MCHY series

180° ANGULAR GRIPPER - Cam style

Features:

- Compact design and light weight.
- Gripping forces via piston / cam design.
- Precision reference points on body and fingers are standard.
- Auto switch mounting at 4 locations.
- Resistant to dusty environments.

Specification:

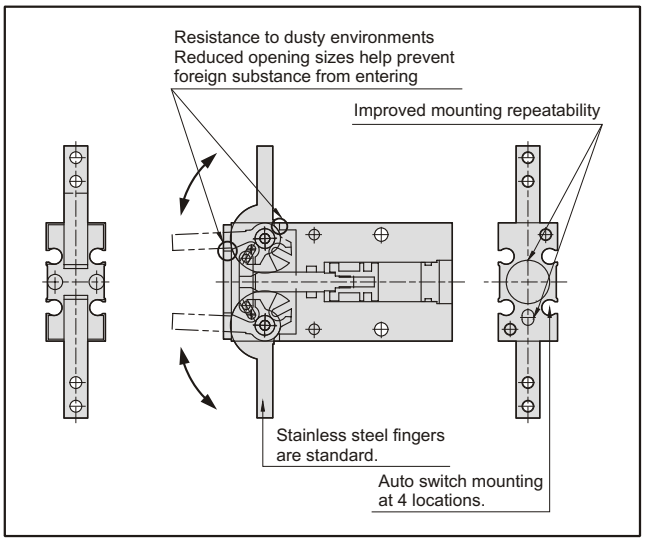
Model		MCHY			
Acting Type		Double Acting			
Tube I.D. (mm)		10	16	20	25
Medium		Air			
Operating pressure range		1~6 kgf/cm^2			
Ambient temperature		−10~+60℃ (No freezing)			
Repeatability (mm)		±0.2			
Max.operating frequency(c.p.m)		60			
Lubrication		Not required			
Effective force (Nm) at (5kgf/cm^2)		0.16	0.54	1.10	2.28
Operating angle (both sides)	Opened side	180°			
	Closed side	-3°			
Weight (g)		80	150	320	600

Order example:

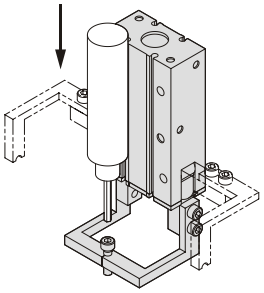
MCHY − 16 D 1 − RT × 1

- MODEL: MCHY
- BORE: ϕ10, ϕ16, ϕ20, ϕ25
- **D**:Double acting
- FINGER OPTION
  - –: Standard tap mounting
  - 1: Operening / closing direction though hole.
- AUTO SWITCH TYPE
- NUMBER of AUTO SWITCH

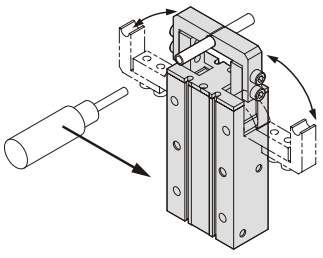
perpendicular	in-line	style
RTV	RT	Reed switch
RTNV	RTN	NPN
RTPV	RTP	PNP



Assembly

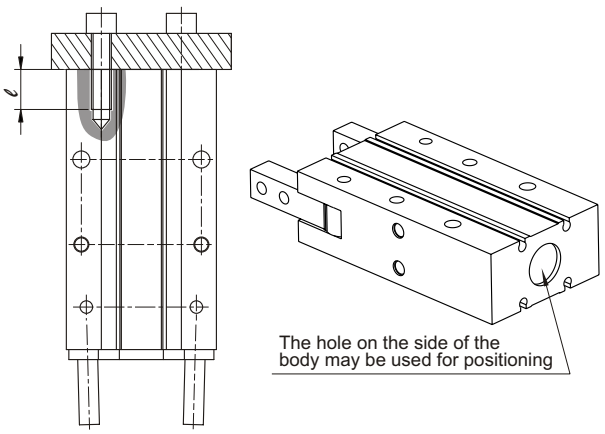


Clamping of work



Mounting

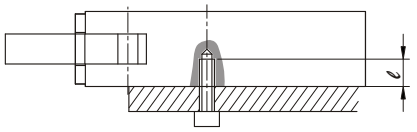
Axisl mounting (body tapped)



Model	Bolt	Max.torque N.m	Max.screw depth ℓ (mm)
MCHY-10	M3×0.5	0.88	6
MCHY-16	M4×0.7	2.1	8
MCHY-20	M5×0.8	4.3	10
MCHY-25	M6×1	7.3	12

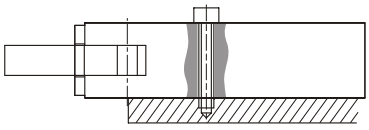
Model	Hole diameter (mm)	Height (mm)
MCHY-10	$\phi 11H9\ ^{+0.043}_{-0}$	1.5
MCHY-16	$\phi 17H9\ ^{+0.043}_{-0}$	1.5
MCHY-20	$\phi 21H9\ ^{+0.052}_{-0}$	1.5
MCHY-25	$\phi 26H9\ ^{+0.062}_{-0}$	1.5

Leteral mounting (body tapped)



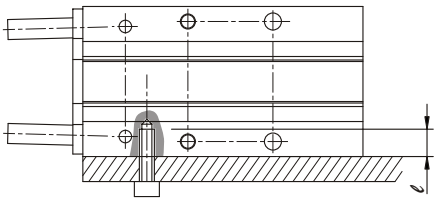
Model	Bolt	Max.torque N.m	Max.screw depth ℓ (mm)
MCHY-10	M3×0.5	0.88	6
MCHY-16	M4×0.7	2.1	8
MCHY-20	M5×0.8	4.3	10
MCHY-25	M6×1	7.3	12

Leteral mounting (body through hole)



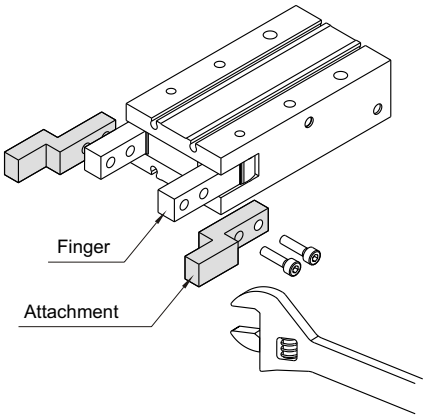
Model	Bolt	Max.torque N.m
MCHY-10	M3×0.5	0.88
MCHY-16	M4×0.7	2.1
MCHY-20	M5×0.8	4.3
MCHY-25	M6×1	7.3

Vertical mounting (body tapped)



Model	Bolt	Max.torque N.m	Max.screw depth ℓ (mm)
MCHY-10	M3×0.5	0.59	4
MCHY-16	M4×0.7	1.3	5
MCHY-20	M5×0.8	3.3	8
MCHY-25	M6×1	5.9	10

How to mount attachment on fingers



- To mount an attachment to a finger, make sure to use a wrench to support the attachment so as not to apply undue strain on the finger.
- Refer to the table below for the proper tightening torque on the bolt used for securing the attachment to the finger.

Model	Bolt	Max.torque N.m
MCHY-10	M3×0.5	0.59
MCHY-16	M4×0.7	0.59
MCHY-20	M5×0.8	1.4
MCHY-25	M6×1	2.8

Effective holding force

Indication of effective holding force

1.Although the condition differs according to the coefficient of friction between the attachment and work, select a model that can produce a holding force of 10 to 20 times the work.

2.Further allowance should be provided when great acceleration or impact is expected during work transfer.

Ex.)

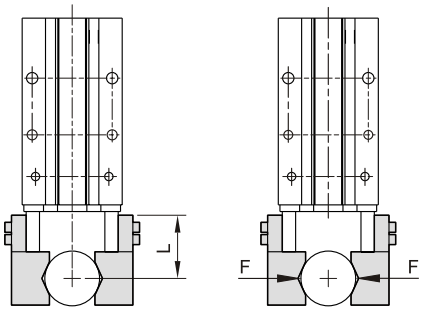
For setting the holding force to be at least 20 times the work weight;

Required holding force = 0.05kg X 20 X 9.8m/s^2 = 10N min.

When MCHY-16 is selected, the holding force is determined to be 17N according to the holding point distance (L = 30mm) and the pressure (5kgf/cm^2).

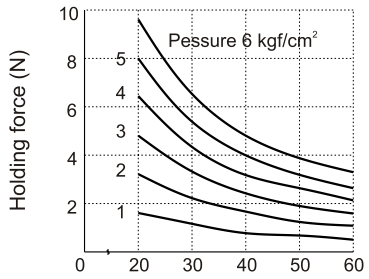
3.The holding force shown in the tables represents the holding force of one finger when all fingers and attachments are in contact with the work.

L: Holding point distance **F**: Thrust of one finger

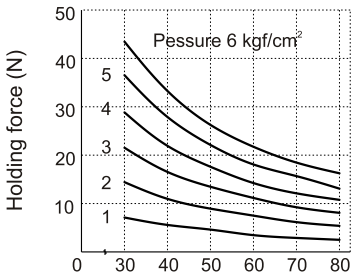


External hold

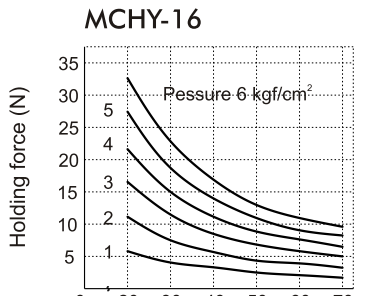
MCHY-10



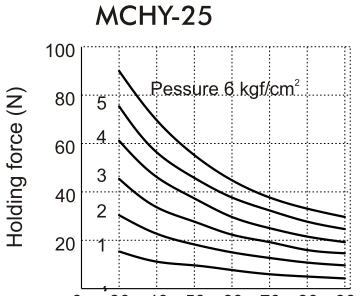
MCHY-20



MCHY-16

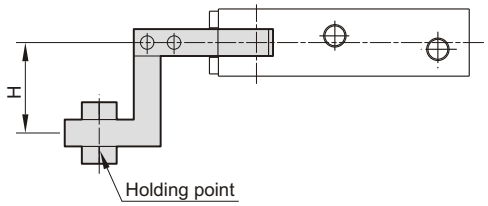


MCHY-25

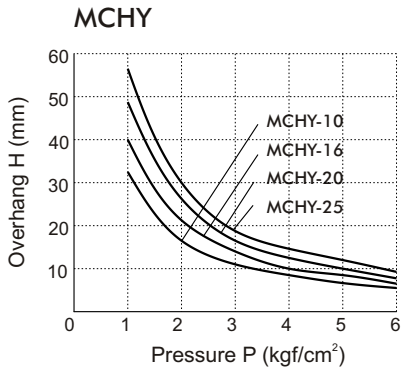


Confirmation of holding point

Work should be held at a point within the tange of overhanging distance (H) for a given preaaure bindicated in the tables.
When the work is held at a point outside of the recommended range for a given pressure. it may causes adverse effect on the product life.

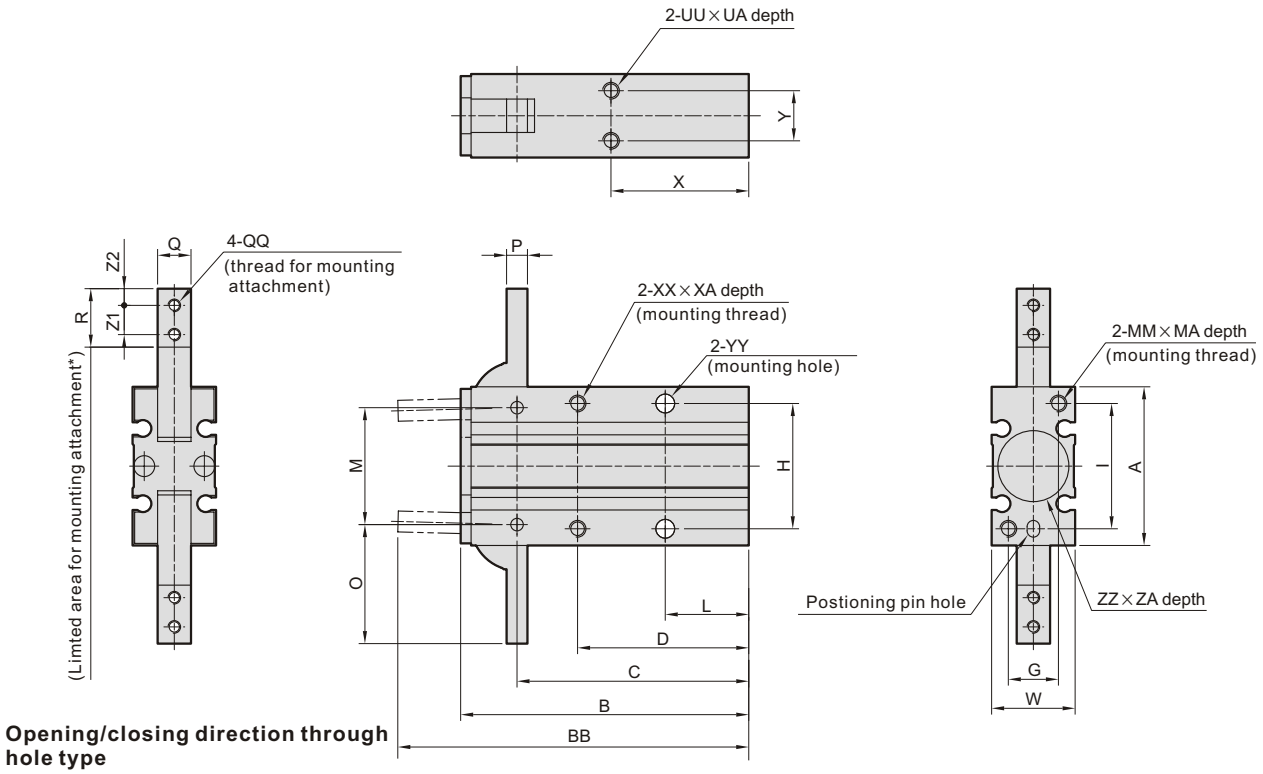


MCHY

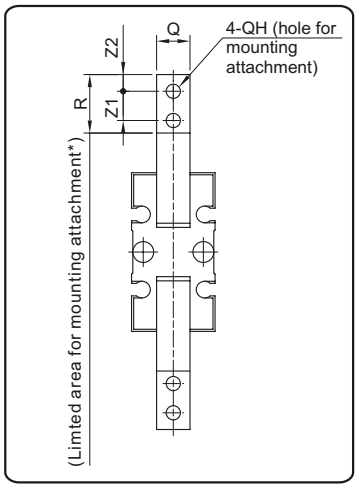


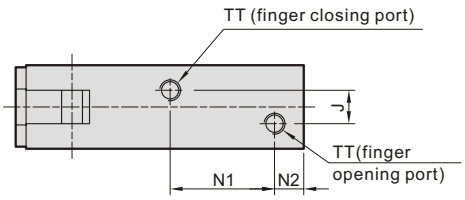
MCHY Dimensions ϕ10~ϕ25

180° ANGULAR GRIPPER - Cam style

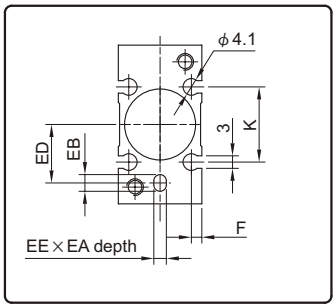


Opening/closing direction through hole type





Auto switch mounting groove position



*Do not extend the attachment from limited area for mounting to avoid interference with the attachment or main body.

Code / Tube I.D.	A	B	BB	C	D	EE	EA	EB	ED	F	G	H	I	J	K	L	M	MA	MM	N1	N2	O	P	Q	QH	QQ
10	30	58	71	47.5	35	3H9 $^{+0.025}_{-0}$	3	4	9	2	9	24	24	3	13	18	22	6	M3×0.5	23	7	23.5	4	6 $^{-0.005}_{-0.025}$	ϕ3.4	M3×0.5
16	38	69	84	55.5	41	3H9 $^{+0.025}_{-0}$	3	4	15	2.5	12	30	30	8	18	20	28	8	M4×0.7	25	7	28.5	5	8 $^{-0.005}_{-0.025}$	ϕ3.4	M3×0.5
20	48	86	106	69	50	4H9 $^{+0.030}_{-0}$	4	5	19	3	16	36	38	12	20	25	36	10	M5×0.8	32	8	37	8	10 $^{-0.005}_{-0.025}$	ϕ4.5	M4×0.7
25	58	107	131	86	60	4H9 $^{+0.030}_{-0}$	4	5	23	3	18	42	46	14	24	30	45	12	M6×1	42	8	45	10	12 $^{-0.005}_{-0.025}$	ϕ5.5	M5×0.8

Code / Tube I.D.	R	TT	UA	UU	W	X	XA	XX	Y	YY	ZA	ZZ	Z1	Z2
10	12	M5×0.8	4	M3×0.5	15	30	6	M3×0.5	9	ϕ3.4	1.5	ϕ11H9 $^{+0.043}_{-0}$	6	3
16	14	M5×0.8	5	M4×0.7	20	33	8	M4×0.7	12	ϕ4.5	1.5	ϕ17H9 $^{+0.043}_{-0}$	7	4
20	18	M5×0.8	8	M5×0.8	26	42	10	M5×0.8	14	ϕ5.5	1.5	ϕ21H9 $^{+0.042}_{-0}$	9	5
25	22.5	M5×0.8	10	M6×1	30	50	12	M6×1	16	ϕ6.6	1.5	ϕ26H9 $^{+0.042}_{-0}$	12	6