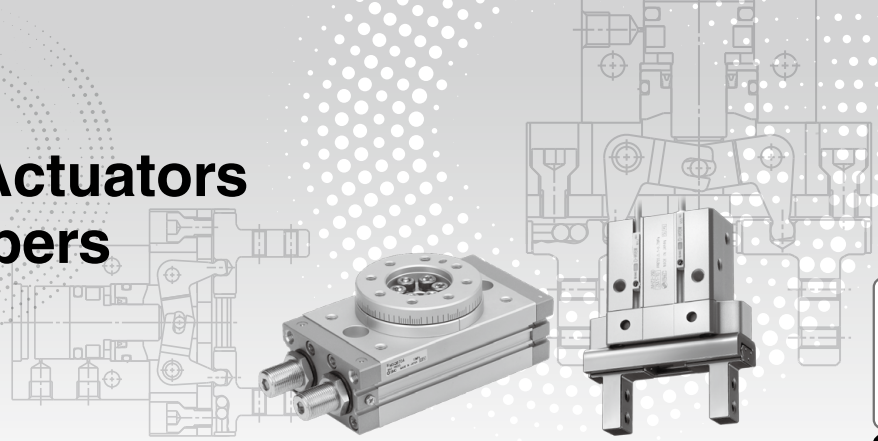


Rotary Actuators Air Grippers



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2	Troubleshooting	p. 258
3	Construction/Replacement Parts	

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Rotary Actuators

Air Grippers

1 Maintenance

The following describes the general contents of the rotary actuator and air gripper inspection items. Actually, add inspection items suitable for the customer's specifications and perform the inspection work.

[Rotary Actuator]

■ Periodic inspection

Check followings for periodic inspection.

- 1) If the rotary actuator set screw become loose
- 2) Operating state
- 3) Leakage to outside
- 4) Is not the backlash of the rack-and-pinion abnormally large?

If any items are found by the inspection that require repairing, tighten any loose parts or disassemble the product to repair.

■ Precautions

- 1) Disassembling the product will void SMC's warranty. If disassembly is really necessary it is recommended to fully understand the internal construction before disassembling the products.
- 2) Do not damage the seals when reassembling the product.
- 3) If locking adhesive is applied to the bolts or screws, apply locking adhesive again during reassembly.

[Air Gripper]

■ Precautions

- 1) Perform maintenance and inspection according to the procedures indicated in the operation manual.
If handled improperly, human injury and/or malfunction or damage of machinery and equipment may occur.
- 2) If handled improperly, compressed air can be dangerous. Assembly, handling, repair, and element replacement of pneumatic systems should be performed by a knowledgeable and experienced person.
- 3) Remove drainage from air filters regularly.
- 4) Before air grippers are removed, first confirm that measures are in place to prevent workpieces from dropping, run-away equipment, etc. Then, cut off the supply pressure and electric power, and exhaust all compressed air from the system using the residual pressure release function.
When machinery is restarted, proceed with caution after confirming that appropriate measures are in place to prevent sudden movement.
- 5) Do not allow people to enter or place objects in the carrying path of the air gripper.
This may cause human injury and/or an accident.
- 6) Do not put hands, etc., in between the air gripper fingers or attachments.
This may cause human injury and/or an accident.
- 7) When removing the air gripper, first confirm that no workpieces are being held and then release the compressed air before removing the air gripper.
If a workpiece is still being held, there is a danger of it being dropped.

2 Troubleshooting

The following describes the general contents of the troubleshooting.

[Rotary Actuator]

Trouble (Symptom)	Cause	Corrective action
Actuator does not operate. Adjust speed controller and check that rotation speed of actuator is within the specified speed adjusting range.	Stable speed adjusting range is not satisfied.	Use the product within the specified speed adjusting range.
	Increase in internal leakage due to internal seal damage caused by foreign matter and/or oil.	Replace the piston seal and gasket. (In general, the product requires replacement.)
	Sealing failure of internal seal or increase in internal resistance due to the use out of the specified operating temperature range (including freezing).	Use the product within the specified operating temperature range. (In some cases of sealing failure, the piston seal and gasket require replacement.)
	a. Failure of peripheral components b. Improper adjusting of speed controllers c. Malfunction of solenoid valves d. Air supply shortage due to clogging of air filter e. Decrease in pressure due to failure of regulator	Use special products. (including measures against problems of pneumatic circuit).
Shaft/Pinion breakage	Large load energy: a. Large load mass b. Fast operating speed c. Long rotation radius	Replace the shaft or pinion. a. Use the product with the allowable energy range. b. Install cushioning device and external stopper to absorb impact energy.
	External force other than load energy is applied.	Replace the shaft or pinion. Avoid excessive external force.
	Offset load due to de-centering	Replace the shaft: Correct de-centering.
Rotation angle failure	Breakage of the connection part of the rotation axis or internal stopper	Replace the connection part or product.
Bearing breakage	Overload (Loads in radial and thrust directions are too heavy.)	Replace the bearing: Make radial and thrust loads be within the allowable range.
	Offset load due to de-centering	Replace the bearing: Correct de-centering.
	Large vibration	Replace the bearing: Absorb vibration.
External leakage	Sealing failure of O-ring due to bearing damage and/or shaft bending	Replace the bearing and/or shaft. Relieve external force.
	Seal damage due to foreign matter and/or oil	Replace the seals. Prevent foreign matter and oil entrance.
	Sealing failure due to the use out of the specified operating temperature range	Replace the piston seal and gasket. (The product requires replacement especially for the use at high temperature.) Use the product within the specified operating temperature range.

Notice on Trouble and Troubleshooting

1. Life is excluded from the causes.
2. Consult SMC for any causes other than those in the table above (except life) since the product may require disassembling check.

Rotary Actuators Air Grippers

2 Troubleshooting

The following describes the general contents of the troubleshooting.

[Air Gripper/MHZ]

Trouble (Symptom)		Cause	Check method	Corrective action
Air leakage	Rod seal leakage (Air external leakage)	Wear or damage of rod seals	Check if the intrusion of liquid or the adhesion of foreign matter is occurring on the sliding part of the piston rod.	A
	Piston seal leakage (Air internal leakage)	Wear or damage of piston seals	Check if grease is remaining in the cylinder, or if intrusion of foreign matter is occurring.	B
Nonconformance operation	Sticking Operates slowly Does not operate Response delay	Wear or damage of rod seals	Check if the intrusion of liquid or the adhesion of foreign matter is occurring on the sliding part of the piston rod.	A
		Wear or damage of piston seals	Check if grease is remaining in the cylinder, or if intrusion of foreign matter is occurring.	B
		Increase of operating resistance in cylinder	Check if grease is remaining in the cylinder, or if intrusion of foreign matter is occurring.	B
		Increase of guide operating resistance	Check the lubrication condition of the guide, or adhesion of foreign matter.	C
Poor accuracy	Increase in amount of finger sway	Wear of U groove transfer surface and steel balls of guide	Check if wear occurred on the U groove transfer surface and steel balls of the guide.	D
		An impression occurred on the U groove transfer surface of the guide	Check if an impression occurred on the U groove transfer surface of the guide.	E
Damage	Finger breakage Guide damage Roller stopper damage	Overload	Check if an impression occurred on the U groove transfer surface of the guide.	E
		Poor rolling of the steel balls due to the occurrence of an impression	Check if an impression occurred on the U groove transfer surface of the guide.	E
		Poor rolling of the steel balls due to intrusion of foreign matter	Check if any foreign matter is caught in the U groove transfer surface of the guide.	F
Appearance defect	Occurrence of rust	Operating environment where water splashes, etc.	Check if the operating environment tends to generate rust caused by high humidity and water splashing, etc.	G

Corrective action

A	<p>■ The rod seals may have worn and been damaged due to insufficient lubrication on the sliding part of the piston rod.</p> <p>1. Check if there is any intrusion of liquid which will cause outflow of the grease.</p> <p>2. Check if there is any intrusion of foreign matter which will accelerate the wear of the rod seals.</p> <p>In either case, consider use of the MHZJ series with dust cover.</p> <p>When the product is used in an environment where a large amount of liquid splashes, consider using a special product equipped with a fixed dust cover.</p>
B	<p>■ This trouble may have been caused by the outflow of grease due to the intrusion of liquid, including condensation, drainage, coolant, etc., or intrusion of external foreign matter</p> <p>1. Check if there is any intrusion of condensation or drainage, and consider taking actions against condensation, such as installing a quick exhaust valve, use of a moisture control tube, and reducing the tubing capacity.</p> <p>2. Check if there is any intrusion of foreign matter in the cylinder.</p>
C	<p>■ Insufficient lubrication and adhesion of foreign matter on the U groove transfer surface of the guide can be considered as the cause.</p> <p>1. Check if there is any possibility of grease outflowing from the guide caused by the adhesion of liquid splashing in the surroundings.</p> <p>2. Check if there is any possibility of the adhesion of foreign matter which will cause deterioration of the lubrication condition of the guide.</p> <p>In either case, consider use of the MHZJ series with dust cover.</p> <p>When the product is used in an environment where a large amount of liquid splashes, consider using a special product equipped with a fixed dust cover.</p>
D	<p>■ The trouble may have been caused by an increase in the clearance between parts, due to wear of the U groove transfer surface and steel balls, caused by the worsening of the lubrication conditions of the guide.</p> <p>Check if there is any adhesion of foreign matter on the guide, and consider the use of a product with a dust cover (MHZJ series).</p>
E	<p>■ The trouble may have been caused by interaction of an excessive moment on the fingers.</p> <p>1. Check if there has been any interaction of an external force, such as contact with other equipment, etc.</p> <p>2. Check if there has been any impact applied at the end of the opening/closing, caused by heavy attachment, the open/close speed being too fast, or the gripping point distance is too long, etc.</p>
F	<p>■ The steel balls may have collided with the roller stopper with each operation, because normal rolling of the steel balls was obstructed due to the foreign matter caught on the U groove transfer surface of the guide.</p> <p>Check if there is any adhesion of foreign matter on the guide, and consider the use of a product with a dust cover (MHZJ series).</p>
G	<p>■ Rust may occur depending on the operating environment.</p> <p>Consider the use of a product with a dust cover (MHZJ series) to prevent the adhesion of liquid.</p>

CRA1 Series

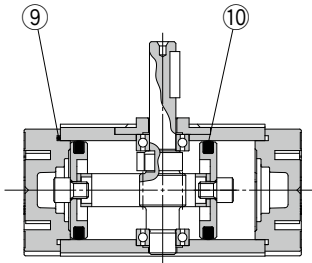
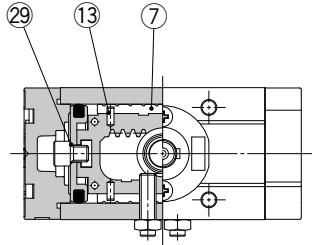
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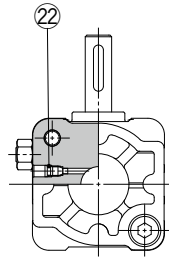
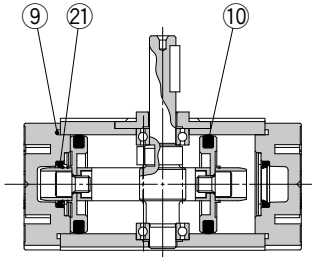
Construction

Size 30

Without air cushion



With air cushion



* The numbers correspond with those in the "Construction" of the CRA1 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
⑦	Slider	Resin	22 and 29 are non-replaceable parts, so they are not included in the seal kit.
⑨	Tube gasket	NBR	
⑩	Piston seal	NBR	
⑬	Spring pin	Steel	
⑳	Cushion seal	Urethane	
22	O-ring	NBR	
29	O-ring	NBR	

Replacement Parts

Size	Part no.		
	Without air cushion	With air cushion	
30 ^{Note 2)}	90°	P694010-20	P694010-22
	180°	P694010-21	P694010-23
Corresponding parts	⑦, ⑨, ⑩, ⑬ are included as a set.	⑦, ⑨, ⑩, ⑬, ㉑ are included as a set.	

Note 1) When ordering replacement parts, write "1" for one set of the parts per actuator.

Note 2) Replacement parts for different rotation angles are set.

A grease pack (10 g) is included.

Order with the following part number when only the grease pack is required.

Grease pack part no.: GR-S-010 (10 g)

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CRA1 Series

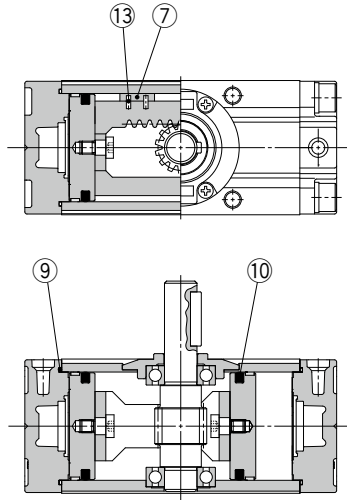
Size: 50 to 100



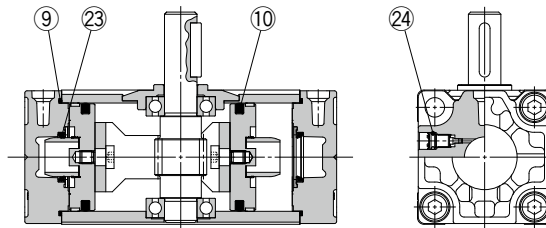
Construction

Sizes 50 to 100

Without air cushion



With air cushion



* The numbers correspond with those in the "Construction" of the CRA1 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
⑦	Slider	Resin	24 is a non-replaceable part, so it is not included in the seal kit.
⑨	Tube gasket	NBR	
⑩	Piston seal	NBR	
⑬	Spring pin	Steel	
⑳	Cushion seal	Urethane	
24	O-ring	NBR	

Replacement Parts

Size	Part no.		
	Without air cushion	With air cushion	Air-hydro
50	P694020-20	P694020-21	P694020-23
63	P694030-20	P694030-21	P694030-23
80	P694040-20	P694040-21	P694040-23
100	P694050-20	P694050-21	P694050-23
Corresponding parts	⑦, ⑨, ⑩, ⑬ are included as a set.	⑦, ⑨, ⑩, ⑬, ㉓ are included as a set.	⑦, ⑨, ⑩, ⑬ are included as a set.

Note) When ordering replacement parts, write "1" for one set of the parts per actuator.

A grease pack (10 g) is included.

Order with the following part number when only the grease pack is required.

Grease pack part no.: GR-S-010 (10 g)

Compact Rotary Actuator/Rack & Pinion Type

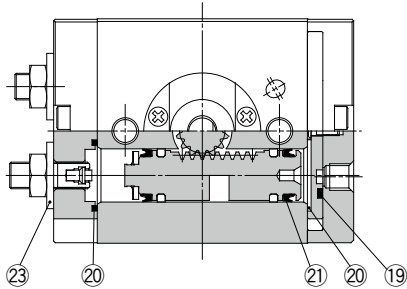
CRQ2 Series

Size: 10, 15, 20
30, 40

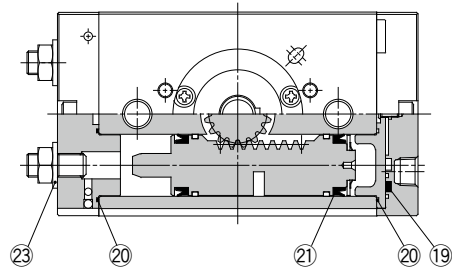
The Replacement Procedure is on p. 516

Construction

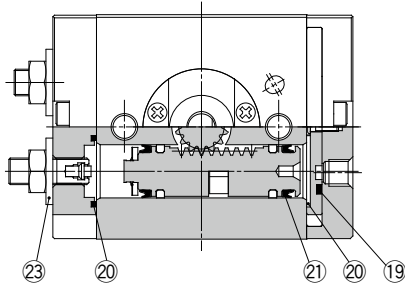
Sizes 10, 15



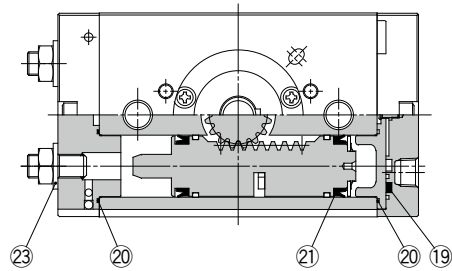
Sizes 20, 30, 40



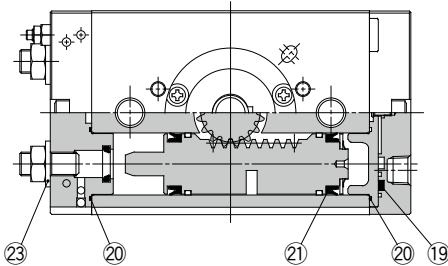
With auto switch Sizes 10, 15



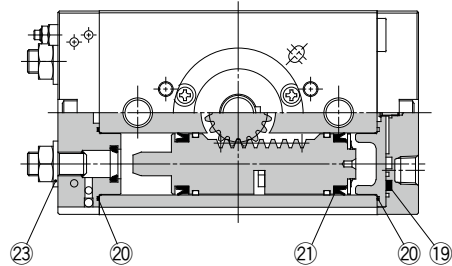
With auto switch Sizes 20, 30, 40



With cushion Sizes 20, 30, 40



With auto switch and cushion Sizes 20, 30, 40



* The numbers correspond with those in the "Construction" of the CRQ2 series in the Web Catalog.

Component Parts

No.	Description	Material	Note
19	Seal	NBR	
20	Gasket	NBR	
21	Piston seal	NBR	
23	Seal washer	NBR	

Replacement Parts

Description	Size				
	10	15	20	30	40
Seal kit part no.	P473010-1	P473020-1	P473030-1	P473040-1	P473050-1

A grease pack (10 g) is included. Order with the following part number when only the grease pack is required.

Grease pack part no.: GR-S-010 (10 g)

Contents

	No.	Description	Qty.	Note
Applicable parts	19	Seal	1	
		Gasket for cover	2	
	20	Gasket for end cover	1	Size: 10, 15
		Gasket	4	Size: 20, 30, 40
	21	Piston seal	4	
	23	Seal washer	2	

* A set includes all parts above.

* Individual part cannot be shipped.

Low-Speed Compact Rotary Actuator/Rack & Pinion Type

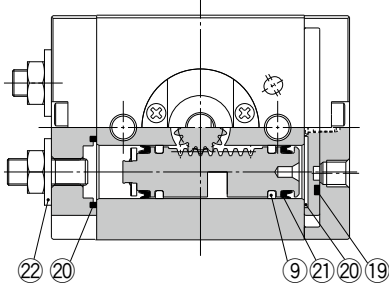
CRQ2X Series

Size: 10, 15, 20
30, 40

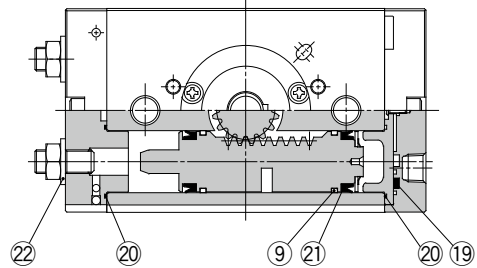
The Replacement Procedure is on p. 516

Construction

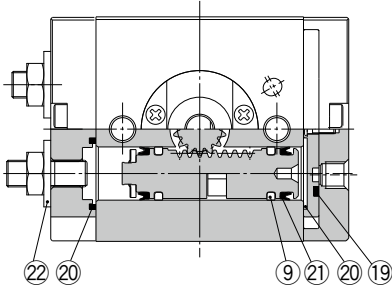
Sizes 10, 15



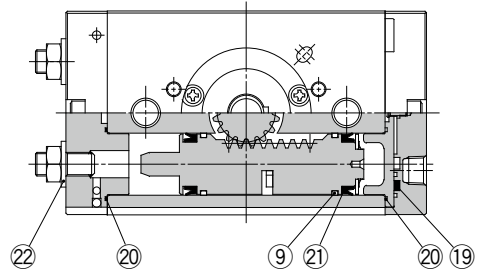
Sizes 20, 30, 40



With auto switch Sizes 10, 15



With auto switch Sizes 20, 30, 40



Component Parts

No.	Description	Material	Note
9	Wear ring	Resin	
19	Seal	NBR	
20	Gasket	NBR	
21	Piston seal	NBR	
22	Seal washer	NBR	

* The numbers correspond with those in the "Construction" of the CRQ2X series in the **Web Catalog**.

Replacement Parts

Description	Size					Contents
	10	15	20	30	40	
Seal kit part no.	P473010-23	P473020-23	P473030-23	P473040-23	P473050-23	Set of nos. 9, 19, 20, 21, 22

Contents

No.	Description	Qty.	Note
9	Wear ring	4	
19	Seal	1	
20	Gasket for cover	2	Size: 10, 15
	Gasket for end cover	1	
20	Gasket	4	Size: 20, 30, 40
21	Piston seal	4	
22	Seal washer	2	

* A set includes all parts above.
A grease pack (10 g) is included. Order with the following part number when only the grease pack is required.

Replacement parts/Grease pack part no.: P523010-21 (10 g)

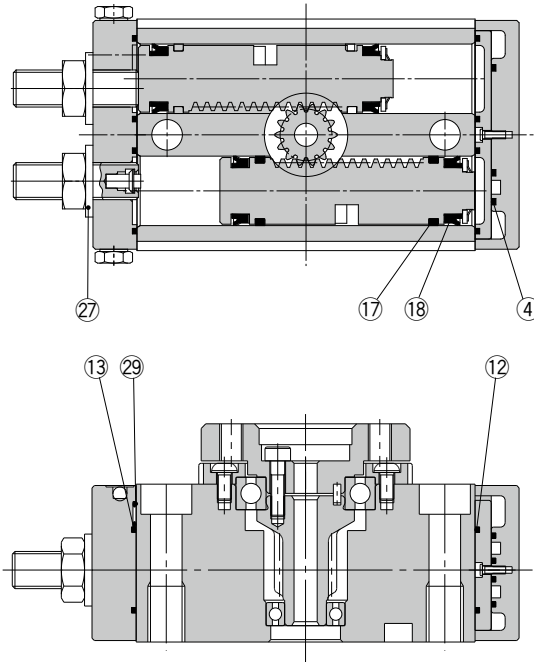
Rotary Table/Rack & Pinion Type

MSQ Series

Size: 10, 20, 30, 50,
70, 100, 200



Construction



Component Parts

No.	Description	Material	Note
④	Seal	NBR	
⑫	Gasket	NBR	
⑬	Gasket	NBR	
⑰	Wear ring	Resin	
⑱	Piston seal	NBR	
⑳	Seal washer	NBR	
㉑	O-ring	Size: 70 to 200 only	NBR

* The numbers correspond with those in the "Construction" of the MSQ series in the **Web Catalog**.

Replacement Parts: Basic Type

Description	Size																									
	10			20			30			50			70			100			200							
Seal kit part no.	P523010-5			P523020-5			P523030-5			P523040-5			P391050-5			P391060-5			P391070-5							
Parts included in seal kit	No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.		
	④	Seal	1	④	Seal	1	④	Seal	1	④	Seal	1	④	Seal	1	④	Seal	1	④	Seal	1	④	Seal	1		
	⑫	Gasket	1	⑫	Gasket	1	⑫	Gasket	1	⑫	Gasket	1	⑫	Gasket	1	⑫	Gasket	4	⑫	Gasket	4	⑫	Gasket	4		
	⑬	Gasket	1	⑬	Gasket	1	⑬	Gasket	1	⑬	Gasket	1	⑬	Gasket	1	⑰	Wear ring	4	⑰	Wear ring	4	⑰	Wear ring	4		
	⑰	Wear ring	4	⑰	Wear ring	4	⑰	Wear ring	4	⑰	Wear ring	4	⑰	Wear ring	4	⑱	Piston seal	4	⑱	Piston seal	4	⑱	Piston seal	4		
	⑱	Piston seal	4	⑱	Piston seal	4	⑱	Piston seal	4	⑱	Piston seal	4	⑱	Piston seal	4	㉑	Seal washer	2	㉑	Seal washer	2	㉑	Seal washer	2	㉑	Seal washer
㉑	Seal washer	2	㉑	Seal washer	2	㉑	Seal washer	2	㉑	Seal washer	2	㉑	Seal washer	2	㉑	O-ring	4	㉑	O-ring	4	㉑	O-ring	4	㉑	O-ring	4

* A set includes all parts above.
A grease pack (10 g) is included. Order with the following part number when only the grease pack is required.

Replacement parts/Grease pack part no.: GR-S-010 (10 g)

Replacement Parts: With External Shock Absorber

Description	Size				Note
	10	20	30	50	
Seal kit part no.	P523010-6	P523020-6	P523030-6	P523040-6	The seal washer ㉑ is excluded from the kit contents of the basic type.

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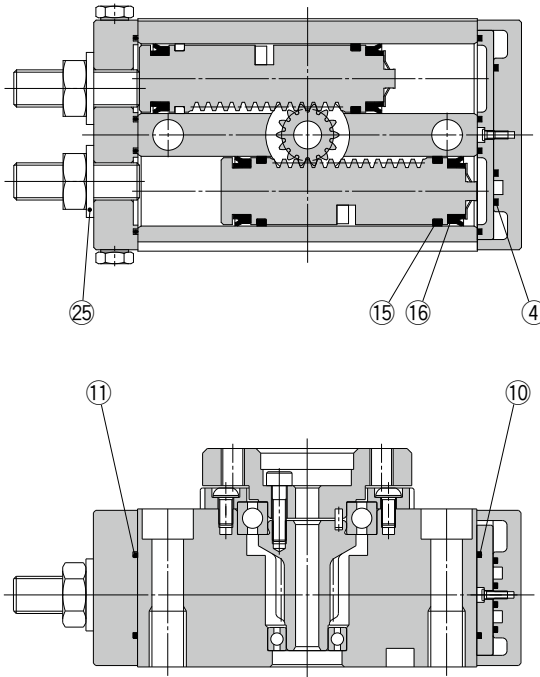
Modular F.R.L.
Pressure Control Equipment

Air Preparation Equipment
Industrial Filters

MSQX Series

Size: 10, 20, 30, 50

Construction



Component Parts

No.	Description	Material	Note
④	Seal	NBR	
⑩	Gasket	NBR	
⑪	Gasket	NBR	
⑮	Wear ring	Resin	
⑯	Piston seal	NBR	
㉕	Seal washer	NBR	

* The numbers correspond with those in the "Construction" of the MSQX series in the **Web Catalog**.

Replacement Parts

Description	Size											
	10			20			30			50		
Seal kit part no.	P523010-20			P523020-20			P523030-20			P523040-20		
	No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.	No.	Description	Qty.
Parts included in seal kit	4	Seal	1	4	Seal	1	4	Seal	1	4	Seal	1
	10	Gasket	1	10	Gasket	1	10	Gasket	1	10	Gasket	1
	11	Gasket	1	11	Gasket	1	11	Gasket	1	11	Gasket	1
	15	Wear ring	4	15	Wear ring	4	15	Wear ring	4	15	Wear ring	4
	16	Piston seal	4	16	Piston seal	4	16	Piston seal	4	16	Piston seal	4
	25	Seal washer	2	25	Seal washer	2	25	Seal washer	2	25	Seal washer	2

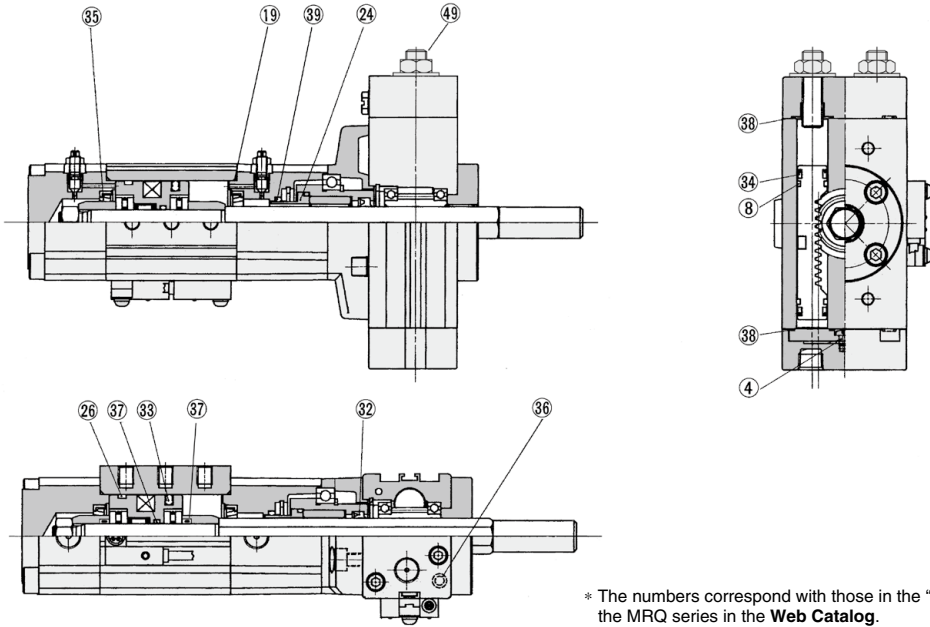
* A set includes all parts above.

A grease pack (10 g) is included. Order with the following part number when only the grease pack is required.

Replacement parts/Grease pack part no.: P523010-21 (10 g)

MRQ Series

Construction



* The numbers correspond with those in the "Construction" of the MRQ series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
④	Seal	NBR	24, 35, 37, and 38 are non-replaceable parts, so they are not included in the seal kit.
⑧	Wear ring	Resin	
⑱	Tube gasket	NBR	
⑲	O-ring	NBR	
⑳	Wear ring	Resin	
㉓	Rod seal	NBR	
㉔	Piston seal	NBR	
㉕	Piston seal	NBR	
㉖	Cushion seal	NBR	
㉗	O-ring	NBR	
㉘	O-ring	NBR	
㉙	O-ring	NBR	
㉚	O-ring	NBR	
㉛	Seal washer	Steel wire	

Replacement Parts

Description	Size		
	32	40	
Spare parts assembly part no.	P31701-1	P31702-1	
	No.	Description	Qty.
Parts included in the spare parts	4	Seal	1
	8	Wear ring	4
	19	Tube gasket	2
	26	Wear ring	1
	32	Rod seal	1
	33	Piston seal	1
	34	Piston seal	4
	36	O-ring	4
	38	O-ring	4
	39	O-ring	1
	49	Seal washer	2

A grease pack (10 g) is included. Order with the following part number when only the grease pack is required.

Replacement parts/Grease pack part no.: GR-S-010 (10 g)

* Individual part cannot be shipped.

Actuators

Rotary Actuators
Air Grippers

Modular F.R.L.
Pressure Control Equipment

Air Preparation
Equipment

Industrial Filters

Replacement
Procedure

Actuators

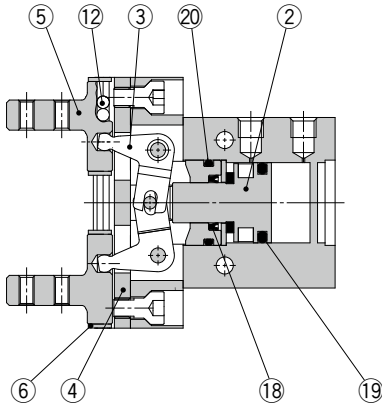
Rotary Actuators
Air Grippers

Modular F.R.L.
Pressure Control Equipment

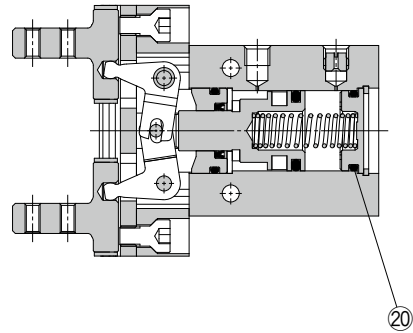
Air Preparation Equipment
Industrial Filters

Construction

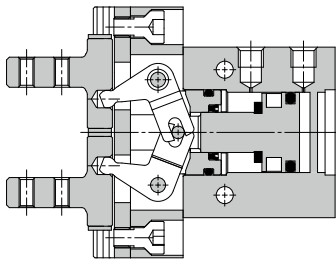
Double acting, With fingers open



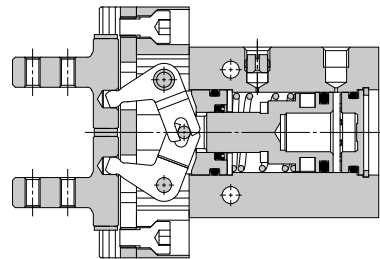
Single acting, Normally open



Double acting, With fingers closed



Single acting, Normally closed



Component Parts

No.	Description	Note
2	Piston assembly	
3	Lever	
4	Guide	
5	Finger	
6	Roller stopper	

No.	Description	Note
12	Steel ball	
18	Rod seal	
19	Piston seal	
20	Gasket	

Replacement Parts/Part Nos.

Description		JMHZ2-8	JMHZ2-12	JMHZ2-16	JMHZ2-20	Contents
Seal kit	JMHZ2-□□□	JMHZ8-PS	JMHZ12-PS	JMHZ16-PS	JMHZ20-PS	⑱⑲⑳
	JMHZ2-□□S	JMHZ8S-PS	JMHZ12S-PS	JMHZ16S-PS	JMHZ20S-PS	
	JMHZ2-□□C					
Finger assembly	JMHZ2-□□□	JMHZ-A0802	JMHZ-A1202	JMHZ-A1602	JMHZ-A1602	④⑤⑥⑫ Mounting screw
	JMHZ2-□□□1	JMHZ-A0802-1	JMHZ-A1202-1	JMHZ-A1602-1	JMHZ-A1602-1	
	JMHZ2-□□□2	JMHZ-A0802-2	JMHZ-A1202-2	JMHZ-A1602-2	JMHZ-A1602-2	
Piston assembly	JMHZ2-□□□	JMHZ-A0803	JMHZ-A1203	JMHZ-A1603	JMHZ-A2003	②
	JMHZ2-□□S	JMHZ-A0803S	JMHZ-A1203S	JMHZ-A1603S	JMHZ-A2003S	
	JMHZ2-□□C	JMHZ-A0803C				
Lever assembly		JMHZ-A0804	JMHZ-A1204	JMHZ-A1604	JMHZ-A2004	③

* Finger option

1 = Side tapped, 2 = Through-hole

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease pack part no.: GR-S-010 (10 g)

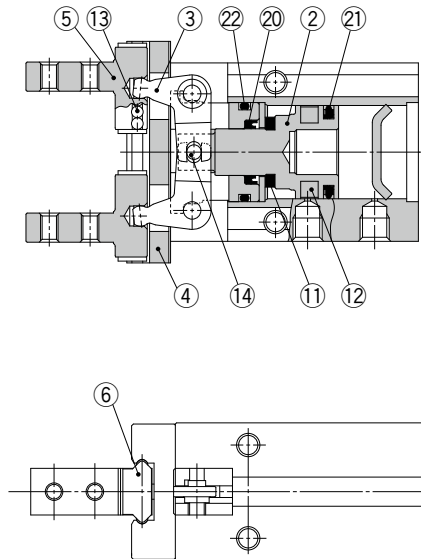
MHZ2 Series

ø10, ø16, ø20, ø25



Construction

MHZ2-10□ to 25□



* The numbers correspond with those in the "Construction" of the MHZ2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	ø10, ø16: Stainless steel ø20, ø25: Aluminum alloy	
③	Lever	Stainless steel	
④	Guide	Stainless steel	
⑤	Finger	Stainless steel	
⑥	Roller stopper	Stainless steel	
⑪	Bumper	Urethane rubber	

No.	Description	Material	Note
⑫	Rubber magnet	Synthetic rubber	
⑬	Steel ball	High carbon chrome bearing steel	
⑭	Needle roller	High carbon chrome bearing steel	
⑳	Rod seal	NBR	
㉑	Piston seal	NBR	
㉒	Gasket	NBR	

Replacement Parts/Part Nos.: Double Acting, Single Acting

Description		MHZ2-10	MHZ2-16	MHZ2-20	MHZ2-25	Main parts		
Seal kit	MHZ2-□□□□ MHZ2-□□□□	MHZ10-PS	MHZ16-PS	MHZ20-PS	MHZ25-PS	⑫⑬⑭		
	MHZ2-□□□□	MHZ10S-PS	MHZ16S-PS	MHZ20S-PS	MHZ25S-PS			
Finger assembly	MHZ2-□□□□(N) MHZ2-□□□□(N)1 MHZ2-□□□□(N)2 MHZ2-□□□□3	MHZ-AA1002(N) MHZ-AA1002(N)-1 MHZ-AA1002(N)-2 MHZ-AA1002-3	MHZ-AA1602(N) MHZ-AA1602(N)-1 MHZ-AA1602(N)-2 MHZ-AA1602-3	MHZ-AA2002(N) MHZ-AA2002(N)-1 MHZ-AA2002(N)-2 MHZ-AA2002-3	MHZ-AA2502(N) MHZ-AA2502(N)-1 MHZ-AA2502(N)-2 MHZ-AA2502-3	④⑤⑥⑬ Mounting screw		
	Piston assembly	MHZ2-□□□□ MHZ2-□□□□ MHZ2-□□□□	MHZ-AA1003	MHZ-AA1603	MHZ-AA2003	MHZ-AA2503	②⑪⑫⑭	
		End boss assembly	MHZ2-□□□□W MHZ2-□□□□K MHZ2-□□□□M MHZ2-□□□□E	MHZ-A1007 MHZ-A1008 MHZ-A1009 MHZ-A1010	MHZ-A1607 MHZ-A1608 MHZ-A1609 MHZ-A1610	MHZ-A2007 MHZ-A2008 MHZ-A2009 MHZ-A2010	MHZ-A2507 MHZ-A2508 MHZ-A2509 MHZ-A2510	Main body of adaptor Mounting screw for adaptor Seal
			Lever assembly	MHZ-AA1004	MHZ-AA1604	MHZ-AA2004	MHZ-AA2504	③

* Finger option

1 = Side tapped, 2 = Through-hole, 3 = Flat type fingers

* End boss type

W = One-touch fitting for coaxial tubing, K = With One-touch fitting, M = With M5 port, E = Side ported

* The end boss assembly other than type E should be mounted on the special body.

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease pack part no.: GR-S-010 (10 g)

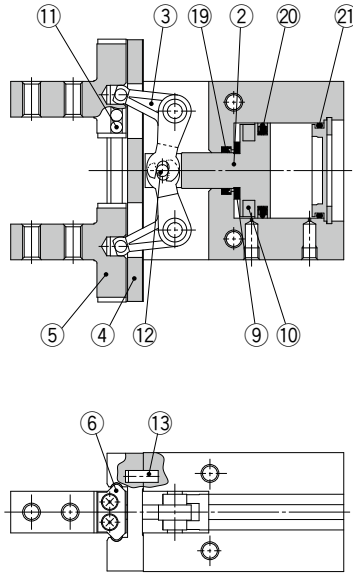
Actuators
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MHZ2 Series ø32, ø40



Construction

MHZ2-32□ to 40□



* The numbers correspond with those in the "Construction" of the MHZ2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	Aluminum alloy	
③	Lever	Stainless steel	
④	Guide	Stainless steel	
⑤	Finger	Stainless steel	
⑥	Roller stopper	Stainless steel	
⑨	Bumper	Urethane rubber	
⑩	Rubber magnet	Synthetic rubber	
⑪	Steel ball	High carbon chrome bearing steel	

No.	Description	Material	Note
⑫	Needle roller	High carbon chrome bearing steel	
⑬	Parallel pin	Stainless steel	
⑰	Rod seal	NBR	
⑳	Piston seal	NBR	
㉑	Gasket	NBR	

Replacement Parts/Part Nos.: Double Acting, Single Acting

Description		MHZ2-32	MHZ2-40	Main parts
Seal kit		MHZ32-PS	MHZ40-PS	⑰⑱㉑
Finger assembly	MHZ2-□□□	MHZ-A3202	MHZ-A4002	④⑤⑥⑪⑬ Mounting screw
	MHZ2-□□□1	MHZ-A3202-1	MHZ-A4002-1	
	MHZ2-□□□2	MHZ-A3202-2	MHZ-A4002-2	
	MHZ2-□□□3	MHZ-A3202-3	MHZ-A4002-3	
Piston assembly	MHZ2-□□□□	MHZ-A3203	MHZ-A4003	②⑨⑩⑫
	MHZ2-□□□S□	MHZ-A3203S	MHZ-A4003S	
	MHZ2-□□□C□			
Lever assembly		MHZ-A3204	MHZ-A4004	③

* Finger option

1 = Side tapped, 2 = Through-hole, 3 = Flat type fingers

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease pack part no.: GR-S-010 (10 g)

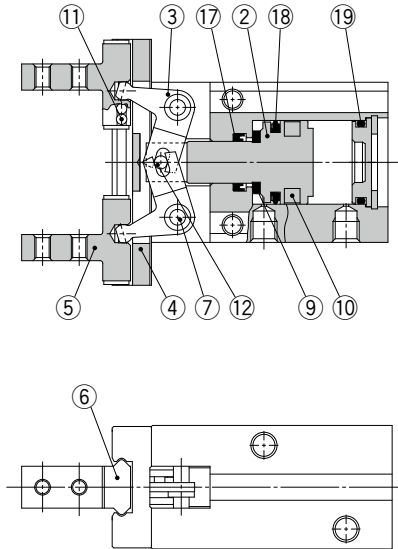
MHZL2 Series

ø10, ø16, ø20, ø25



Construction

MHZL2-10□ to 25□



* The numbers correspond with those in the "Construction" of the MHZL2 series in the Web Catalog.

Component Parts

No.	Description	Material	Note
②	Piston	ø10, ø16: Stainless steel ø20, ø25: Aluminum alloy	
③	Lever	Stainless steel	
④	Guide	Stainless steel	
⑤	Finger	Stainless steel	
⑥	Roller stopper	Stainless steel	
⑦	Lever shaft	Stainless steel	
⑨	Bumper	Urethane rubber	

No.	Description	Material	Note
⑩	Rubber magnet	Synthetic rubber	
⑪	Steel ball	High carbon chrome bearing steel	
⑫	Needle roller	High carbon chrome bearing steel	
⑰	Rod seal	NBR	
⑱	Piston seal	NBR	
⑲	Gasket	NBR	

Replacement Parts/Part Nos.: Double Acting, Single Acting

Description		MHZL2-10	MHZL2-16	MHZL2-20	MHZL2-25	Main parts
Seal kit		MHZL10-PS	MHZL16-PS	MHZL20-PS	MHZL25-PS	⑰⑱⑲
Finger assembly	MHZL2-□□□□	MHZL-AA1002	MHZL-AA1602	MHZL-AA2002	MHZL-AA2502	
	MHZL2-□□□□1	MHZL-AA1002-1	MHZL-AA1602-1	MHZL-AA2002-1	MHZL-AA2502-1	④⑤⑥⑪
	MHZL2-□□□□2	MHZL-AA1002-2	MHZL-AA1602-2	MHZL-AA2002-2	MHZL-AA2502-2	Mounting screw
	MHZL2-□□□□3	MHZL-AA1002-3	MHZL-AA1602-3	MHZL-AA2002-3	MHZL-AA2502-3	
Piston assembly	MHZL2-□□□□	MHZL-A1003	MHZL-A1603	MHZL-A2003	MHZL-A2503	②⑨⑩⑫
	MHZL2-□□□□S					
	MHZL2-□□□□C	MHZL-A1003C	MHZL-A1603C	MHZL-A2003C	MHZL-A2503C	
End boss assembly	MHZL2-□□□□W	MHZ-A1007	MHZ-A1607	MHZ-A2007	MHZ-A2507	Main body of adaptor Mounting screw for adaptor Seal
	MHZL2-□□□□K	MHZ-A1008	MHZ-A1608	MHZ-A2008	MHZ-A2508	
	MHZL2-□□□□M	MHZ-A1009	MHZ-A1609	MHZ-A2009	MHZ-A2509	
	MHZL2-□□□□E	MHZ-A1010	MHZ-A1610	MHZ-A2010	MHZ-A2510	
Lever assembly		MHZL-A1004	MHZL-A1604	MHZL-A2004	MHZL-A2504	③⑦

* Finger option

1 = Side tapped, 2 = Through-hole, 3 = Flat type fingers

* End boss type

W = One-touch fitting for coaxial tubing, K = With One-touch fitting, M = With M5 port, E = Side ported

* The end boss assembly other than type E should be mounted on the special body.

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease pack part no.: GR-S-010 (10 g)

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Air Grippers
Modular F.R.L.
Pressure Control Equipment
Air Preparation
Equipment
Industrial Filters

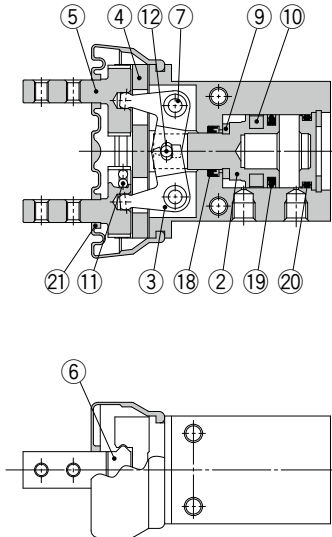
MHZJ2 Series

ø10, ø16, ø20, ø25



Construction

MHZJ2-10□ to 25□



* The numbers correspond with those in the "Construction" of the MHZJ2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	ø10, ø16: Stainless steel ø20, ø25: Aluminum alloy	
③	Lever	Stainless steel	
④	Guide	Stainless steel	
⑤	Finger	Stainless steel	
⑥	Roller stopper	Stainless steel	
⑦	Lever shaft	Stainless steel	
⑨	Bumper	Urethane rubber	
⑩	Rubber magnet	Synthetic rubber	
⑪	Steel ball	High carbon chrome bearing steel	

No.	Description	Material	Note
⑫	Needle roller	High carbon chrome bearing steel	
⑱	Rod seal	NBR	
⑲	Piston seal	NBR	
⑳	Gasket	NBR	
⑳	Dust cover	Chloroprene rubber	
		Fluororubber	
		Silicone rubber	

Replacement Parts/Part Nos.: Double Acting, Single Acting

Description		MHZJ2-10	MHZJ2-16	MHZJ2-20	MHZJ2-25	Main parts
Seal kit		MHZJ10-PS	MHZJ16-PS	MHZJ20-PS	MHZJ25-PS	⑱⑲⑳
Dust cover	Material	Chloroprene rubber	MHZJ2-J10	MHZJ2-J16	MHZJ2-J20	MHZJ2-J25
		Fluororubber	MHZJ2-J10F	MHZJ2-J16F	MHZJ2-J20F	MHZJ2-J25F
		Silicone rubber	MHZJ2-J10S	MHZJ2-J16S	MHZJ2-J20S	MHZJ2-J25S
Finger assembly		MHZJ-AA1002	MHZJ-AA1602	MHZJ-AA2002	MHZJ-AA2502	④⑤⑥⑪ Mounting screw
Piston assembly		MHZJ-A1003	MHZJ-A1603	MHZJ-A2003	MHZJ-A2503	②⑨⑩⑫
End boss assembly	MHZJ2-□□□□W	MHZ-A1007	MHZ-A1607	MHZ-A2007	MHZ-A2507	Main body of adaptor Mounting screw for adaptor Seal
	MHZJ2-□□□□K	MHZ-A1008	MHZ-A1608	MHZ-A2008	MHZ-A2508	
	MHZJ2-□□□□M	MHZ-A1009	MHZ-A1609	MHZ-A2009	MHZ-A2509	
	MHZJ2-□□□□E	MHZ-A1010	MHZ-A1610	MHZ-A2010	MHZ-A2510	
Lever assembly		MHZJ-A1004	MHZJ-A1604	MHZJ-A2004	MHZJ-A2504	ø10, ø16: ③ ø20, ø25: ③⑦

* End boss type

W = One-touch fitting for coaxial tubing, K = With One-touch fitting, M = With M5 port, E = Side ported

* The end boss assembly other than type E should be mounted on the special body.

* Since the seal kit does not include a grease pack, it should be ordered separately.

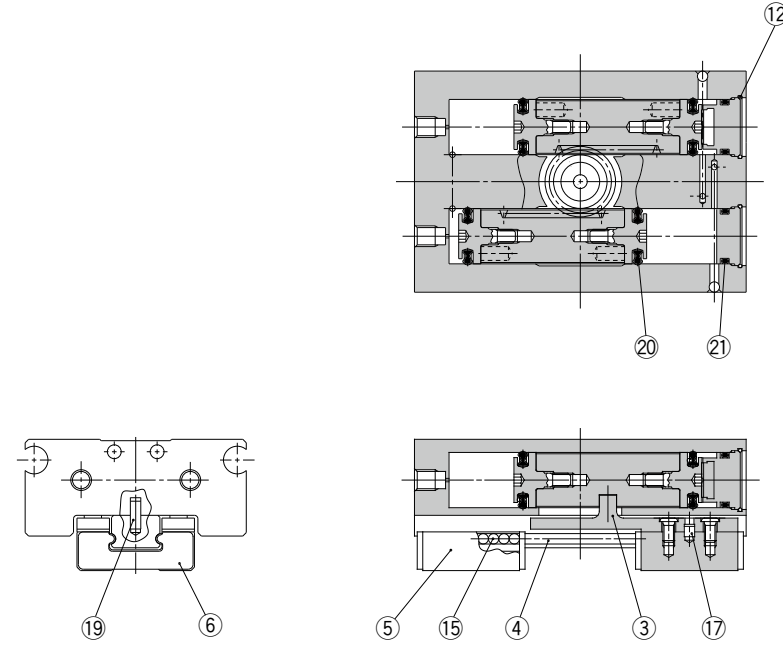
Grease pack part no.: GR-S-010 (10 g)

MHF2 Series ø8

The Replacement Procedure is on p. 532

Construction

MHF2-8D, MHF2-8D1



Component Parts

No.	Description	Material	Note
③	Joint	Stainless steel	
④	Guide rail	Stainless steel	
⑤	Finger	Stainless steel	
⑥	Roller stopper	Stainless steel	
⑫	Clip	Stainless steel wire	
⑮	Steel ball	High carbon chrome bearing steel	
⑰	Roller	High carbon chrome bearing steel	
⑱	Parallel pin	Stainless steel	
⑳	Piston seal	NBR	
㉑	Gasket	NBR	

* The numbers correspond with those in the "Construction" of the MHF2 series in the **Web Catalog**.

Replacement Parts/Part Nos.

Description	Model			Contents
	MHF2-8D	MHF2-8D1	MHF2-8D2	
Seal kit	MHF8-PS	MHF8-PS	MHF8-PS-2	⑫⑳㉑
Finger assembly	MHF-A0802	MHF-A0802-1	MHF-A0802-2	③④⑤⑥⑮⑰⑱ Mounting screw

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease pack part nos.

Guide unit: GR-S-010 (10 g)

Cylinder unit: GR-L-005 (5 g)

Bolts for Body Through-hole Mounting

Part no.	Number of pieces	
	MHF2-8D	MHF2-8D1
MHF-B08	MHF2-8D	2 pieces/unit
	MHF2-8D1	2 pieces/unit
	MHF2-8D2	4 pieces/unit

* The bolts for body through-hole mounting are attached to the product. But you can also place an order for just 1 piece with this part number.

Actuators
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Air Preparation
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Industrial Filters

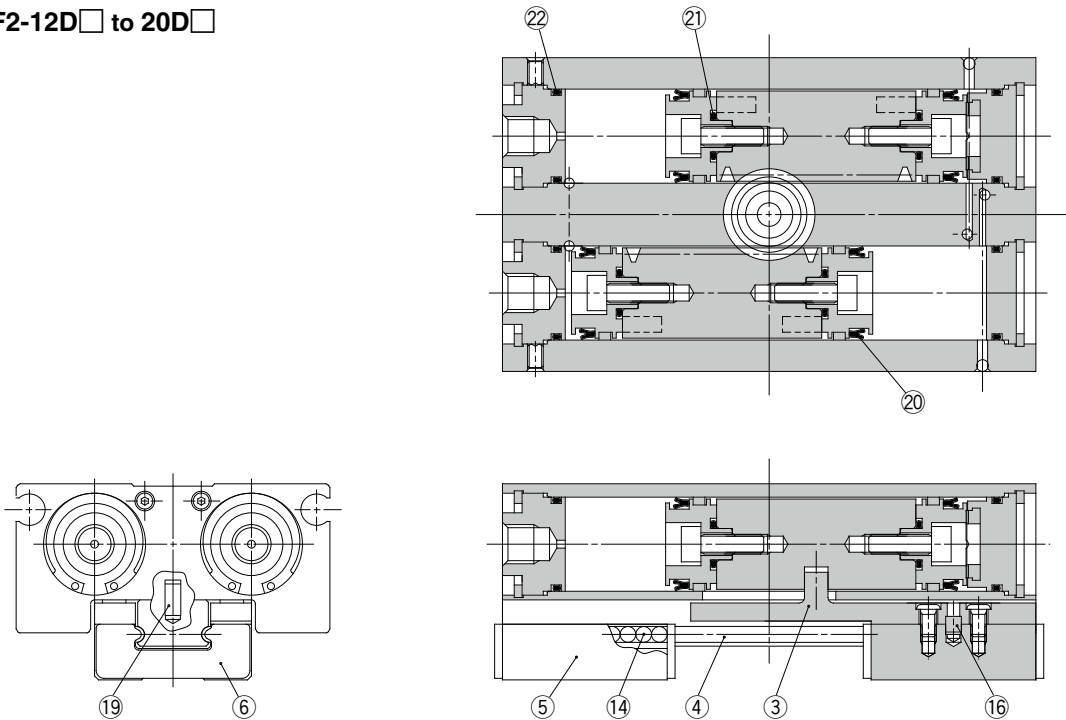
MHF2 Series

ø12, ø16, ø20



Construction

MHF2-12D□ to 20D□



* The numbers correspond with those in the "Construction" of the MHF2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
③	Joint	Stainless steel	
④	Guide rail	Stainless steel	
⑤	Finger	Stainless steel	
⑥	Roller stopper	Stainless steel	
⑭	Steel ball	High carbon chrome bearing steel	
⑯	ø12: Roller	High carbon chrome bearing steel	
	ø16 to ø20: Parallel pin	Stainless steel	

No.	Description	Material	Note
⑰	Parallel pin	Stainless steel	
⑳	Piston seal	NBR	
㉑	Gasket	NBR	
㉒	Gasket	NBR	

Replacement Parts/Part Nos.

Description	Model			Contents
	MHF2-12D	MHF2-12D1	MHF2-12D2	
Seal kit	MHF12-PS	MHF12-PS	MHF12-PS	⑳㉑㉒
Finger assembly	MHF-A1202	MHF-A1202-1	MHF-A1202-2	③④⑤⑥⑭⑯⑰ Mounting screw
Description	Model			Contents
	MHF2-16D	MHF2-16D1	MHF2-16D2	
Seal kit	MHF16-PS	MHF16-PS	MHF16-PS	⑳㉑㉒
Finger assembly	MHF-A1602	MHF-A1602-1	MHF-A1602-2	③④⑤⑥⑭⑯⑰ Mounting screw
Description	Model			Contents
	MHF2-20D	MHF2-20D1	MHF2-20D2	
Seal kit	MHF20-PS	MHF20-PS	MHF20-PS	⑳㉑㉒
Finger assembly	MHF-A2002	MHF-A2002-1	MHF-A2002-2	③④⑤⑥⑭⑯⑰ Mounting screw

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease Pack Part Nos.

MHF2-□□D, D1 (ø12, ø16, ø20)	GR-S-010 (10 g) (Guide unit)
MHF2-□□D2 (ø12)	GR-L-005 (5 g) (Cylinder unit)
MHF2-□□D2 (ø16, ø20)	GR-S-010 (10 g) (Guide unit)
	GR-L-010 (10 g) (Cylinder unit)

Bolts for Body Through-hole Mounting

Part no.	Number of pieces	
	MHF2-12D	2 pieces/unit
MHF-B12	MHF2-12D1	2 pieces/unit
	MHF2-12D2	4 pieces/unit

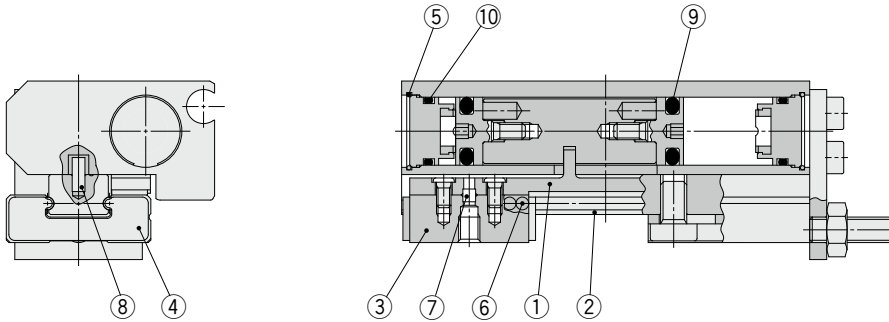
* The bolts for body through-hole mounting are attached to the product. But you can also place an order for just 1 piece with this part number.

* When mounting MHF2-16D□ or MHF2-20D□ with the body through-holes, use hexagon socket head cap screws available on the market.

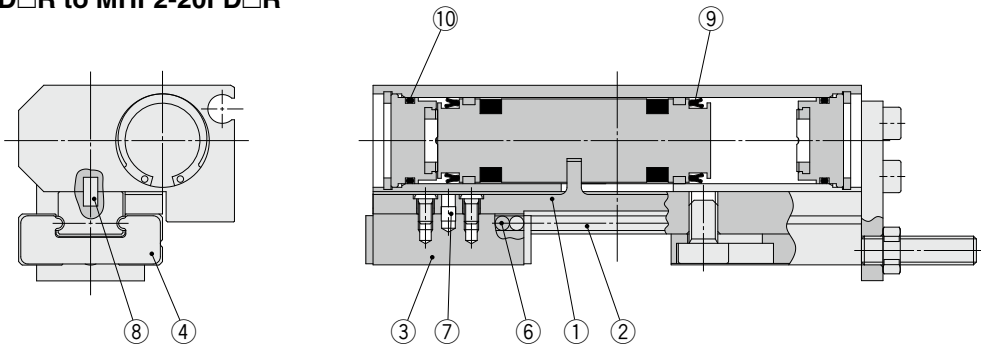
MHF2-□F Series ø8, ø12, ø16, ø20

Construction

MHF2-8FD□R



MHF2-12FD□R to MHF2-20FD□R



Component Parts

No.	Description	Note
①	Joint	
②	Guide rail	
③	Finger	
④	Roller stopper	
⑤	Clip	
⑥	Steel ball	

No.	Description	Note
⑦	Roller (ø8, ø12) Parallel pin (ø16, ø20)	
⑧	Parallel pin	
⑨	Piston seal	
⑩	Gasket	

* The numbers correspond with those in the "Construction" of the MHF2-□F series in the **Web Catalog**.

Finger Assembly/Part Nos.

Model	Part no.	Contents
MHF2-8FDR	MHF-AA0802F	①②③④⑥⑦⑧
MHF2-8FD1R	MHF-AA0802F-1	Guide rail mounting screw
MHF2-8FD2R	MHF-AA0802F-2	
MHF2-12FDR	MHF-AA1202F	①②③④⑥⑦⑧
MHF2-12FD1R	MHF-AA1202F-1	Guide rail mounting screw
MHF2-12FD2R	MHF-AA1202F-2	
MHF2-16FDR	MHF-AA1602F	①②③④⑥⑦⑧
MHF2-16FD1R	MHF-AA1602F-1	Guide rail mounting screw
MHF2-16FD2R	MHF-AA1602F-2	
MHF2-20FDR	MHF-AA2002F	①②③④⑥⑦⑧
MHF2-20FD1R	MHF-AA2002F-1	Guide rail mounting screw
MHF2-20FD2R	MHF-AA2002F-2	

Grease Pack Part Nos.

Guide unit: GR-S-010 (10 g)

Actuators

Rotary Actuators
Air Grippers

Modular F.R.L.
Pressure Control Equipment

Air Preparation
Equipment

Industrial Filters

Replacement
Procedure

Actuators

Rotary Actuators
Air Grippers

Modular F.R.L.
Pressure Control Equipment

Air Preparation Equipment
Industrial Filters

Wide Type Parallel Style Air Gripper

MHL2-Z Series

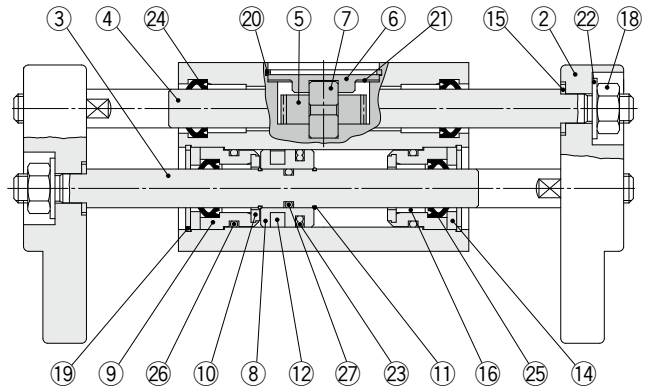
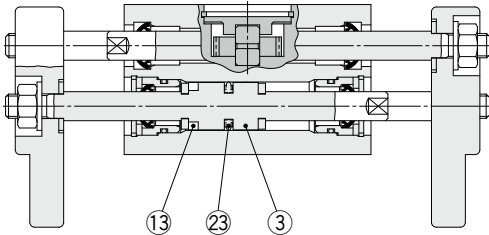
ø10, ø16, ø20
ø25, ø32, ø40

The Replacement Procedure is on p. 534

Construction

ø10

ø16 to ø40



Component Parts

* The numbers correspond with those in the "Construction" of the MHL2-Z series in the Web Catalog.

No.	Description	Material	Note
②	Finger	Aluminum alloy	
③	Piston rod	Stainless steel	
④	Rack	Stainless steel	
⑤	Pinion	Carbon steel	
⑥	Pinion cover	Carbon steel	
⑦	Pinion axis	Stainless steel	
⑧	Piston	Aluminum alloy	
⑨	Rod cover	Aluminum alloy	
⑩	Bumper	Urethane rubber	
⑪	Clip	Stainless steel spring wire	
⑫	Rubber magnet	Synthetic rubber	
⑬	Magnet	—	
⑭	Rod seal cover B	Cold rolled carbon steel sheet	

No.	Description	Material	Note
⑮	Washer	Stainless steel	
⑯	Bearing	Oil containing polyacetal	
⑰	U-nut	Carbon steel	
⑱	Inverted internal retaining ring	Carbon steel	
⑳	Basic internal retaining ring	Carbon steel	
㉑	Wave washer	Steel for spring	
㉒	Conical spring washer	Carbon steel	
㉓	Piston seal	NBR	
㉔	Rod seal	NBR	
㉕	Rod seal	NBR	
㉖	Gasket	NBR	
㉗	Gasket	NBR	

Replacement Parts/Part Nos.

Description	MHL2-10□Z	MHL2-16□Z	MHL2-20□Z	MHL2-25□Z	MHL2-32□Z	MHL2-40□Z	Contents
Seal kit	MHL10-PS	MHL16-PS	MHL20-PS	MHL25-PS	MHL32-PS	MHL40-PS	㉓ ㉔ ㉕ ㉖ ㉗
Piston assembly	MHL2-□□DZ	MHL-AA1001	MHL-AA1601	MHL-AA2001	MHL-AA2501	MHL-AA3201	MHL-AA4001
	MHL2-□□D1Z	MHL-AA1002	MHL-AA1602	MHL-AA2002	MHL-AA2502	MHL-AA3202	MHL-AA4002
	MHL2-□□D2Z	MHL-AA1003	MHL-AA1603	MHL-AA2003	MHL-AA2503	MHL-AA3203	MHL-AA4003
Rack	MHL2-□□DZ	MHL-AA1004	MHL-AA1604	MHL-AA2004	MHL-AA2504	MHL-AA3204	MHL-AA4004
	MHL2-□□D1Z	MHL-AA1005	MHL-AA1605	MHL-AA2005	MHL-AA2505	MHL-AA3205	MHL-AA4005
	MHL2-□□D2Z	MHL-AA1006	MHL-AA1606	MHL-AA2006	MHL-AA2506	MHL-AA3206	MHL-AA4006
Rod cover assembly	MHL-AA1007	MHL-AA1607	MHL-AA2007	MHL-AA2507	MHL-AA3207	MHL-AA4007	ø10: ⑨ ⑩ ⑬ ⑮ ㉓ ㉕ ø16 to ø40: ⑨ ⑩ ⑬ ⑮ ⑱ ㉓ ㉕
Finger assembly	MHL-AA1008	MHL-AA1608	MHL-AA2008	MHL-AA2508	MHL-AA3208	MHL-AA4008	② ⑮ ⑰ ㉒
Pinion assembly	MHL-AA1009	MHL-AA1609	MHL-AA2009	MHL-AA2509	MHL-AA3209	MHL-AA4009	⑤ ⑥ ⑦ ㉑ ㉒
Nut set	MHL-A1017	MHL-A1617	MHL-A2017	MHL-A2517	MHL-A3217	MHL-A4017	⑰ ㉒ ㉗
U-nut assembly	MHL-A1017A	MHL-A1617A	MHL-A2017A	MHL-A2517A	MHL-A3217A	MHL-A4017A	⑰ ㉗

* Order 1 piece finger assembly, pinion assembly, nut set and U-nut assembly respectively per unit.

* For piston assembly and rack, order 2 pieces per unit.

* For rod cover assembly, order 4 pieces per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease Pack Part Nos.

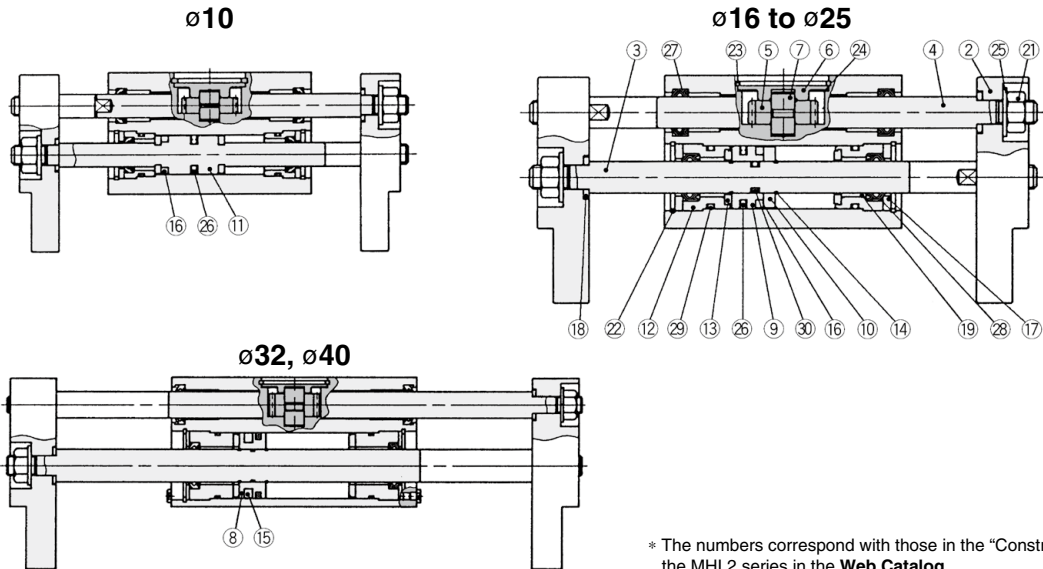
MHL2-□□DZ (ø10 to ø20)	GR-S-010 (10 g)
MHL2-□□DZ (ø25, ø32)	GR-S-010 (10 g)
MHL2-□□DZ (ø40)	GR-S-020 (20 g)
MHL2-□□D1Z (ø10, ø16)	GR-S-010 (10 g)
MHL2-□□D1Z (ø20, ø25)	GR-S-010 (10 g)
MHL2-□□D1Z (ø32, ø40)	GR-S-020 (20 g)
MHL2-□□D2Z (ø10, ø16)	GR-S-010 (10 g)
MHL2-□□D2Z (ø20, ø25)	GR-S-010 (10 g)
MHL2-□□D2Z (ø32, ø40)	GR-S-010 (10 g), GR-S-020 (20 g) (1 pack each)

MHL2 Series

ø10, ø16, ø20
ø25, ø32, ø40

The Replacement Procedure is on p. 534

Construction



* The numbers correspond with those in the "Construction" of the MHL2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
2	Finger	Aluminum alloy	
3	Piston rod	Stainless steel	
4	Rack	Stainless steel	
5	Pinion	Carbon steel	
6	Pinion cover	Carbon steel	
7	Pinion axis	Stainless steel	
8	Piston	Brass	
9	Piston A	Brass	
10	Piston B	Brass	
11	Piston A	Stainless steel	
12	Rod cover	Aluminum alloy	
13	Bumper	Urethane rubber	
14	Clip	Stainless steel spring wire	
15	Rubber magnet	Synthetic rubber	
16	Magnet	—	

No.	Description	Material	Note
17	Rod seal cover B	Cold rolled carbon steel sheet	
18	Washer	Stainless steel	
19	Bearing	Oil containing polyacetal with back metal	
21	U-nut	Carbon steel	
22	Inverted internal retaining ring	Carbon steel	
23	Basic internal retaining ring	Carbon steel	
24	Wave washer	Steel for spring	
25	Conical spring washer	Carbon steel	
26	Piston seal	NBR	
27	Rod seal	NBR	
28	Rod seal	NBR	
29	Gasket	NBR	
30	Gasket	NBR	

Replacement Parts/Part Nos.

Description	MHL2-10□	MHL2-16□	MHL2-20□	MHL2-25□	MHL2-32□	MHL2-40□	Main parts
Seal kit	MHL10-PS	MHL16-PS	MHL20-PS	MHL25-PS	MHL32-PS	MHL40-PS	26 27 28 29 30
Piston assembly	MHL2-□□D	MHL-A1001	MHL-A1601	MHL-A2001	MHL-A2501	MHL-A3201	MHL-A4001 <ø10> 11 13 16 26 <ø16 to ø25> 3 9 10 14 15 25 30
	MHL2-□□D1	MHL-A1002	MHL-A1602	MHL-A2002	MHL-A2502	MHL-A3202	MHL-A4002
	MHL2-□□D2	MHL-A1003	MHL-A1603	MHL-A2003	MHL-A2503	MHL-A3203	MHL-A4003 <ø32, ø40> 3 8 14 15 26 30
Rack	MHL2-□□D	MHL-A1004	MHL-A1604	MHL-A2004	MHL-A2504	MHL-A3204	MHL-A4004
	MHL2-□□D1	MHL-A1005	MHL-A1605	MHL-A2005	MHL-A2505	MHL-A3205	MHL-A4005
	MHL2-□□D2	MHL-A1006	MHL-A1606	MHL-A2006	MHL-A2506	MHL-A3206	MHL-A4006
Rod cover assembly	MHL-A1007	MHL-A1607	MHL-A2007	MHL-A2507	MHL-A3207	MHL-A4007	<ø10> 12 17 19 22 28 29 <ø16 to 40> 12 13 17 19 22 28 29
Finger assembly	MHL-A1008	MHL-A1608	MHL-A2008	MHL-A2508	MHL-A3208	MHL-A4008	2 18 21 25
Pinion assembly	MHL-A1009	MHL-A1609	MHL-A2009	MHL-A2509	MHL-A3209	MHL-A4009	5 6 7 23 24
Nut set	MHL-A1017	MHL-A1617	MHL-A2017	MHL-A2517	MHL-A3217	MHL-A4017	18 21 25
U-nut assembly	MHL-A1017A	MHL-A1617A	MHL-A2017A	MHL-A2517A	MHL-A3217A	MHL-A4017A	21 25

- * Order 1 piece finger assembly, pinion assembly, nut set and U-nut assembly respectively per unit.
- * For piston assembly and rack, order 2 pieces per unit.
- * For rod cover assembly, order 4 pieces per unit.
- * Since the seal kit does not include a grease pack, it should be ordered separately.

Grease Pack Part Nos.

MHL2-□□D (ø10 to ø20)	GR-S-010 (10 g)
MHL2-□□D (ø25, ø32)	GR-S-010 (10 g)
MHL2-□□D (ø40)	GR-S-020 (20 g)
MHL2-□□D1 (ø10, ø16)	GR-S-010 (10 g)
MHL2-□□D1 (ø20, ø25)	GR-S-010 (10 g)
MHL2-□□D1 (ø32, ø40)	GR-S-020 (20 g)
MHL2-□□D2 (ø10, ø16)	GR-S-010 (10 g)
MHL2-□□D2 (ø20, ø25)	GR-S-010 (10 g)
MHL2-□□D2 (ø32, ø40)	GR-S-010 (10 g), GR-S-020 (20 g) (1 pack each)

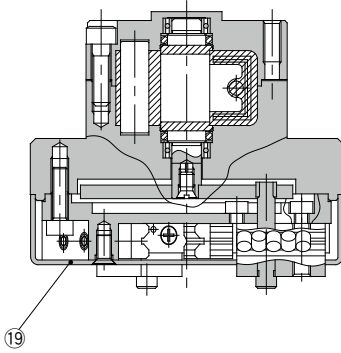
Actuators
Rotary Actuators
Air Grippers
Modular F.R.L.
Pressure Control Equipment
Air Preparation
Equipment
Industrial Filters
Replacement
Procedure
Actuators
Rotary Actuators
Air Grippers
Modular F.R.L.
Pressure Control Equipment
Air Preparation
Equipment
Industrial Filters

MHR3/MDHR3 Series ø10, ø15

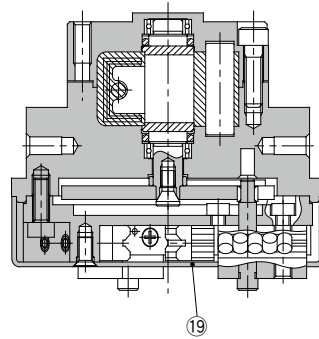
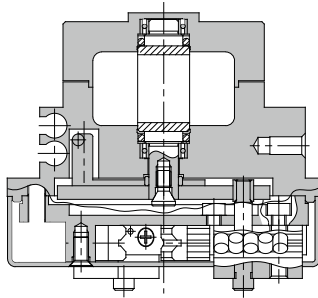


Construction

MHR3



MDHR3



* The numbers correspond with those in the "Construction" of the MHR3/MDHR3 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
19	Cover	Aluminum alloy	

Replacement Parts

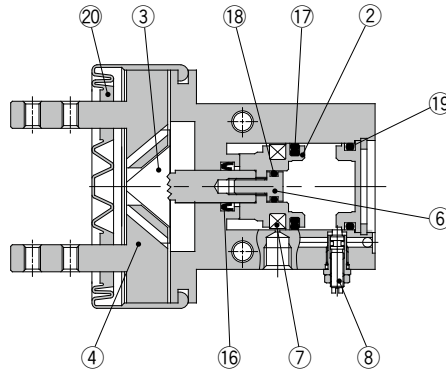
Description	M□HR3-10□	M□HR3-15□	Main parts
Cover	P3313128	P3313228	19

MHK2 Series

ø12, ø16, ø20, ø25

The Replacement Procedure is on p. 536

Construction



* The numbers correspond with those in the "Construction" of the MHK2 series in the Web Catalog.

Component Parts

No.	Description	Material	Note
②	Piston	Aluminum alloy	
③	Cam	Carbon steel	
④	Finger	Carbon steel	
		Stainless steel 304	
⑥	Piston bolt	Stainless steel	
⑦	Rubber magnet	Synthetic rubber	
⑧	Needle assembly		

No.	Description	Material	Note
⑬	Rod seal	NBR	
⑰	Piston seal	NBR	
⑱	Gasket	NBR	
⑲	Gasket	NBR	
⑳	Dust cover	Chloroprene rubber	
		Fluororubber	
		Silicone rubber	

MHK2 Replacement Parts/Part Nos.: Double Acting, Single Acting

Description		MHK2-12□	MHK2-16□	MHK2-20□	MHK2-25□	Main parts	
Seal kit		MHK12-PS	MHK16-PS	MHK20-PS	MHK25-PS	⑬⑰⑱⑲	
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		MHK-A1206				⑧	
Dust cover	Material	Chloroprene rubber	MHK2-J12	MHK2-J16	MHK2-J20	MHK2-J25	⑳
	Fluororubber	MHK2-J12F	MHK2-J16F	MHK2-J20F	MHK2-J25F		
	Silicone rubber	MHK2-J12S	MHK2-J16S	MHK2-J20S	MHK2-J25S		

* Order 2 fingers per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

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

MHKL2 Replacement Parts/Part Nos.: Double Acting, Single Acting

Description		MHKL2-12□	MHKL2-16□	MHKL2-20□	MHKL2-25□	Main parts	
Seal kit		MHK12-PS	MHK16-PS	MHK20-PS	MHK25-PS	⑬⑰⑱⑲	
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		MHK-A1206				⑧	
Dust cover	Material	Chloroprene rubber	MHKL2-J12	MHKL2-J16	MHKL2-J20	MHKL2-J25	⑳
	Fluororubber	MHKL2-J12F	MHKL2-J16F	MHKL2-J20F	MHKL2-J25F		
	Silicone rubber	MHKL2-J12S	MHKL2-J16S	MHKL2-J20S	MHKL2-J25S		

* Order 2 fingers per unit.

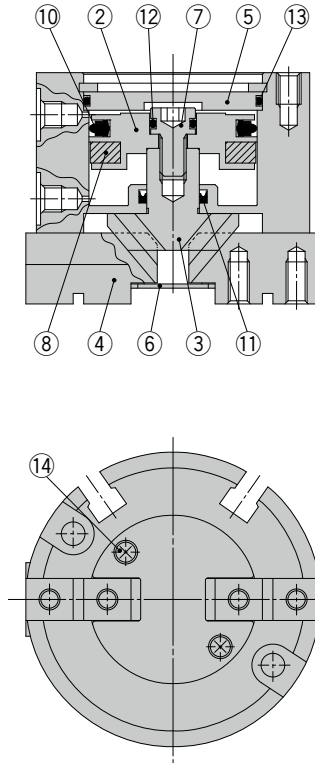
* Since the seal kit does not include a grease pack, it should be ordered separately.

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

Actuators
Rotary Actuators
Air Grippers
Modular F.R.L.
Pressure Control Equipment
Air Preparation Equipment
Industrial Filters
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Actuators
Rotary Actuators
Air Grippers
Modular F.R.L.
Pressure Control Equipment
Air Preparation Equipment
Industrial Filters

Construction

Closed condition



* The numbers correspond with those in the "Construction" of the MHS2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	Aluminum alloy	
③	Cam	Carbon steel	
④	Finger	Carbon steel	
⑤	Cap	Aluminum alloy	
⑥	End plate	Stainless steel	
⑦	Piston bolt	Stainless steel	

No.	Description	Material	Note
⑧	Magnet	—	
⑩	Piston seal	NBR	
⑪	Rod seal	NBR	
⑫	Gasket	NBR	
⑬	Gasket	NBR	
⑭	Cross recessed flat head screw	Carbon steel	

Replacement Parts/Part Nos.

Description	MHS2-16D	MHS2-20D	MHS2-25D	MHS2-32D	MHS2-40D	MHS2-50D	MHS2-63D	Main parts
Seal kit	MHS16-PS	MHS20-PS	MHS25-PS	MHS32-PS	MHS40-PS	MHS50-PS	MHS63-PS	⑩⑪⑫⑬
Finger	P3316004	P3316104	P3316204	P3316304	P3316404	P3316504	P3316604	④
Cam	P3316023	P3316123	P3316223	P3316323	P3316423	P3316523	P3316623	③
Piston assembly	MHS-A1601	MHS-A2001	MHS-A2501	MHS-A3201	MHS-A4001	MHS-A5001	MHS-A6301	②⑦⑧
End plate assembly	MHS-A1613-2	MHS-A2013-2	MHS-A2513-2	MHS-A3213-2	MHS-A4013-2	MHS-A5013-2	MHS-A6313-2	⑥⑭
Cap	MHS-A1614	MHS-A2014	MHS-A2514	MHS-A3214	MHS-A4014	MHS-A5014	MHS-A6314	⑤

* Order 2 fingers per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

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

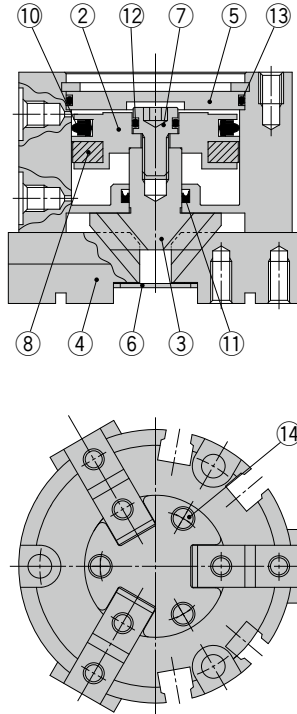
MHS3 Series

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



Construction

Closed condition



* The numbers correspond with those in the "Construction" of the MHS3 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	Aluminum alloy	
③	Cam	Carbon steel	
④	Finger	Carbon steel	
⑤	Cap	Aluminum alloy	
⑥	End plate	Stainless steel	
⑦	Piston bolt	Stainless steel	

No.	Description	Material	Note
⑧	Magnet	—	
⑩	Piston seal	NBR	
⑪	Rod seal	NBR	
⑫	Gasket	NBR	
⑬	Gasket	NBR	
⑭	Cross recessed flat head screw	Carbon steel	

Replacement Parts/Part Nos.

Description	MHS3-16D	MHS3-20D	MHS3-25D	MHS3-32D	MHS3-40D	Main parts
Seal kit	MHS16-PS	MHS20-PS	MHS25-PS	MHS32-PS	MHS40-PS	⑩⑪⑫⑬
Finger	P3316004	P3316104	P3316204	P3316304	P3316404	④
Cam	P3316003	P3316103	P3316203	P3316303	P3316403	③
Piston assembly	MHS-A1601	MHS-A2001	MHS-A2501	MHS-A3201	MHS-A4001	②⑦⑧
End plate assembly	MHS-A1613-3	MHS-A2013-3	MHS-A2513-3	MHS-A3213-3	MHS-A4013-3	⑥⑭
Cap	MHS-A16014	MHS-A2014	MHS-A2514	MHS-A3214	MHS-A4014	⑤

Description	MHS3-50D	MHS3-63D	MHS3-80D	MHS3-100D	MHS3-125D	Main parts
Seal kit	MHS50-PS	MHS63-PS	MHS80-PS	MHS100-PS	MHS125-PS	⑩⑪⑫⑬
Finger	P3316504	P3316604	P3316704	P3316804	P3316904	④
Cam	P3316503	P3316603	P3316703	P3316803	P3316903	③
Piston assembly	MHS-A5001	MHS-A6301	MHS-A8001	MHS-A10001	MHS-A12501	②⑦⑧
End plate assembly	MHS-A5013-3	MHS-A6313-3	MHS-A8013-3	MHS-A10013-3	MHS-A12513-3	⑥⑭
Cap	MHS-A5014	MHS-A6314	MHS-A8014	MHS-A10014	MHS-A12514	⑤

* Order 3 fingers per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

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

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Air Preparation
Equipment
Industrial Filters

Parallel Type Air Gripper/3-Finger Type with Dust Cover

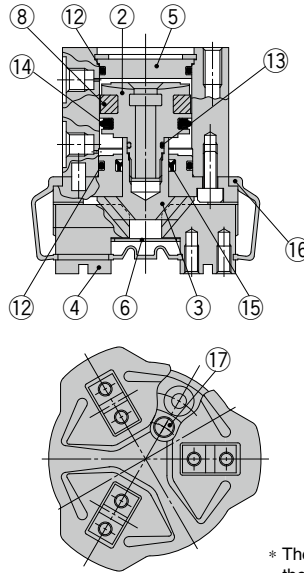
MHSJ3 Series

ø16, ø20, ø25, ø32
ø40, ø50, ø63, ø80



Construction

Closed condition



* The numbers correspond with those in the "Construction" of the MHSJ3 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	ø16 to ø25: Stainless steel	
		ø32 to ø80: Aluminum alloy	
③	Cam	Carbon steel	
④	Finger	Carbon steel	
⑤	Cap	Aluminum alloy	
⑥	End plate	Stainless steel	
⑧	Magnet	—	

No.	Description	Material	Note
⑫	Gasket	NBR	
⑬	Gasket	NBR	
⑭	Piston seal	NBR	
⑮	Rod seal	NBR	
⑯	Dust cover	Chloroprene rubber	
		Fluororubber	
		Silicone rubber	
⑰	Cross recessed flat head screw	Carbon steel	

Replacement Parts/Part Nos.

Description		MHSJ3-16D	MHSJ3-20D	MHSJ3-25D	MHSJ3-32D	Main parts
Seal kit		MHSJ16-PS	MHSJ20-PS	MHSJ25-PS	MHSJ32-PS	⑫⑬⑭⑮
Dust cover	Material Chloroprene rubber	MHSJ3-J16	MHSJ3-J20	MHSJ3-J25	MHSJ3-J32	⑯
	Fluororubber	MHSJ3-J16F	MHSJ3-J20F	MHSJ3-J25F	MHSJ3-J32F	
	Silicone rubber	MHSJ3-J16S	MHSJ3-J20S	MHSJ3-J25S	MHSJ3-J32S	
Finger		P3316054	P3316154	P3316254	P3316354	④
Cam (J)		P3316093	P3316193	P3316293	P3316393	③
Piston assembly		MHS-A1603	MHS-A2003	MHS-A2503	MHS-A3203	②⑧
End plate assembly		MHSJ-A1613	MHSJ-A2013	MHSJ-A2513	MHSJ-A3213	⑥⑰
Cap		MHSJ-A1614	MHSJ-A2014	MHSJ-A2514	MHSJ-A3214	⑤

Description		MHSJ3-40D	MHSJ3-50D	MHSJ3-63D	MHSJ3-80D	Main parts
Seal kit		MHSJ40-PS	MHSJ50-PS	MHSJ63-PS	MHSJ80-PS	⑫⑬⑭⑮
Dust cover	Material Chloroprene rubber	MHSJ3-J40	MHSJ3-J50	MHSJ3-J63	MHSJ3-J80	⑯
	Fluororubber	MHSJ3-J40F	MHSJ3-J50F	MHSJ3-J63F	MHSJ3-J80F	
	Silicone rubber	MHSJ3-J40S	MHSJ3-J50S	MHSJ3-J63S	MHSJ3-J80S	
Finger		P3316454	P3316554	P3316654	P3316754	④
Cam (J)		P3316493	P3316593	P3316693	P3316793	③
Piston assembly		MHS-A4003	MHS-A5003	MHS-A6303	MHS-A8003	②⑧
End plate assembly		MHSJ-A4013	MHSJ-A5013	MHSJ-A6313	MHSJ-A8013	⑥⑰
Cap		MHSJ-A4014	MHSJ-A5014	MHSJ-A6314	MHSJ-A8014	⑤

* Order 3 fingers per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

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

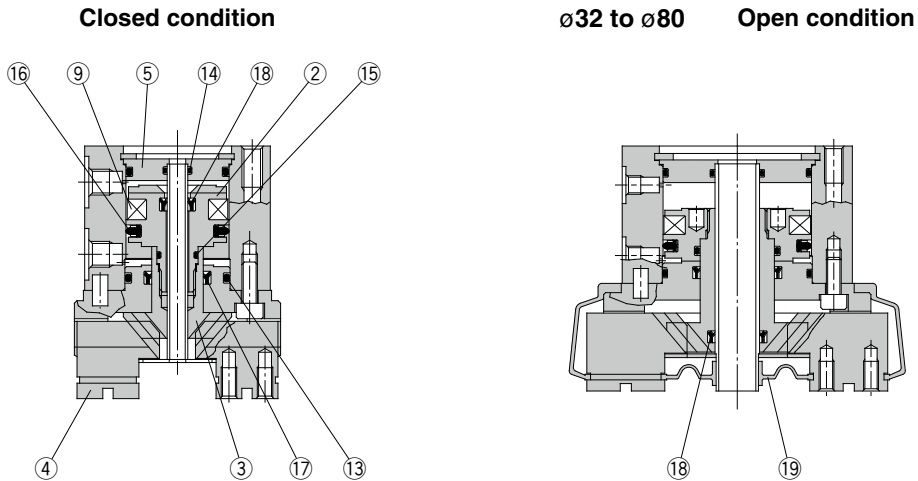
Parallel Type Air Gripper/3-Finger Type: Through-hole Type

MHSH3 Series

ø16, ø20, ø25, ø32
ø40, ø50, ø63, ø80

The Replacement Procedure is on p. 541

Construction



Component Parts

* The numbers correspond with those in the "Construction" of the MHSH3 series in the **Web Catalog**.

No.	Description	Material	Note
②	Piston	ø16 to ø25: Stainless steel	
		ø32 to ø80: Aluminum alloy	
③	Cam (A)	Carbon steel	
④	Finger	Carbon steel	
⑤	Cap (A)	Aluminum alloy	
⑨	Magnet	—	

No.	Description	Material	Note
⑬	Gasket	NBR	
⑭	Gasket	NBR	
⑮	Gasket	NBR	
⑯	Piston seal	NBR	
⑰	Rod seal	NBR	
⑱	Rod seal	NBR	
⑲	Dust cover	Chloroprene rubber	
		Fluororubber	
		Silicone rubber	

Replacement Parts/Part Nos.

Description		MHSH3-16D	MHSH3-20D	MHSH3-25D	MHSH3-32D MHSHJ3-32D	Main parts
Seal kit		MHSH16-PS	MHSH20-PS	MHSH25-PS	MHSH32-PS	⑬⑭⑮⑯⑰⑱
Dust cover	Material	—	—	—	MHSHJ3-J32	⑲
	Chloroprene rubber				MHSHJ3-J32F	
	Fluororubber				MHSHJ3-J32S	
	Silicone rubber					
Finger		P3316054	P3316154	P3316254	P3316354	④
Cam (A)		P3316053	P3316153	P3316253	P3316353	③
Piston assembly		MHS-A1603	MHS-A2003	MHS-A2503	MHS-A3203	②⑨
Cap		MHSH-A1614	MHSH-A2014	MHSH-A2514	MHSH-A3214	⑤

Description		MHSH3-40D MHSHJ3-40D	MHSH3-50D MHSHJ3-50D	MHSH3-63D MHSHJ3-63D	MHSH3-80D MHSHJ3-80D	Main parts				
Seal kit		MHSH40-PS	MHSH50-PS	MHSH63-PS	MHSH80-PS	⑬⑭⑮⑯⑰⑱				
Dust cover	Material	—	—	—	—	⑲				
	Chloroprene rubber						MHSHJ3-J40	MHSHJ3-J50	MHSHJ3-J63	MHSHJ3-J80
	Fluororubber						MHSHJ3-J40F	MHSHJ3-J50F	MHSHJ3-J63F	MHSHJ3-J80F
	Silicone rubber	MHSHJ3-J40S	MHSHJ3-J50S	MHSHJ3-J63S	MHSHJ3-J80S					
Finger		P3316454	P3316554	P3316654	P3316754	④				
Cam (A)		P3316453	P3316553	P3316653	P3316753	③				
Piston assembly		MHS-A4003	MHS-A5003	MHS-A6303	MHS-A8003	②⑨				
Cap		MHSH-A4014	MHSH-A5014	MHSH-A6314	MHSH-A8014	⑤				

* Order 3 fingers per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

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

Parallel Type Air Gripper/3-Finger Type: Through-hole Type

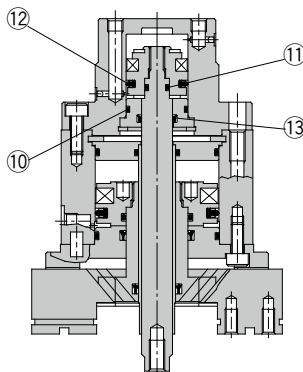
MHSH3-A Series

ø32, ø40, ø50
ø63, ø80



Construction

Center pusher/Cylinder type



Component Parts

No.	Description	Material	Note
⑩	Gasket	NBR	
⑪	Gasket	NBR	
⑫	Piston seal	NBR	
⑬	Rod seal	NBR	

* The numbers correspond with those in the "Construction" of the MHSH3-A series in the **Web Catalog**.

Replacement Parts/Part Nos.: Seal Kit (Center pusher/Cylinder type)

Model					Contents
MHSH3-A32A	MHSH3-A40A	MHSH3-A50A	MHSH3-A63A	MHSH3-A80A	
MHSH32A-PS	MHSH40A-PS	MHSH50A-PS	MHSH63A-PS	MHSH80A-PS	⑩⑪⑫⑬

* Since the seal kit does not include a grease pack, it should be ordered separately.

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

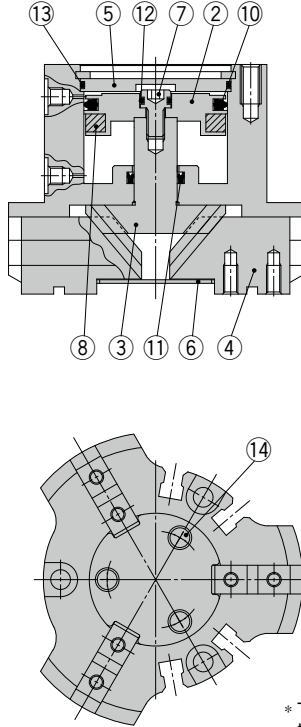
MHSL3 Series

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



Construction

Closed condition



* The numbers correspond with those in the "Construction" of the MHSL3 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	Aluminum alloy	
③	Cam	Carbon steel	
④	Finger	Carbon steel	
⑤	Cap	Aluminum alloy	
⑥	End plate	Stainless steel	
⑦	Piston bolt	Stainless steel	

No.	Description	Material	Note
⑧	Magnet	—	
⑩	Piston seal	NBR	
⑪	Rod seal	NBR	
⑫	Gasket	NBR	
⑬	Gasket	NBR	
⑭	Cross recessed flat head screw	Carbon steel	

Replacement Parts/Part Nos.

Description	MHSL3-16D	MHSL3-20D	MHSL3-25D	MHSL3-32D	MHSL3-40D	Main parts
Seal kit	MHSL16-PS	MHSL20-PS	MHSL25-PS	MHSL32-PS	MHSL40-PS	⑩⑪⑫⑬
Finger	P3316034	P3316134	P3316234	P3316334	P3316434	④
Cam	P3316033	P3316133	P3316233	P3316333	P3316433	③
Piston assembly	MHS-A1601	MHS-A2001	MHS-A2501	MHS-A3201	MHS-A4001	②⑦⑧
End plate assembly	MHSL-A1613	MHSL-A2013	MHSL-A2513	MHSL-A3213	MHSL-A4013	⑥⑭
Cap	MHS-A1614	MHS-A2014	MHS-A2514	MHS-A3214	MHS-A4014	⑤

Description	MHSL3-50D	MHSL3-63D	MHSL3-80D	MHSL3-100D	MHSL3-125D	Main parts
Seal kit	MHSL50-PS	MHSL63-PS	MHSL80-PS	MHSL100-PS	MHSL125-PS	⑩⑪⑫⑬
Finger	P3316534	P3316634	P3316734	P3316834	P3316934	④
Cam	P3316533	P3316633	P3316733	P3316833	P3316933	③
Piston assembly	MHS-A5001	MHS-A6301	MHS-A8001	MHS-A10001	MHS-A12501	②⑦⑧
End plate assembly	MHSL-A5013	MHSL-A6313	MHSL-A8013	MHSL-A10013	MHSL-A12513	⑥⑭
Cap	MHS-A5014	MHS-A6314	MHS-A8014	MHS-A10014	MHS-A12514	⑤

* Order 3 fingers per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

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

Actuators
Rotary Actuators
Air Grippers
Modular F.R.L.
Pressure Control Equipment
Air Preparation
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Industrial Filters
Replacement
Procedure
Actuators
Rotary Actuators
Air Grippers
Modular F.R.L.
Pressure Control Equipment
Air Preparation
Equipment
Industrial Filters

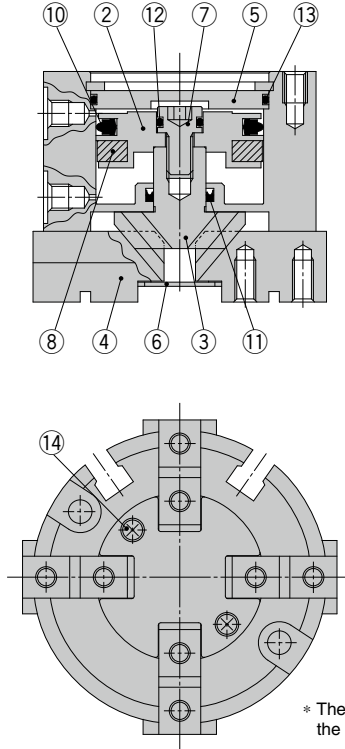
MHS4 Series

ø16, ø20, ø25, ø32
ø40, ø50, ø63



Construction

Closed condition



* The numbers correspond with those in the "Construction" of the MHS4 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	Aluminum alloy	
③	Cam	Carbon steel	
④	Finger	Carbon steel	
⑤	Cap	Aluminum alloy	
⑥	End plate	Stainless steel	
⑦	Piston bolt	Stainless steel	

No.	Description	Material	Note
⑧	Magnet	—	
⑩	Piston seal	NBR	
⑪	Rod seal	NBR	
⑫	Gasket	NBR	
⑬	Gasket	NBR	
⑭	Cross recessed flat head screw	Carbon steel	

Replacement Parts/Part Nos.

Description	MHS4-16D	MHS4-20D	MHS4-25D	MHS4-32D	MHS4-40D	MHS4-50D	MHS4-63D	Main parts
Seal kit	MHS16-PS	MHS20-PS	MHS25-PS	MHS32-PS	MHS40-PS	MHS50-PS	MHS63-PS	⑩⑪⑫⑬
Finger	P3316004	P3316104	P3316204	P3316304	P3316404	P3316504	P3316604	④
Cam	P3316043	P3316143	P3316243	P3316343	P3316443	P3316543	P3316643	③
Piston assembly	MHS-A1601	MHS-A2001	MHS-A2501	MHS-A3201	MHS-A4001	MHS-A5001	MHS-A6301	②⑦⑧
End plate assembly	MHS-A1613-4	MHS-A2013-4	MHS-A2513-4	MHS-A3213-4	MHS-A4013-4	MHS-A5013-4	MHS-A6313-4	⑥⑭
Cap	MHS-A1614	MHS-A2014	MHS-A2514	MHS-A3214	MHS-A4014	MHS-A5014	MHS-A6314	⑤

* Order 4 fingers per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

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

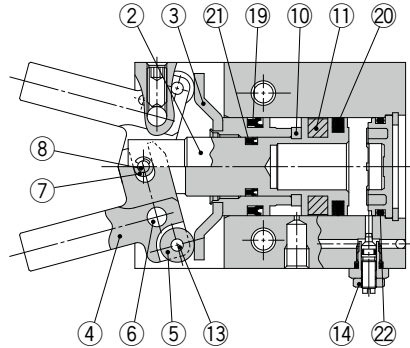
MHC2 Series

ø10, ø16, ø20, ø25



Construction

Double acting, With fingers open



* The numbers correspond with those in the "Construction" of the MHC2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston A	Aluminum alloy	
③	Piston B assembly		
④	Finger	ø10 to ø20: Stainless steel ø25: Carbon steel	
⑤	Side roller	Carbon steel	
⑥	Lever shaft	Stainless steel	
⑦	Center roller	Carbon steel	
⑧	Center pin	Carbon steel	

No.	Description	Material	Note
⑩	Bumper	Urethane rubber	
⑪	Rubber magnet	Synthetic rubber	
⑬	Needle roller	High carbon chrome bearing steel	
⑭	Needle assembly	Brass/Electroless nickel plating	
⑲	Piston seal	NBR	
⑳	Piston seal	NBR	
㉑	Piston seal	NBR	
㉒	Gasket	NBR	

Replacement Parts/Part Nos.: Double Acting, Single Acting

Description	MHC2-10□	MHC2-16□	MHC2-20□	MHC2-25□	Main parts
Seal kit	MHC10-PS	MHC16-PS	MHC20-PS	MHC25-PS	⑰⑲⑳㉑㉒
Finger assembly	MHC-A1003	MHC-A1603	MHC-A2003	MHC-A2503	④⑤⑥⑦⑧⑬
Piston assembly set	MHC-A1002	MHC-A1602	MHC-A2002	MHC-A2502	②③⑦⑧⑩⑪⑰⑲⑳㉑
Piston A assembly	MHC-A1001	MHC-A1601	MHC-A2001	MHC-A2501	②⑩⑪
Piston B assembly	P3311145B	P3311245B	P3311345B	P3311445C	③
Needle assembly	MH-A1006		MH-A1606		⑭

* Order 1 piece finger assembly per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease pack part no.: GR-S-010 (10 g)

Actuators

Rotary Actuators
Air Grippers

Modular F.R.L.
Pressure Control Equipment

Air Preparation
Equipment

Industrial Filters

Replacement
Procedure

Actuators

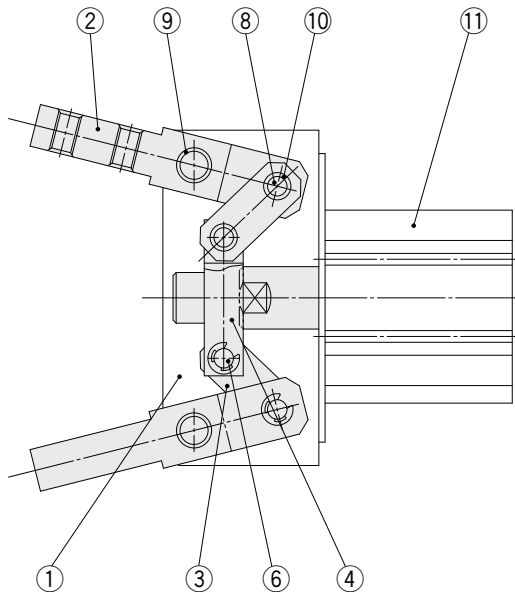
Rotary Actuators
Air Grippers

Modular F.R.L.
Pressure Control Equipment

Air Preparation Equipment
Industrial Filters

MHT2 Series ø32, ø40, ø50, ø63

Construction



Component Parts

No.	Description	Material	Note
①	Side plate	Aluminum alloy	
②	Finger	Carbon steel	
③	Lever	Carbon steel	
④	Joint	Carbon steel	
⑥	Joint pin	Stainless steel	
⑧	Lever pin	Stainless steel	
⑨	Bearing		
⑩	Bearing		
⑪	Cylinder		

* The numbers correspond with those in the "Construction" of the MHT2 series in the **Web Catalog**.

Replacement Parts/Part Nos.

Description	MHT2-32DZ	MHT2-40DZ	MHT2-50DZ	MHT2-63DZ	Main parts
Finger assembly	MH-TA3201	MH-TA4001	MH-TA5001	MH-TA6301	② ⑨
Lever assembly	MH-TA3202	MH-TA4002	MH-TA5002	MH-TA6302	③ ⑩
Link parts assembly	MH-TA3203	MH-TA4003	MH-TA5003	MH-TA6303	<ø32, ø50> ② ③ ④ ⑥ ⑧ ⑨ ⑩ <ø40, ø63> ② ③ ④ ⑧ ⑨ ⑩
Compact cylinder	CDQ2A32-15DZ	CDQ2A40-15DZ	CDQ2A50-20DZ	CDQ2A63-20DZ	⑪

* For finger assembly, lever assembly, order 2 pieces per unit.

Grease pack part nos.

For finger part: **MH-G01** (30 g)

For cylinder part: **GR-S-010** (10 g)

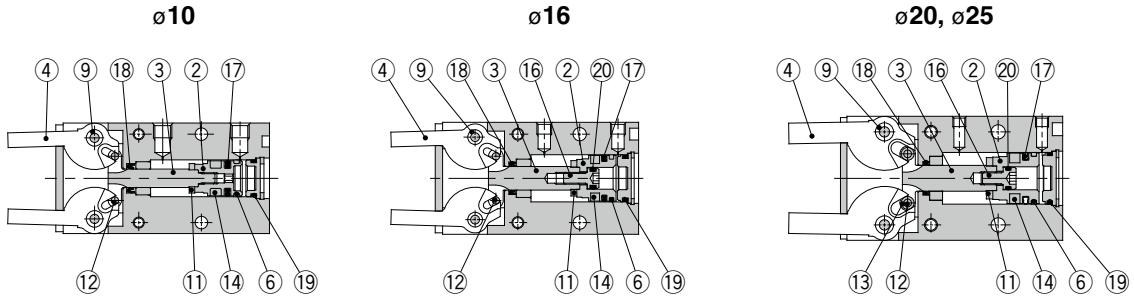
MHY2 Series

ø10, ø16, ø20, ø25



Construction

Closed condition



* The numbers correspond with those in the "Construction" of the MHY2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	ø10: Stainless steel ø16 to 25: Aluminum alloy	
③	Joint	Stainless steel	
④	Finger	Stainless steel	
⑥	Wear ring	Resin	
⑨	Bushing B	Sintered alloy steel	
⑪	Bumper	Urethane rubber	
⑫	Needle roller	High carbon chrome bearing steel	

No.	Description	Material	Note
⑬	Joint roller	Carbon steel	
⑭	Rubber magnet	Synthetic rubber	
⑯	Piston bolt	Stainless steel	
⑰	Piston seal	NBR	
⑱	Gasket	NBR	
⑳	Gasket	NBR	

Replacement Parts/Part Nos.

Description		MHY2-10	MHY2-16	MHY2-20	MHY2-25	Main parts
Seal kit		MHY10-PS	MHY16-PS	MHY20-PS	MHY25-PS	<ø10> ⑰⑱⑲ <ø16, ø20, ø25> ⑰⑱⑲⑲⑲
Finger assembly	MHY2-□D	MHY-A1001	MHY-A1601	MHY-A2001	MHY-A2501	④ ⑨
	MHY2-□D2	MHY-A1001-2	MHY-A1601-2	MHY-A2001-2	MHY-A2501-2	
Joint assembly		MHY-A1002	MHY-A1602	MHY-A2002	MHY-A2502	<ø10, ø16> ③⑫ <ø20, ø25> ③⑫⑬
Piston assembly		MHY-A1003	MHY-A1603	MHY-A2003	MHY-A2503	<ø10> ②⑥⑪⑭ <ø16, ø20, ø25> ②⑥⑪⑭⑯

* Order 1 piece finger assembly per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease pack part no.: MH-G04 (30 g)

Actuators

Rotary Actuators
Air Grippers

Modular F.R.L.
Pressure Control Equipment

Air Preparation
Equipment

Industrial Filters

Replacement
Procedure

Actuators

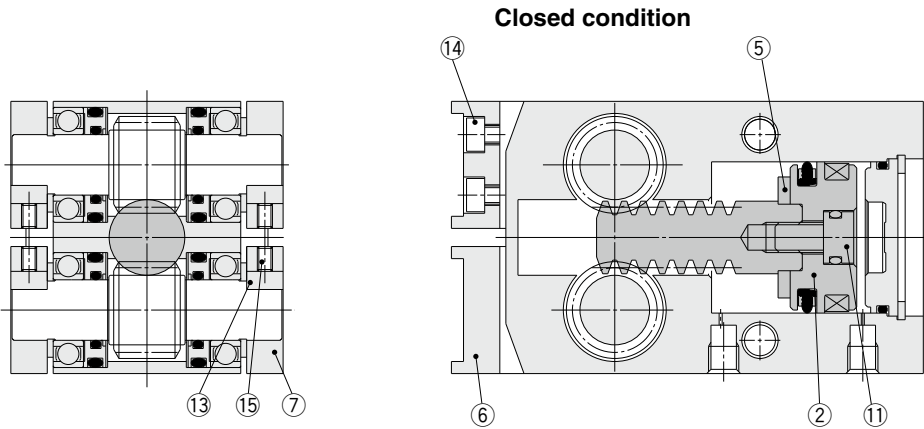
Rotary Actuators
Air Grippers

Modular F.R.L.
Pressure Control Equipment

Air Preparation Equipment
Industrial Filters

MHW2 Series ø20, ø25, ø32, ø40, ø50

Construction



* The numbers correspond with those in the "Construction" of the MHW2 series in the **Web Catalog**.

Component Parts

No.	Description	Material	Note
②	Piston	Aluminum alloy	
⑤	Bumper	Urethane rubber	
⑥	Finger (A)	Carbon steel	
⑦	Finger (B)	Carbon steel	
⑧	Rubber magnet	Synthetic rubber	

No.	Description	Material	Note
⑨	Rack	Carbon steel	
⑪	Piston bolt	Stainless steel	
⑬	Key	Carbon steel	
⑭	Hexagon socket head cap screw	Carbon steel	
⑮	Hexagon socket head set screw	Carbon steel	

Replacement Parts/Part Nos.

Description	MHW2-20	MHW2-25	MHW2-32	MHW2-40	MHW2-50	Main parts	
Seal kit	MHW20-PS	MHW25-PS	MHW32-PS	MHW40-PS	MHW50-PS	⑱⑲⑳㉑㉒	
Piston assembly	MHW-A2001	MHW-A2501	MHW-A3201	MHW-A4001	MHW-A5001	②⑤⑧⑨⑪⑲	
Finger assembly	MHW2-□D	MHW-A2002	MHW-A2502	MHW-A3202	MHW-A4002	MHW-A5002	⑥⑦⑬⑭⑮
	MHW2-□D1	MHW-A2002-1	MHW-A2502-1	MHW-A3202-1	MHW-A4002-1	MHW-A5002-1	
Finger A assembly	MHW2-□D	MHW-A2006	MHW-A2506	MHW-A3206	MHW-A4006	MHW-A5006	⑥⑭
Finger C assembly	MHW2-□D1	MHW-A2006-1	MHW-A2506-1	MHW-A3206-1	MHW-A4006-1	MHW-A5006-1	⑥⑭
Finger B assembly	MHW2-□D	MHW-A2007	MHW-A2507	MHW-A3207	MHW-A4007	MHW-A5007	⑦⑬⑮

* Order 1 piece finger assembly per unit.

* Since the seal kit does not include a grease pack, it should be ordered separately.

Grease pack part nos.

ø20, ø25, ø32: **GR-S-010** (10 g)

ø40, ø50: **GR-S-020** (20 g)