## INFORMATION

# Air Gripper with Finger Changer Function

# Automatic tool changer unit for robots

# The wiring and piping are bundled together in the body of the air gripper (robot side).



20-E754

# MHF2-X7076A

#### Configured for improved function and easier maintenance



#### Mounting is possible from 2 directions.



Body through-hole



#### **Working Principle**



When pressurized from the finger assembly separation port



The needle roller pushes the taper of the connecting finger with a spring force when pressure is not supplied to the finger assembly separation port to generate an axial force when connected to make the connection.



When pressure is supplied to the finger assembly separation port, while the lock piston moves outward, the finger assembly is separated by the spring force of the plunger.

1

## Automatic tool changer unit for robots Air Gripper with Finger Changer Function **MHF2-X7076A**



Appli	icable Auto S	witches/	Refer t	to the Web Ca	talog fo	r further i	nformati	on on auto s	witches.
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	Special function	Electrical entry	tor	Wiring (Output)	Load voltage			Auto switch model		Lead wire length [m]				Due wined	Annlinghia		
Туре			Indicat		DC		AC	Dorpondioulor	In line	0.5	1	3	5	Pre-wired	load		
								Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	CONNECTOR			
Ę				3-wire (NPN)	24 V 24 V 5 V,12 V 5 V,12 V 12 V 5 V,12 V 5 V,12 V 12 V	5 V,12 V	5 V 10 V		M9NV	M9N			٠	0	0	IC	
e auto switc	—	Grommet	Yes	3-wire (PNP)				M9PV	M9P			٠	0	0	circuit		
				2-wire		12 V	2 V (12 V 2 V (12 V	M9BV	M9B			۲	0	0	_	Delay	
	Diagnostic			3-wire (NPN)		5 V,12 V		M9NWV	M9NW			۲	0	0	IC		
	indication			3-wire (PNP)				M9PWV	M9PW			•	0	0	circuit	Relay,	
tate	(2-color indicator)			2-wire		12 V		M9BWV	M9BW			۲	0	0	_		
Solid st	Water resistant (2-color indicator)			3-wire (NPN)		EV10V		M9NAV*1	<b>M9NA</b> *1	0	0	•	0	0	IC		
				3-wire (PNP)		5 V, 12 V		M9PAV*1	<b>M9PA</b> *1	0	0	۲	0	0	circuit		
				2-wire		12 V	M9BAV*1	M9BA*1	0	0	٠	0	0	_			

\*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

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

## **Specifications**

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Bore size [mm]		8				
Fluid		Air				
Action	Gripper unit	Double acting				
Action	Changer unit	Single acting (Normally connected)				
Operating pressure	Gripper unit	0.15 to 0.7				
[MPa]	Changer unit	0.45 to 0.6				
Ambient temperature [	°C]	-10 to 60				
Axial force when conne	ected (Theoretical value) [N]	98				
Finger position	Position of fingers when fully open	4.3				
holding force [N]*1	Position of fingers when not fully open	0.6				
Gripping force per finge	r at 0.5 MPa (Effective value) [N]	19				
<b>Opening/Closing strok</b>	e (Both sides) [mm]	16				
Max. operating frequer	ıcy [c.p.m]	120				
Lubricant		Non-lube				
Weight [g]		150 (Finger assembly: 38)				

\*1 The theoretical holding force (reference value) which fixes the finger position when the finger assembly is separated



## MHF2-X7076A

#### **Dimensions**

Air Gripper with Finger Changer Function MHF2-8D1R-X7076A



8 867-628-13756 00480 MSS 6.77-6.1 Ph 0480 MSS 6.70-6.1 Ph 0480 MSS 6.70-6.1 Ph 0480 MSS 6.70-6.1 Ph

#### **Finger assembly** MHF-A08021-X7076A





11



### MHF2-X7076A **Specific Product Precautions**

Be sure to read this before handling the products.

#### Handling

## ▲ Caution

#### 1. While pressure is being supplied to the finger opening/closing ports, the finger assembly may be difficult to separate.

Use the exhaust center solenoid valve or 3-port solenoid valve together to separate the finger assembly after the pressure from the finger opening/closing ports has been released.

#### **Recommended Circuit Examples**



2. It is recommended that the finger assembly be separated while the fingers are in a fully open state.

(If the finger assembly is separated while the fingers are not in a fully open state, the force to fix the finger position will be reduced.)

3. When connecting, align the guide rail holes and pins (2 locations), and confirm that the convex part of each joint is aligned with the concave part of the rack. Then, tightly connect the body and guide rail.



**Connection Method** 

4. If the separated state is not maintained, such as when the fingers or piston are operated while the finger assembly is separated, the pieces will no longer be able to connect as is.

Align the convex part of each joint and the concave part of the rack to make the connection.

**Safety Instructions** Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

## SMC Corporation

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