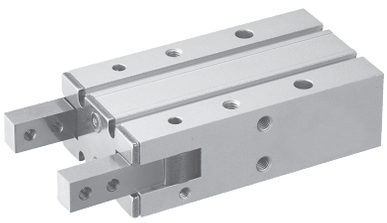
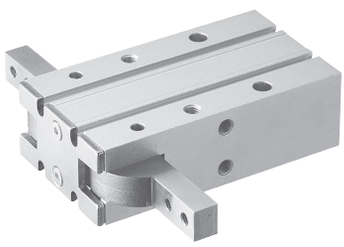
# MCHY series

## 180° ANGULAR **GRIPPER** - CAM STYLE





## Features

- Compact design and lightweight construction.
- High gripping forces achieved via internal cams. Reduced required offset while moving gripper. (Fig1).
- Reference points on gripping fingers are standard.
- Sensors can be mounted in any one of four positions.
- Rod seal prevents foreign objects to enter piston.

## Specification

| Model | | MCHY | | | |
|---|---|---|---|---|---|
| Acting Type | | Double acting | | | |
| Tube I.D. (mm) | | 10 | 16 | 20 | 25 |
| Medium | | Air | | | |
| Operating pressure range | | 0.2~0.6 MPa | | | |
| Ambient temperature | | -10~+60°C (No freezing) | | | |
| Repeatability | | ±0.2 mm | | | |
| Max. operating frequency (c.p.m) | | 60 (*1) | | | |
| Lubrication (*2) | | Not required | | | |
| Effective force (Nm) at (0.5 MPa) | | 0.16 | 0.54 | 1.1 | 2.28 |
| Operating angle (both sides) | Opened side | 180°~182° | | | |
| | Closed side | -3° | | | |
| Sensor switch (*3) | 2 wire | **RDFE(V)**: Non-contact | | | |
| | 3 wire | **RNFE(V)**: NPN, **RPFE(V)**: PNP | | | |
| Weight (g) | | 80 | 150 | 320 | 600 |

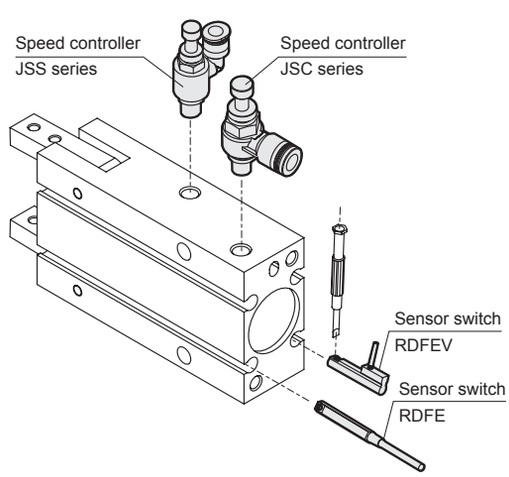
*1. Speed adjust components are required while in use.
*2. Sliding area of jaws need scheduled relubrication.
*3. R*FE(V) specification, please refer to page 5-10.

## Order example

MCHY — 16 D 1

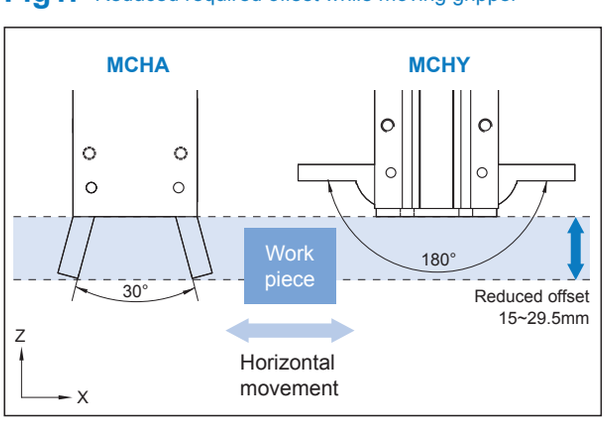
| MODEL | TUBE I.D. | | | | D: Double acting | FINGER OPTION | |
|---|---|---|---|---|---|---|---|
| | **10** | **16** | **20** | **25** | | — | Standard tap mounting |
| | | | | | | **1** | Opening / closing direction through hole. |

## Installation of sensor switch & speed controller




* Each gripper needs at least two speed control valves to operate.
* Speed controller specification, please refer to page 8-15~17 (Vol.1).

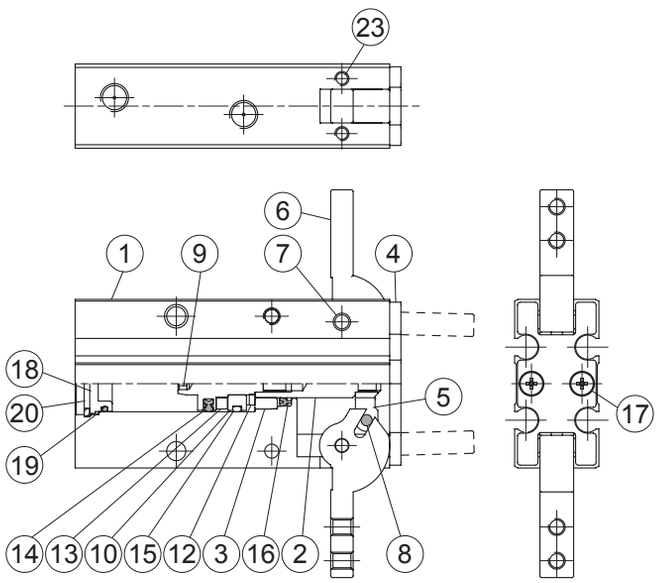
**Fig1.** Reduced required offset while moving gripper



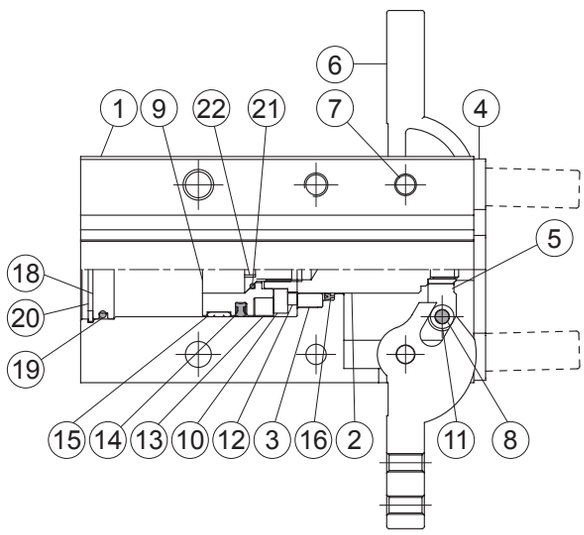
# MCHY Inside structure & Parts list

180° ANGULAR **GRIPPER** - CAM STYLE

ø10




ø16~ø25




## Material

| No. | Tube I.D. / Part name | 10 | 16 | 20 | 25 | Q'y | Repair kits (inclusion) |
|---|---|---|---|---|---|---|---|
| 1 | Body | Aluminum alloy | | | | 1 | |
| 2 | Piston rod | Stainless steel | | | | 1 | |
| 3 | Bushing | Brass | | | | 1 | |
| 4 | Head cover | Stainless steel | | | | 1 | |
| 5 | Lever | Stainless steel | | | | 1 | |
| 6 | Gripper | Stainless steel | | | | 2 | |
| 7 | Grip rivet | Carbon steel | | | | 2 | |
| 8 | Pin | Carbon steel | | | | 2 | |
| 9 | Piston | *1 | Aluminum alloy | | | 1 | |
| 10 | Magnet holder | Stainless steel | | | | 1 | |
| 11 | Pin bushing | – | | SCM | | 2 | |
| 12 | Cushion pad | NBR | PU | | | 1 | ● |
| 13 | Magnet ring | Magnet material | | | | 1 | |
| 14 | Piston packing | NBR | | | | 1 | ● |
| 15 | Wear ring | Teflon | | | | 1 | |
| 16 | Rod packing | NBR | | | | 1 | ● |

| No. | Tube I.D. / Part name | 10 | 16 | 20 | 25 | Q'y | Repair kits (inclusion) |
|---|---|---|---|---|---|---|---|
| 17 | Screw | Stainless steel | | | | 2 | |
| 18 | Rod cover | Aluminum alloy | | | | 1 | |
| 19 | O-ring | NBR | | | | 1 | ● |
| 20 | Snap ring | *2 | Stainless steel | | | 1 | |
| 21 | O-ring | – | NBR | | | 1 | ● |
| 22 | Hexagon Bolt | – | Stainless steel | | | 1 | |
| 23 | Scew | Stainless steel | | | | 4 | |

*1. Stainless steel *2. Carbon steel

## Order example of repair kits

| Tube I.D. | Repair kits |
|---|---|
| ø10 | **PS-MCHY-10** |
| ø16 | **PS-MCHY-16** |
| ø20 | **PS-MCHY-20** |
| ø25 | **PS-MCHY-25** |

# MCHY Dimensions ø10~ø25

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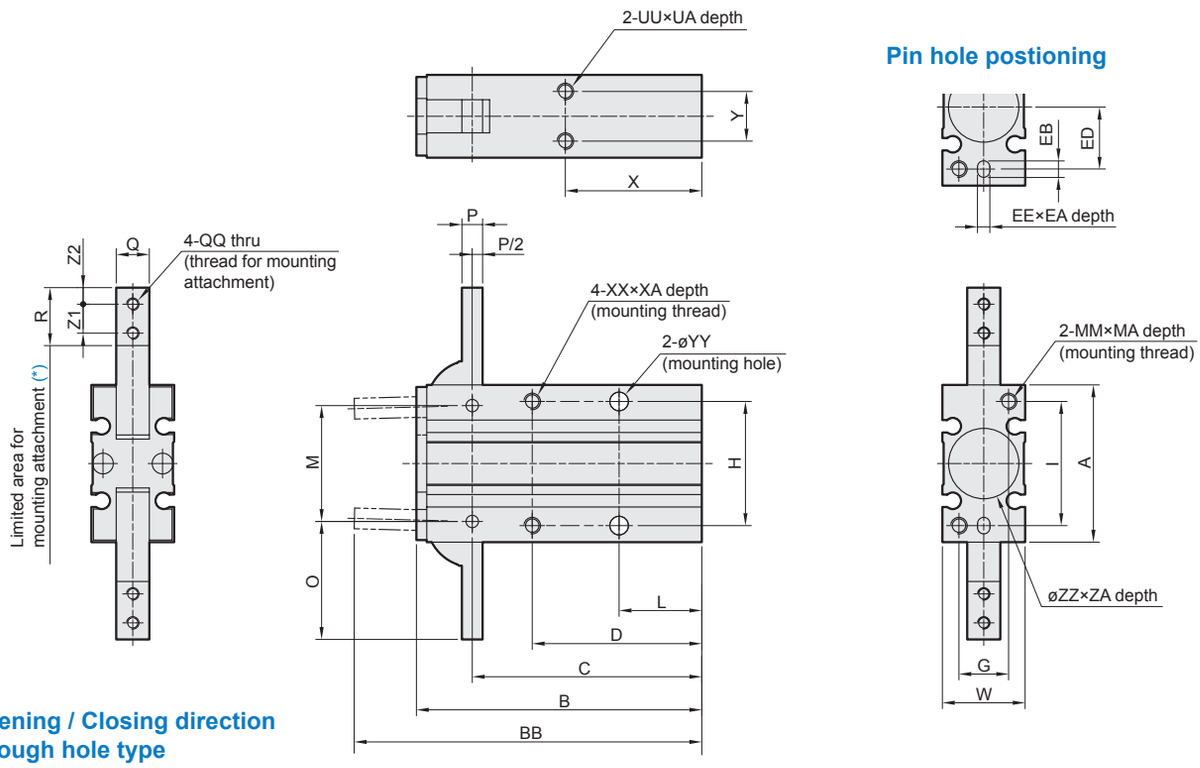
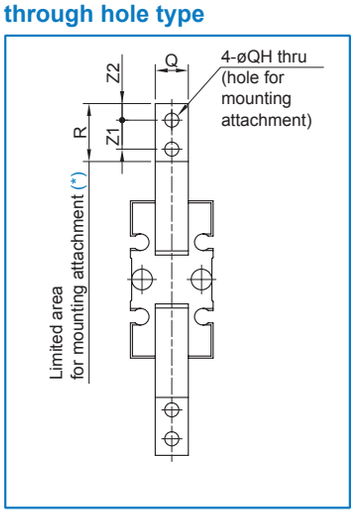
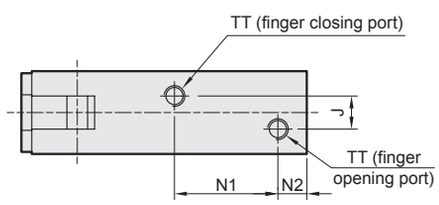


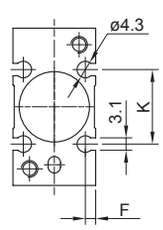

### Pin hole postioning

### 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 $^{-0.005}_{-0.025}$ | 3.4 | 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 $^{-0.005}_{-0.025}$ | 3.4 | 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 $^{-0.005}_{-0.025}$ | 4.5 | 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 $^{-0.005}_{-0.025}$ | 5.5 | 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 | 3.4 | 1.5 | 11H9 $^{+0.043}_{-0}$ | 6 | 3 |
| 16 | 14 | M5×0.8 | 5 | M4×0.7 | 20 | 33 | 8 | M4×0.7 | 12 | 4.5 | 1.5 | 17H9 $^{+0.043}_{-0}$ | 7 | 4 |
| 20 | 18 | M5×0.8 | 8 | M5×0.8 | 26 | 42 | 10 | M5×0.8 | 14 | 5.5 | 1.5 | 21H9 $^{+0.052}_{-0}$ | 9 | 5 |
| 25 | 22.5 | M5×0.8 | 10 | M6×1 | 30 | 50 | 12 | M6×1 | 16 | 6.6 | 1.5 | 26H9 $^{+0.052}_{-0}$ | 12 | 6 |