

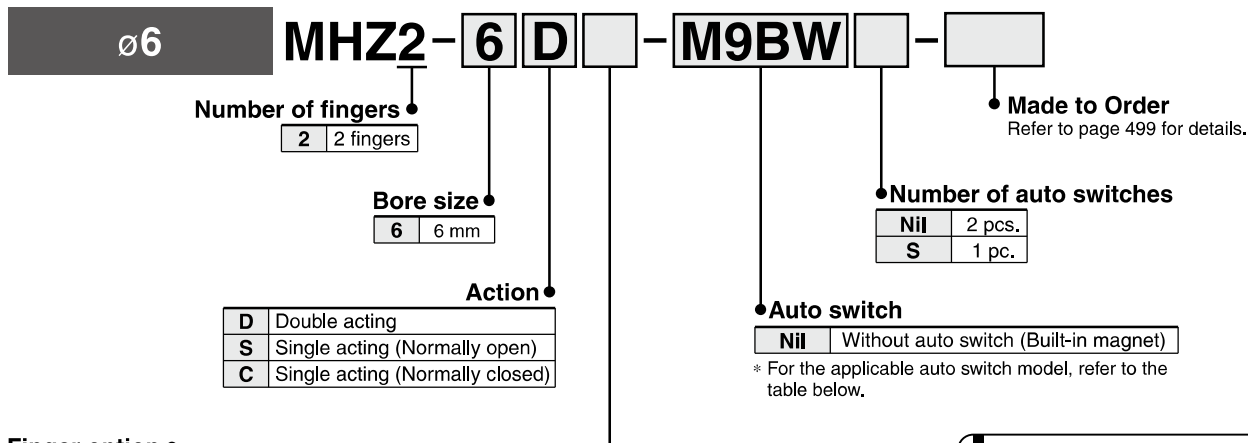
# Parallel Type Air Gripper/Standard Type

# MHZ2 Series

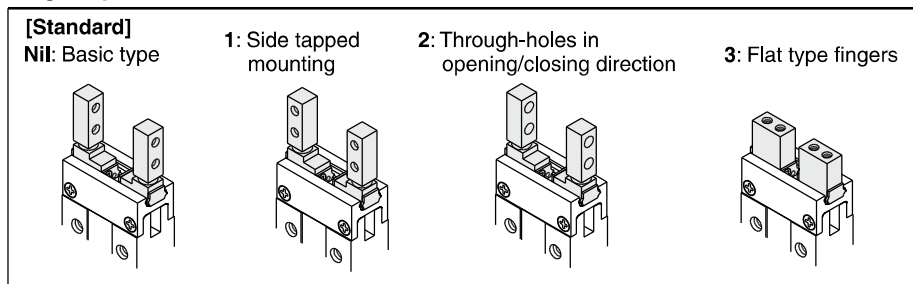
ø6, ø10, ø16, ø20, ø25, ø32, ø40

## How to Order

### Bore size



### Finger option



### Moisture Control Tube IDK Series

When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions. Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to the [Web Catalog](#).

### Applicable Auto Switches/Refer to pages 929 to 983 for further information on the auto switch.

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		0.5 (Nil)	1 (M)	3 (L)	5 (Z)					
							Perpendicular	In-line									
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit		
								F8N	—	●	—	●	○	—			
				M9PV				M9P	●	●	●	○	○				
				F8P				—	●	—	●	○	—				
				M9BV				M9B	●	●	●	○	○				
				F8B				—	●	—	●	○	—				
	Diagnosis (2-color indicator)			3-wire (NPN)	24 V	5 V, 12 V	—	M9NWV	M9NW	●	●	●	○	○	○	IC circuit	
								M9PWV	M9PW	●	●	●	○	○			
				2-wire				M9BVV	M9BW	●	●	●	○	○	○		—
								M9NAV**	M9NA**	○	○	●	○	○	IC circuit		
				3-wire (NPN)				M9PAV**	M9PA**	○	○	●	○	○			—
								3-wire (PNP)	M9BAV**	M9BA**	○	○	●	○	○		
2-wire																	

\*\* 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) M9NW  
1 m..... M (Example) M9NWM  
3 m..... L (Example) M9NWL  
5 m..... Z (Example) M9NWZ

\* Solid state auto switches marked with ○ 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) When using the 2-color 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.

## How to Order

### Bore size

ø10 to ø25

**MHZ2 - 16 D** **- M9BW**

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)

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

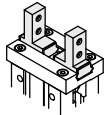
\* For the applicable auto switch model, refer to the table below.

Made to Order	
Refer to page 499 for details.	
Number of auto switches	
Nil	2 pcs.
S	1 pc.
n	n pc.

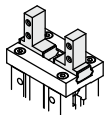
### Finger position/option

**Standard**  
(MHQG2 compatible type)

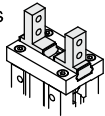
Nil: Basic type



1: Side tapped mounting

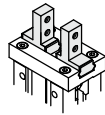


2: Through-holes in opening/closing direction

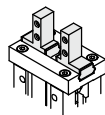


**Narrow type**  
(MHQ2 compatible type)

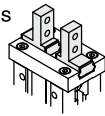
N: Basic type



N1: Side tapped mounting

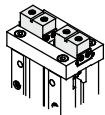


N2: Through-holes in opening/closing direction



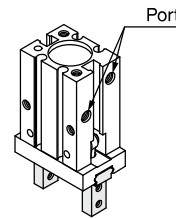
### 3: Flat type fingers

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 548.

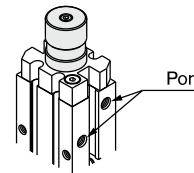


### Body option

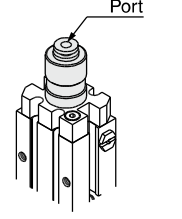
Nil: Basic type



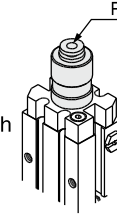
E: End boss type  
Side ported  
(Double acting/  
Single acting)



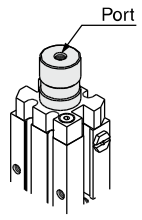
W: End boss type  
Axial ported  
ø4 One-touch fitting  
for coaxial tubing  
(Double acting)



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 Switches/Refer to pages 929 to 983 for further information on the auto switch.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m) *				Applicable model				Pre-wired connector	Applicable load				
					DC	AC	Electrical entry direction		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	ø10	ø16	ø20	ø25						
							Perpendicular	In-line														
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	●	●	●	●	○	IC circuit	Relay, PLC		
								F8N	—	●	—	●	○	—	●	●	●	—				
				M9PV				M9P	●	●	●	○	●	●	●	●	○					
				F8P				—	●	—	●	○	—	●	●	●	—					
				M9BV				M9B	●	●	●	○	●	●	●	●	○					
				F8B				—	●	—	●	○	—	●	●	●	—					
	Diagnosis (2-color indicator)			Water resistant (2-color indicator)	—	—	2-wire	24 V	12 V	—	M9NWV	M9NW	●	●	●	○	●	●	●		○	IC circuit
											M9PWV	M9PW	●	●	●	○	●	●	●		○	
							M9B WV				M9B W	●	●	●	○	●	●	●	○			
							M9NAV**				M9NA**	○	○	●	○	●	●	●	○		IC circuit	
							M9PAV**				M9PA**	○	○	●	○	●	●	●	○			
							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) M9NW  
1 m..... M (Example) M9NWM  
3 m..... L (Example) M9NWL  
5 m..... Z (Example) M9NWZ

\* Solid state auto switches marked with ○ are produced upon receipt of order.

- Note 1) When using the 2-color 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) Through-hole mounting is not possible when using the auto switch at the square groove on the side.  
Note 3) When the product is ordered with auto switch, only MHZ2-10 is shipped with the auto switch mounting brackets. When ordering an auto switch for an MHZ2-10 separately, an auto switch mounting bracket (BMG2-012) is also required. Be sure to order it separately. When the auto switch is used at the square groove on the side with MHZ2-16 to 25, mounting brackets (BMG2-012) are required. Please order them separately. Refer to page 545 for the auto switch mounting brackets.

### Moisture Control Tube IDK Series



When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.

Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to the [Web Catalog](#).

## How to Order

### Bore size

**ø32 to ø40** **MHZ2-32 D** **M9BW**

**Number of fingers**  

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

**Bore size**  

32	32 mm
40	40 mm

**Action**  

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

**Auto switch**  

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

**Number of auto switches**  

Nil	2 pcs.
S	1 pc.
n	n pc.

**Made to Order**  
Refer to page 499 for details.

### Finger option

**[Standard]**  
Nil: Basic type

**1: Side tapped mounting**

**2: Through-holes in opening/closing direction**

**3: Flat type fingers**

### Applicable Auto Switches/Refer to pages 929 to 983 for further information on the auto switch.

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		0.5 (Nil)	1 (M)	3 (L)	5 (Z)		IC circuit	Relay, PLC	
							Perpendicular	In-line								
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	—	M9NV	M9N	●	●	●	○	○	—	—	
									F8N	●	—	●				○
				M9PV			M9P	●		●	●	○	○			
								F8P	●	—	●	○				
				2-wire			12 V		M9BV	M9B	●	●	●			○
								F8B			●	—	●			○
	Diagnosis (2-color indicator)			3-wire (NPN)	5 V, 12 V	—	M9NWV		M9NW	●	●	●	○	○	○	IC circuit
								3-wire (PNP)		M9PWV	M9PW	●	●			
				2-wire			12 V		M9BWW			M9BW	●	●		
								3-wire (NPN)		5 V, 12 V	M9NAV**		M9NA**	○		
				3-wire (PNP)			12 V		M9PAV**			M9PA**		○		
								2-wire		5 V, 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) M9NW  
 1 m..... M (Example) M9NWM  
 3 m..... L (Example) M9NWL  
 5 m..... Z (Example) M9NWX

\* Solid state auto switches marked with ○ are produced upon receipt of order.

Note 1) When using the 2-color 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) Through-hole mounting is not possible when using the auto switch at the square groove on the side.

Note 3) When the auto switch is used at the square groove on the side with MHZ2-32 and 40, mounting brackets (BMG2-012) are required. Please order them separately. Refer to page 545 for the auto switch mounting brackets.

# Parallel Type Air Gripper/Standard Type **MHZ2 Series**

ø6



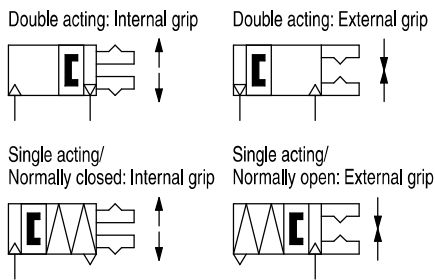
ø10 to ø25



ø32, ø40



## Symbol



Refer to pages 542 to 546 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: Individual Specifications**  
(For details, refer to pages 547 and 548.)

Symbol	Specifications/Description
-X46	Built-in needle valve for finger speed control
-X51	MHQ2/MHQG2-compliant flat type fingers



**Made to Order**  
[Click here for details](#)

Symbol	Specifications/Description
-X4	Heat resistance (100°C)
-X5	Fluororubber seal
-X7	Closing direction spring assist
-X12	Opening direction spring assist
-X50	Without magnet
-X53	EPDM seal/Fluorine grease
-X56	Axial ported type
-X63	Fluorine grease
-X79	Grease for food processing machines, Fluorine grease
-X79A	Grease for food processing machines
-X81A	Anti-corrosive treatment of finger
-X81B	Anti-corrosive treatment of finger and guide

## 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 auto switch (3-wire, 2-wire)

Note) Refer to pages 929 to 983 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/Closing stroke (Both sides) (mm)	Weight <sup>Note 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	230	
	MHZ2-25D(N)	25	65	104	14	420	
	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	235
		MHZ2-25S(N)	25	45		14	425
		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	235
		MHZ2-25C(N)	25		83	14	425
		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 weight 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	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 body option specifications, refer to option specifications on pages 512 and 513.