

# 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



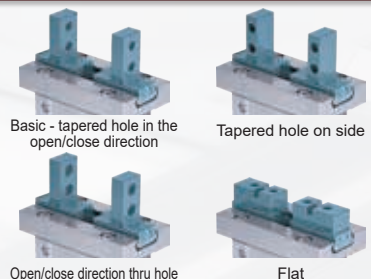
Improved environmental resistance (IP50 with case)

### Long stroke

Size	Conventional stroke	Long stroke
FLSH-16G	6 mm	12 mm
FLSH-20G	10 mm	18 mm
FLSH-25G	14 mm	22 mm

Up to +8 mm compared to conventional

### Finger shape option

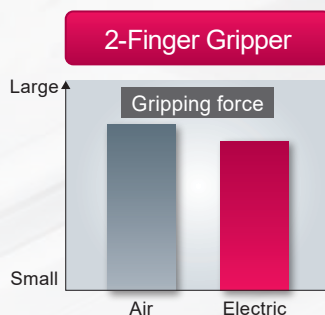


Freely design attachments

## Features of FLSH Series

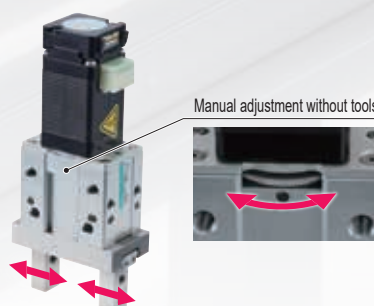
### Realizes high gripping force

Equivalent dimensions and gripping force as Air Hand



### Adjustments made easier

Manual operation mechanism is on the front surface



## Compatible controllers ECG Series



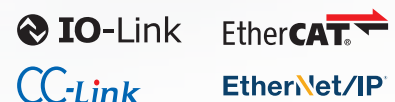
### Helps reduce inventory

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

FLSH - 16 G H1 06 N C N - F S03

<b>A Size</b>
16

<b>B Applicable controller*1</b>
G ECG
Blank ECR

<b>D Stroke</b>
06 6 mm (Single side 3 mm)
12 12 mm (one side 6 mm)

<b>C Screw lead</b>
H1 1.5 mm

<b>E Rubber cover *2</b>
N None
G Chloroprene rubber
F Fluoro rubber

<b>F Encoder</b>
C Incremental encoder

<b>G Finger</b>
N Basic
2 Side tapered hole
3 Through hole
4 Flat

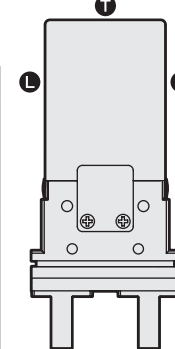
<b>H Cable output type/direction *3*4</b>
L Case ejection Left surface
R Case ejection Right surface
T Case ejection Top
F Direct outlet Front
S Direct outlet Side

<b>I Relay cable *5</b>
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

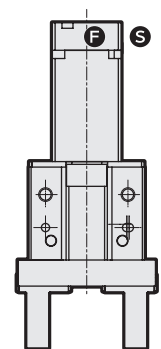
## Option selection table

Option	Model No.	Applicable controller	
		ECG	ECR
D Stroke	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 force *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	N·m	MP: 0.68, MY: 0.68, MR: 1.36
Motor power supply voltage *4		24 VDC ±10% or 48 VDC ±10%
Insulation resistance		10 MΩ, 500 VDC
Withstand voltage		500 VAC for 1 minute
Operating ambient temperature, humidity		0 to 40°C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity		-10 to 50°C (no freezing) 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

\*1 Gripping is done with pressing operation.

\*2 Repeatability indicates variation when the same workpieces are gripped repeatedly with the same operating conditions.

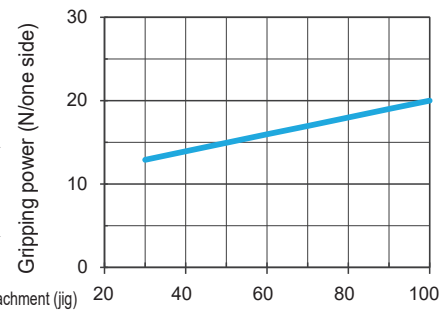
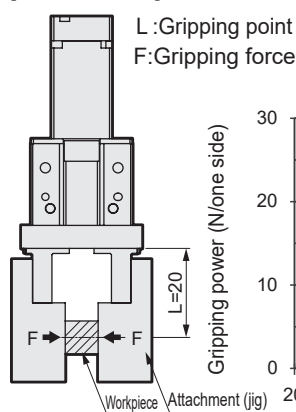
\*3 This may cause variation in the stop position when positioning is repeatedly performed to the same point.

\*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 force and pressing rate

[At 24/48 VDC]



\* The gripping force 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 ratio.

\* Speed during gripping operation is for 15mm/s. (L=20)

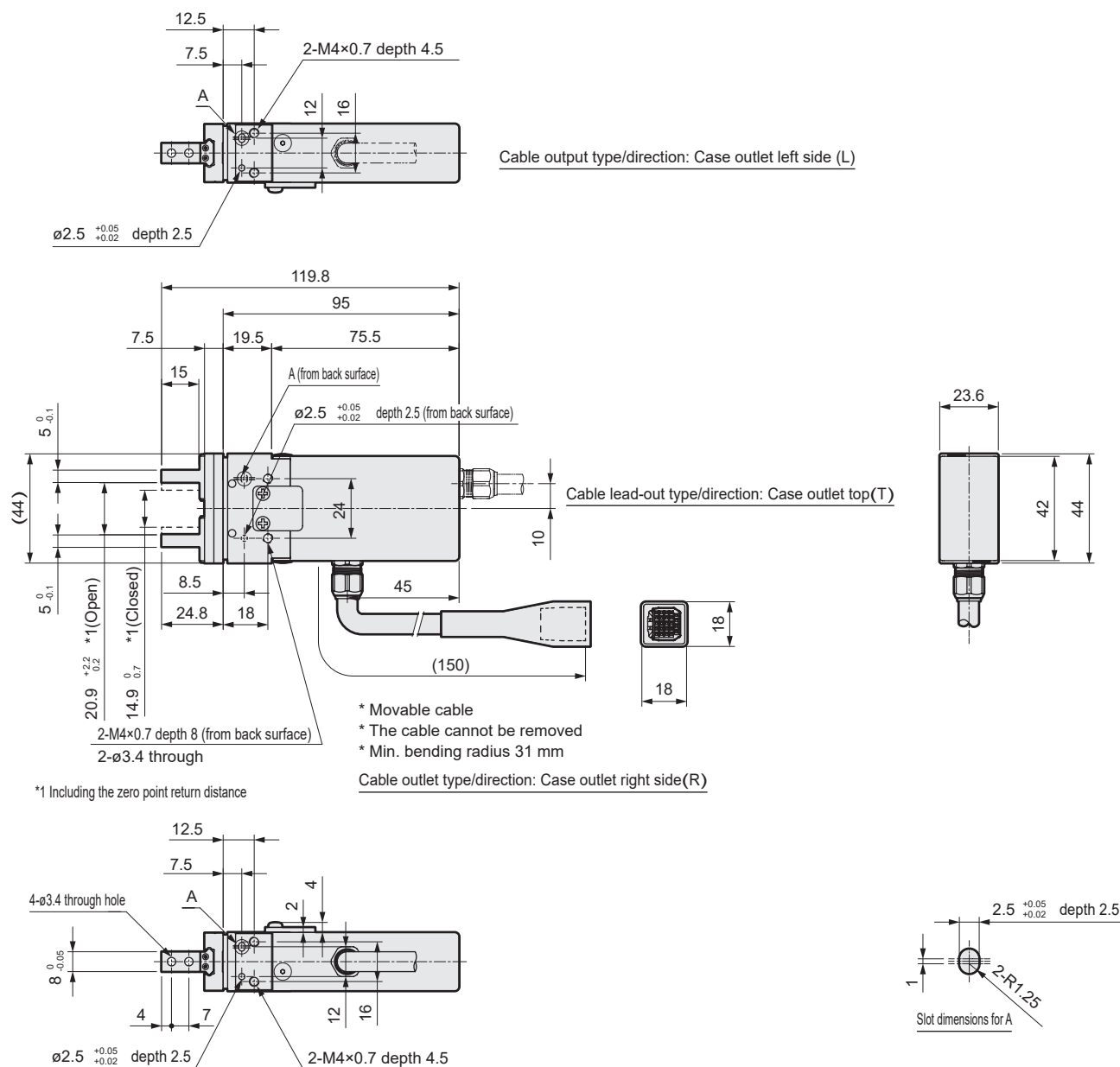
## Optional weight (\*6)

(g)

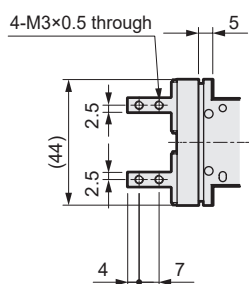
Option	Stroke	
	06	12
Rubber cover	+0	+10
Case ejection	+100	+100

## Dimensions

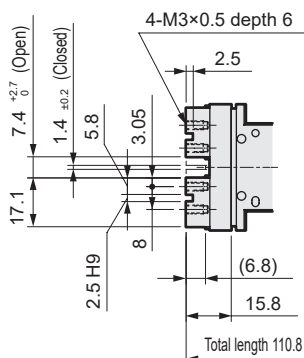
- FLSH-16GH106NC3-L/R/T\* (Stroke: 6 mm, rubber cover: none, finger: through hole, cable outlet type/direction: case outlet)



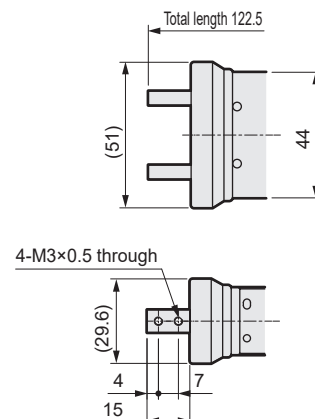
- Finger: Side tapered hole (2)



- Finger: Flat (4)



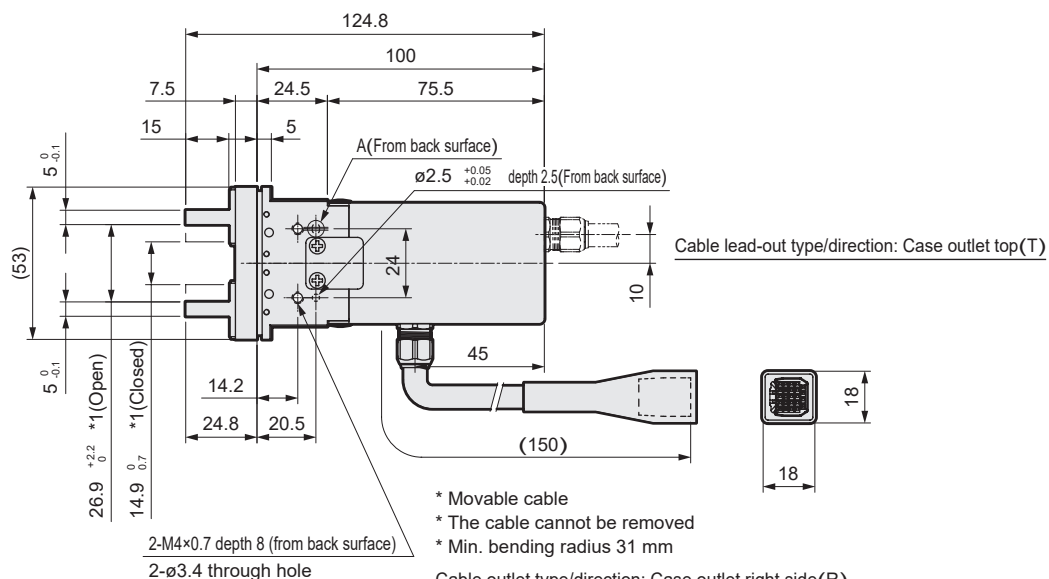
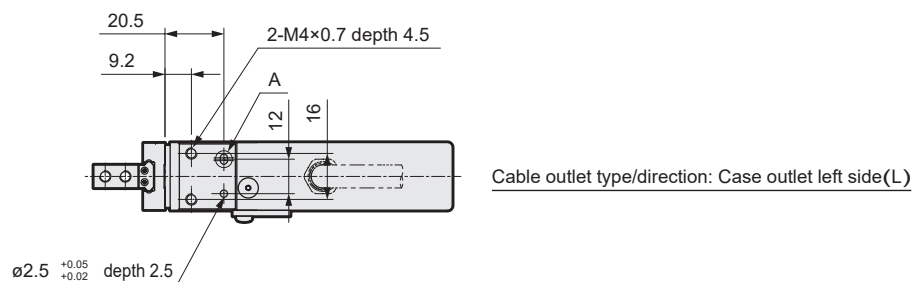
- Rubber cover (G/F) Finger: Basic (N)



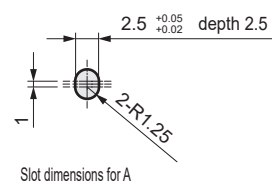
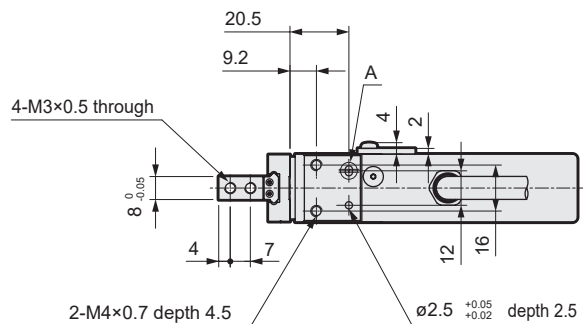
# FLSH-16 Series

## Dimensions

- FLSH-16GH112NCN-L/R/T\* (Stroke: 12mm, rubber cover: none, finger: basic, cable outlet type/direction: case outlet)



\*1 Including the zero point return distance

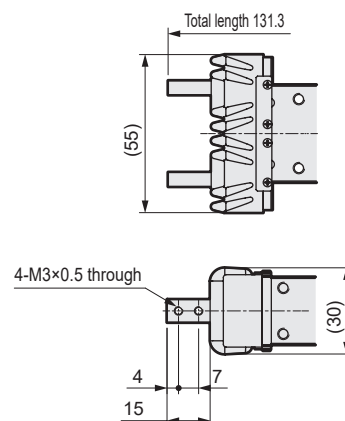
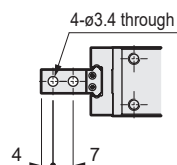
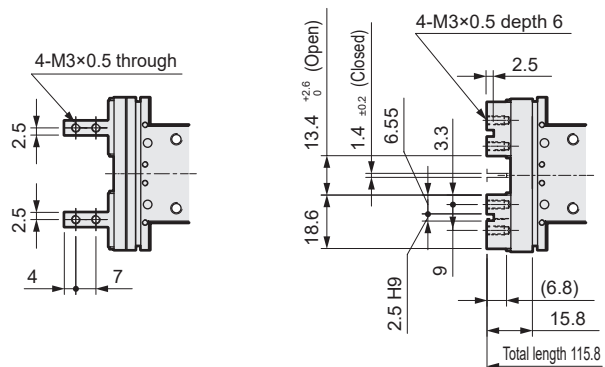


- Finger: Side tapered hole(2)

- Finger: Flat(4)

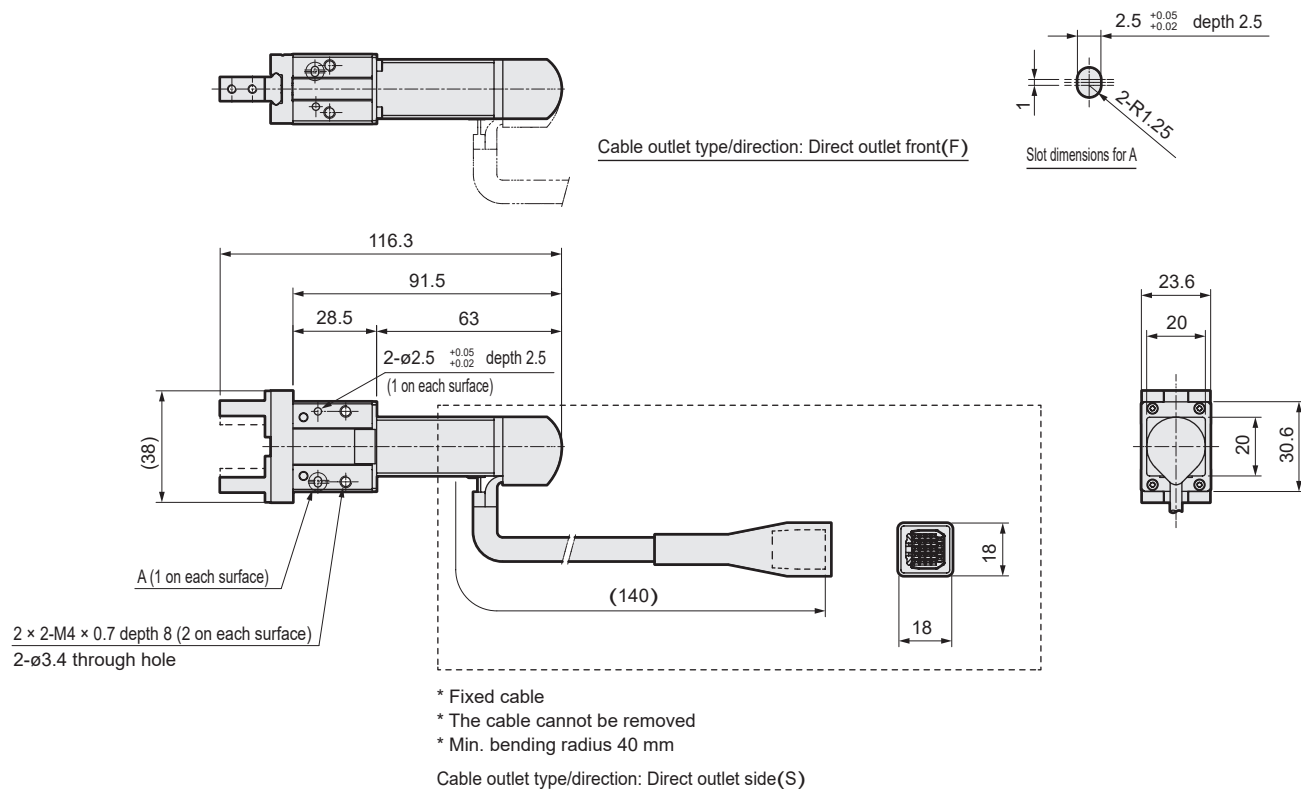
- Finger: Through hole(3)

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

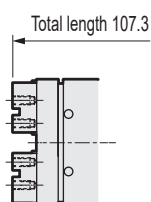


### Dimensions

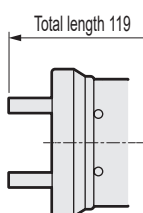
- FLSH-16GH106NCN-F/S\* (Stroke: 6 mm, rubber cover: none, finger: basic, cable outlet type/direction: Direct outlet)



- Finger: Flat(4)

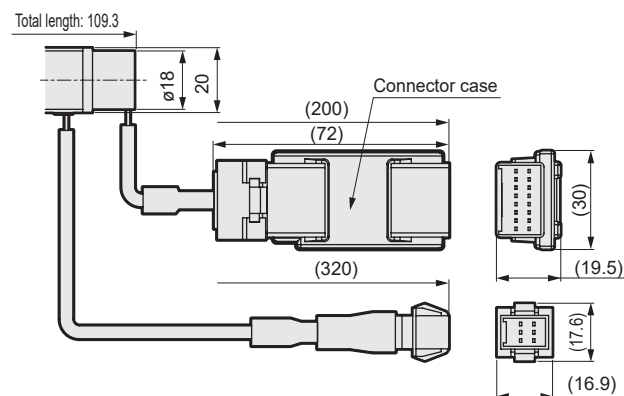


- Rubber cover (G/F)  
Finger: Basic(N)



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

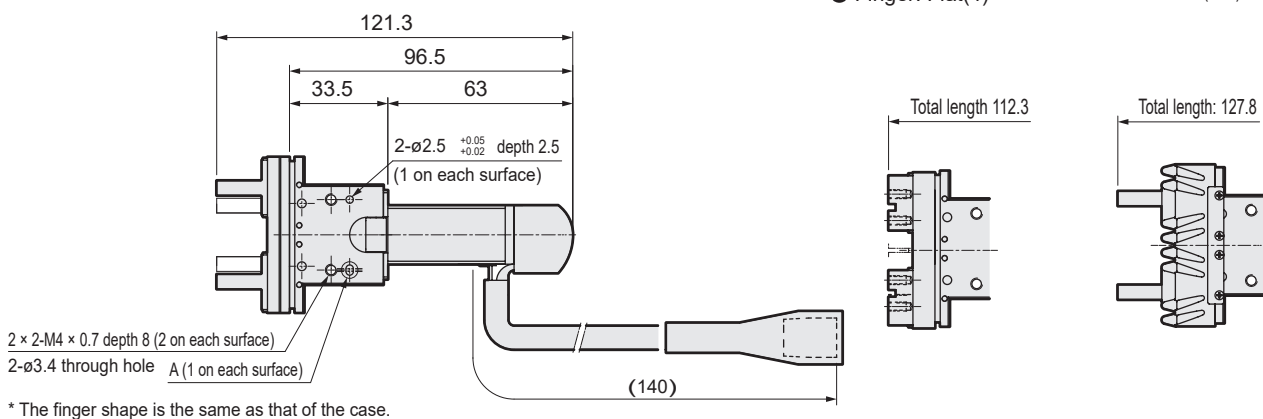
\* The dotted line is as shown below when connecting ECR.



- FLSH-16GH112NCN-F/S\* (Stroke: 12mm, rubber cover: none, finger: basic, cable outlet type/direction: direct outlet)

- Finger: Flat(4)

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





## Electric Actuator 2-Finger Gripper

# FLSH-20

□ 25 stepper motor



### How to order

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

#### A Size

20

#### B Applicable controller\*1

G	ECG
Blank	ECR

#### D Stroke

10	10 mm (5 mm on one side)
18	18 mm (9 mm per side)

#### C Screw lead

H1 1.5 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 outlet Front
S	Direct outlet Side

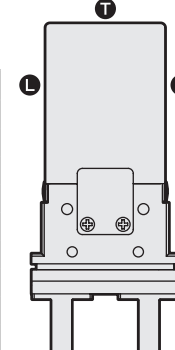
#### I Relay cable \*5

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

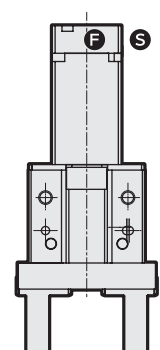
### Option selection table

Option	Model No.	Applicable controller	
		ECG	ECR
D Stroke	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	□ 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 force *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%
Insulation resistance		10 MΩ, 500 VDC
Withstand voltage		500 VAC for 1 minute
Operating ambient temperature, humidity		0 to 40 °C (no freezing) 35 to 80% RH (no condensation)
Storage ambient temperature, humidity		-10 to 50 °C (no freezing) 35 to 80% RH (no condensation)
Atmosphere		No corrosive gas, explosive gas, or dust
Degree of protection		IP40(IP50 *5)
Weight	g	
	ECG *6	380
	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.

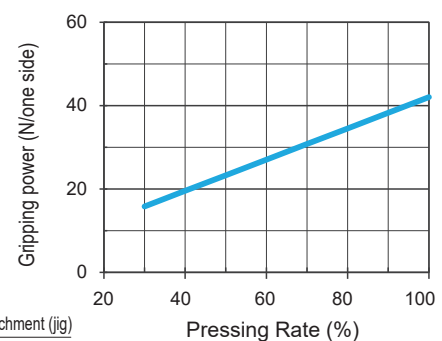
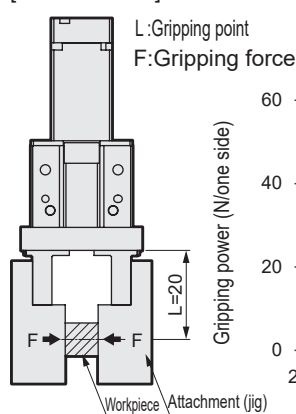
\*3 This may cause variation in the stop position when positioning is repeatedly performed to the same point.

\*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 force and pressing rate

[At 24/48 VDC]



\* The gripping force 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 ratio.

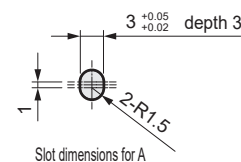
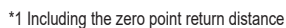
\* Speed during gripping operation is for 15mm/s. (L=20)

### Optional weight (\*6)

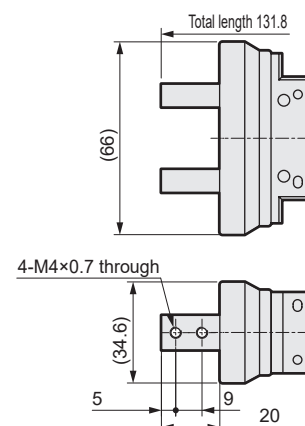
(g)

Option	Stroke	
	10	18
Rubber cover	+10	+20
Case ejection	+110	+110

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



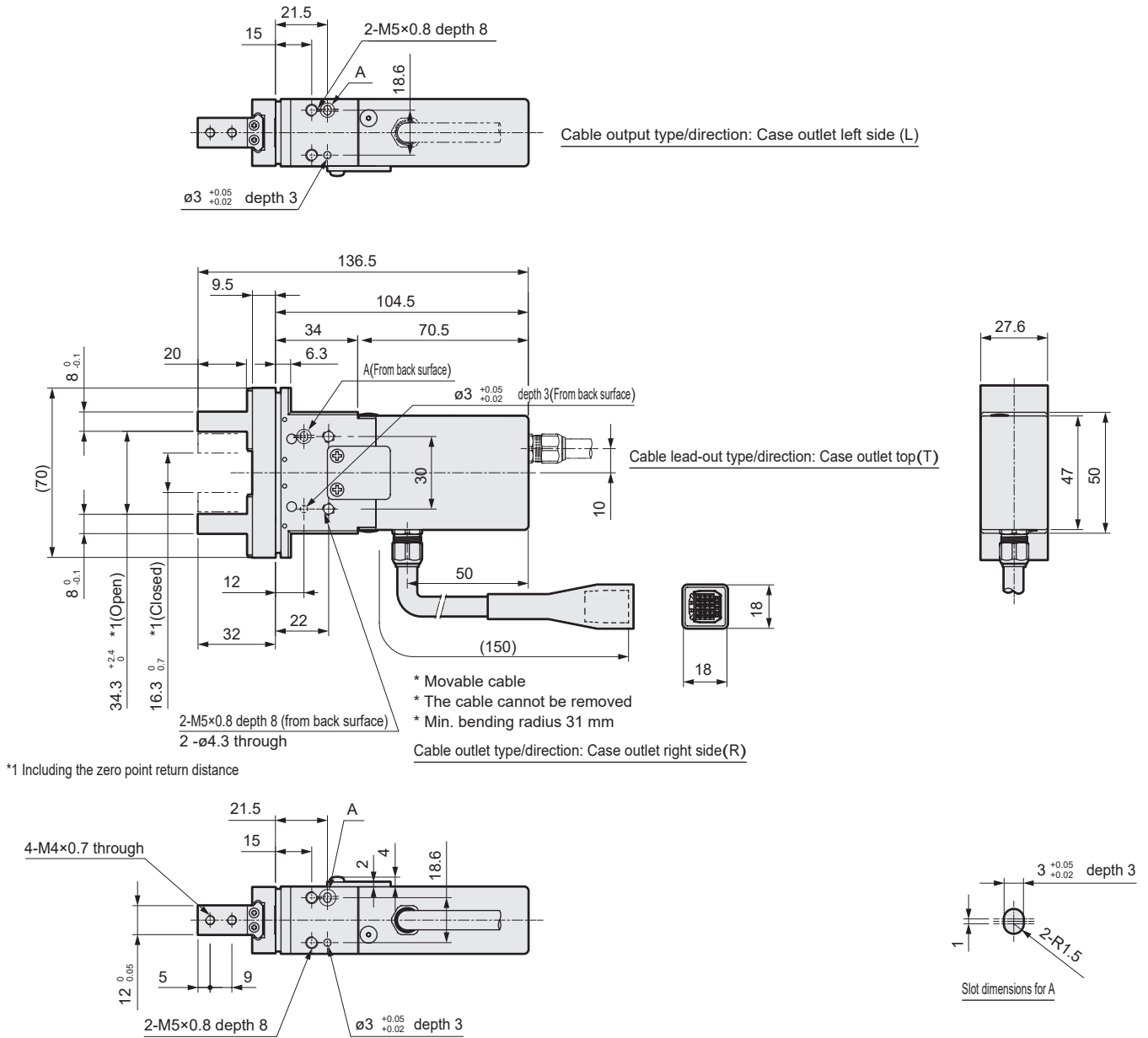
- Rubber cover(G/F) Finger: Basic(N)



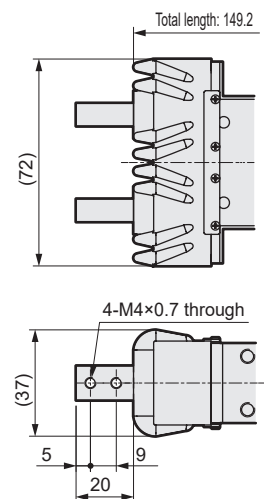
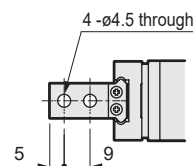
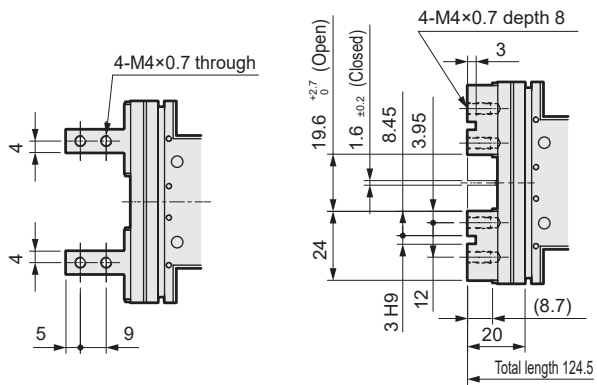


## Dimensions

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



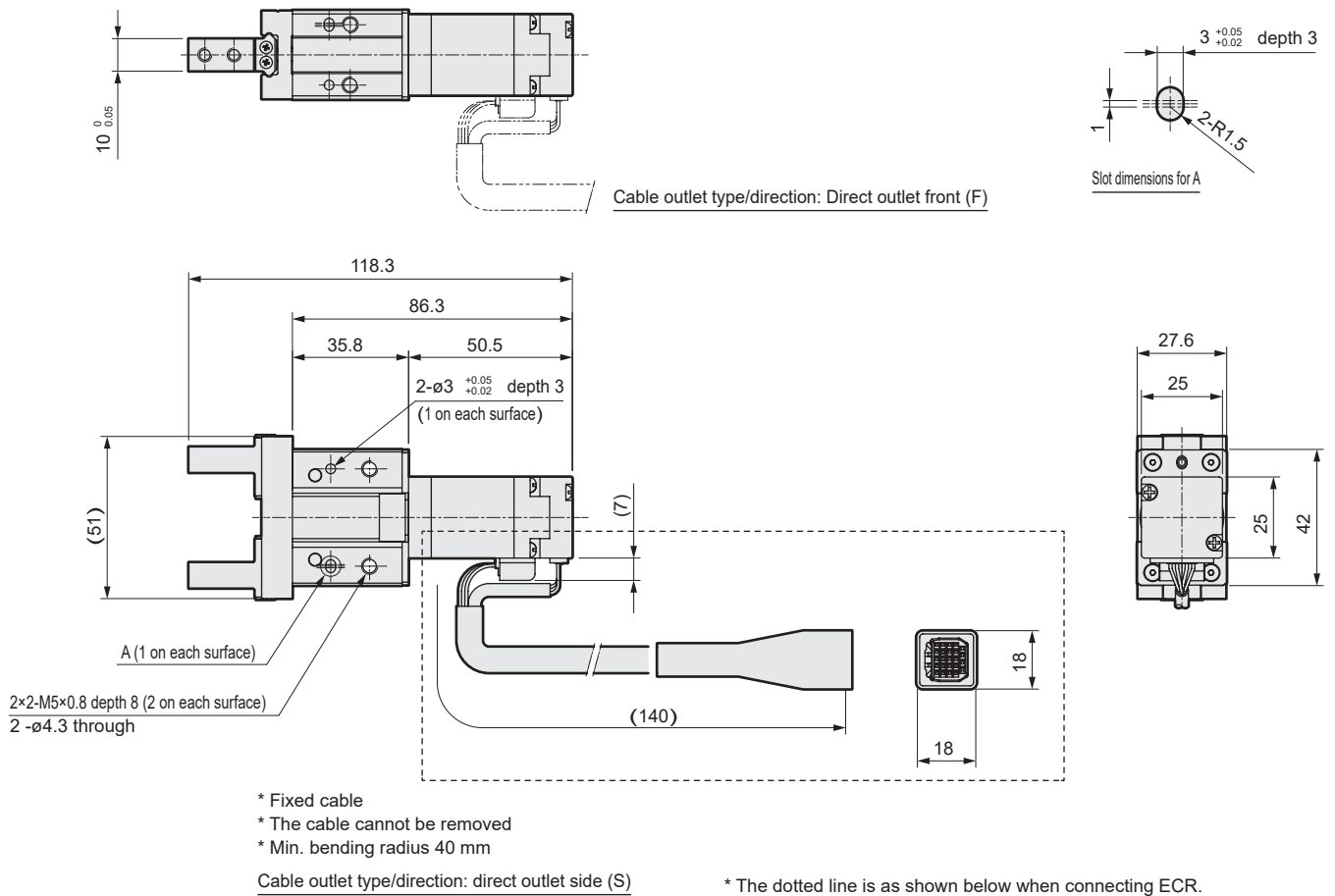
- Finger: Side tapered hole(2)      ● Finger: Flat(4)      ● Finger: Through hole(3)      ● Rubber cover(G/F) Finger: Basic(N)



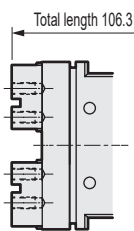


### Dimensions

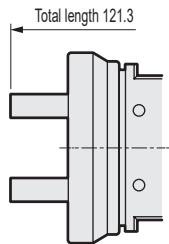
- FLSH-20GH110NCN-F/S\* (Stroke: 10mm, rubber cover: none, finger: basic, cable outlet type/direction: direct outlet)



- Finger: Flat(4)

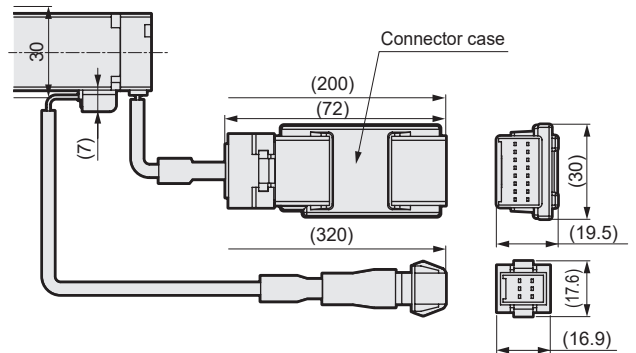


- Rubber cover(G/F)  
Finger: Basic(N)

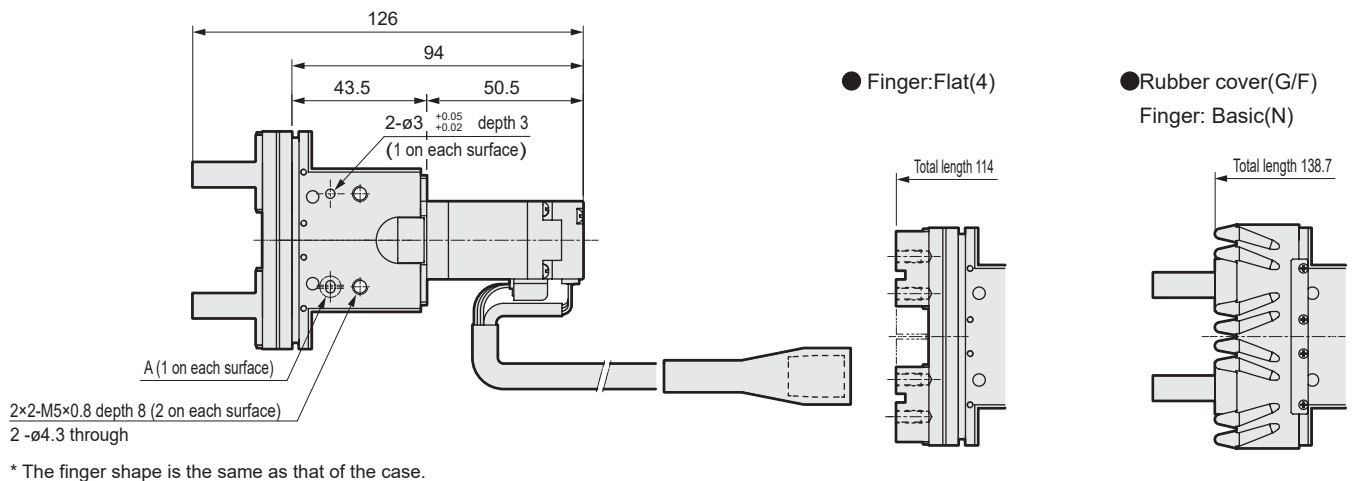


\* The finger shape is the same as that of the case.

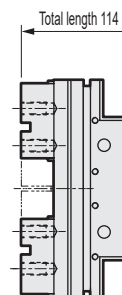
\* The dotted line is as shown below when connecting ECR.



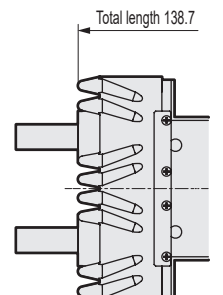
- FLSH-20GH118NCN-F/S\* (Stroke: 18mm, rubber cover: none, finger: basic, cable outlet type/direction: direct outlet)



- Finger: Flat(4)



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





## 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 11mm)

**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

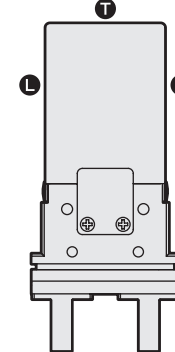
**H Cable output type/direction \*3\*4**  
L Case ejection Left surface  
R Case ejection Right surface  
T Case ejection Top  
F Direct outlet Front  
S Direct outlet Side

**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

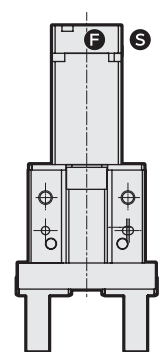
### Option selection table

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)".

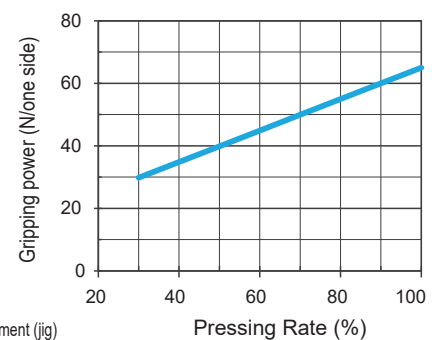
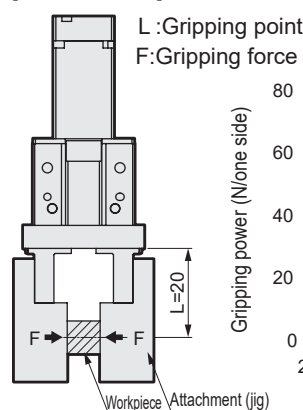
### Specifications

Motor	□ 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 force *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	24 VDC ±10% or 48 VDC ±10%	
Insulation resistance	10 MΩ, 500 VDC	
Withstand voltage	500 VAC for 1 minute	
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)	
Storage ambient temperature, humidity	-10 to 50 °C (no freezing) 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
	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 force and pressing rate

[At 24/48 VDC]

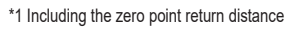


- \* The gripping force and pressing rate are a guide. Power supply voltages, individual motor differences and variations in mechanical efficiency may result in differing actual values, even at the same pressing ratio.
- \* Speed during gripping operation is for 15mm/s. (L=20)

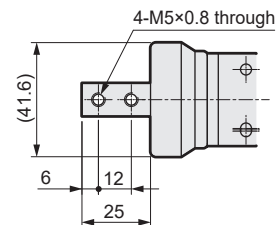
### Optional weight (\*6) (g)

Option	Stroke	
	14	22
Rubber cover	+20	-
Case ejection	+100	+100

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



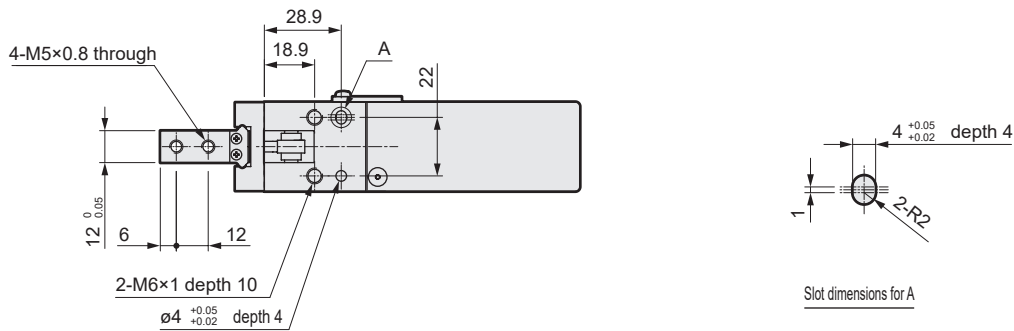
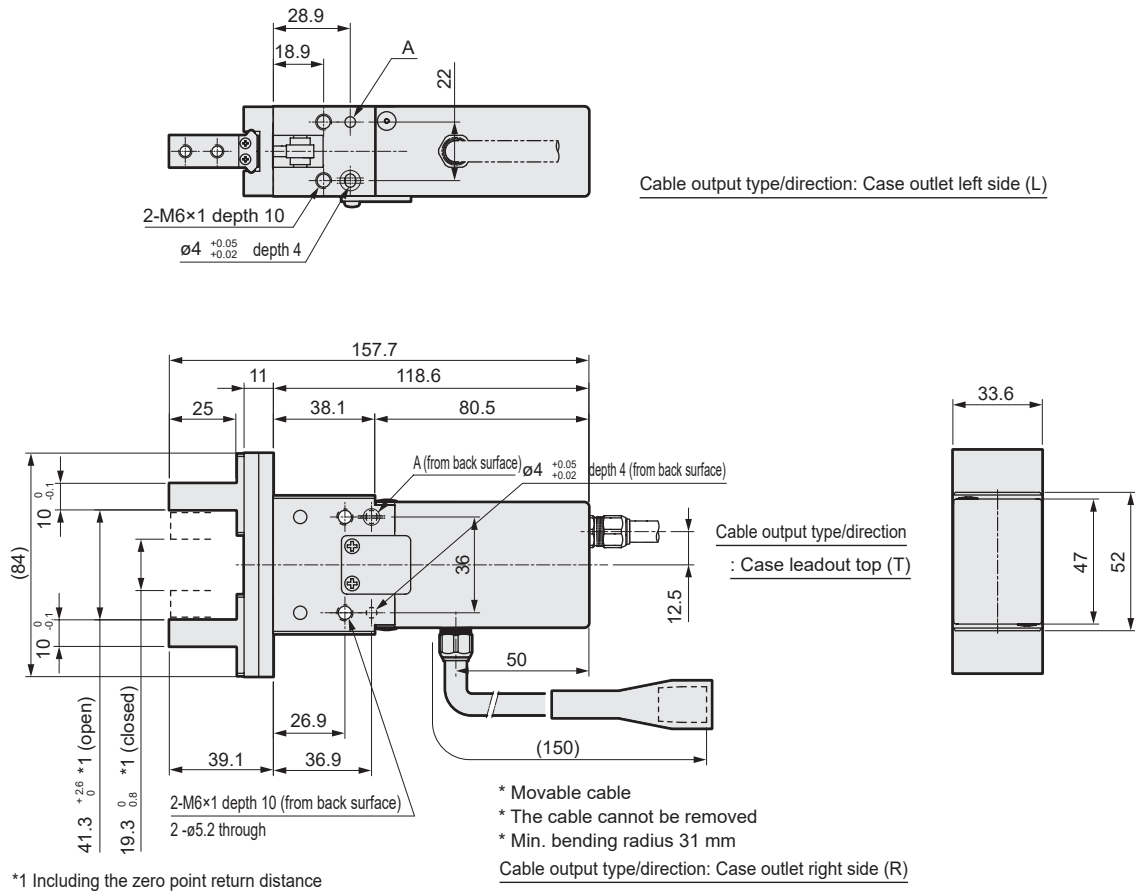
- Rubber cover(G/F) Finger: Basic(N)



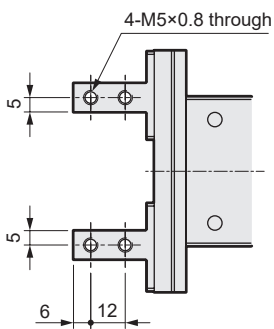
# FLSH-25 Series

## Dimensions

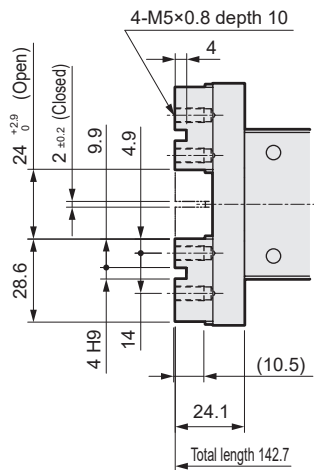
- FLSH-25GH122NCN-L/R/T \*(Stroke: 22mm, rubber cover: none, finger: basic, cable outlet type/direction: case outlet)



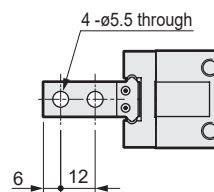
- Finger: Side tapered hole(2)



- Finger: Flat(4)

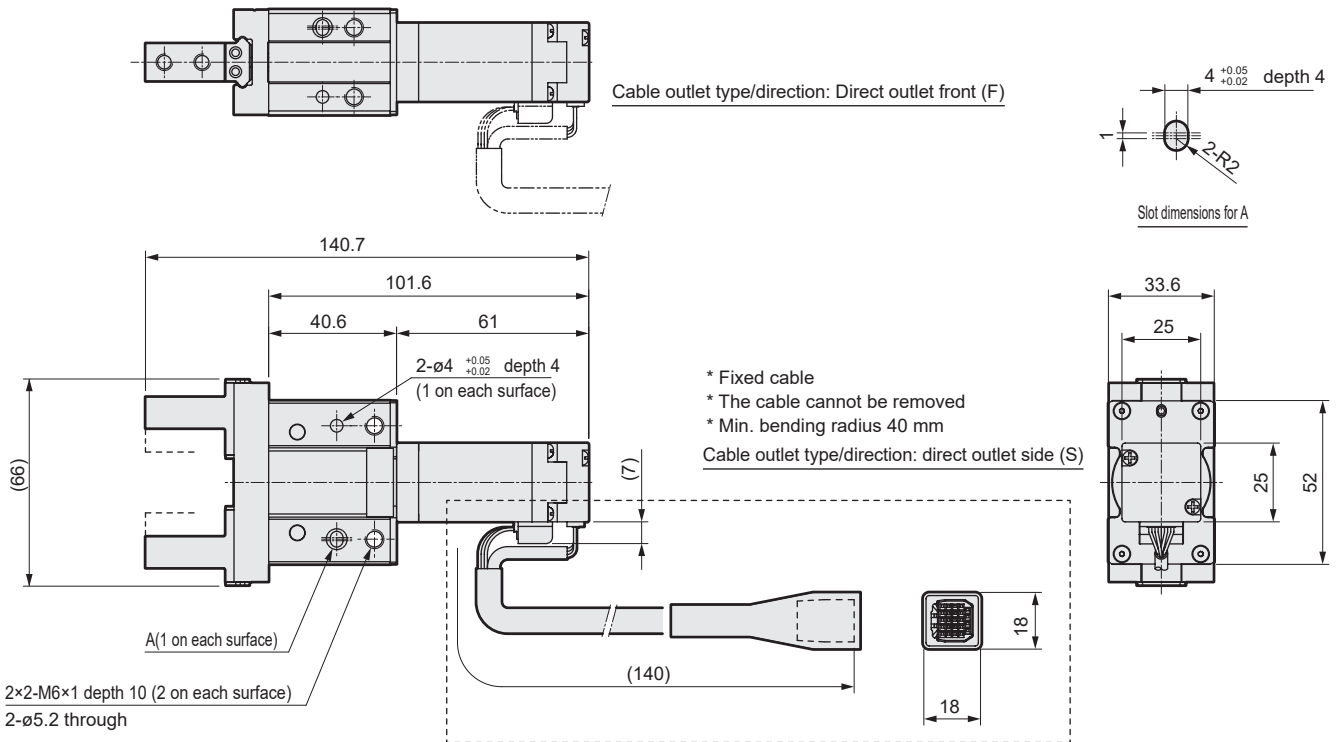


- Finger: Through hole(3)

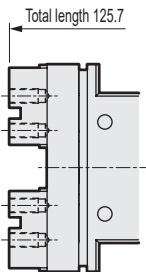


## Dimensions

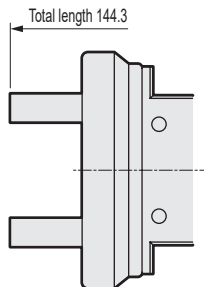
- FLSH-25GH114NCN-F/S \*(Stroke: 14mm, rubber cover: none, finger: basic, cable outlet type/direction: direct outlet)



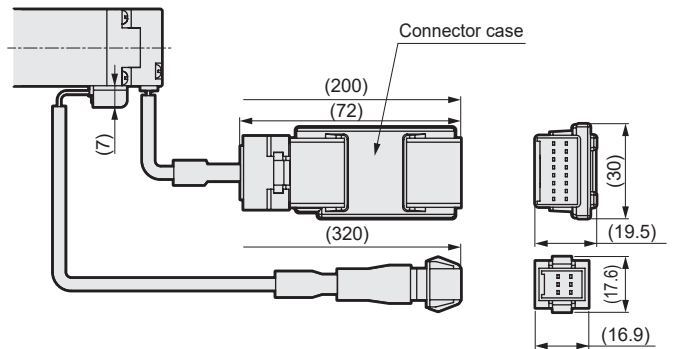
- Finger: Flat(4)



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

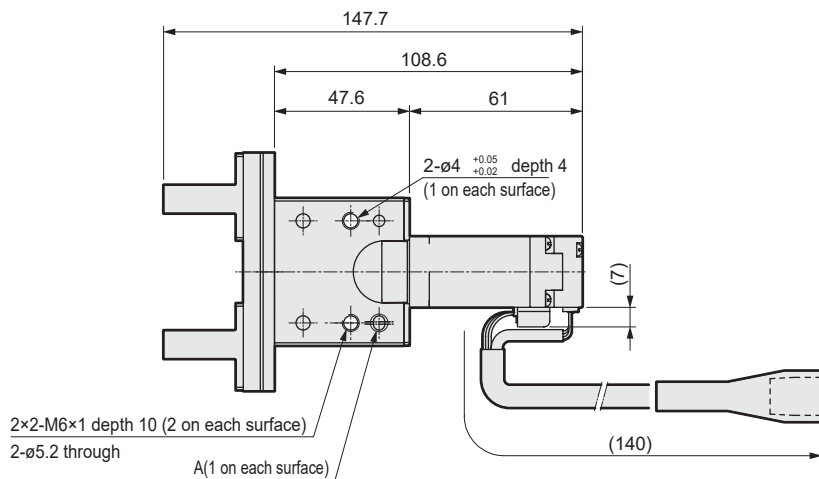


\* The dotted line is as shown below when connecting ECR.

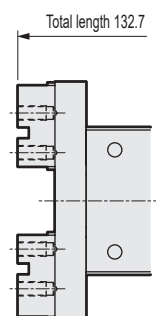


\* The finger shape is the same as that of the case.

- 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.