How to Order

Clean series

11	Vacuum suction type

11 — MHZ2 — 16 D [ ] — M9N [ ]

22 — MHZ2 — 16 D [ ] — M9N [ ]

Copper, fluorine and silicone-free + Low particle generation

22	Vacuum suction type

Bore size

10	10 mm
16	16 mm
20	20 mm
25	25 mm

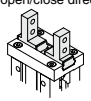
Action

D	Double acting

Number of auto switches

Nil	2 pcs.
S	1 pc.

Finger option

Standard type	**Nil**: Basic 	**1**: Side tapped mounting 	**2**: Through-holes in open/close direction 
Narrow type	**N**: Basic 	**N1**: Side tapped mounting 	**N2**: Through-holes in open/close direction 

3: Flat finger 

Auto switch

Nil	Without auto switch (Built-in magnet)

Auto Switch Specifications (Refer to the **WEB catalog** for further information on auto switches.)

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage			Auto switch model		Lead wire length (m) Note 1)			Applicable load		Applicable model			
					DC		AC	Perpendicular	In-line	0.5 Nil	3 (L)	5 Note 2) (Z)			ø10	ø16	ø20	ø25
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**M9NV**	**M9N**	●	●	○	IC circuit	Relay PLC	●	●	●	●
								F8N	**—**	●	●	○			—	—	●	●
				3-wire (PNP)				**M9PV**	**M9P**	●	●	○			●	●	●	●
								F8P	**—**	●	●	○			—	—	●	●
				2-wire		12 V		**M9BV**	**M9B**	●	●	○	—		●	●	●	●
								F8B	**—**	●	●	○			—	—	●	●

Note 1) Lead wire length symbols: 0.5 m·····Nil (Example) M9N
3 m·····L (Example) M9NL
5 m·····Z (Example) M9NZ

Note 2) Auto switches marked with "○" symbol are produced upon receipt of order.

Refer to page 946 for the applicable auto switch list.

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
Maximum operating frequency	180 c.p.m.
Lubrication	Not required
Action	Double acting
Grease	11-: Fluorine grease 22-: Lithium soap based grease
Cleanliness class (ISO class)	11-/22-: Class 4

Suction Flow Rate of Vacuum Suction Type (Reference values)

Size	Suction flow rate L/min (ANR)
10/16	1
20/25	2

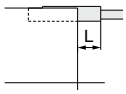
Model

Model	Bore size mm	Gripping force Note 1)		Open/ Close stroke (Both sides) mm	Note 2) Weight g
		Gripping force per finger			
		External	Internal		
11-MHZ2-10D	10	9.8	17	4	60
11-MHZ2-16D	16	30	40	6	125
11-MHZ2-20D	20	42	66	10	250
11-MHZ2-25D	25	65	104	14	455

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.

Protrusion of Auto Switch from Edge of Body

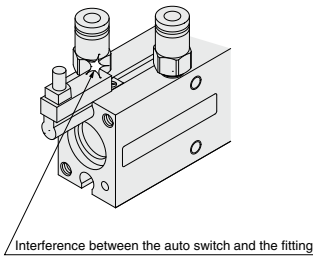
- The amount of auto switch protrusion from the body's end surface is as shown in the table below.
- Use this as a standard when mounting, etc.
- D-F8□ has no protrusion from the body's end surface.

Lead wire type / Explanatory drawing / Auto switch / Finger position / Model		In-line electrical entry
		
		D-M9□
11-22-**MHZ2-10□**	Open	8
	Closed	10
11-22-**MHZ2-16□**	Open	4
	Closed	7
11-22-**MHZ2-20□**	Open	—
	Closed	5
11-22-**MHZ2-25□**	Open	—
	Closed	2

[Mounting of Auto Switch: Precautions]

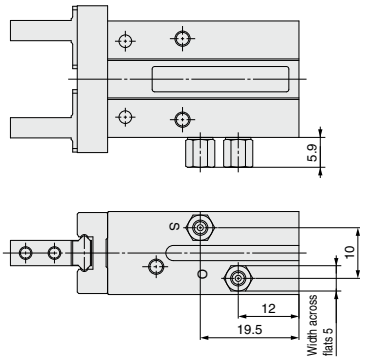
When mounting an auto switch on the piping port surface of the 11-MHZ2-10□, the auto switch may not be mountable due to interference with the fitting. Use an extension fitting included with the product for the combinations in the table below.

Auto switch model	One-touch Fittings (KQ2H/KQ2S/KQ2L/KQ2W/KJH/KJS/KJL/KJW)
D-M9□(V)	×
D-M9□W(V)	×
D-F8□	×
D-M9□A(V)	×



Interference between the auto switch and the fitting

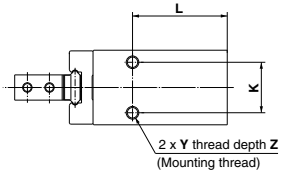
Mounting dimensions of extension fitting

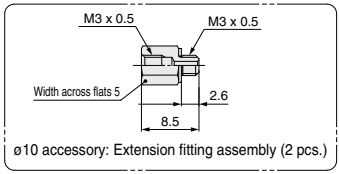


∗ When mounting extension fittings, first, tighten it by hand, then give it an additional 1/4 turn with a wrench.

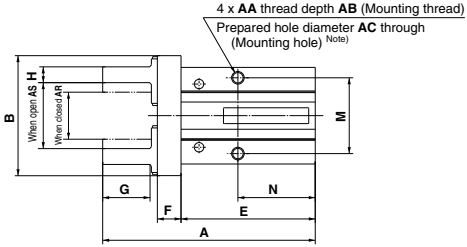
Dimensions

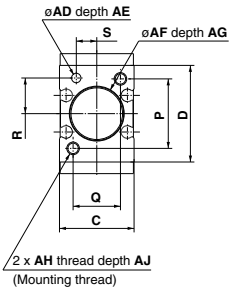
11-22-MHZ2-10, 16, 20, 25

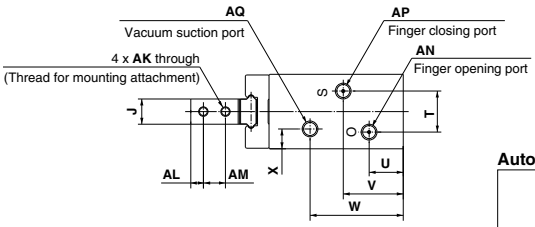




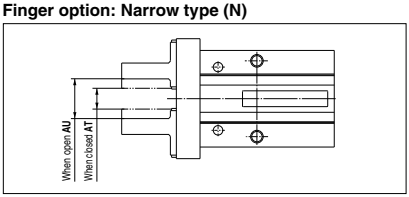
Note) If the fitting attached to the port interferes with the auto switch, please use the extension fitting assembly supplied with the air gripper.



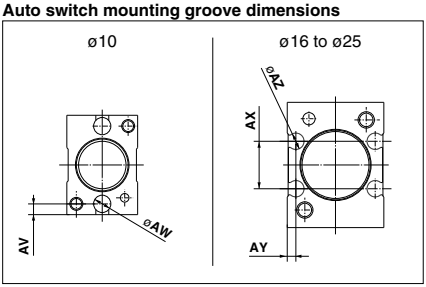




Finger option: Narrow type (N)



Auto switch mounting groove dimensions



(mm)

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
11-22-MHZ2-10D□	57	29	16.4±0.05	23	37.8	6	12	$4^{0}_{-0.1}$	$5^{0}_{-0.05}$	11.4	27	16	23	18	12	7.6±0.02	5.2±0.02	10
11-22-MHZ2-16D□	67.3	38	23.6±0.05	30.6	42.5	7.5	15	$5^{0}_{-0.1}$	$8^{0}_{-0.05}$	16	30	24	24.5	22	15	11±0.02	6.5±0.02	13
11-22-MHZ2-20D□	84.8	50	27.6±0.05	42	52.8	9.5	20	$8^{0}_{-0.1}$	$10^{0}_{-0.05}$	18.6	35	30	29	32	18	16.8±0.02	7.5±0.02	15
11-22-MHZ2-25D□	102.7	63	33.6±0.05	52	63.6	11	25	$10^{0}_{-0.1}$	$12^{0}_{-0.05}$	22	36.5	36	30	40	22	21.8±0.02	10±0.02	20

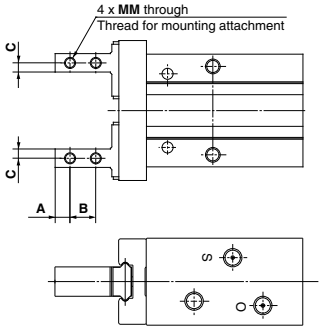
Model	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK
11-22-MHZ2-10D□	12	19.5	28.2	5.5	M3 x 0.5	6	M3 x 0.5	5.5	2.6	$2H9^{+0.025}_{0}$	3	$12.4H9^{+0.043}_{0}$	1.5	M3 x 0.5	6	M2.5 x 0.45
11-22-MHZ2-16D□	10.8	19	29.5	6.5	M4 x 0.7	4.5	M4 x 0.7	8	3.4	$3H9^{+0.025}_{0}$	3	$17.4H9^{+0.043}_{0}$	1.5	M4 x 0.7	8	M3 x 0.5
11-22-MHZ2-20D□	12	23	39.8	8.3	M5 x 0.8	8	M5 x 0.8	10	4.3	$4H9^{+0.030}_{0}$	4	$22.4H9^{+0.052}_{0}$	2	M5 x 0.8	10	M4 x 0.7
11-22-MHZ2-25D□	13	37	49.7	10.8	M6 x 1	10	M6 x 1	12	5.1	$4H9^{+0.030}_{0}$	4	$27.4H9^{+0.052}_{0}$	3	M6 x 1	12	M5 x 0.8

Model	AL	AM	AN	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
11-22-MHZ2-10D□	3	5.7	M3 x 0.5	M3 x 0.5	M3 x 0.5	$11.2^{+0.5}_{-0.2}$	$15.2^{+2.2}_{0}$	$5.7^{+0.5}_{+0.1}$	$9.7^{+2.2}_{0}$	2.5	4	—	—	—
11-22-MHZ2-16D□	4	7	M5 x 0.8	M5 x 0.8	M5 x 0.8	$14.9^{+0.5}_{-0.2}$	$20.9^{+2.2}_{-0.2}$	$6.6^{+0.5}_{+0.1}$	$12.6^{+2.2}_{0}$	—	—	11.6	2.1	4
11-22-MHZ2-20D□	5	9	M5 x 0.8	M5 x 0.8	M5 x 0.8	$16.3^{+0.5}_{-0.2}$	$26.3^{+2.2}_{-0.2}$	$7.2^{+0.5}_{+0.1}$	$17.2^{+2.2}_{0}$	—	—	14	2.1	4
11-22-MHZ2-25D□	6	12	M5 x 0.8	M5 x 0.8	M5 x 0.8	$19.3^{+0.5}_{-0.3}$	$33.3^{+2.5}_{-0.2}$	$8.8^{+0.5}_{+0.1}$	$22.8^{+2.5}_{0}$	—	—	19	3.5	4

Note) Through-hole mounting is not possible for ø10.

Finger Option

Side tapped mounting [1/N1]

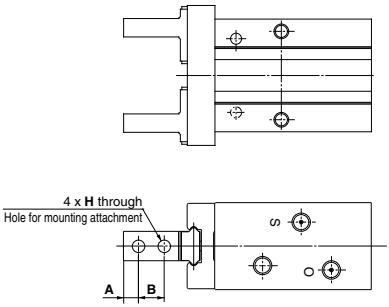


(mm)

Model	A	B	C	MM
11-22-MHZ2-10D 1 N1	3	5.7	2	M2.5 x 0.45
11-22-MHZ2-16D 1 N1	4	7	2.5	M3 x 0.5
11-22-MHZ2-20D 1 N1	5	9	4	M4 x 0.7
11-22-MHZ2-25D 1 N1	6	12	5	M5 x 0.8

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

Through-holes in open/close direction [2/N2]

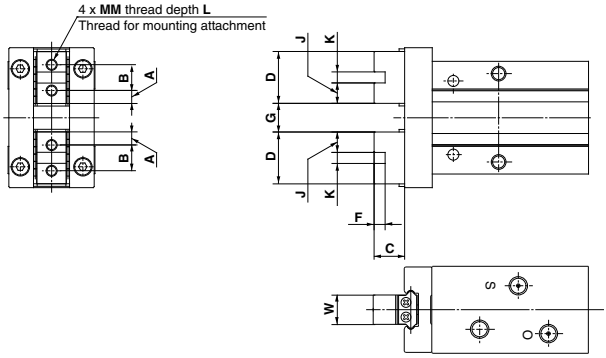


(mm)

Model	A	B	H
11-22-MHZ2-10D 2 N2	3	5.7	2.9
11-22-MHZ2-16D 2 N2	4	7	3.4
11-22-MHZ2-20D 2 N2	5	9	4.5
11-22-MHZ2-25D 2 N2	6	12	5.5

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

Flat finger [3]



(mm)

Model	A	B	C	D	F	G		J	K	MM	L	W	Weight (g)
						Open	Closed						
11-22-MHZ2-10D3 ∗ 1), ∗ 2)	2.45	6	5.2	10.9	2	$5.4^{+2.2}_{0}$	$1.4^{+0.5}_{+0.3}$	4.45	$2H9^{+0.025}_{0}$	M2.5 x 0.45	5	$5^{0}_{0.05}$	60
11-22-MHZ2-16D3 ∗ 1), ∗ 2)	3.05	8	8.3	14.1	2.5	$7.4^{+2.2}_{0}$	$1.4^{+0.5}_{+0.3}$	5.8	$2.5H9^{+0.025}_{0}$	M3 x 0.5	6	$8^{0}_{0.05}$	125
11-22-MHZ2-20D3 ∗ 1), ∗ 2)	3.95	10	10.5	17.9	3	$11.6^{+2.3}_{0}$	$1.6^{+0.5}_{+0.3}$	7.45	$3H9^{+0.025}_{0}$	M4 x 0.7	8	$10^{0}_{0.05}$	250
11-22-MHZ2-25D3 ∗ 1), ∗ 2)	4.9	12	13.1	21.8	4	$16^{+2.5}_{0}$	$2^{+0.5}_{+0.3}$	8.9	$4H9^{+0.030}_{0}$	M5 x 0.8	10	$12^{0}_{0.05}$	450

∗ 1) Specifications and dimensions other than the above are the same as the basic type (Narrow type is not available for D3).
∗ 2) The overall length is the same as the MHQ(G) flat finger type.