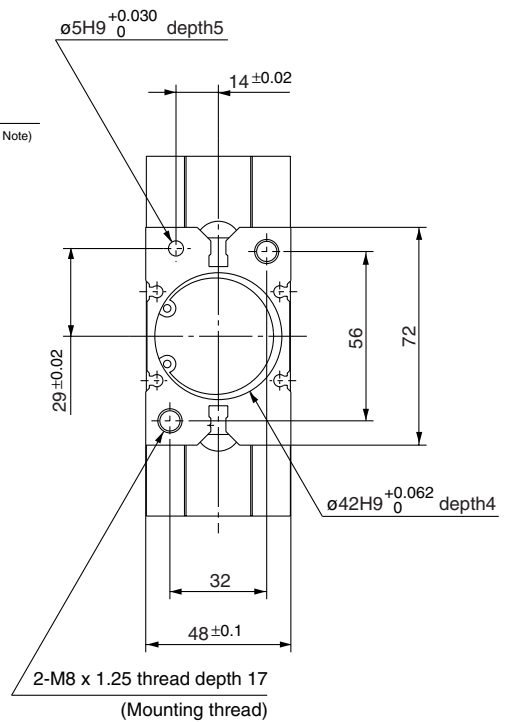
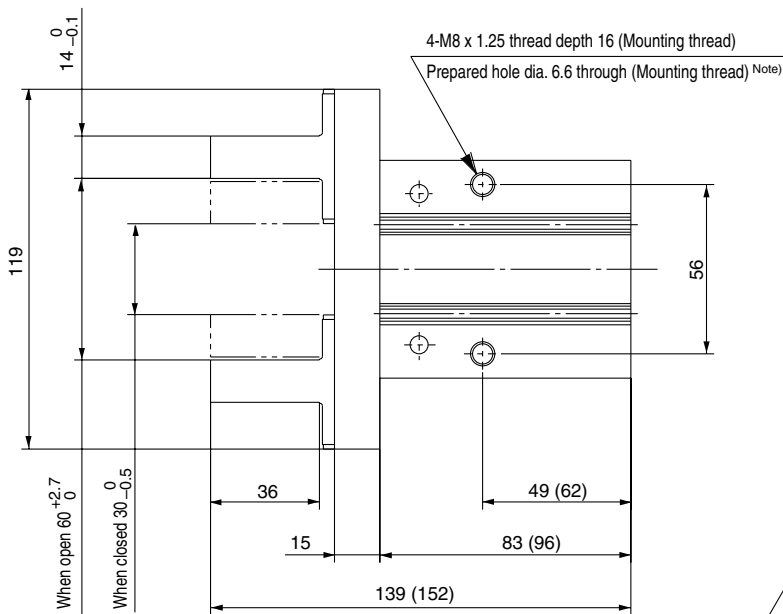
# Series MHZ2

## Dimensions

### MHZ2-40□ Double acting/Single acting Basic type

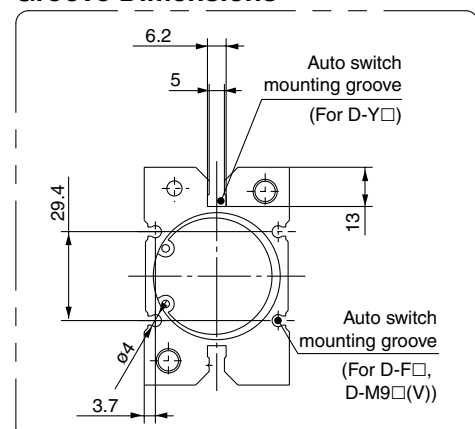


The values inside ( ) are dimensions for the single acting type.



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

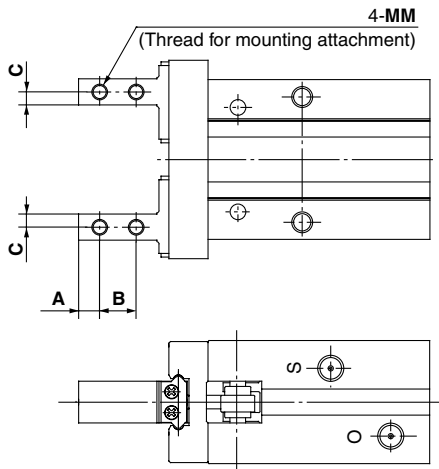
### Auto Switch Mounting Groove Dimensions



Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

# Standard Type/Series *MHZ2* Finger Option

## Side Tapped Mounting [1/N1]

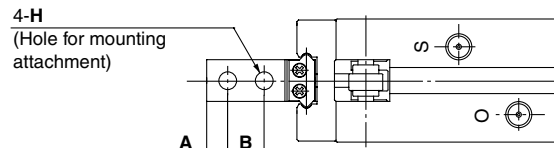
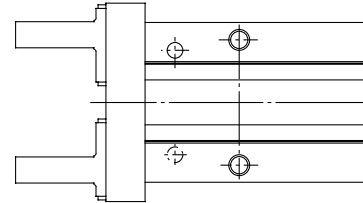


(mm)

Model	A	B	C	MM
MHZ2-6□1	2.5	5	2	M2 x 0.4
MHZ2-10□ <sup>1</sup> <sub>N1</sub> □	3	5.7	2	M2.5 x 0.45
MHZ2-16□ <sup>1</sup> <sub>N1</sub> □	4	7	2.5	M3 x 0.5
MHZ2-20□ <sup>1</sup> <sub>N1</sub> □	5	9	4	M4 x 0.7
MHZ2-25□ <sup>1</sup> <sub>N1</sub> □	6	12	5	M5 x 0.8
MHZ2-32□1□	7	14	6	M6 x 1
MHZ2-40□1□	9	17	7	M8 x 1.25

\* 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]

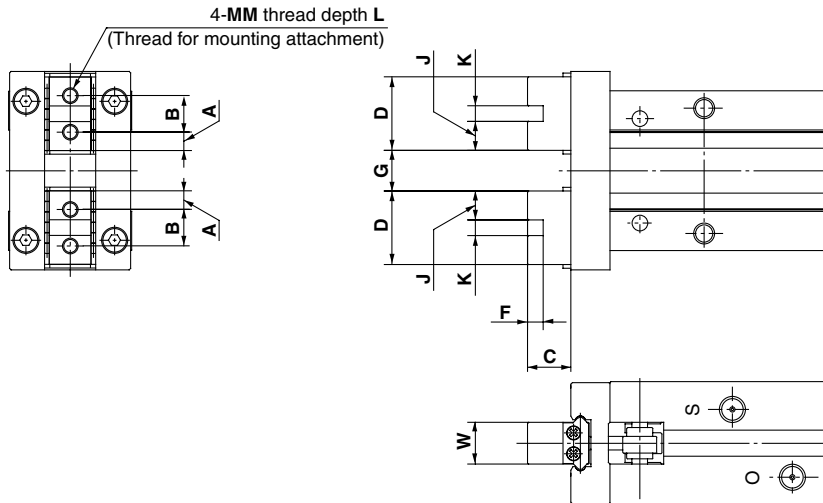


(mm)

Model	A	B	H
MHZ2-6□2	2.5	5	2.4
MHZ2-10□ <sup>2</sup> <sub>N2</sub> □	3	5.7	2.9
MHZ2-16□ <sup>2</sup> <sub>N2</sub> □	4	7	3.4
MHZ2-20□ <sup>2</sup> <sub>N2</sub> □	5	9	4.5
MHZ2-25□ <sup>2</sup> <sub>N2</sub> □	6	12	5.5
MHZ2-32□2□	7	14	6.6
MHZ2-40□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]



(mm)

Model	A	B	C	D	F	G		J	K	MM	L	W	Weight (g)
						Open	Closed						
MHZ2-6□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 x 0.4	3	4 <sup>0</sup> <sub>-0.05</sub>	26
MHZ2-10□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 x 0.45	5	5 <sup>0</sup> <sub>-0.05</sub>	55
MHZ2-16□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 x 0.5	6	8 <sup>0</sup> <sub>-0.05</sub>	115
MHZ2-20□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 x 0.7	8	10 <sup>0</sup> <sub>-0.05</sub>	235
MHZ2-25□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 x 0.8	10	12 <sup>0</sup> <sub>-0.05</sub>	420
MHZ2-32□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 x 1	12	15 <sup>0</sup> <sub>-0.05</sub>	740 (785) <sup>(4)</sup>
MHZ2-40□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 x 1.25	16	18 <sup>0</sup> <sub>-0.05</sub>	1335 (1430) <sup>(4)</sup>

Note 1) To mount attachments, use M2 hexagon socket head cap screws with ø3.3 top diameter, or JISB1101 type M2 round head screws.

Note 2) Specifications and dimensions other than the above are the same as the basic type (including narrow type).

Note 3) The overall length is the same as the MHQ(G) flat finger type.

Note 4) The values inside ( ) are for the single acting type.

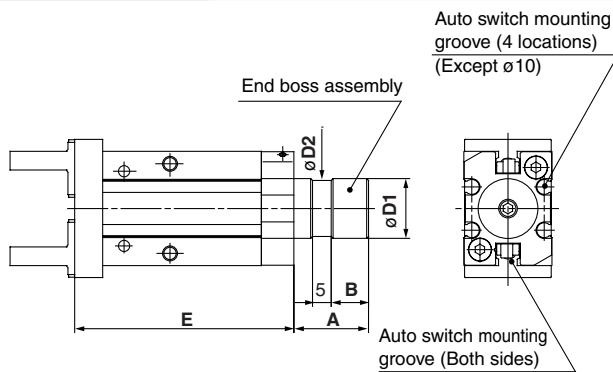
# Standard Type/Series *MHZ2*

## Body Option: End Boss Type

### Applicable Model

Symbol	Piping port location	Type of piping port				Applicable model		
		MHZ2-10	MHZ2-16	MHZ2-20	MHZ2-25	Double acting	Single acting	
							Normally open	Normally closed
E	Side ported	M3 x 0.5	M5 x 0.8		●	●	●	
W	Axial ported	With $\phi 4$ One-touch fitting for coaxial tubing				●	—	—
K		With $\phi 4$ One-touch fitting				—	●	●
M		M5 x 0.8				—	●	●

### Side Ported [E]

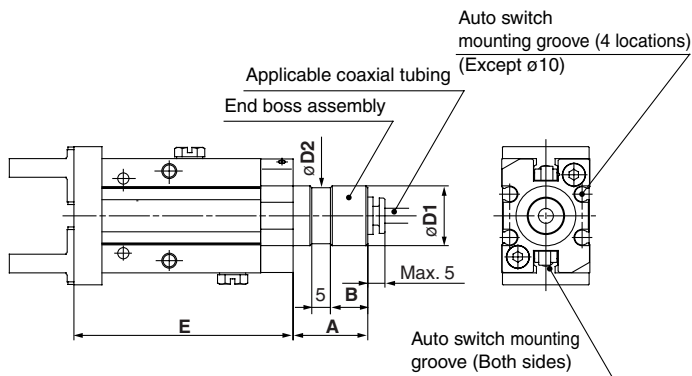


- \* Refer to the dimension table.
- \* When auto switches are used, side mounting with through-holes is not possible.

Model	A	B	D1	D2	E
MHZ2-10□□E	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	52.8
MHZ2-16□□E	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	58.7
MHZ2-20□□E	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	70.5
MHZ2-25□□E	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	82.9

Other dimensions and specifications correspond to the standard.

### Axial Ported (with One-touch fitting for coaxial tubing) [W]

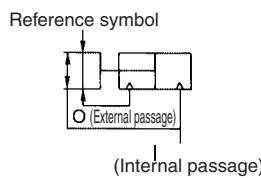


- \* Refer to the dimension table.
- \* When auto switches are used, side mounting with through-holes is not possible.

Model	A	B	D1	D2	E
MHZ2-10D□□W	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	52.8
MHZ2-16D□□W	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	58.7
MHZ2-20D□□W	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	70.5
MHZ2-25D□□W	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	82.9

Other dimensions and specifications correspond to the standard type.

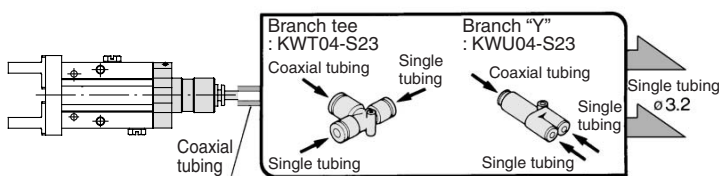
### Applicable Coaxial Tubing



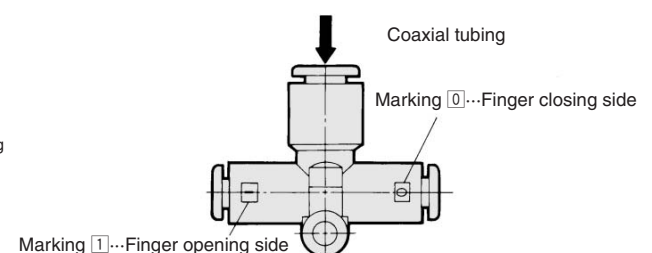
Specifications	Model	TW04B-20
Outside diameter		4 mm
Max. operating pressure		0.6 MPa
Min. bending radius		10 mm
Operating temperature		-20 to 60°C
Material		Nylon 12

### Changing from Coaxial to Single Tubing

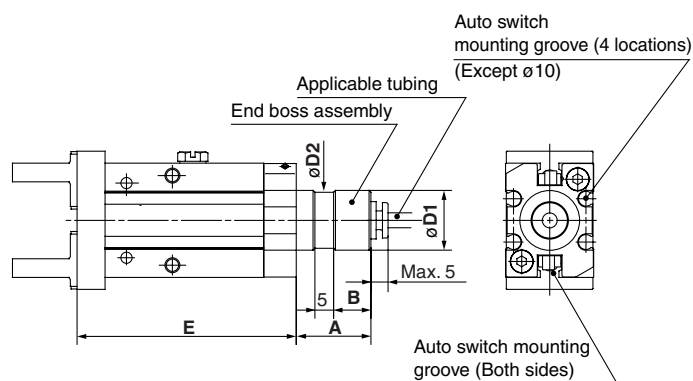
Changing to single tubing is possible by using a branch "Y" or branch tee fitting. In this case particularly, single tube fittings and tube for  $\phi 3.2$  will be necessary.



### Branch Tee, Different Diameter Tee, Branch "Y", Male Run Tee



### Axial Ported (with One-touch fitting) [K]



\* Refer to the dimension table.  
\* When auto switches are used, side mounting with through-holes is not possible.

(mm)

Model	A	B	D1	D2	E
MHZ2-10 $\frac{S}{C} \square K$	15	7	12f8 $\begin{smallmatrix} -0.016 \\ -0.043 \end{smallmatrix}$	11	52.8
MHZ2-16 $\frac{S}{C} \square K$	20	10	16f8 $\begin{smallmatrix} -0.016 \\ -0.043 \end{smallmatrix}$	15	58.7
MHZ2-20 $\frac{S}{C} \square K$	22	12	20f8 $\begin{smallmatrix} -0.020 \\ -0.053 \end{smallmatrix}$	19	70.5
MHZ2-25 $\frac{S}{C} \square K$	25	15	25f8 $\begin{smallmatrix} -0.020 \\ -0.053 \end{smallmatrix}$	24	82.9

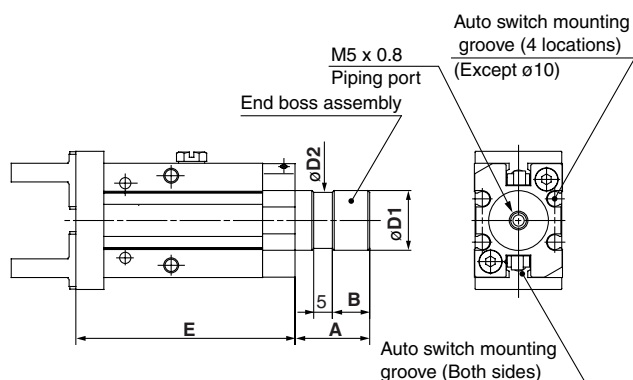
Other dimensions and specifications correspond to the standard type.

#### Applicable Tubing

Description/Model	Nylon tubing	Soft nylon tubing	Polyurethane tubing	Polyurethane coil tubing
	T0425	TS0425	TU0425	TCU0425B-1
Specifications				
Outside diameter (mm)	4	4	4	4
Max. operating pressure (MPa)	1.0	0.8	0.5	0.5
Min. bending radius (mm)	13	12	10	—
Operating temperature (°C)	-20 to 60	-20 to 60	-20 to 60	-20 to 60
Material	Nylon 12	Nylon 12	Polyurethane	Polyurethane

Refer to "Best Pneumatics Vol. 15" regarding One-touch fittings and tubing.

### Axial Ported (with M5 Port) [M]



\* Refer to the dimension table.  
\* When auto switches are used, side mounting with through-holes is not possible.

(mm)

Model	A	B	D1	D2	E
MHZ2-10 $\frac{S}{C} \square M$	15	7	12f8 $\begin{smallmatrix} -0.016 \\ -0.043 \end{smallmatrix}$	11	52.8
MHZ2-16 $\frac{S}{C} \square M$	20	10	16f8 $\begin{smallmatrix} -0.016 \\ -0.043 \end{smallmatrix}$	15	58.7
MHZ2-20 $\frac{S}{C} \square M$	22	12	20f8 $\begin{smallmatrix} -0.020 \\ -0.053 \end{smallmatrix}$	19	70.5
MHZ2-25 $\frac{S}{C} \square M$	25	15	25f8 $\begin{smallmatrix} -0.020 \\ -0.053 \end{smallmatrix}$	24	82.9

Other dimensions and specifications correspond to the standard type.

### Weight

(g)

Model	End boss type (Symbol)			
	E	W	K	M
MHZ2-10 $\square \square$	65	64	66	65
MHZ2-16 $\square \square$	148	147	148	147
MHZ2-20 $\square \square$	277	277	277	277
MHZ2-25 $\square \square$	495	495	496	494

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

D-

20-



# Parallel Style Air Gripper With Dust Cover

## Series *MHZJ2*

Size: 6, 10, 16, 20, 25

### How to Order

**MHZJ2-16 D [ ] [ ] F9BW [ ]**

**Number of fingers**

2	2 fingers
---	-----------

**Bore size**

6	6 mm
10	10 mm
16	16 mm
20	20 mm
25	25 mm

**Action**

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

**Body option**

\* ø6 is only applicable with basic type.

**Auto switch**

Nil	2 pcs.
S	1 pc.

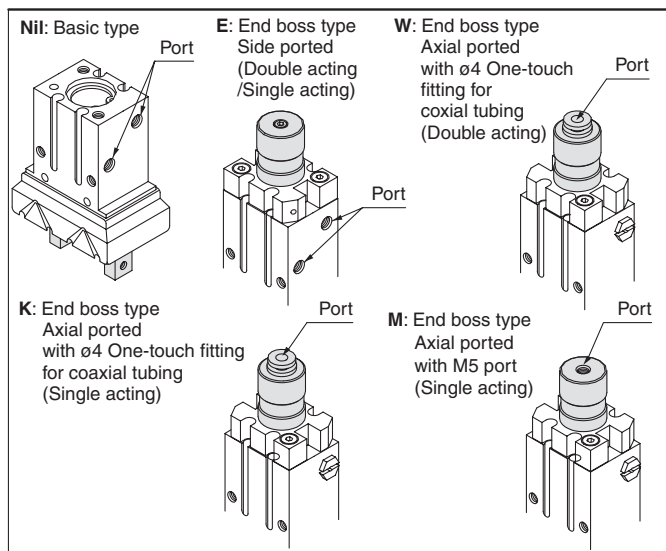
**Auto switch**

Nil	Without auto switch (Built-in magnet)
-----	---------------------------------------

\* For the applicable auto switch model, refer to the table below.

**Dust cover type**

Nil	Chloroprene rubber (CR)
F	Fluoro rubber (FKM)
S	Silicon rubber (Si)



**Applicable Auto Switch** / Switch types D-Y5/6 and D-Y7 cannot be mounted when equipped with dust cover/MHZJ2. Refer to page 12-13-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)			Flexible (2) lead wire (-61)	Pre-wire connector	Applicable load	Applicable model										
					DC	AC	Electrical entry		0.5 (Nil)	3 (L)	5 (Z)				ø6	ø10	ø16	ø20	ø25						
							Perpendicular	In-line																	
Solid state switch	—	Grommet	Yes	3-wire (NPN)	5 V	12 V	M9NV	M9N	●	●	○	Standard	○	IC circuit	Relay, PLC	●	●	●	●	●					
				3-wire (PNP)					●	●	○					○	●	●	●	●	●				
				2-wire	24 V	12 V	M9BV	M9B	●	●	○	Standard	○			●	●	●	●	●					
				3-wire (NPN)					●	●	○					○	●	●	●	●	●				
				Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (PNP)	5 V	12 V	F9NWV	F9NW	●	●			○	Standard	○	IC circuit	—	—	—	—	—	—
												3-wire (NPN)	●			●					○	○	—	—	—
	Water resistant (2-color indicator)	Grommet	Yes	2-wire	12 V	12 V	F9BWV	F9BW	●	●	○	Standard	○	—	—	—	—	—	—	—					
									—	—	—					—	—	—	—	—	—	—			

\* Lead wire length symbols: 0.5 m ..... Nil (Example) M9N  
3 m ..... L (Example) M9NL  
5 m ..... Z (Example) F9NWZ

\* Auto switches marked with a "○" symbol are produced upon receipt of order.

Note 1) Take note of hysteresis with 2-color indication type switches. Refer to page 12-2-53 for detailed auto switch specification.

Note 3) When using a D-F8□ switch on sizes ø6 and 10, mount it at a distance of 10 mm or more from magnetic substances such as iron, etc.

Note 2) Add "-61" at the end of the part number for the flexible lead wire.

(Example)

When ordering with an air gripper  
MHZ□2-16D-F8NS-61

When ordering auto switches only  
D-F8PL-61

● Flexible lead wire

● Flexible lead wire



Refer to page 12-13-25 for solid state switch with pre-wire connector.

# Parallel Style Air Gripper With Dust Cover Series MHZJ2

## Specifications



Fluid		Air
Operating pressure	Double acting	ø6: 0.15 to 0.7 MPa ø10: 0.2 to 0.7 MPa ø16 to ø25: 0.1 to 0.7 MPa
	Single acting	Normally open ø6: 0.3 to 0.7 MPa ø10: 0.35 to 0.7 MPa ø16 to ø25: 0.25 to 0.7 MPa
Ambient and fluid temperature		-10 to 60°C
Repeatability		±0.01 mm
Max. operating frequency		180 c.p.m.
Lubrication		Not required
Action		Double acting, Single acting
Auto switch (option) <sup>Note)</sup>		Solid state switch (3-wire, 2-wire)

Note) Refer to page 12-13-1 for further information on auto switches.

## Model

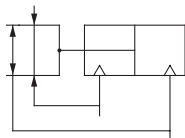
Action	Model	Bore size (mm)	Gripping force <sup>(1)</sup>		Opening/ Closing stroke (Both sides) (mm)	Weight <sup>(2)</sup> (g)	
			Gripping force per finger Effective value (N)				
			External	Internal			
Double acting	MHZJ2-6D	6	3.3	6.1	4	28	
	MHZJ2-10D	10	9.8	17	4	60	
	MHZJ2-16D	16	30	40	6	130	
	MHZJ2-20D	20	42	66	10	250	
	MHZJ2-25D	25	65	104	14	460	
Single acting	Normally open	MHZJ2-6S	6	1.9	—	4	28
		MHZJ2-10S	10	6.3		4	60
		MHZJ2-16S	16	24		6	130
		MHZJ2-20S	20	28		10	255
		MHZJ2-25S	25	45		14	465
	Normally closed	MHZJ2-6C	6	—	3.7	4	28
		MHZJ2-10C	10		12	4	60
		MHZJ2-16C	16		31	6	130
		MHZJ2-20C	20		56	10	255
		MHZJ2-25C	25		83	14	460

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

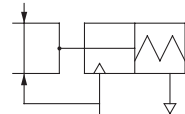
Note 2) Except auto switch.

### JIS Symbol

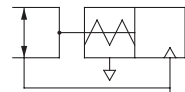
Double acting



Single acting type, Normally open



Single acting type, Normally closed



## Option

### ● Body Option/End Boss Type

Symbol	Piping port location	Type of piping port				Applicable model	
		MHZJ2-10	MHZJ2-16	MHZJ2-20	MHZJ2-25	Double acting	Single acting
Nil	Basic type	M3 x 0.5	M5 x 0.8			●	●
E	Side ported	M3 x 0.5	M5 x 0.8			●	●
W	Axial ported	With ø4 One-touch fitting for coaxial tubing				●	—
K	Axial ported	With ø4 One-touch fitting				—	●
M	Axial ported	M5 x 0.8				—	●

\* For detailed specification on body options, refer to page 12-2-51 to 12-2-52 for option specifications.

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

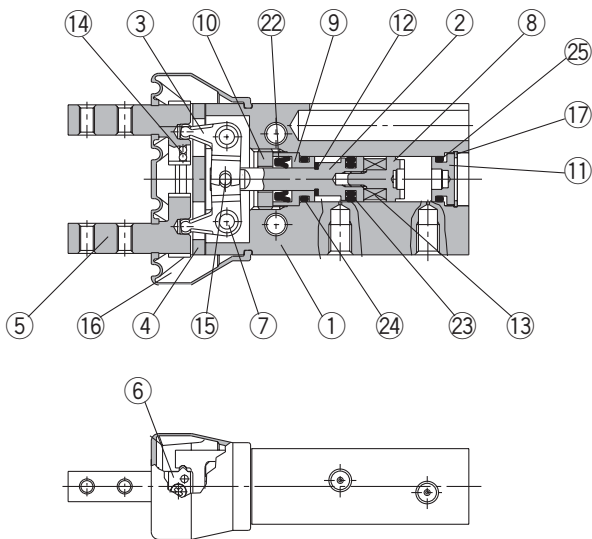
D-

20-

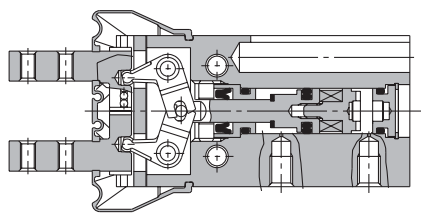
# Series MHZJ2

## Construction: MHZJ2-6□

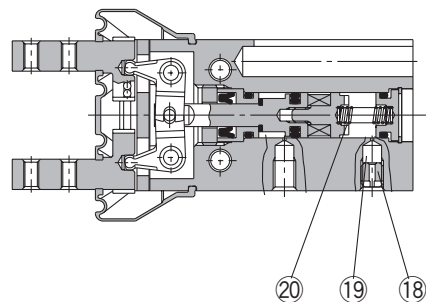
### Double acting/With fingers open



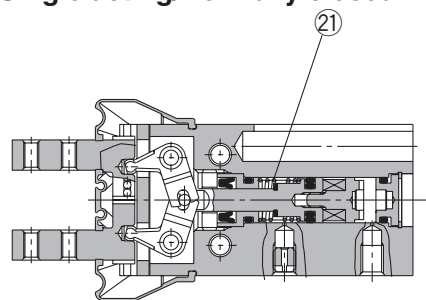
### Double acting/With fingers closed



### Single acting/Normally open



### Single acting/Normally closed



## Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Piston	Stainless steel	
③	Lever	Stainless steel	Heat treated
④	Guide	Stainless steel	Heat treated
⑤	Finger	Stainless steel	Heat treated
⑥	Roller stopper	Stainless steel	
⑦	Lever shaft	Stainless steel	Nitriding
⑧	Magnet holder	Stainless steel	
⑨	Holder	Brass	Electroless nickel plated
⑩	Holder lock	Stainless steel	
⑪	Cap	Aluminum alloy	Nitrided hard anodized
⑫	Bumper	Urethane rubber	
⑬	Magnet	Rare earth magnet	Nickel plated
⑭	Steel balls	High carbon chrome bearing steel	
⑮	Needle roller	High carbon chrome bearing steel	
⑯	Dust cover	CR	Chloroprene rubber
		FKM	Fluoro rubber
		Si	Silicon rubber
⑰	Type C snap ring	Carbon steel	Nickel plated
⑱	Exhaust plug	Brass	Electroless nickel plated
⑲	Exhaust filter	Polyvinyl formal	
⑳	N.O. spring	Stainless steel spring wire	
㉑	N.C. spring	Stainless steel spring wire	
㉒	Rod seal	NBR	
㉓	Piston seal	NBR	
㉔	Gasket	NBR	
㉕	Gasket	NBR	

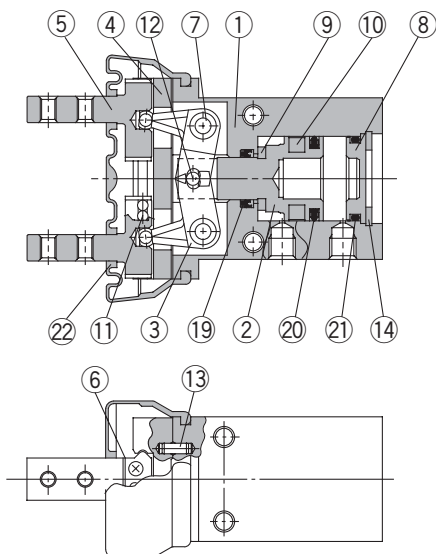
## Replacement Parts

Description		MHZJ2-6	Main parts
Seal kit		MHZJ6-PS	⑫⑬⑭⑮
Dust cover	Material	CR	⑯
		FKM	
		Si	
Finger assembly		Please contact SMC for replacing Finger assembly.	
Piston assembly	MHZJ2-6D□	MHZJ-A0603	②⑧⑨⑩⑫⑬⑮⑲⑳㉑㉒
	MHZJ2-6S□		
	MHZJ2-6C□	MHZJ-A0603C	②⑧⑨⑩⑫⑬⑮⑲⑳㉑㉒

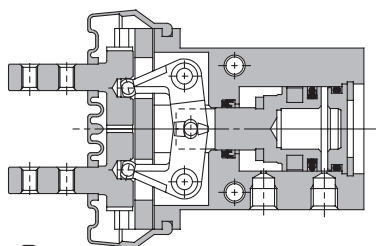
# Parallel Style Air Gripper With Dust Cover Series MHZJ2

Construction: MHZJ2-10□ to 25□

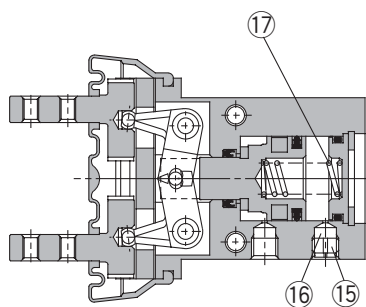
Double acting/With fingers open



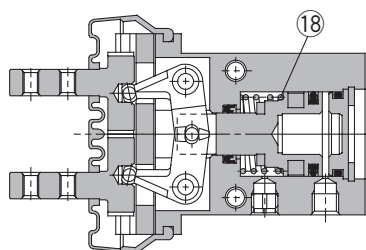
Double acting/With fingers closed



Single acting/Normally open



Double acting/Normally closed



## Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Piston	ø10, ø16: Stainless steel ø20, ø25: Aluminum alloy	ø20, ø25: Hard anodized
③	Lever	Stainless steel	Heat treated
④	Guide	Stainless steel	Heat treated
⑤	Finger	Stainless steel	Heat treated
⑥	Roller stopper	Stainless steel	
⑦	Lever shaft	Stainless steel	Nitriding
⑧	Cap	Aluminum alloy	Nitrided hard anodized
⑨	Bumper	Urethane rubber	
⑩	Rubber magnet	Synthetic rubber	
⑪	Steel balls	High carbon chrome bearing steel	
⑫	Needle roller	High carbon chrome bearing steel	

No.	Description	Material	Note
⑬	Parallel pin	Stainless steel	
⑭	Type C snap ring	Carbon steel	Nickel plated
⑮	Exhaust plug A	Brass	Electroless nickel plated
⑯	Exhaust filter A	Polyvinyl formal	
⑰	N.O. spring	Stainless steel spring wire	
⑱	N.C. spring	Stainless steel spring wire	
⑲	Rod seal	NBR	
⑳	Piston seal	NBR	
㉑	Gasket	NBR	
㉒	Dust cover	CR	Chloroprene rubber
		FKM	Fluoro rubber
		Si	Silicon rubber

## Replacement Parts

Description		MHZJ2-10	MHZJ2-16	MHZJ2-20	MHZJ2-25	Main parts
Seal kit		MHZJ10-PS	MHZJ16-PS	MHZJ20-PS	MHZJ25-PS	⑲⑳㉑
Dust cover	Material	CR	MHZJ2-J10	MHZJ2-J16	MHZJ2-J20	MHZJ2-J25
		FKM	MHZJ2-J10F	MHZJ2-J16F	MHZJ2-J20F	MHZJ2-J25F
		Si	MHZJ2-J10S	MHZJ2-J16S	MHZJ2-J20S	MHZJ2-J25S
Finger assembly		MHZJ-A1002	MHZJ-A1602	MHZJ-A2002	MHZJ-A2502	④⑤⑥⑪⑬ Mounting thread
Piston assembly		MHZJ-A1003	MHZJ-A1603	MHZJ-A2003	MHZJ-A2503	②⑨⑩⑫⑳
End boss assembly	MHZJ2-□□□W	MHZJ-A1007	MHZJ-A1607	MHZJ-A2007	MHZJ-A2507	Main body of adaptor Mounting screw for adaptor Seal kit
	MHZJ2-□□□K	MHZJ-A1008	MHZJ-A1608	MHZJ-A2008	MHZJ-A2508	
	MHZJ2-□□□M	MHZJ-A1009	MHZJ-A1609	MHZJ-A2009	MHZJ-A2509	
	MHZJ2-□□□E	MHZJ-A1010	MHZJ-A1610	MHZJ-A2010	MHZJ-A2510	

- \* Material of packing  
NBR = Nitrile rubber, FKM = Fluoro rubber
- \* Material of dust cover  
CR = Chloroprene rubber, FKM = Fluoro rubber, Si = Silicon rubber
- \* End boss type  
H = With hose nipple, K = With One-touch fitting, M = With M3 port, E = Side ported

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

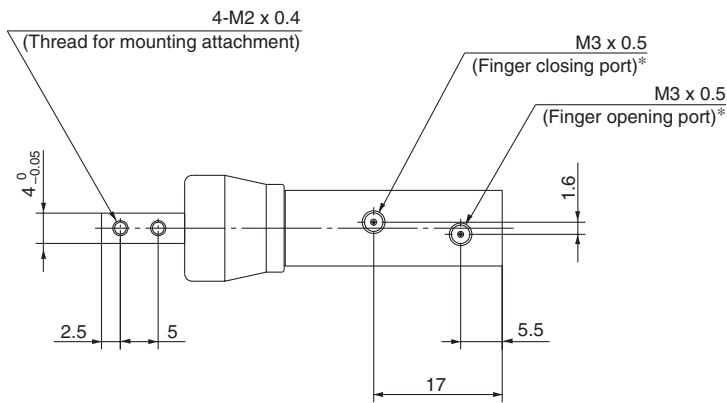
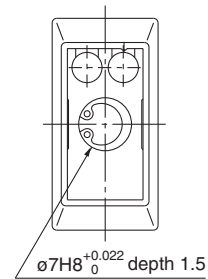
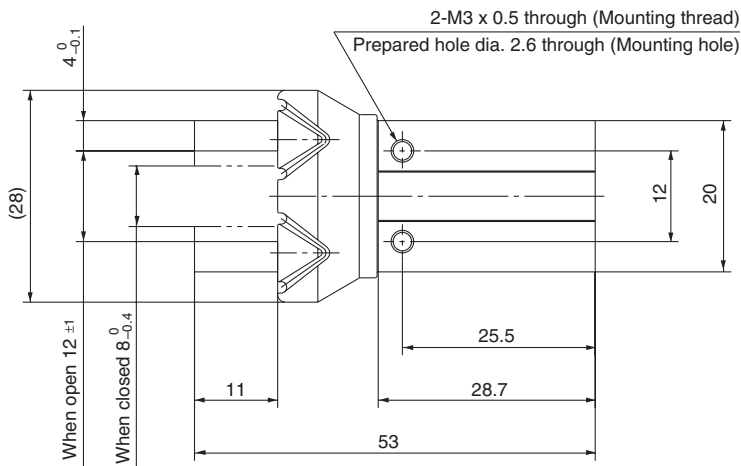
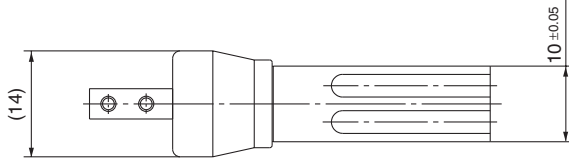
D-

20-

# Series MHZJ2

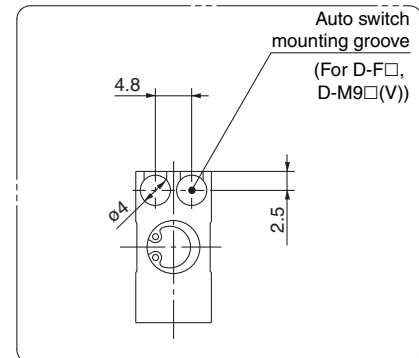
## Dimensions

MHZJ2-6□ Double acting/Single acting  
Basic type

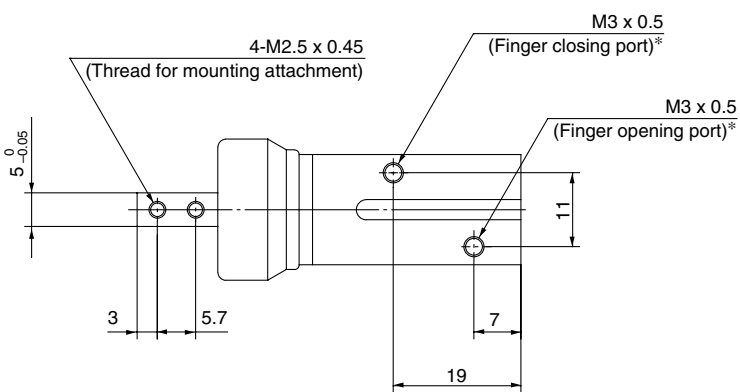
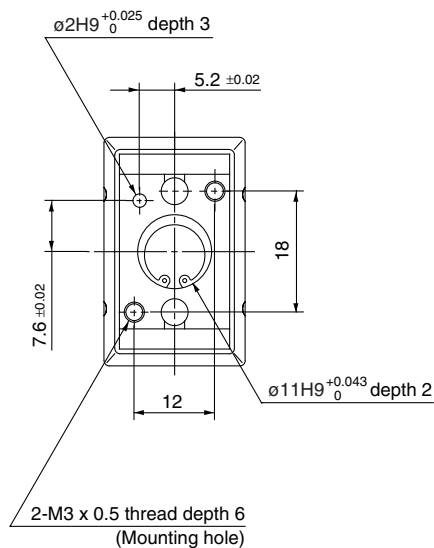
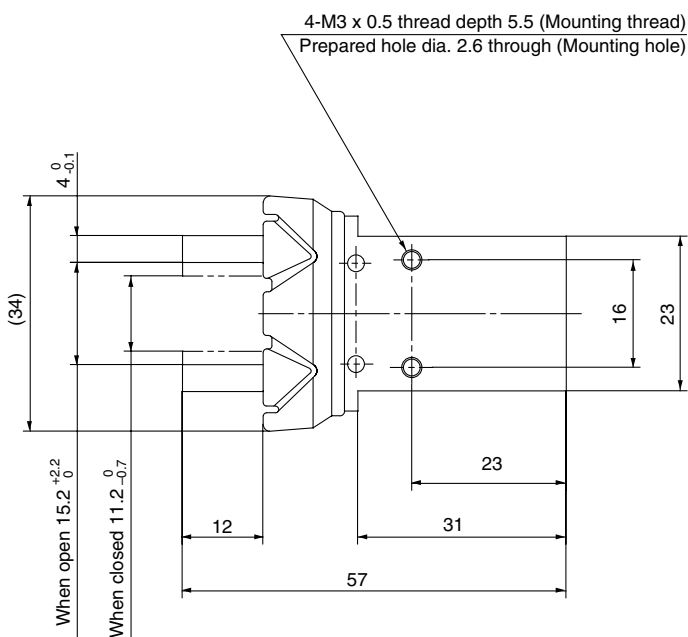
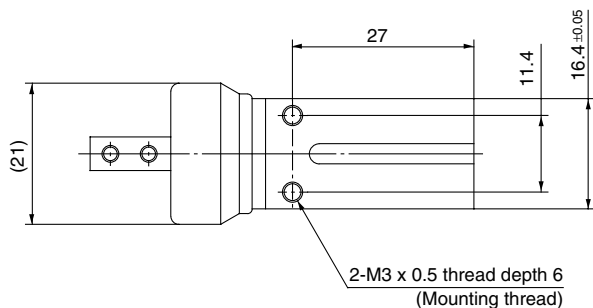


\* For single action, the port on one side is a breathing hole.

### Auto Switch Mounting Groove Dimensions

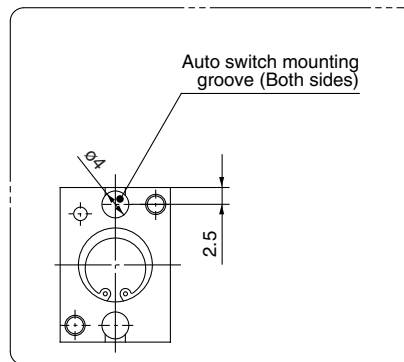


**MHZJ2-10** □ Double acting/Single acting  
Basic type



\* 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.

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

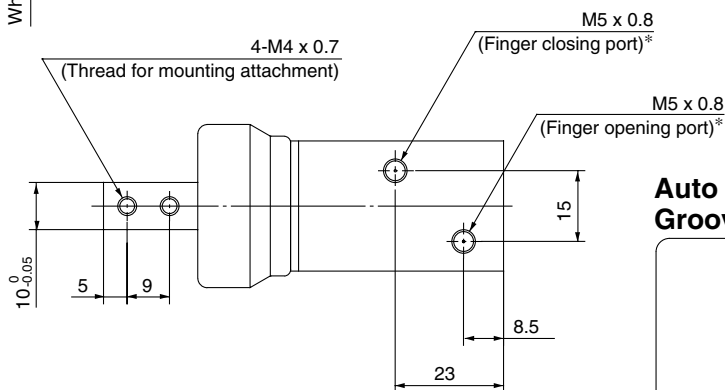
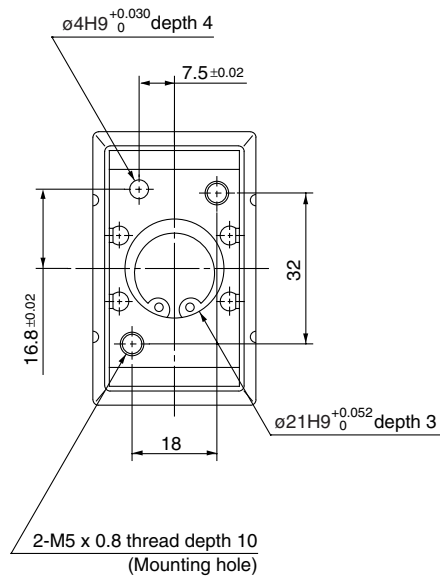
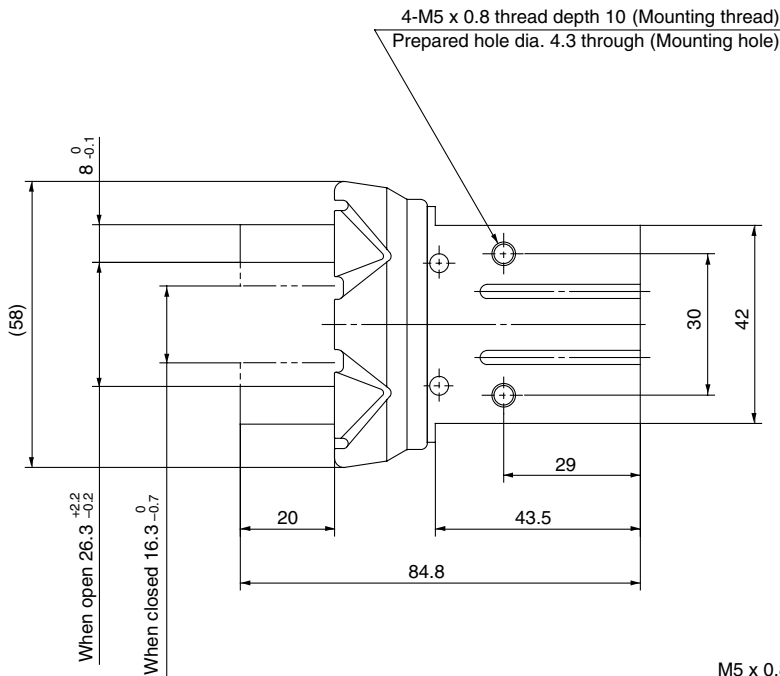
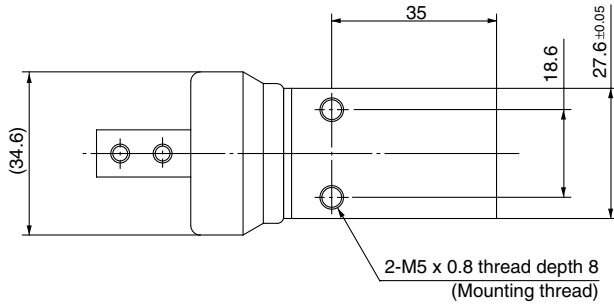
Misc.

D-

20-

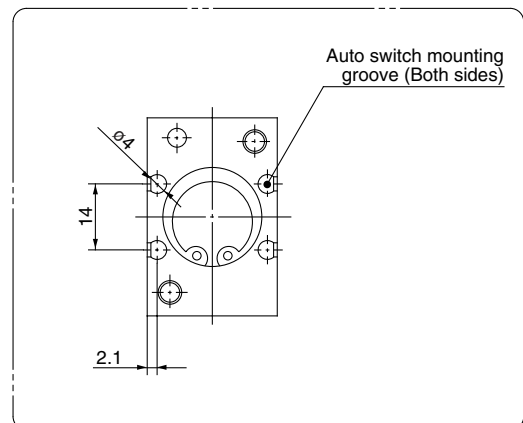


**MHZJ2-20** □ Double acting/Single acting  
Basic type



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

**Auto Switch Mounting  
Groove Dimensions**

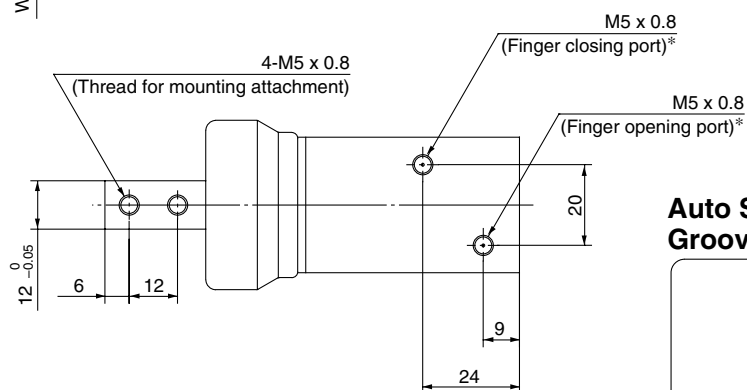
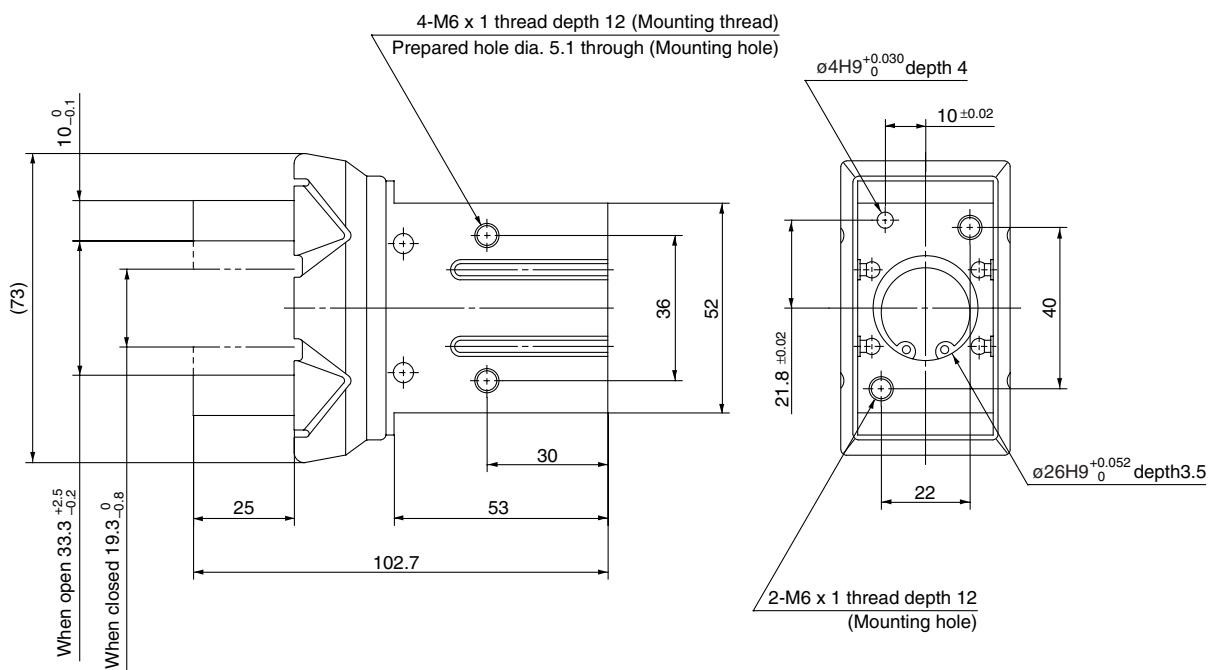
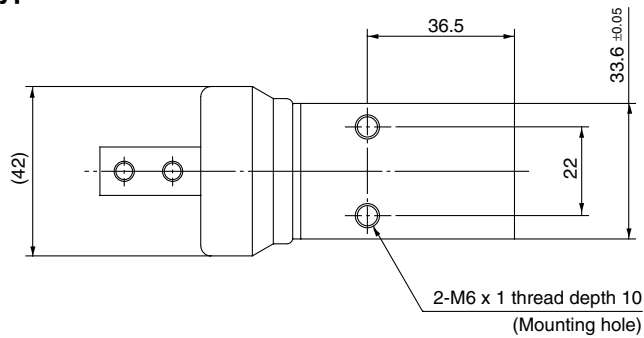


- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

# Series MHZJ2

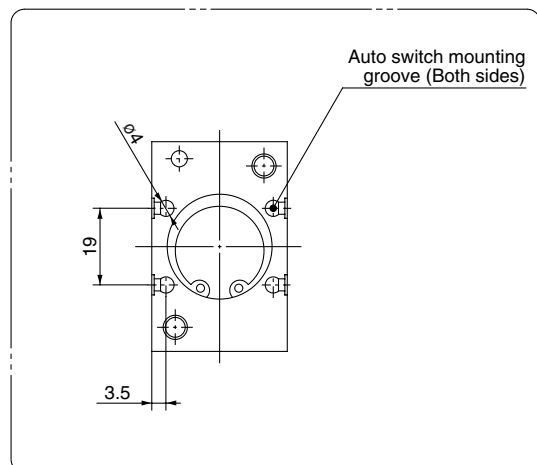
## Dimensions

MHZJ2-25 □ Double acting/Single acting  
Basic type



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

### Auto Switch Mounting Groove Dimensions



# With Dust Cover/Series MHZJ2 Body Option: End Boss Type

## Applicable Model

Symbol	Piping port location	Type of piping port				Applicable model		
		MHZJ2-10	MHZJ2-16	MHZJ2-20	MHZJ2-25	Double acting	Single acting	
							Normally open	Normally closed
E	Side ported	M3 x 0.5	M5 x 0.8		●	●	●	
W	Axial ported	With ø4 One-touch fitting for coaxial tubing				●	—	—
K		With ø4 One-touch fitting				—	●	●
M		M5 x 0.8				—	●	●

## Side Ported [E]

Auto switch mounting groove (4 locations) (Except ø10)

Auto switch mounting groove (Both sides) (ø10 only)

Model	A	B	D1	D2	E
MHZJ2-10□□E	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	40
MHZJ2-16□□E	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	43.5
MHZJ2-20□□E	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	51.7
MHZJ2-25□□E	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	61.3

Other dimensions and specifications correspond to the standard type.

- \* Refer to the dimension table.
- \* When auto switches are used on ø10, side mounting with through-holes is not possible.

## Axial Ported (with One-touch fitting for coaxial tubing) [W]

Applicable coaxial tubing

Auto switch mounting groove (4 locations) (Except ø10)

Auto switch mounting groove (Both sides) (ø10 only)

Model	A	B	D1	D2	E
MHZJ2-10D□□W	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	40
MHZJ2-16D□□W	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	43.5
MHZJ2-20D□□W	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	51.7
MHZJ2-25D□□W	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	61.3

Other dimensions and specifications correspond to the standard type.

**Applicable Coaxial Tubing**

Specifications	Model	TW04B-20
Outside diameter		4 mm
Max. operating pressure		0.6 MPa
Min. bending radius		10 mm
Operating temperature		-20 to 60°C
Material		Nylon 12

Reference symbol

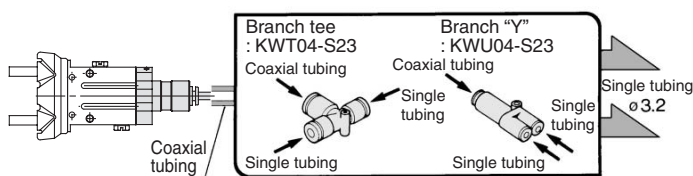
External passage

Internal passage

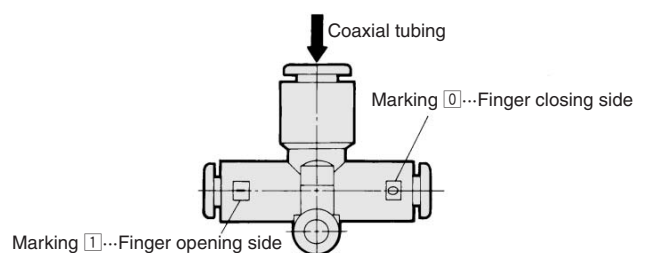
- \* Refer to the dimension table.
- \* When auto switches are used on ø10, side mounting with through-holes is not possible. (External passage)

## Changing from Coaxial to Single Tubing

Changing to single tubing is possible by using a branch "Y" or branch tee fitting.  
In this case particularly, single tube fittings and tubing for ø3.2 will be necessary.

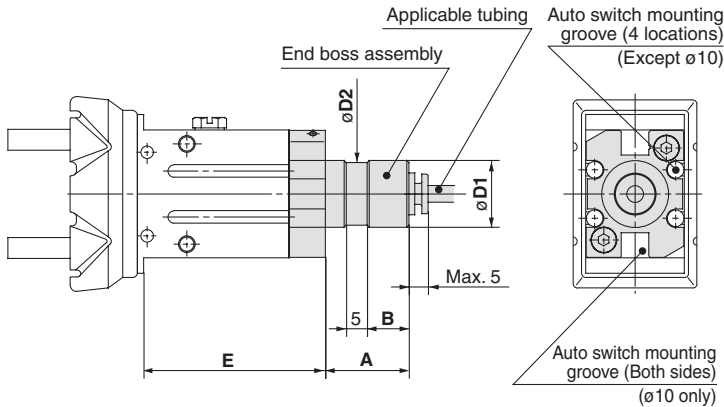


## Branch Tee, Different Diameter Tee, Branch "Y", Male Run Tee



# With Dust Cover/Series MHZJ2 Body Option: End Boss Type

## Axial Ported (with One-touch fitting) [K]



- \* Refer to the dimension table.
- \* When auto switches are used on  $\phi 10$ , side mounting with through-holes is not possible.

Model	A	B	D1	D2	E
MHZJ2-10 <sup>S</sup> □□K	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	40
MHZJ2-16 <sup>S</sup> □□K	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	43.5
MHZJ2-20 <sup>S</sup> □□K	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	51.7
MHZJ2-25 <sup>S</sup> □□K	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	61.3

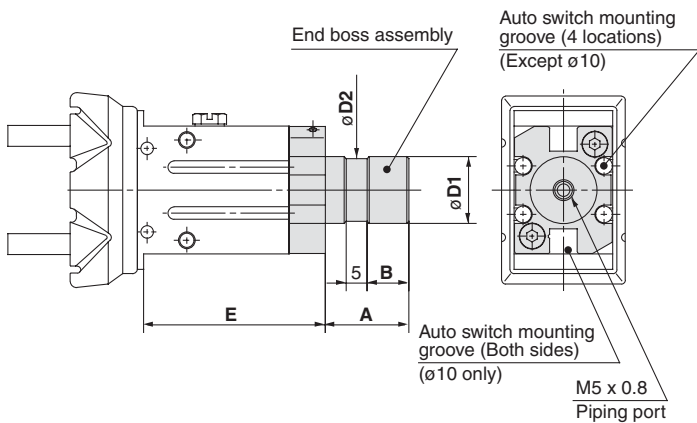
Other dimensions and specifications correspond to the standard type.

### Applicable Tubing

Description/ Model	Nylon tubing	Soft nylon tubing	Polyurethane tubing	Polyurethane coil tubing
	T0425	TS0425	TU0425	TCU0425B-1
Specifications				
Outside diameter (mm)	4	4	4	4
Max. operating pressure (MPa)	1.0	0.8	0.5	0.5
Min. bending radius (mm)	13	12	10	—
Operating temperature (°C)	-20 to 60	-20 to 60	-20 to 60	-20 to 60
Material	Nylon 12	Nylon 12	Polyurethane	Polyurethane

Refer to "Best Pneumatics Vol. 15" regarding One-touch fittings and tubing.

## Axial Ported (with M5 port) [M]



- \* Refer to the dimension table.
- \* When auto switches are used on  $\phi 10$ , side mounting with through-holes is not possible.

Model	A	B	D1	D2	E
MHZJ2-10 <sup>S</sup> □□M	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	40
MHZJ2-16 <sup>S</sup> □□M	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	43.5
MHZJ2-20 <sup>S</sup> □□M	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	51.7
MHZJ2-25 <sup>S</sup> □□M	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	61.3

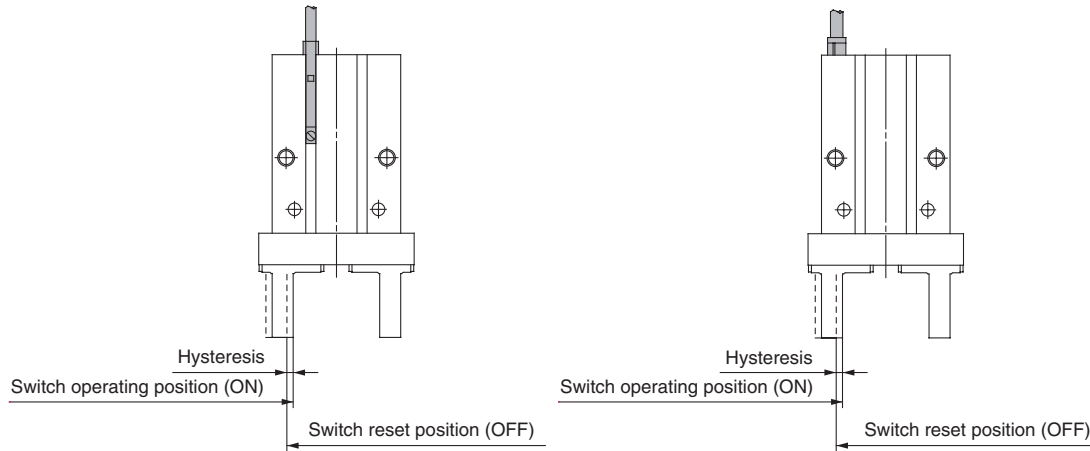
Other dimensions and specifications correspond to the standard type.

## Weight

Model	End boss type (Symbol)			
	E	W	K	M
MHZJ2-10□□	70	70	70	70
MHZJ2-16□□	165	165	165	165
MHZJ2-20□□	290	290	290	290
MHZJ2-25□□	525	525	525	525

## Auto Switch Hysteresis

Auto switches have hysteresis similar to micro switches.  
Use the table below as a guide when adjusting auto switch positions, etc.



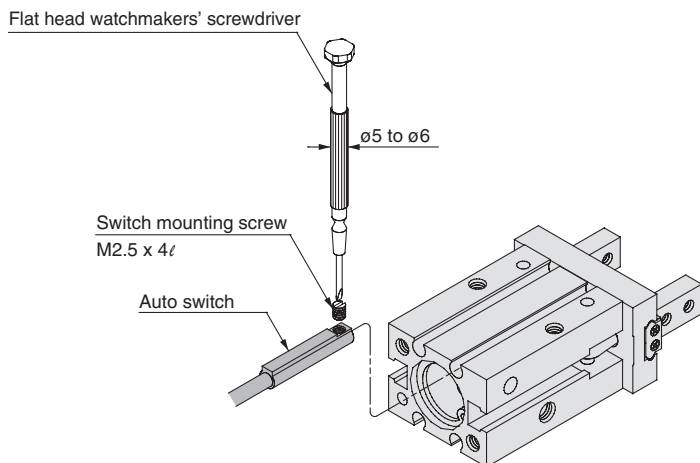
### Hysteresis

	D-Y59A/B D-Y69A/B D-Y7P(V)	D-M9□(V) D-F8□	D-Y7□W(V)		D-F9□W(V)		D-F9BAL	
			ON position set when red light is turned on	ON position set when green light is turned on	ON position set when red light is turned on	ON position set when green light is turned on	ON position set when red light is turned on	ON position set when green light is turned on
MHZ2-6□	No setting	(0.4)	No setting		No setting		No setting	
MHZ2-10□, MHZL2-10□	0.4	No setting						
MHZ2-16□, MHZL2-16□	0.4	(0.4)						
MHZ2-20□, MHZL2-20□	0.4	(0.4)	0.5	1	0.5	1		
MHZ2-25□, MHZL2-25□	0.4	0.5	0.5	1	0.5	1		
MHZ2-32□	0.4	0.5	0.5	1	0.5	1		
MHZ2-40□	0.4	0.5	0.5	1	0.5	1		
MHZJ2-6□	No setting	(0.4)	No setting		No setting		0.4	0.8
MHZJ2-10□		0.5 (0.4)					0.4	0.8
MHZJ2-16□		(0.4)					0.4	0.8
MHZJ2-20□		(0.4)			0.5	1	0.4	0.8
MHZJ2-25□		0.5			0.5	1	0.4	0.8

Note) Figures in parentheses are the cases for D-M9□, D-M9□V switch types.

## Mounting of Auto Switch

To set the auto switch, insert the auto switch into the installation groove of the gripper from the direction indicated in the following drawing. After setting the position, tighten the attached switch mounting set screw with a flat head watchmakers' screwdriver.



Note) Use a watchmakers' screwdriver with a grip diameter of 5 to 6 mm to tighten the auto switch mounting screw.

The tightening torque should be about 0.05 to 0.1 N·m. As a rule, it should be turned about 90° beyond the point at which tightening can be felt.

# Series MHZ

## Protrusion of Auto Switch from Edge of Body

- The amount of auto switch protrusion from the body's end surface is as shown in the table below.
- Use this as a standard when mounting, etc.
- D-F8□ has no protrusion from the body's end surface.

### Standard Body

Model	Lead wire type	Explanatory drawing	In-line electrical entry type					Perpendicular electrical entry type							
			D-Y59□ D-Y7P	D-Y7□W	D-M9□	D-F9□W	D-F9BAL	D-Y69□ D-Y7PV	D-Y7□WV	D-M9□V	D-F9□WV				
Standard	MHZ2-6□	Open	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting		
		Closed												11	9
	MHZ2-10□	Open	1	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	7.5												13
	MHZ2-16□	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	6												1
	MHZ2-20□	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	4												4
	MHZ2-25□	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	1												1
	MHZ2-32□	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	3												3
	MHZ2-40□	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	2												2
With dust cover	MHZJ2-6□	Open	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting		
		Closed												11	9
	MHZJ2-10□	Open	5	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	7												13
	MHZJ2-16□	Open	2	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	5												12
	MHZJ2-20□	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	3												3
	MHZJ2-25□	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	2												2
	Long stroke	Double acting	MHZL2-10D	Open	0.5	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting
				Closed	8.5										
MHZL2-16D			Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting
			Closed	8											
MHZL2-20D			Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting
			Closed	7											
MHZL2-25D		Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
		Closed	5.5												5.5
Single acting (Normally open)		MHZL2-10S	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
			Closed	—											1
		MHZL2-16S	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
			Closed	3											—
		MHZL2-20S	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
			Closed	1											1
MHZL2-25S		Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting		
		Closed	—											—	—
Single acting (Normally closed)		MHZL2-10C	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	
			Closed	5.5											4.5
	MHZL2-16C	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting		
		Closed	5.5											4.5	3.5
	MHZL2-20C	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting		
		Closed	3.5											3.5	1.5
MHZL2-25C	Open	—	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting	No setting			
	Closed	1.5											1.5	—	—

Note) There is no auto switch protrusion from the body's end surface.

## End Boss Type

Lead wire type		In-line electrical entry type					Perpendicular electrical entry type			
		Explanatory drawing					Explanatory drawing			
Model	Finger position	Auto switch					Auto switch			
		D-Y59□ D-Y7P	D-Y7□W	D-M9□	D-F9□W	D-F9BAL	D-Y69□ D-Y7PV	D-Y7□WV	D-M9□V	D-F9□WV
With dust cover	MHZJ2-10□□□	Open	No setting	—	No setting	4	No setting	—	No setting	—
		Closed		—		8		—		
	MHZJ2-16□□□	Open		—		1		—		
		Closed		—		6.5		—		
	MHZJ2-20□□□	Open		—		—		—		
		Closed		—		3		—		
	MHZJ2-25□□□	Open		—	—	—				
		Closed		—	1.5	—				

Note) There is no auto switch protrusion from the body's end surface.

- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

# Series MHZ

# Made to Order Specifications:

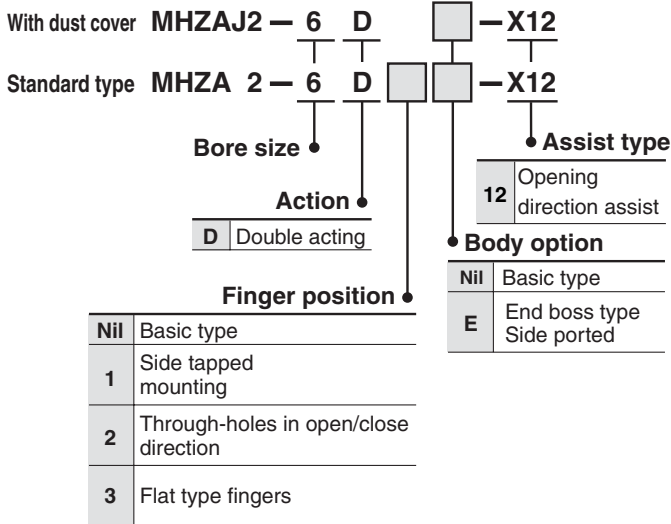
Please contact SMC for detailed dimensions, specifications and lead times.

Symbol

- X7  
- X12

## 1 Spring Assisted Type

### Compact Type: MHZA2-6, MHZAJ2-6

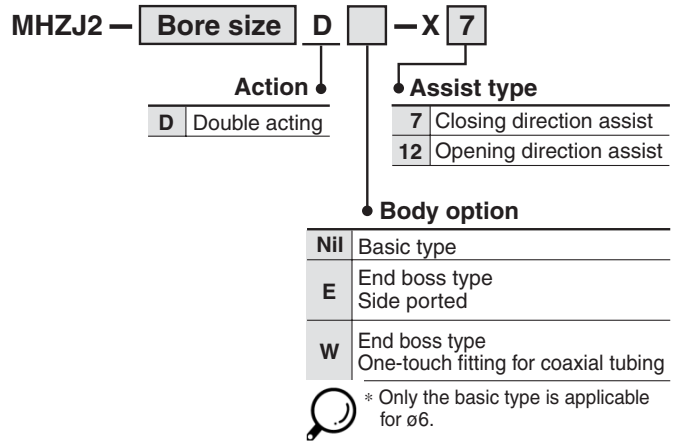


### Specifications

Type	Spring assisted type
Bore size (mm)	6
Action	Double acting
Fluid	Air

Note) Dimensions are the same as the standard type.

### With Dust Cover: MHZJ2

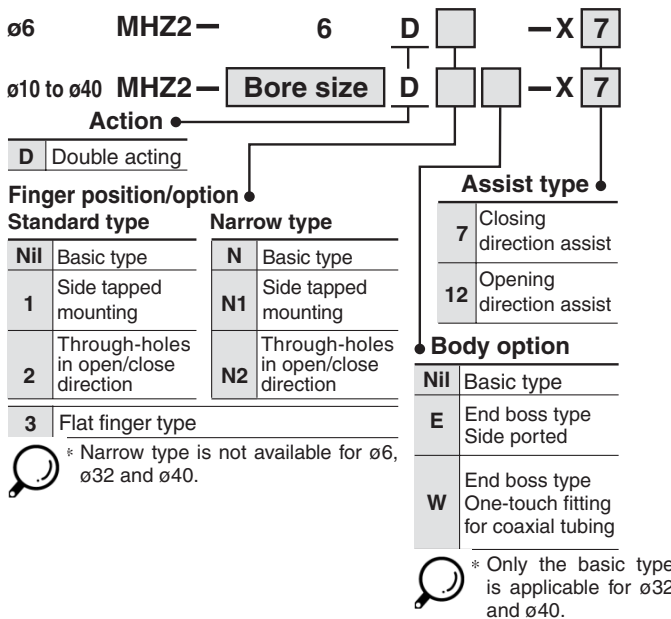


### Specifications

Type	Spring assisted type
Bore size (mm)	6, 10, 16, 20, 25
Action	Double acting
Fluid	Air

Note) Dimensions are the same as the standard type.

### Standard Type: MHZ2

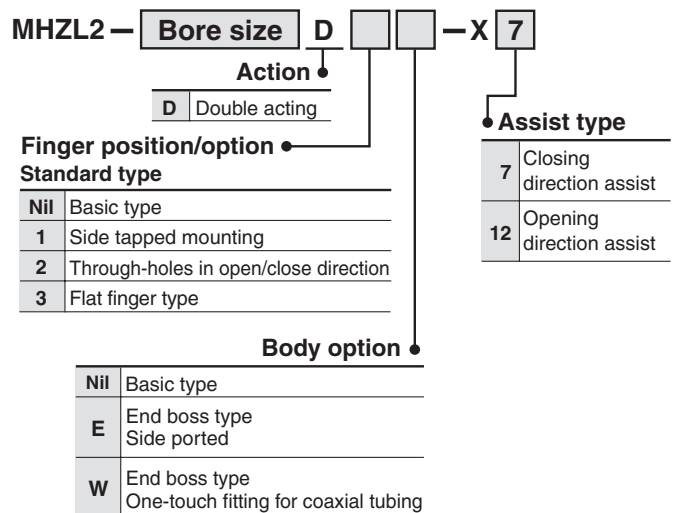


### Specifications

Type	Spring assisted type
Bore size (mm)	6, 10, 16, 20, 25, 32, 40
Action	Double acting
Fluid	Air

Note) Dimensions of ø6 to ø25 are the same as the standard type. Dimensions of ø32 and ø40 are the same as the standard single acting type.

### Long Stroke Type: MHZL2



### Specifications

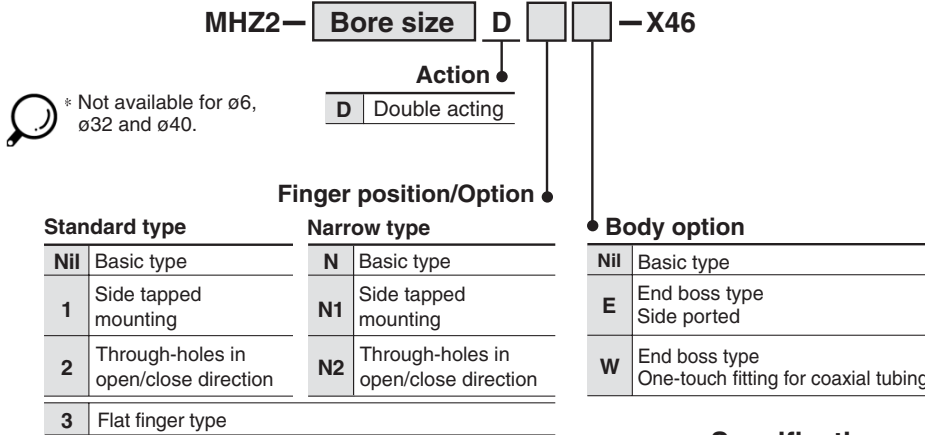
Type	Spring assisted type
Bore size (mm)	10, 16, 20, 25
Action	Double acting
Fluid	Air

Dimensions are the same as the single acting type.

**2 With Needle (With variable throttle)**

**-X46**

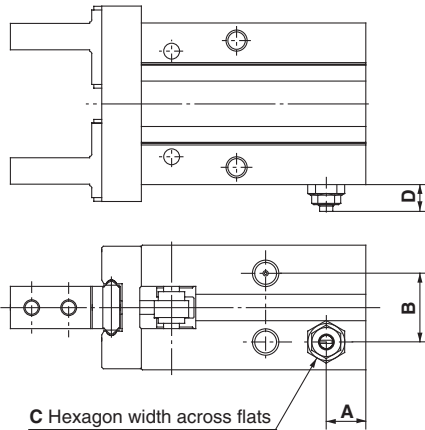
Installation of a variable throttle allows adjustment of the finger opening/closing speed.



**Specifications**

Type	With needle
Bore size (mm)	10, 16, 20, 25
Action	Double acting
Fluid	Air

**Dimensions**



Model	A	B	C	D *
MHZ2-10D□□-X46	9	11	4.5	5.2
MHZ2-16D□□-X46	7.5	13	7	5.8
MHZ2-20D□□-X46	10	15	7	6
MHZ2-25D□□-X46	10.7	20	7	6.2

Dimensions other than the above are identical to the standard type; refer to pages 12-2-33 to 12-2-36.

\* Reference values to establish criteria for needle adjustment.

Adjust so that the finger opening/closing speed will be no greater than necessary. If the finger opening/closing speed is greater than necessary, impact forces acting on the fingers and other parts will increase. This can cause a loss of repeatability when gripping workpieces and have an adverse effect on the life of the unit.

**Guide for Internal Needle Adjustment**

Model	Number of rotations from fully closed needle condition <sup>(1)</sup>
MHZ2-10D□□-X46	1/4 to 1/2
MHZ2-16D□□-X46	1/2 to 1
MHZ2-20D□□-X46	1 to 1 1/2
MHZ2-25D□□-X46	1 1/2 to 2

Note 1) The condition in which the needle is tightened gently until it stops.

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

D-

20-

## 3 MHQ2/MHQG2 Compatible Flat Finger Type -X51

The flat finger type can be selected depending on the intended application.

MHZ2— **Bore size** **D** **□** **□** —X51

**Action**

<b>D</b>	Double acting
<b>S</b>	Single acting (Normally open)
<b>C</b>	Single acting (Normally closed)

**Finger position**

<b>Nil</b>	MHQG2 compatible type
<b>N</b>	MHQ2 compatible type

\* Not available for ø6, ø32 and ø40.

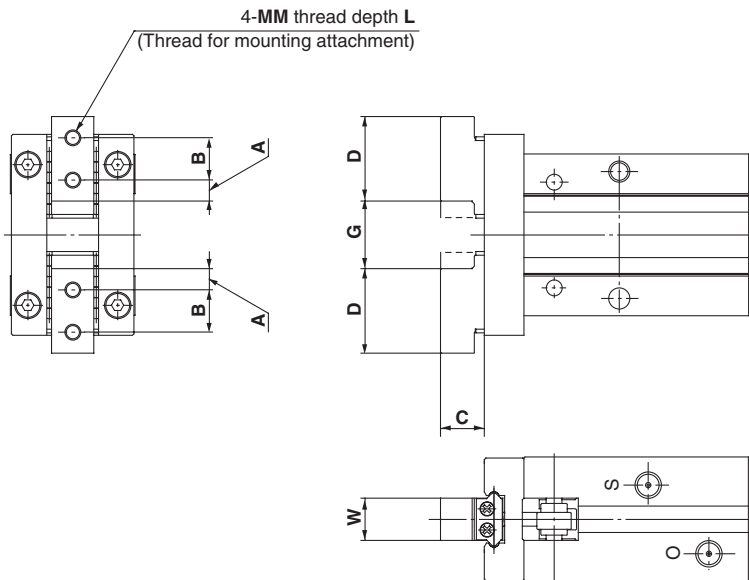
**Body option**

<b>Nil</b>	Basic type
<b>E</b>	End boss type Side ported
<b>W</b>	End boss type One-touch fitting for coaxial tubing
<b>K</b>	End boss type One-touch fitting
<b>M</b>	End boss type with M5 port

### Specifications

Type	Flat finger type
Bore size (mm)	10, 16, 20, 25
Action	Double acting, Single acting (Normally open, Normally closed)
Fluid	Air

### Dimensions



(mm)

Model		A	B	C	D	G		MM	L	W
						Open	Closed			
MHZ2-10□□□-X51	MHQG2 compatible	3	6	5.2	12	9.7 <sup>+2.2</sup> <sub>0</sub>	5.7 <sup>0</sup> <sub>-0.4</sub>	M2 x 0.4	3.6	5 <sup>0</sup> <sub>-0.05</sub>
	MHQ2 compatible	2	5	5.2	9	9.7 <sup>+2.2</sup> <sub>0</sub>	5.7 <sup>0</sup> <sub>-0.4</sub>	M2 x 0.4	3.6	5 <sup>0</sup> <sub>-0.05</sub>
MHZ2-16□□□-X51	MHQG2 compatible	4	8	8.3	16	12.6 <sup>+2.2</sup> <sub>0</sub>	6.6 <sup>0</sup> <sub>-0.4</sub>	M3 x 0.5	6	8 <sup>0</sup> <sub>-0.05</sub>
	MHQ2 compatible	2.5	7	8.3	12	12.6 <sup>+2.2</sup> <sub>0</sub>	6.6 <sup>0</sup> <sub>-0.4</sub>	M3 x 0.5	6	8 <sup>0</sup> <sub>-0.05</sub>
MHZ2-20□□□-X51	MHQG2 compatible	5	10	10.5	20.8	17.2 <sup>+2.2</sup> <sub>0</sub>	7.2 <sup>0</sup> <sub>-0.4</sub>	M4 x 0.7	8	10 <sup>0</sup> <sub>-0.05</sub>
	MHQ2 compatible	3.3	9	10.5	15.5	17.2 <sup>+2.2</sup> <sub>0</sub>	7.2 <sup>0</sup> <sub>-0.4</sub>	M4 x 0.7	8	10 <sup>0</sup> <sub>-0.05</sub>
MHZ2-25□□□-X51	MHQG2 compatible	6.5	12	13.1	25	22.8 <sup>+2.2</sup> <sub>0</sub>	8.8 <sup>0</sup> <sub>-0.4</sub>	M5 x 0.8	10	12 <sup>0</sup> <sub>-0.05</sub>
	MHQ2 compatible	3.5	12	13.1	19	22.8 <sup>+2.2</sup> <sub>0</sub>	8.8 <sup>0</sup> <sub>-0.4</sub>	M5 x 0.8	10	12 <sup>0</sup> <sub>-0.05</sub>

Dimensions other than the above are identical to the standard type; refer to pages 12-2-33 to 12-2-36.





# Parallel Style Air Gripper Long Stroke Type Series **MHZL2** Size: 10, 16, 20, 25

## How to Order

**MHZL2 – 16 D [ ] [ ] F9BW [ ]**

**Number of fingers**  
2 | 2 fingers

**Bore size**

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

**Auto switch**

Nil	2 pcs.
S	1 pc.

**Auto switch**

Nil	Without auto switch (Built-in magnet)
-----	---------------------------------------

\* For the applicable auto switch model, refer to the table below.

**Action**

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

**Finger option**

Nil: Basic type

1: Side tapped mounting

2: Through-holes in opening/closing direction

3: Flat type fingers

**Body option**

Nil: Basic type

E: End boss type Side ported (Double acting/Single acting)

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

K: End boss type Axial ported with ø4 One-touch fitting (Single acting)

M: End boss type Axial ported with M5 port (Single acting)

### Applicable Auto Switch/Refer to page 12-13-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m) <sup>(1)</sup>			Flexible lead wire (-61)	Pre-wire connector	Applicable load	Applicable model					
					DC	AC	Electrical entry	In-line	0.5 (Nil)	3 (L)	5 (Z)				ø10	ø16	ø20	ø25		
					Perpendicular	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	Y69A	Y59A	●	●	○	Standard	○	IC circuit	●	●	●	●	
								M9NV	M9N	●	●	○	Standard	○		●	●	●	●	
								F8N	—	●	●	○	○	—		●	●	●	●	
								Y7PV	Y7P	●	●	○	Standard	○		●	●	●	●	
				M9PV	M9P	●	●	○	Standard	○	●	●	●	●						
				F8P	—	●	●	○	○	—	●	●	●	●						
				Y69B	Y59B	●	●	○	Standard	○	—	●	●	●		●				
				M9BV	M9B	●	●	○	Standard	○	—	●	●	●		●				
	Diagnosis (2-color indication)	Grommet	No	No	3-wire (NPN)	24 V	5 V, 12 V	—	F8B	—	●	●	○	○	—	Relay, PLC	●	●	●	●
									Y7NWV	Y7NW	●	●	○	Standard	○		●	●	●	
									F9NWV	F9NW	●	●	○	○	—		●	●	●	
									Y7PWV	Y7PW	●	●	○	Standard	○		●	●	●	
					F9PWV	F9PW	●	●	○	○	—	●	●	●						
					Y7BWV	Y7BW	●	●	○	Standard	○	—	●	●	●					
					F9BWV	F9BW	●	●	○	○	—	●	●	●						

\* Lead wire length symbols: 0.5 m..... Nil (Example) M9N  
3 m..... L (Example) M9NL  
5 m..... Z (Example) Y59AZ

\* Auto switches marked with a "○" symbol are produced upon receipt of order.

Note 1) Take note of hysteresis with 2-color indication type switches. Refer to "Auto Switch Hysteresis" on page 12-2-53.

Note 2) Through-hole mounting is not possible when using auto switch types D-Y59, D-Y69, or D-Y7.

Note 3) Through-hole mounting is not possible when using auto switch types D-Y59, D-Y69, or D-Y7.

Note 4) D-M9□, D-M9□V switch types are not possible to mount on size 10.

Note 2) Add "-61" at the end of the part number for the flexible lead wire.

(Example)  
When ordering with an air gripper  
**MHZ□ 2-16D-F8NS-61**

When ordering auto switches only  
**D-F8PL-61**

● Flexible lead wire



# Parallel Style Air Gripper Long Stroke Type Series MHZL2

## Specifications



Fluid		Air	
Operating pressure	Double acting		$\phi 10$ : 0.2 to 0.7 MPa $\phi 16$ to $\phi 25$ : 0.1 to 0.7 MPa
	Single acting	Normally open	$\phi 10$ : 0.35 to 0.7 MPa
		Normally closed	$\phi 16$ to $\phi 25$ : 0.25 to 0.7 MPa
Ambient and fluid temperature		-10 to 60°C	
Repeatability		$\pm 0.01$ mm	
Max. operating frequency		120 c.p.m.	
Lubrication		Not required	
Action		Double acting/Single acting	
Auto switch (Option) <sup>Note)</sup>		Solid state switch (3-wire, 2-wire)	

Note) Refer to page 12-13-1 for further information on auto switches.

## Model

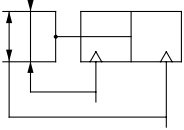
Action	Model	Bore size (mm)	Gripping force <sup>(1)</sup>		Opening/Closing stroke (Both sides) (mm)	Weight <sup>(2)</sup> (g)	
			Gripping force per finger Effective value (N)				
			External	Internal			
Double acting	MHZL2-10D	10	11	17	8	60	
	MHZL2-16D	16	34	45	12	135	
	MHZL2-20D	20	42	66	18	270	
	MHZL2-25D	25	65	104	22	470	
Single acting	Normally open	MHZL2-10S	10	7.1	—	8	70
		MHZL2-16S	16	27		12	145
		MHZL2-20S	20	33		18	290
		MHZL2-25S	25	50		22	515
	Normally closed	MHZL2-10C	10	—	13	8	70
		MHZL2-16C	16		38	12	140
		MHZL2-20C	20		57	18	290
		MHZL2-25C	25		85	22	515

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

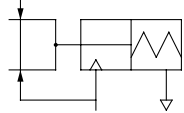
Note 2) Values excluding weight of auto switch.

### JIS Symbol

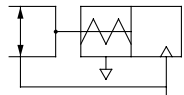
Double acting



Single acting, Normally open



Single acting, Normally closed



## Option

### ● Body Option/End Boss Type

Symbol	Piping port location	Type of piping port				Applicable model	
		MHZL2-10	MHZL2-16	MHZL2-20	MHZL2-25	Double acting	Single acting
<b>N</b>	Basic type	M3 x 0.5	M5 x 0.8			●	
<b>E</b>	Side ported	M3 x 0.5	M5 x 0.8		●	●	
<b>W</b>	Axial ported	With $\phi 4$ One-touch fitting for coaxial tubing				●	—
<b>K</b>	Axial ported	With $\phi 4$ One-touch fitting				—	●
<b>M</b>	Axial ported	M5 x 0.8				—	●

\* For detailed specifications on the body option, refer to pages 12-2-68 to 12-2-69 for option specifications.

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

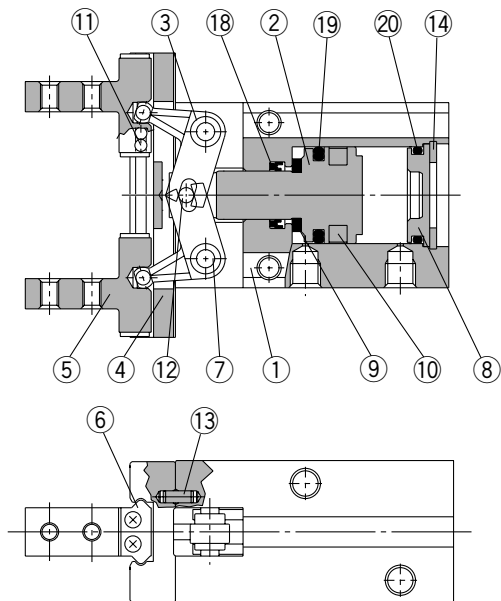
D-

20-

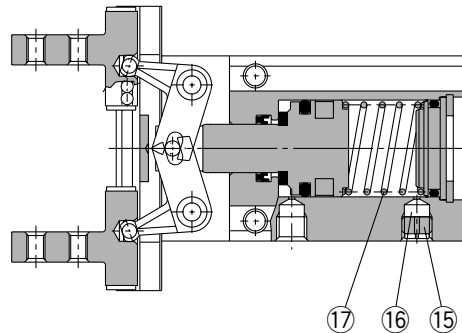
# Series MHZL2

## Construction: MHZL2-10□ to 25□

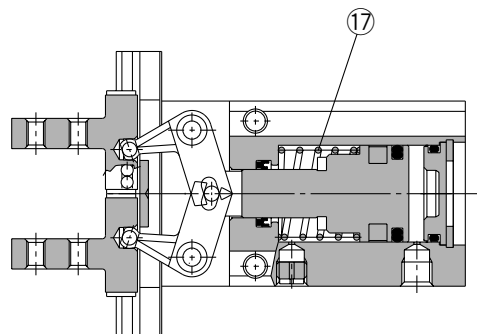
### Double acting/With fingers open



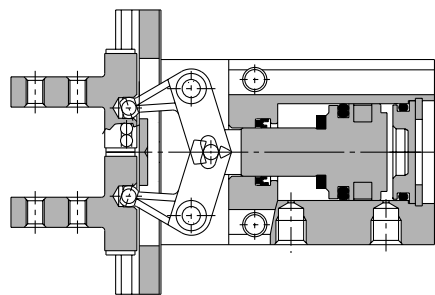
### Single acting/Normally open



### Single acting/Normally closed



### Double acting/With fingers closed



## Component Parts

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

No.	Description	Material	Note
⑪	Steel balls	High carbon chrome bearing steel	
⑫	Needle roller	High carbon chrome bearing steel	
⑬	Parallel pin	Stainless steel	
⑭	Type C snap ring	Carbon steel	Nickel plated
⑮	Exhaust plug A	Brass	Electroless nickel plated
⑯	Exhaust filter A	Polyvinyl formal	
⑰	Spring	Stainless steel spring wire	
⑱	Rod seal	NBR	
⑲	Piston seal	NBR	
⑳	O-ring	NBR	

## Replacement Parts

Description		MHZL2-10	MHZL2-16	MHZL2-20	MHZL2-25	Main parts
Seal kit		MHZL10-PS	MHZL16-PS	MHZL20-PS	MHZL25-PS	⑱⑲⑳
Finger assembly	MHZL2-□□□	MHZL-A1002	MHZL-A1602	MHZL-A2002	MHZL-A2502	④⑤⑥⑪⑬ Mounting screw
	MHZL2-□□□1	MHZL-A1002-1	MHZL-A1602-1	MHZL-A2002-1	MHZL-A2502-1	
	MHZL2-□□□2	MHZL-A1002-2	MHZL-A1602-2	MHZL-A2002-2	MHZL-A2502-2	
Piston assembly	MHZL2-□□□3	MHZL-A1002-3	MHZL-A1602-3	MHZL-A2002-3	MHZL-A2502-3	②⑨⑩⑫⑱
	MHZL2-□□□□	MHZL-A1003	MHZL-A1603	MHZL-A2003	MHZL-A2503	
End boss assembly	MHZL2-□□□□	MHZL-A1003C	MHZL-A1603C	MHZL-A2003C	MHZL-A2503C	Main body of adaptor Mounting screw for adaptor Seal kit
	MHZL2-□□□□W	MHZJ-A1007	MHZJ-A1607	MHZJ-A2007	MHZJ-A2507	
	MHZL2-□□□□K	MHZJ-A1008	MHZJ-A1608	MHZJ-A2008	MHZJ-A2508	
	MHZL2-□□□□M	MHZJ-A1009	MHZJ-A1609	MHZJ-A2009	MHZJ-A2509	
	MHZL2-□□□□E	MHZJ-A1010	MHZJ-A1610	MHZJ-A2010	MHZJ-A2510	

\* Finger option

1 = Side tapped 2 = Through-hole 3 = Flat type fingers

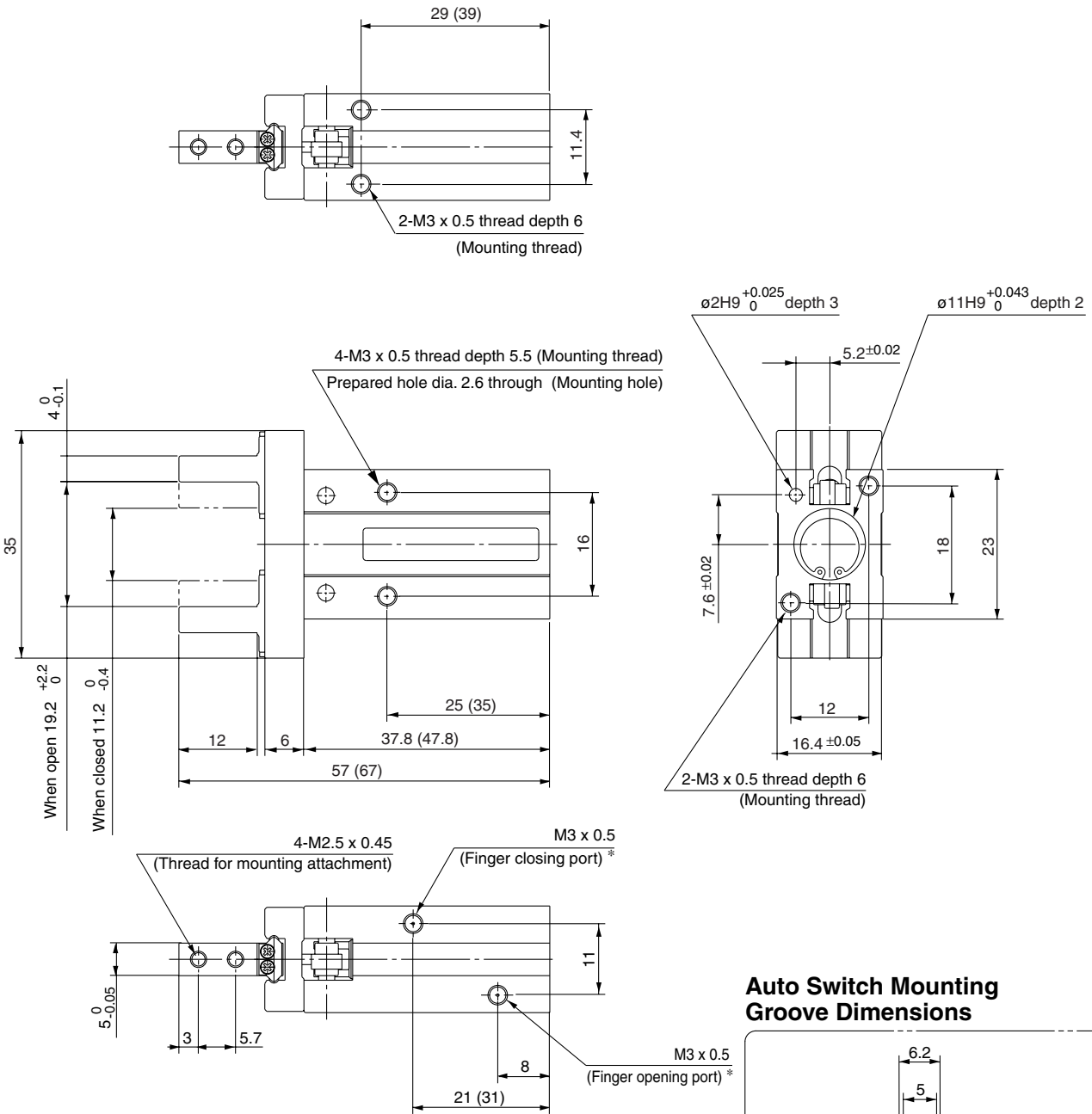
\* End boss type

W = With One-touch fitting for coaxial tubing, K = With One-touch fitting, M = With M5 port, E = Side ported

# Parallel Style Air Gripper Long Stroke Type Series MHZL2

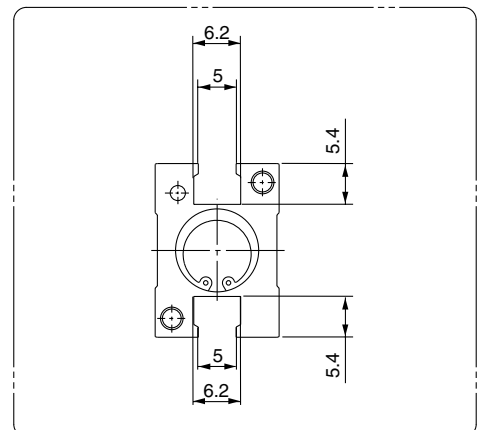
## Dimensions

MHZL2-10 □ Double acting/Single acting  
Basic type



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

### Auto Switch Mounting Groove Dimensions



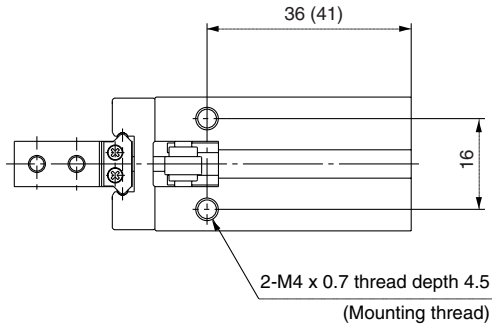
Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

MHZ
MHF
MHL
MHR
MHK
MHS
MHC
MHT
MHY
MHW
MRHQ
Misc.
D-
20-

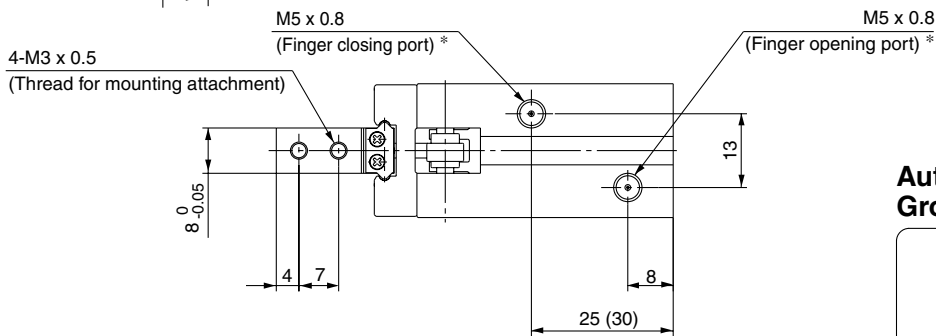
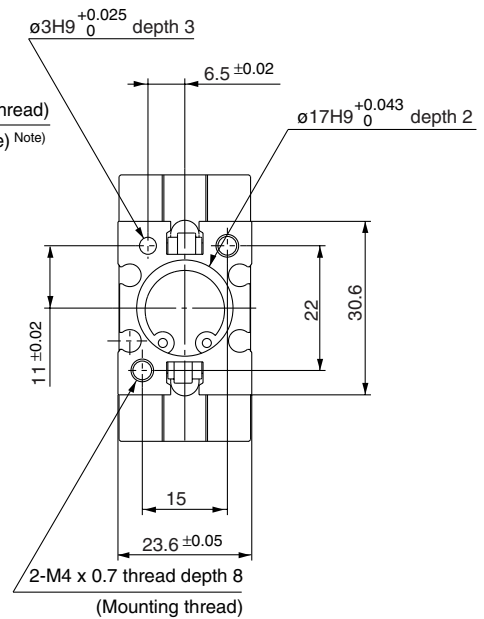
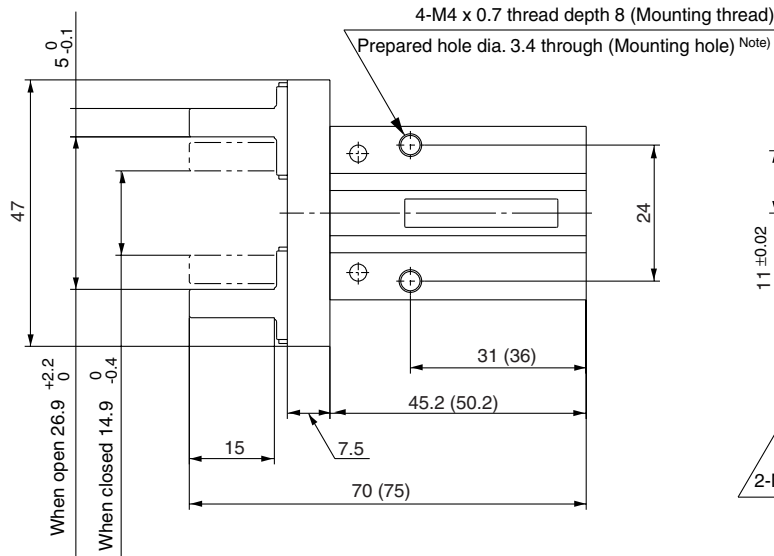
# Series MHZL2

## Dimensions

### MHZL2-16 □ Double acting/Single acting Basic type

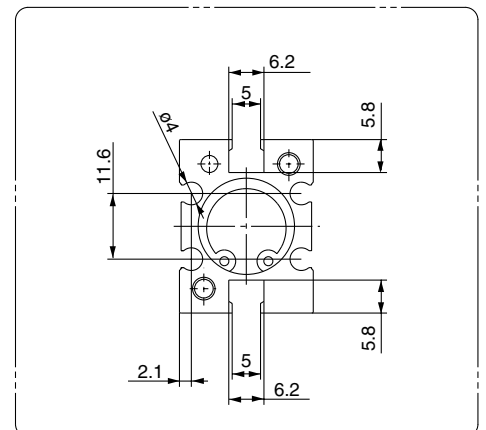


The values inside ( ) are dimensions for the single acting type.



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

### Auto Switch Mounting Groove Dimensions

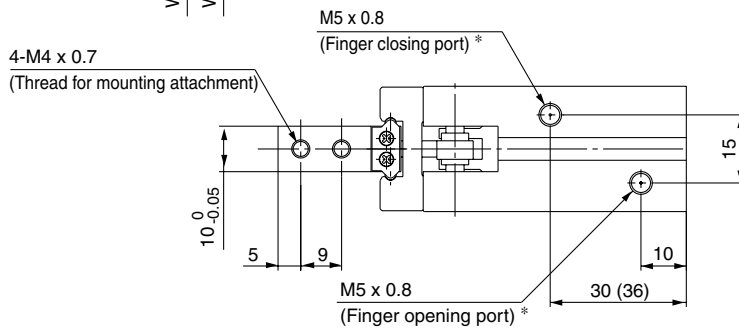
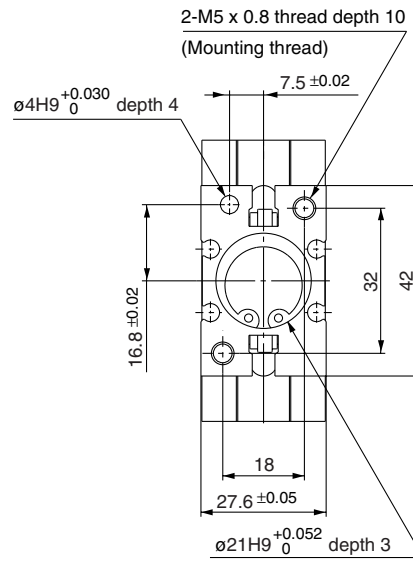
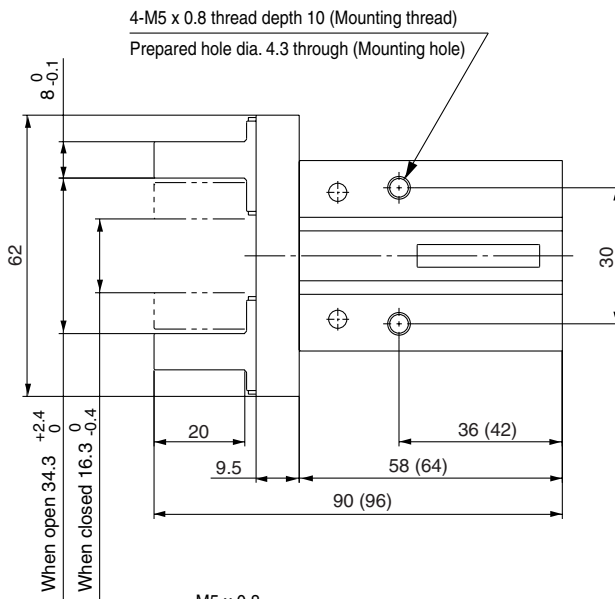
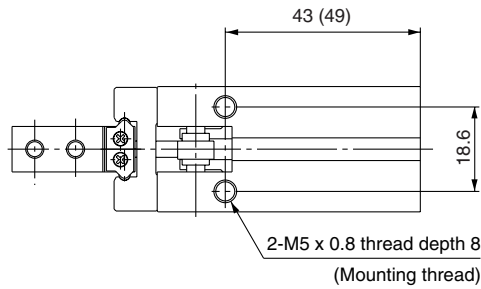


Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

# Parallel Style Air Gripper Long Stroke Type Series MHZL2

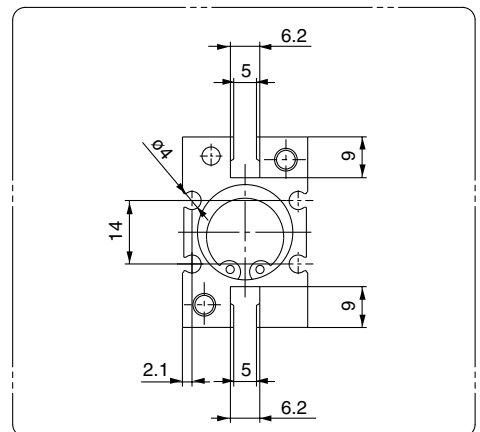
## MHZL2-20 □ Double acting/Single acting Basic type

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



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

### Auto Switch Mounting Groove Dimensions



Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

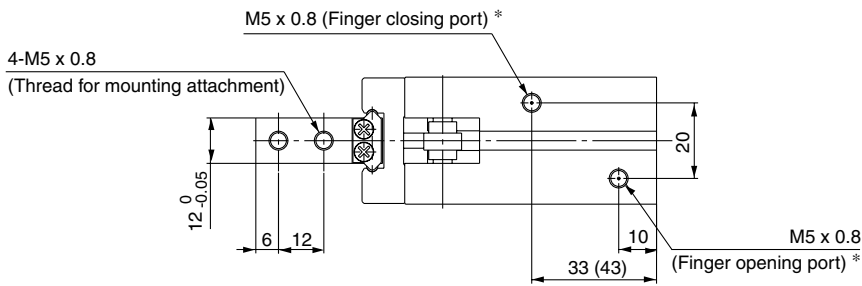
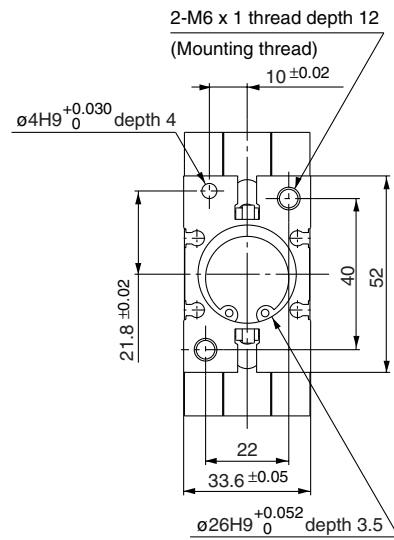
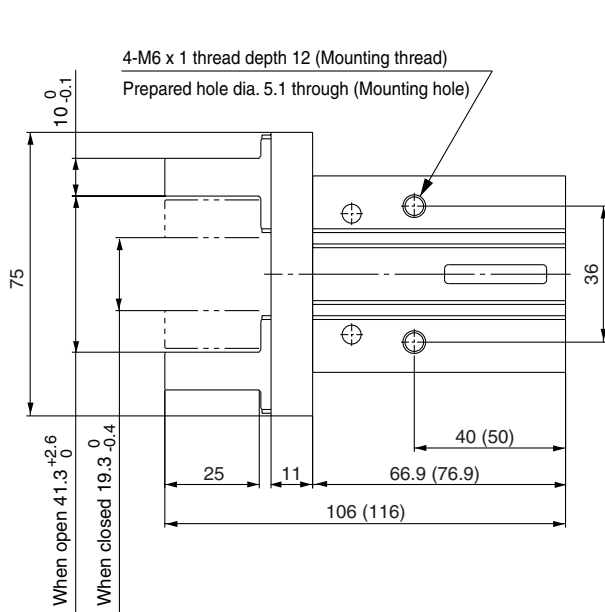
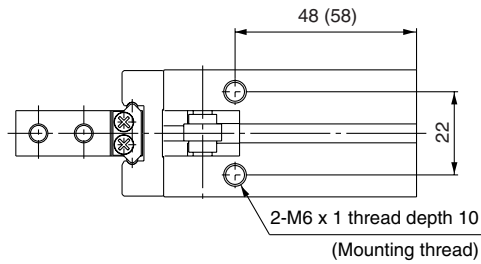
MHZ
MHF
MHL
MHR
MHK
MHS
MHC
MHT
MHY
MHW
MRHQ
Misc.
D-
20-

# Series MHZL2

## Dimensions

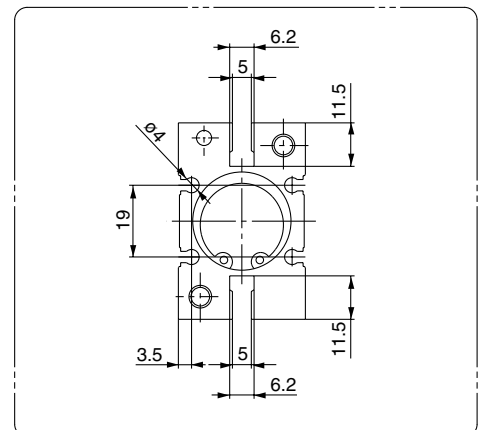
### MHZL2-25 □ Double acting/Single acting Basic type

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



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

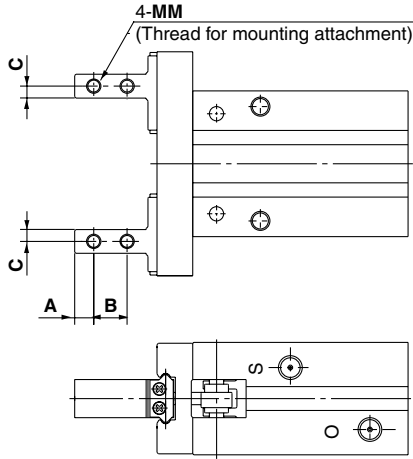
### Auto Switch Mounting Groove Dimensions



Note) When using D-Y59, D-Y69 and D-Y7 type auto switches, through-hole mounting is not possible.

# Long Stroke Type/series MHZL2 Finger Option

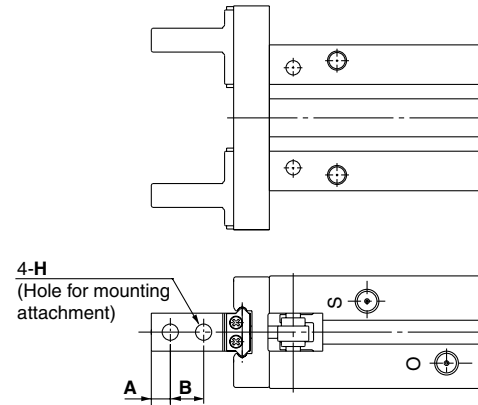
## Side Tapped Mounting [1]



Model	A	B	C	MM
MHZL2-10□1□	3	5.7	2	M2.5 x 0.45
MHZL2-16□1□	4	7	2.5	M3 x 0.5
MHZL2-20□1□	5	9	4	M4 x 0.7
MHZL2-25□1□	6	12	5	M5 x 0.8

\* Specifications and dimensions other than the above are the same as the basic type.

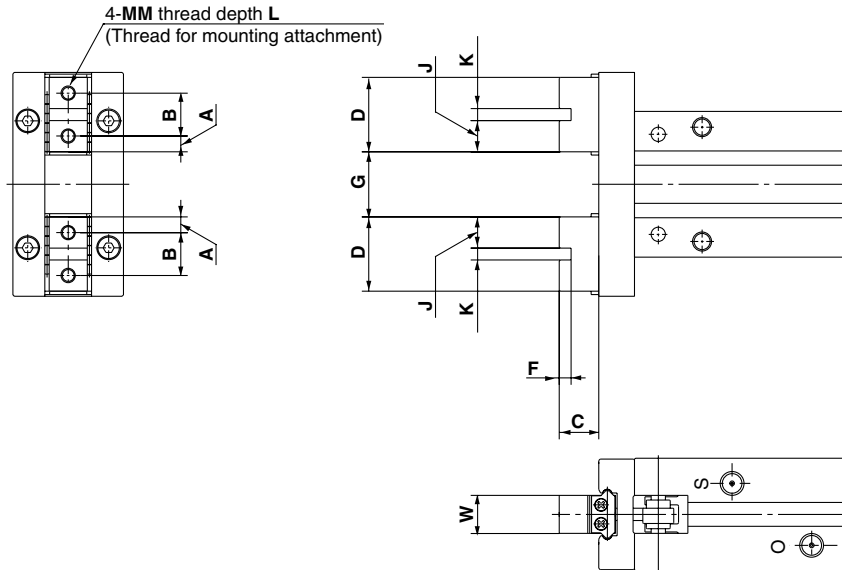
## Through-holes in Opening/ Closing Direction [2]



Model	A	B	H
MHZL2-10□2□	3	5.7	2.9
MHZL2-16□2□	4	7	3.4
MHZL2-20□2□	5	9	4.5
MHZL2-25□2□	6	12	5.5

\* Specifications and dimensions other than the above are the same as the basic type.

## Flat Type Fingers [3]



Model	A	B	C	D	F	G		J	K	MM	L	W	Weight (g)	
						Open	Closed						Double acting	Single acting
MHZL2-10□3□	2.45	7	5.2	11.9	2	9.4 <sup>+2.2</sup> <sub>0</sub>	1.4 <sup>0</sup> <sub>-0.2</sub>	4.95	2H9 <sup>-0.025</sup> <sub>0</sub>	M2.5 x 0.45	5	5 <sup>0</sup> <sub>-0.05</sub>	60	70
MHZL2-16□3□	3.3	9	8.3	15.6	2.5	13.4 <sup>+2.2</sup> <sub>0</sub>	1.4 <sup>0</sup> <sub>-0.2</sub>	6.55	2.5H9 <sup>-0.025</sup> <sub>0</sub>	M3 x 0.5	6	8 <sup>0</sup> <sub>-0.05</sub>	135	145
MHZL2-20□3□	3.95	12	10.5	19.9	3	19.6 <sup>+2.4</sup> <sub>0</sub>	1.6 <sup>0</sup> <sub>-0.2</sub>	8.45	3H9 <sup>-0.025</sup> <sub>0</sub>	M4 x 0.7	8	10 <sup>0</sup> <sub>-0.05</sub>	270	290
MHZL2-25□3□	4.9	14	13.1	23.8	4	24 <sup>+2.6</sup> <sub>0</sub>	2 <sup>0</sup> <sub>-0.2</sub>	9.9	4H9 <sup>+0.030</sup> <sub>0</sub>	M5 x 0.8	10	12 <sup>0</sup> <sub>-0.05</sub>	460	505

\* Specifications and dimensions other than the above are the same as the basic type.

- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW
- MRHQ
- Misc.
- D-
- 20-

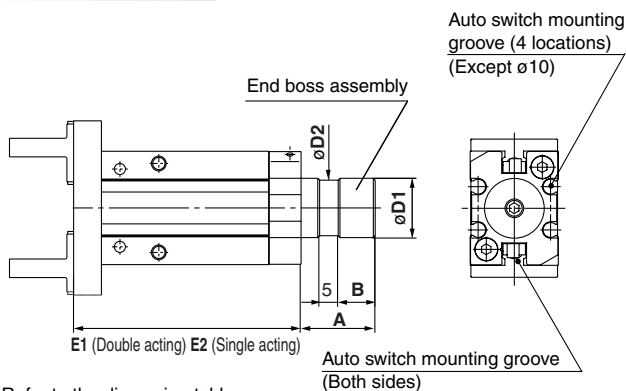
# Long Stroke Type/Series MHZL2

## Body Option: End Boss Type

### Applicable Model

Symbol	Piping port location	Type of piping port				Applicable model		
		MHZL2-10	MHZL2-16	MHZL2-20	MHZL2-25	Double acting	Single acting	
		M3 x 0.5					M5 x 0.8	
E	Side ported	M3 x 0.5	M5 x 0.8			●	●	●
W	Axial ported	With ø4 One-touch fitting for coaxial tubing				●	—	—
K		With ø4 One-touch fitting				—	●	●
M		M5 x 0.8				—	●	●

### Side Ported [E]

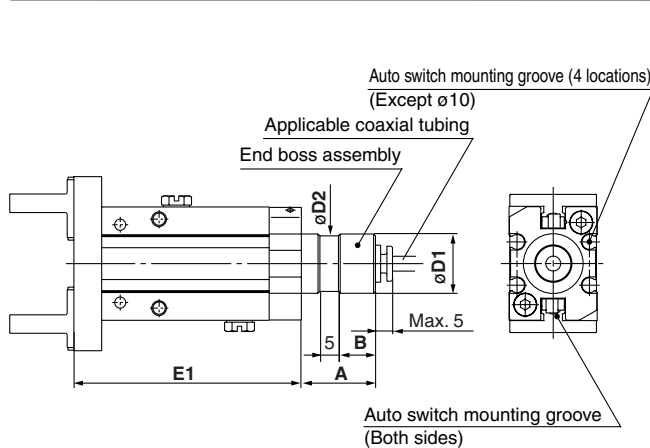


Model	A	B	D1	D2	E1	E2
MHZL2-10□□E	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	52.8	62.8
MHZL2-16□□E	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	61.4	66.4
MHZL2-20□□E	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	75.7	81.7
MHZL2-25□□E	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	86.2	96.2

Other dimensions and specifications correspond to the standard type.

- \* Refer to the dimension table.
- \* When auto switches are used, side mounting with through-holes is not possible.

### Axial Ported (with One-touch fitting for coaxial tubing) [W]

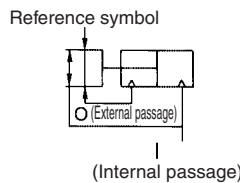


Model	A	B	D1	D2	E1
MHZL2-10D□□W	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	52.8
MHZL2-16D□□W	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	61.4
MHZL2-20D□□W	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	75.7
MHZL2-25D□□W	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	86.2

Other dimensions and specifications correspond to the standard type.

- \* Refer to the dimension table.
- \* When auto switches are used, side mounting with through-holes is not possible.

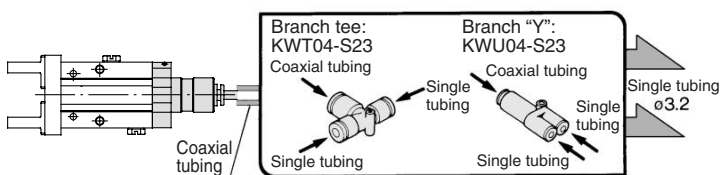
### Applicable Coaxial Tubing



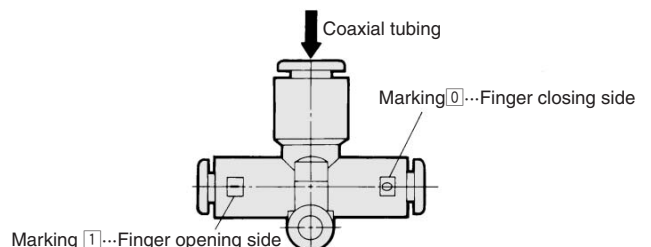
Model	TW04B-20
Specifications	
Outside diameter	4 mm
Max. operating pressure	0.6 MPa
Min. bending radius	10 mm
Operating temperature	-20 to 60°C
Material	Nylon 12

### Changing from Coaxial to Single Tubing

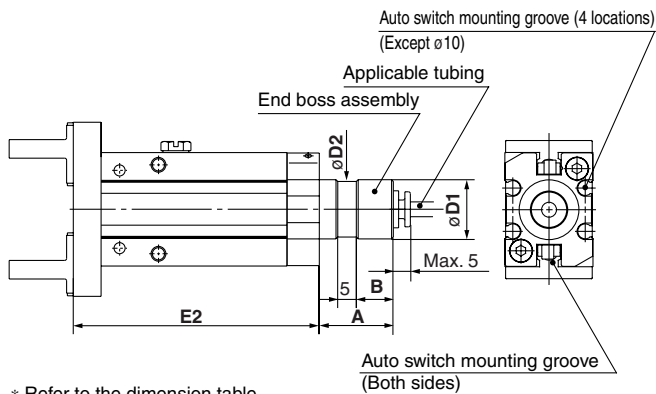
Changing to single tubing is possible by using a branch "Y" or branch tee fitting. In this case particularly, single tube fittings and tubing for ø3.2 will be necessary.



### Branch tee, Different diameter tee, Branch "Y", Male run tee



### Axial Ported (with One-touch fitting) [K]



\* Refer to the dimension table.  
\* When auto switches are used, side mounting with through-holes is not possible.

Model	A	B	D1	D2	E2
MHZL2-10 <sup>S</sup> <sub>C</sub> □K	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	62.8
MHZL2-16 <sup>S</sup> <sub>C</sub> □K	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	66.4
MHZL2-20 <sup>S</sup> <sub>C</sub> □K	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	81.7
MHZL2-25 <sup>S</sup> <sub>C</sub> □K	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	96.2

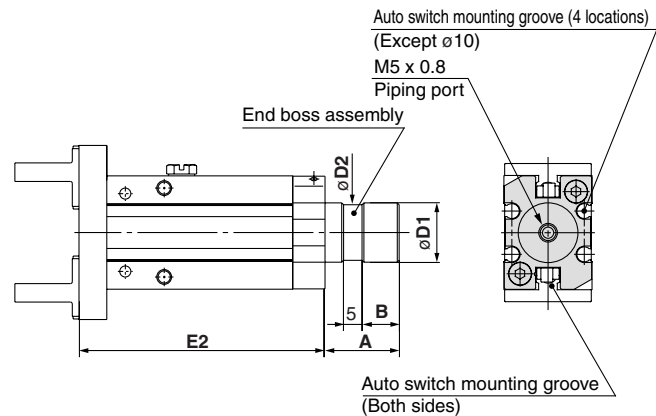
Other dimensions and specifications correspond to the standard type.

#### Applicable Tubing

Description/ Model	Nylon tubing	Soft nylon tubing	Polyurethane tubing	Polyurethane coil tubing
	T0425	TS0425	TU0425	TCU0425B-1
Specifications				
Outside diameter (mm)	4	4	4	4
Max. operating pressure (MPa)	1.0	0.8	0.5	0.5
Min. bending radius (mm)	13	12	10	—
Operating temperature (°C)	-20 to 60	-20 to 60	-20 to 60	-20 to 60
Material	Nylon 12	Nylon 12	Polyurethane	Polyurethane

Refer to "Best Pneumatics Vol. 15" regarding One-touch fittings and tubing.

### Axial Ported (with M5 port) [M]



\* Refer to the dimension table.  
\* When auto switches are used, side mounting with through-holes is not possible.

Model	A	B	D1	D2	E2
MHZL2-10 <sup>S</sup> <sub>C</sub> □M	15	7	12f8 <sup>-0.016</sup> <sub>-0.043</sub>	11	62.8
MHZL2-16 <sup>S</sup> <sub>C</sub> □M	20	10	16f8 <sup>-0.016</sup> <sub>-0.043</sub>	15	66.4
MHZL2-20 <sup>S</sup> <sub>C</sub> □M	22	12	20f8 <sup>-0.020</sup> <sub>-0.053</sub>	19	81.7
MHZL2-25 <sup>S</sup> <sub>C</sub> □M	25	15	25f8 <sup>-0.020</sup> <sub>-0.053</sub>	24	96.2

Other dimensions and specifications correspond to the standard type.

### Weight

Model	End boss type (Symbol)				
	E		W	K	M
	Double acting	Single acting			
MHZL2□-10□□	70	80	70	80	80
MHZL2□-16□□	170	180	170	180	180
MHZL2□-20□□	310	330	310	330	330
MHZL2□-25□□	535	580	535	580	580

