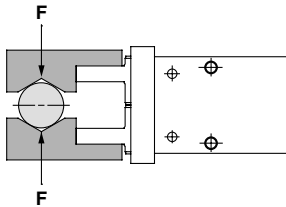


## Step 1 Effective Gripping Force: Series MHZ□2/Double Acting/External Gripping Force

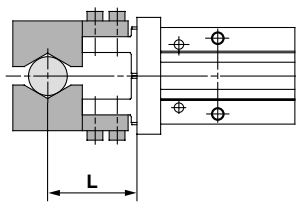
- Indication of effective gripping force

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.



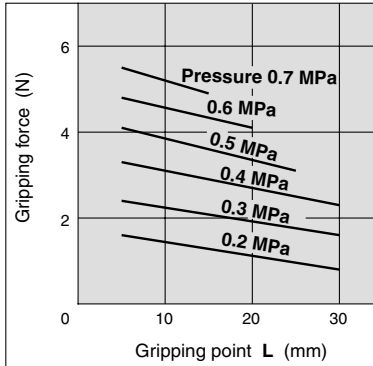
### External Grip

MHZA2, MHZ2, MHZL2

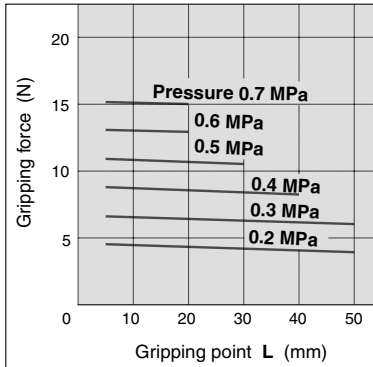


### External Gripping Force

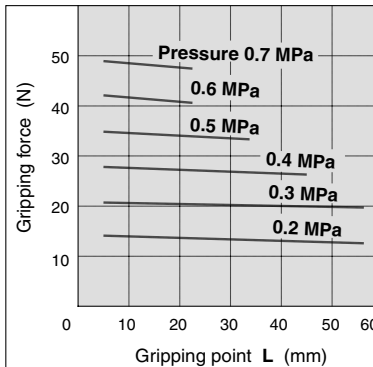
#### MHZ2-6D/MHZA2-6D



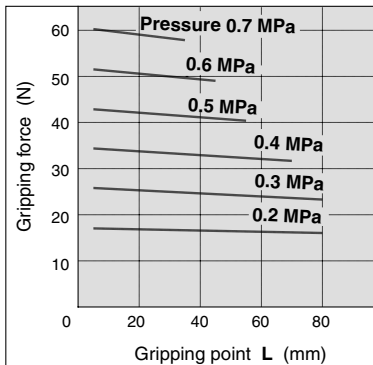
#### MHZ2-10D/MHZL2-10D



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

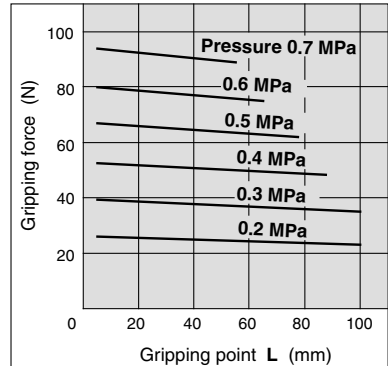


#### MHZ2-20D/MHZL2-20D

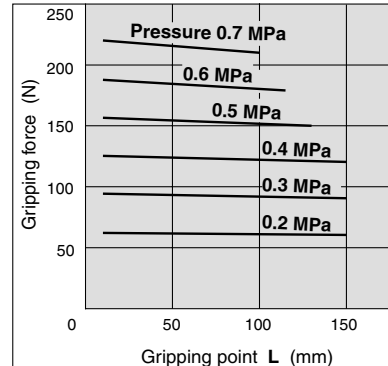


### External Gripping Force

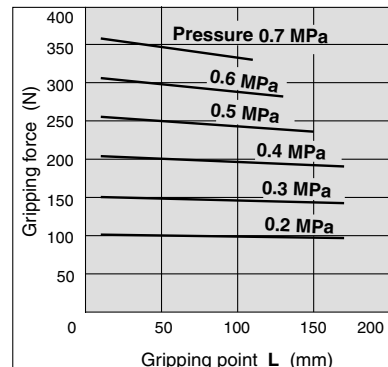
#### MHZ2-25D/MHZL2-25D



#### MHZ2-32D



#### MHZ2-40D



MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

-X□

MRHQ

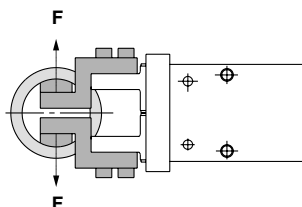
MA

D-□

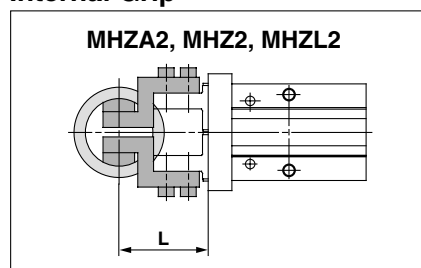
## Model Selection

### 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.

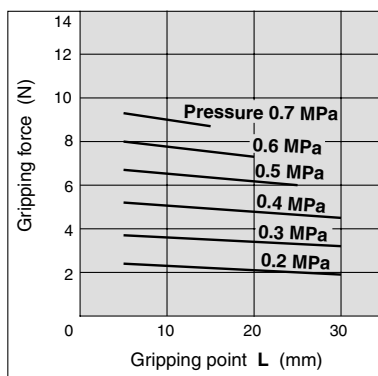


#### Internal Grip

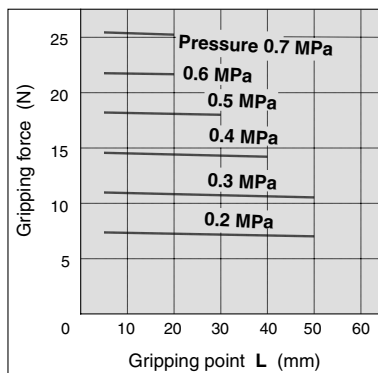


#### Internal Gripping Force

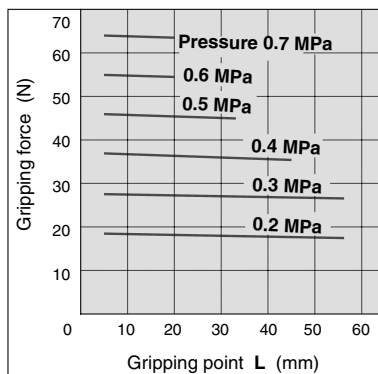
##### MHZ2-6D/MHZA2-6D



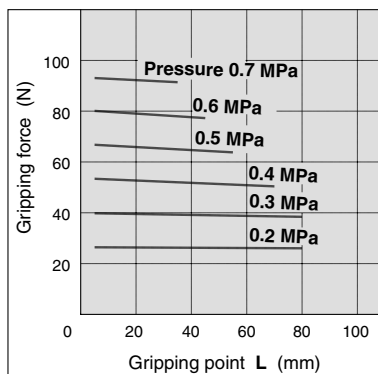
##### MHZ2-10D/MHZA2-10D



##### MHZ2-16D/MHZA2-16D

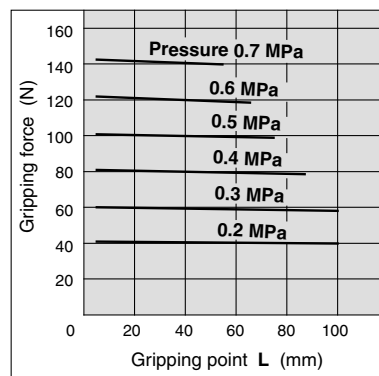


##### MHZ2-20D/MHZA2-20D

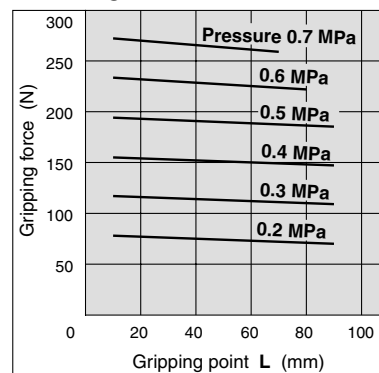


#### Internal Gripping Force

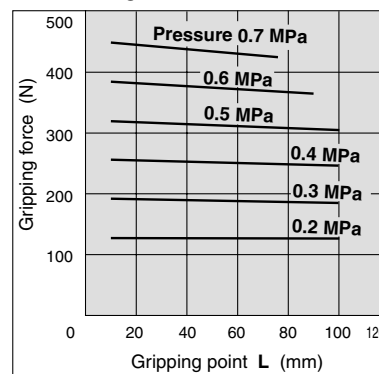
##### MHZ2-25D/MHZA2-25D



##### MHZ2-32D



##### MHZ2-40D

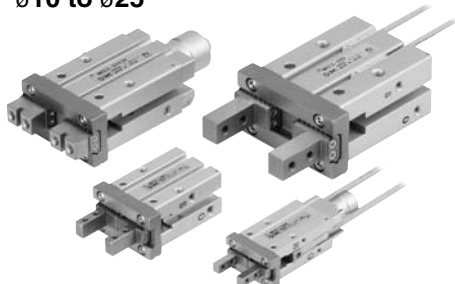


# Series MHZ2

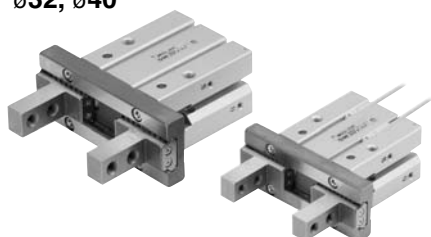
ø6



ø10 to ø25

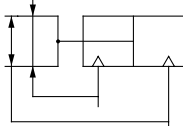


ø32, ø40

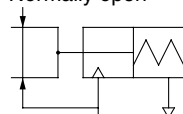


## JIS Symbol

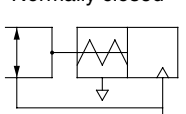
Double acting



Single acting type, Normally open



Single acting type, Normally closed



Refer to pages 436 to 440 for the specifications with auto switch.

- Auto switch installation examples and mounting positions
- Auto switch hysteresis
- Auto switch mounting
- Protrusion of auto switch from edge of body



## Made to Order

(Refer to pages 683 to 713 for details.)

| Symbol | Specifications/Description         |
|--------|------------------------------------|
| -X4    | Heat resistance (100°C)            |
| -X5    | Fluororubber seal                  |
| -X7    | Closing direction spring assist    |
| -X12   | Opening direction spring assist    |
| -X46   | With needle                        |
| -X50   | Without magnet                     |
| -X51   | MHQ(G)2-compliant finger flat type |
| -X53   | EPDM seal/Fluorine grease          |
| -X56   | Axial ported type                  |
| -X63   | Fluorine grease                    |
| -X79   | Grease for food                    |

## Specifications

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

Note) Refer to pages 761 to 809 for further information on auto switches.

\* Use the gripper with dust cover when used in a place where there may be dust.

## Model

| Action        |                 | Model       | Bore size (mm) | Gripping force <sup>Note 1)</sup>                |          | Opening/<br>Closing stroke<br>(Both sides) (mm) | <sup>Note 2)</sup><br>Mass (g) |
|---------------|-----------------|-------------|----------------|--------------------------------------------------|----------|-------------------------------------------------|--------------------------------|
|               |                 |             |                | Gripping force per finger<br>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) Values excluding mass of auto switch.

## Option

### ●Body Option/End Boss Type

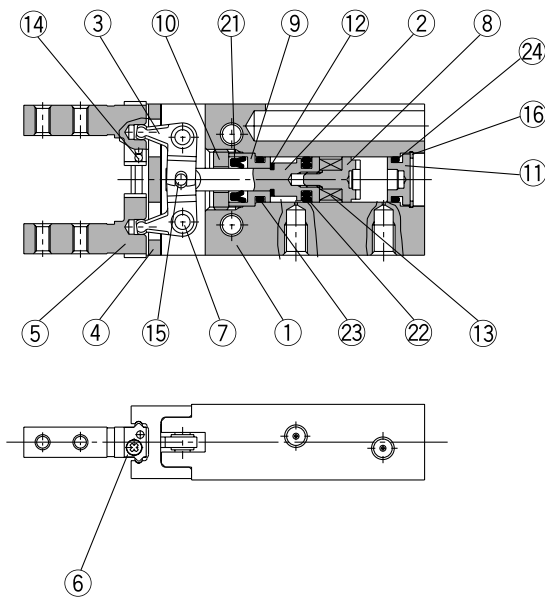
| Symbol | Piping port location | Type of piping port |                                              |          |         |         |         | Applicable model |               |
|--------|----------------------|---------------------|----------------------------------------------|----------|---------|---------|---------|------------------|---------------|
|        |                      | 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 pages 412 and 413.

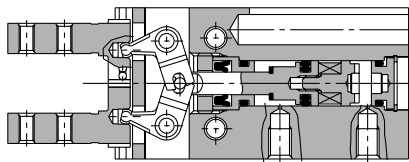
# Series MHZ2

## Construction: MHZ2-6□

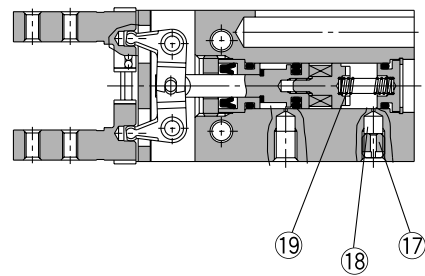
### Double acting/With fingers open



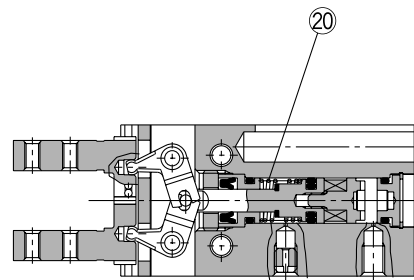
### Double acting/With fingers closed



### 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 | Nitriding                 |
| 8   | Magnet holder  | Stainless steel |                           |
| 9   | Holder         | Brass           | Electroless nicked plated |
| 10  | Holder lock    | Stainless steel |                           |
| 11  | Cap            | Aluminum alloy  | Clear anodized            |
| 12  | Bumper         | Urethane rubber |                           |
| 13  | Magnet         | —               | Nickel plated             |

### Component Parts

| No. | Description           | Material                         | Note                      |
|-----|-----------------------|----------------------------------|---------------------------|
| 14  | Steel balls           | High carbon chrome bearing steel |                           |
| 15  | Needle roller         | High carbon chrome bearing steel |                           |
| 16  | Type C retaining 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              |
|-----------------|-----------------------------------------------------------------|-------------------------|
| Finger assembly | Please contact SMC to replace the seal kit and finger assembly. |                         |
| Piston assembly | MHZ2-6D□                                                        | MHZ-A0603 ②⑧⑨⑫⑬⑮⑰⑲⑳㉑㉒㉓  |
|                 | MHZ2-6S□                                                        |                         |
|                 | MHZ2-6C□                                                        | MHZ-A0603C ②⑧⑨⑫⑬⑮⑰⑲⑳㉑㉒㉓ |

Replacement part/Grease pack part no.: GR-S-005 (5 g)