

## Electric actuator 2-Finger Gripper FLSH Series



Added options to expand the "gripping" possibilities of the compact Electric Gripper with high gripping force

**With case**

Reduce disconnection risk of movable cables

**Rubber cover option**

Improved environmental resistance (IP50 with case)

**Long stroke**

| Size     | Conventional stroke | Long stroke  |
|----------|---------------------|--------------|
| FLSH-16G | 6 mm                | <b>12 mm</b> |
| FLSH-20G | 10 mm               | <b>18 mm</b> |
| FLSH-25G | 14 mm               | <b>22 mm</b> |

Up to +8 mm compared to conventional

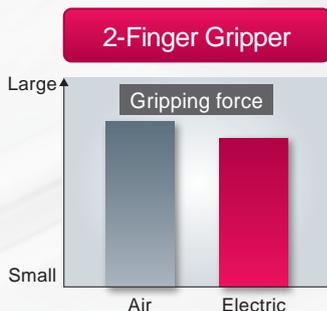
**Finger shape option**

Basic - tapered hole in the open/close direction  
Tapered hole on side  
Open/close direction thru hole  
Flat

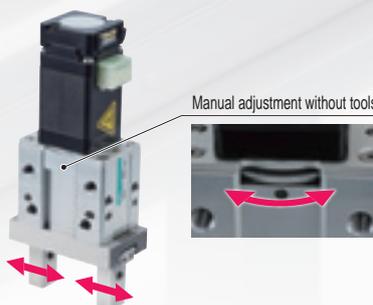
**Freely design attachments**

### Features of FLSH Series

● **Realizes high gripping force**  
Equivalent dimensions and gripping force as Air Hand



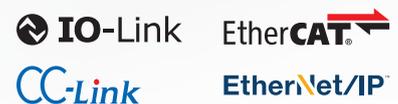
● **Adjustments made easier**  
Manual operation mechanism is on the front surface



### Compatible controllers ECGSeries

- **Helps reduce inventory**  
Can be connected to different motor sizes
- **Space saving realized**  
No need for heat ventilation on side of controller

### Supported network



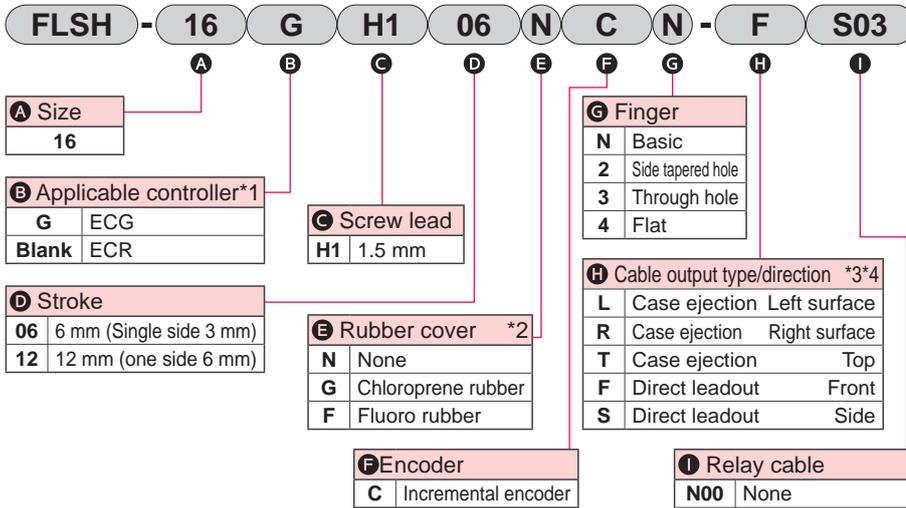


# Electric actuator 2-Finger Gripper FLSH-16

20 stepper motor



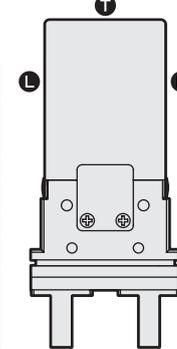
## How to order



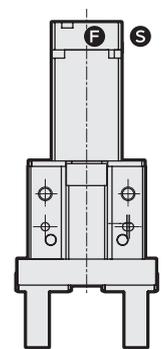
## Option selection table

| Option                        | Model No. | Applicable controller |     |
|-------------------------------|-----------|-----------------------|-----|
|                               |           | ECG                   | ECR |
| D Stroke                      | 06        | ●                     | ●   |
|                               | 12        | ●                     |     |
| E Rubber cover                | N         | ●                     | ●   |
|                               | G/F       | ●                     |     |
| G Finger                      | N         | ●                     | ●   |
|                               | 2/3/4     | ●                     |     |
| H Cable output type/direction | L/R/T     | ●                     |     |
|                               | F/S       | ●                     | ●   |

[Fig. 1]



[Fig. 2]



- \*1 Select the controller from "Electric Actuator (Catalog No.CC-1444A)".
- \*2 When rubber cover "G, F" is selected, only finger "N" can be selected.
- \*3 Refer to Figure 1 or Figure 2.
- \*4 When the rubber cover "N" or finger "N" has been selected for the Stroke "06", only the cable outlet types and directions "F, S" can be selected.
- \*5 For the dimensions of the relay cable, refer to "Electric Actuator (Catalog No.CC-1444A)".

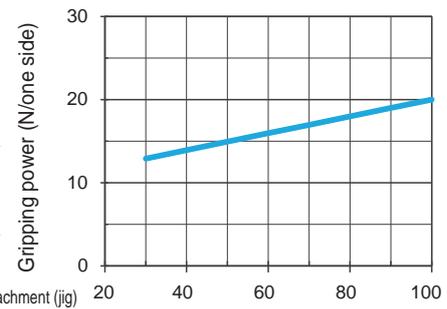
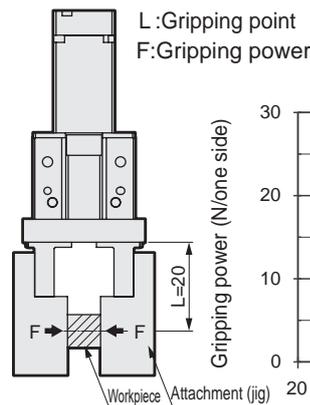
## Specifications

|  |   |   |
|--|---|---|
| Motor                                    | <input type="checkbox"/> 20 stepper motor |   |
| Encoder type                             | Incremental encoder                       |   |
| Drive method                             | Sliding screw                             |   |
| Stroke                                   | mm  | 6 (3 per side)   12 (6 per side)                            |
| Screw lead                               | mm  | 1.5   |
| Max. gripping power *1                   | N   | 20 (per side)   |
| Open/close speed range                   | mm/s                                      | 5 to 50 (per side)  |
| Acceleration/deceleration range          | G   | 0.1 to 0.3  |
| Gripping speed range *1                  | mm/s                                      | 5 to 15 (per side)  |
| Repeatability *2                         | mm  | ±0.02   |
| Positioning repeatability *3             | mm  | ±0.05 (per side)  |
| Lost motion                              | mm  | 0.3 or less (per side)                                      |
| Static allowable moment                  | Nm  | MP: 0.68, MY: 0.68, MR: 1.36                                |
| Motor power supply voltage *4            |   | 24 VDC ±10% or 48 VDC ±10%                                  |
| Motor section max. instantaneous current | A   | 1.2   |
| Insulation resistance                    |   | 10 MΩ, 500 VDC  |
| Withstand voltage                        |   | 500 VAC for 1 minute  |
| Operating ambient temperature, humidity  |   | 0 to 40°C (no freezing)<br>35 to 80% RH (no condensation)   |
| Storage ambient temperature, humidity    |   | -10 to 50°C (no freezing)<br>35 to 80% RH (no condensation) |
| Atmosphere                               |   | No corrosive gas, explosive gas, or dust                    |
| Degree of protection                     |   | IP40(IP50 *5)   |
| Weight                                   | g   | ECG *6: 200, ECR: 250                                       |
|  |   | 220, -  |

- \*1 Gripping is done with pressing operation.
- \*2 Repeatability indicates variation when the same workpieces are gripped repeatedly with the same operating conditions.
- \*3 This may cause variation in the stop position when positioning is repeatedly performed to the same point.
- \*4 48 VDC is compatible only with controller ECR.
- \*5 When rubber cover (G/F), cable outlet type/direction: case outlet (L/R/T) is selected.

## Gripping power and pressing rate

[At 24/48 VDC]



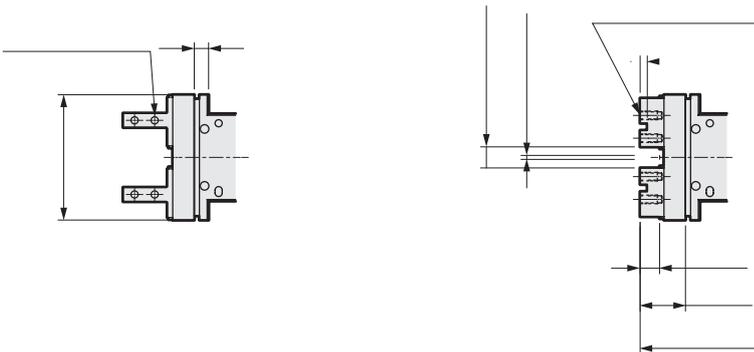
- \* The gripping power and pressing rate are a guide. Power supply voltages, individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.
- \* Speed during gripping operation is for 15mm/s. (L=20)

Optional weight (\*6) (g)

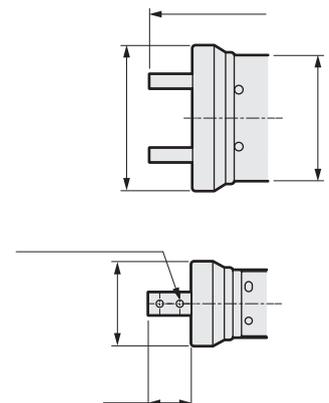
| Option        | Stroke |      |
|---------------|--------|------|
|               | 06     | 12   |
| Rubber cover  | +0     | +10  |
| Case ejection | +100   | +100 |

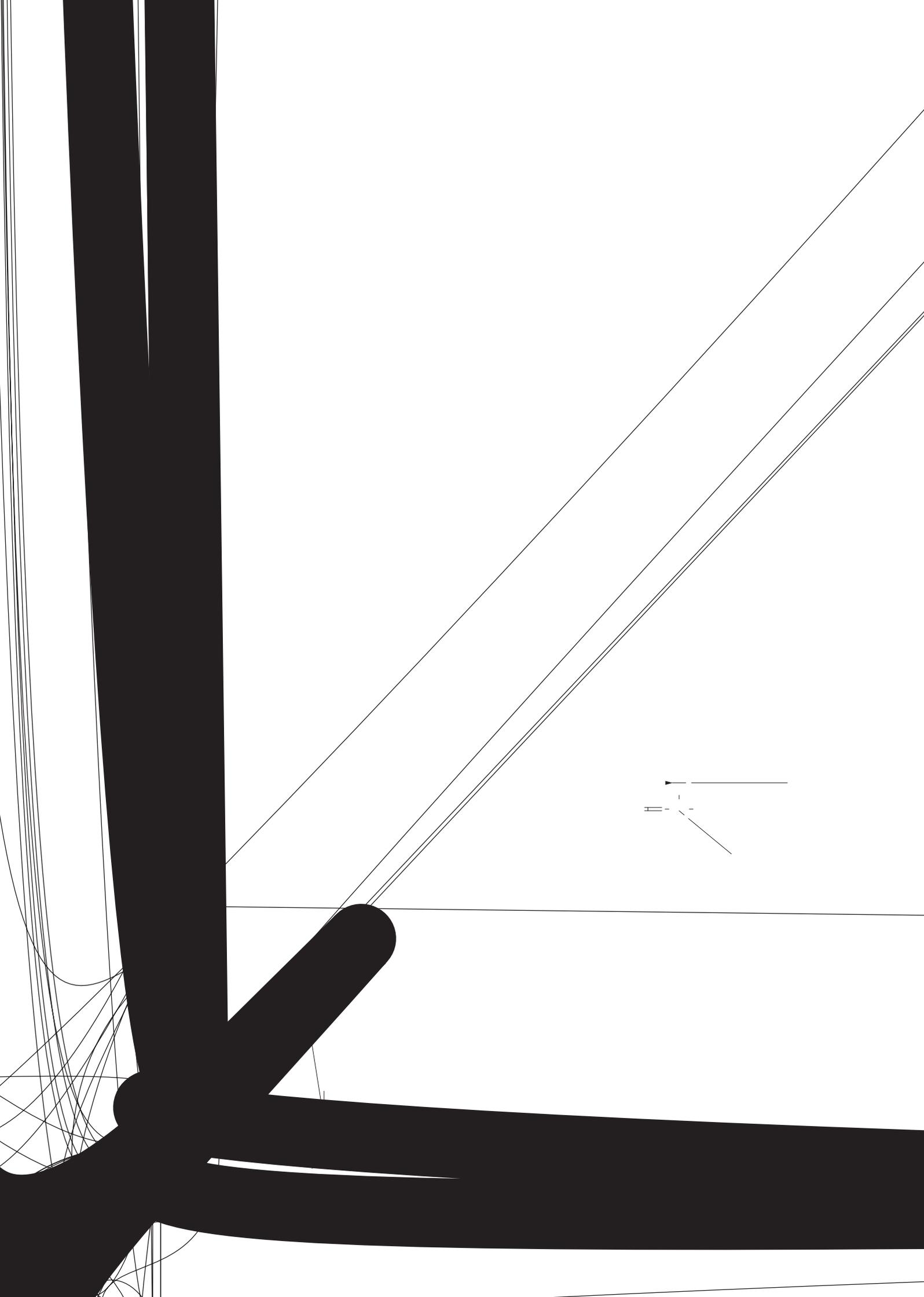
## Dimensions

- FLSH-16GH106NC3-L/R/T\* (Stroke: 6 mm, rubber cover: none, finger: through hole, cable outlet type/direction: case outlet)



- Rubber cover(G/F) Finger: Basic(N)





When connecting ECR.



Electric Actuator 2-Finger Gripper

# FLSH-20

25 stepper motor



How to order

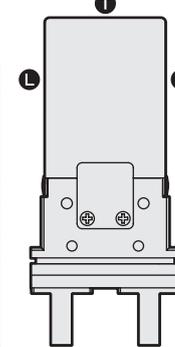
FLSH - 20 G H1 10 N C N - F S03

|   |  |
|---|--|
| <b>A Size</b>                             | 20   |
| <b>B Applicable controller*1</b>          | G ECG<br>Blank ECR   |
| <b>C Screw lead</b>                       | H1 1.5 mm  |
| <b>D Stroke</b>                           | 10 10 mm (5 mm on one side)<br>18 18 mm (9 mm per side)  |
| <b>E Rubber cover *2</b>                  | N None<br>G Chloroprene rubber<br>F Fluoro rubber  |
| <b>F Encoder</b>                          | C Incremental encoder  |
| <b>G Finger</b>                           | N Basic<br>2 Side tapered hole<br>3 Through hole<br>4 Flat   |
| <b>H Cable output type/direction *3*4</b> | L Case ejection Left surface<br>R Case ejection Right surface<br>T Case ejection Top<br>F Direct leadout Front<br>S Direct leadout Side  |
| <b>I Relay cable *5</b>                   | N00 None<br>S01 Fixing cable 1 m<br>S03 Fixing cable 3 m<br>S05 Fixing cable 5 m<br>S10 Fixing cable 10 m<br>R01 Movable cable 1 m<br>R03 Movable cable 3 m<br>R05 Movable cable 5 m<br>R10 Movable cable 10 m |

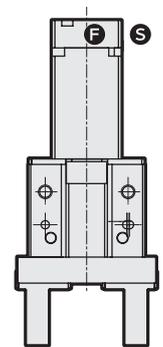
Option selection table

| Option                        | Model No. | Applicable controller |     |
|-------------------------------|-----------|-----------------------|-----|
|                               |           | ECG                   | ECR |
| D Stroke                      | 10        | ●                     | ●   |
|                               | 18        | ●                     | ●   |
| E Rubber cover                | N         | ●                     | ●   |
|                               | G/F       | ●                     | ●   |
| G Finger                      | N         | ●                     | ●   |
|                               | 2/3/4     | ●                     | ●   |
| H Cable output type/direction | L/R/T     | ●                     | ●   |
|                               | F/S       | ●                     | ●   |

[Fig. 1]



[Fig. 2]



\*1 Select the controller from "Electric Actuator (Catalog No.CC-1444A)".  
 \*2 When rubber cover "G, F" is selected, only finger "N" can be selected.  
 \*3 Refer to Figure 1 or Figure 2.  
 \*4 When the rubber cover "N" or finger "N" has been selected for the Stroke "10", only the cable outlet types and directions "F, S" can be selected.  
 \*5 For the Dimensions of the relay cable, refer to "Electric Actuator (Catalog No.CC-1444A)".

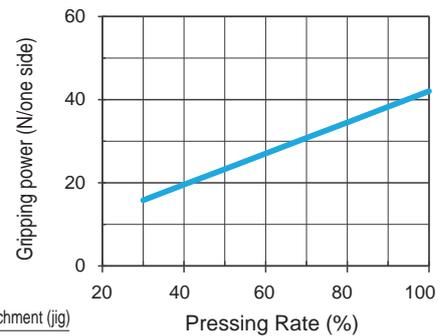
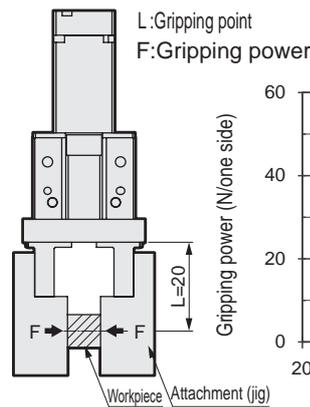
Specifications

|  |   |   |
|--|---|---|
| Motor                                    | <input type="checkbox"/> 25 stepper motor |   |
| Encoder type                             | Incremental encoder                       |   |
| Drive method                             | Sliding screw                             |   |
| Stroke                                   | mm  | 10 (5 per side)   18 (9 per side)                           |
| Screw lead                               | mm  | 1.5   |
| Max. gripping power *1                   | N   | 42 (per side)   |
| Open/close speed range                   | mm/s                                      | 5 to 50 (per side)  |
| Acceleration/deceleration range          | G   | 0.1 to 0.3  |
| Gripping speed range *1                  | mm/s                                      | 5 to 15 (per side)  |
| Repeatability *2                         | mm  | ±0.02   |
| Positioning repeatability *3             | mm  | ±0.05 (per side)  |
| Lost motion                              | mm  | 0.3 or less (per side)                                      |
| Static allowable moment                  | Nm  | MP: 1.32, MY: 1.32, MR: 2.65                                |
| Motor power supply voltage *4            |   | 24 VDC ±10% or 48 VDC ±10%                                  |
| Motor section max. instantaneous current | A   | 2.4   |
| Insulation resistance                    |   | 10 MΩ, 500 VDC  |
| Withstand voltage                        |   | 500 VAC for 1 minute  |
| Operating ambient temperature, humidity  |   | 0 to 40 °C (no freezing)<br>35 to 80% RH (no condensation)  |
| Storage ambient temperature, humidity    |   | -10 to 50°C (no freezing)<br>35 to 80% RH (no condensation) |
| Atmosphere                               |   | No corrosive gas, explosive gas, or dust                    |
| Degree of protection                     |   | IP40(IP50 *5)   |
| Weight                                   | g   | ECG *6 330   440<br>ECR 380   -                             |

\*1 Gripping is done with pressing operation.  
 \*2 Repeatability indicates variation when the same workpieces are gripped repeatedly with the same operating conditions.  
 \*3 This may cause variation in the stop position when positioning is repeatedly performed to the same point.  
 \*4 48 VDC is compatible only with controller ECR.  
 \*5 When rubber cover (G/F), cable outlet type/direction: case outlet (L/R/T) is selected.

Gripping power and pressing rate

[At 24/48 VDC]



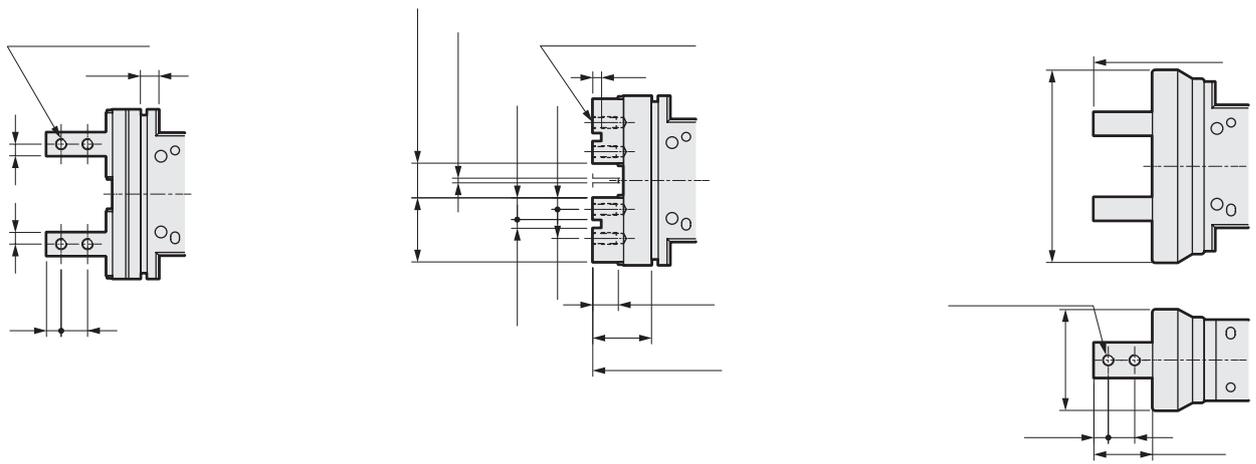
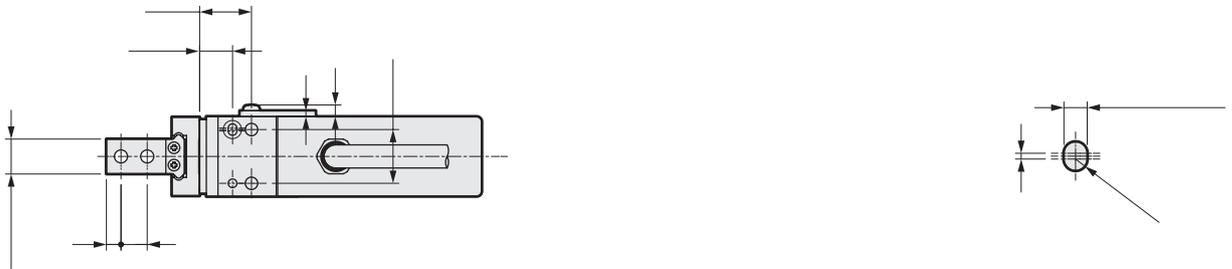
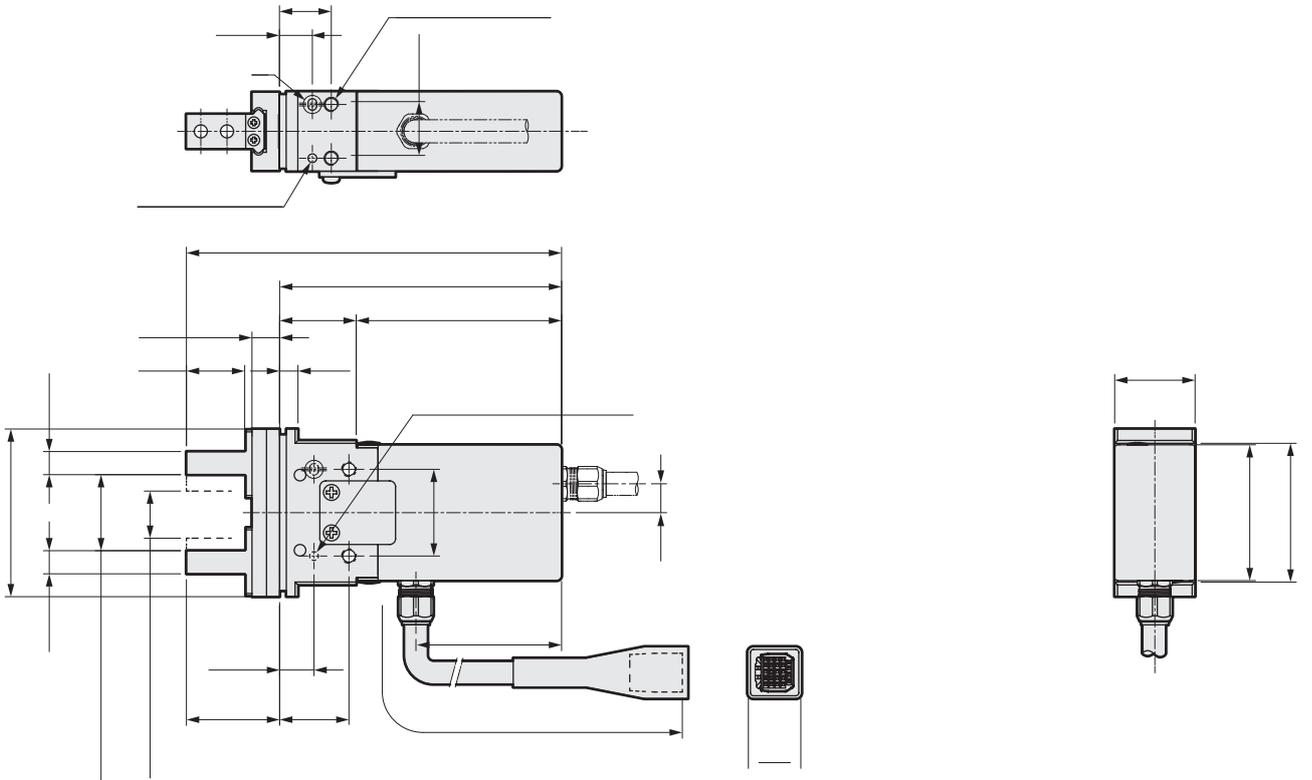
\* The gripping power and pressing rate are a guide. Power supply voltages, individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.  
 \* Speed during gripping operation is for 15mm/s. (L=20)

Optional weight (\*6) (g)

| Option        | Stroke |     |
|---------------|--------|-----|
|               | 10     | 18  |
| Rubber cover  | +10    | +50 |
| Case ejection | +200   | +50 |

Dimensions

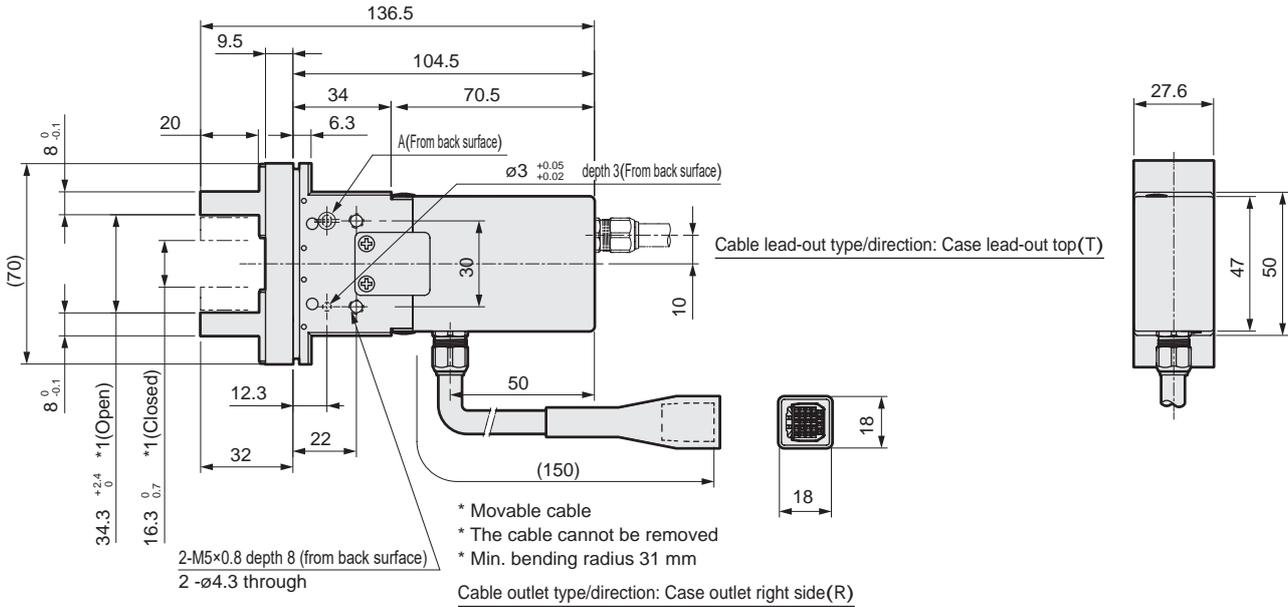
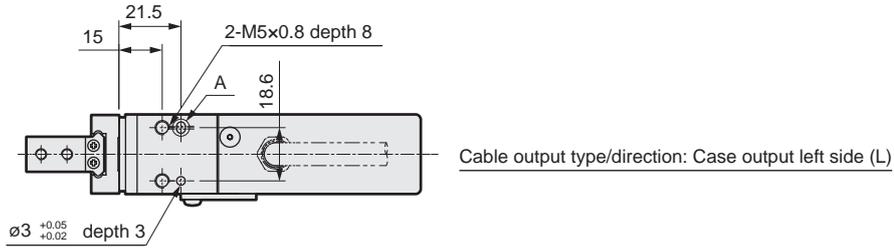
● FLSH-20GH110NC3-L/R/T\* (Stroke: 10mm, rubber cover: none, finger: through hole, cable outlet type/direction: case outlet)



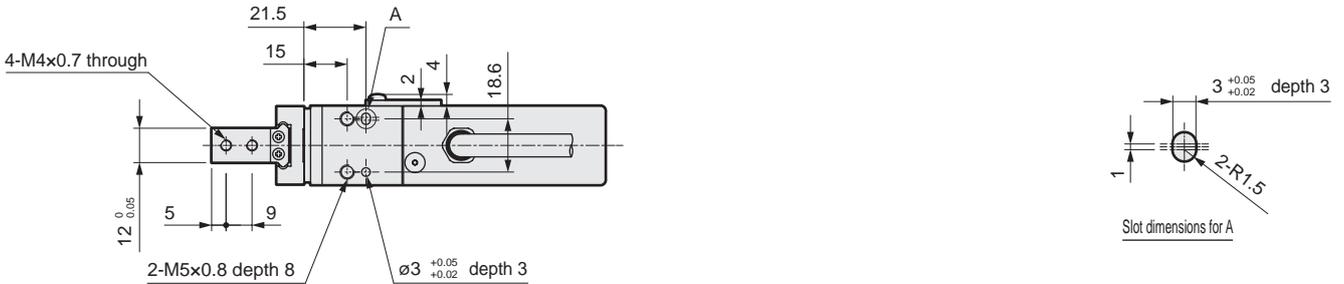
# FLSH-20 Series

## Dimensions

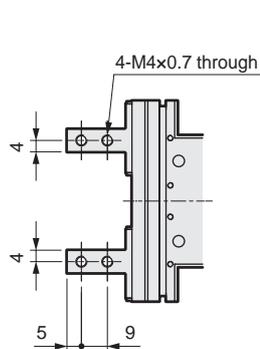
● FLSH-20GH118NCN-L/R/T\* (Stroke: 18mm, rubber cover: none, finger: basic, cable outlet type/direction: case outlet)



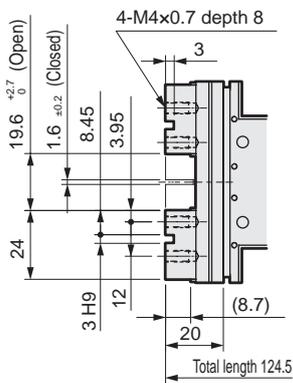
\*1 Including the zero point return distance



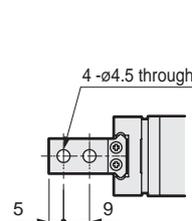
● Finger: Side tapered hole(2)



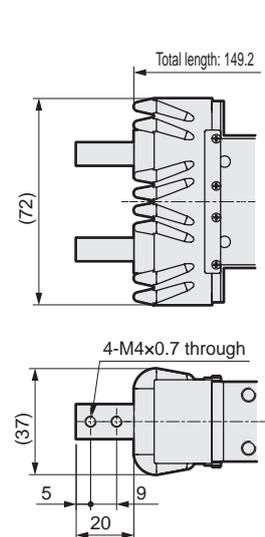
● Finger: Flat(4)



● Finger: Through hole(3)

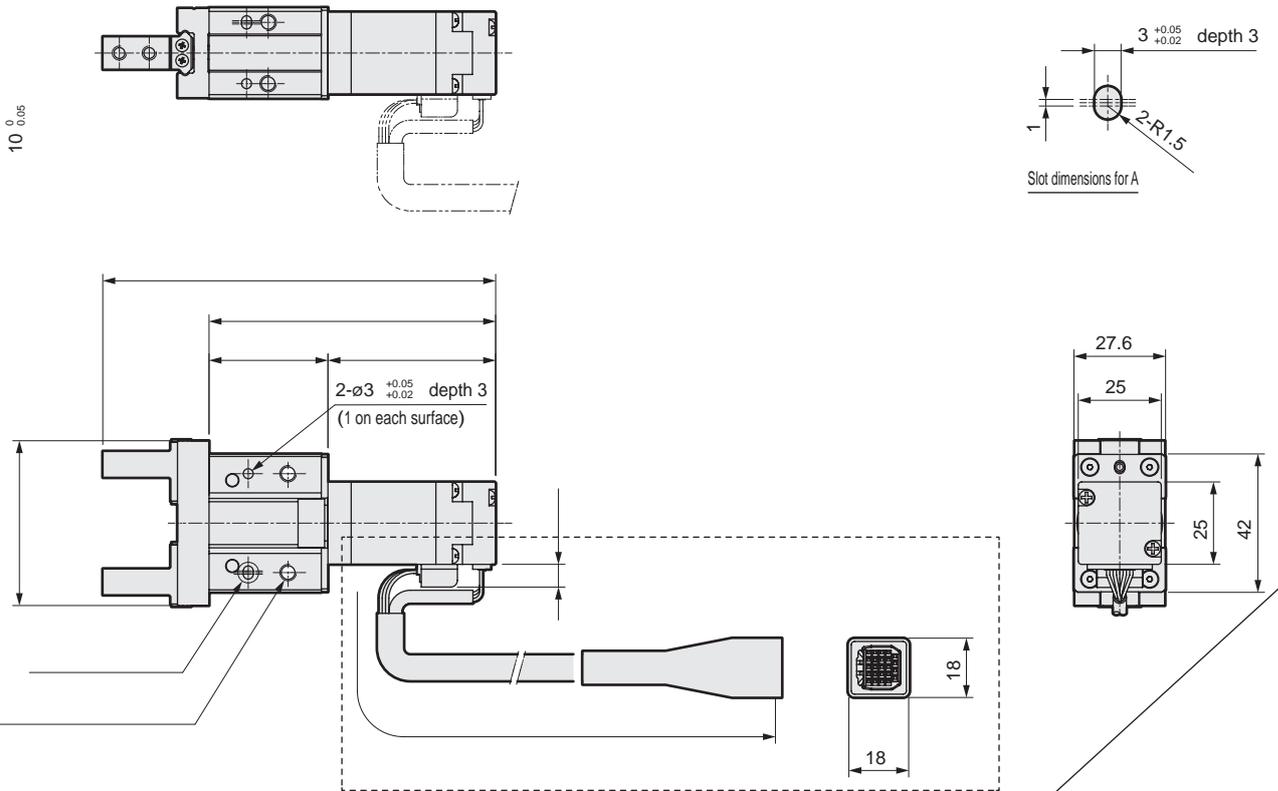


● Rubber cover(G/F) Finger: Basic(N)

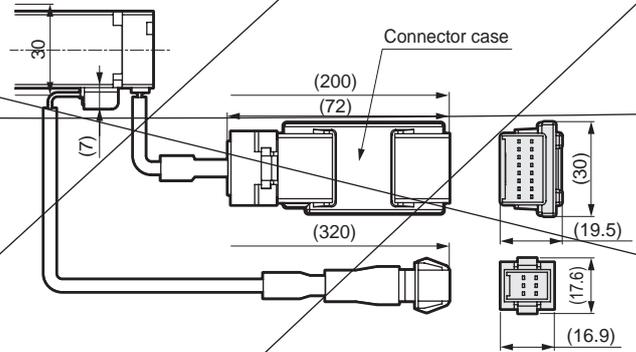


### Dimensions

- FLSH-20GH110NCN-F/S\* (Stroke: 10mm, rubber cover: none, finger: basic, cable outlet type/direction: direct outlet)

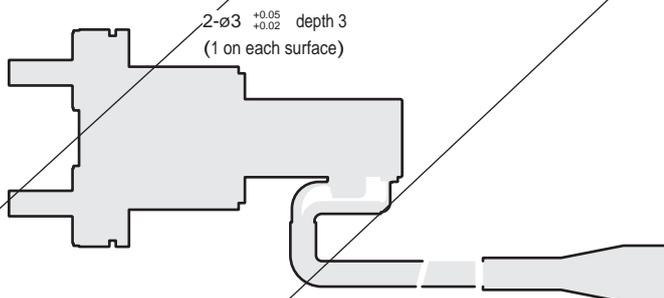


- \* Fixed cable
  - \* The cable cannot be removed
  - \* Min. bending radius 40 mm
- Cable outlet type/direction: direct outlet side (S)



\* The finger shape is the same as that of the case.

- FLSH-20GH118NCN-F/S\* (Stroke: 18mm, rubber cover: none, finger: basic, cable outlet type/direction: direct outlet)

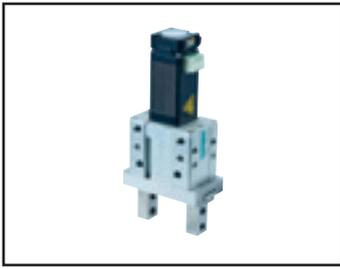


● Finger: Flat(4)

● Rubber cover(G/F)  
Finger: Basic(N)



\* The finger shape is the same as that of the case.



# Electric Actuator 2-Finger Gripper FLSH-25

25L stepper motor



## How to order

**FLSH - 25 G H1 14 N C N - F S03**

**A Size**  
25

**B Applicable controller \*1**

|       |     |
|-------|-----|
| G     | ECG |
| Blank | ECR |

**C Screw lead**

|    |        |
|----|--------|
| H1 | 1.5 mm |
|----|--------|

**D Stroke**

|    |                          |
|----|--------------------------|
| 14 | 14 mm (Single side 7 mm) |
| 22 | 22 mm (one side 11 mm)   |

**E Rubber cover \*2**

|   |                    |
|---|--------------------|
| N | None               |
| G | Chloroprene rubber |
| F | Fluoro rubber      |

**F Encoder**

|   |                     |
|---|---------------------|
| C | Incremental encoder |
|---|---------------------|

**G Finger**

|   |                   |
|---|-------------------|
| N | Basic             |
| 2 | Side tapered hole |
| 3 | Through hole      |
| 4 | Flat              |

**H Cable output type/direction \*3\*4**

|   |                             |
|---|-----------------------------|
| L | Case ejection Left surface  |
| R | Case ejection Right surface |
| T | Case ejection Top           |
| F | Direct leadout Front        |
| S | Direct leadout Side         |

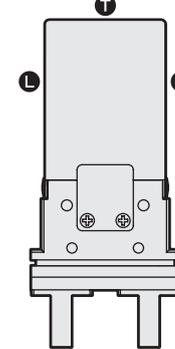
**I Relay cable \*5**

|     |                    |
|-----|--------------------|
| N00 | None               |
| S01 | Fixing cable 1 m   |
| S03 | Fixing cable 3 m   |
| S05 | Fixing cable 5 m   |
| S10 | Fixing cable 10 m  |
| R01 | Movable cable 1 m  |
| R03 | Movable cable 3 m  |
| R05 | Movable cable 5 m  |
| R10 | Movable cable 10 m |

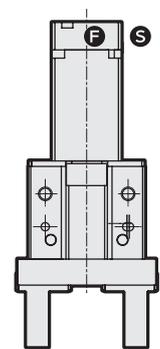
## Option selection table

| Option                        | Model No. | Applicable controller |     |
|-------------------------------|-----------|-----------------------|-----|
|                               |           | ECG                   | ECR |
| D Stroke                      | 14        | ●                     | ●   |
|                               | 22        | ●                     |     |
| E Rubber cover                | N         | ●                     | ●   |
|                               | G/F       | ●                     |     |
| G Finger                      | N         | ●                     | ●   |
|                               | 2/3/4     | ●                     |     |
| H Cable output type/direction | L/R/T     | ●                     |     |
|                               | F/S       | ●                     | ●   |

[Fig. 1]



[Fig. 2]



- \*1 Select the controller from "Electric Actuator (Catalog No.CC-1444A)".
- \*2 When rubber cover "G, F" is selected, only finger "N" can be selected. When rubber cover "G, F" is selected, only stroke "14" can be selected.
- \*3 Refer to Figure 1 or Figure 2.
- \*4 When the rubber cover "N" or finger "N" was selected for the Stroke "14", only the cable lead-out types and directions "F, S" can be selected.
- \*5 For the Dimensions of the relay cable, refer to "Electric Actuator (Catalog No.CC-1444A)".

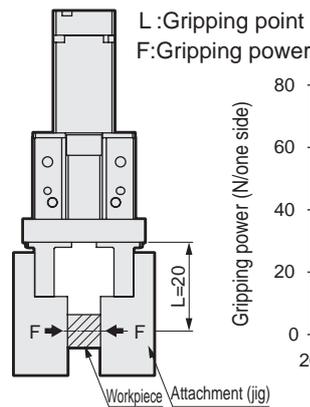
## Specifications

|  |   |     |     |
|--|---|-----|-----|
| Motor                                    | <input type="checkbox"/> 25L stepper motor                  |     |     |
| Encoder type                             | Incremental encoder   |     |     |
| Drive method                             | Sliding screw   |     |     |
| Stroke                                   | mm 14 (7 per side)   22 (11 per side)                       |     |     |
| Screw lead                               | mm 1.5  |     |     |
| Max. gripping power *1                   | N 65 (per side)   |     |     |
| Open/close speed range                   | mm/s 5 to 50 (per side)                                     |     |     |
| Acceleration/deceleration range          | G 0.1 to 0.3  |     |     |
| Gripping speed range *1                  | mm/s 5 to 15 (per side)                                     |     |     |
| Repeatability *2                         | mm ±0.02  |     |     |
| Positioning repeatability *3             | mm ±0.05 (per side)   |     |     |
| Lost motion                              | mm 0.3 or less (per side)                                   |     |     |
| Static allowable moment                  | Nm MP: 1.94, MY: 1.94, MR: 3.88                             |     |     |
| Motor power supply voltage *4            | V 24 VDC ±10% or 48 VDC ±10%                                |     |     |
| Motor section max. instantaneous current | A 3.6   |     |     |
| Insulation resistance                    | 10 MΩ, 500 VDC  |     |     |
| Withstand voltage                        | 500 VAC for 1 minute  |     |     |
| Operating ambient temperature, humidity  | 0 to 40 °C (no freezing)<br>35 to 80% RH (no condensation)  |     |     |
| Storage ambient temperature, humidity    | -10 to 50°C (no freezing)<br>35 to 80% RH (no condensation) |     |     |
| Atmosphere                               | No corrosive gas, explosive gas, or dust                    |     |     |
| Degree of protection                     | IP40(IP50 *5)   |     |     |
| Weight                                   | g ECG *6  | 590 | 630 |
|  | g ECR   | 580 | -   |

- \*1 Gripping is done with pressing operation.
- \*2 Repeatability indicates variation when the same workpieces are gripped repeatedly with the same operating conditions.
- \*3 This may cause variation in the stop position when positioning is repeatedly performed to the same point.
- \*4 48 VDC is compatible only with controller ECR.
- \*5 When rubber cover (G/F), cable outlet type: Direction: When case outlet (L/R/T) is selected.

## Gripping power and pressing rate

[At 24/48 VDC]



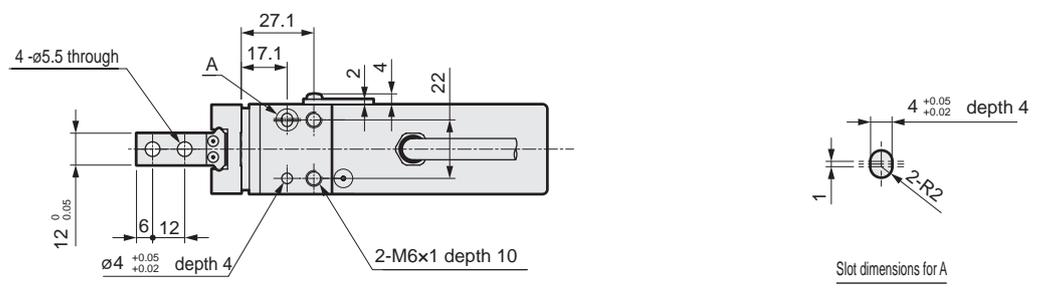
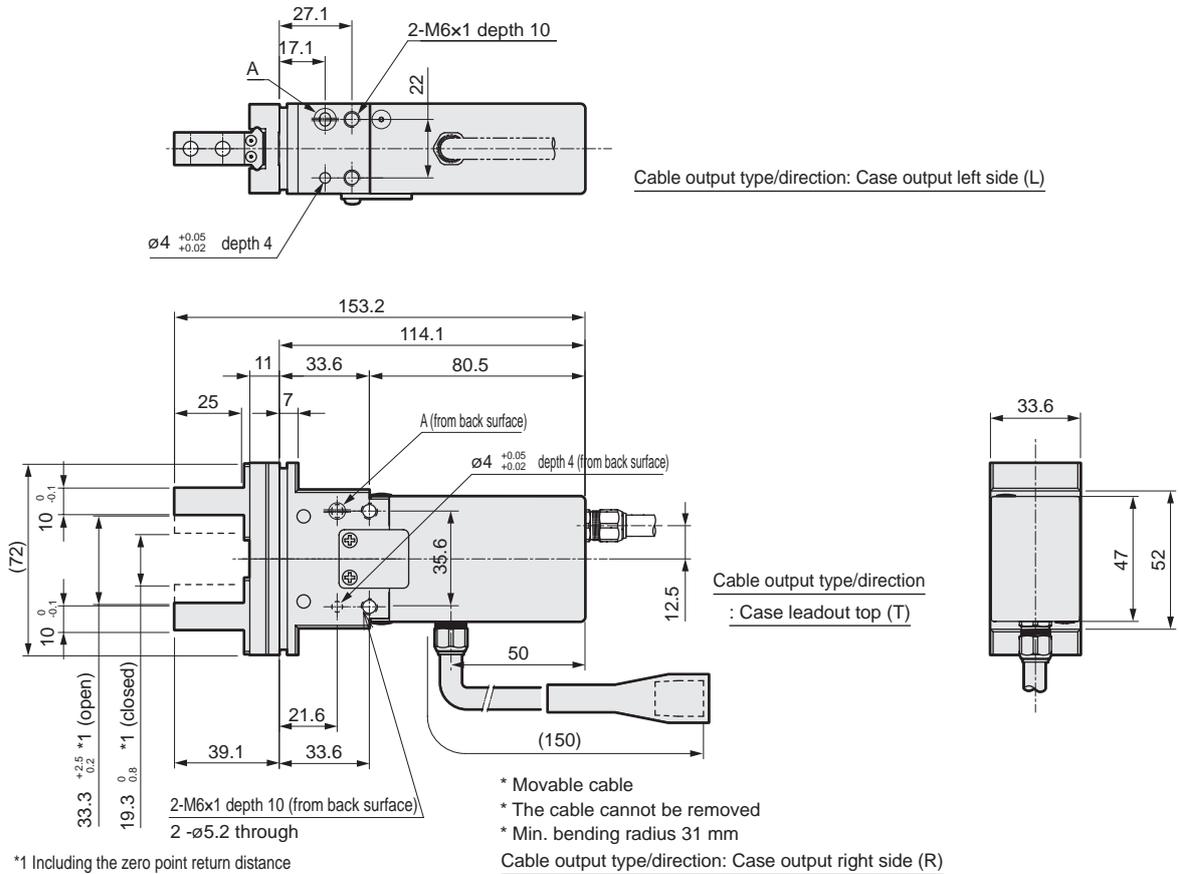
- \* The gripping power and pressing rate are a guide. Power supply voltages, individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing rate.
- \* Speed during gripping operation is for 15mm/s. (L=20)

## Optional weight (\*6) (g)

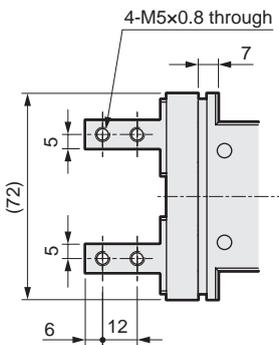
| Option        | Stroke |     |
|---------------|--------|-----|
|               | 14     | 22  |
| Rubber cover  | +20    | -   |
| Case ejection | +30    | +10 |

Dimensions

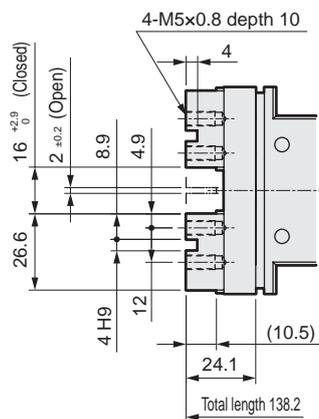
● FLSH-25GH114NC3-L/R/T \*(Stroke: 14mm, rubber cover: none, finger: through hole, cable outlet type/direction: case outlet)



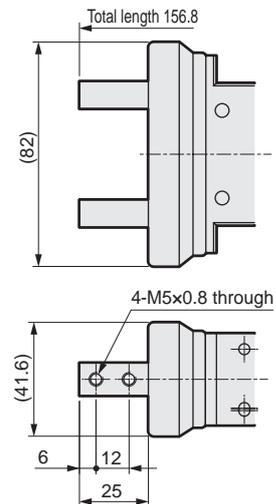
● Finger: Side tapered hole(2)



● Finger: Flat(4)



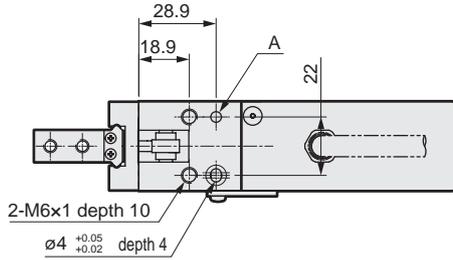
● Rubber cover(G/F) Finger: Basic(N)



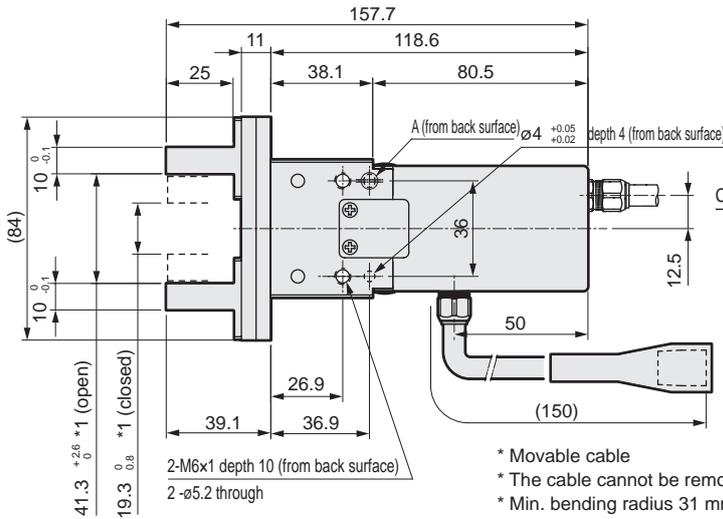
# FLSH-25 Series

## Dimensions

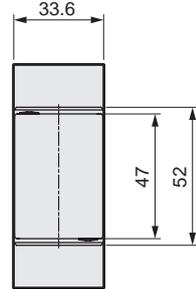
● FLSH-25GH122NCN-L/R/T \*(Stroke: 22mm, rubber cover: none, finger: basic, cable outlet type/direction: case outlet)



Cable output type/direction: Case output left side (L)



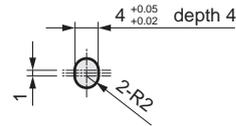
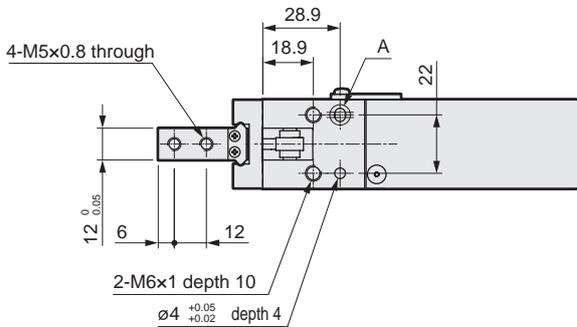
Cable output type/direction : Case leadout top (T)



- \* Movable cable
- \* The cable cannot be removed
- \* Min. bending radius 31 mm

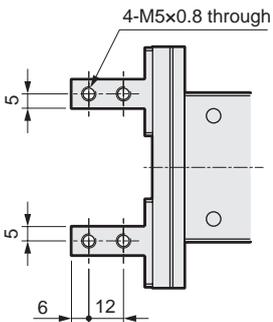
Cable output type/direction: Case output right side (R)

\*1 Including the zero point return distance

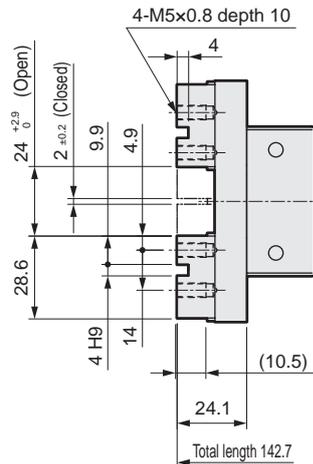


Slot dimensions for A

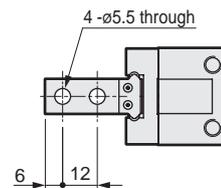
● Finger: Side tapered hole(2)



● Finger: Flat(4)

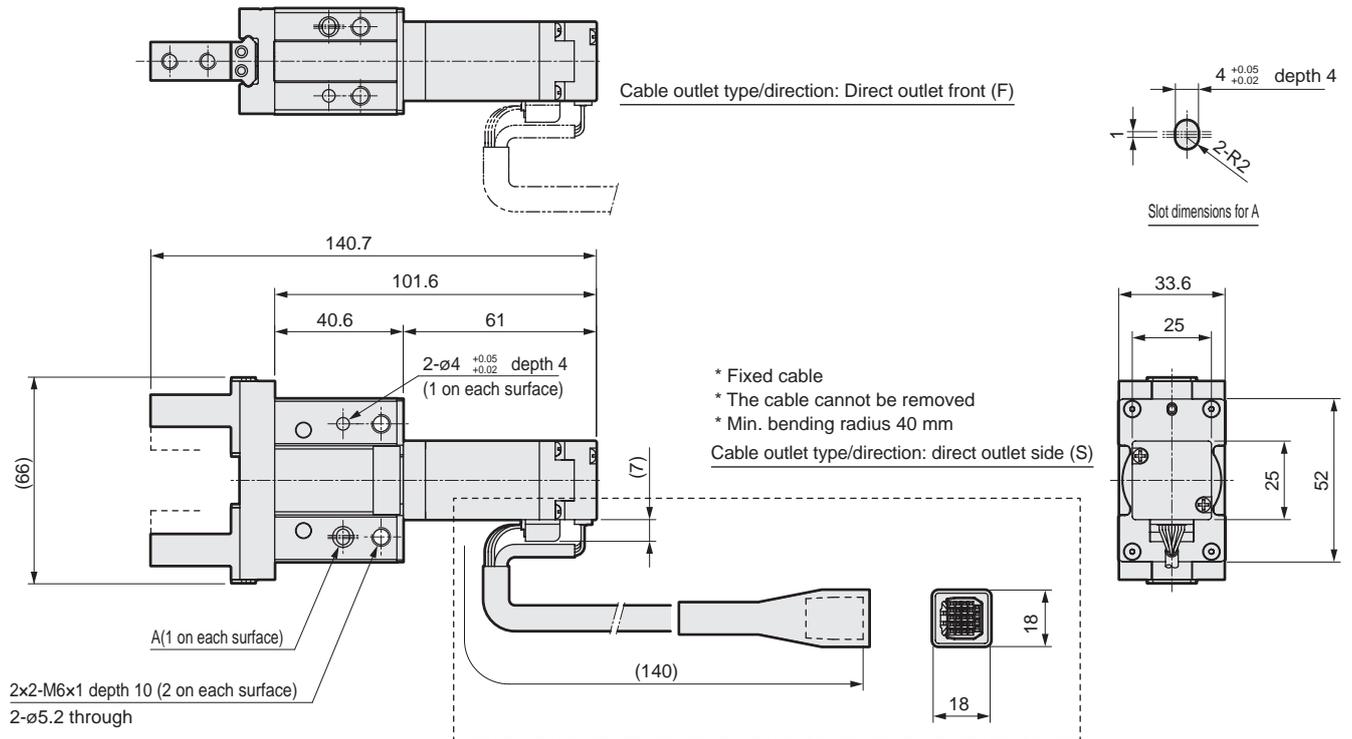


● Finger: Through hole(3)

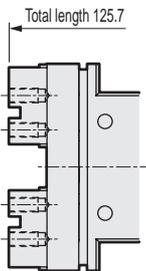


### Dimensions

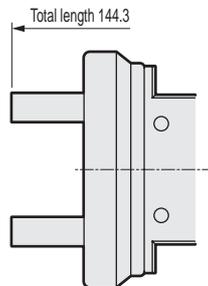
● FLSH-25GH114NCN-F/S \*(Stroke: 14mm, rubber cover: none, finger: basic, cable outlet type/direction: direct outlet)



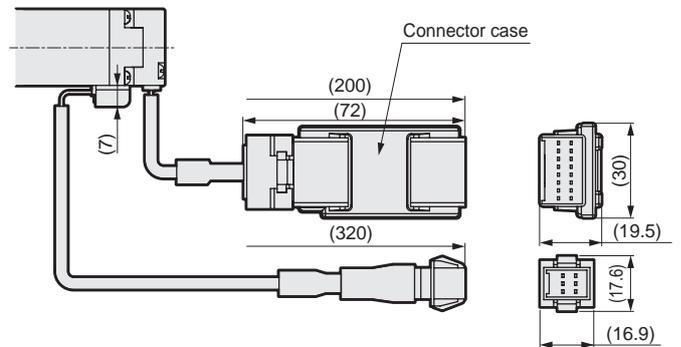
● Finger: Flat(4)



● Rubber cover(G/F)  
Finger: Basic(N)

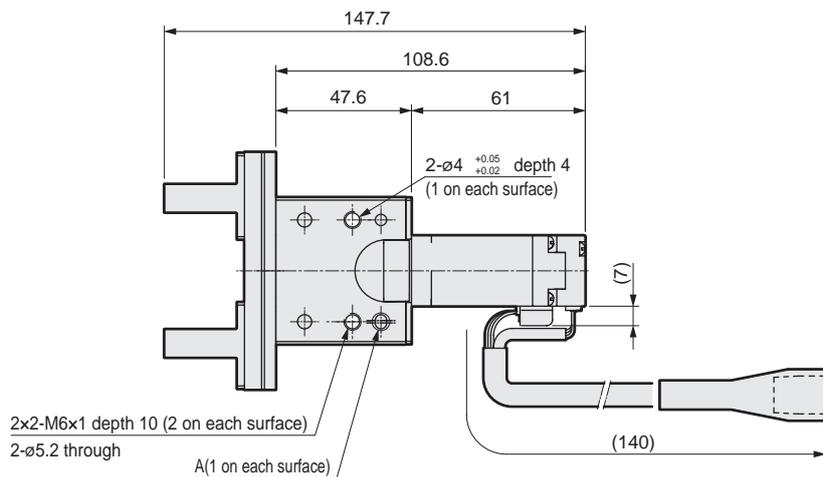


\* The dotted line is as shown below when connecting ECR.

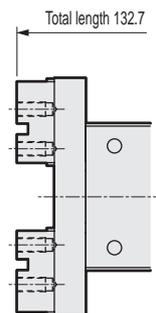


\* The finger shape is the same as that of the case.

● FLSH-25GH122NCN-F/S \*(Stroke: 22mm, rubber cover: none, finger: basic, cable outlet type/direction: direct outlet)



● Finger: Flat



\* The finger shape is the same as that of the case.