

EDF2 Series

Sliding Parallel Electric Gripper

CHELIC®



Chemistry



Automation



Robotic Arms



Testing



Semiconductors

Integrated Drive and Controller

- Built-in driver reduces wiring and saves installation space.

Precision Linear Guide Structure

- High rigidity and precision guiding mechanism.

Stainless Steel Jaws

- Jaws made of stainless steel, excellent corrosion resistance.

Multiple Communication Interfaces

- Supports I/O and RS-485 communication.



Max. Gripping Force

102 N

Max. Stroke

80mm

Repeatability

±0.02mm

Open/close speed

60mm/s

Controllability



Position Control

Adjustable open/
close position



Gripping Force Control

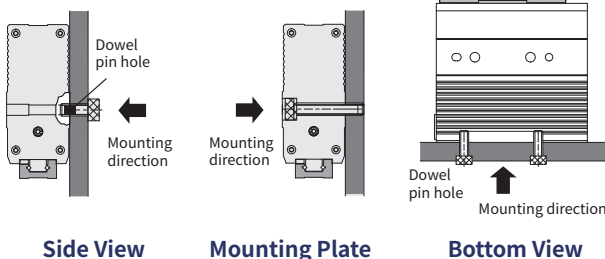
Adjustable clamping force



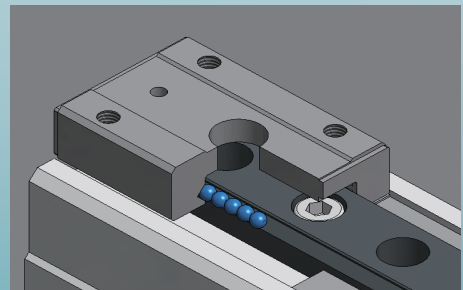
Speed Control

Adjustable open/
close speed

Body-Tapped-Hole-Mounting



Precision Linear Guide Design



EDF2 Series – Parallel Electric Gripper (Long Stroke)

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Product features/ Code of order

Features

- Equipped with precision linear guide, providing high rigidity and strong support force.
- Stainless steel integrated finger structure ensures high precision and stability.
- Adjustable position, speed, and gripping force.



Specifications

Item	Model	EDF2-08	EDF2-12	EDF2-20
Gripping Force (N)	Standard Motor	17~23	17~42	50~102
Opening Stroke	mm	32	48	80
Maximum Speed	mm/s	40	60	60
Drive Method		Lead screw		
Operating Temperature Range	°C	5~40		
Operating Humidity Range	%	35~85		
Motor Dimensions		□ 20	□ 28	□ 35
Repeat Positioning Accuracy	mm	±0.02		
Weight	kg	0.32	0.65	1.61
Communication Protocol		RS-485		
Operating Voltage	V	DC 24V		
Current	A	1	1.5	1.8
Protection Rating		IP40		
Complies with International Standards		CE ' RoHS		

Notes :

- 1.Speed and thrust vary depending on cable length, load weight, and installation conditions. When cable length exceeds 5 m, speed and thrust may decrease by up to 10%.
- 2.If the load exceeds the recommended value, product service life will shorten.
- 3.Gripping force corresponds to approximately 30~70% of the current value.

Code of order **EDF2 20 – 03**

— 1 — 2 —

1

Mark	Motor Size	Opening/Closing Stroke (mm)
08	□ 20	32
12	□ 28	48
20	□ 35	80

2

Mark	Motor Cable Length (m)
None	Without Cable
03	3
05	5

EDF2 Series – Parallel Electric Gripper (Long Stroke)



Model selection

Step 1 Confirmation of the Workpiece → **Step 2** Calculation of Required Gripping Force → **Step 3** Model Selection from Gripping Force Chart

Step 1 Confirmation of the Workpiece

Confirm the weight of the clamped object

Step 2 Calculation of Required Gripping Force

- Symbols Used in the Diagram

F: Gripping force, unit: Newton (N)
 W: Workpiece weight, unit: Newton (N)
 m: Workpiece mass, unit: kilogram (kg)
 g: Gravitational acceleration (= 9.8 m/s²)
 μ: Coefficient of friction between the material and the gripper

- Condition to Prevent Workpiece from Dropping

$$2 \times \mu F > W \Rightarrow F > \frac{W}{2 \times \mu}$$

↳ number of gripper fingers

- With Safety Factor SF, then F is

$$F = \frac{W}{2 \times \mu} \times SF$$

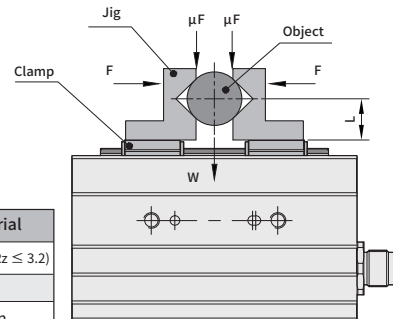
- Calculation Range

When the safety factor SF = 4 and μ = 0.2

$$F = \frac{W}{2 \times 0.2} \times 4 = 10 \times W$$

- Coefficient of Friction μ <Reference Values>

Coefficient of Friction (μ)	Workpiece Material
0.1	Metal (polished surface Rz ≤ 3.2)
0.2	Metal
≥ 0.2	Rubber, Resin



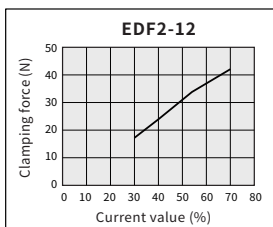
Step 3 Model Selection from Gripping Force Chart

- Calculation Example

Gripped object = 0.2 kg
 Safety factor = 13
 (Usually 10–20 times the weight of the object)

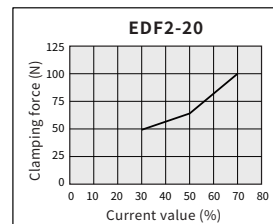
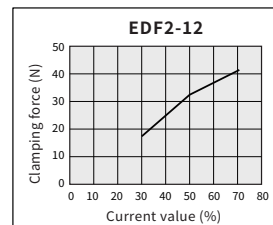
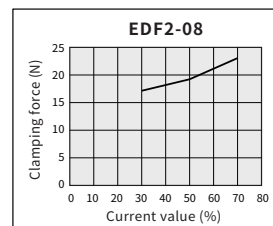
Required gripping force
 = 0.2kg x 13 x 9.8m/s² ≈ 25.48N or more

Please use within the range shown in the chart.



- Note

1. The gripping force <F> refers to the force applied by one finger in a two-finger gripping scenario.
2. Gripping distance <L>: Please note that the greater the distance, the weaker the gripping force becomes.

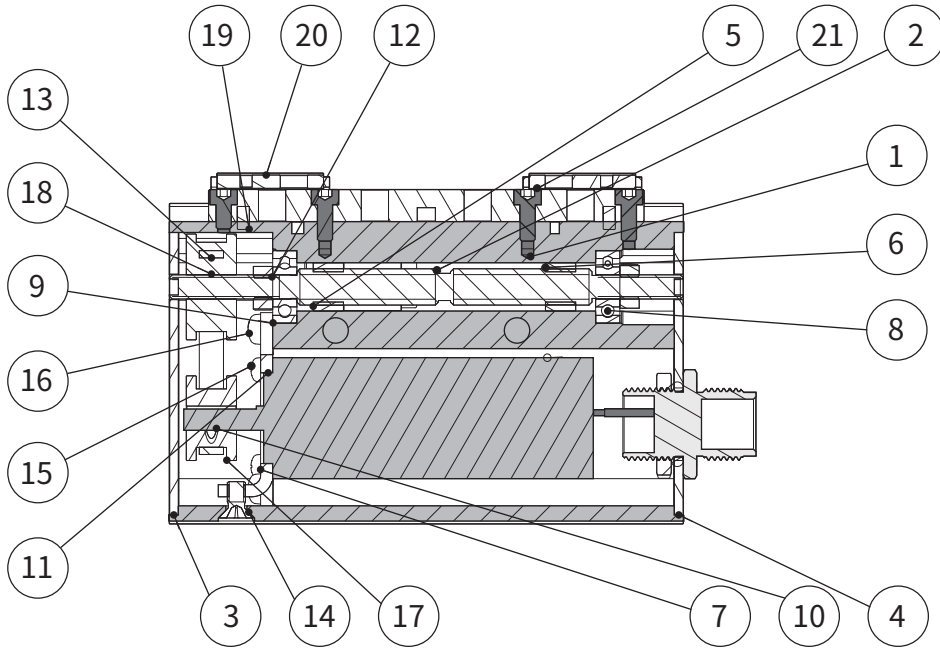


EDF2 Series – Parallel Electric Gripper (Long Stroke)

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Product features

Internal Structure Diagram



Parts and Materials List

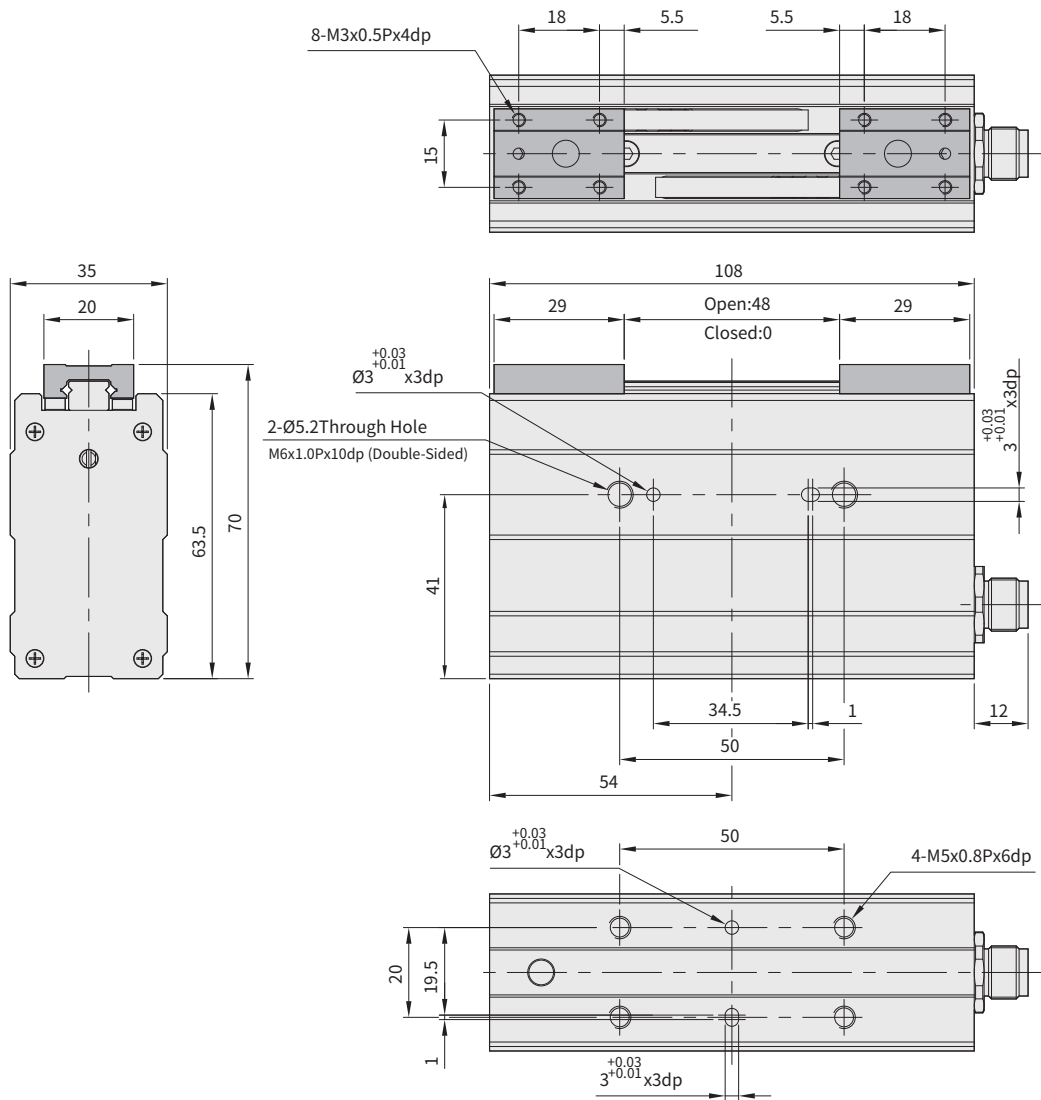
No.	Name	Material	No.	Name	Material
1	Body	Aluminum Alloy	12	Nut	Alloy Steel
2	Screw Cap	Stainless Steel	13	Pulley B	Aluminum Alloy
3	Front Cover	Stainless Steel	14	Bolt	Alloy Steel
4	Bushing	Stainless Steel	15	Bolt	Alloy Steel
5	Link Rod	Stainless Steel	16	Bolt	Alloy Steel
6	Shaft	Stainless Steel	17	Bolt	Alloy Steel
7	Pin Holder Seat	Alloy Steel	18	Pulley	Rubber
8	Bearing	Bearing Steel	19	Stopper	Bearing Steel
9	Bearing	Bearing Steel	20	Slider Assembly	Bearing Steel
10	Pulley A	Aluminum Alloy	21	Bolt	Alloy Steel
11	Bolt	Alloy Steel			

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Dimensions

EDF2-12

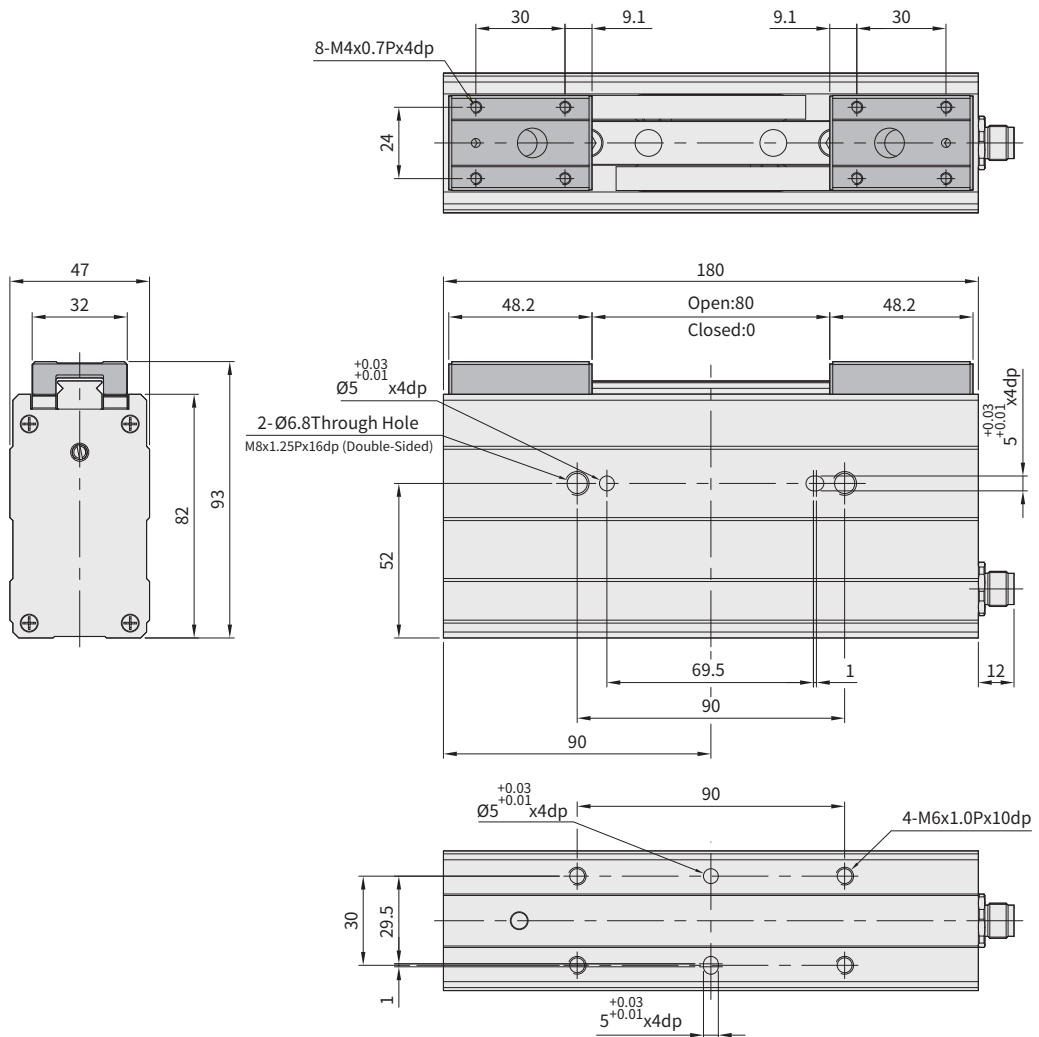


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Dimensions

EDF2-20

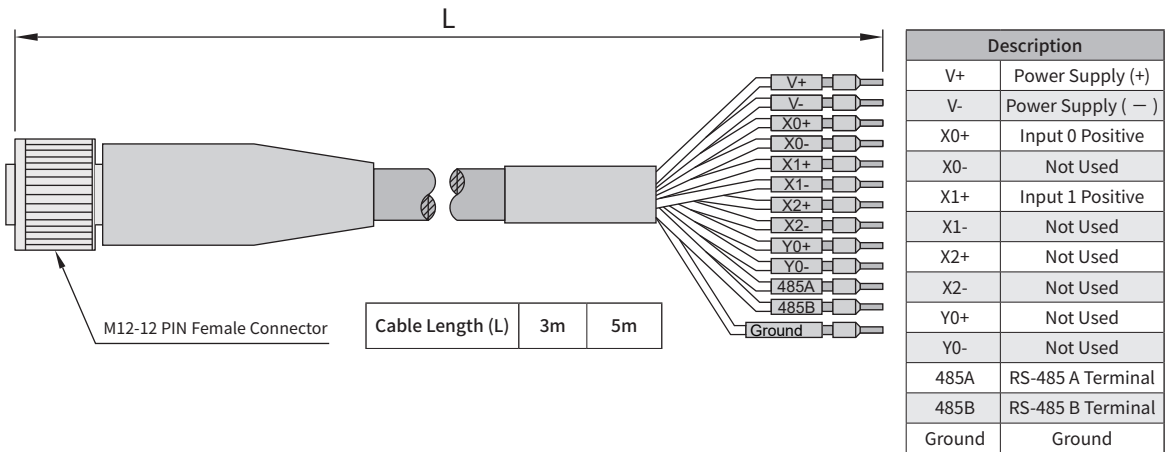


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Motor wiring diagram

EDF2-08 Motor Wiring Diagram



EDF2-12 / EDF2-20 Motor Wiring Diagram

