MCHS2 series

PARALLEL GRIPPER (2-Finger)

mindman

Features
Safety device
Model selection
Technical data
Caution for safety
(Read before installing)

Features

- Compact design to ensure minimum interference while operating; robust T rail design, ensure accurate gripping.
- Can reach maximum torque suitable for long jaws design.
- Oval piston-driven design ensure maximum gripping force.
- Hose-free direct connection: Air supply channel can connect directly without piping or through tread to assure the flexibility of supplying compressed air on any kind of automation system.
- Assembling with a dust-proof module can prevent foreign matters (>0.5mm) entering the gripper.
- Magnetic as standard.

Specification

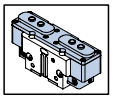
Model	MCHS2							
Acting type	Double acting							
Size	50	66	80	100	125	160	200	300
Stroke per-jaw(mm)	4	6	8	10	12	16	20	30
Effective external gripping force (N) (*1)	69	122	225	315	505	842	1417	3283
Close / Open time(s)	0.02	0.03	0.04	0.07	0.1	0.2	0.35	0.45
Medium	Air							
Operating pressure range	0.3~0.8 MPa							
Compressed air consumption(cm^3)	4.1	10.1	23.6	39.3	85	85	330	1000
Ambient temperature	+5°C~ +80°C							
Lubrication	Not required							
Sensor switch	RDC(V), RQC(V)							
Proximity sensor	–	RJY						
Accessories	Mounting block, Accessory kits							
Weight (kg)	0.14	0.27	0.495	0.85	1.6	3.0	5.7	14.2

*1. Under the condition of clamping length 40mm and operation pressure 0.6 MPa.
*2. Regularly relubricate the finger to increase the service life. Please contact us for grease info.

Order example

MCHS2 — 50 — SD

- MCHS2 — MODEL
- 50 — SIZE: **50, 66, 80, 100, 125, 160, 200, 300**
- SD — DUST-PROOF MODULE (*)



* When the size 50 is assembled with the dust-proof module, the proximity sensor cannot be used.

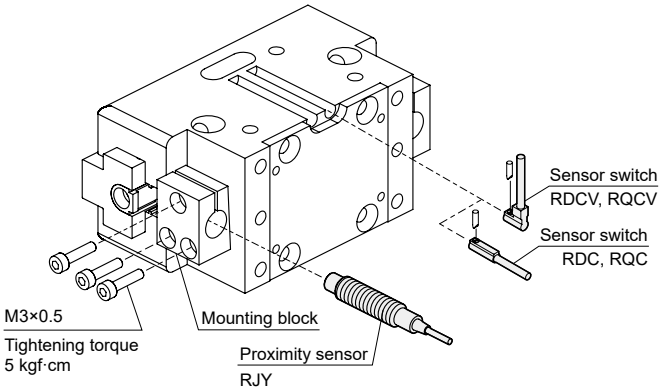
Dust-proof Module

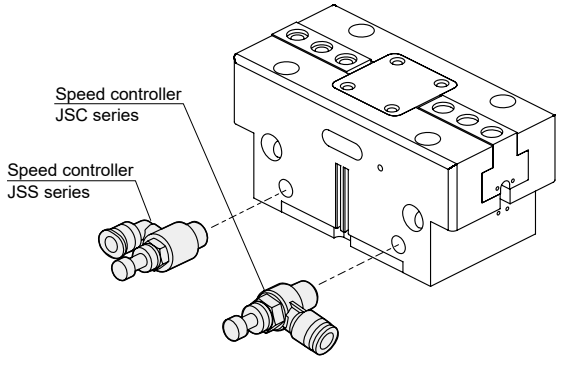
* Use the same module with MCHS series.

SD — MCHS — 50

- SD — DUST-PROOF MODULE
- MCHS — MODEL
- 50 — SIZE: **50 ~ 300**

Installation of sensor switch & speed controller

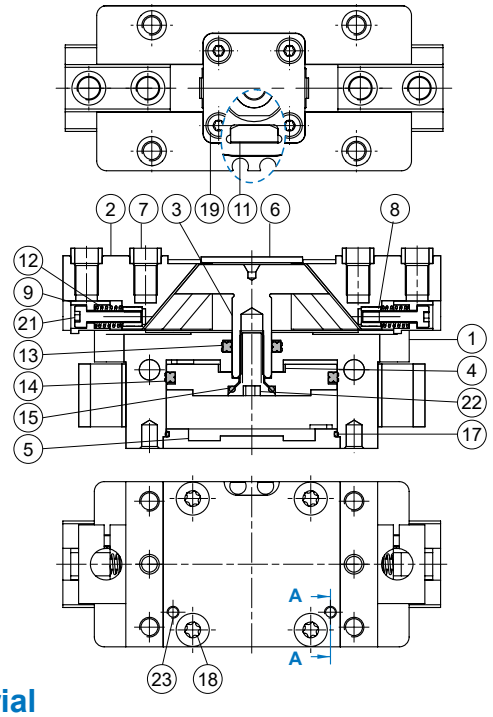




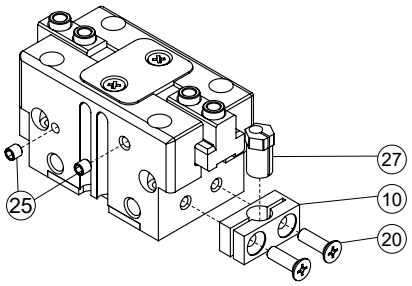
* Each gripper needs at least two speed control valves to control speed.
* Speed controller specification .

MCHS2 Inside structure & Parts list

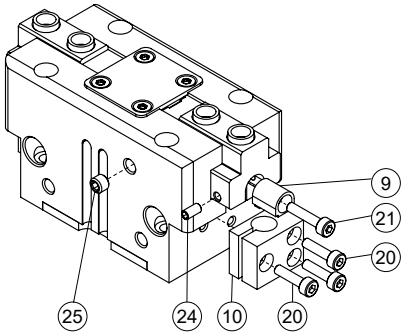
PARALLEL GRIPPER (2-Finger)

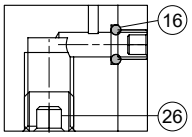


50



66~300





A-A

Material

No.	Part name	Material		Size & Q'y								Repair kits (inclusion)
		50,66	80~300	50	66	80	100	125	160	200	300	
1	Body	Aluminum alloy		1								
2	Finger	Carbon steel		2								
3	Rod	Carbon steel		1								
4	Piston	Aluminum alloy		1								
5	End cover	Aluminum alloy		1								
6	Plate cover	Stainless steel		1								
7	Centering sleeve	Stainless steel		4 (Included in accessory kits)								
8	Thread insert	Brass		–		2						
9	Sensor adj block	Aluminum alloy		–	2							
10	Sensor holder	Resin		2								
11	Magnet	Magnet material		1	2	4				1		
12	Spring	SWP		–	2							
13	Rod packing	NBR		1								●
14	Piston packing	NBR		1								●
15	O-ring	NBR		1								●
16	O-ring	NBR		3	4	2						●
17	O-ring	NBR		1								●
18	Torx screw	Alloy steel		4	–							
	Hex bolt	Alloy steel		–	4							
19	Cross screw	Alloy steel		2	–							
	Torx screw	Alloy steel		–	4							
20	Bolt	Stainless steel		4	6							
21	Hex bolt	Stainless steel		–	2							
22	Hex bolt	Stainless steel	Alloy steel	1								
23	Hex screw	Stainless steel		2								
24	Hex screw	Alloy steel		4								
25	Hex screw	Stainless steel		2								
26	Hex screw	Stainless steel		2								
27	Adjust socket	Stainless steel		2	–							

Order example of repair & accessory kits

Size	Repair kits	Accessory kits
50	**PS-MCHS-50**	**AK-MCHS-50**
66	**PS-MCHS-66**	**AK-MCHS-66**
80	**PS-MCHS-80**	**AK-MCHS-80**
100	**PS-MCHS-100**	**AK-MCHS-100**
125	**PS-MCHS-125**	**AK-MCHS-125**
160	**PS-MCHS-160**	**AK-MCHS-160**
200	**PS-MCHS-200**	**AK-MCHS-200**
300	**PS-MCHS-300**	**AK-MCHS-300**

* Use the same kits with MCHS series.

Accessory kits

	
O-ring (×2) Material: NBR	Iron plug (×2) Stainless steel + NBR
	
PIN (×2)* Bearing steel	Centering sleeve (×4) Stainless steel

* Size 200 Q'y: 4 pcs. Refer to the table below.

Pin size

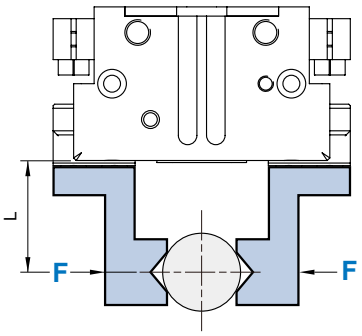
Size	Pin
50	ø3×9.8L
66	ø4×10.8L
80	ø4×10.8L
100	ø5×14.8L
125	ø6×17.8L
160	ø6×17.8L
200	ø8×17.5L, ø10×21L
300	ø10×21L

Effective gripping force

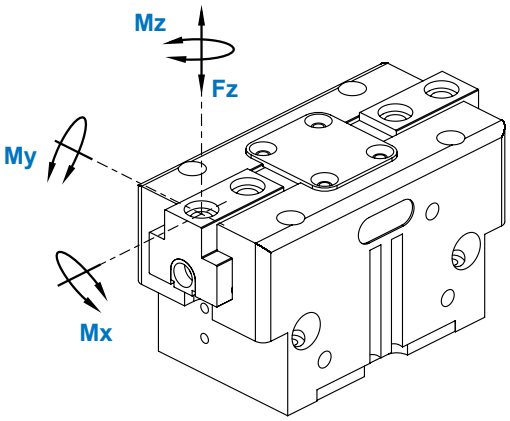
* Model selection .

Indication of effective gripping force.
The effective gripping force shown in the graphs to the right is expressed as F, which is the thrust of one finger, when two fingers and attachments are in full contact with the workpiece as shown in the figure below.

1N=0.102 kgf
1MPa=10.2 kgf/cm^2



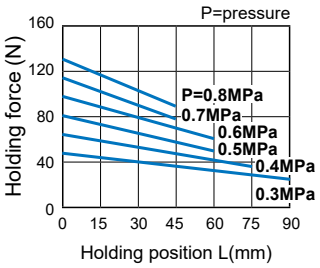
External grip



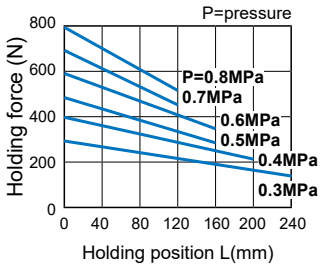
Code / Size	**Mx** max. (Nm)	**My** max. (Nm)	**Mz** max. (Nm)	**Fz** max. (N)
50	15	15	8	700
66	50	45	35	1200
80	80	60	50	1800
100	100	90	75	2500
125	120	120	100	3200
160	160	180	140	5000
200	180	220	170	7000
300	275	300	200	9000

External gripping force

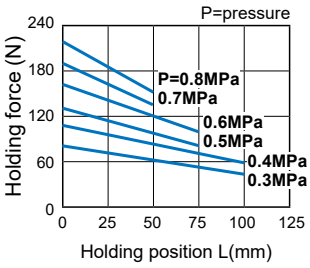
MCHS2-50



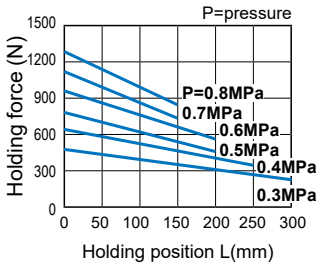
MCHS2-125



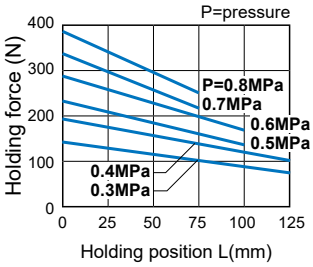
MCHS2-66



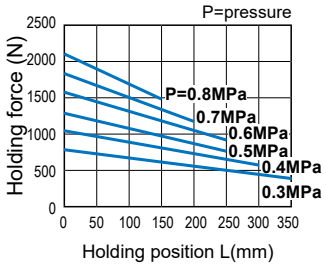
MCHS2-160



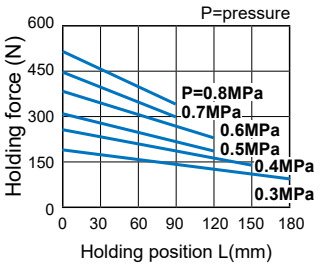
MCHS2-80



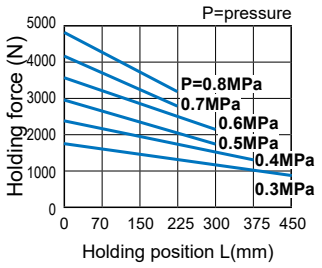
MCHS2-200



MCHS2-100



MCHS2-300



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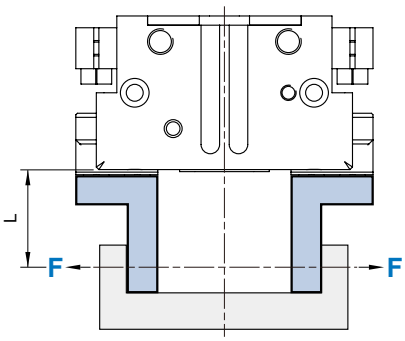
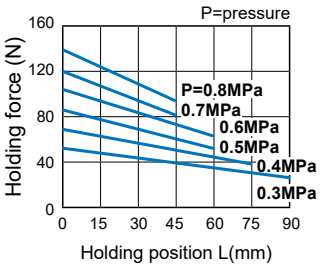


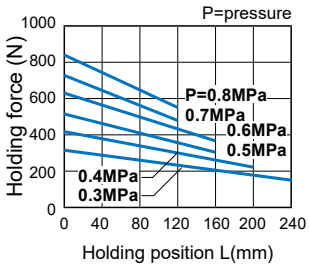
Internal grip

Internal gripping force

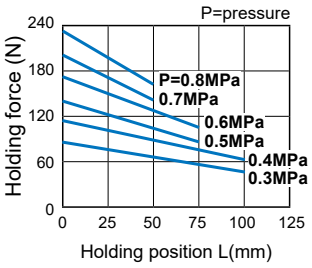
MCHS2-50



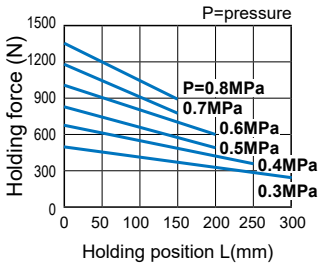
MCHS2-125



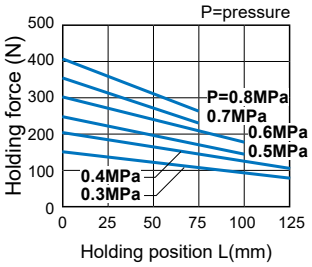
MCHS2-66



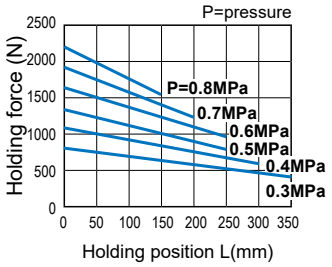
MCHS2-160



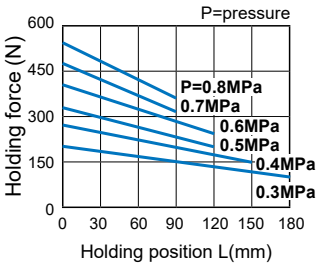
MCHS2-80



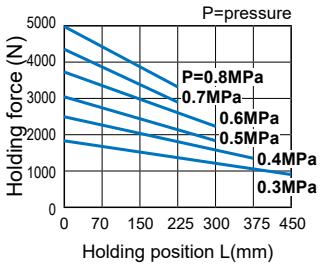
MCHS2-200



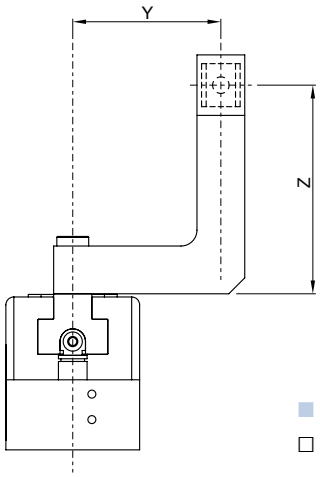
MCHS2-100



MCHS2-300

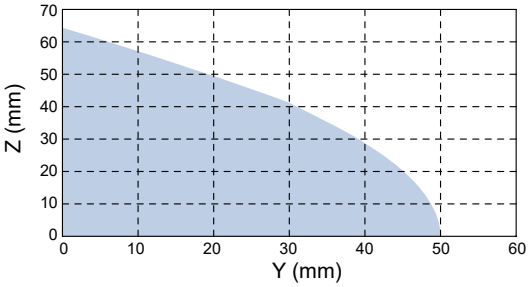


Max. feasible centrifugal degree

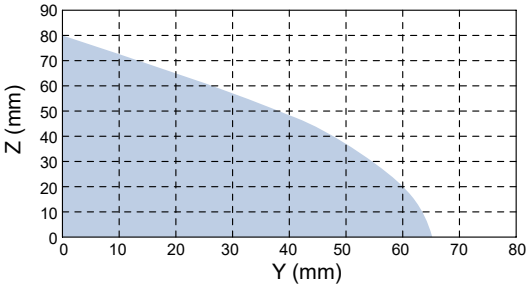


■ Feasible
□ Infeasible

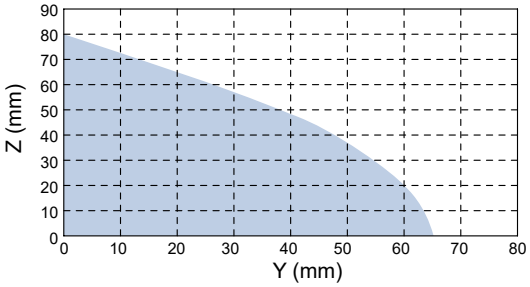
MCHS2-50



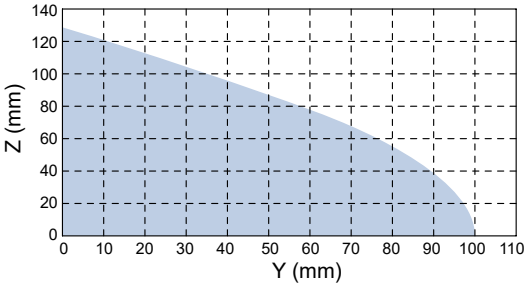
MCHS-66



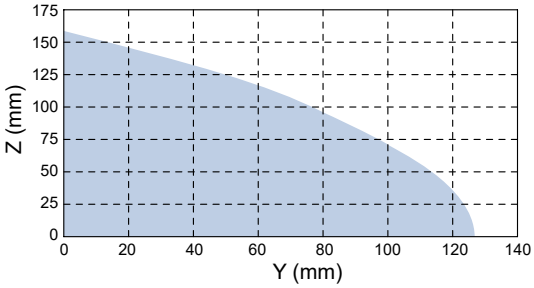
MCHS2-80



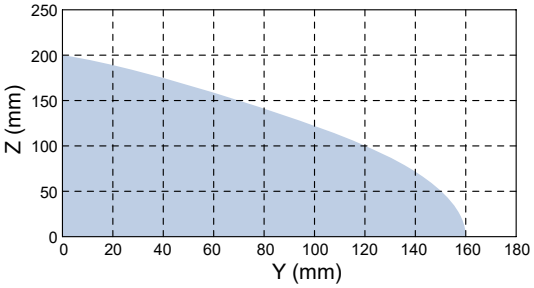
MCHS2-100



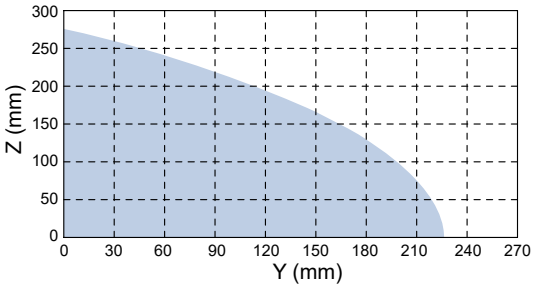
MCHS2-125



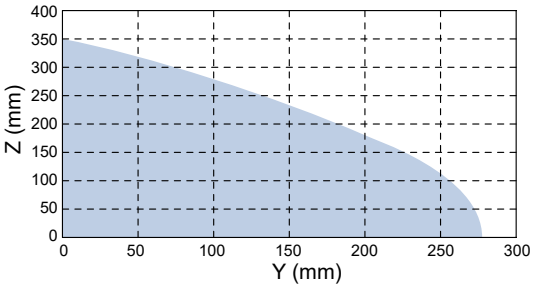
MCHS2-160



MCHS2-200



MCHS2-300

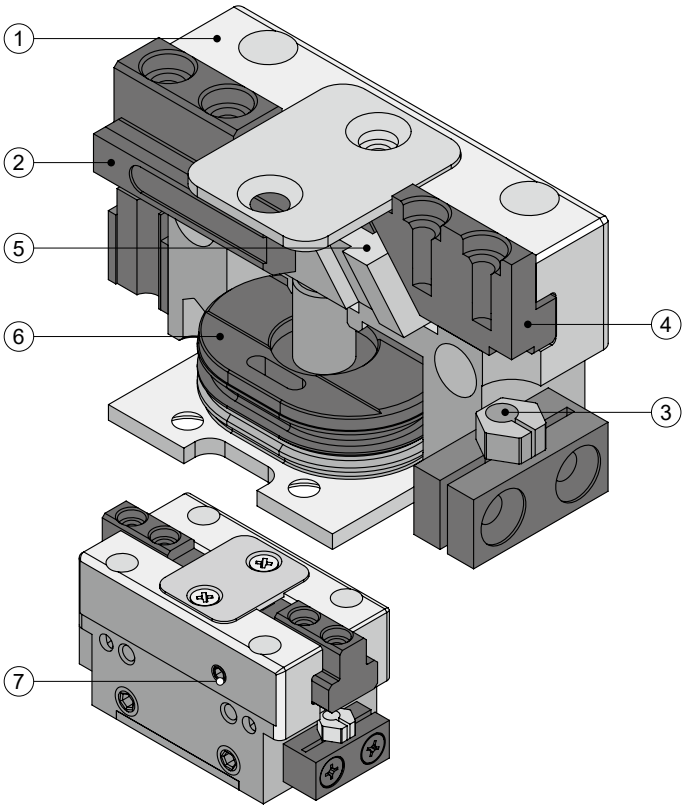


MCHS2 Internal structure & Application examples

PARALLEL GRIPPER (2-Finger)

Internal structure & Movement description

Compressed air will push or press the oval piston.
By tilting the working surface, the wedge hook will transfer the movement to side movement, and initiate the action of the two base jaws simultaneously.



① Material
Anodized high rigid aluminum alloy to reduce weight.

② Rail
Bearing rails load the base jaw,which ensure the minimal vibration of long jaw.

③ Sensor system
Sensor switch or proximity sensor are available.

④ Base jaw
Jaws connected to work piece.

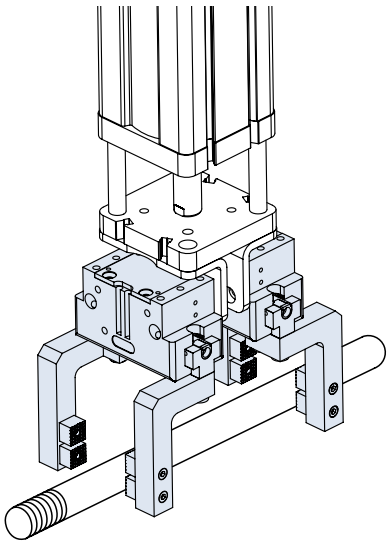
⑤ Wedge hook
High power transmission center jaws.

⑥ Large circular piston
Generate larger structural strength.

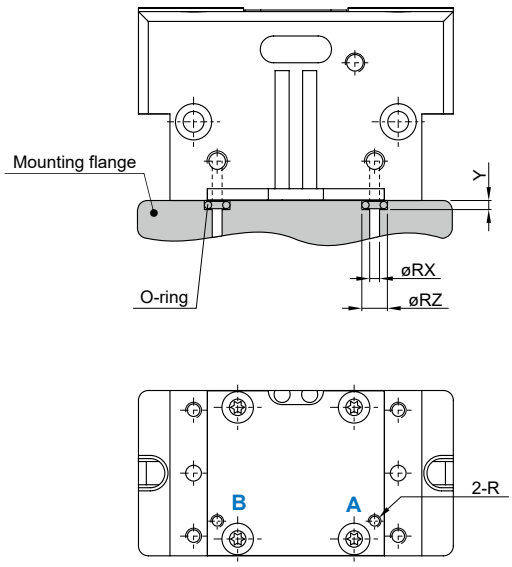
⑦ Air purge connection (External vents)
The air purge is used in order to make it more difficult for dirt and dust to penetrate into the product and the guiding areas.

* The air purge is effective only when the gripper is opened.
* Install a valve to control the air purge.

Application examples

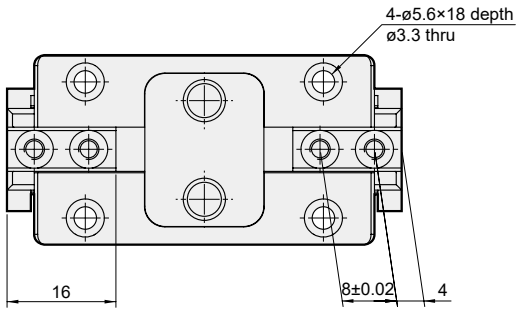


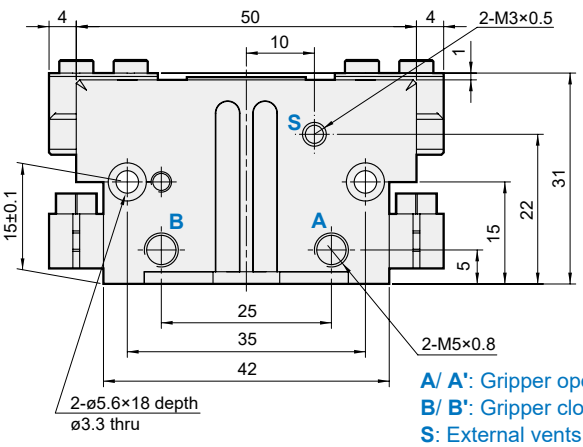
Hose-free direct connection



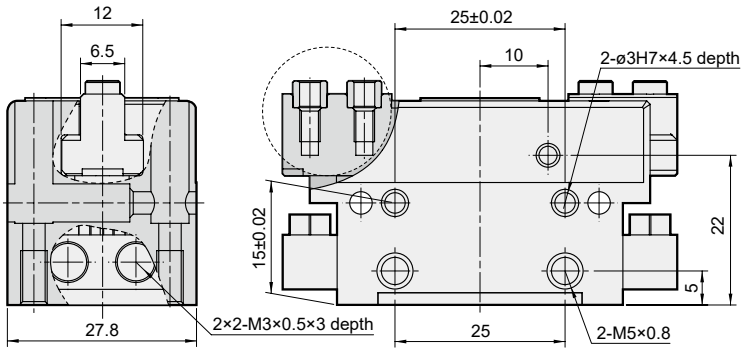
Code / Size	R	RX	RZ	Y
50	M2	2	4	0.7
66	M3	3	5	0.7
80	M3	3	5	0.7
100	M5	5	8	1.1
125	M5	5	8	1.1
160	M5	5	8	1.1
200	M5	5	8	1.1
300	M5	5	8	1.1

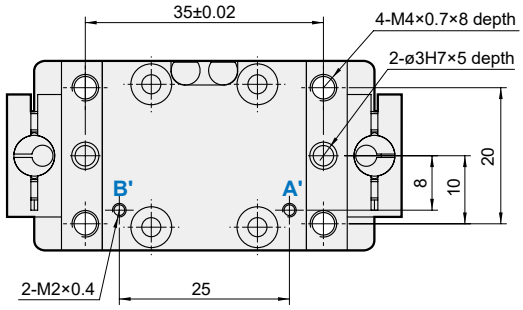
A : Gripper open
B : Gripper close



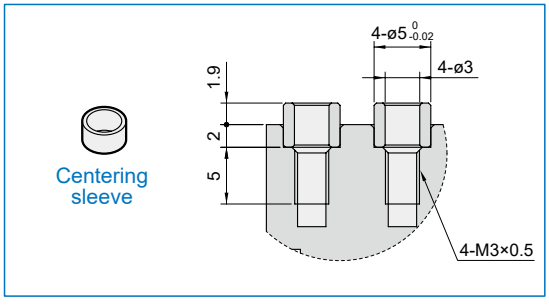


A/ A': Gripper open
B/ B': Gripper close
S: External vents





Centering sleeve

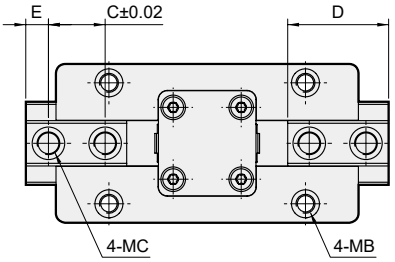


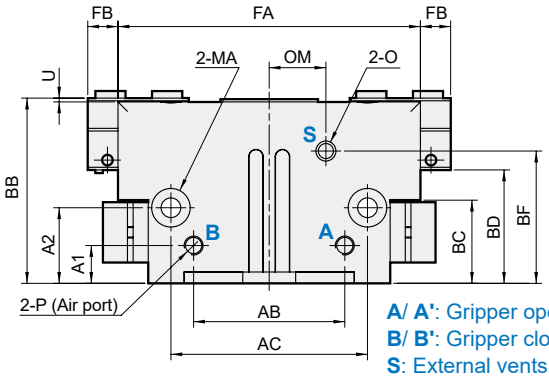
MCHS2 Dimensions 66~300

PARALLEL GRIPPER (2-Finger)

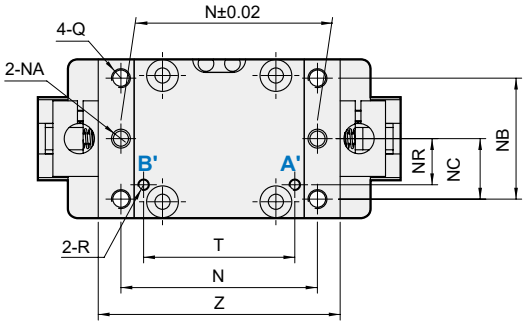
mindman

66~100

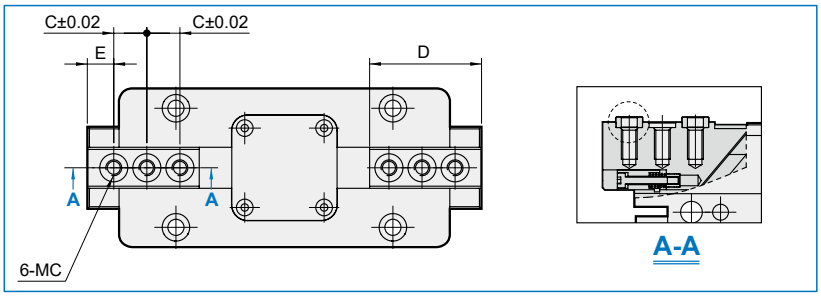


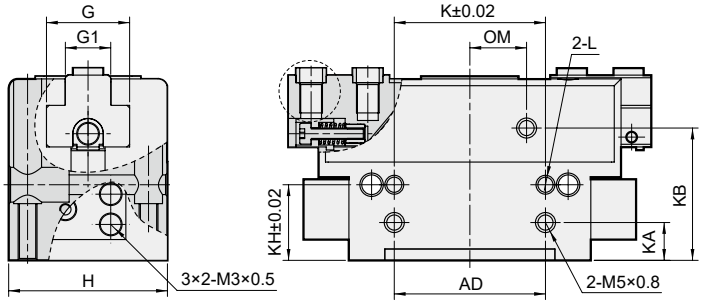


A/ A': Gripper open
B/ B': Gripper close
S: External vents

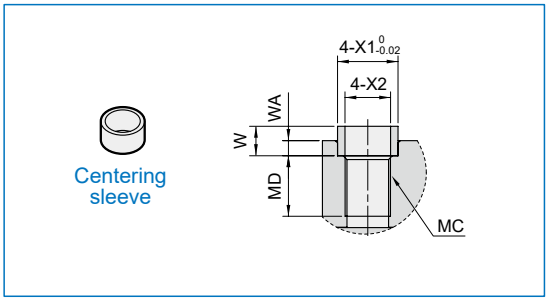


125~300





Centering sleeve



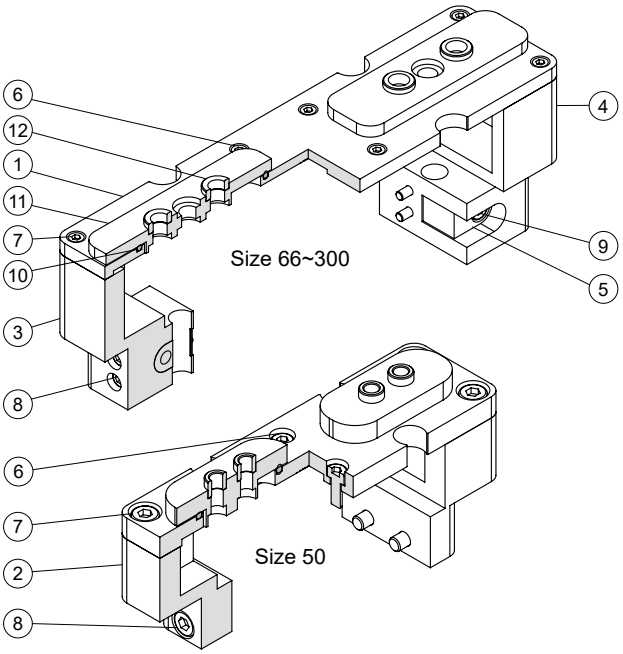
Code / Size	A1	A2	AB	AC	AD	BB	BC	BD	BF	C	D	E	FA	FB	G	G1	H	K	KA	KB	KH	L	MA
66	5	18	28	42	28	39	18.5	23	27.5	12	22	5	64	6	17	10	36	20	5	27.5	18	ø4H7×4dp	ø7.4×13dp, ø4.2 thru
80	10	20	40	52	40	49	22	30	35	15	26.7	6	80	8	22	12	42	40	10	35	20	ø4H7×6dp	ø9.2×16dp, ø5.2 thru
100	12	25	48	66	54	55	28	33	38	18	34.2	10	100	10	26	14	50	50	12	38	25	ø5H7×7dp	ø10.4×28dp, ø6.2 thru
125	13	30	62	82	65	64	32	38.5	45	12.5	42.3	10	125	12	31	15.5	60	60	13	45	30	ø6H7×8dp	ø13.5×34dp, ø8.4 thru
160	15.5	28	78	100	82	78	39	46	53	18	54.8	10	160	16	39	20	72	76	15.5	53	28	ø6H7×10dp	ø13.5×47dp, ø8.4 thru
200	19	44	102	128	108	97	48	58	69	22	67.5	12	200	20	42	22	95	100	19	69	44	ø8H7×8dp	ø18.5×55dp, ø12.2 thru
300	19	66	150	180	152	130	67	78	92	30	91	15	260	30	66	32	139	140	19	92	66	ø10H7×12dp	ø18.5×100dp, ø12.5 thru

Code / Size	MB	MC	MD	N	NA	NB	NC	NR	O	OM	P	Q	R	T	U	W	WA	X1	X2	Z
66	ø7.4×24dp, ø4.3 thru	M4×0.7	6	42	ø4H7×6dp	27	13.5	11	M5×0.8	12	M5×0.8	M5×0.8×10dp	M3×0.5	28	1	3.9	2	ø6	ø4	52
80	ø7.4×33dp, ø4.3 thru	M6×1.0	8	52	ø4H7×6dp	32	16	12.2	M5×0.8	15	M5×0.8	M5×0.8×10dp	M3×0.5	40	1	3.9	2	ø8	ø6	64
100	ø9×21.5dp, ø5.1 thru	M6×1.0	10	66	ø5H7×8dp	38	19	16	M5×0.8	16	G1/8	M6×1.0×10dp	M5×0.8	48	1	3.9	2	ø10	ø6	80
125	ø10.4×40dp, ø6.8 thru	M6×1.0	12	82	ø6H7×8dp	45	22.5	18	M5×0.8	20	G1/8	M8×1.25×10dp	M5×0.8	60	1	3.9	2	ø10	ø6	100
160	ø10.4×37dp, ø6.8 thru	M8×1.25	12	100	ø6H7×8dp	56	28	22	M5×0.8	27	G1/8	M8×1.25×10dp	M5×0.8	76	1	3.9	2	ø12	ø8	125
200	ø16.5×61dp, ø10.3 thru	M10×1.5	17.5	128	ø10H7×12dp	68	34	24	M5×0.8	34.5	G1/4	M12×1.75×16dp	M5×0.8	100	1	4.9	2.5	ø14	ø10	160
300	ø16.5×72dp, ø10.3 thru	M12×1.5	18	180	ø10H7×12dp	100	50	24	M5×0.8	43	G1/4	M12×1.75×16dp	M5×0.8	150	2	4.9	2.5	ø18	ø12	220

MCHS2 Dust-proof module 50 ~ 300

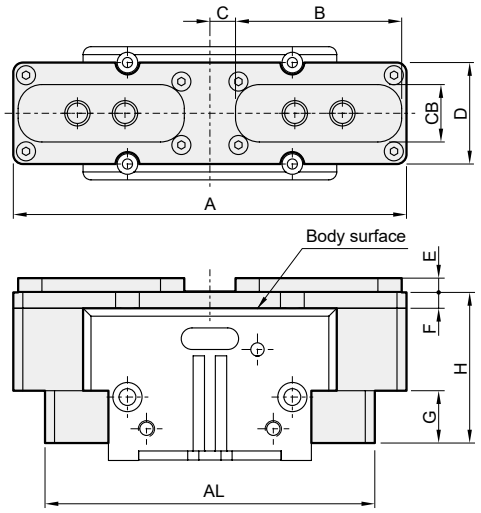
PARALLEL GRIPPER (2-Finger)

Inside structure & Parts list



Dimensions

- When installing soft-jaws, the length of jaws are measured from the the body surface.



Material

No.	Part name	Material	Q'y	
			50	66~300
1	Dust cover	Aluminum alloy	1	1
2	Mounting block	Aluminum alloy	2	0
3	Mounting block L	Aluminum alloy	0	1
4	Mounting block R	Aluminum alloy	0	1
5	Sensor mounting block	Aluminum alloy	0	2
6	Bolt	Alloy steel	2	4
7	Bolt	Alloy steel	4	4
8	Bolt	Alloy steel	4	4
9	Hexagon bolt	Alloy steel	0	2
10	O-ring	NBR	2	2
11	Slider	Carbon steel	2	2
12	Centering sleeve	Stainless steel	4	4

Code / Size	A	AL	B	C	CB	D	E	F	G	H	Weight (g)
50	81.2	58.6	30	6	13	24	4.5	5	12	32	85
66	104	92	41	6.5	16.2	30	4.5	5	16.5	41	169
80	124	104	52.4	8.3	18.1	32	4.5	5	16.5	47.5	220
100	144	124	61	10.5	22	38	4.5	5	16.5	49	296
125	177	157	72	16	22	45	4.5	5	23	59	441
160	231	182	93	21.5	25	56	4.5	6	18	62	688
200	292	247	118	27	30	68	6.3	6	18	72	1279
300	394	318	162	34	38	100	8.3	6	20	87	2900