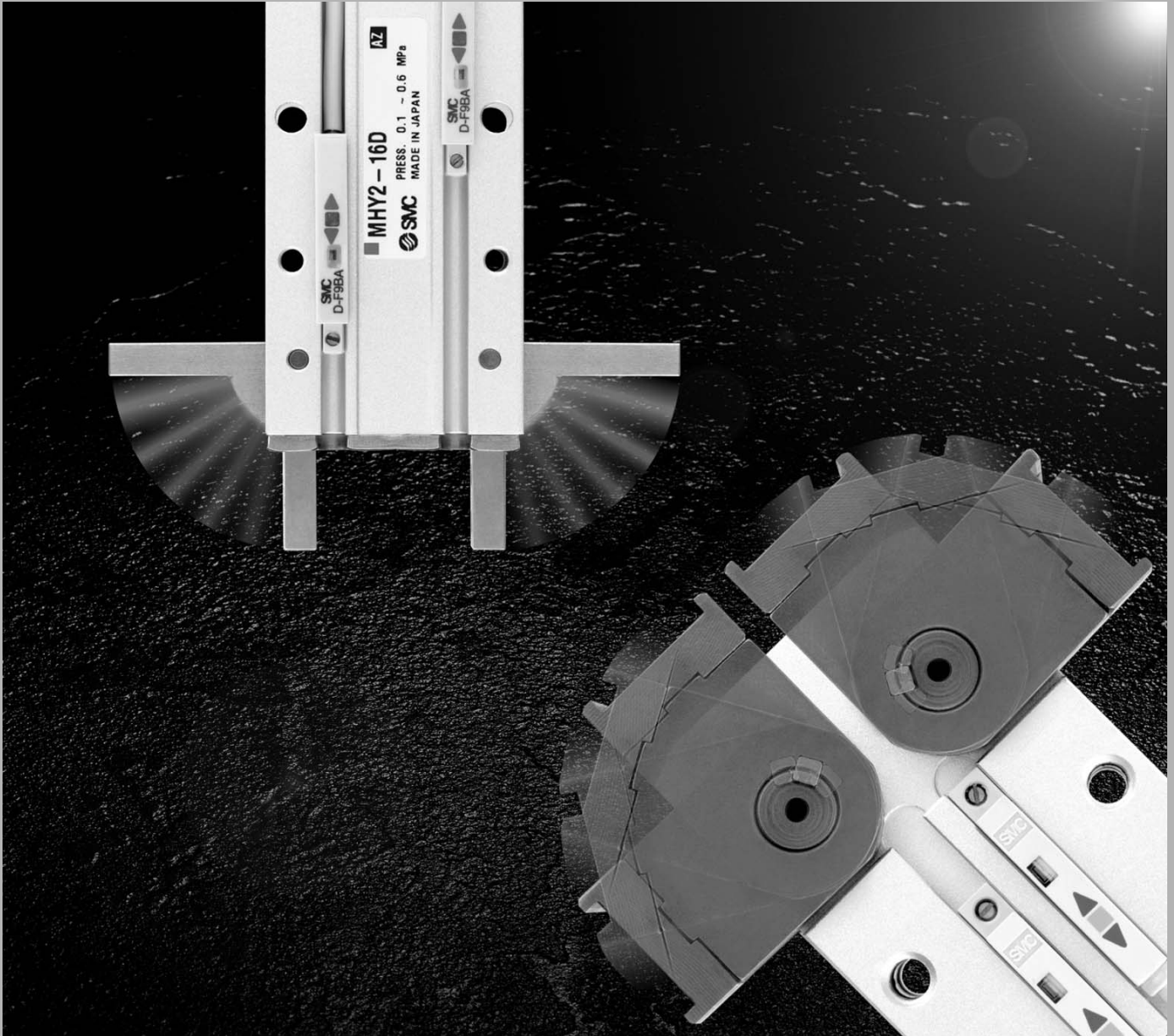


# 180° Angular Style Air Gripper

Cam Style

Rack & Pinion Style

## Series *MHY2/MHW2*



MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

D-

20-

# 180° Angular Style Air Gripper

# 180° Angular Style Air Gripper Series *MHY2/MHW2*

Cam Style      Rack & Pinion Style

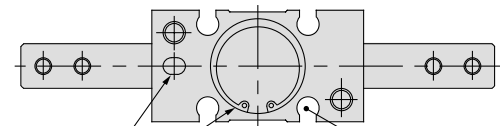
## Series *MHY2/MHW2*

### Series *MHY/Cam Style*

Light and compact size in small bore sizes

Model	Bore size (mm)	Gripping moment* (N-m)	Over length L (mm)	Weight (g)
MHY2-10D	10	0.16	71	70
MHY2-16D	16	0.54	84	150
MHY2-20D	20	1.10	106	320
MHY2-25D	25	2.28	131	560

\* At the pressure of 0.5 MPa



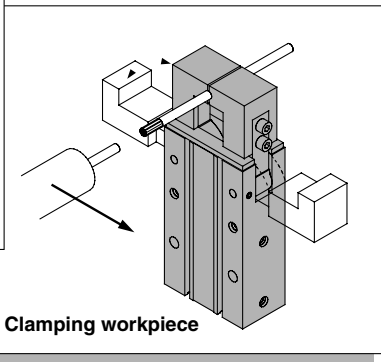
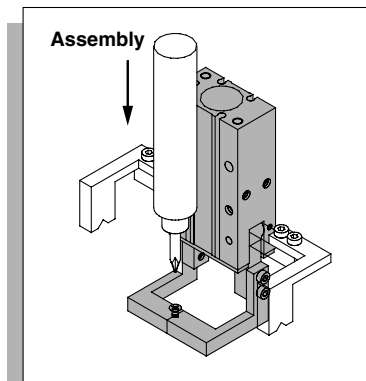
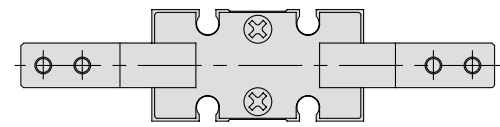
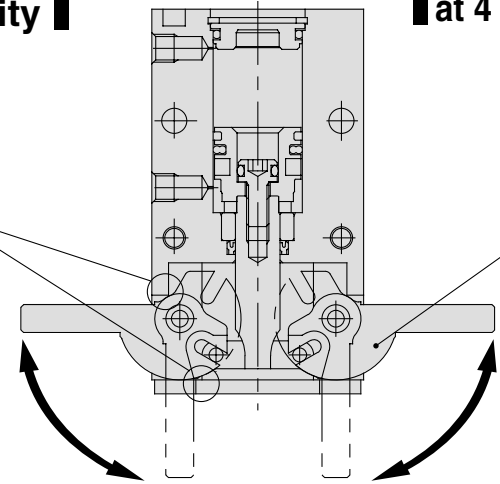
**Improved mounting repeatability**

**Auto switch mounting at 4 locations**

**Resistance to dusty environments**

Reduced opening sizes helps prevent foreign objects from entering.

**Stainless steel fingers are standard.**

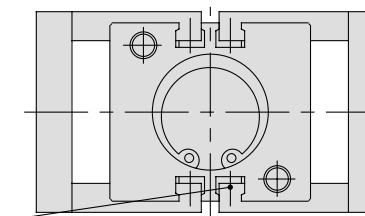


### Series Variations

	Bore size (mm)						Applicable auto switch	Page
	10	16	20	25	32	40		
Cam style Series <i>MHY</i>	●	●	●	●			Solid state switch D-M9/F9□W type	12-10-8 to 12-10-15
Rack & Pinion style Series <i>MHW</i>			●	●	●	●	Solid state switch D-Y5/Y6 type D-Y7 type Y7□W type	12-10-16 to 12-10-24

### Series *MHW/Rack & Pinion Style*

Unique seal design allows shorter total length construction and constant Gripping force when opening and closing fingers. (PAT.PEND)



Model	Bore size (mm)	Gripping moment* (N-m)	Over length L (mm)	Weight (g)
MHW2-20D	20	0.30	68	300
MHW2-25D	25	0.73	78	510
MHW2-32D	32	1.61	93.5	905
MHW2-40D	40	3.70	117.5	2135
MHW2-50D	50	8.27	154	5100

\* At the pressure of 0.5 MPa

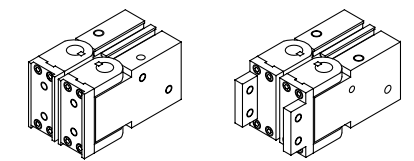
**Auto switch mounting at 4 locations**

**Key connection is ideal for impact resistance.**

Key connection between finger and shaft prevents finger angle slippage during impact.

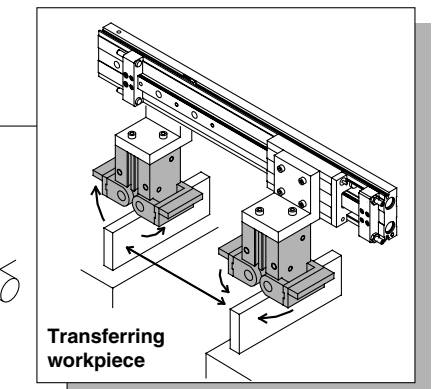
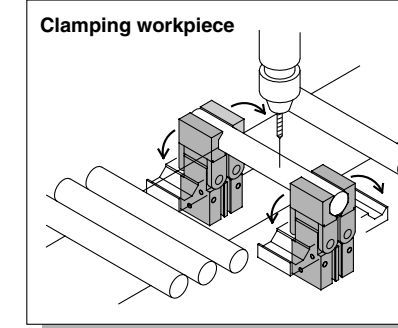
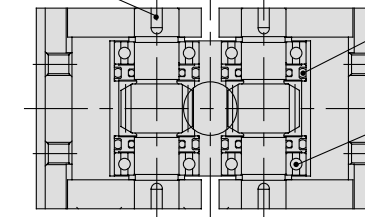
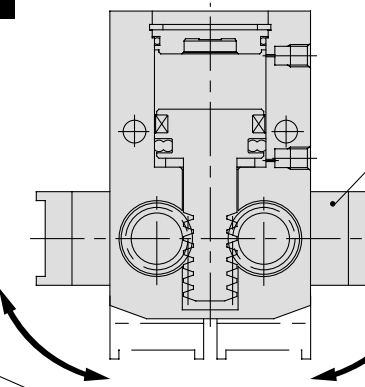
**Two finger styles available.**

Flat finger type      Right angle finger type



**Dustproof construction**  
Seal arrangement protects gripper from harsh dusty environments.

**Bearings are standard.**



### INDEX

Page

12-10-8 to 12-10-15

12-10-16 to 12-10-24

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

# Series MHY2/MHW2 Model Selection

## Model Selection

### Selection Procedure



### Step 1 Confirmation of Gripping Force



#### Example

Workpiece weight: 0.05 kg

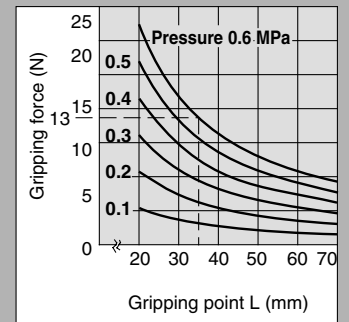
Guidelines for the selection of the gripper with respect to component weight

- Although conditions differ according to the workpiece shape and the coefficient of friction between the attachments and the workpiece, select a model that can provide a gripping force of 10 to 20 times the workpiece weight, or more.
- If high acceleration, deceleration or impact forces are encountered during motion, a further margin of safety should be considered.

Example) For setting the gripping force to be at least 20 times the work weight;

Required gripping force  
 $= 0.05 \text{ kg} \times 20 \times 9.8 \text{ m/s}^2 = 10 \text{ N min.}$

#### MHY2-16D



- When MHY2-16D is selected, the gripping force is determined to be 13 N according to the gripping point distance (L = 35 mm) and the pressure (0.6 MPa).
- The gripping force is 26 times the workpiece weight and therefore satisfies a gripping force setting value of 20 times or more.

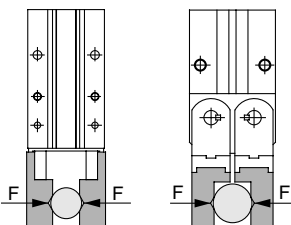
Gripping point L = 35 mm

Operating pressure: 0.6 MPa

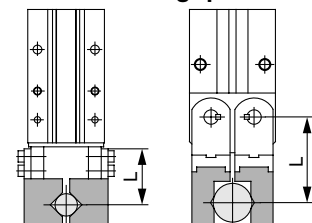
## Effective Gripping Force

### Series MHY2/MHW2 Double Acting

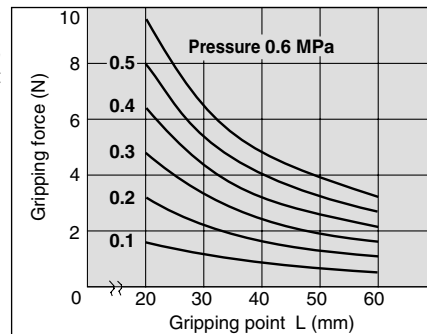
- Indication of effective gripping force  
 The effective gripping force shown in the graphs to the right is expressed as F, which is the impellent force of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



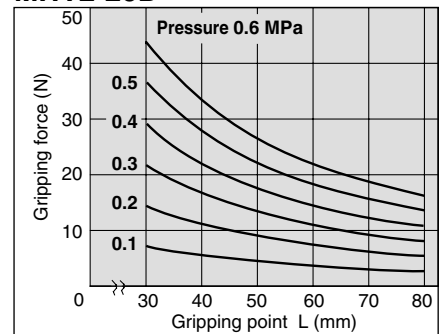
#### External grip



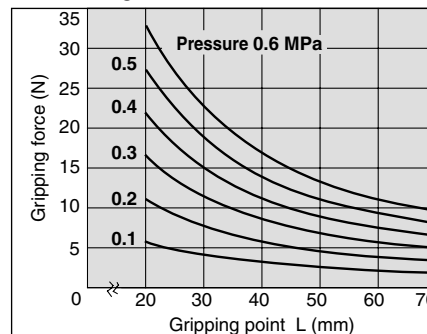
#### MHY2-10D



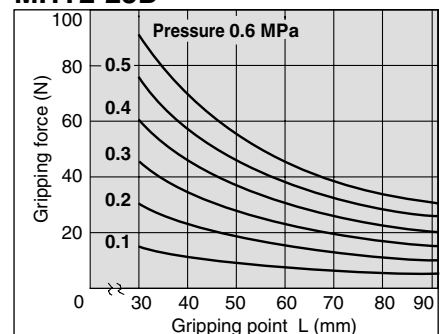
#### MHY2-20D



#### MHY2-16D

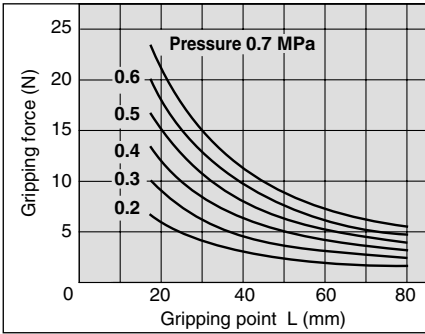


#### MHY2-25D

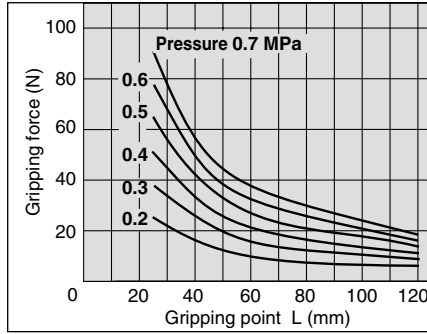


# 180° Angular Style Air Gripper Series *MHY2/MHW2*

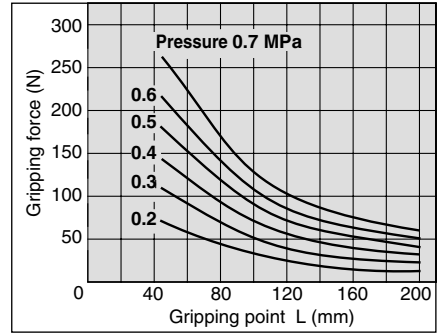
**MHW2-20D**



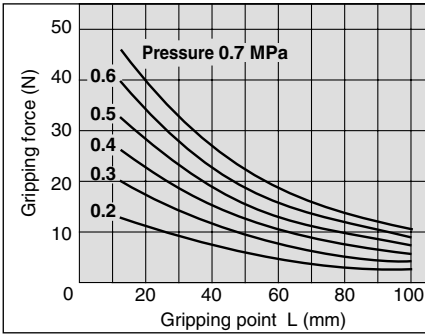
**MHW2-32D**



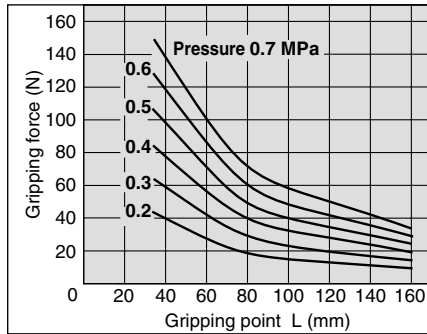
**MHW2-50D**



**MHW2-25D**

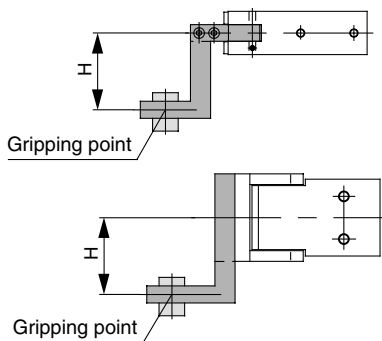


**MHW2-40D**

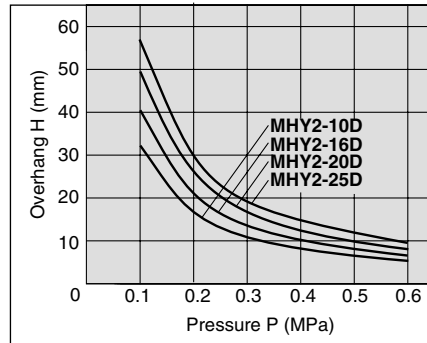


- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY**
- MHW**
- MRHQ
- Misc.
- D-
- 20-

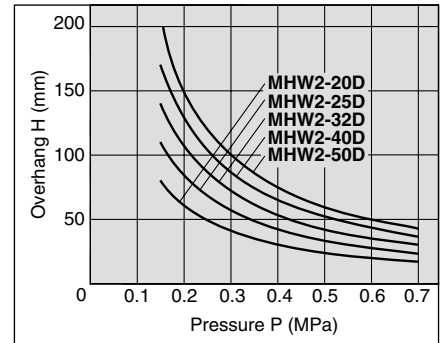
## Step 2 Confirmation of Gripping Point



**MHY**



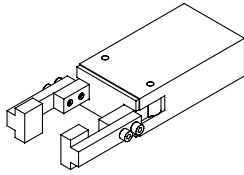
**MHW**



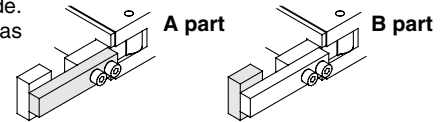
- Workpiece should be held at a point within the range of overhanging distance (H) for a given pressure indicated in the tables on the right.
- When the workpiece is held at a point outside of the recommended range for a given pressure, it may cause adverse effect on the product life.

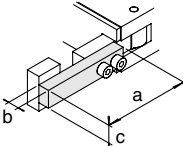
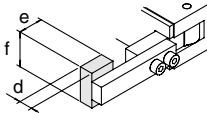
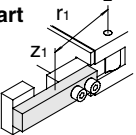
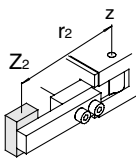
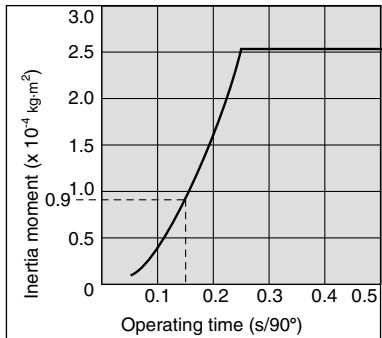
# Series *MHY2/MHW2* Model Selection

## Step 3 Confirmation of Moment of Inertia of Attachments



Confirm the moment of inertia for the attachment at one side.  
Calculate the moment of inertia for A and B separately as shown in the figures on the right.



Procedure	Calculation	Calculation example
<p>1. Check the operating conditions, dimensions of attachment, etc.</p>	<p><b>A part</b></p>  <p><b>B part</b></p> 	<p>Operating model: MHY2-16D Opening time: 0.15 s a = 40 (mm) b = 7 (mm) c = 8 (mm) d = 5 (mm) e = 10 (mm) f = 12 (mm)</p>
<p>2. Calculate the moment of inertia of attachment.</p>	<p><b>A part</b></p>  <p>Calculation of weight <math>m_1 = a \times b \times c \times \text{Specific gravity}</math></p> <p>Moment of inertia around Z<sub>1</sub> axis <math>I_{Z1} = \{m_1(a^2 + b^2)/12\} \times 10^{-6}</math></p> <p>Moment of inertia around Z axis <math>I_A = I_{Z1} + m_1 r_1^2 \times 10^{-6}</math></p> <p><b>B part</b></p>  <p>Calculation of weight <math>m_2 = d \times e \times f \times \text{Specific gravity}</math></p> <p>Moment of inertia around Z<sub>2</sub> axis <math>I_{Z2} = \{m_2(d^2 + e^2)/12\} \times 10^{-6}</math></p> <p>Moment of inertia around Z axis <math>I_B = I_{Z2} + m_2 r_2^2 \times 10^{-6}</math></p> <p>Total moment of inertia <math>I = I_A + I_B</math> (* Constant for unit conversion)</p>	<p>Material of attachment: Aluminum alloy (Specific gravity = 2.7) <math>r_2 = 2.7</math>)</p> <p><math>m_1 = 40 \times 7 \times 8 \times 2.7 \times 10^{-6}</math> <math>= 0.006</math> (kg)</p> <p><math>I_{Z1} = \{0.006 \times (40^2 + 7^2)/12\} \times 10^{-6}</math> <math>= 0.8 \times 10^{-6}</math> (kg·m<sup>2</sup>)</p> <p><math>I_A = 0.8 \times 10^{-6} + 0.006 \times 37^2 \times 10^{-6}</math> <math>= 9.0 \times 10^{-6}</math> (kg·m<sup>2</sup>)</p> <p><math>r_2 = 47</math>(mm)</p> <p><math>m_2 = 5 \times 10 \times 12 \times 2.7 \times 10^{-6}</math> <math>= 0.002</math> (kg)</p> <p><math>I_{Z2} = \{0.002 \times (5^2 + 10^2)/12\} \times 10^{-6}</math> <math>= 0.02 \times 10^{-6}</math> (kg·m<sup>2</sup>)</p> <p><math>I_B = 0.02 \times 10^{-6} + 0.002 \times 47^2 \times 10^{-6}</math> <math>= 4.4 \times 10^{-6}</math> (kg·m<sup>2</sup>)</p> <p><math>I = 9.0 \times 10^{-6} + 4.4 \times 10^{-6}</math> <math>= 13.4 \times 10^{-6} = 0.13 \times 10^{-4}</math> (kg·m<sup>2</sup>)</p>
<p>3. Determine the allowable moment of inertia from the graph.</p>	<p><b>MHY2-16D</b></p> 	<p><math>0.13 \times 10^{-4}</math> (kg·m<sup>2</sup>) &lt; <math>0.9 \times 10^{-4}</math> (kg·m<sup>2</sup>) Possible to use this model MHY2-16D completely</p>
<p>4. Confirm the moment of inertia of one attachment is within the allowable range.</p>	<p>Moment of inertia of attachment &lt; Allowable moment of inertia</p>	<p><math>0.13 \times 10^{-4}</math> (kg·m<sup>2</sup>) &lt; <math>0.9 \times 10^{-4}</math> (kg·m<sup>2</sup>) Possible to use this model MHY2-16D completely.</p>

# 180° Angular Style Air Gripper Series *MHY2/MHW2*

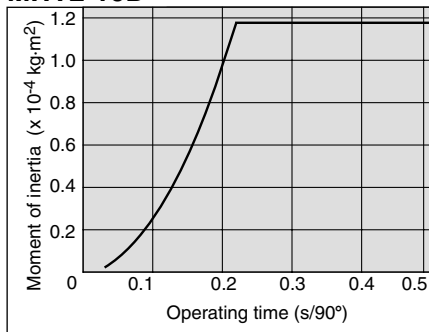
## Symbol

Symbol	Definition	Unit
Z	Finger rotation axis	—
Z1	Axis on the center gravity of A part of attachment and parallel to Z	—
Z2	Axis on the center gravity of B part of attachment and parallel to Z	—
I	Total moment of inertia for attachment	kg·m <sup>2</sup>
Iz1	Inertia moment around the Z1 axis of A part of attachment	kg·m <sup>2</sup>
Iz2	Inertia moment around the Z2 axis of B part of attachment	kg·m <sup>2</sup>

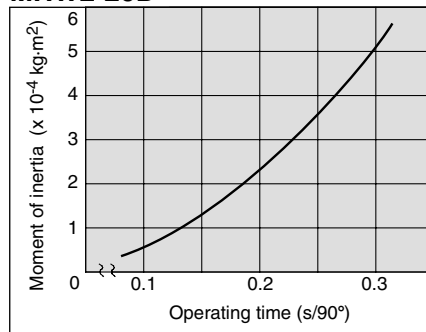
Symbol	Definition	Unit
IA	Moment of inertia around the Z axis of A part of attachment	kg·m <sup>2</sup>
IB	Moment of inertia around the Z axis of B part of attachment	kg·m <sup>2</sup>
m1	Weight of A part of attachment	kg
m2	Weight of B part of attachment	kg
r1	Distance between Z and Z1 axis	mm
r2	Distance between Z and Z2 axis	mm

## Allowable Range of Inertia Moment of Attachment

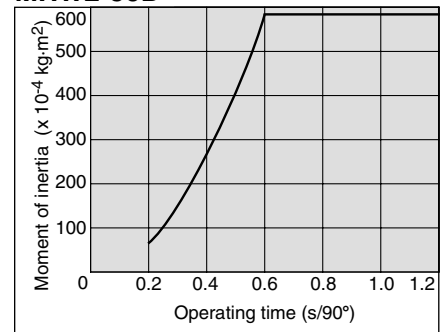
**MHY2-10D**



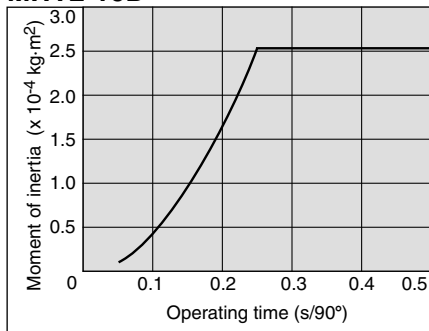
**MHW2-20D**



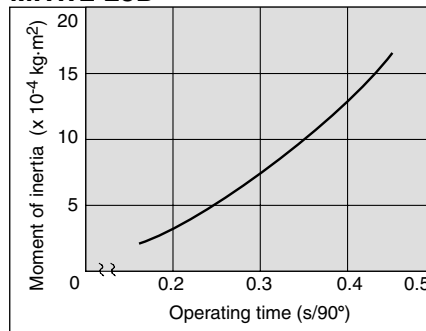
**MHW2-50D**



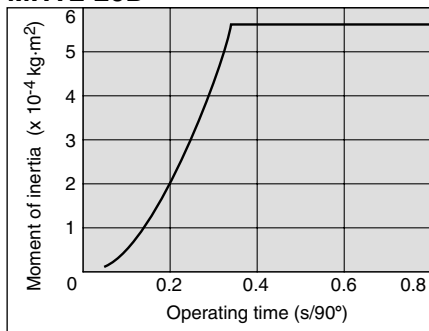
**MHY2-16D**



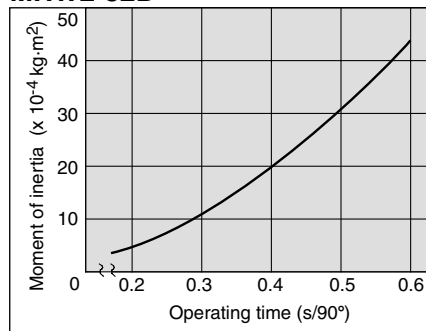
**MHW2-25D**



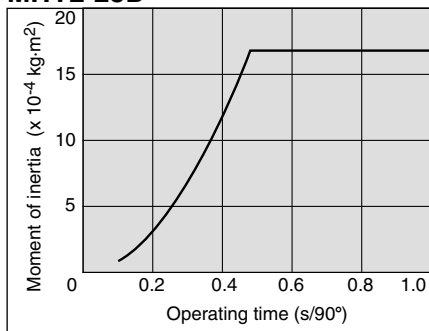
**MHY2-20D**



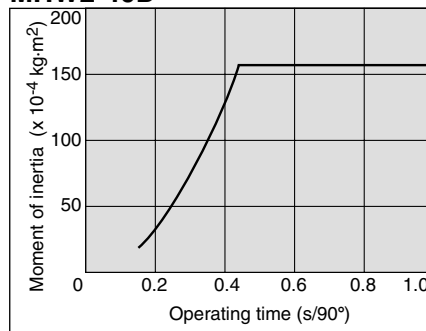
**MHW2-32D**



**MHY2-25D**



**MHW2-40D**



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

# 180° Angular Style Air Gripper Cam Style

# Series *MHY2*

Size: 10, 16, 20, 25

## How to Order

**MHY 2-16 D 2-F9BW S**

Number of fingers

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

Bore size

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

Action

D	Double acting
---	---------------

Number of auto switches

Nil	2 pcs.
S	1 pc.

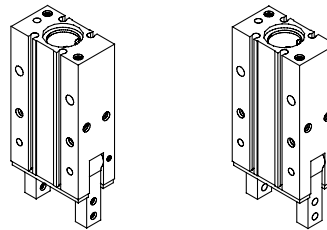
Auto switch

Nil	Without auto switch
-----	---------------------

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

Finger option

Nil: Standard tapped 2: Through-holes in mounting opening/closing direction



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

PLC: Programmable Logic Controller

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)*			Flexible lead wire (-61)	Pre-wire connector	Applicable load	
					DC	AC	Electrical entry		0.5 (Nil)	3 (L)	5 (Z)				
							Perpendicular	In-line							
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	—	M9NV	M9N	●	●	○	Standard	○	IC circuit	
				3-wire (PNP)					5 V	●	●				○
				2-wire					12 V	●	●				○
				3-wire (NPN)					5 V	●	●				○
	Diagnosis (2-color indication)			3-wire (PNP)	12 V	●	●	○	○	○	○	IC circuit			
				2-wire	12 V	●	●	○	○	○	○				
				F9NWV	F9NW	○	○	○	○	○					
				F9PWV	F9PW	○	○	○	○	○					
				2-wire	12 V		F9BWV	F9BW	●	●	○	○	○	○	—

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

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

Note) Take note of hysteresis with 2-color indication type switches. Refer to page 12-10-15 for detailed auto switch specifications.



Refer to page 12-13-25 for auto switch specifications.

# 180° Angular Style Air Gripper Cam Style Series **MHY2**



## Specifications

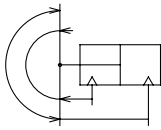
Fluid	Air
Operating pressure	0.1 to 0.6 MPa
Ambient and fluid temperature	-10 to 60°C
Repeatability	±0.2 mm
Max. operating frequency	60 c.p.m.
Lubrication	Not required
Action	Double acting
Auto switch (Option)	Solid state switch (3-wire, 2-wire)



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

### JIS Symbol

Double acting



## Model

Model	Bore size (mm)	Effective gripping force <sup>(1)</sup> (N·m)	Opening/Closing angle (Both sides)		Weight <sup>(2)</sup> (g)
			Opening side	Closing side	
<b>MHY2-10D</b>	10	0.16	180°	-3°	70
<b>MHY2-16D</b>	16	0.54			150
<b>MHY2-20D</b>	20	1.10			320
<b>MHY2-25D</b>	25	2.28			560



Note 1) At the pressure of 0.5 MPa

Note 2) Except auto switch



- Refer to "How to Select the Applicable Model" on page 12-10-4.
- Refer to pages 12-10-4 to 12-10-5 for the details on effective holding force and allowable overhanging distance.

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

**MHY**

MHW

MRHQ

Misc.

D-

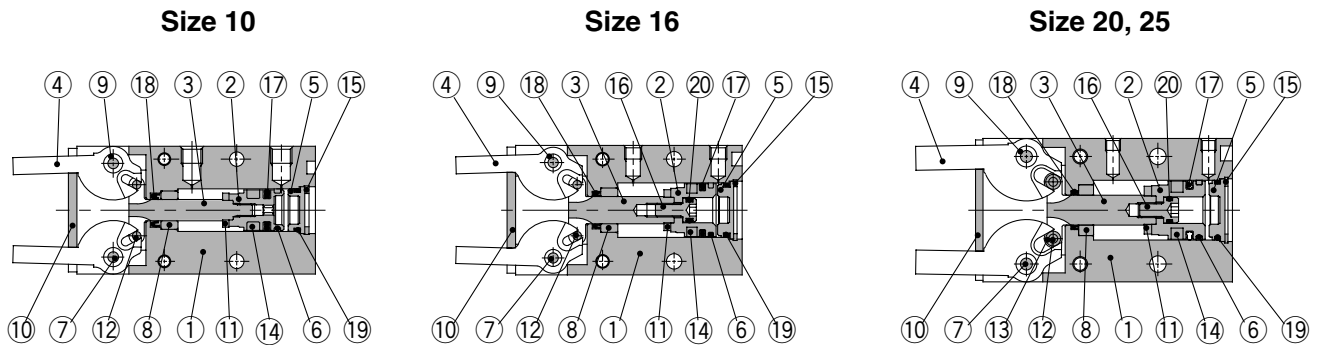
20-



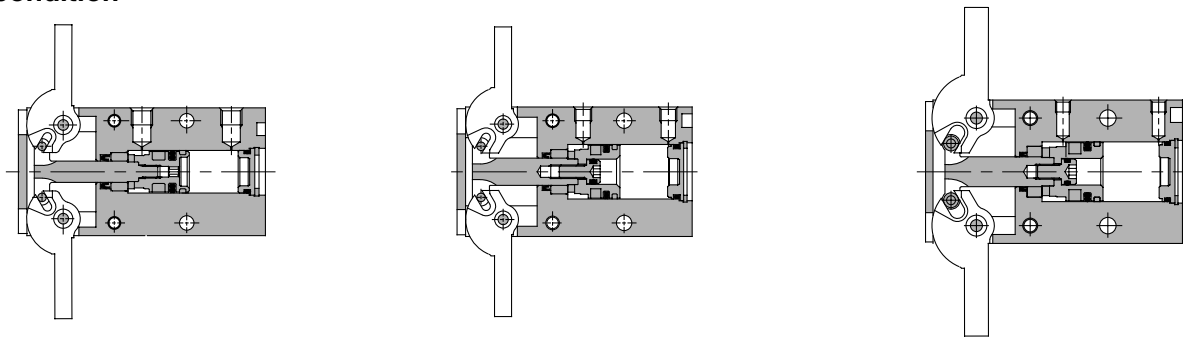
# Series MHY2

## Construction

### Closed condition



### Open condition



## Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Piston	ø10: Stainless steel ø16 to 25: Aluminum alloy	ø16 to 25: Chromated
③	Joint	Stainless steel	Heat treated
④	Finger	Stainless steel	Heat treated
⑤	Cap	Resin	
⑥	Wear ring	Resin	Nitrided
⑦	Shaft	Stainless steel	
⑧	Bushing A	Sintered alloy steel	

No.	Description	Material	Note
⑨	Bushing B	Sintered alloy steel	
⑩	End plate	Stainless steel	
⑪	Bumper	Urethane rubber	
⑫	Needle roller	High carbon chrome bearing steel	
⑬	Joint roller	Carbon steel	Nitrided
⑭	Rubber magnet	Synthetic rubber	
⑮	Type C snap ring	Carbon steel	Nickel plated
⑯	Piston bolt	Stainless steel	

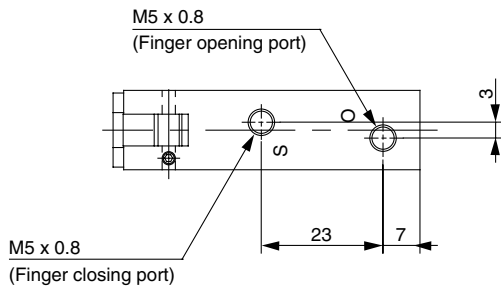
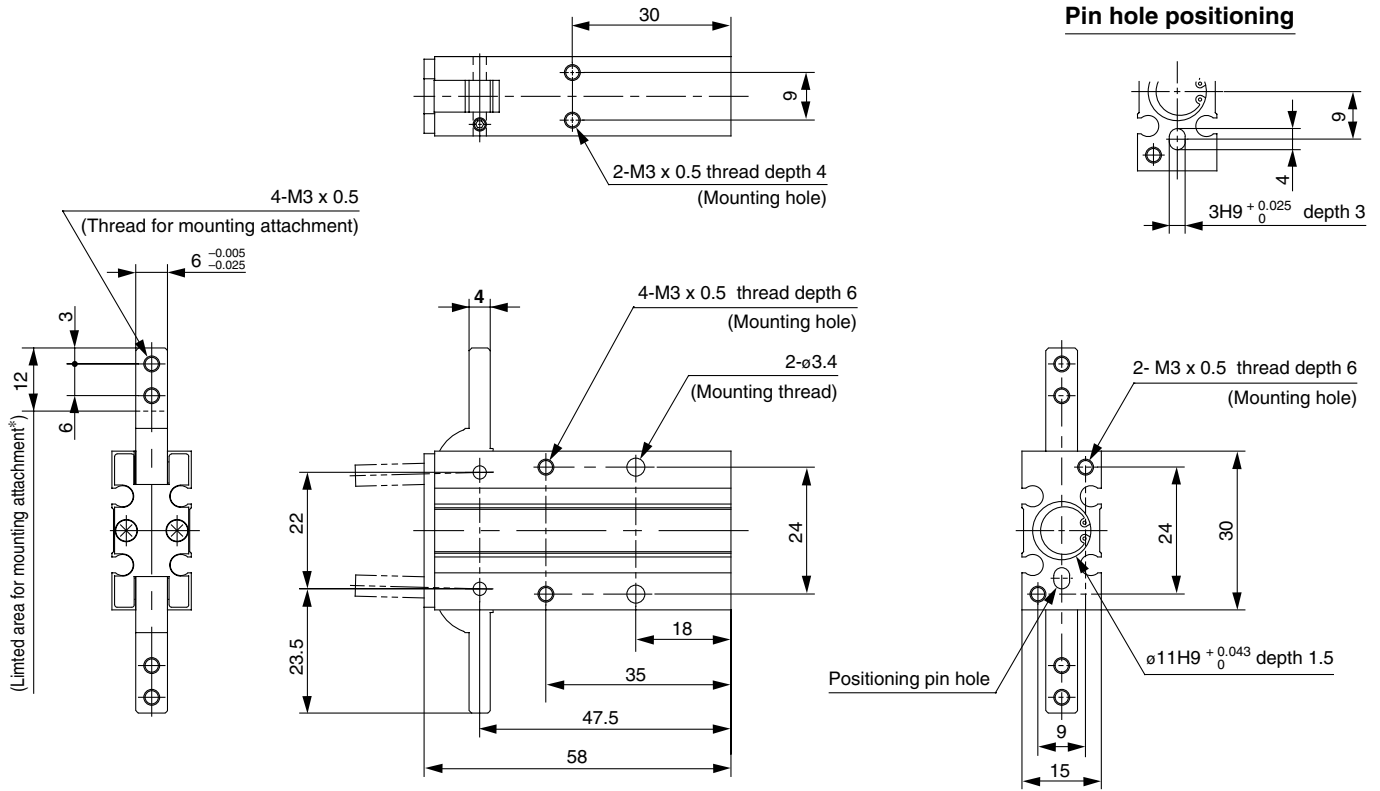
## Replacement Parts

Description		MHY2-10D	MHY2-16D	MHY2-20D	MHY2-25D	Main parts
Seal kit		MHY10-PS	MHY16-PS	MHY20-PS	MHY25-PS	<ø10> ⑰⑱⑲⑲⑲ <ø16, ø20, ø25> ⑰⑱⑲⑲⑲
Finger assembly	MHY2-□D	MHY-A1001	MHY-A1601	MHY-A2001	MHY-A2501	④⑨
	MHY2-□D2	MHY-A1001-2	MHY-A1601-2	MHY-A2001-2	MHY-A2501-2	
Joint assembly		MHY-A1002	MHY-A1602	MHY-A2002	MHY-A2502	<ø10, ø16> ③⑫ <ø20, ø25> ③⑫⑬

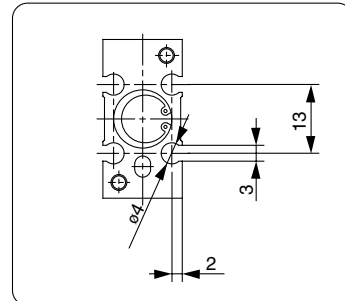
\* Order 1 piece of finger assembly per one unit.

**Dimensions**

**MHY2-10D**

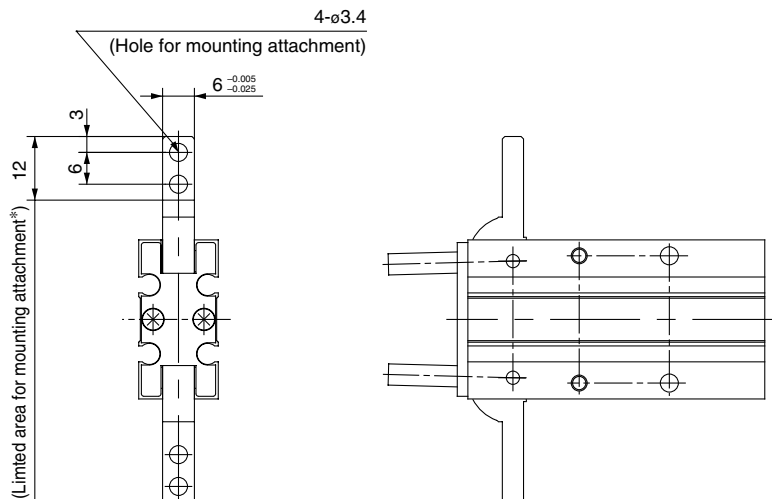


**Auto Switch Mounting  
Groove Dimensions**



**MHY2-10D2**

**Opening/Closing direction  
through-hole type**



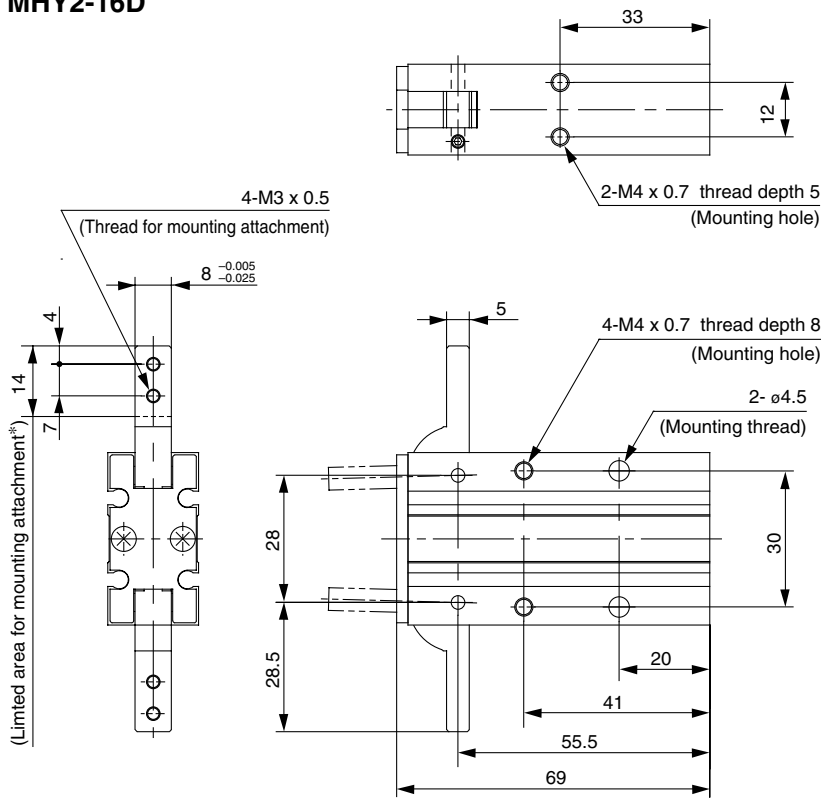
\* Do not extend the attachment from limited area for mounting to avoid interference with the attachment or main body.

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

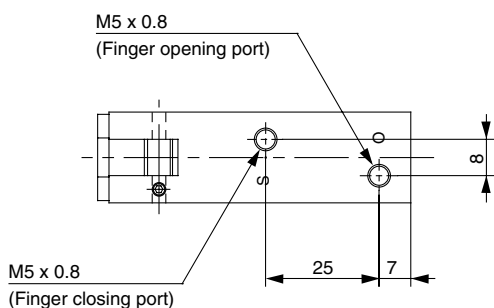
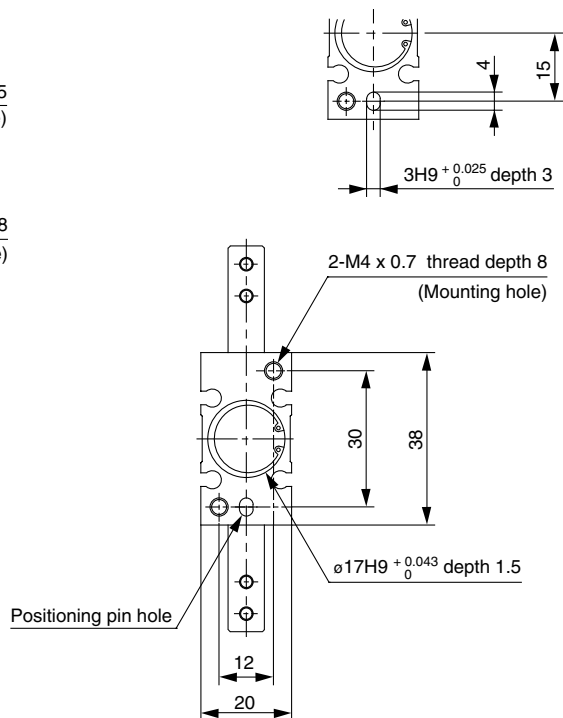
# Series MHY2

## Dimensions

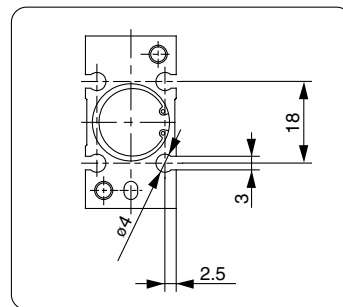
### MHY2-16D



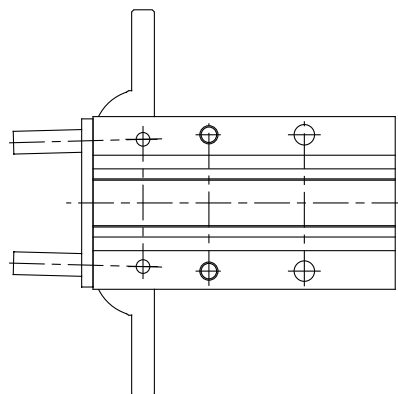
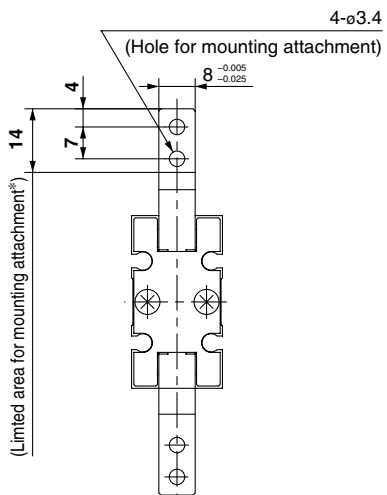
### Pin hole positioning



### Auto Switch Mounting Groove Dimensions

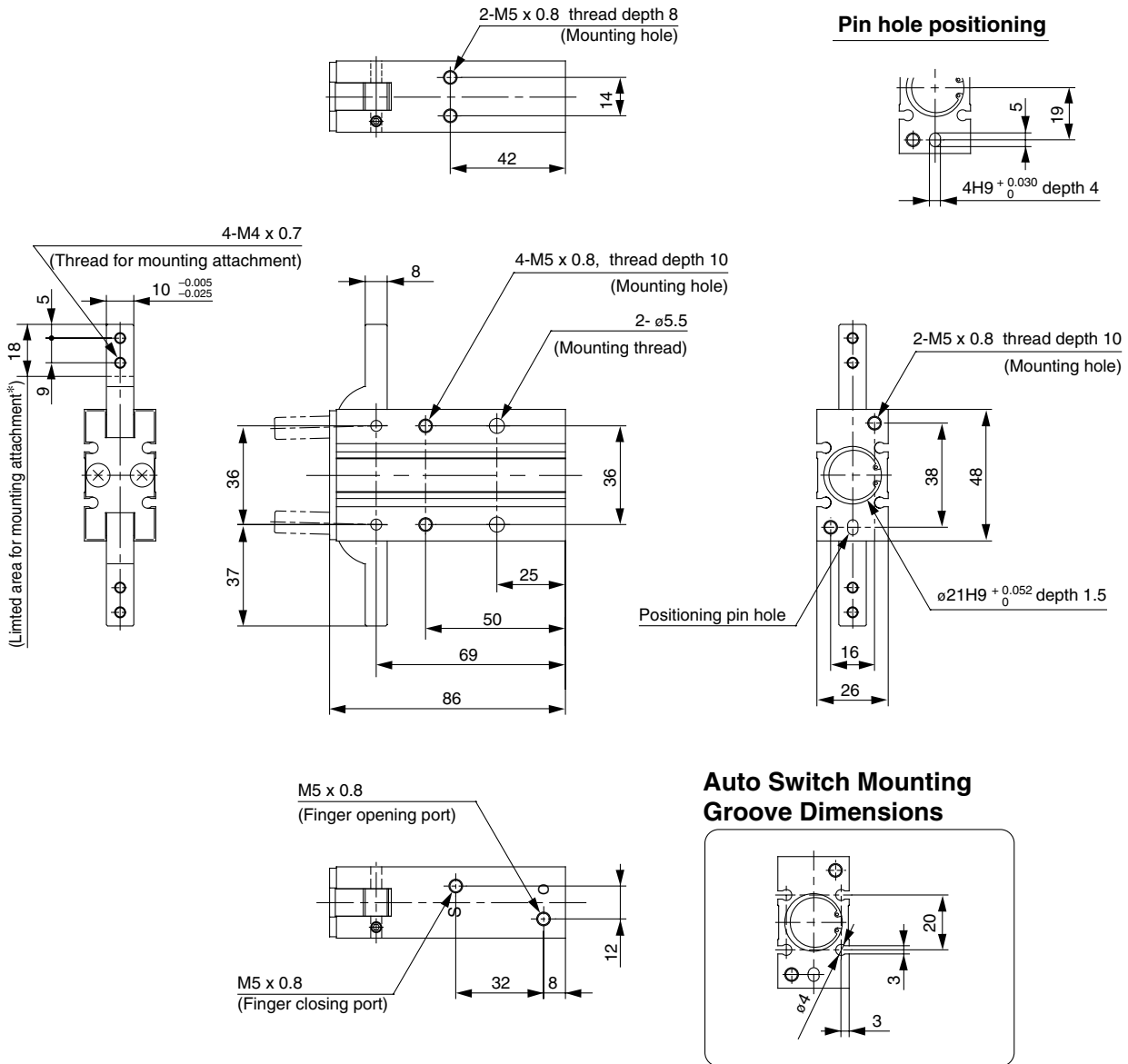


### MHY2-16D2 Opening/Closing direction through-hole type



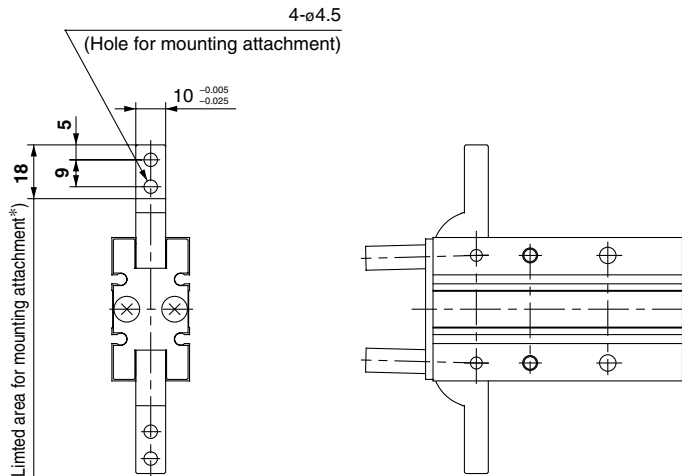
\* Do not extend the attachment from limited area for mounting to avoid interference with the attachment or main body.

**MHY2-20D**



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

**MHY2-20D2**  
**Opening/Closing direction through-hole type**

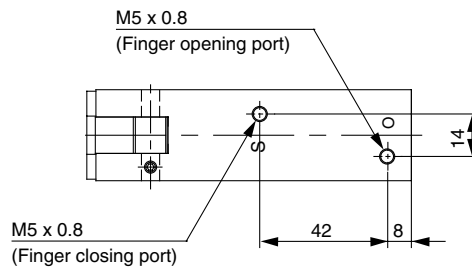
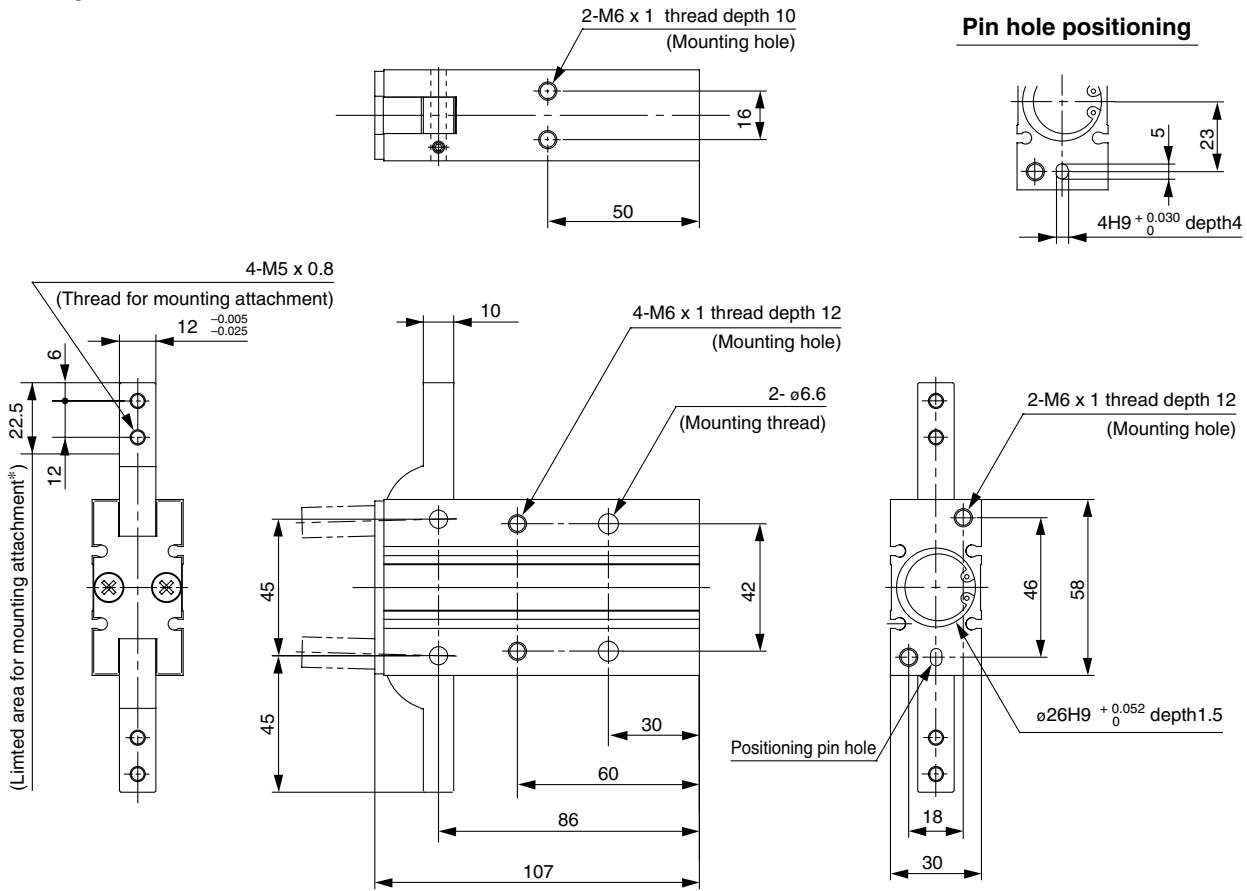


\* Do not extend the attachment from limited area for mounting to avoid interference with the attachment or main body.

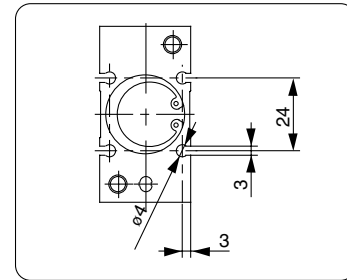
# Series MHY2

## Dimensions

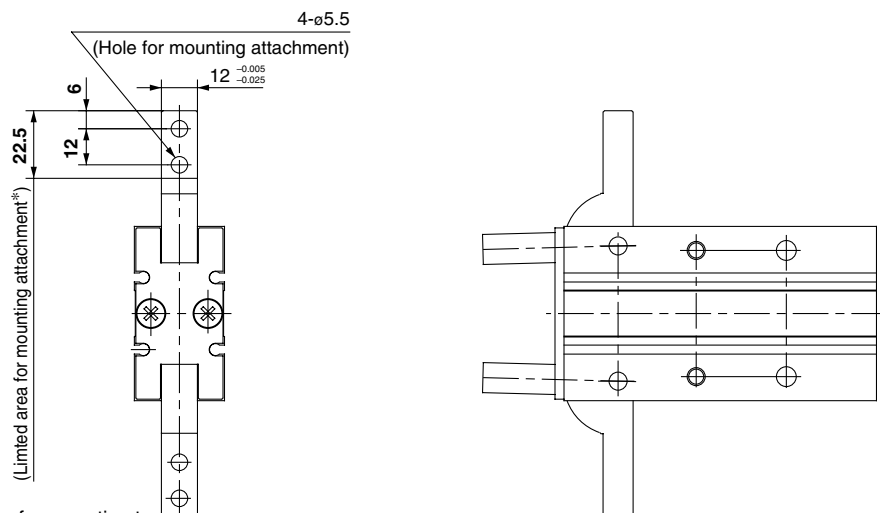
### MHY2-25D



### Auto Switch Mounting Groove Dimensions



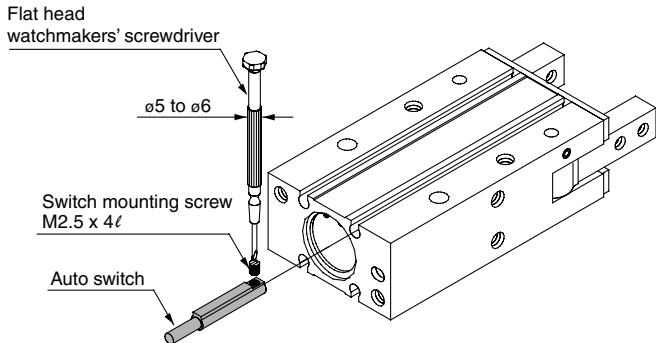
### MHY2-25D2 Opening/Closing direction through-hole type



\* Do not extend the attachment from limited area for mounting to avoid interference with the attachment or main body.

### 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.

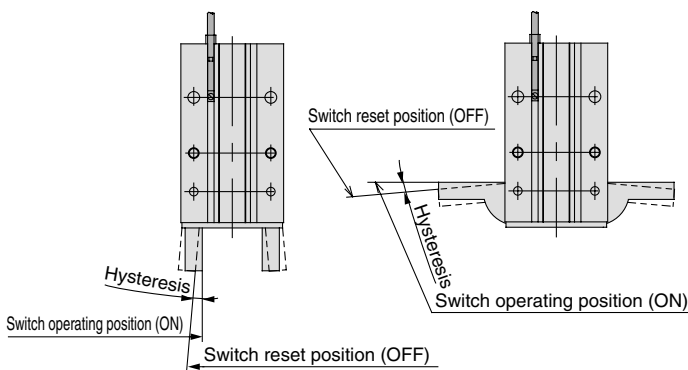


Note) Use a watchmakers' screwdriver with a grip diameter of 5 to 6 mm to tighten the auto switch mounting screw. The tightening torque should be about 0.05 to 0.1 N·m. As a rule, it should be turned about 90° beyond the point at which tightening can be felt.

\* Refer to the page 12-13-6 for the details on "Auto Switches Connection and Example".

### Auto Switch Hysteresis

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

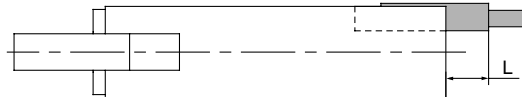


		D-M9□(V)	D-F9□W(V)	
			Red light at ON	Green light at ON
<b>MHY2-10D</b>	Finger fully closed	2°	2°	4°
	Finger fully open	4°	4°	7°
<b>MHY2-16D</b>	Finger fully closed	2°	2°	4°
	Finger fully open	4°	3°	6°
<b>MHY2-20D</b>	Finger fully closed	2°	2°	3°
	Finger fully open	3°	3°	5°
<b>MHY2-25D</b>	Finger fully closed	2°	1°	3°
	Finger fully open	3°	2°	5°

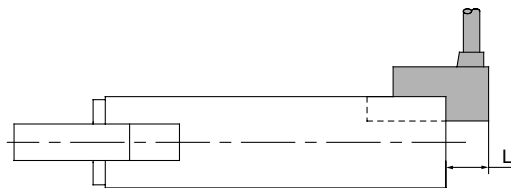
### Protrusion of Auto Switch from Edge of Body

The projection of an auto switch from the edge of the body is shown in the table below. Use the table as a guideline for mounting.

Note) 2-color indicator type and perpendicular entry type protrude in the direction of the lead wire entry.



When auto switch D-M9□ is used



When auto switch D-M9□V is used

### Max. Protrusion of Auto Switch from Edge of Body (L) (mm)

Auto switch model		Protrusion	
		In-line	Perpendicular
Air gripper model		D-M9□ D-F9□W	D-M9□V D-F9□WV
<b>MHY2-10D</b>	O	—	—
	S	3	1
<b>MHY2-16D</b>	O	—	—
	S	3	1
<b>MHY2-20D</b>	O	—	—
	S	—	—
<b>MHY2-25D</b>	O	—	—
	S	—	—

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

**MHY**

MHW

MRHQ

Misc.

D-

20-



# 180° Angular Style Air Gripper Rack & Pinion Style

## Series *MHW2*

Size: 20, 25, 32, 40, 50

### How to Order

**MHW 2-20 D 1-Y7BW S**

**Number of fingers**

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

**Bore size**

20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm

**Action**

D	Double acting
---	---------------

**Number of auto switches**

Nil	2 pcs.
S	1 pc.

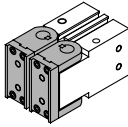
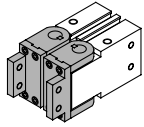
**Auto switch**

Nil	Without auto switch
-----	---------------------

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

**Finger option**

Nil: Flat type fingers (Standard)    1: Right angle type fingers tapped mounting

### 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	Pre-wire connector	Applicable load	
					DC	AC	Electrical entry		0.5 (Nil)	3 (L)	5 (Z)				
							Perpendicular	In-line							
Solid state switch		Grommet	Yes	24 V	5 V 12 V		Y69A	Y59A	●	●	○	Standard	○	IC circuit	Relay, PLC
							Y7PV	Y7P	●	●	○		○	IC circuit	
							Y69B	Y59B	●	●	○		○	—	
							Y7NWV	Y7NW	●	●	○		○	IC circuit	
							Y7PWV	Y7PW	●	●	○		○	IC circuit	
							Y7BWV	Y7BW	●	●	○		○	—	
	Diagnosis (2-color indication)														

\* Lead wire length symbols: 0.5 m ..... Nil (Example) Y59A  
 3 m ..... L (Example) Y59AL  
 5 m ..... Z (Example) Y59AZ

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

Note) Take note of hysteresis with 2-color indication type switches.  
 Refer to "Auto Switch Hysteresis" on page 12-10-24 when using the 2-color indication type D-Y7BAL.



Refer to page 12-13-25 for auto switch specifications.

# 180° Angular Style Air Gripper Rack & Pinion Style **Series MHW2**

## Specifications



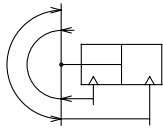
Fluid	Air
Operating pressure	0.15 to 0.7 MPa
Ambient and fluid temperature	-10 to 60°C
Repeatability	±0.2 mm
Max. operating frequency	ø20, 25: 60 c.p.m. ø32 to 50: 30 c.p.m.
Lubrication	Not required
Action	Double acting
Auto switch (Option) <sup>Note)</sup>	Solid state switch (3-wire, 2-wire)



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

### JIS Symbol

Double acting



## Model

Model	Bore size (mm)	Effective gripping force (N·m) <sup>(1)</sup>	Opening angle (Both sides)		Weight <sup>(2)</sup> (g)
			Opening	Closing	
MHW2-20D	20	0.30	180°	-5°	300
MHW2-25D	25	0.73		-6°	510
MHW2-32D	32	1.61		-5°	910
MHW2-40D	40	3.70		-5°	2140
MHW2-50D	50	8.27		-4°	5100

Note 1) At the pressure of 0.5 MPa

Note 2) Except auto switch



- Refer to "How to Select the Applicable Model" on page 12-10-4.
- Refer to pages 12-10-4 to 12-10-5 for the details on effective holding force and allowable overhanging distance.

## ⚠ Precautions

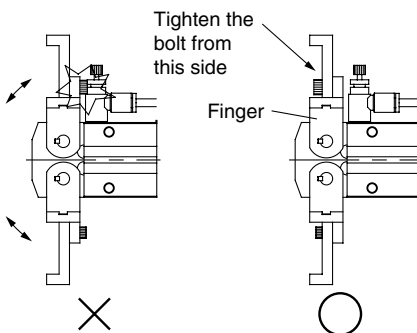
**Be sure to read before handling.**  
Refer to pages 12-15-3 to 12-15-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 12-1-4 to 12-1-6 for Precautions on every series.

## Mounting

MHW

### ⚠ Warning

When using right angle finger tap mounting type, monitor the interference of the bolt with the speed controller.



Bolt interferes with speed controller

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

MRHQ

Misc.

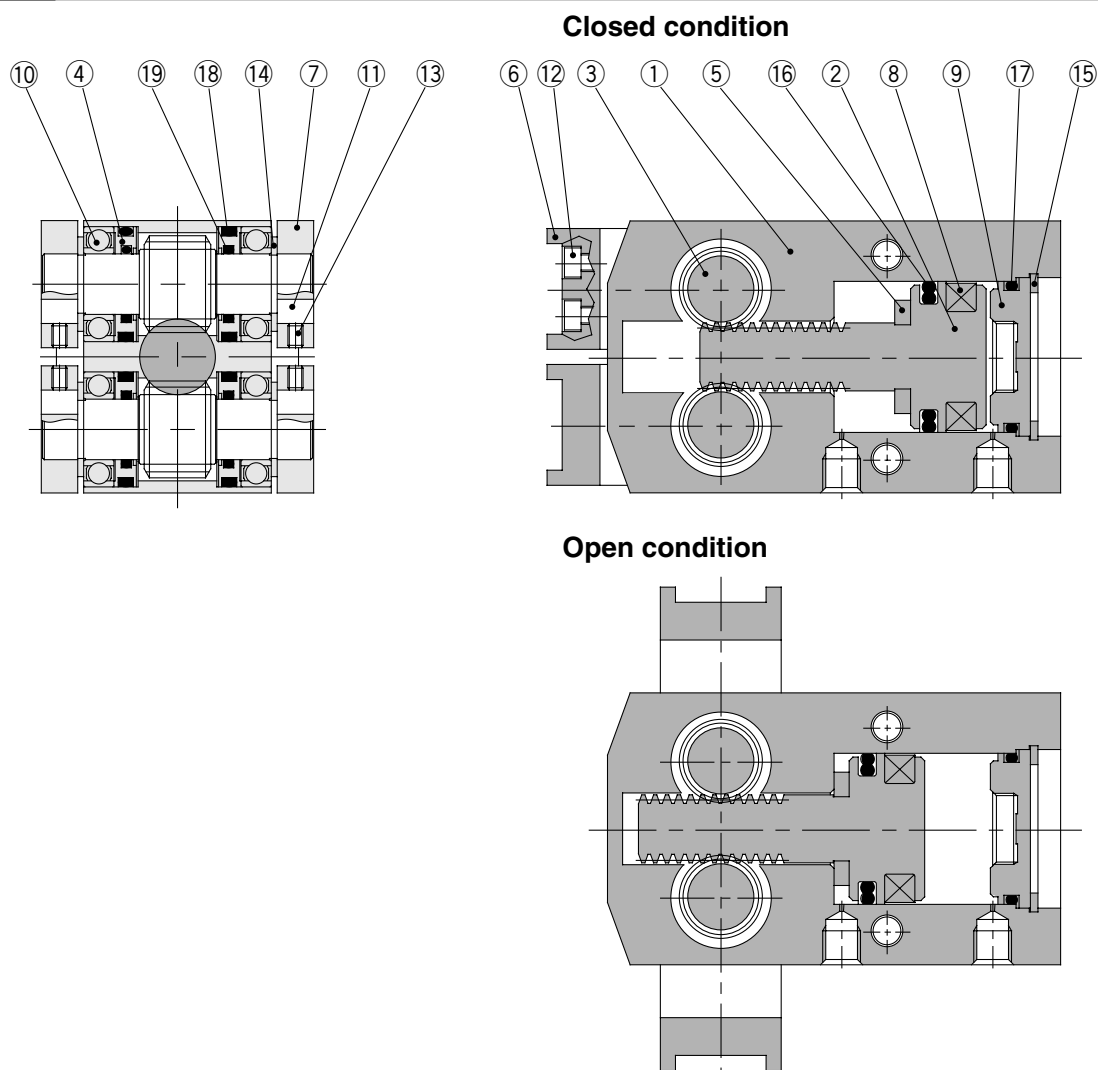
D-

20-



# Series MHW2

## Construction



### Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Piston	Stainless steel	Nitrided
③	Pinion gear	Carbon steel	Heat treated
④	Seal cover	Brass	
⑤	Bumper	Urethane rubber	
⑥	Finger (A)	Carbon steel	
⑦	Finger (B)	Carbon steel	
⑧	Rubber magnet	Synthetic rubber	

No.	Description	Material	Note
⑨	Cap	ø20, 25: Resin	
		ø32 to 50: Aluminum alloy	Hard anodized
⑩	Ball bearing	Carbon steel	Shield type
⑪	Key	Carbon steel	
⑫	Hexagon socket head bolt	Carbon steel	
⑬	Hexagon socket cap screw	Carbon steel	
⑭	Type C snap ring	Carbon steel	
⑮	Type C snap ring	Carbon steel	

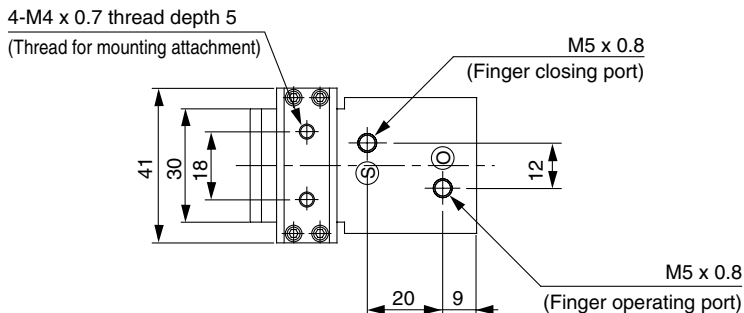
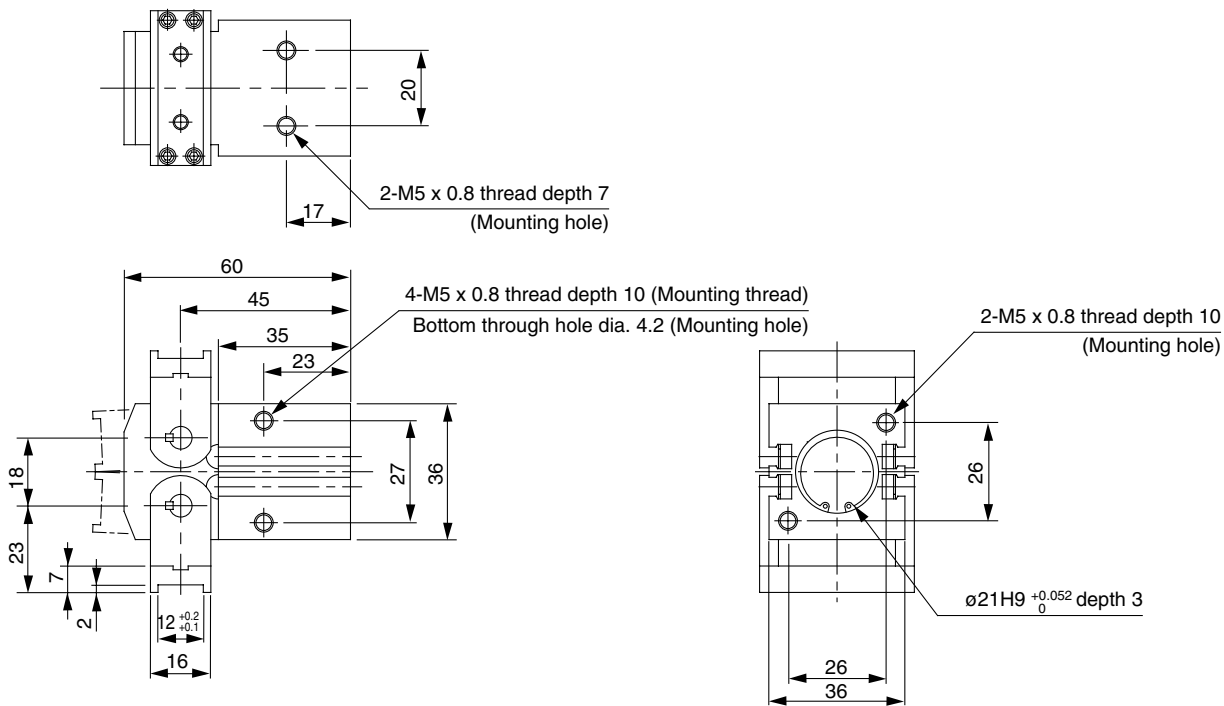
### Replacement Parts

Description	MHW2-20D	MHW2-25	MHW2-32	MHW2-40	MHW2-50	Main parts
Seal kit	MHW20-PS	MHW25-PS	MHW32-PS	MHW32-PS	MHW50-PS	⑬⑭⑮
Piston assembly	MHW-A2001	MHW-A2501	MHW-A3201	MHW-A4001	MHW-A5001	②⑧⑤
Finger assembly	MHW2-□D	MHW-A2002	MHW-A2502	MHW-A3202	MHW-A4002	⑥⑦⑪⑫⑬
	MHW2-□D1	MHW-A2002-1	MHW-A2502-1	MHW-A3202-1	MHW-A4002-1	

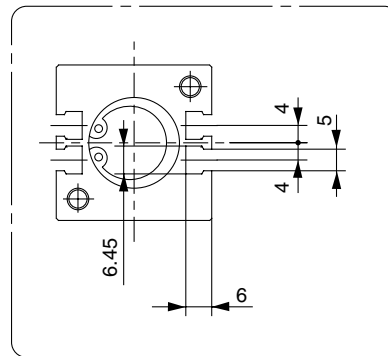
\* MHW-3 Order 1 piece finger assembly per one unit.

**Dimensions**

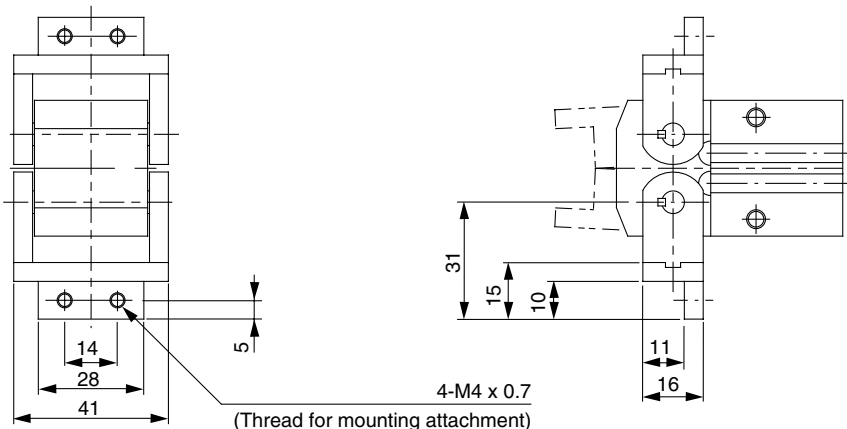
**MHW2-20D**  
 Flat finger type (Standard)



**Auto Switch Mounting Groove Dimensions**



**MHW2-20D1**  
 Right angle finger type



MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

**MHW**

MRHQ

Misc.

D-

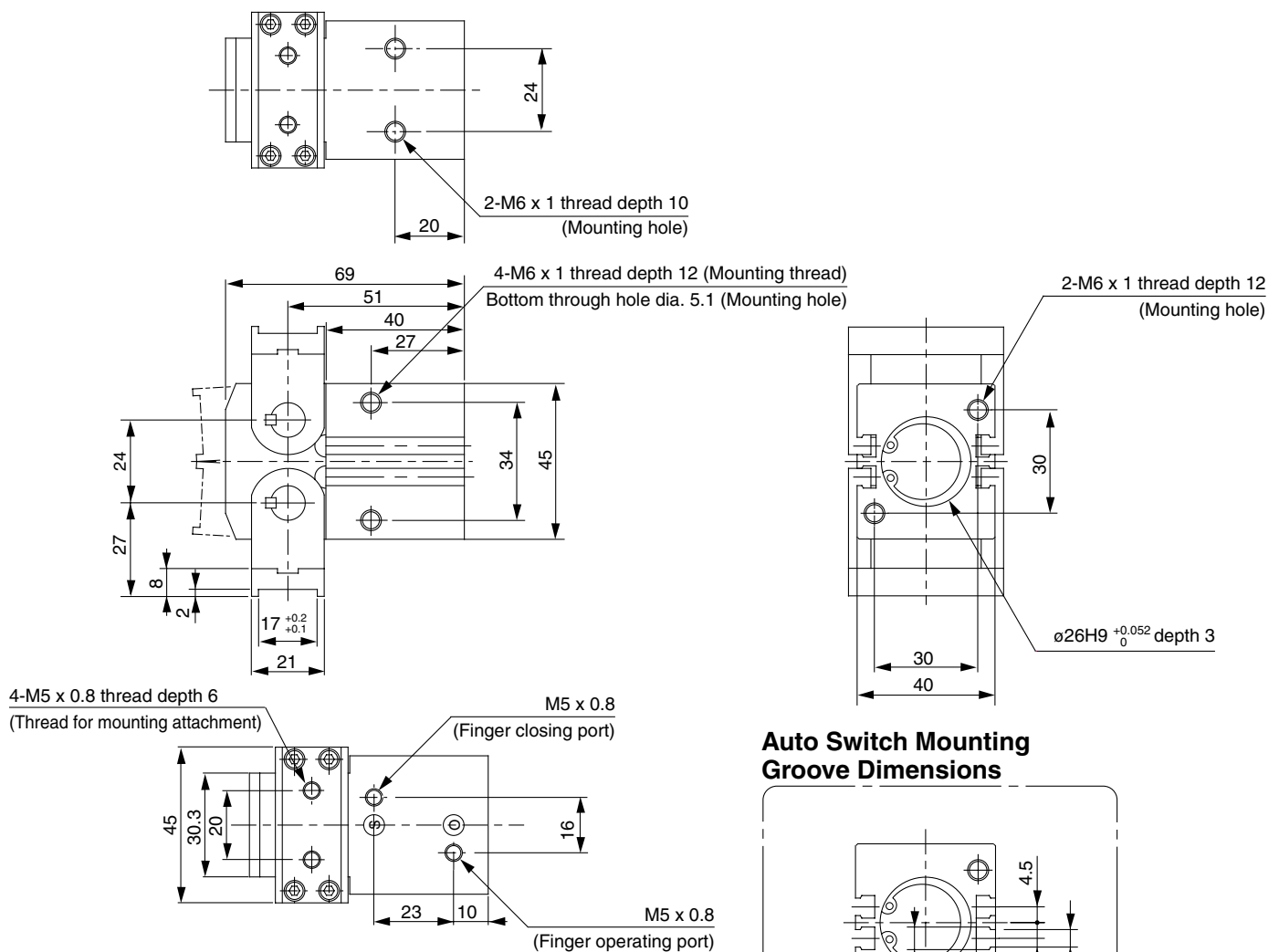
20-

# Series MHW2

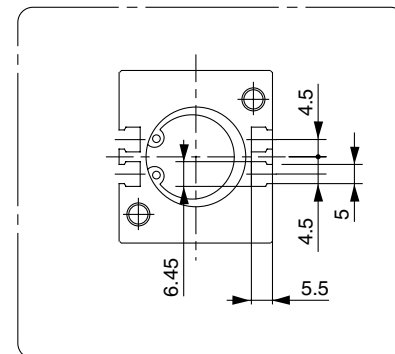
## Dimensions

### MHW2-25D

#### Flat finger type (Standard)

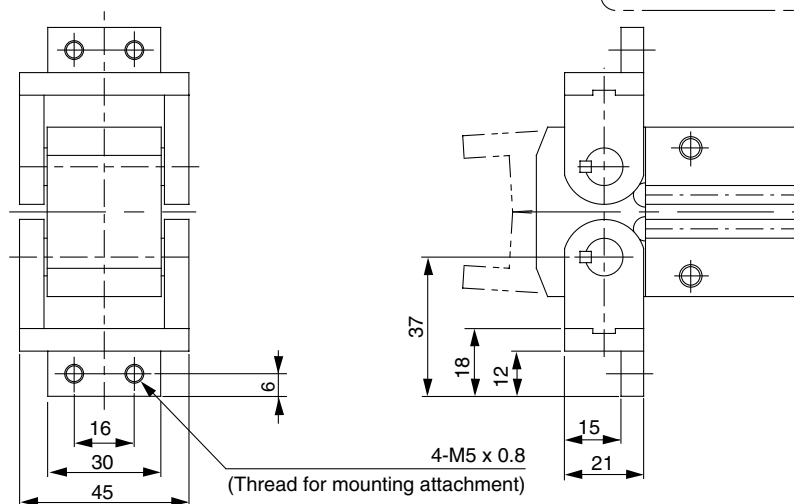


#### Auto Switch Mounting Groove Dimensions

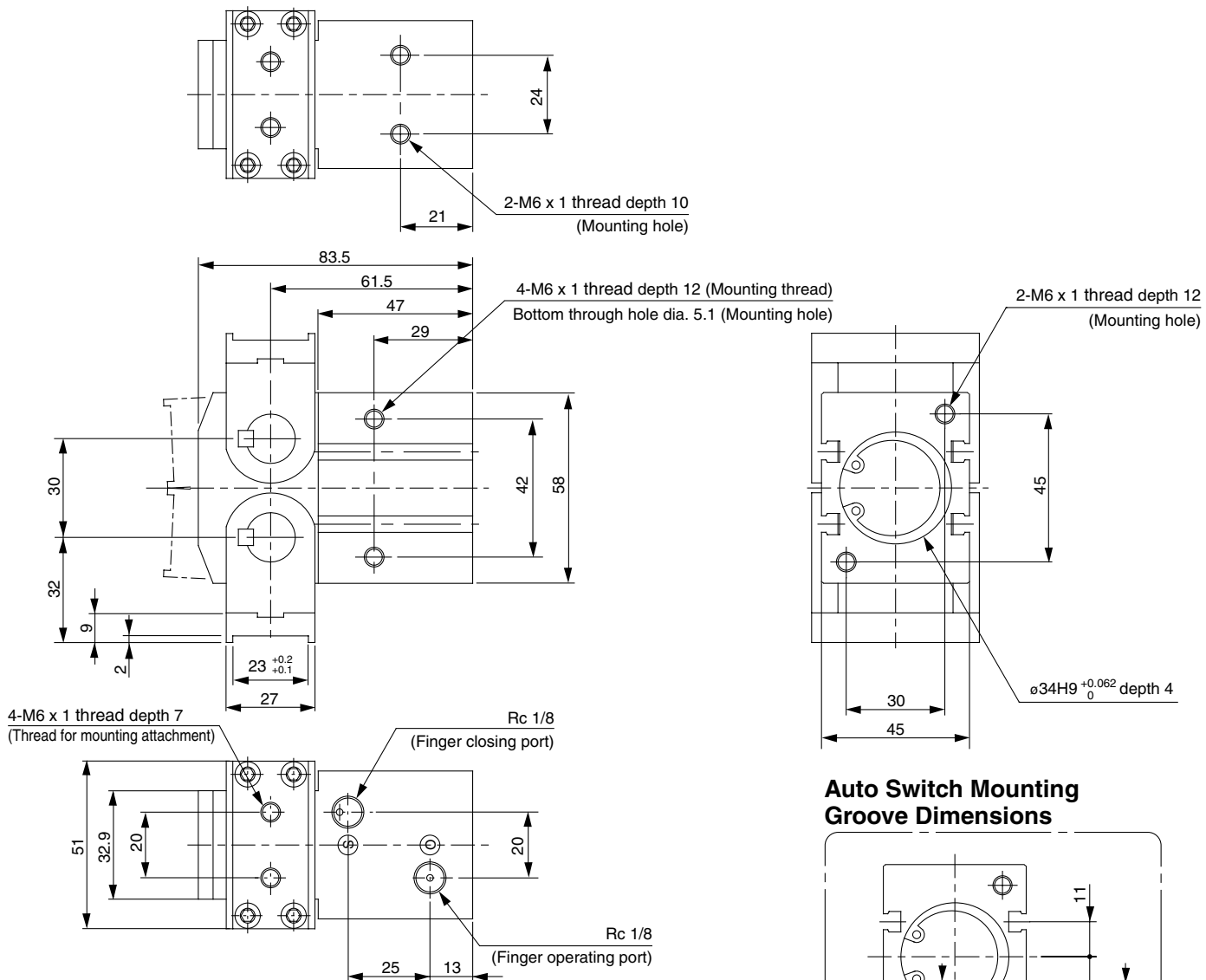


### MHW2-25D1

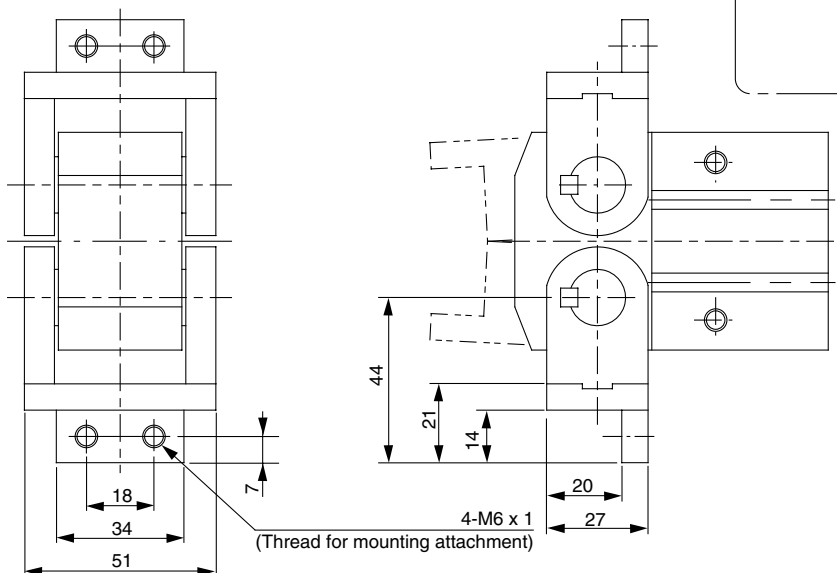
#### Right angle finger type



**MHW2-32D**  
 Flat finger type (Standard)



**MHW2-32D1**  
 Right angle finger type



MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

**MHW**

MRHQ

Misc.

D-

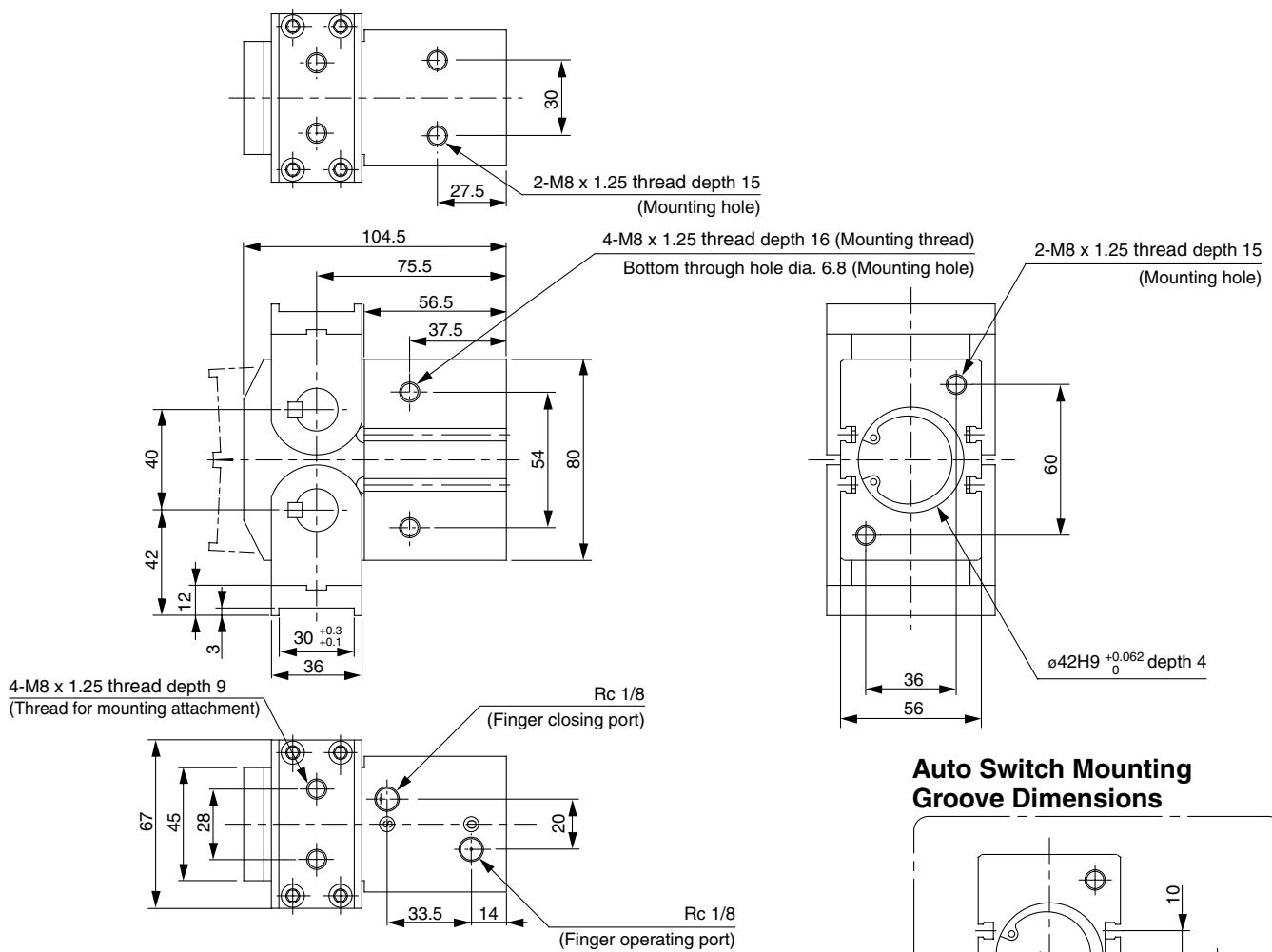
20-

# Series MHW2

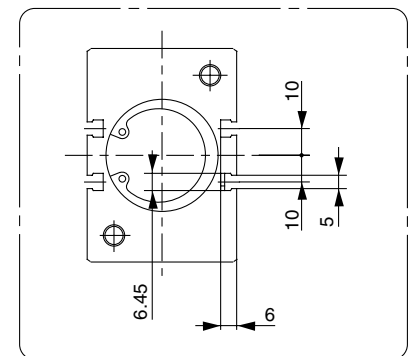
## Dimensions

### MHW2-40D

#### Flat finger type (Standard)

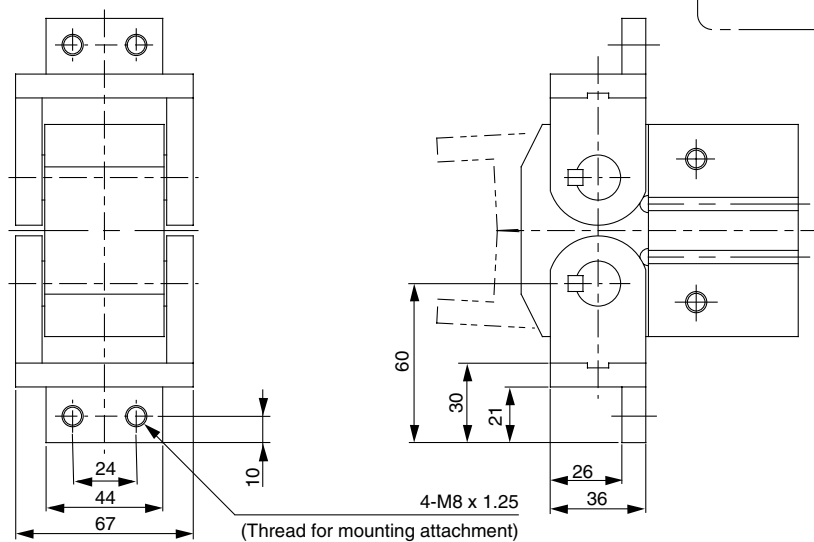


#### Auto Switch Mounting Groove Dimensions



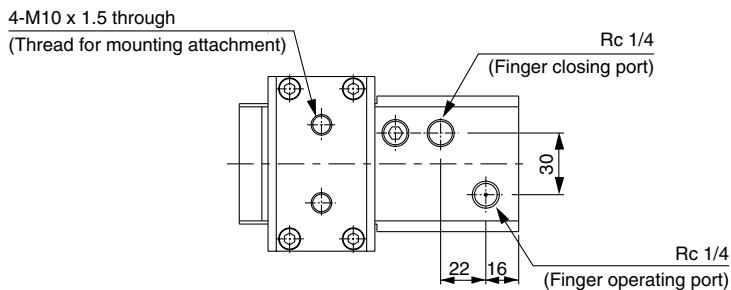
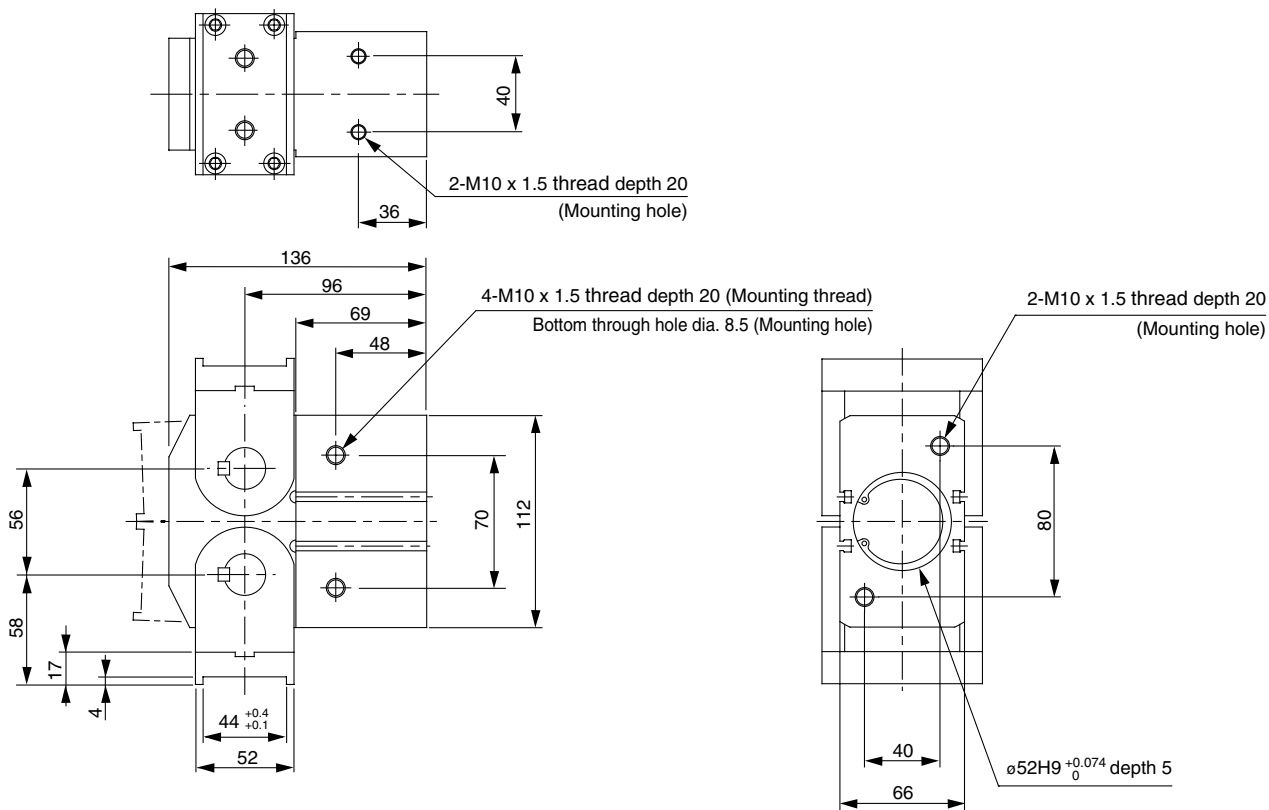
### MHW2-40D1

#### Right angle finger type

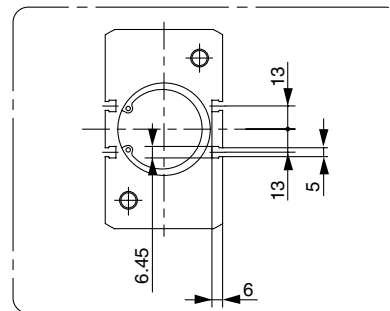


180° Angular Style Air Gripper  
 Rack & Pinion Style **Series MHW2**

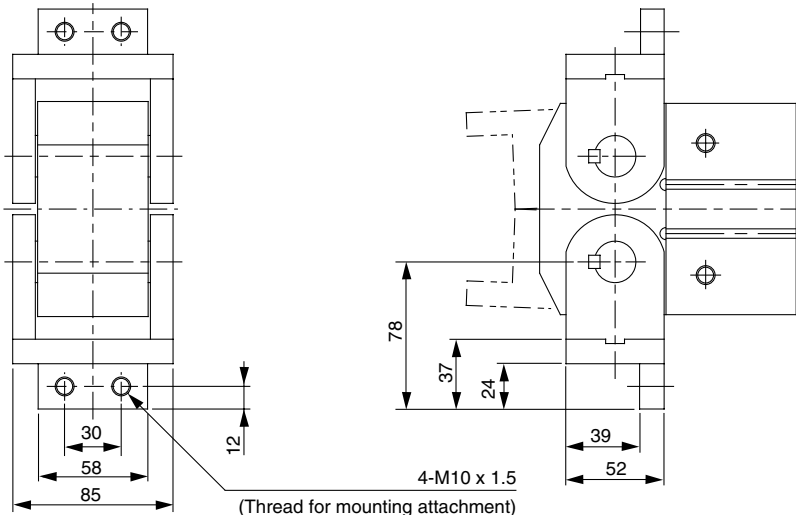
**MHW2-50D**  
 Flat finger type (Standard)



**Auto Switch Mounting  
 Groove Dimensions**



**MHW2-50D1**  
 Right angle finger type

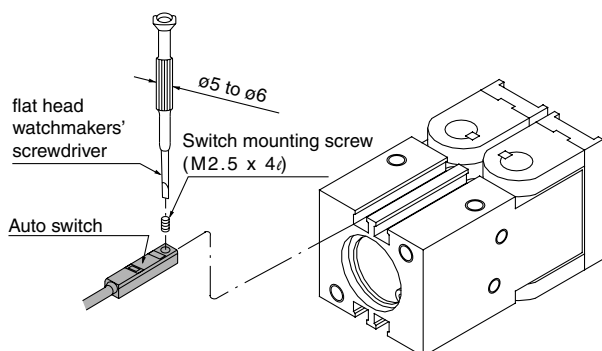


- MHZ
- MHF
- MHL
- MHR
- MHK
- MHS
- MHC
- MHT
- MHY
- MHW**
- MRHQ
- Misc.
- D-
- 20-

# Series MHW2

## Mounting of Auto Switch

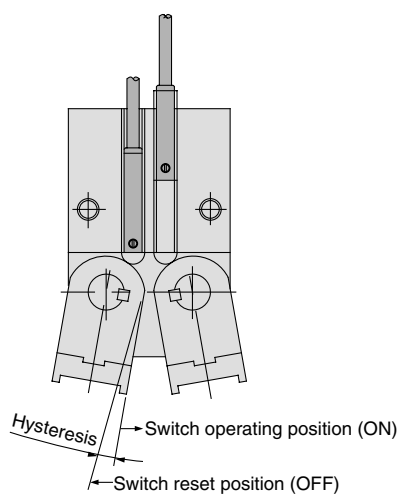
To set the auto switch, insert the auto switch into the installation groove of the gripper from the direction indicated in the following drawing. After setting the position, tighten the attached switch mounting set screw with a flat head watchmakers' screwdriver.



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.

## Auto Switch Hysteresis

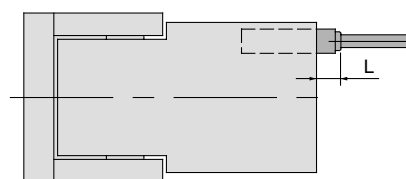
Auto switches have hysteresis similar to micro switches. Use the table below as a guide when adjusting auto switch positions, etc.



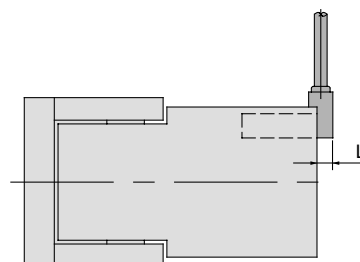
Air gripper model	Auto switch model D-Y59□ D-Y69□ D-Y7P(V)	D-Y7□W(V)	
		Red light at ON	Green light at ON
MHW2-20D	4°	4°	13°
MHW2-25D	4°	4°	10°
MHW2-32D	2°	2°	7°
MHW2-40D	2°	2°	5°
MHW2-50D	2°	2°	4°

## Protrusion of Auto Switch from Edge of Body

The maximum protrusion of an auto switch (when fingers are fully closed) from the edge of the body is shown in the table below. Use the table as a guideline for mounting.



When auto switch D-Y59<sup>A</sup> is used



When auto switch D-Y69<sup>A</sup> is used

## Max. Protrusion of Auto Switch from Edge of Body (L)

(mm)

Auto switch model	Protrusion (mm)	
	In-line electrical entry type	Perpendicular electrical entry type
	D-Y59□ D-Y7P D-Y7□W	D-Y69□ D-Y7PV D-Y7□WV
Air gripper model	O	—
	S	—
MHW2-20D	7	5
MHW2-25D	O	—
	S	7
MHW2-32D	O	—
	S	4
MHW2-40D	O	—
	S	3
MHW2-50 D	O	—
	S	1