

Parallel Type Air Gripper/3-Finger Type MHS3 Series

ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125

How to Order

Bore size

ø16 to ø25 **MHS3 - 20 D - M9BW** - -

Number of fingers
3 3 fingers

Bore size
16 16 mm
20 20 mm
25 25 mm

Action
D Double acting

Auto switch
Nil Without auto switch (Built-in magnet)
S For the applicable auto switch model, refer to the table below.

Number of auto switches
Nil 2 pcs.
S 1 pc.

Made to Order
Refer to page 711 for details.

Applicable Auto Switches/Refer to pages 929 to 983 for further information on 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	Perpendicular	In-line	0.5 (Nil) 1 (M) 1.3 (L) 5 (Z)					
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V,	M9NV	M9N	●	●	●	○	IC circuit	Relay PLC
				3-wire (PNP)		12 V	M9PV	M9P	●	●	●	○		
				2-wire		12 V	M9BV	M9B	●	●	●	○		
				3-wire (NPN)		5 V,	M9NVV	M9NW	●	●	●	○		
				3-wire (PNP)		12 V	M9PVV	M9PW	●	●	●	○		
				2-wire		12 V	M9BVV	M9BW	●	●	●	○		
	Diagnosis (2-color indicator)			3-wire (NPN)	5 V,	M9NAV**	M9NA**	○	○	●	○	IC circuit		
				3-wire (PNP)	12 V	M9PAV**	M9PA**	○	○	●	○			
				2-wire	12 V	M9BAV**	M9BA**	○	○	●	○			
				3-wire (NPN)	5 V,	M9NVV	M9NW	●	●	●	○			
				3-wire (PNP)	12 V	M9PVV	M9PW	●	●	●	○			
				2-wire	12 V	M9BVV	M9BW	●	●	●	○			

** 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) M9N

1 m M (Example) M9NWM

3 m L (Example) M9NWL

5 m Z (Example) M9NZ

* Auto switches marked with a "O" symbol are produced upon receipt of order.

Note) 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.

Bore size

ø32 to ø125 **MHS3 - 50 D - M9BW** - -

Number of fingers
3 3 fingers

Bore size
32 32 mm
40 40 mm
50 50 mm
63 63 mm
80 80 mm
100 100 mm
125 125 mm

Action
D Double acting

Port thread type
Symbol Type Cylinder bore
Nil M thread ø32 to ø63
TN NPT ø80 to ø125
TF G

Number of auto switch
Nil 2 pcs.
S 1 pc.
n "n" pcs.

Made to Order
Refer to page 711 for details.

Auto switch
Nil Without auto switch (Built-in magnet)
S For the applicable auto switch model, refer to the table below.

Applicable Auto Switches/Refer to pages 929 to 983 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)* 0.5 (Nil) 1 (M) 3 (L) 5 (Z)	Pre-wired connector	Applicable load			
					DC	AC	Perpendicular	In-line						
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V,	—	M9NV	M9N	●	●	○	○	IC circuit	Relay PLC
				3-wire (PNP)	12 V		M9PV	M9P	●	●	●	○		
				2-wire	12 V		M9BV	M9B	●	●	●	○		
	Diagnosis (2-color indicator)			3-wire (NPN)	5 V,		M9NVV	M9NW	●	●	○	○	IC circuit	
				3-wire (PNP)	12 V		M9PVV	M9PW	●	●	●	○		
				2-wire	12 V		M9BVV	M9BW	●	●	○	○		
	Water resistant (2-color indicator)			3-wire (NPN)	5 V,		M9NAV**	M9NA**	○	○	●	○	IC circuit	
				3-wire (PNP)	12 V		M9PAV**	M9PA**	○	○	●	○		
				2-wire	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) M9NZ

* Auto switches marked with a "O" symbol 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) When ordering the air gripper with auto switch, auto switch mounting brackets are supplied with the air gripper having a bore size of ø32 to ø125.

Note 3) When ordering the auto switch separately, auto switch mounting brackets (BMG2-012) are required.

710



Parallel Type Air Gripper/3-Finger Type **MHS3 Series**

Models/Specifications

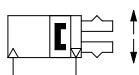


Model		MHS3-16D	MHS3-20D	MHS3-25D	MHS3-32D	MHS3-40D	MHS3-50D	MHS3-63D	MHS3-80D	MHS3-100D	MHS3-125D
Cylinder bore size (mm)		16	20	25	32	40	50	63	80	100	125
Fluid		Air									
Operating pressure (MPa)		0.2 to 0.6				0.1 to 0.6					
Ambient and fluid temperature (°C)		-10 to 60									
Repeatability (mm)		±0.01									
Max. operating frequency (c.p.m.)		120				60			30		
Lubrication		Not required									
Action		Double acting									
Effective gripping force (N) at 0.5 MPa Note 1)	External grip	14	25	42	74	118	187	335	500	750	1,270
	Internal grip	16	28	47	82	130	204	359	525	780	1,320
Opening/Closing stroke (mm) (dia.)		4	4	6	8	8	12	16	20	24	32
Weight (g)		60	100	140	237	351	541	992	1,850	3,340	6,460

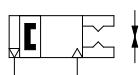
Note 1) Values for ø16 to ø25 are with gripping point L = 20 mm, for ø32 to ø63 with gripping point L = 30 mm, and for ø80 to ø125 with gripping point L = 50 mm. Refer to "Effective Gripping Force" data on pages 713 to 715 for the gripping force at each gripping position.

Symbol

Double acting:
Internal grip



Double acting:
External grip



Made to Order: Individual Specifications

(For details, refer to pages 769 to 785.)

Symbol	Specifications/Description
-X84	Single acting (ø16 to ø63)
-X6708	Environmentally resistant 3-finger air gripper



Made to Order Common Specifications

[Click here for details](#)

Symbol	Specifications/Description
-X4	Heat resistance (100°C)
-X5	Fluororubber seal
-X50	Without magnet
-X53	EPDM seal/Fluorine grease
-X56	Axial ported
-X63	Fluorine grease
-X79	Grease for food processing machines, Fluorine grease
-X79A	Grease for food processing machines

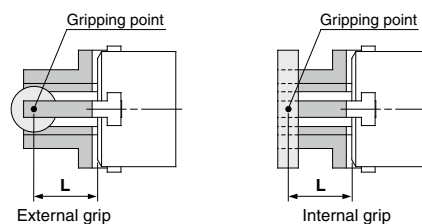
Refer to pages 762 to 768 for the specifications of products with auto switches.

- Auto switch installation examples and mounting positions
- Auto switch hysteresis
- Auto switch mounting
- Protrusion of auto switch from edge of body

Parallel Type Air Gripper/3-Finger Type **MHS3 Series**

Gripping Point

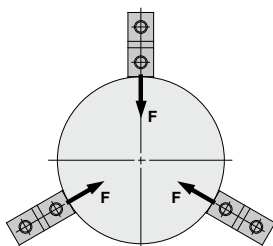
- The workpiece gripping point distance should be within the gripping force ranges given for each pressure in the effective gripping force graphs below.
- If operated with the workpiece gripping point beyond the indicated ranges, an excessive offset load will be applied to the sliding section of the fingers, which can have an adverse effect on the service life of the product.



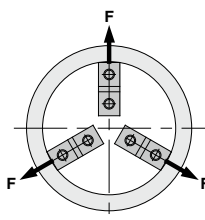
L: Gripping point distance

Effective 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 all 3 of the fingers and attachments are in full contact with the workpiece as shown in the figure below.



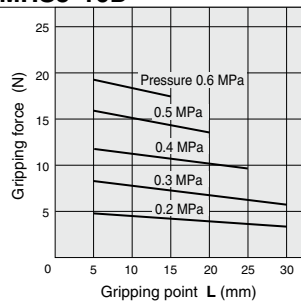
External grip



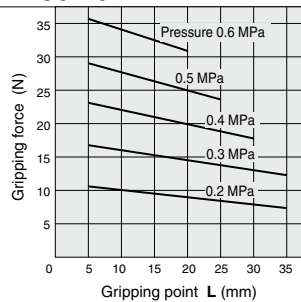
Internal grip

External Gripping Force

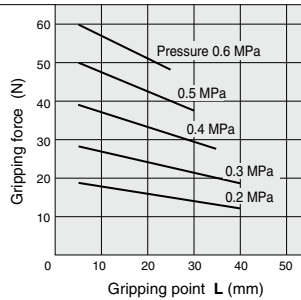
MHS3-16D



MHS3-20D

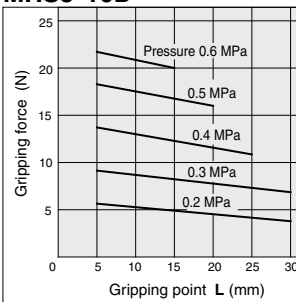


MHS3-25D

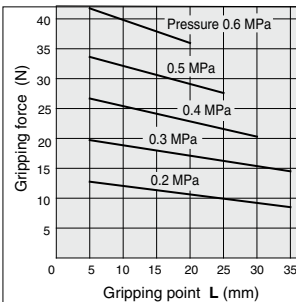


Internal Gripping Force

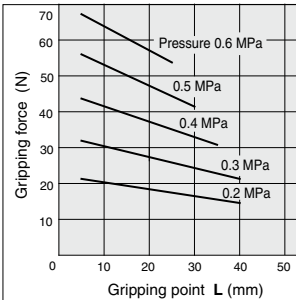
MHS3-16D



MHS3-20D



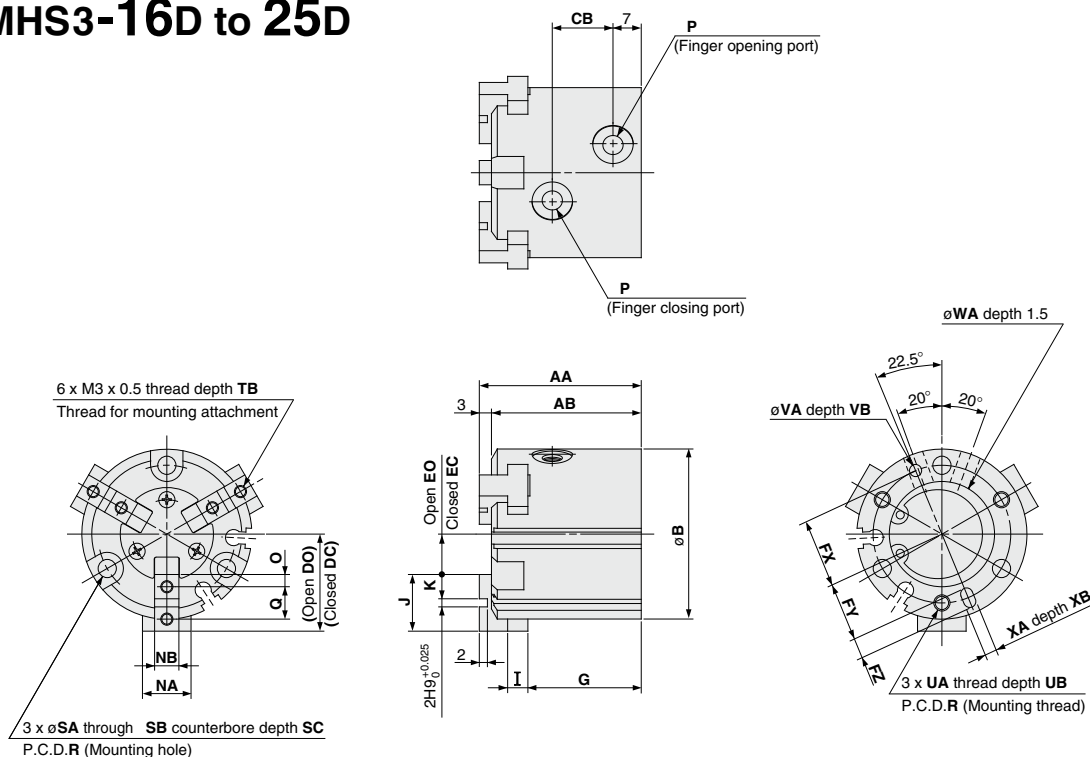
MHS3-25D



MHS3 Series

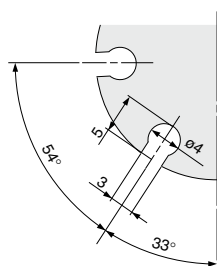
Dimensions

MHS3-16D to 25D

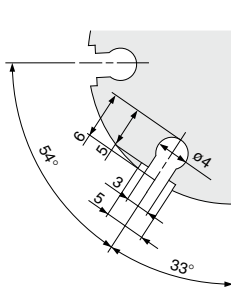


Auto switch mounting groove dimentions (2 locations)

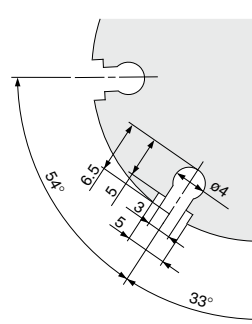
MHS3-16D



MHS3-20D



MHS3-25D

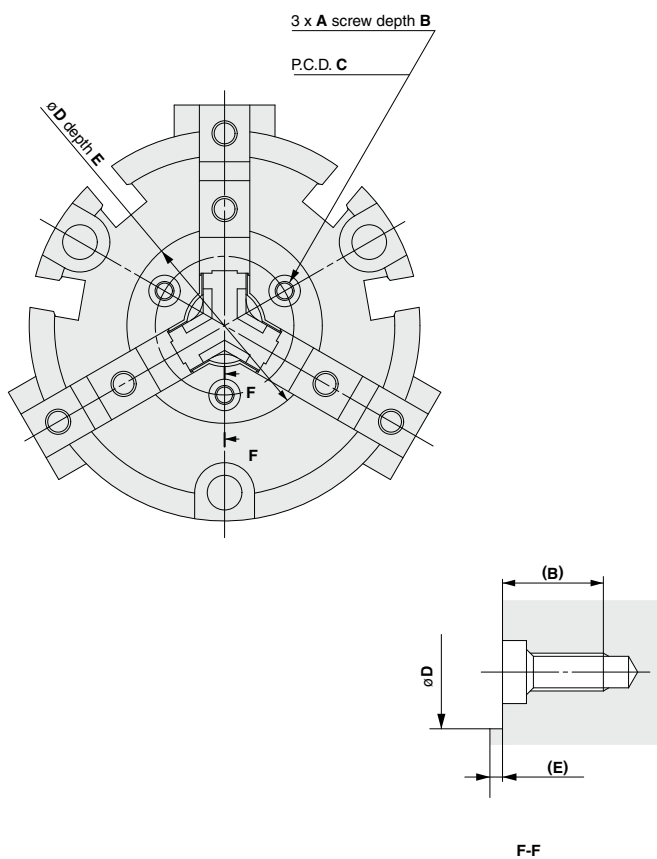


Model	AA	AB	B	CB	DC	DO	EC	EO	FX	FY	FZ	G	I	J	K	NA	NB	O	P	Q	R
MHS3-16D	35	32	30	11	15	17	5	7	12.5	11	3	25	4	10	4	8	5h9 ⁰ _{-0.030}	2	M3 x 0.5	6	25
MHS3-20D	38	35	36	13	18	20	6	8	14.5	13	3	27	5	12	5	10	6h9 ⁰ _{-0.030}	2.5	M5 x 0.8	7	29
MHS3-25D	40	37	42	15	21	24	7	10	17	14.5	5	28	5	14	6	12	6h9 ⁰ _{-0.030}	3	M5 x 0.8	8	34

Model	SA	SB	SC	TB	UA	UB	VA	VB	WA	XA	XB
MHS3-16D	3.4	6.5	8	5	M3 x 0.5	4.5	2H9 ^{+0.025} ₀	2	17H9 ^{+0.043} ₀	2H9 ^{+0.025} ₀	2
MHS3-20D	3.4	6.5	9.5	6	M3 x 0.5	6	2H9 ^{+0.025} ₀	2	21H9 ^{+0.052} ₀	2H9 ^{+0.025} ₀	2
MHS3-25D	4.5	8	10	6	M4 x 0.7	6	3H9 ^{+0.025} ₀	3	26H9 ^{+0.052} ₀	3H9 ^{+0.025} ₀	3

Parallel Type Air Gripper/3-Finger Type **MHS3 Series**

MHS3 Series Detailed Dimensions of Mounting Portion of End Plate



(mm)

Model	A	B	C	øD	E
MHS3-16D	M2 x 0.4	5.5	12.5	18H8 ^{+0.027} ₀	0.5
MHS3-20D		5.4	15	21H8 ^{+0.033} ₀	0.6
MHS3-25D			17	23H8 ^{+0.033} ₀	
MHS3-32D	M3 x 0.5	5.2	21	27H8 ^{+0.033} ₀	0.8
MHS3-40D		8	22	31H8 ^{+0.039} ₀	1
MHS3-50D			26	35H8 ^{+0.039} ₀	
MHS3-63D			33	42H8 ^{+0.039} ₀	
MHS3-80D	M4 x 0.7	9.5	40	52H8 ^{+0.046} ₀	1.5
MHS3-100D			54	70H8 ^{+0.046} ₀	
MHS3-125D			62	82H8 ^{+0.054} ₀	



GLOBAL INDUSTRIAL AUTOMATION SOURCING

Ready to source this part?

Ask for availability, pricing and delivery options.

Request a fast quote

Include the product title and any required part number or quantity.

EMAIL

info@apterpower.com

PHONE

+86 18106909650

CHAT ON WHATSAPP >



SCAN TO CHAT ON WHATSAPP

PRODUCT: MHS3-25D / MHS Series Three-Finger Parallel Air Gripper

The enclosed manufacturer pages are reproduced without alteration to technical content.

Apter Power is not an authorized distributor, reseller or representative of the products featured.

Product names, trademarks, brands and logos remain the property of their respective owners.