

Wedge Cam Operation Slide Guide

Air Gripper/2-Finger Type

Series *MHK2*

ø12, ø16, ø20, ø25

How to Order

Standard type	MHK 2 - 20 D 1 F - M9B		
Long stroke type	MHKL 2 - 20 D 1 F - M9B		

Number of fingers

2	2 fingers
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Bore size

12	12 mm
16	16 mm
20	20 mm
25	25 mm

Action

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

Finger material

Nil	Carbon steel
1	Stainless steel

Auto switch

Nil	Without auto switch (Built-in magnet)
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Dust cover material

Nil	Chloroprene rubber (CR)
F	Fluororubber (FKM)
S	Silicon rubber (Si)

Number of auto switches

Nil	2 pcs.
S	1 pc.

Made to Order
Refer to page 523 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)	24 V	5 V,	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC
				12 V		M9PV		M9P	●	●	●	○				
	2-wire			12 V		M9BV		M9B	●	●	●	○	○	—		
	3-wire (NPN)			5 V,		M9NAV		M9NA	○	○	●	○	○	IC circuit		
	3-wire (PNP)			12 V		M9PAV		M9PA	○	○	●	○	○			
	2-wire			12 V		M9BAV		M9BA	○	○	●	○	○	—		

* 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

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

Note 1) Take note of hysteresis with 2-color indication type switches.
 Refer to "Auto Switch Hysteresis" on page 536.

Note 2) Refer to pages 761 to 809 for further information on auto switches.

Specifications



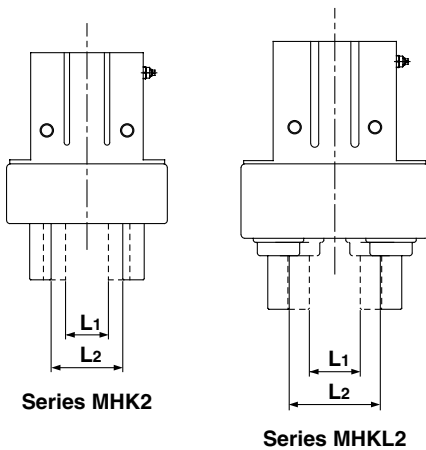
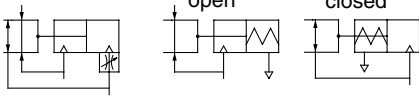
JIS Symbol

Double acting

Single acting

Normally open

Normally closed



Fluid			Air
Operating pressure	Double acting		0.1 to 0.6 MPa
	Single acting	Normally open	0.25 to 0.6 MPa
		Normally closed	
Ambient and fluid temperature			−10 to 60°C
Repeatability			±0.01 mm
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.

Option

Finger material	Carbon steel (Standard), Stainless steel
Dust cover material	Chloroprene rubber (CR) (Standard), Fluoro rubber (FKM), Silicon rubber (Si)

Model

Series MHK2/Standard Type

Action	Model	Bore size (mm)	Max. operating frequency (c.p.m)	Effective gripping force per finger (N) ^{Note)}	Opening/Closing stroke (mm) L2-L1	Width at closing (mm) L1	Width at opening (mm) L2	Mass (g)
Double acting	MHK2-12D	12	120	External grip: 15 Internal grip : 16	4	9	13	75
	MHK2-16D	16		External grip: 31 Internal grip : 36	6	14.6	20.6	113
	MHK2-20D	20		External grip: 46 Internal grip : 56	10	16	26	235
	MHK2-25D	25		External grip: 80 Internal grip : 86	14	19	33	440
Single acting	Normally open	MHK2-12S		9	4	9	13	76
		MHK2-16S		23	6	14.6	20.6	114
		MHK2-20S		34	10	16	26	237
		MHK2-25S		58	14	19	33	443
	Normally closed	MHK2-12C		12	4	9	13	76
		MHK2-16C		25	6	14.6	20.6	115
		MHK2-20C		44	10	16	26	237
		MHK2-25C		73	14	19	33	443



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
-X39	With grease needle
-X41	Switch groove (Both-side type)
-X50	Without magnet
-X53	EPDM seal/Fluorine grease
-X63	Fluorine grease
-X64	Finger: Side tapped mounting
-X65	Finger: Through-hole mounting
-X77A	Dust cover adhesion
-X77B	Dust cover adhesion (Finger part only)
-X78A	Dust cover caulking
-X78B	Dust cover caulking (Finger part only)
-X79	Grease for food

Series MHKL2/Long Stroke Type

Action	Model	Bore size (mm)	Max. operating frequency (c.p.m)	Effective gripping force per finger (N) ^{Note)}	Opening/Closing stroke (mm) L2-L1	Width at closing (mm) L1	Width at opening (mm) L2	Mass (g)
Double acting	MHKL2-12D	12	90	External grip: 14 Internal grip : 16	11	9	20	104
	MHKL2-16D	16		External grip: 27 Internal grip : 30	14	14.6	28.6	164
	MHKL2-20D	20		External grip: 45 Internal grip : 53	18	16	34	312
	MHKL2-25D	25		External grip: 79 Internal grip : 90	22	19	41	562
Single acting	Normally open	MHKL2-12S		9	11	9	20	105
		MHKL2-16S		17	14	14.6	28.6	165
		MHKL2-20S		32	18	16	34	314
		MHKL2-25S		53	22	19	41	565
	Normally closed	MHKL2-12C		11	11	9	20	105
		MHKL2-16C		22	14	14.6	28.6	166
		MHKL2-20C		40	18	16	34	314
		MHKL2-25C		63	22	19	41	565



^{Note)} At the pressure of 0.5 MPa, when gripping point L is 20 mm.

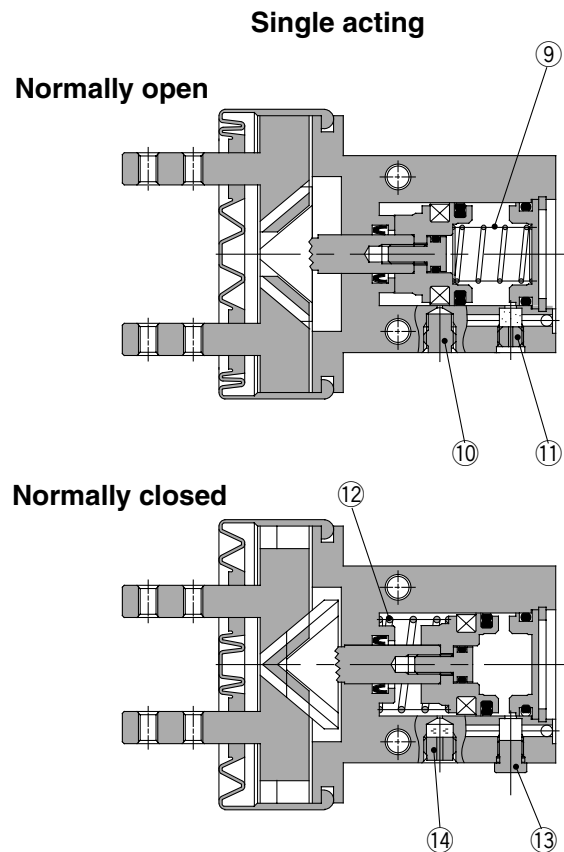
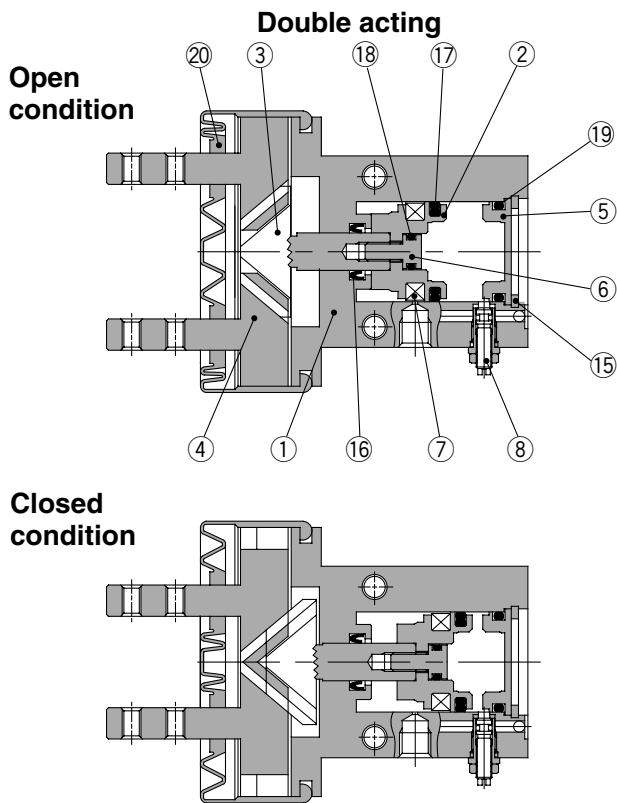
Single acting normally open: External holding force, Single acting normally closed:

Internal gripping force.

Refer to "Effective Gripping Force" for the gripping force at each gripping position on pages 525 to 529.

Series MHK2

Construction



Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	Hard anodized
2	Piston	Aluminum alloy	Hard anodized
3	Cam	Carbon steel	Heat treated, Specially treated
4	Finger	Carbon steel	Heat treated, Specially treated
		Stainless steel 304	Option
5	Cap	Aluminum alloy	Hard anodized
6	Piston bolt	Stainless steel	
7	Rubber magnet	Synthetic rubber	

No.	Description	Material	Note
8	Needle assembly		
9	N.O. spring	Piano wire	
10	Plug	Brass	Electroless nickel plated
11	Exhaust plug	Brass	Electroless nickel plated
12	N.C. spring	Piano wire	
13	Plug assembly	Brass	Electroless nickel plated
14	Exhaust plug A	Brass	Electroless nickel plated
15	Type C retaining ring	Carbon steel	Nickel plated

MHK2 Replacement Parts

Description			MHK2-12□	MHK2-16□	MHK2-20□	MHK2-25□	Main parts
Seal kit			MHK12-PS	MHK16-PS	MHK20-PS	MHK25-PS	⑬⑭⑮⑯
Piston assembly			MHK-A1201	MHK-A1601	MHK-A2001	MHK-A2501	②⑥⑦
Cam			P3318103	P3318203	P3318303	P3318403	③
Finger	Material	Carbon steel	P3318104	P3318204	P3318304	P3318404	④
		Stainless steel	P3318104-1	P3318204-1	P3318304-1	P3318404-1	
Needle assembly			MH-A1006				⑧
Dust cover	Material	CR	MHK2-J12	MHK2-J16	MHK2-J20	MHK2-J25	⑳
		FKM	MHK2-J12F	MHK2-J16F	MHK2-J20F	MHK2-J25F	
		Si	MHK2-J12S	MHK2-J16S	MHK2-J20S	MHK2-J25S	

* Order 2 pieces per one finger unit.

Replacement part/Grease pack part no.: MH-G01 (30 g)

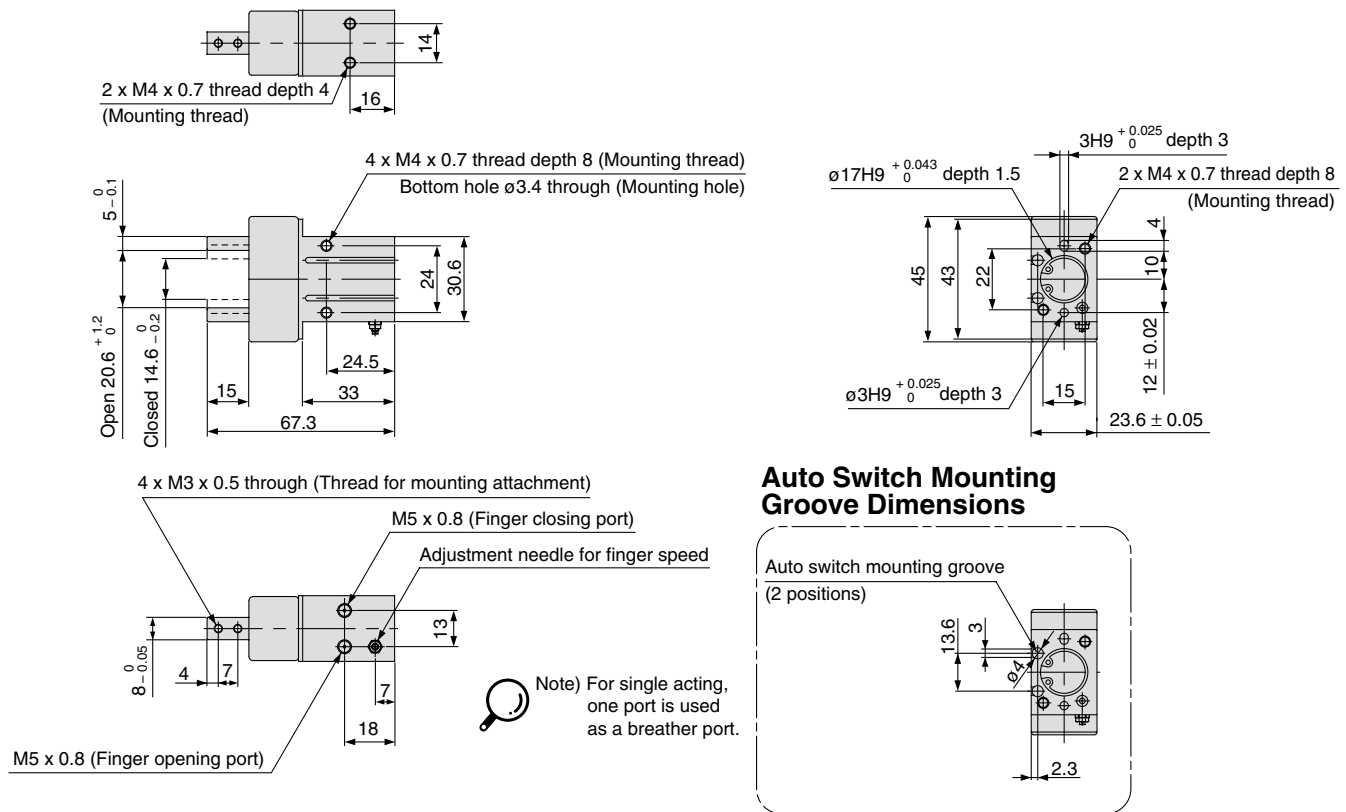
MHKL2 Replacement Parts

Description			MHKL2-12□	MHKL2-16□	MHKL2-20□	MHKL2-25□	Main parts
Seal kit			MHK12-PS	MHK16-PS	MHK20-PS	MHK25-PS	⑬⑭⑮⑯
Piston assembly			MHK-A1201	MHK-A1601	MHK-A2001	MHK-A2501	②⑥⑦
Cam			P3318111	P3318211	P3318311	P3318411	③
Finger	Material	Carbon steel	P3318112	P3318212	P3318312	P3318412	④
		Stainless steel	P3318112-1	P3318212-1	P3318312-1	P3318412-1	
Needle assembly			MH-A1006				⑧
Dust cover	Material	CR	MHKL2-J12	MHKL2-J16	MHKL2-J20	MHKL2-J25	⑳
		FKM	MHKL2-J12F	MHKL2-J16F	MHKL2-J20F	MHKL2-J25F	
		Si	MHKL 2-.J12S	MHKL 2-.J16S	MHKL 2-.J20S	MHKL 2-.J25S	

* Order 2 pieces per one finger unit.

Replacement part/Grease pack part no.: MH-G01 (30 g)

MHK2-16□: Standard type



MHKL2-16□: Long stroke type

