



EFG-8 NPN

Product manual



Huiling-tech Robotic Co., Ltd

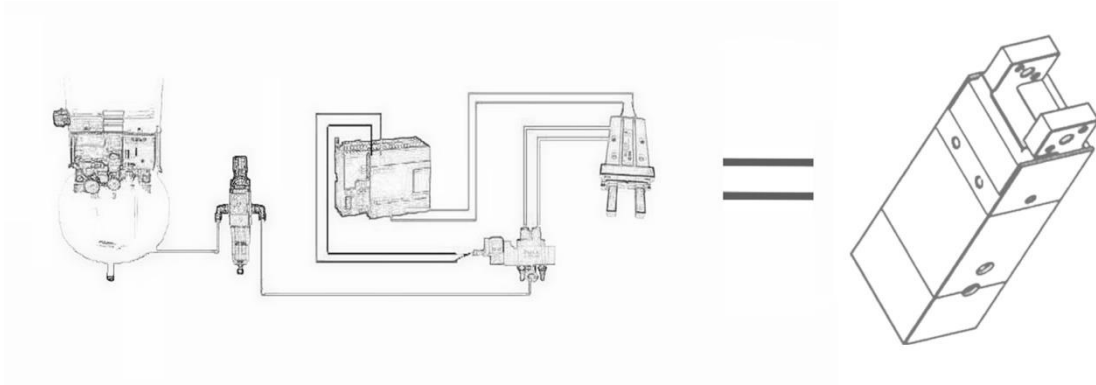
Electric 2-Fingers Parallel Gripper EFG-8



- ✓ Brush-Less DC motor
- ✓ Replaceable terminal can suit various demands
- ✓ Can clamp fragile objects, i.e. eggs, test tubes, and circular rings.
- ✓ Applicable to non-air source environments, i.e. laboratories and hospitals

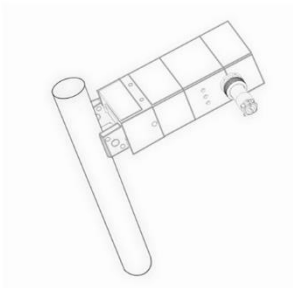
Promote a Revolution in Replacing

Pneumatics Products with Motor-Driven Ones

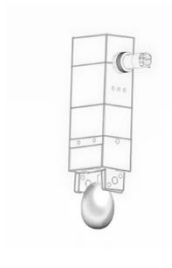


- The EFG series of motor-driven grippers which can be replaced the air compressor, filter, solenoid valve, throttle valve, and pneumatic gripper perfectly.
- With more than 7 million service life, it is in consistent with Japanese traditional cylinder.

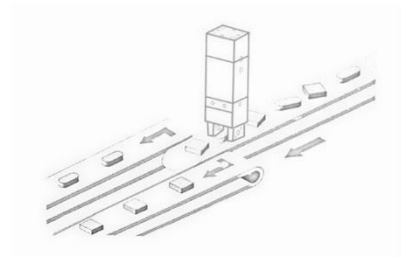
Application scenario



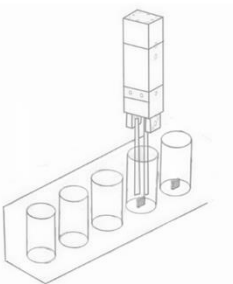
Fragile scenario 1(such as test tube)



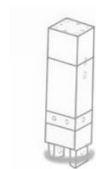
Fragile scenario 2(such as egg)



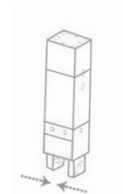
Disorder layout, spare parts arrangement and selection



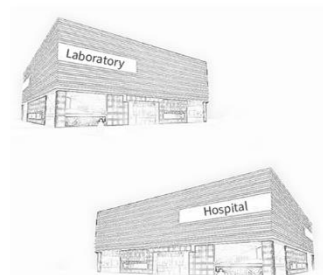
Clamping in narrow scenario



Easy to deform scenario (such as ring)



Soft contact high frequency scenario

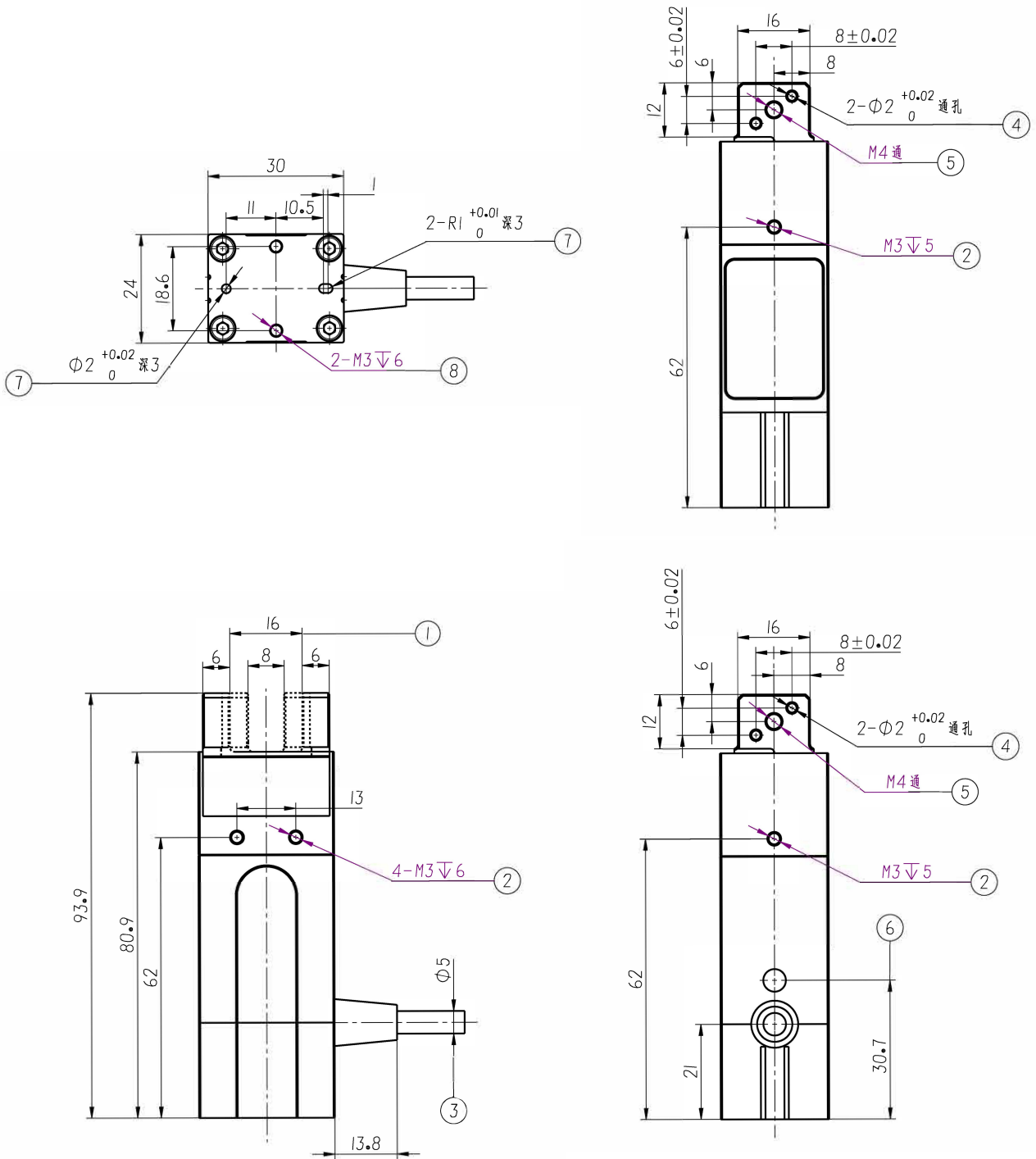


Laboratory, medical treatment and other air free scenario

Detailed parameter table of electric gripper EFG-8

Item	EFG-8
Total stroke	8 mm
Clamping force	5-30 N \pm 25%
Max clamping weight	300 g
Repeated positioning accuracy	/
Grease supply of device	every six months or a million times
Operating temperature range	5~55 °C
Operating humidity range	RH35-80(No frosting)
Movement	2-finger-parallel
Adjustable stroke	Not adjustable
Adjustable Gripping force	adjustable
Weight	0.235 kg
Dimensions (L*W*H)	30*24*94 mm
Controller location type	built-in
Motor type	BLDC
Power supply	24 V \pm 10%
Standby current	\leq 0.02A
Peak current	0.5A
Protection level	IP20

Dimension installation diagram



- ① Stroke of electric gripper
- ② Side mounting position (threaded hole)
- ③ Control line
- ④ Clamp mounting position (pin-hole)
- ⑤ Clamp mounting position (threaded hole)
- ⑥ Clamping force adjustment position
- ⑦ Bottom mounting position (pin-hole)
- ⑧ Bottom mounting position (threaded hole)

Description of line sequence

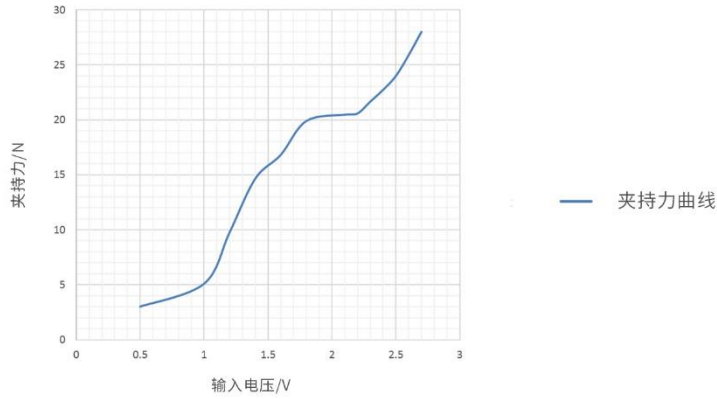
Type of line	Function	Description	Remarks
Red line	24V	Power supply	It must be connected.
Black line	GND	Power supply	It must be connected.
Green line	Control signal (control clamp or loose)	<p>I/O interface should be connected if the logic level of the controller is 3.3V or 5V.</p> <ul style="list-style-type: none"> ◆Electric gripper opens to the outside if the input is 0V-0.7V(low level). ◆Electric gripper clamps inside if the input is 2.7V-5V(high level). 	It must be connected.
		<p>Drain open output can be used if the logic level of the controller is higher than 5V.</p> <p>(Open Drain)</p> <ul style="list-style-type: none"> ◆Electric gripper clamps to the inside if the Open Drain input is invalid. ◆Electric gripper opens to the outside if the input is 0V-0.7V(valid). 	
		<p>The second method cannot be used if logic level of the controller is higher than 5V.(One electric resistance can be connected in series. The resistance value is 8.2k when the single control voltage is 24V.)</p> <ul style="list-style-type: none"> ◆Electric gripper clamps to the inside if the input is higher than 2.7V(high level). ◆Electric gripper opens to the outside if the input is 0-VLow*(low level). 	
White line	Clamping force	◆*It does not need to be connected.	Selective connection
	analog signal input	◆It is used to continuously adjust the clamping force in connection with input 0.5 ~2.7V. Corresponding clamping force output is 5-30N. The higher the input value, the greater the clamping force.	
Yellow line	Signal output	<ul style="list-style-type: none"> ◆It does not need to be connected. The read signal displays the LED status. ◆Output in motion is 0V and output in the end of motion is 3.3V. 	Selective connection

* Explanation

1. The clamping force is controlled by potentiometer when the white line is not connected while the clamping force is controlled by white signal in white line connection.
2. The potentiometer is located above the side connection of electric gripper.
3. 出Potentiometer default before leaving the factory is in vertical status. The clamping force is 20N if the white line is not connected. The clamping force cannot be adjusted to larger in clockwise and smaller in anticlockwise.(It is 0° in vertical, negative in anticlockwise and positive in clockwise.)
4. It is 30N in +60° and 5N in -60°.
5. Do not rotate the potentiometer to the maximum or minimum (±62.7°. The electric gripper is in protection status(static) when the potentiometer is at the maximum and minimum position.
6. $V_{Low} \leq 0.7 - 2.6 * R_x / 50K$

Electric gripper EFG-8 clamping force curve

Different voltage inputs output different clamping forces through the white line.

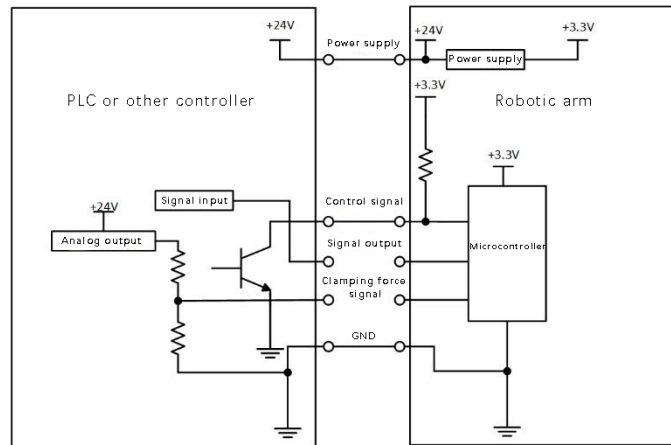


▲ Notes

The +24V, GND, control signal(control direction, clamp or loose) must be connected.

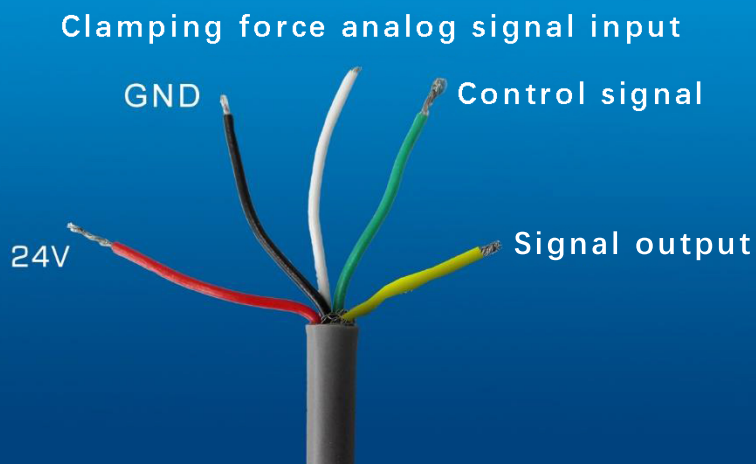
Electrical parameters

- Rated voltage $24 \pm 10\%$
- Standby current 0.02A
- Peak current 0.5A



Wiring diagram

Electric gripper EFG-8 physical picture





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