

AHC System/Auto Hand Changing System

Series MA3



Specifications

Series		MA310	MA311	MA320	MA321
Positioning		Ball coupling		Curved coupling	
Max. transportable mass		5 kg			
Handling		Single acting/ Air supply at disconnection	Double acting	Single acting/ Air supply at disconnection	Double acting
Handling air pressure		0.4 to 0.7 MPa			
Proof pressure		1.05 MPa			
Ambient and fluid temperature		0 to 60°C			
Positioning repeatability		±0.01 mm			
Combined axial force *		200 N	500 N (0.5 MPa)	200 N	500 N (0.5 MPa)
Moment resistance M *		3 N·m	7.5 N·m (0.5 MPa)	3 N·m	7.5 N·m (0.5 MPa)
Torque resistance T *		3 N·m	7.5 N·m (0.5 MPa)	12 N·m	30 N·m (0.5 MPa)
Interface	Air	Max. operating pressure	0.7 MPa		
		Operating vacuum pressure	−100 kPa or more (10 Torr or more)		
		Cv value	0.072		
		Number of circuits	6		
	Electricity	Contact point capacity	2 A/interface		
		Number of contact points	12		

* Values given on the table for combined axial force, moment resistance, and torque resistance are the values for when the AHC unit and tool adapter begin to separate. During use, make sure the axial force, moment and torque from load are 1/2 or less than those shown above, for safety reasons.

Option Part No.

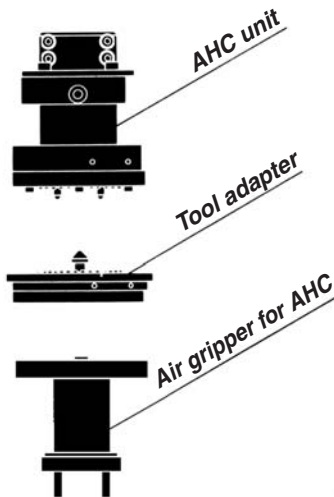
Robot adapter

Part no.	Applicable shaft diameter	Note
MA310-CR1	ø10	Hexagon socket head cap screw M4 x 10 (4 pcs.) M4 x 14 (4 pcs.)
MA310-CR2	ø11	
MA310-CR3	ø14	
MA310-CR4	ø15	
MA310-CR5	ø20	
MA310-CS6	ø24	
MA310-CR6	ø25	

Additional Installation Unit of Electrical Contact Point

Part no.	Additional installation unit	Application	Note
MA310-EY1	8 contact points	AHC unit	Hexagon socket head cap screw M2.5 x 10 (2 pcs.)
MA310-EA1		Tool adapter	

How to Order



MA 3 1 0 - Y A M5 - R3

Auto hand changer

Transportable mass
3 Transportable mass 5 kg

Positioning
1 Ball coupling
2 Curved coupling

Operation
0 Single acting
1 Double acting

AHC unit

Robot adapter

Nil	Without robot adapter	
R1	ø10	Applicable shaft diameter
R2	ø11	
R3	ø14	
R4	ø15	
R5	ø20	
R6	ø25	

Air connection size

M5 M5 x 0.8

Electric specifications

Symbol	No electric specifications	D-sub connector
N	●	—
A	—	● (Without connector)
B	—	● (With connector)
C	—	● (With 3 m cable)

Tool adapter

MA 3 10 - A M5

Auto hand changer

Air connection size
M3 M3 x 0.5
M5 M5 x 0.8

Tool adapter

Series

10	Ball coupling
20	Curved coupling

Transportable mass

3 Transportable mass 5 kg

Air gripper for AHC

<ø10/ø15>

MHR2-10-A310

Cylinder bore
10 10 mm
15 15 mm

For MA3
With adapter

<ø16/ø20>

MHZ2-16 D N - A310 - Y69A

Cylinder bore
16 16 mm
20 20 mm

For MA3
With adapter

Finger position
Nil Standard
N Narrow type

Auto switch type

Nil	Without auto switch	
Y69A	D-Y69A (3-wire)	Solid state auto switch Lead wire: Right angle entry Lead wire length: 0.5 m
Y69B	D-Y69B (2-wire)	

Auto switch additional symbol

Nil	2 pcs.
S	1 pc.

* When using an air gripper for AHC, use tool adapter MA3₂10-AM3

90° reverse unit

MA310-R1-90A

90° reverse unit

Auto switch type

Nil	Without auto switch			
90	D-90 (2 pcs.)	Reed auto switch	3-wire	Lead wire length: 0.5 m
90A	D-90A (2 pcs.)			
S99	D-S991, D-S992 (1 pc. each)	Solid state auto switch	3-wire	Lead wire length: 0.5 m
T99	D-T991, D-T992 (1 pc. each)		2-wire	

* Can also be used for Series MA320.

Tool stand

MA310-S1-Y59A

Tool stand

Lead wire length

Nil	Grommet	With 0.5 m lead wire
L		With 3 m lead wire

Auto switch type

Nil	Without auto switch	
Y59A	D-Y59A (3-wire)	Solid state auto switch Lead wire: Axial direction entry
Y59B	D-Y59B (2-wire)	

* Can also be used for Series MA320.

MHZ

MHF

MHL

MHR

MHK

MHS

MHC

MHT

MHY

MHW

-X□

MRHQ

MA

D-□