

**Angular Style Air Gripper  
Standard Type**

***Series MHC2***

# Angular Style Air Gripper

## Series MHC2

Standard

- A large amount of gripping force is provided through the use of a double piston mechanism, while maintaining a compact design
- Built-in variable throttle
- A solid state auto switch with an indicator light can be mounted



### Specifications

Fluid		Air
Operating pressure	Double acting	0.1 to 0.6MPa
	Single acting	0.25 to 0.6MPa
Ambient and fluid temperature		-10 to 60°C
Repeatability		±0.01mm
Max. operating frequency		180c.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 p.6-15 for further specifications of auto switch.

### Model

Action	Model	Bore size mm	Holding moment (effective value) <sup>(1)</sup>	Opening/closing angle (both sides)	Weight <sup>(2)</sup> g
Double acting	MHC2-10D	10	0.10	30° to -10°	39
	MHC2-16D	16	0.39		91
	MHC2-20D	20	0.70		180
	MHC2-25D	25	1.36		311
Single acting	MHC2-10S	10	0.070	30° to -10°	39
	MHC2-16S	16	0.31		92
	MHC2-20S	20	0.54		183
	MHC2-25S	25	1.08		316



Note1) At pressure 0.5MPa.

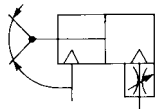
Refer to "Effective Holding Force" data on p.5-220 for holding point of each holding point.

Note2) Weight except auto switch.

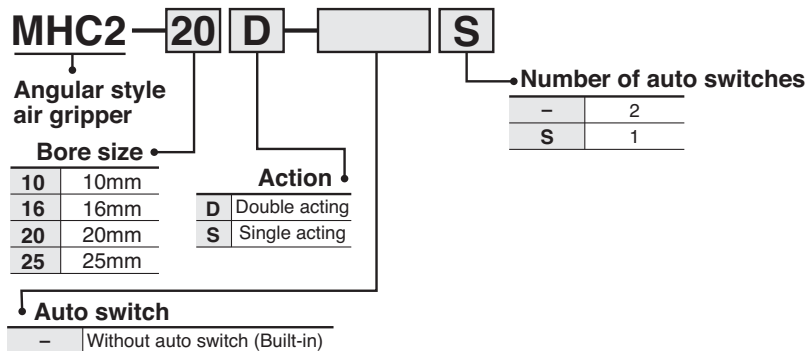
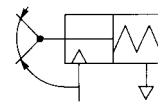
### How to Order

#### Symbol

#### Double acting



#### Single acting



### Applicable Auto Switches

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)*				Pre-wired connector	Applicable load
					DC	AC	Electrical entry direction	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)		
Solid state auto switch	-	Grommet	Yes	3-wire (NPN)	5 V,	-	M9NV	M9N	●	●	○	○	Relay, PLC	
				3-wire (PNP)	12 V		M9PV	M9P	●	●	○	○		
				2-wire	12 V		M9BV	M9B	●	●	○	○		
				3-wire (NPN)	5 V,		M9NVV	M9NW	●	●	○	○		
				3-wire (PNP)	12 V		M9PVV	M9PW	●	●	○	○		
				2-wire	12 V		M9BVV	M9BW	●	●	○	○		
	Diagnosis (2-colour indication)	Grommet	Yes	3-wire (NPN)	5 V,	-	M9NAV**	M9NA**	○	○	○	○	Relay, PLC	
				3-wire (PNP)	12 V		M9PAV**	M9PA**	○	○	○	○		
				2-wire	12 V		M9BAV**	M9BA**	○	○	○	○		
				3-wire (NPN)	5 V,		M9NAV**	M9NA**	○	○	○	○		
				3-wire (PNP)	12 V		M9PAV**	M9PA**	○	○	○	○		
				2-wire	12 V		M9BAV**	M9BA**	○	○	○	○		

\*\* Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.

\* Lead wire length symbols: 0.5 m ..... Nil (Example) M9NV  
 1 m ..... M (Example) M9NVW  
 3 m ..... L (Example) M9NVWL  
 5 m ..... Z (Example) M9NVWZ

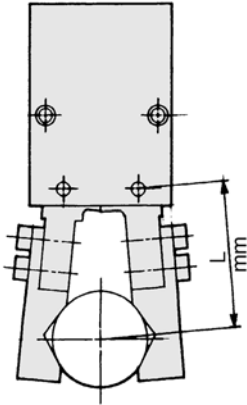
\* Solid state auto switches marked with a "O" symbol are produced upon receipt of order.

Note 1) When using the 2-colour indicator type, please make the setting so that the indicator is lit in red to ensure the detection at the proper position of the air gripper.

Note 2) When ordering the air gripper with auto switch, auto switch mounting brackets are supplied with the air gripper. When ordering the auto switch separately, auto switch mounting brackets (BMG2-012) are required.

## Holding Point

● Work holding point should be within the range indicated in the graph.



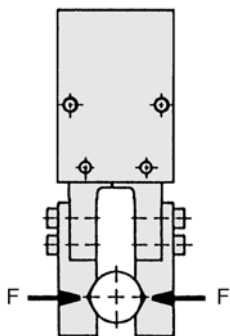
## Guidelines for the selection of the gripper with respect to component weight

● Selection of the correct model depends upon the component weight, the coefficient of friction between the finger attachment and the component, and their respective configurations. A model should be selected with a holding force of 10 to 20 times that of the component weight.

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

## ● Effective holding force

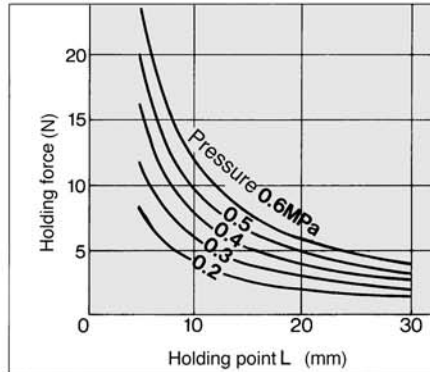
The holding force shown in the tables represents the holding force of one finger when all fingers and attachment are in contact with the work. F = One finger thrust.



## Effective Holding Force

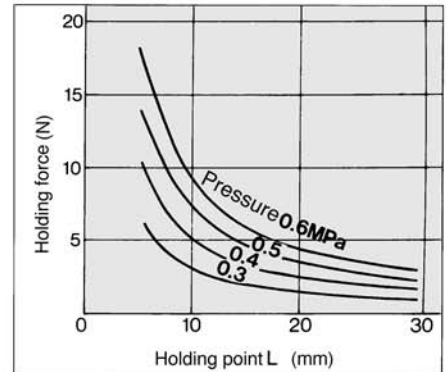
### Double acting

#### MHC2-10D

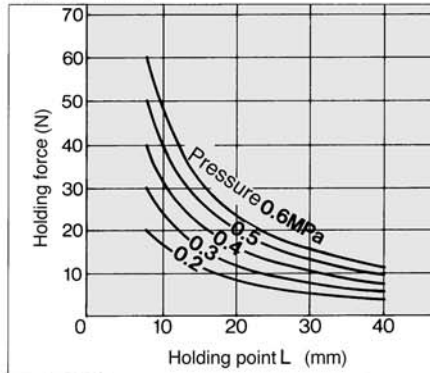


### Single acting

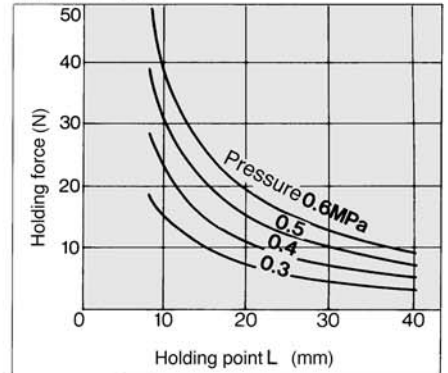
#### MHC2-10S



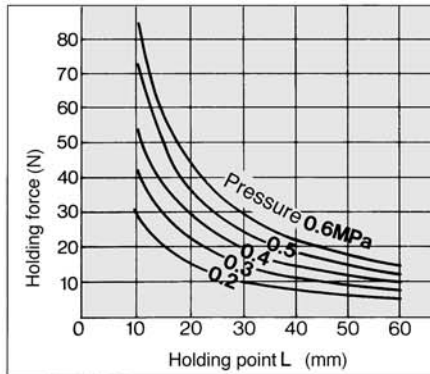
#### MHC2-16D



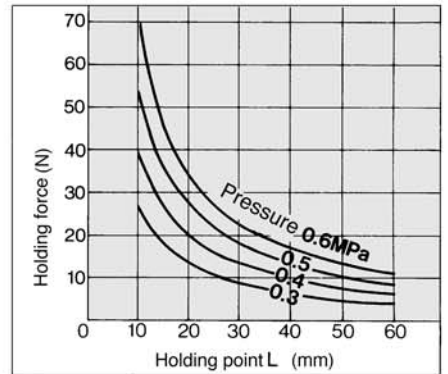
#### MHC2-16S



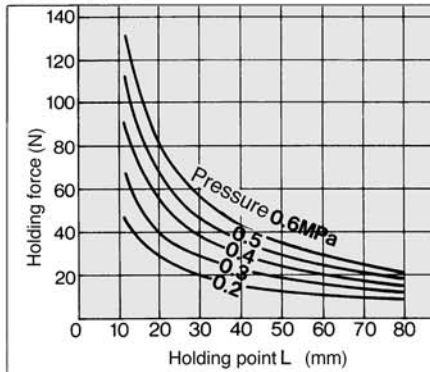
#### MHC2-20D



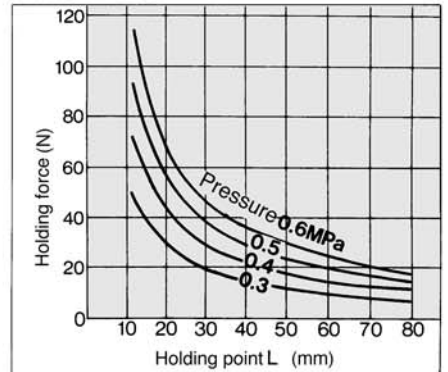
#### MHC2-20S



#### MHC2-25D



#### MHC2-25S

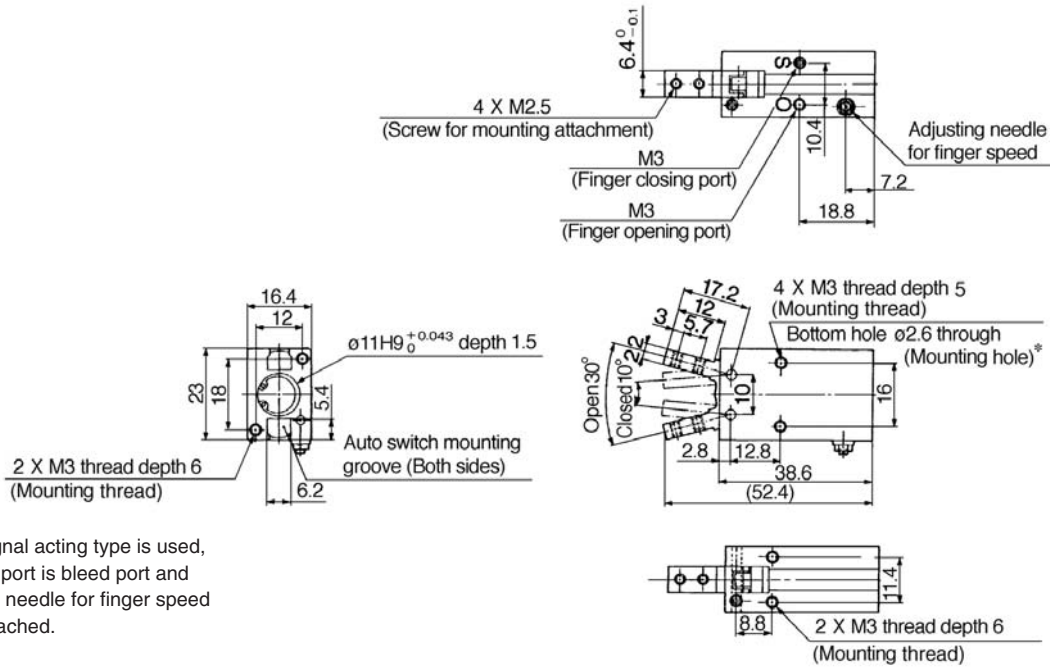


# Series MHC2



## Double Acting $\phi 10, \phi 16,$

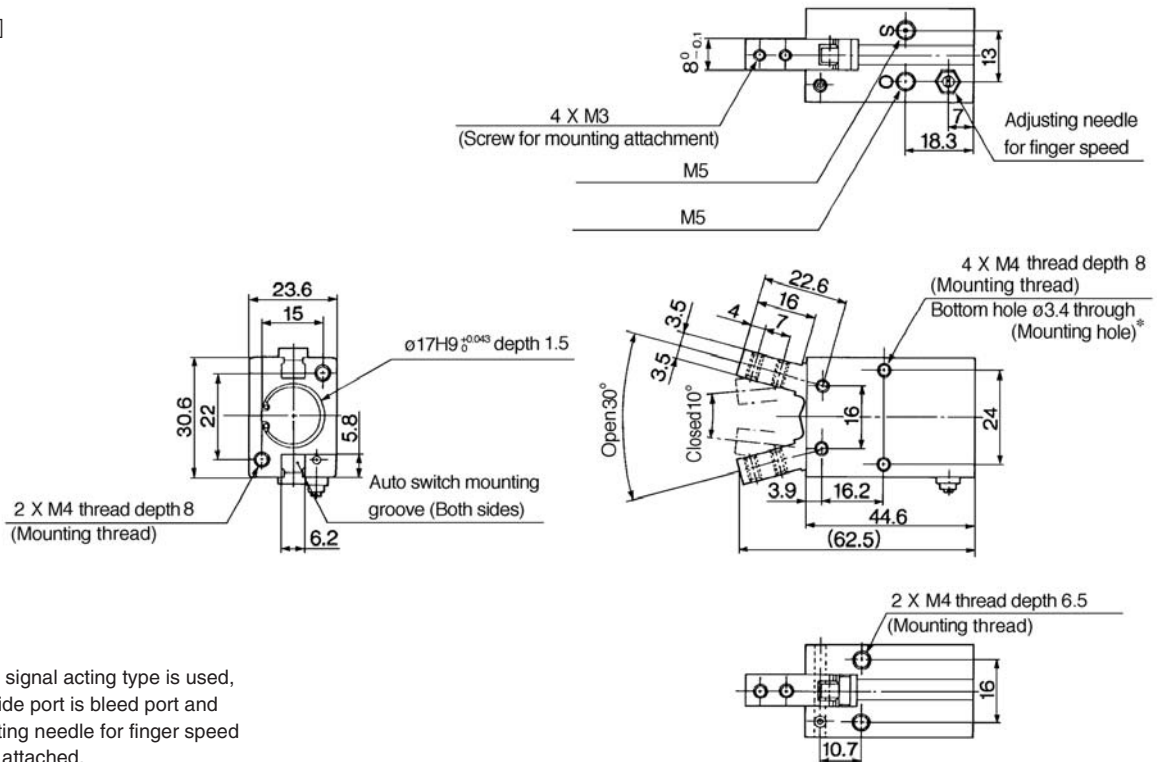
### MHC2-10□



Note) When signal acting type is used, one side port is bleed port and adjusting needle for finger speed is not attached.

\* When auto switch is used, through hole mounting type is not available.

### MHC2-16□



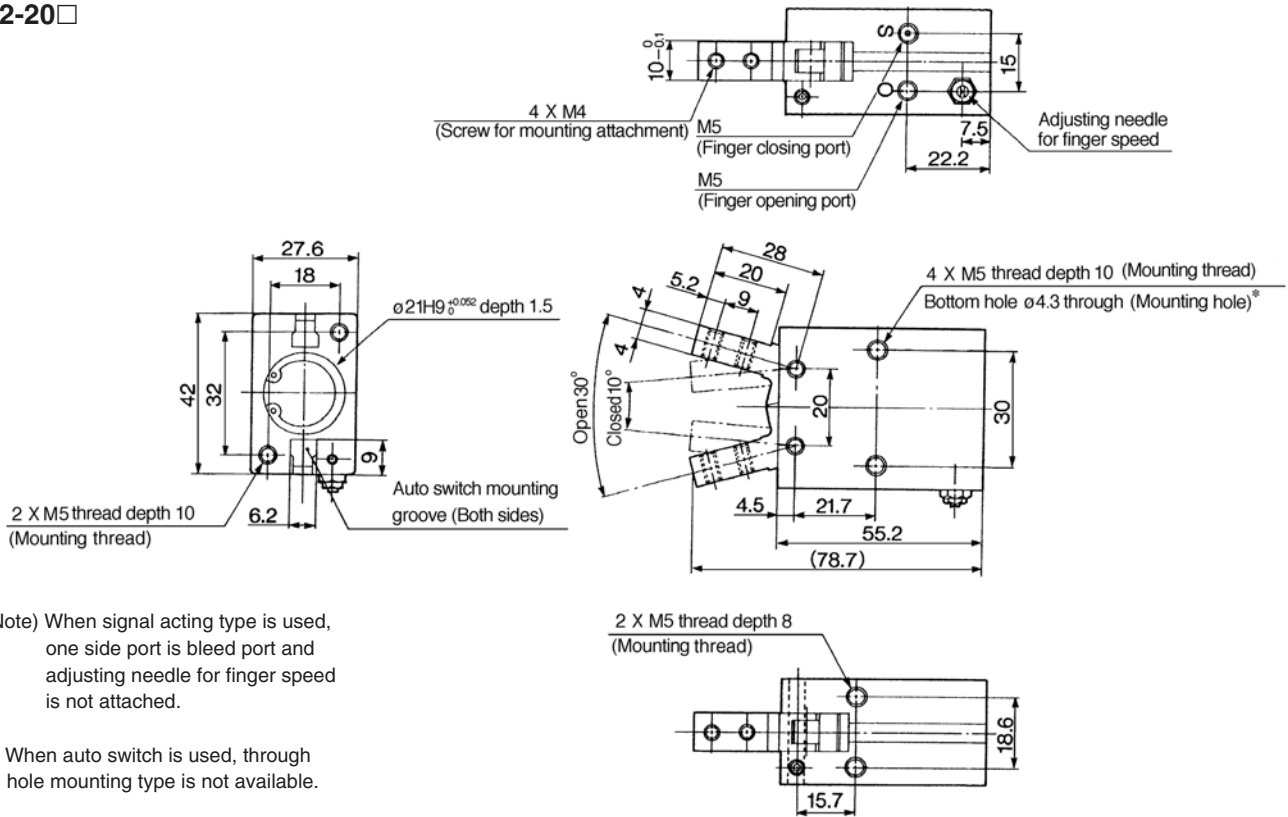
Note) When signal acting type is used, one side port is bleed port and adjusting needle for finger speed is not attached.

\* When auto switch is used, through hole mounting type is not available.

# Angular Style Standard Series **MHC2**

## Double Acting $\phi 20, \phi 25,$

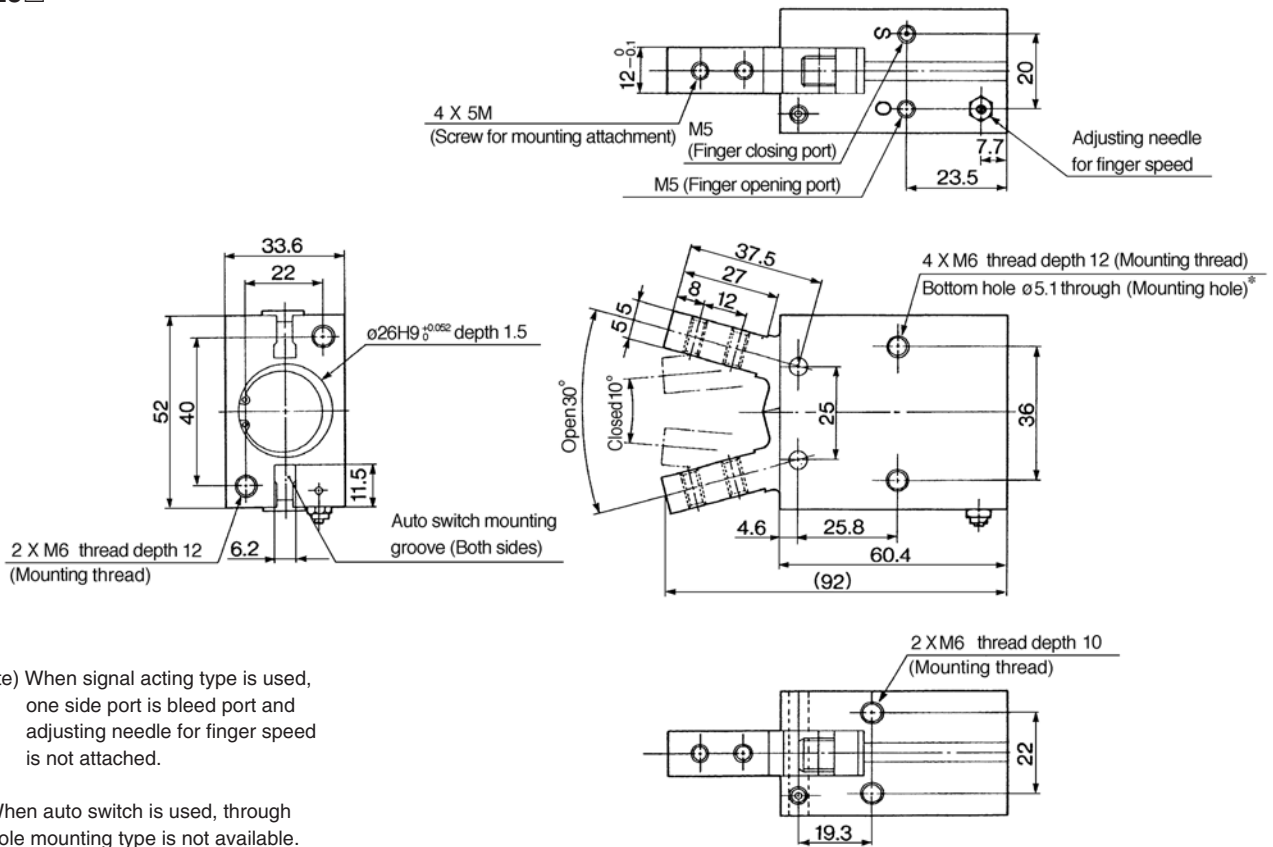
### MHC2-20□



Note) When signal acting type is used, one side port is bleed port and adjusting needle for finger speed is not attached.

\* When auto switch is used, through hole mounting type is not available.

### MHC2-25□



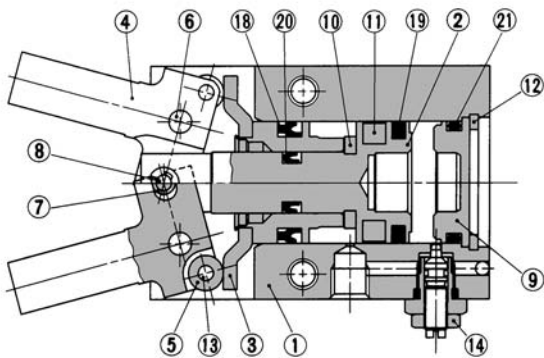
Note) When signal acting type is used, one side port is bleed port and adjusting needle for finger speed is not attached.

\* When auto switch is used, through hole mounting type is not available.

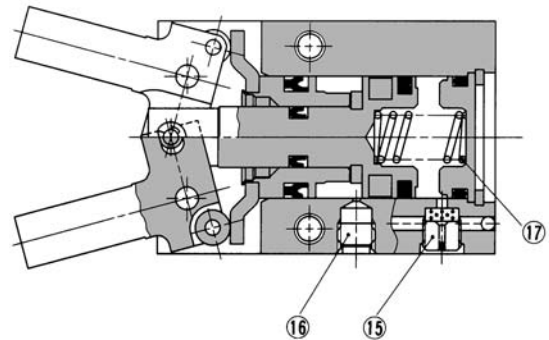
# Series MHC2

## Construction

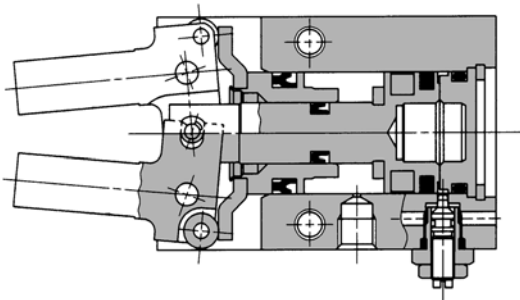
### Double acting/Fingers open



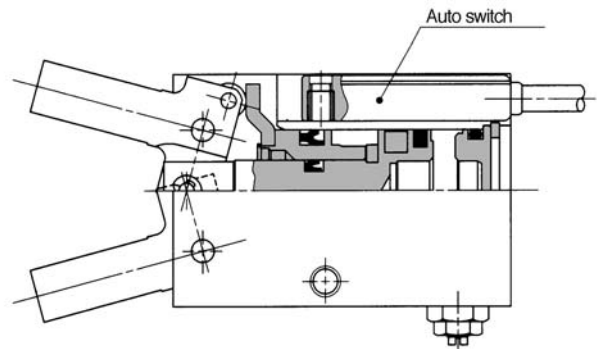
### Single acting



### Double acting/Fingers closed



### With auto switch



### Component Parts

No.	Description	Material	Note
①	Body	Aluminium alloy	Hard anodized
②	Piston A	Aluminium alloy	Hard anodized
③	Piston B Ass'y		
④	Finger	ø10 to ø20: Stainless steel ø25: Carbon steel	Heat treated
⑤	Side roller	Carbon steel	Nitriding
⑥	Level shaft	Stainless steel	Nitriding
⑦	centre roller	Carbon steel	Nitriding
⑧	centre pin	Carbon steel	Nitriding
⑨	Cap	Resin	

### Component Parts

No.	Description	Material	Note
⑩	Damper	Urethane rubber	
⑪	Rubber magnet	Synthetic rubber	
⑫	C shape snap ring	Carbon steel	Nickel plated
⑬	Cylindrical roller	High carbon chrome bearing steel	Electroless nickel plated
⑭	Needle Ass'y	Brass	Electroless nickel plated
⑮	Exhaust plug	Brass	Electroless nickel plated
⑯	Plug	Brass	
⑰	Spring	High carbon chrome bearing steel	

### Replacement Parts: Seal Kits

No.	Description	Material	Kit No.			
			MHC2-10	MHC2-16	MHC2-20	MHC2-25
⑱	Seal kit	NBR	MHC10-PS	MHC16-PS	MHC20-PS	MHC25-PS
⑲						
⑳						
㉑						