Rotary Actuated Air Gripper/2-Finger Type

Series MHR2/MDHR2

Size: 10, 15, 20, 30

How to Order

Without auto switch

MHR 2 – 10 R – ☐

With auto switch (Built-in magnet)

MDHR 2 – 10 R – M9N S – ☐

With magnet
(For auto switch)

Number of fingers

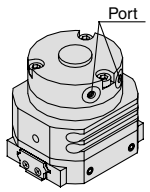
2	2 fingers

Nominal size

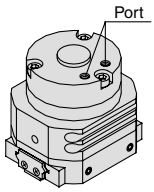
10
15
20
30

Connecting port

R: Body side



E: Axial side



Number of auto switches

Nil	2 pcs.
S	1 pc.

Made to Order
Refer to page 492 for details.

Applicable Auto Switch/Refer to pages 761 to 809 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	
								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)	24V	5V,12V	—	**M9NV**	**M9N**	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**M9PV**	**M9P**	●	●	●	○	○		
				2-wire		12V		**M9BV**	**M9B**	●	●	●	○	○	—	

∗ Lead wire length symbols: 0.5 m ····· Nil (Example) M9N
1 m ····· M (Example) M9NM
3 m ····· L (Example) M9NL
5 m ····· Z (Example) M9NZ

∗ Solid state auto switches marked with a "○" symbol are produced upon receipt of order.

Model/Specifications

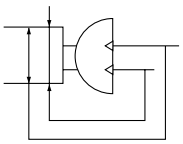
Nominal size		10	15	20	30
Action		Double acting			
Gripping force (N) (1) **(Effective value) at 0.5 MPa**	**External grip**	12	24	33	58
	Internal grip	12	25	34	59
Opening/ Closing stroke (Both sides)	**Finger closing width (mm)**	10	14	16	19
	Finger opening width (mm)	16	22	28	37
	Stroke (mm)	6	8	12	18
Mass (g) (2)		100 (95)	180 (175)	390 (380)	760 (740)
Connection port		M3 X 0.5		M5 X 0.8	
Repeatability		±0.01mm			
Fluid		Air			
Operating pressure		0.2 to 0.6 MPa	0.15 to 0.6 MPa		
Ambient and fluid temperature		0 to 60°C			
Max. operating frequency		180 c.p.m			
Lubrication		Non-lube			

Note 1) Refer to page 494 “Effective Gripping Force” for details of Gripping force at each gripping point. Value of effective gripping force is measured at the middle of opening/closing stroke.

Note 2) ( ) Value shows MDHR mass, but it does not include auto switch mass.

When the finger opening/closing speed is set as the total stroke of 0.2 seconds or more, it may cause the product to stick or completely stop its movement.

JIS Symbol



Made to Order

(Refer to pages 683 to 713 for details.)

Symbol	Specifications/Description
-X32	Countermeasure for condensation
-X63	Fluorine grease

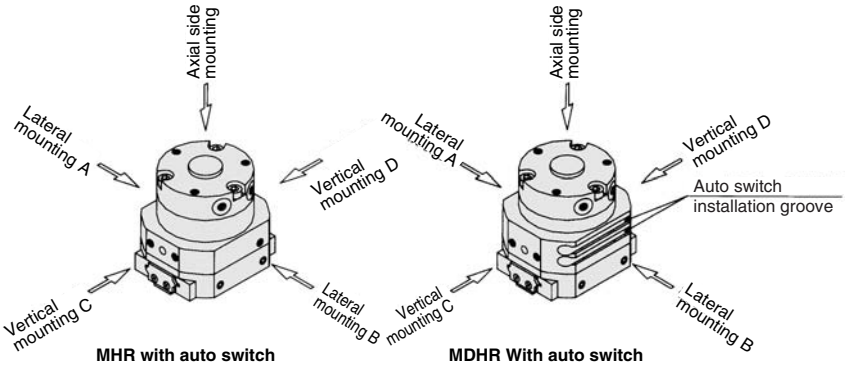
Specific Product Precautions

Be sure to read before handling.

Mounting Air Grippers/MHR2/MHR3

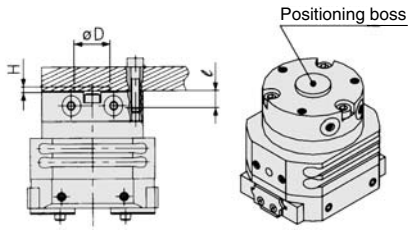
Mounting direction of each model is different. Refer to the table at right.

Model	Axial side mounting	Lateral mounting		Vertical mounting	
		A	B	C	D
MHR2-□	●	●	—	●	●
MHR3-□	●	—	—	—	—
MDHR2-□	●	●	—	●	●
MDHR3-□	●	●	●	—	●



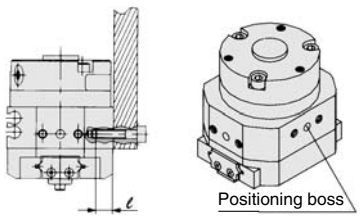
MHR with auto switch　　MDHR With auto switch

Axial side mounting



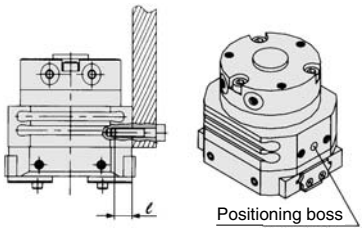
Model			Applicable bolt	Max. tightening torque N·m	Max. screw-in depth ℓmm	Positioning boss Dmm	Positioning boss Hmm
MHR	2	-10	M3 x 0.5	0.88	6	9h9 $^{0}_{-0.036}$	1
		-15				12h9 $^{0}_{-0.043}$	1.5
		-20	M4 x 0.7	2.1	8	14h9 $^{0}_{-0.043}$	
MDHR		-30	M5 x 0.8	4.3	10	16h9 $^{0}_{-0.043}$	2
	3	-10	M3 x 0.5	0.88	6	9h9 $^{0}_{-0.036}$	1
		-15				12h9 $^{0}_{-0.043}$	1.5

Lateral mounting



Model			Applicable bolt	Max. tightening torque N·m	Max. screw-in depth ℓmm	Positioning boss Bore Depth dmm	Positioning boss Bore Depth hmm
MHR	2	-10	M3 x 0.5	0.88	6	3 $^{+0.02}_{0}$	6
		-15					
		-20	M4 x 0.7	2.1	8	4 $^{+0.02}_{0}$	8
MDHR		-30	M5 x 0.8	4.3	10	5 $^{+0.02}_{0}$	10
	3	-10	M3 x 0.5	0.88	6	3 $^{+0.02}_{0}$	6
		-15					

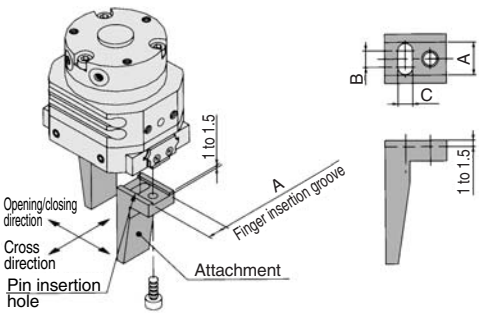
Vertical mounting



Model			Applicable bolt	Max. tightening torque N·m	Max. screw-in depth ℓmm	Positioning boss Bore Depth dmm	Positioning boss Bore Depth hmm
MHR	2	-10	M3 x 0.5	0.88	6	3 $^{+0.02}_{0}$	6
		-15					
		-20	M4 x 0.7	2.1	8	4 $^{+0.02}_{0}$	8
MDHR		-30	M5 x 0.8	4.3	10	5 $^{+0.02}_{0}$	10
	3	-10	M3 x 0.5	0.88	6	3 $^{+0.02}_{0}$	6
		-15					

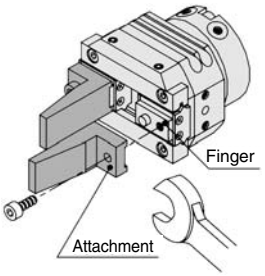
How to Locate Finger and Attachment

- **Positioning in the finger's open/close direction**
  Position the finger and the attachment by inserting the finger's pin into the attachment's pin insertion hole. Provide the following pin insertion hole dimensions: shaft-basis fitting dimension C for the open/close direction; slotted hole with relief B for the cross direction.
- **Positioning in the finger's cross direction**
  Position the finger and the attachment by placing the finger's width into the attachment's finger insertion groove A.



How to Mount the Attachment to the Finger

- To mount the attachment to the finger, make sure to use a wrench to support the attachment so as not to apply undue strain on the finger.
- Refer to the table below for the proper tightening torque on the bolt used for securing the attachment to the finger.



Model			Applicable bolt	Max. tightening torque N·m
MHR	2	-10	M3 x 0.5	0.59
		-15		
		-20	M4 x 0.7	1.4
MDHR		-30	M5 x 0.8	2.8
	3	-10	M3 x 0.5	0.59
		-15		

Finger opening/closing speed: MHR2/MHR3

When the finger opening/closing speed is set as the total stroke of 0.2 seconds or more, it may cause the product to stick or completely stop its movement.