

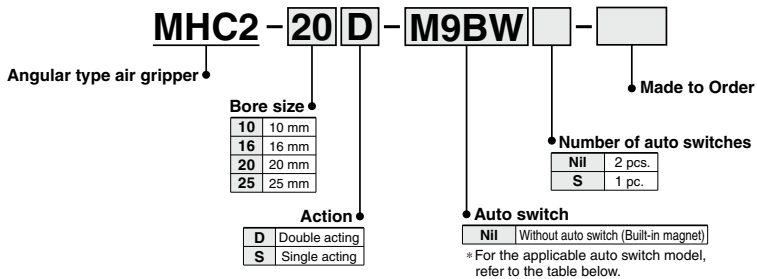


# Angular Type Air Gripper/Standard Type

# MHC2 Series

∅10, ∅16, ∅20, ∅25

## How to Order

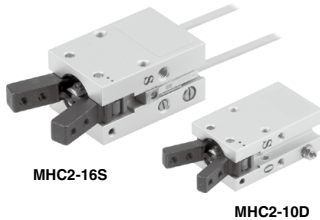


## Applicable Auto Switches

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	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)	12 V				●	●	○	○		
	2-wire			12 V	●		●	○	○	—				
	3-wire (NPN)			5 V,	M9NWV		M9NW	●	●	○	○	IC circuit		
	3-wire (PNP)			12 V				●	●	○	○			
	2-wire			12 V	●		●	○	○	—				
	3-wire (NPN)			5 V,	M9BWW		M9BW	●	●	○	○	IC circuit		
	3-wire (PNP)			12 V				●	●	○	○			
	2-wire			12 V	●		●	○	○	—				
	Water resistant (2-color indicator)			—	Grommet		Yes	3-wire (NPN)	5 V,	—	M9NAV	M9NA	○	
3-wire (PNP)		12 V	○			○		●	○					
2-wire		12 V	○			○		●	○		—			
2-wire		12 V	○			○		●	○		—			

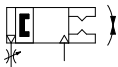
## MHC2 Series

- 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.



### Symbol

Double acting: External grip



Single acting/ Normally open:  
External grip



### Specifications

Fluid		Air
Operating pressure	Double acting	0.1 to 0.6 MPa
	Single acting	0.25 to 0.6 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 auto switch (3-wire, 2-wire)

### Model

Action	Model	Bore size (mm)	Gripping moment (N·m) (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

Note 1) At the pressure of 0.5 MPa.

Refer to "Effective Gripping Force" data on page 809 for gripping force of each gripping point.

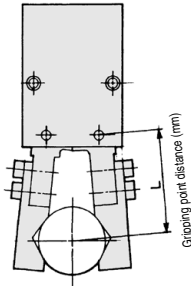
Note 2) Except auto switch.



## Angular Type Air Gripper/Standard Type **MHC2 Series**

### Gripping Point

- Workpiece gripping point should be within the range indicated in the graph.

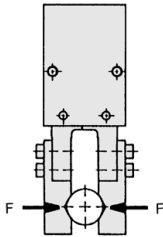


### Guidelines for the selection of the gripper with respect to workpiece mass

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

### ● Indication of effective gripping force

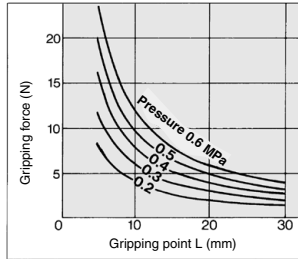
The effective gripping force shown in the graphs below is expressed as F, which is the thrust of one finger, when both fingers and attachments are in full contact with the workpiece as shown in the figure below.



### Effective Gripping Force

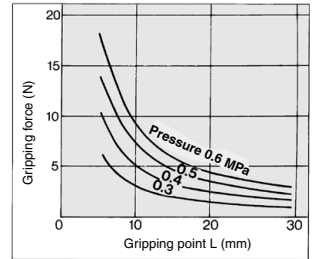
#### Double Acting

##### MHC2-10D

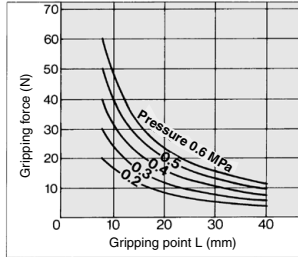


#### Single Acting

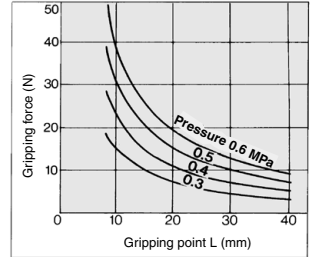
##### MHC2-10S



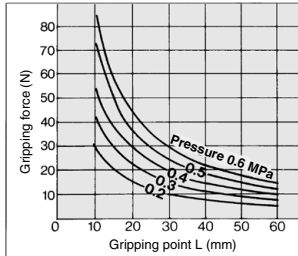
##### MHC2-16D



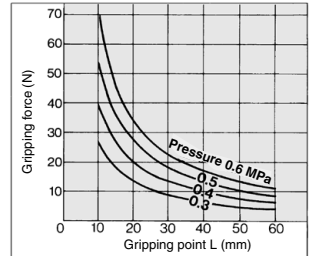
##### MHC2-16S



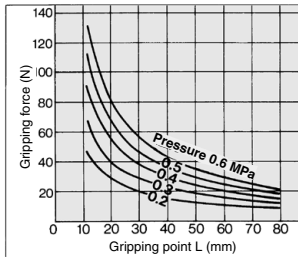
##### MHC2-20D



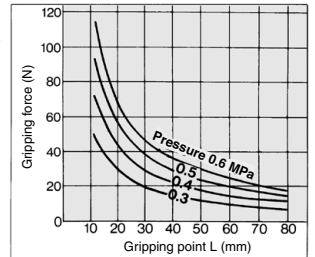
##### MHC2-20S



##### MHC2-25D



##### MHC2-25S

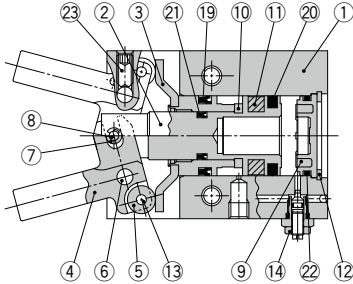




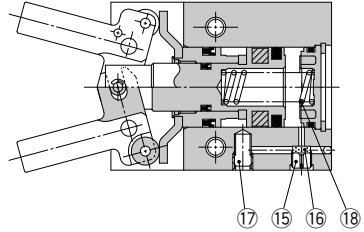
## Construction

## MHC2 Series

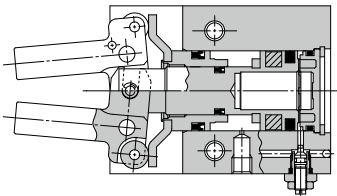
### Double acting/With fingers open



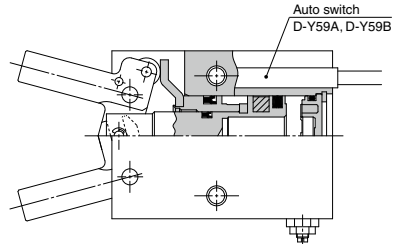
### Single acting



### Double acting/With fingers closed



### With auto switch



### Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Hard anodized
2	Piston A	Aluminum alloy	Hard anodized
3	Piston B assembly		
4	Finger	ø10 to ø20: Stainless steel ø25: Carbon steel	Heat treated Heat treated/ Special black chromium treatment
5	Side roller	Carbon steel	Nitriding
6	Lever shaft	Stainless steel	Nitriding
7	Center roller	Carbon steel	Nitriding
8	Center pin	Carbon steel	Nitriding
9	Cap	Resin	
10	Bumpe	Urethane rubber	
11	Rubber magnet	Synthetic rubber	

### Component Parts

No.	Description	Material	Note
12	Type C retaining ring for hole	Carbon steel	Phosphate coated
13	Needle roller	High carbon chrome bearing steel	Heat treated
14	Needle assembly	Brass	Electroless nickel plated
15	Exhaust plug	Brass	Electroless nickel plated
16	Exhaust filter	Resin sponge	
17	Plug	Brass	Electroless nickel plated
18	Spring	Stainless steel spring wire	
19	Piston seal	NBR	
20	Piston seal	NBR	
21	Piston seal	NBR	
22	Gasket	NBR	
23	Hexagon socket cap screw	Carbon steel	Black zinc chromated

### Replacement Parts

Description	MHC2-10□	MHC2-16□	MHC2-20□	MHC2-25□	Main parts
Seal kit	MHC10-PS	MHC16-PS	MHC20-PS	MHC25-PS	19/20/21/22
Finger assembly	MHC-A1003	MHC-A1603	MHC-A2003	MHC-A2503	4/5/6/7/8/13
Piston assembly set	MHC-A1002	MHC-A1602	MHC-A2002	MHC-A2502	2/3/7/8/10/11/19/20/21
Piston A assembly	MHC-A1001	MHC-A1601	MHC-A2001	MHC-A2501	2/10/11
Piston B assembly	P3311145B	P3311245B	P3311345B	P3311445C	3
Needle assembly	MH-A1006		MH-A1606		14

\* Order 1 piece finger assembly per one unit.

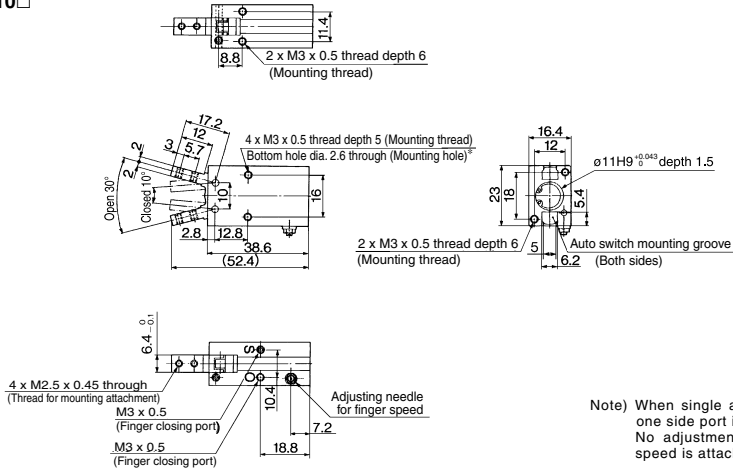
Replacement part/Grease pack part no.: GR-S-010 (10 g)



## Double Acting: Size 10, 16

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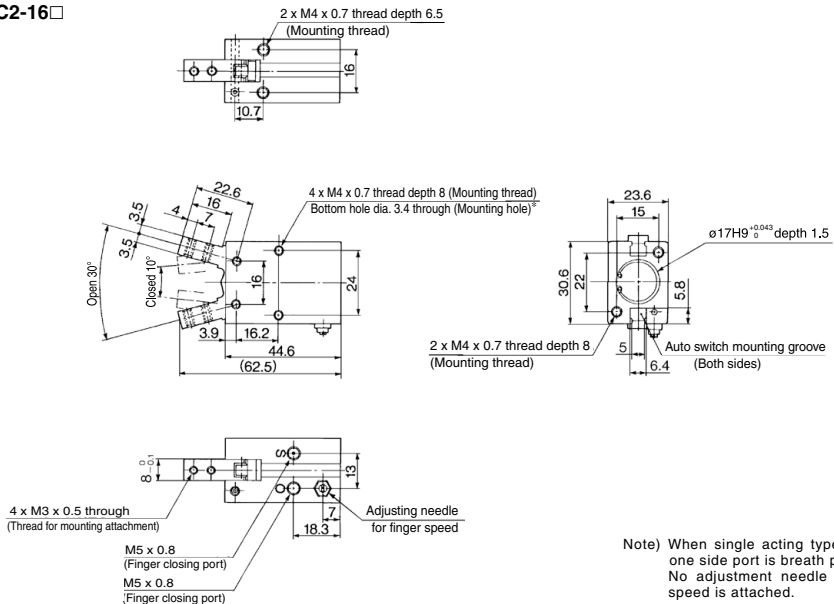
### MHC2-10



Note) When single acting type is used, one side port is breath port. No adjustment needle for finger speed is attached.

\* When auto switches are used, through hole mounting is not available.

### MHC2-16



Note) When single acting type is used, one side port is breath port. No adjustment needle for finger speed is attached.

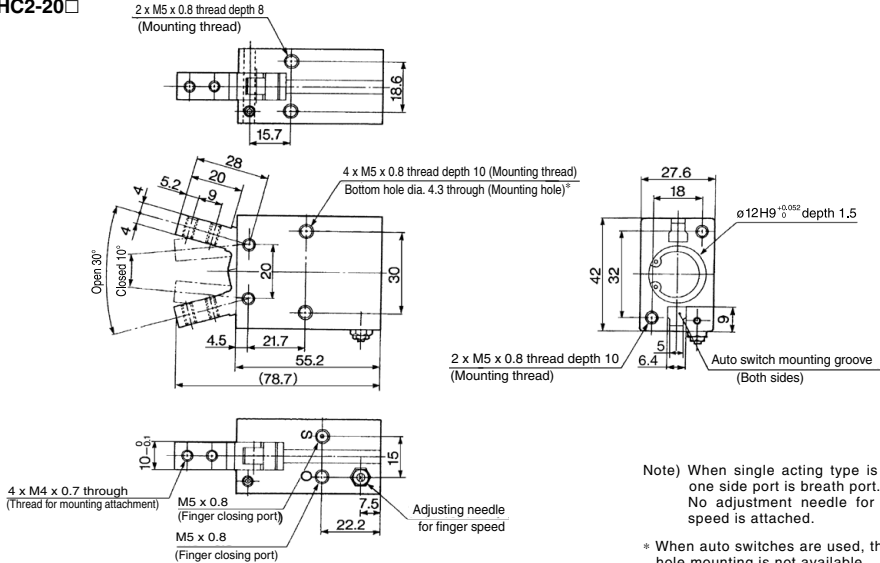
\* When auto switches are used, through hole mounting is not available.



## Double Acting: Size 20, 25

## MHC2 Series

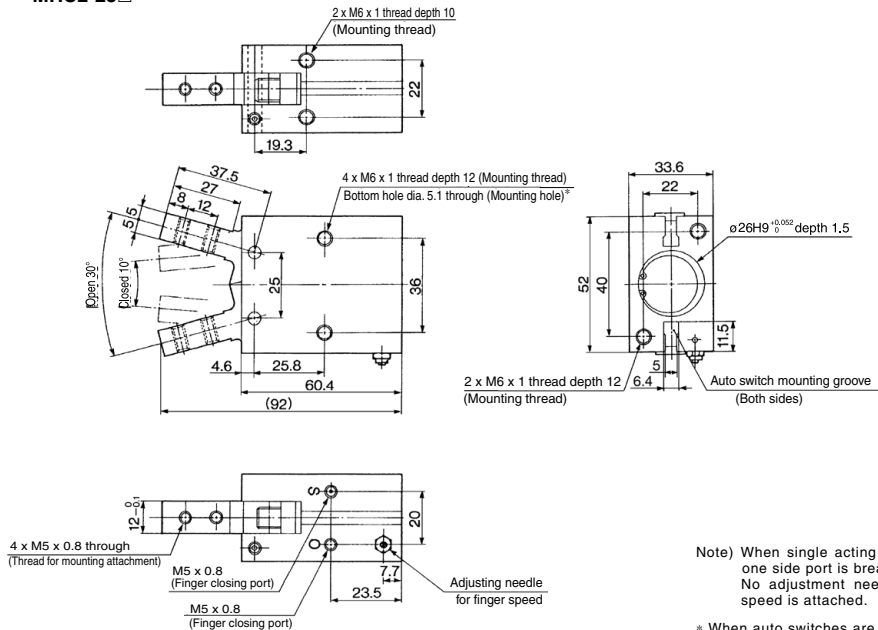
### MHC2-20 □



Note) When single acting type is used, one side port is breath port. No adjustment needle for finger speed is attached.

\* When auto switches are used, through hole mounting is not available.

### MHC2-25 □



Note) When single acting type is used, one side port is breath port. No adjustment needle for finger speed is attached.

\* When auto switches are used, through hole mounting is not available.