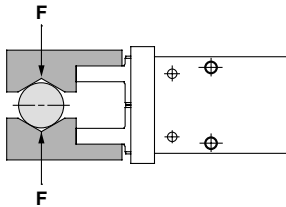


Step 1 Effective Gripping Force: Series MHZ□2/Double Acting/External Gripping Force

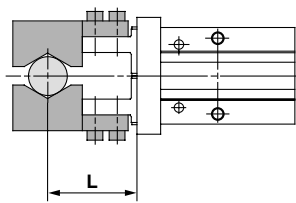
- Indication of effective gripping force

The effective gripping force shown in the graphs to the right 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.



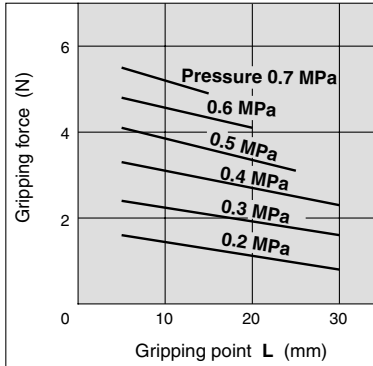
External Grip

MHZA2, MHZ2, MHZL2

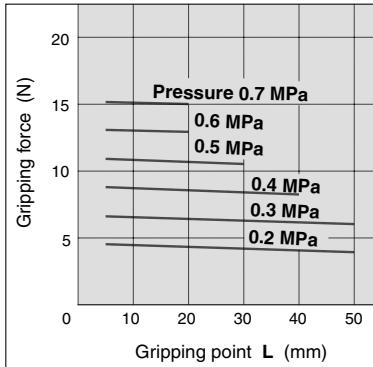


External Gripping Force

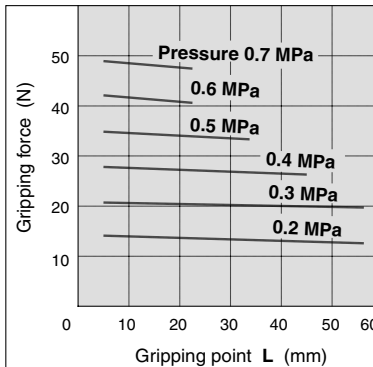
MHZ2-6D/MHZA2-6D



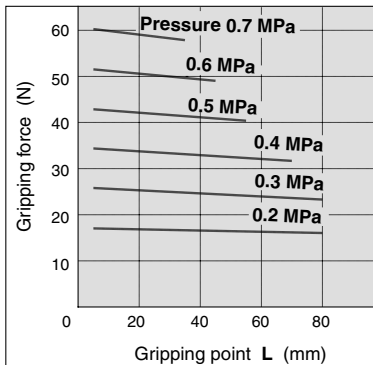
MHZ2-10D/MHZL2-10D



MHZ2-16D/MHZL2-16D

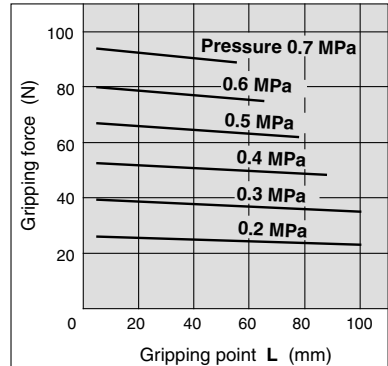


MHZ2-20D/MHZL2-20D

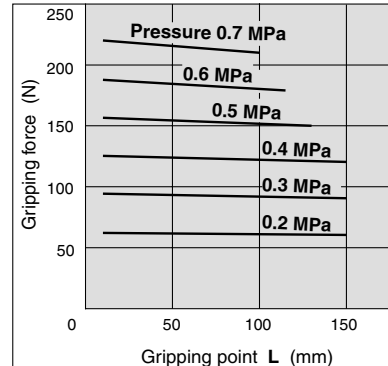


External Gripping Force

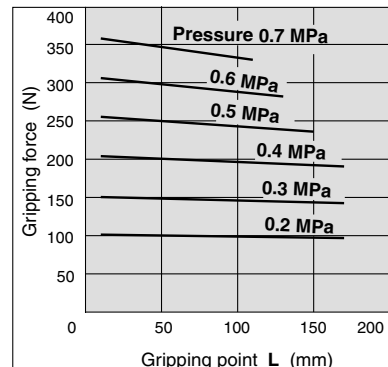
MHZ2-25D/MHZL2-25D



MHZ2-32D



MHZ2-40D



MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

-X□

MRHQ

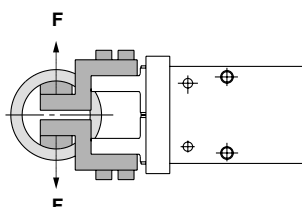
MA

D-□

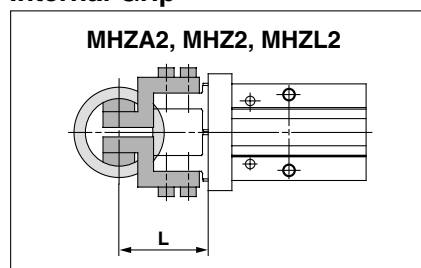
Model Selection

Step 1 Effective Gripping Force: Series MHZ□2/Double Acting/Internal Gripping Force

- Indication of effective gripping force
The effective gripping force shown in the graphs to the right 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.

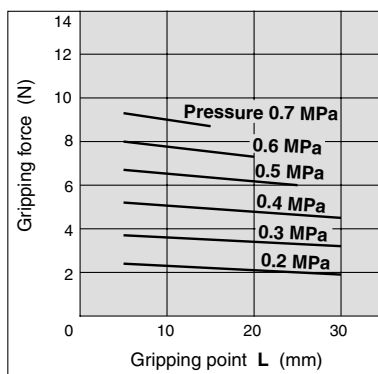


Internal Grip

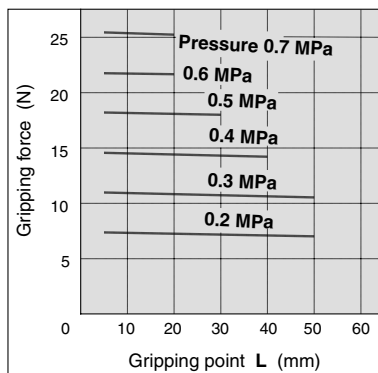


Internal Gripping Force

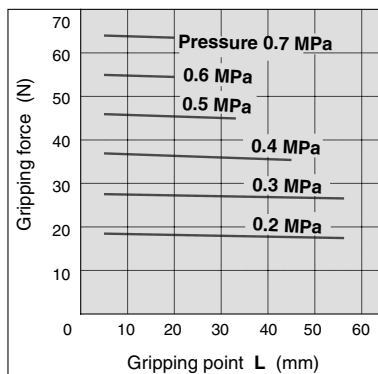
MHZ2-6D/MHZA2-6D



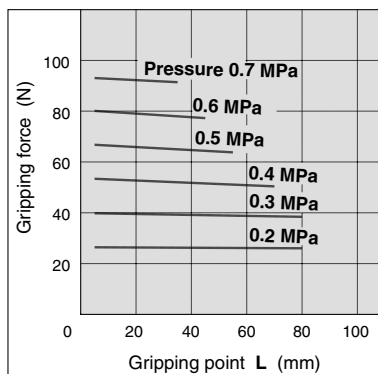
MHZ2-10D/MHZA2-10D



MHZ2-16D/MHZA2-16D

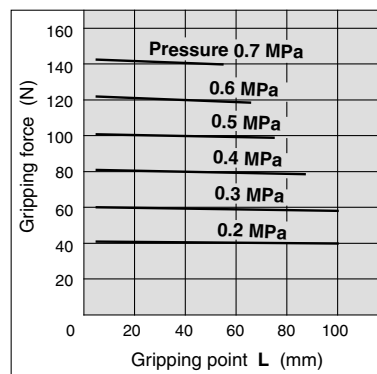


MHZ2-20D/MHZA2-20D

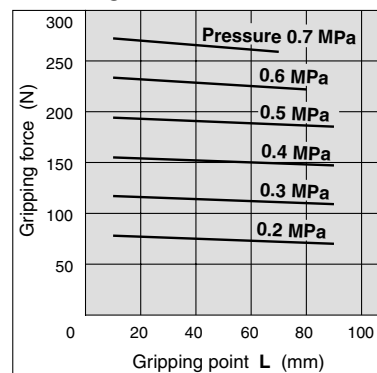


Internal Gripping Force

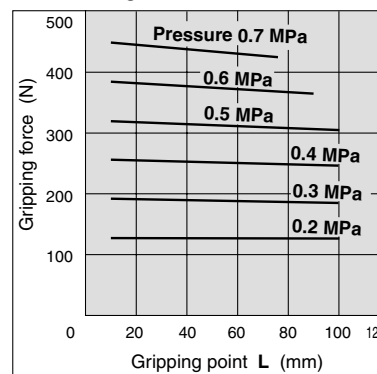
MHZ2-25D/MHZA2-25D



MHZ2-32D

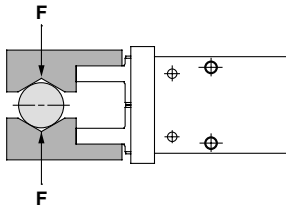


MHZ2-40D



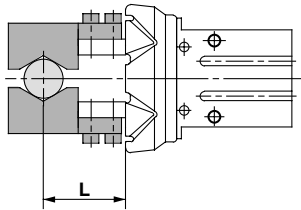
Step 1 Effective Gripping Force: Series MHZ□2/Double Acting/External Gripping Force

- Indication of effective gripping force
The effective gripping force shown in the graphs to the right 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.



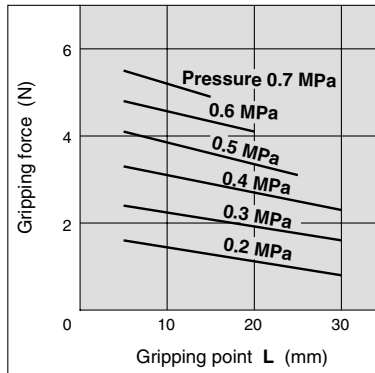
External Grip

MHZAJ2, MHZJ2, 11-MHZ2



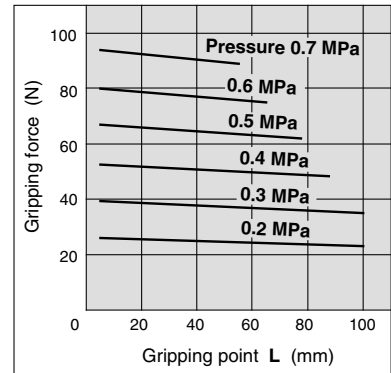
External Gripping Force

MHZJ2-6D/MHZAJ2-6D

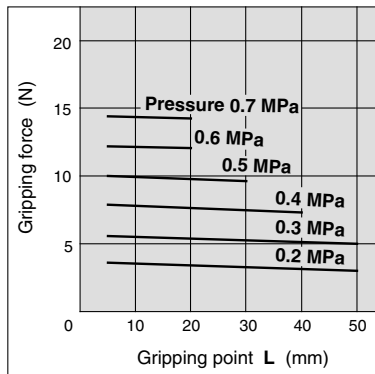


External Gripping Force

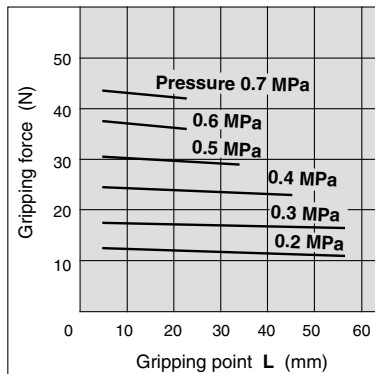
MHZJ2-25D/11-MHZ2-25D



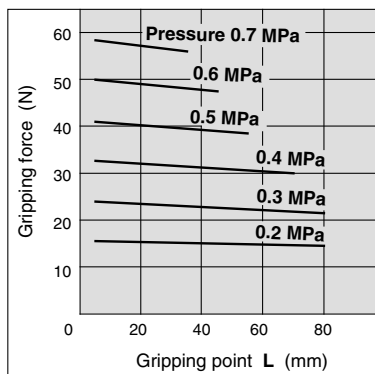
MHZJ2-10D/11-MHZ2-10D



MHZJ2-16D/11-MHZ2-16D



MHZJ2-20D/11-MHZ2-20D



MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

-X□

MRHQ

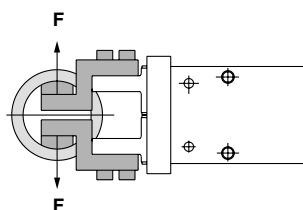
MA

D-□

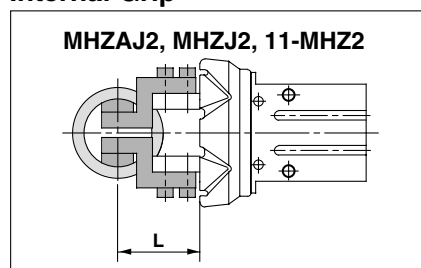
Model Selection

Step 1 Effective Gripping Force: Series MHZ□2/Double Acting/Internal Gripping Force

- Indication of effective gripping force
The effective gripping force shown in the graphs to the right 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.

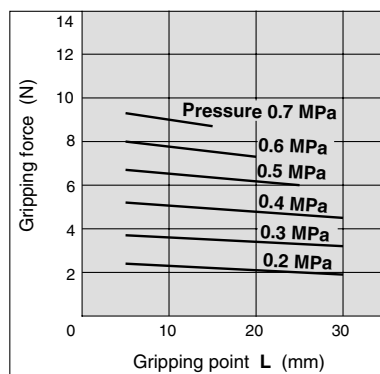


Internal Grip

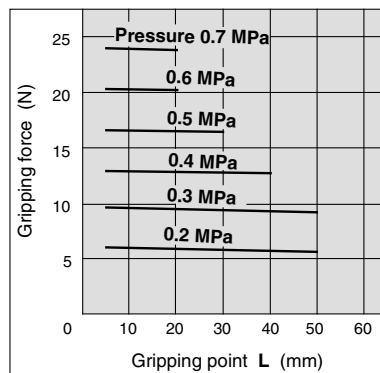


Internal Gripping Force

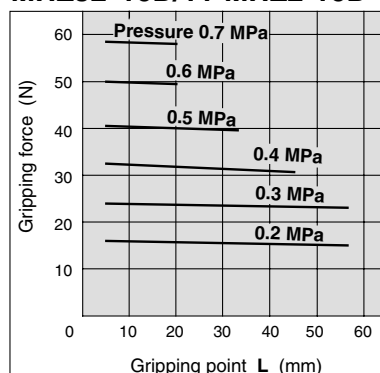
MHZJ2-6D/MHZAJ2-6D



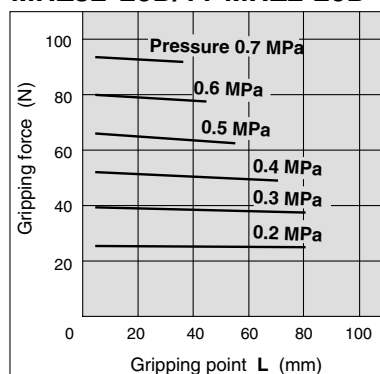
MHZJ2-10D/11-MHZ2-10D



MHZJ2-16D/11-MHZ2-16D

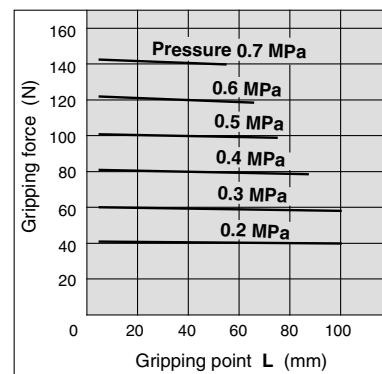


MHZJ2-20D/11-MHZ2-20D



Internal Gripping Force

MHZJ2-25D/11-MHZ2-25D

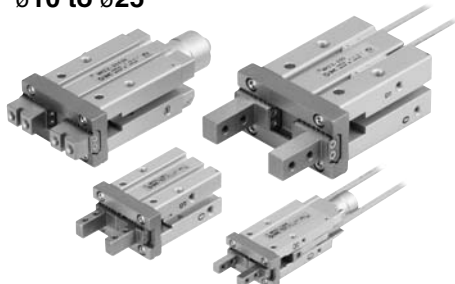


Series MHZ2

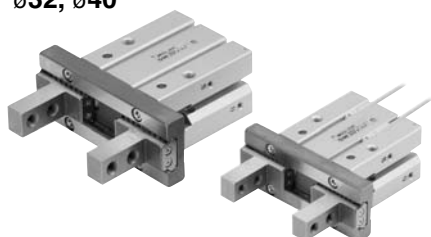
ø6



ø10 to ø25

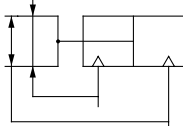


ø32, ø40

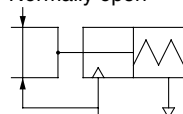


JIS Symbol

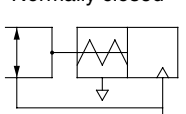
Double acting



Single acting type, Normally open



Single acting type, Normally closed



Refer to pages 436 to 440 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

(Refer to pages 683 to 713 for details.)

Symbol	Specifications/Description
-X4	Heat resistance (100°C)
-X5	Fluororubber seal
-X7	Closing direction spring assist
-X12	Opening direction spring assist
-X46	With needle
-X50	Without magnet
-X51	MHQ(G)2-compliant finger flat type
-X53	EPDM seal/Fluorine grease
-X56	Axial ported type
-X63	Fluorine grease
-X79	Grease for food

Specifications

Operating pressure	Fluid		Air	
	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 Normally closed	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) ^{Note)}			Solid state auto switch (3-wire, 2-wire)	

Note) Refer to pages 761 to 809 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 ^{Note 1)}		Opening/ Closing stroke (Both sides) (mm)	^{Note 2)} Mass (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	235
		MHZ2-25D(N)	25	65	104	14	430
		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	240
		MHZ2-25S(N)	25	45		14	435
		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	240
		MHZ2-25C(N)	25		83	14	430
		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 mass of auto switch.

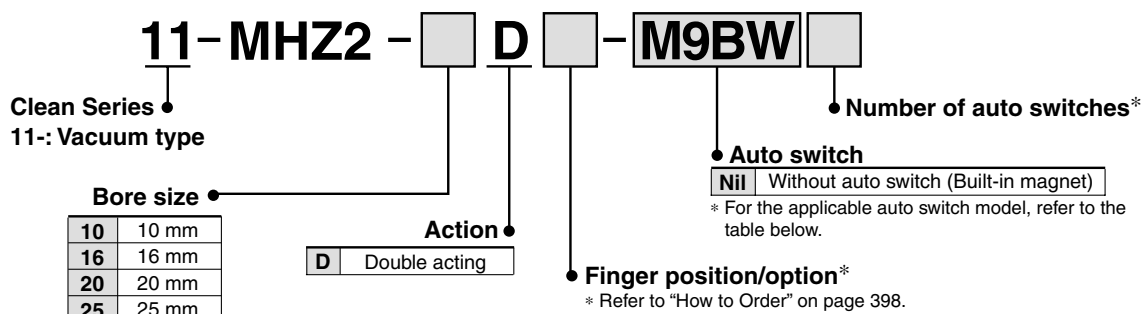
Option

●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							●	●
E	Side ported	—	M3 x 0.5						●	●
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 412 and 413.

Clean Series: Air Gripper



Applicable Auto Switch/Refer to pages 761 to 809 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		
							Electrical entry direction		0.5 (Nil)	1 (M)	3 (L)	5 (Z)				
					DC	AC	Perpendicular	In-line								
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay PLC
				3-wire (PNP)				F8N	—	●	—	●	○	—		
				2-wire				M9PV	M9P	●	●	●	○	○		
								F8P	—	●	—	●	○	—		
	Diagnosis (2-color indicator)			2-wire	12 V	M9BV	M9B	●	●	●	○	○	○	—	—	
				3-wire (NPN)	5 V, 12 V	F8B	—	●	—	●	○	—				
				3-wire (PNP)		M9NWV	M9NW	●	●	●	○	○	IC circuit			
				2-wire		12 V	M9PWV	M9PW	●	●	●	○		○	—	
				M9BWV	M9BW	●	●	●	○	○						

* 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) Take note of hysteresis with 2-color indication type switches. Refer to page 438 for detailed auto switch specifications.

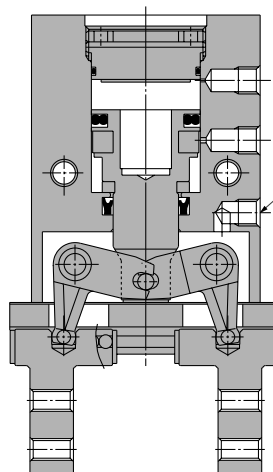
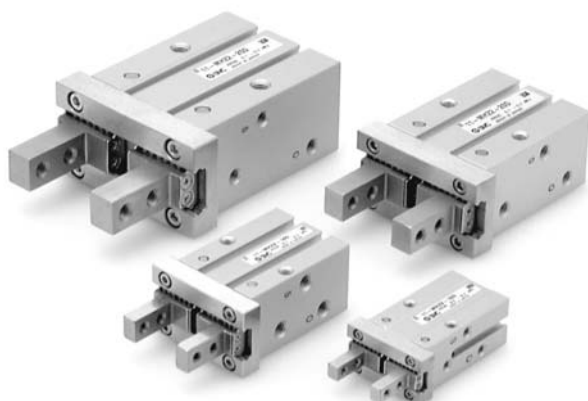
Note 2) When using a D-F8□ switch, mount it at a distance of 10 mm or more from magnetic substances such as iron, etc.

Note 3) Through-hole mounting is not possible when using the auto switch at the square groove on the side.

Note 4) Only MHZ2-10 is shipped with the auto switch mounting brackets. When the auto switch is used at the square groove on the side with MHZ2-16 to 25, mounting brackets are required. Please order them separately. Refer to page 439 for the auto switch mounting brackets.

Specifications

Fluid	Air
Operating pressure	ø10: 0.2 to 0.7 MPa ø16 to ø25: 0.1 to 0.7 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
Particulate generation grade	Grade 2
Auto switch (Option)	Solid state auto switch (3-wire, 2-wire)



Vacuum port

The concentrated vacuuming of internally generated particulates prevents them from spreading into the clean room.

For details, refer to "Pneumatic Clean Series" catalog.

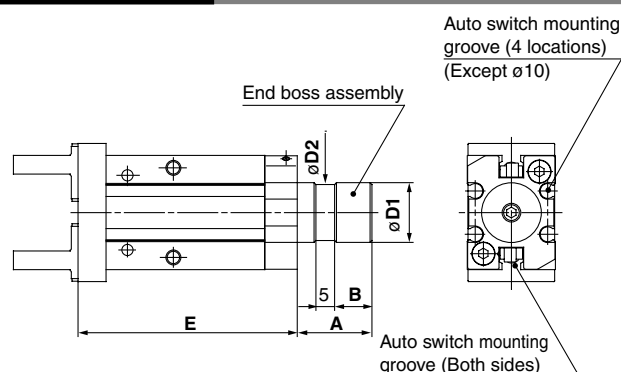
Standard Type/series MHZ2

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			●	●	●
W	Axial ported	With ø4 One-touch fitting for coaxial tubing				●	—	—
K		With ø4 One-touch fitting				—	●	●
M		M5 x 0.8				—	●	●

Side Ported [E]



(mm)

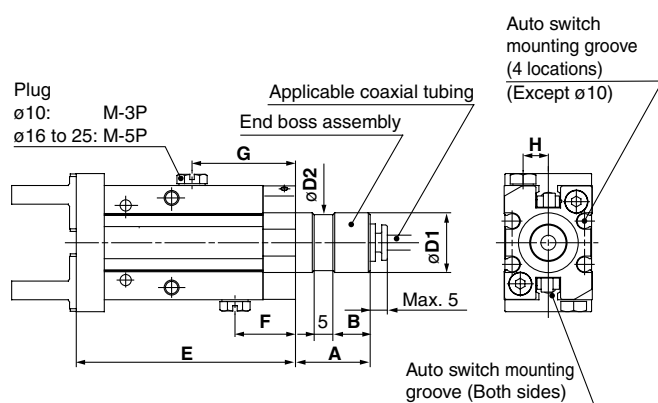
Model	A	B	D1	D2	E
MHZ2-10□□E	15	7	12f8 ^{-0.016} _{-0.043}	11	52.8
MHZ2-16□□E	20	10	16f8 ^{-0.016} _{-0.043}	15	58.7
MHZ2-20□□E	22	12	20f8 ^{-0.020} _{-0.053}	19	70.5
MHZ2-25□□E	25	15	25f8 ^{-0.020} _{-0.053}	24	82.9

Other dimensions and specifications correspond to the standard type.

* Refer to the dimension table.

* When auto switches are used, side mounting with through-holes is not possible.

Axial Ported (with One-touch fitting for coaxial tubing) [W]



(mm)

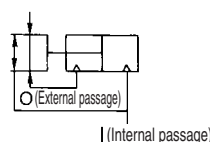
Model	A	B	D1	D2	E	F	G	H
MHZ2-10D□W	15	7	12f8 ^{-0.016} _{-0.043}	11	52.8	18	28.3	5.5
MHZ2-16D□W	20	10	16f8 ^{-0.016} _{-0.043}	15	58.7	16.2	27.7	6.5
MHZ2-20D□W	22	12	20f8 ^{-0.020} _{-0.053}	19	70.5	18.2	31.2	7.5
MHZ2-25D□W	25	15	25f8 ^{-0.020} _{-0.053}	24	82.9	19	31.8	10

Other dimensions and specifications correspond to the standard type.

Applicable Coaxial Tubing

Model	TW04B-20
Specifications	
Outside diameter	4 mm
Max. operating pressure	0.6 MPa
Min. bending radius	10 mm
Operating temperature	-20 to 60°C
Material	Nylon 12

Reference symbol

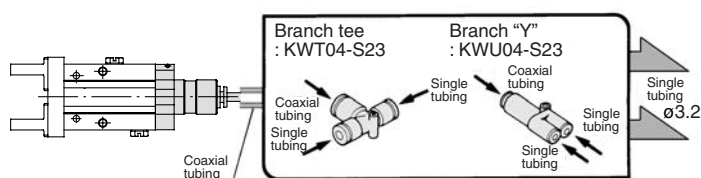


* Refer to the dimension table.

* When auto switches are used, side mounting with through-holes is not possible.

Changing from Coaxial to Single Tubing

Changing to single tubing is possible by using a branch "Y" or branch tee fitting. In this case particularly, single tube fittings and tube for ø3.2 will be necessary.



Branch Tee, Different Diameter Tee, Branch "Y", Male Run Tee

Please contact SMC for the coaxial fittings and tubing.

