Parallel Type Air Gripper/Standard Type

MHZ2 Series

ø6, ø10, ø16, ø20, ø25, ø32, ø40

How to Order

Bore size

ø6 **MHZ2 − 6 D □ − M9B □**

Number of fingers

2	2 fingers

Bore size

6	6 mm

Action

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

Number of auto switches

Nil	2 pcs.
S	1 pc.

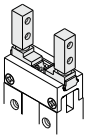
Auto switch

Nil	Without auto switch (Built-in magnet)

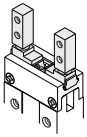
∗ For the applicable auto switch model, refer to the table below.

Finger option

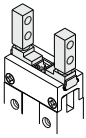
[Standard]
Nil: Basic type



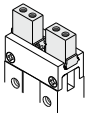
1: Side tapped mounting



2: Through-holes in opening/closing direction



3: Flat type fingers



Applicable Auto Switches

Type	Electrical entry	Indicator light	Wiring (Output)	Load volta		Auto switch model	
				DC	AC	Perpendicular	In-line
Solid state auto switch	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N
						F8N	—
			3-wire (PNP)			M9PV	M9P
						F8P	—
			2-wire	12 V		M9BV	M9B
						F8B	—

∗ Lead wire length 3 meter.

How to Order

Bore size

ø10 to ø25 **MHZ2 – 16 D [ ] [ ] – M9B [ ]**

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.

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

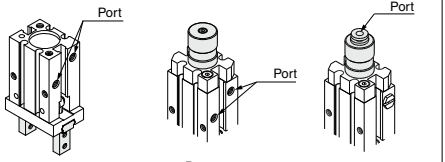
The flat type fingers do not have standard and narrow options.
When MHQG2/MHQ2 compatible types are required, see the -X51 made-to-order specifications on page 460.

Body option

Nil: Basic type

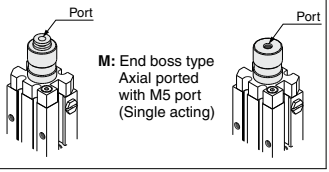
E: End boss type
Side ported
(Double acting/ Single acting)

W: End boss type
Axial ported
ø4 One-touch fitting for coxial 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

Type	Electrical entry	Indicator light	Wiring (Output)	Load volta		Auto switch model	
				DC	AC	Perpendicular	In-line
Solid state auto switch	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N
						F8N	—
			3-wire (PNP)			M9PV	M9P
						F8P	—
			2-wire	12 V		M9BV	M9B
						F8B	—

∗ Lead wire length 3 meter.

How to Order

Bore size

ø32 to ø40 **MHZ2-32D□-M9B□**

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)

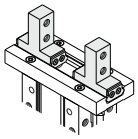
∗ For the applicable auto switch model, refer to the table below.

Number of auto switches

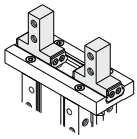
Nil	2 pcs.
S	1 pc.
n	n pc.

Finger option

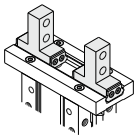
[Standard]
Nil: Basic type



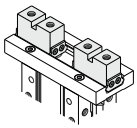
1: Side tapped mounting



2: Through-holes in opening/ closing direction



3: Flat type fingers



Applicable Auto Switches

Type	Electrical entry	Indicator light	Wiring (Output)	Load volta		Auto switch model	
				DC	AC	Perpendicular	In-line
Solid state auto switch	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N
						F8N	—
			3-wire (PNP)			M9PV	M9P
						F8P	—
			2-wire	12 V		M9BV	M9B
						F8B	—

∗ Lead wire length 3 meter.

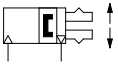
Specifications

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
		Normally closed	
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)			Solid state auto switch (3-wire, 2-wire)

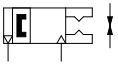
∗ Use the gripper with dust cover when used in a place where there may be dust.

Symbol

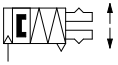
Double acting: Internal grip



Double acting: External grip



Single acting/
Normally closed: Internal grip



Single acting/
Normally open: External grip

Model

Action		Model	Bore size (mm)	Gripping force Note 1) Gripping force per finger Effective value (N) External	Gripping force Note 1) Gripping force per finger Effective value (N) Internal	Opening/ Closing stroke (Both sides) (mm)	Note 2) Weight (g)
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

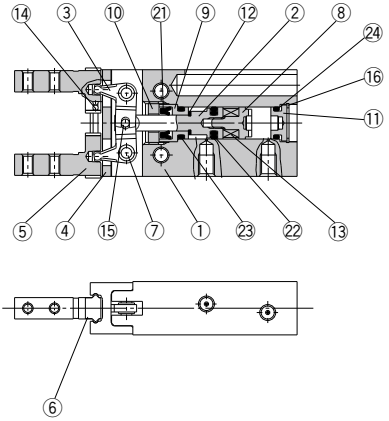
●Body Option/End Boss Type

Symbol	Piping port location	Type of piping port MHZ2-6	MHZ2-10	MHZ2-16	MHZ2-20	MHZ2-25	MHZ2-32	MHZ2-40	Applicable model 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			—		●	●
M	Axial ported	—	M5 x 0.8				—		—	●

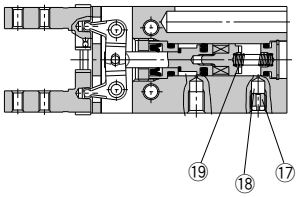
∗ For detailed body option specifications, refer to option specifications on pages 16.

Construction: MHZ2-6□

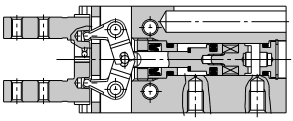
Double acting/With fingers open



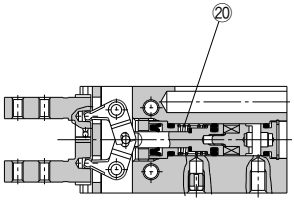
Single acting/Normally open



Double acting/With fingers closed



Single acting/Normally closed



Component Parts

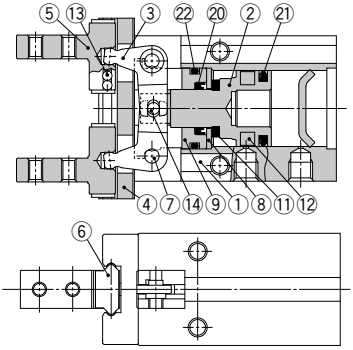
No.	Description	Material	Note
1	**Body**	Aluminum alloy	Hard anodized
2	**Piston**	Stainless steel	
3	**Lever**	Stainless steel	Heat treated
4	**Guide**	Stainless steel	Heat treated
5	**Finger**	Stainless steel	Heat treated
6	**Roller stopper**	Stainless steel	
7	**Lever shaft**	Stainless steel	Nitriding
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

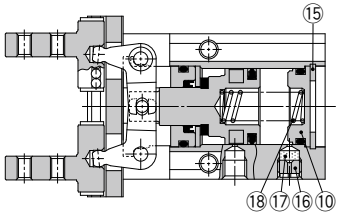
No.	Description	Material	Note
14	**Steel balls**	High carbon chrome bearing steel	
15	**Needle roller**	High carbon chrome bearing steel	
16	**Type C retaining ring**	Carbon steel	Phosphate coated
17	**Exhaust plug**	Brass	Electroless nickel plated
18	**Exhaust filter**	Polyvinyl formal	
19	**N.O. spring**	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	

Construction: MHZ2-10□ to 25□

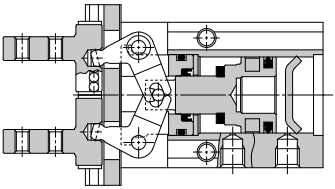
Double acting/With fingers open



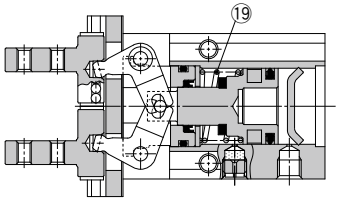
Single acting/Normally open



Double acting/With fingers closed



Single acting/Normally closed



Component Parts

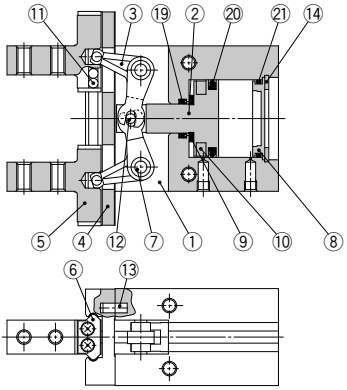
No.	Description	Material	Note
1	**Body**	Aluminum alloy	Hard anodized
2	**Piston**	ø10, ø16: Stainless steel ø20, ø25: Aluminum alloy	ø20, ø25: Hard anodized
3	**Lever**	Stainless steel	Nitriding
4	**Guide**	Stainless steel	Heat treated
5	**Finger**	Stainless steel	Heat treated
6	**Roller stopper**	Stainless steel	
7	**Lever shaft**	Stainless steel	Nitriding
8	**Seal support**	Stainless steel	
9	**Rod cover**	Synthetic resin	
10	**Cap**	Synthetic resin	Single acting/Normally open only
11	**Bumper**	Urethane rubber	

Component Parts

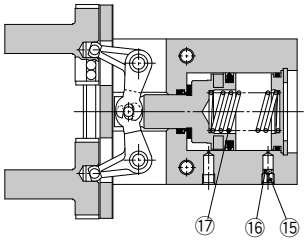
No.	Description	Material	Note
12	**Rubber magnet**	Synthetic rubber	
13	**Steel balls**	High carbon chrome bearing steel	
14	**Needle roller**	High carbon chrome bearing steel	
15	**Type C retaining ring**	Carbon steel	Phosphate coated Single acting/Normally open only
16	**Exhaust plug A**	Brass	Electroless nickel plated
17	**Exhaust filter A**	Polyvinyl formal	
18	**N.O. spring**	Stainless steel spring wire	
19	**N.C. spring**	Stainless steel spring wire	
20	**Rod seal**	NBR	
21	**Piston seal**	NBR	
22	**Gasket**	NBR	

Construction: MHZ2-32□ to 40□

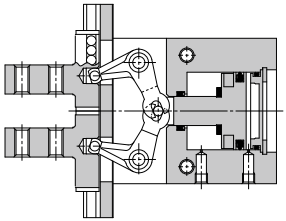
Double acting/With fingers open



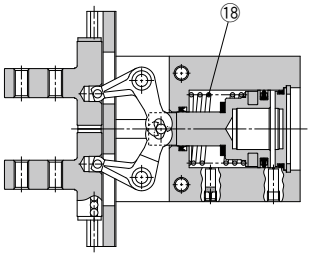
Single acting/Normally open



Double acting/With fingers closed



Single acting/Normally closed



Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	Hard anodized
2	**Piston**	Aluminum alloy	Hard anodized
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	**Cap**	Aluminum alloy	Clear anodized
9	**Bumper**	Urethane rubber	
10	**Rubber magnet**	Synthetic rubber	
11	**Steel balls**	High carbon chrome bearing steel	

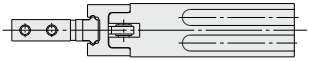
Component Parts

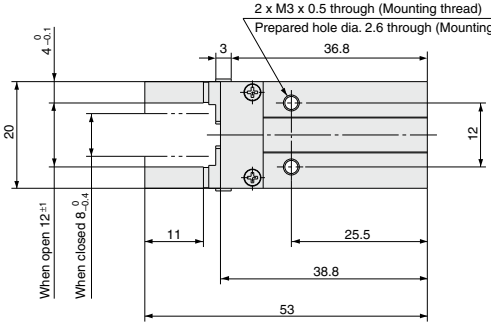
No.	Description	Material	Note
12	**Needle roller**	High carbon chrome bearing steel	
13	**Parallel pin**	Stainless steel	
14	**Type C retaining ring**	Carbon steel	Phosphate coated
15	**Exhaust plug A**	Brass	Electroless nickel plated
16	**Exhaust filter A**	Polyvinyl formal	
17	**N.O. spring**	Stainless steel spring wire	
18	**N.C. spring**	Stainless steel spring wire	
19	**Rod seal**	NBR	
20	**Piston seal**	NBR	
21	**Gasket**	NBR	

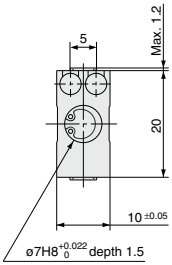
Dimensions

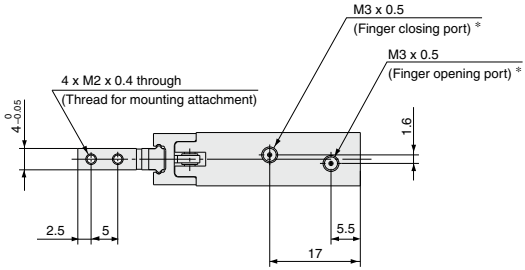
MHZ2-6□ Double acting/Single acting
Basic type

Use the MHZJ2 series with a dust cover when used in a place where there may be dust.



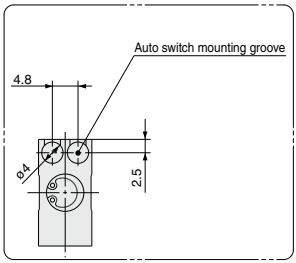






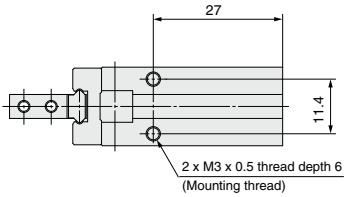
* For single action, the port on one side is a breathing hole.

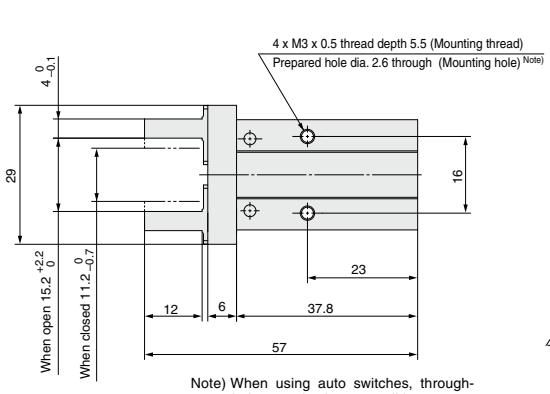
Auto Switch Mounting Groove Dimensions



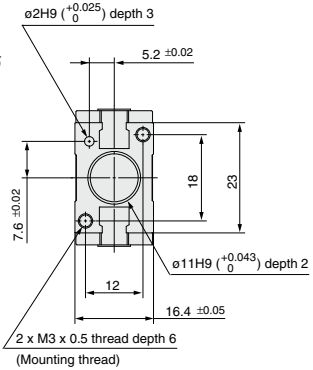
MHZ2-10□ Double acting/Single acting
Basic type

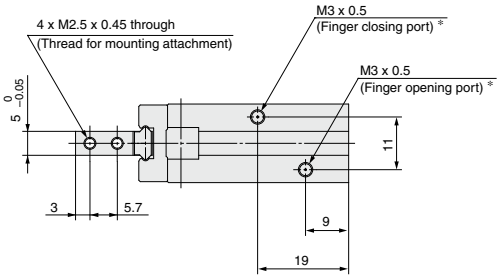
Use the MHZJ2 series with a dust cover when used in a place where there may be dust.





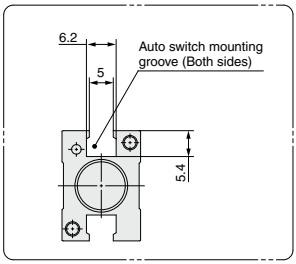
Note) When using auto switches, through-hole mounting is not possible.





* For single action, the port on one side is a breathing hole.

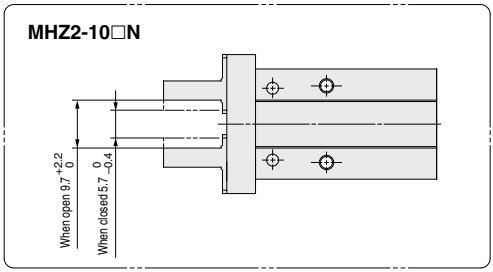
Auto Switch Mounting Groove Dimensions



Note) When using auto switches, through-hole mounting is not possible.

Finger Position/Narrow Type

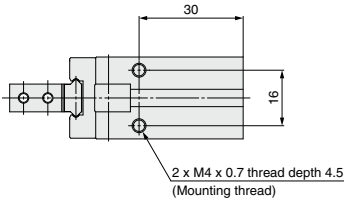
MHZ2-10□N

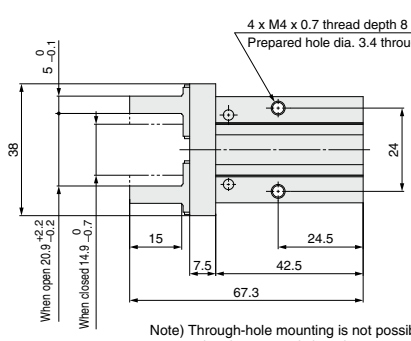


Dimensions

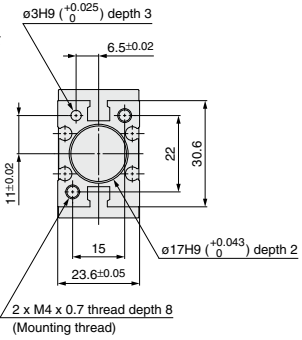
MHZ2-16□ Double acting/Single acting
Basic type

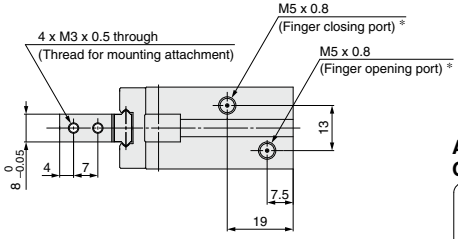
Use the MHZJ2 series with a dust cover when used in a place where there may be dust.





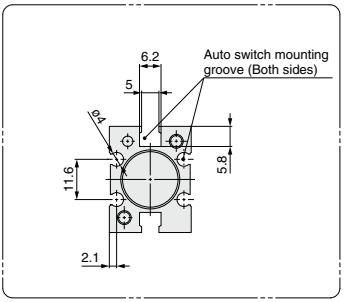
Note) Through-hole mounting is not possible when using the auto switch at the square groove.





* For single action, the port on one side is a breathing hole.

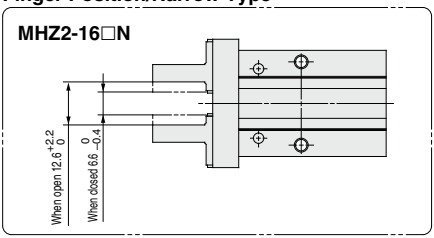
Auto Switch Mounting Groove Dimensions



Note) Through-hole mounting is not possible when using the auto switch at the square groove.

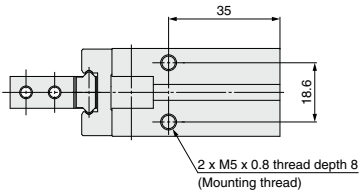
Finger Position/Narrow Type

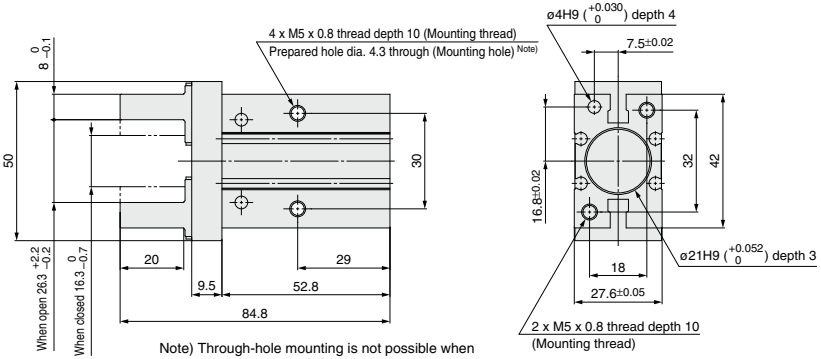
MHZ2-16□N



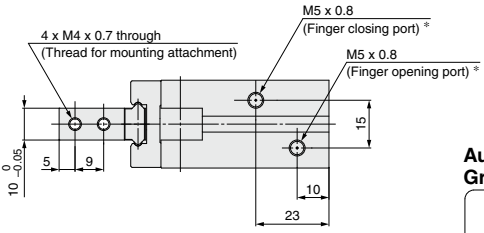
MHZ2-20□ Double acting/Single acting Basic type

Use the MHZJ2 series with a dust cover when used in a place where there may be dust.



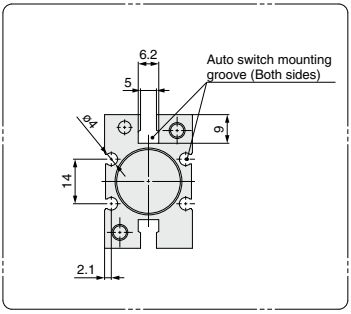


Note) Through-hole mounting is not possible when using the auto switch at the square groove.



* For single action, the port on one side is a breathing hole.

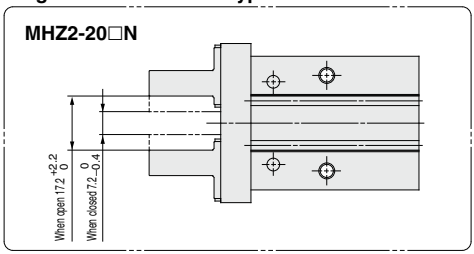
Auto Switch Mounting Groove Dimensions



Note) Through-hole mounting is not possible when using the auto switch at the square groove.

Finder Position/Narrow Type

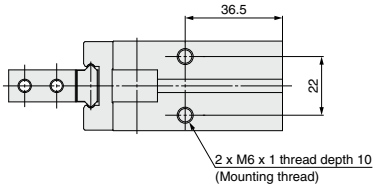
MHZ2-20□N

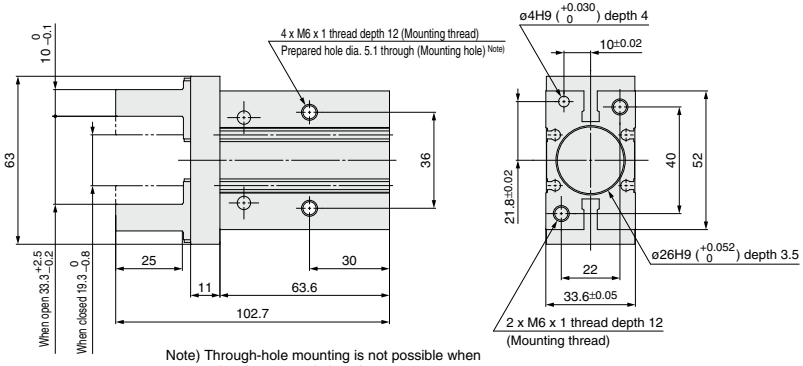


Dimensions

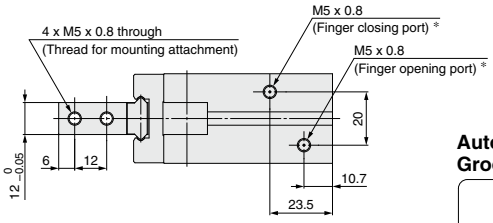
MHZ2-25□ Double acting/Single acting
Basic type

Use the MHZJ2 series with a dust cover when used in a place where there may be dust.



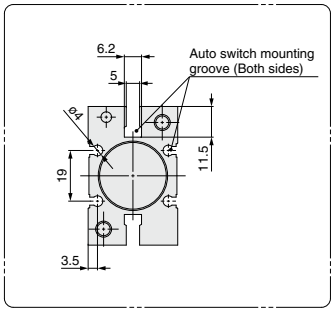


Note) Through-hole mounting is not possible when using the auto switch at the square groove.



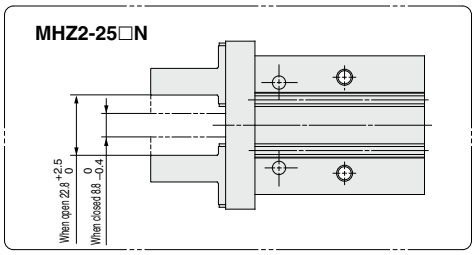
* For single action, the port on one side is a breathing hole.

Auto Switch Mounting Groove Dimensions



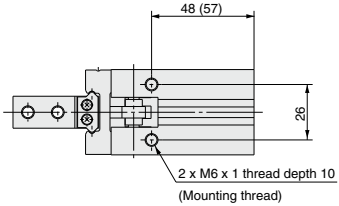
Note) Through-hole mounting is not possible when using the auto switch at the square groove.

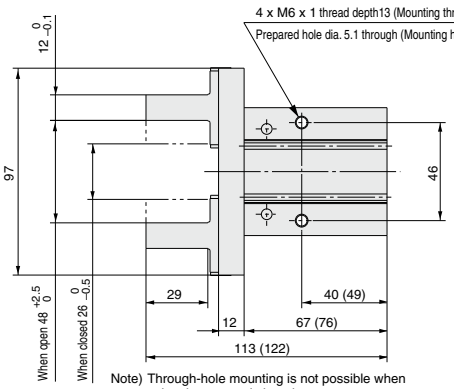
Finger Position/Narrow Type



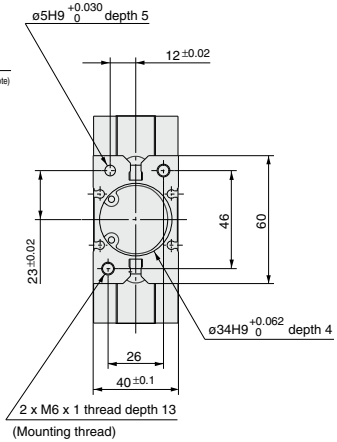
MHZ2-32□ Double acting/Single acting
Basic type

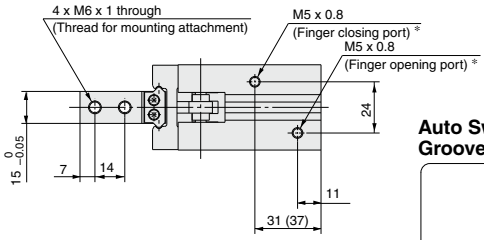
The values inside ( ) are dimensions for the single acting type.





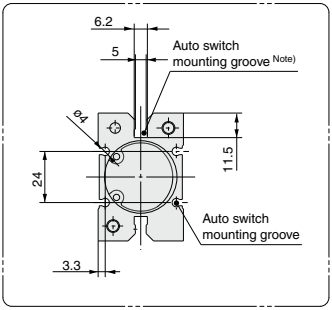
Note) Through-hole mounting is not possible when using the auto switch at the square groove.





* For single action, the port on one side is a breathing hole.

Auto Switch Mounting Groove Dimensions

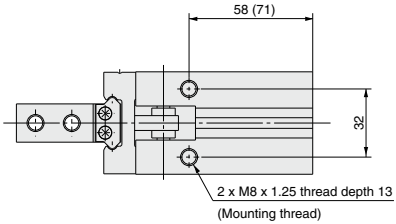


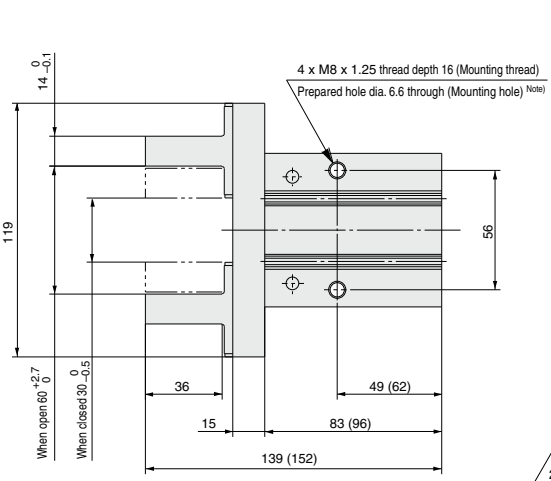
Note) Through-hole mounting is not possible when using the auto switch at the square groove.

Dimensions

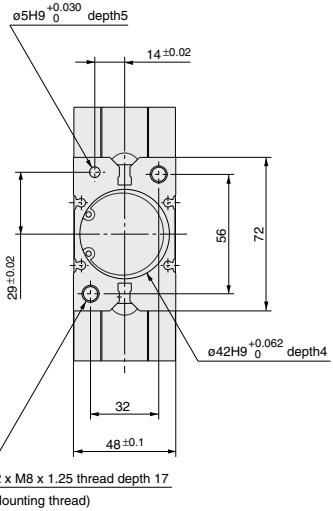
MHZ2-40□ Double acting/Single acting
Basic type

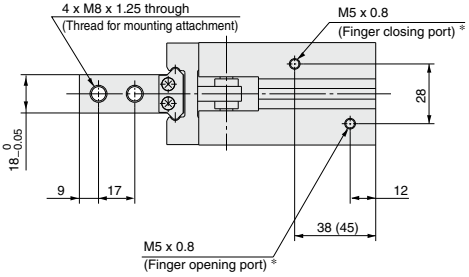
The values inside ( ) are dimensions for the single acting type.





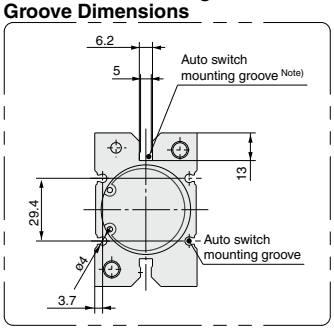
Note) Through-hole mounting is not possible when using the auto switch at the square groove.





* For single action, the port on one side is a breathing hole.

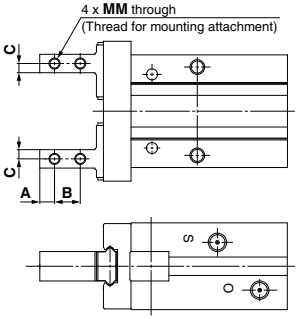
Auto Switch Mounting Groove Dimensions



Note) Through-hole mounting is not possible when using the auto switch at the square groove.

Standard Type/*MHZ2 Series*
Finger Option

Side Tapped Mounting [1/N1]

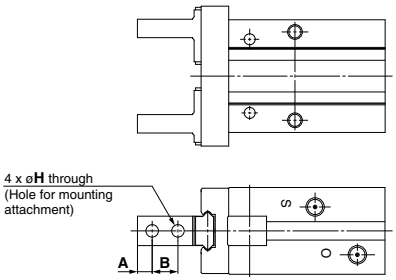


(mm)

Model	A	B	C	MM
MHZ2-6□1	2.5	5	2	M2 x 0.4
MHZ2-10□$^{1}_{N1}$□	3	5.7	2	M2.5 x 0.45
MHZ2-16□$^{1}_{N1}$□	4	7	2.5	M3 x 0.5
MHZ2-20□$^{1}_{N1}$□	5	9	4	M4 x 0.7
MHZ2-25□$^{1}_{N1}$□	6	12	5	M5 x 0.8
MHZ2-32□1□	7	14	6	M6 x 1
MHZ2-40□1□	9	17	7	M8 x 1.25

∗ Specifications and dimensions other than the above are the same as the basic type (including narrow type).

Through-holes in Opening/ Closing Direction [2/N2]

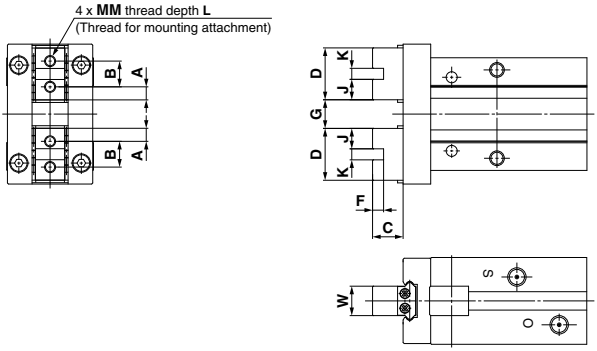


(mm)

Model	A	B	H
MHZ2-6□2	2.5	5	2.4
MHZ2-10□$^{2}_{N2}$□	3	5.7	2.9
MHZ2-16□$^{2}_{N2}$□	4	7	3.4
MHZ2-20□$^{2}_{N2}$□	5	9	4.5
MHZ2-25□$^{2}_{N2}$□	6	12	5.5
MHZ2-32□2□	7	14	6.6
MHZ2-40□2□	9	17	9

∗ Specifications and dimensions other than the above are the same as the basic type (including narrow type).

Flat Type Fingers [3]



(mm)

Model	A	B	C	D	F	G		J	K	MM	L	W	Weight (g)
						Open	Closed						
MHZ2-6□3 (1)	2	3.5	7.2	7.5	—	$5^{+1.2}_{-0.8}$	$1^{+0.2}_{0}$	—	—	M2 x 0.4	3	$4^{0}_{-0.05}$	26
MHZ2-10□3□ (2)(3)	2.45	6	5.2	10.9	2	$5.4^{+2.2}_{0}$	$1.4^{0}_{-0.2}$	4.45	$2H9^{+0.025}_{0}$	M2.5 x 0.45	5	$5^{0}_{-0.05}$	55
MHZ2-16□3□ (2)(3)	3.05	8	8.3	14.1	2.5	$7.4^{+2.2}_{0}$	$1.4^{0}_{-0.2}$	5.8	$2.5H9^{+0.025}_{0}$	M3 x 0.5	6	$8^{0}_{-0.05}$	115
MHZ2-20□3□ (2)(3)	3.95	10	10.5	17.9	3	$11.6^{+2.3}_{0}$	$1.6^{0}_{-0.2}$	7.45	$3H9^{+0.025}_{0}$	M4 x 0.7	8	$10^{0}_{-0.05}$	225 (230)
MHZ2-25□3□ (2)(3)	4.9	12	13.1	21.8	4	$16^{+2.5}_{0}$	$2^{0}_{-0.2}$	8.9	$4H9^{+0.030}_{0}$	M5 x 0.8	10	$12^{0}_{-0.05}$	410 (415)
MHZ2-32□3□	7.3	20	18	34.6	5	$25^{+2.7}_{0}$	$3^{0}_{-0.2}$	14.8	$5H9^{+0.030}_{0}$	M6 x 1	12	$15^{0}_{-0.05}$	740 (785)
MHZ2-40□3□	8.7	24	22	41.4	6	$33^{+2.9}_{0}$	$3^{0}_{-0.2}$	17.7	$6H9^{+0.030}_{0}$	M8 x 1.25	16	$18^{0}_{-0.05}$	1335 (1430)

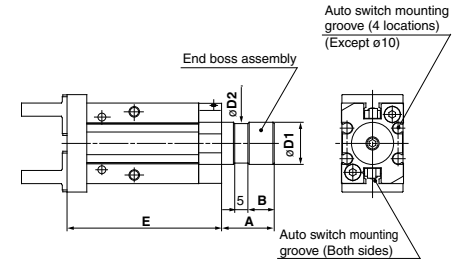
Note 1) To mount attachments, use JISB1101 type M2 round head screws. Be careful not to use commercially available M2 hexagon socket head cap bolt as its top diameter is large.
Note 2) Specifications and dimensions other than the above are the same as the basic type (including narrow type).
Note 3) The overall length is the same as the MHQ(G) flat finger type.
Note 4) The values inside ( ) are for the single acting type.

Standard Type/*MHZ2 Series*
Body Option: End Boss Type

Applicable Model

Symbol	Piping port location	Type of piping port				Applicable model		
		MHZ2-10	MHZ2-16	MHZ2-20	MHZ2-25	Double acting	Single acting	
							Normally open	Normally closed
E	Side ported	M3 x 0.5	M5 x 0.8			●	●	●
M	Axial ported	M5 x 0.8				—	●	●

Side Ported [E]



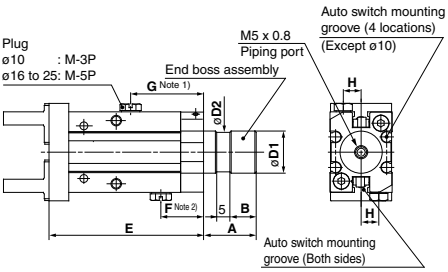
(mm)

Model	A	B	D1	D2	E
MHZ2-10□□E	15	7	12f8 $^{-0.016}_{-0.043}$	11	52.8
MHZ2-16□□E	20	10	16f8 $^{-0.016}_{-0.043}$	15	58.7
MHZ2-20□□E	22	12	20f8 $^{-0.020}_{-0.053}$	19	70.5
MHZ2-25□□E	25	15	25f8 $^{-0.020}_{-0.053}$	24	82.9

Other dimensions and specifications correspond to the standard type.

∗ Refer to the dimension table.
∗ When auto switches are used at the square groove on the side, side mounting with through-holes is not possible.

Axial Ported (with M5 Port) [M]



(mm)

Model	A	B	D1	D2	E	F	G	H
MHZ2-10 S C □M	15	7	12f8 $^{-0.016}_{-0.043}$	11	52.8	18	28.3	5.5
MHZ2-16 S C □M	20	10	16f8 $^{-0.016}_{-0.043}$	15	58.7	16.2	27.7	6.5
MHZ2-20 S C □M	22	12	20f8 $^{-0.020}_{-0.053}$	19	70.5	18.2	31.2	7.5
MHZ2-25 S C □M	25	15	25f8 $^{-0.020}_{-0.053}$	24	82.9	19	31.8	10

Other dimensions and specifications correspond to the standard type.

∗ Refer to the dimension table.
∗ When auto switches are used at the square groove on the side, side mounting with through-holes is not possible.
Note 1) Normally open type plug position.
Note 2) Normally closed type plug position.
The plug is mounted on only one side for the single acting type.

Weight

(g)

Model	End boss type (Symbol)			
	E	W	K	M
MHZ2-10□□	65	64	66	65
MHZ2-16□□	148	147	148	147
MHZ2-20□□	272	277	277	277
MHZ2-25□□	485	495	496	494