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# FERRULE CRIMPING MACHINE (FOR EW-5010A+)

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## **Preface**

Thank you for purchasing the "Pre-insulated tubular terminal servo crimping machine" equipment!

We believe that the "Pre-insulated tubular terminal servo crimping machine" equipment will definitely gain the satisfaction and credibility of your company, and hope to use it for a long time!

This instruction manual, in order to actually use the "Pre-insulated tube terminal servo crimping machine", records the machine removal, peripheral installation, interface operation introduction, replacement product adjustment, related mechanical adjustment, electrical wiring layout, troubleshooting, maintenance, and use important things to note when doing so. Be sure to read this instruction manual before using this machine. So that the "pre-insulated tube terminal servo crimping machine" can always exert its true value under the best conditions. After reading this book, please keep it nearby so that you can refer to it at any time.

**When the "Pre-insulated tube terminal servo crimping machine" arrives, please confirm:**

1. Whether there is any damage caused by transportation.
2. Are there any deficiencies or errors in the accompanying accessories?
3. Confirm whether it meets the order requirements.

**To use this machine safely:**

Note: It is expected that incorrect operation will only cause minor injuries to the operator or damage to items.

Reference: Precautions during operation and maintenance.

## Machine removal and installation

**1. After taking out the machine, confirm whether there is any transportation damage or other mechanical parts falling off in the machine box.**

2. Before the machine is ventilated and powered on, it is necessary to remove the three protective plates that fix the vibration plate. (As shown by the arrow in Figure 1) At the same time, confirm whether the vibration plate is offset, because the vibration plate may be polarized during the logistics vibration process.

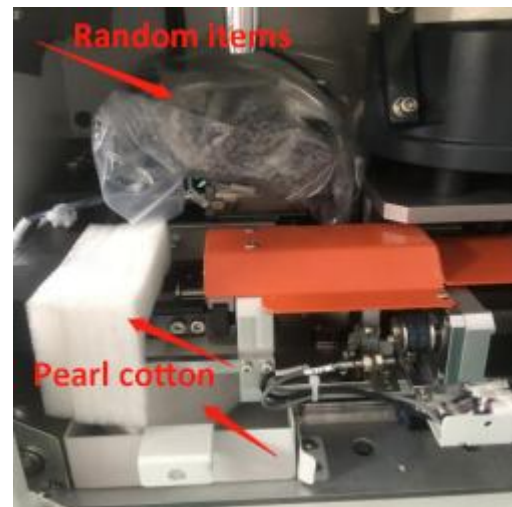
3. Open the door on the right side, remove the pearl cotton, and take out random items. (As shown by the arrow in Figure 2)

**4. Before ventilating, gently push the stripping and twisting mechanism back, and move the rotating and swinging mechanism to the vertical position. The position of the swinging mechanism as shown by the arrow in Figure 3 is vertical.**

5. The air source and power interface are at the rear of the machine (as shown in Figure 4); before powering on the machine, you need to open the air inlet valve (as shown in Figure 3) and then turn on the power.



(figure 1)



(figure 2)



(image 3)



(Figure 4)

## Machine introduction

This machine is a semi-automatic pre-insulated tubular terminal servo crimping machine with simple operation, high efficiency, high cost performance and high quality.

Achieve integration, **vibrating plate feeding, electric wire clamping, electric stripping, electric twisting, terminal insertion, servo crimping; touch screen operation, electric adjustment of penetration distance, setting parameters saved** , can be called directly.

Features:

- 1、 Mainly electric and pneumatic combined with diversification.
- 2、 The overall closed appearance design and the front operating position are visible, making it easy to watch and operate accurately.
- 3、 The machine has strong movement flexibility, compact mechanical structure, precision, fineness, excellence and safe operation.
- 4、 Automatic trigger start or foot switch, fast and convenient.
- 5、 The advantages of high production efficiency and reduced production defective rate.

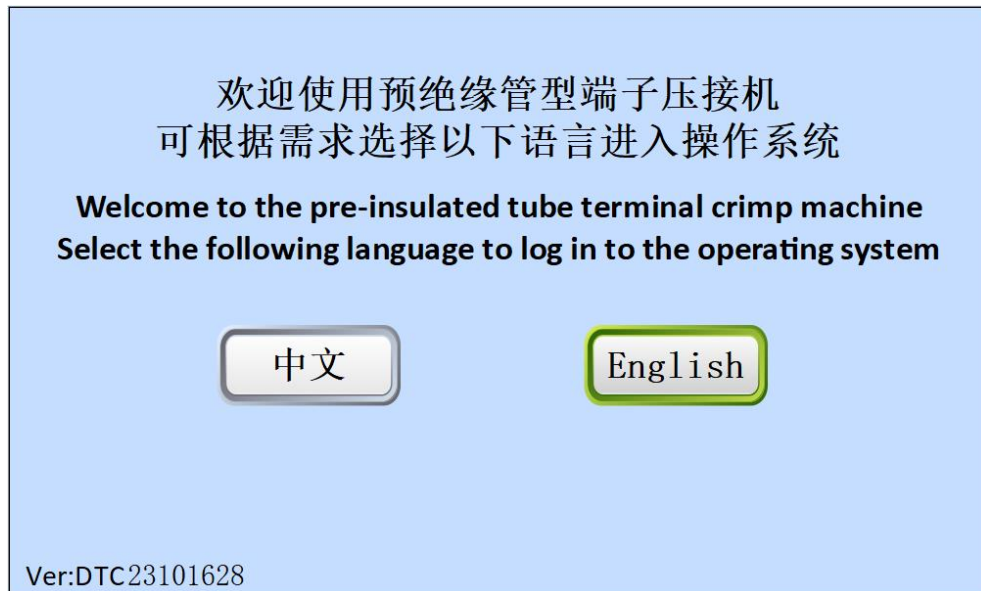
## Basic parameters

project	Specifications/Contents
name	Pre-insulated tube terminal servo crimping machine
model	DTC-P16
control method	Human-machine interface, electrical control, mainly electric and pneumatic are combined to achieve electrical integration control.

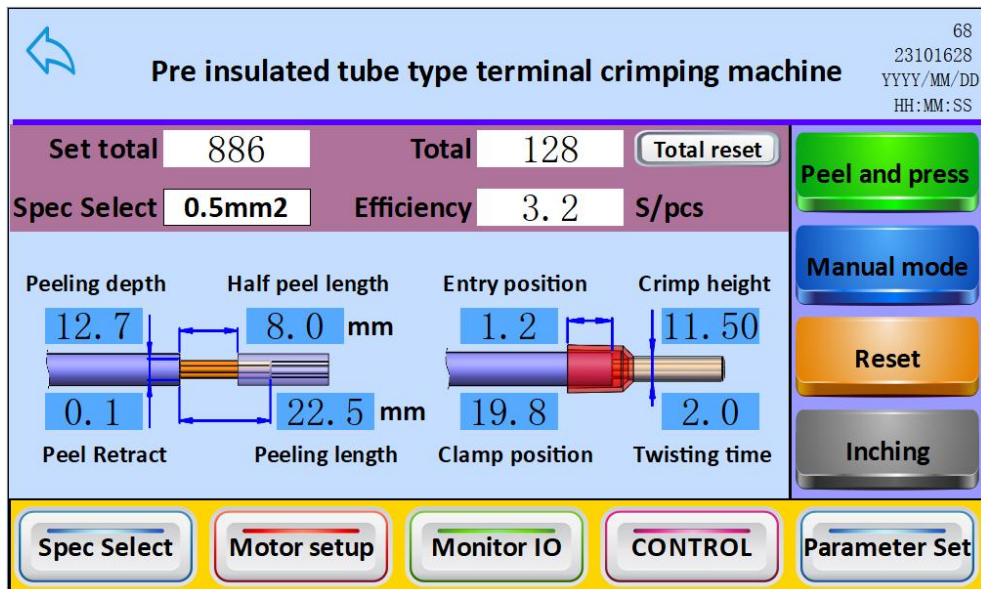
<b>operating mode</b>	The pay-off induction triggers automatic operation and manual operation, and a foot start switch can be installed.
<b>Wire size specification</b>	Suitable for RV cords and most other wires, 10 specifications ranging from 0.3 to 16 square meters (currently less than 0.5 square meters require material and fixtures).
<b>Terminal specifications</b>	<b>0.3 (customized) 0.5 to 16 square meters; terminal insulator length within 11mm, conductor length within 20mm.</b>
<b>Skinning and penetration</b>	<b>The peeling length is 6-30mm, and the position of inserting into the rubber shell can be controlled by motor adjustment, freeing up the original</b>
<b>Peeling method</b>	<b>Rotary peeling, parallel peeling, rotary twisting, the direction can be forward and reverse .</b>
<b>Terminal supply</b>	Vibrating plate feeding, one plate can be used for 10 types of terminals, and 10 types of terminals can be used for all 10 types of terminals with simple adjustment.
<b>Crimp shape</b>	<b>Correct quadrilateral crimping, servo motor crimping</b> , crimping height can be adjusted at will;
<b>Replace product</b>	Manually replace the relevant fixtures and adjust the vibration plate, select the original parameters, and control the recall of memory parameters.
<b>production capacity</b>	About 3.2s/single terminal, the details may vary depending on the wire material (Regarded as a single operation cycle of the machine), about 4s/single terminal
<b>Detect alarm</b>	Check whether the terminals are present, etc. Various operating tests.
<b>power supply</b>	Power supply AC220V/50Hz (single phase) 10A; internal power supply DC24V, DC30V, AC30V; total power 1500W.
<b>Gas source</b>	0.5-0.6Mpa (please use a stable, clean and dry air source).
<b>Working temperature</b>	0~35℃ (the ambient temperature of the machine), 30~80%HR (no condensation).
<b>Dimensions and weight</b>	W360mm (front width) × L520mm (front and rear depth) × H425mm (height) (excluding protrusions), weight about 62KG.

# 1. Introduction to the operation interface

## 1-1. Enter the operating system and main screen functions



(Figure 5)



(Figure 6)

- 1-1-1. Click the arrow in the upper left corner of the interface to return to the operating language selection interface.
- 1-1-2. Set total : the quantity that can be set according to production needs (maximum setting value 9999999).
- 1-1-3. Total: the quantity recorded when the machine is operating in automatic mode.

1-1-4. Total reset: When clearing the total production number, you need to click the "Reset Total Number" button to automatically clear the current count.

1-1-5. Spec Select: You can directly enter the selection specification. See the relevant interface introduction for details.

1-1-6. Efficiency: The operating cycle of the machine in automatic mode (the time for picking up and delivering terminals is not included during stripping and crimping, because under automatic conditions, this cycle time is parallel to the time of manual wire picking and unwinding).

1-1-7. Peel and press: This button is a function selection. You can click to switch to peeling.

1-1-8. Manual mode: This button is for function selection and can be clicked to switch to automatic mode.

1-1-9. Reset: used in conjunction with the modified value refresh key. For details, please see the introduction in item 1-4-6.

1-1-10. Inching: This button is used to control single-step operation and must be valid in "manual mode"; press and hold the inching button for about 2 seconds to activate the function, and the background color of the button will turn red after activation. , click again to proceed to the next action (the interval between next clicks is valid for 1S).

1-1-11, Peeling depth, half-stripping length, penetration position, crimping height, peeling length; you can directly click on the value to change, see **1-3 peeling and crimping setting** introduction for details.

1-1-12. Peel retract: After cutting the wire insulation, the knife will be retracted to prevent scratching the copper core when pulling out the insulation. You can directly click on the value to change it. The larger the value, the greater the retraction distance and the longer the value. The smaller the retraction distance is.

1-1-13. Clamp position: You can directly click on the value to change it. The larger the value, the tighter the clamping. The smaller the value, the looser the clamping. When the clamping position of a certain specification of wire is unknown, the clamping position can be adjusted with the modification value refresh function of items 1-4-6.

1-1-14. Twisting time: You can directly click on the value to change it. The larger the value, the longer the twisting time. The smaller the value, the shorter the twisting time. The value can be adjusted according to the tightness of the copper core of the wire.

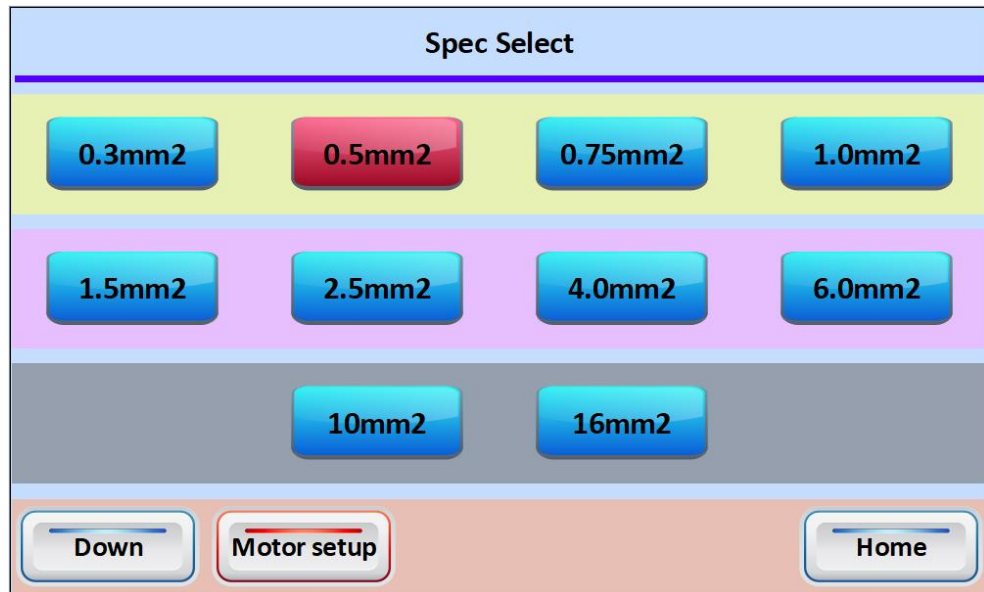
1-1-15. Motor setup: See the relevant interface introduction for details.

1-1-16. Monitor IO: See the relevant interface introduction for details.

1-1-17. Control: See the relevant interface introduction for details.

1-1-18. Parameter set: See the relevant interface introduction for details.

## 1-2. Select specifications



(Figure 7)

1-2-1. Enter this interface: Main screen → Select specifications

1-2-2. The 10 blue buttons correspond to specifications from 0.3 square meters to 16 square meters. After clicking, the buttons turn red to represent the currently selected specifications.

**0.3 square meters is customized, but for the convenience and unification of the operation interface, the 0.3 square meters specification is reserved.**

1-2-3. Next page: Enter the peeling and crimping setting interface. See the relevant interface introduction for details.

## 1-3. Stripping and crimping settings

Stripping and crimping Settings I					
Wire number	Peeling depth	Length(mm)	Half length(mm)	Penetration(mm)	Crimp height
0.3mm <sup>2</sup>	13.2	12.0	8.0	1.0	13.00
0.5mm <sup>2</sup>	12.7	12.0	8.0	1.0	11.50
0.75mm <sup>2</sup>	12.5	12.0	8.0	1.0	11.00
1.0mm <sup>2</sup>	12.0	12.0	8.0	1.0	9.80
1.5mm <sup>2</sup>	11.2	12.0	8.0	1.0	9.50

(Figure 8)

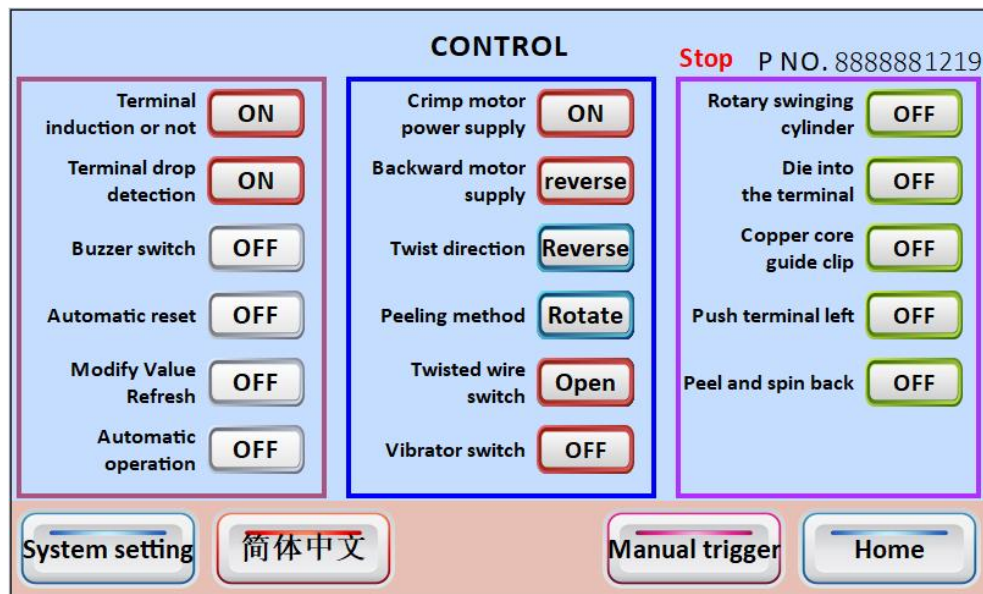
Stripping and crimping Settings II					
Wire number	Peeling depth	Length(mm)	Half length(mm)	Penetration(mm)	Crimp height
2.5mm <sup>2</sup>	10.5	12.0	8.0	1.0	8.50
4.0mm <sup>2</sup>	10.3	12.0	8.0	1.0	7.80
6.0mm <sup>2</sup>	10.1	12.0	8.0	1.0	6.80
10mm <sup>2</sup>	8.5	12.0	8.0	1.0	5.50
16mm <sup>2</sup>	7.3	12.0	8.0	1.0	4.60

Up      Motor setup      Home

(Figure 9)

- 1-3-1. Peeling and crimping setting 1: The steps to enter this interface are "Main screen → Specification selection → Next page".
- 1-3-2. Stripping and crimping setting 2: The steps to enter this interface are "Main screen → Specification selection → Next page → Next page".
- 1-3-3. Wire size specifications: There are 10 wire size specifications to choose from.
- 1-3-4. Peeling depth: The larger the value, the deeper the peeling depth. The smaller the value, the shallower the peeling depth.
- 1-3-5. Length: The larger the value, the longer the peeling length. The smaller the value, the shorter the peeling depth. The peeling length is the total peeling length, in mm.
- 1-3-6. Half length: Half-stripping length is used with twisting wire. When the stripping returns to the set length, twisting begins. The larger the value is, the longer the half-stripping retreat length is. The smaller the value is, the shorter the half-stripping retreat length is. The unit is mm.
- 1-3-7. After the machine is installed, the peeling depth and length of each wire can be adjusted according to different wire numbers; if the peeling knife is replaced, the peeling depth may change. The size of the change depends on the processing accuracy of the peeling knife and each Secondary installation location.
- 1-3-8. Penetration : The position where the wire insulation layer penetrates the terminal rubber shell. The larger the value, the deeper the penetration. The smaller the value, the shallower the penetration. The unit is mm.
- 1-3-9. Crimp height: The larger the value, the tighter the crimped terminal. The smaller the value, the looser the crimped terminal.

## 1-4. Function control

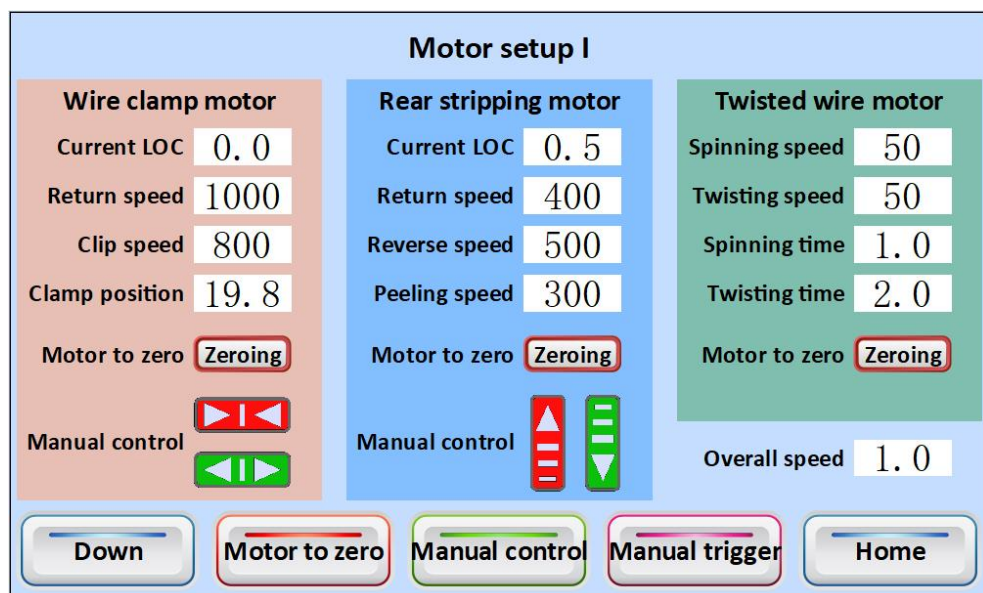


(Figure 10)

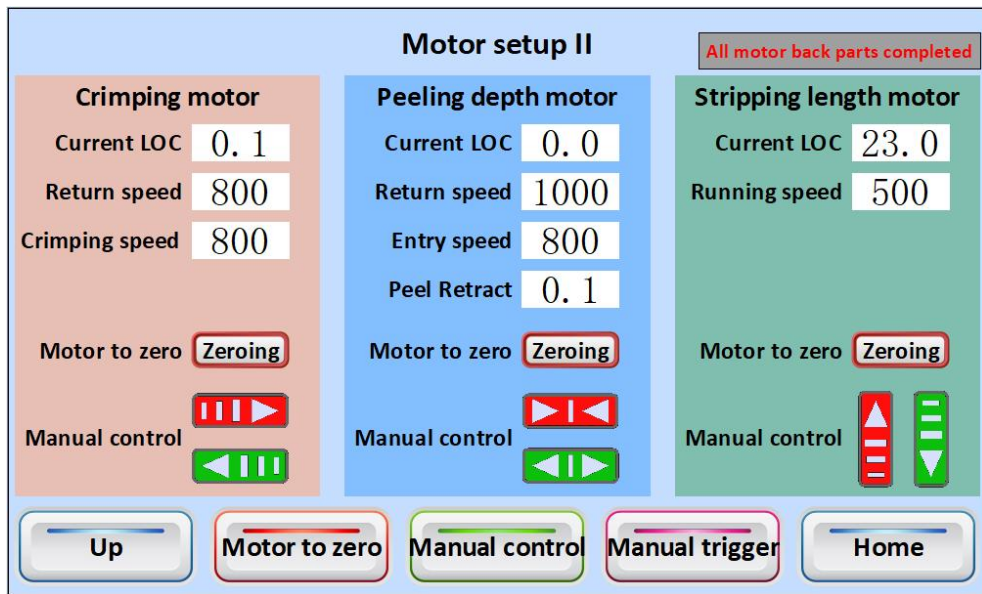
- 1-4-1. Enter this interface: main screen → function control.
- 1-4-2. Terminal induction or not : used to detect whether the terminal is in place before sending the terminal, and to detect whether there is any abnormality in the terminal after sending the terminal. **This function needs to be turned on during normal production operation** , otherwise there will be no prompt when the terminal is stuck.
- 1-4-3. Terminal drop detection: After turning on this function, it can detect whether the terminal has fallen into the conduit. If it is not detected, the crimping action will stop when the terminal falls into the conduit.
- 1-4-4. Buzzer switch: When this function is turned on, a buzzer will sound when there is an alarm message.
- 1-4-5. Automatic reset: When this function is turned on, all motors will automatically return to zero when the machine is powered on.
- 1-4-6. Modify value refresh: used to adjust the action position of each mechanism in manual mode. After turning on this function (automatic mode is not supported), when the peeling depth, clamping position, crimping height and other values are changed, the corresponding mechanism will act and can be used to reset with the 1-1-11 reset button.
- 1-4-7. Automatic operation: After turning on this switch, touch the switch and the machine will automatically run in cycles. When turning on, be careful not to accidentally hit the position of mechanical movement and pay attention to safety; when you need to stop, click to turn off the switch and run. It will automatically stop after one cycle.
- 1-4-8. Crimp motor power supply: It is on by default. When motor overload protection occurs, you can manually turn off the motor power supply and reset it.
- 1-4-9. Backward motor power supply: It is on by default. When motor overload protection occurs, you can manually turn off the motor power supply and reset it.

- 1-4-10. Twist direction: Control the running direction of the twisting motor, including reverse and forward directions. The twisting direction can be selected according to the original winding direction of the copper core. The default is reverse direction, click to switch to forward direction.
- 1-4-11. Peeling method: There are two methods: rotation and parallel. The rotation peeling method is double-knife circumferential cutting, and the parallel peeling mode is double-knife collision cutting. The default is rotation. Click to switch to parallel.
- 1-4-12. Twisting wire switch: This function is to turn on or off the twisting function. When turned on, the relatively loose copper core can be tightened, making it easier to penetrate the terminal and solving the problem when inserting the terminal. Anti-filament problem. When using twisted wires, the machine's productivity will be reduced. If the copper core of the wire is hard and there is no anti-wire, you don't need to use twisted wires and it can shut down by itself.
- 1-4-13. Vibrate plate switch: supports turning on the vibrating plate operation in manual mode.
- 1-4-14. Rotary swinging cylinder, mold penetration terminal, copper core guide clamp, pushing terminal to the left, peeling and rotating back, etc.: This series of functions all act independently when clicked in manual mode. Can be used for maintenance or debugging.

## 1-5. Motor settings



(Figure 11)



(Figure 12)

1-5-1. Motor setup one (Figure 11) : Main screen → Motor setting.

1-5-2. Cable clamp motor;

1) Current LOC: refers to the current standby position of the cord clamp motor, and is also the current stroke position of the cord clamp. It can be adjusted manually. After turning on the "manual control" button at the bottom of the interface, the clamp can be closed or opened manually.

2) Return speed: the speed at which the wire clamp motor returns to zero after releasing the wire clamp. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888". The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

3) Clip speed: the speed of the clamp motor when closing the clamp to the specified position. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888". The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

4) Clamp position: The specified position reached by the cable clamp motor after triggering action. You can click on the value to change it. The larger the value, the tighter the clamp. The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

5) Motor to zero : The wire clamp motor can be manually returned to zero individually.

1-5-3. Rear stripping motor;

1) Current LOC: refers to the current standby position of the rear stripping motor,

which is also the current stroke position of the stripping mechanism. It can be adjusted manually. After turning on the "manual control" button at the bottom of the interface, the position of the stripping mechanism can be moved forward or backward manually.

2) Return speed: the speed at which the rear peeling motor returns to zero after completing the peeling action. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888". The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

3) Reverse speed: the speed at which the rear stripping motor retreats when the wire twisting is completed. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888". The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

4) Peeling speed: the retreat speed of the back peeling motor during peeling. You can click on the value to change it. The larger the value, the faster the speed. The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

5) Motor to zero : The back-stripping motor can be manually returned to the zero point individually.

#### 1-5-4. Twisted wire motor;

1) Spinning speed: the speed of circumferential cutting when the peeling method is rotating. You can click on the value to change it. The larger the value, the faster the speed. The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

2) Twisting speed: the speed of the twisting motor when the twisting function is turned on. You can click on the value to change it. The larger the value, the faster the speed. The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

3) Twisting time: the length of thread twisting when the thread twisting function is turned on. You can click on the value to change it. The larger the value, the longer the twisting time will be. The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.

4) Motor to zero : The twisted wire motor can be manually returned to zero independently.

1-5-5. Machine speed: The time it takes for the machine to complete a cycle can be adjusted. The larger the value, the faster the time!

1-5-6. Motor setup2 (Figure 12) : Main screen → Motor setting → Next page.

1-5-7. Crimping motor;

- 1) Current LOC: refers to the current standby position of the crimping motor. The position of the crimping mechanism can be manually adjusted after turning on the "manual control" button at the bottom of the interface during maintenance and debugging.
- 2) Return speed: the return speed after crimping is completed. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888". The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.
- 3) Crimping speed: the completion speed of crimping. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888". The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.
- 4) Motor to zero: The crimping motor can be manually returned to zero individually.

1-5-8, peeling depth motor;

- 1) Current LOC: refers to the current standby position of the peeling depth motor. The position of the crimping mechanism can be manually adjusted after turning on the "manual control" button at the bottom of the interface during maintenance and debugging.
- 2) Return speed: the return speed after peeling is completed. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888". The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.
- 3) Entry speed: the cutting speed of the peeling knife during peeling. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888". The changed value is saved to the current wire number database of specification selection. Values can be set for each wire size specification as required.
- 4) Peel retract: The knife withdraws a certain distance after completing the peeling in rotation or parallel, which can prevent the knife from scratching the copper core. You can click on the value to change it. The larger the value, the farther the retraction distance is.
- 5) Motor to zero : The peeling depth motor can be manually returned to zero independently.

1-5-9, peeling length motor;

- 1) Current LOC: refers to the peeling length setting value of the current wire number.
- 2) Running speed: the retreat and return speed after triggering the action. You can click on the value to change it. The larger the value, the faster the speed. The password is: "8888".
- 3) Motor to zero : The peeling length motor can be manually returned to zero individually.

1-5-10. The "Motor Zero Return" button at the bottom of the interface can perform zero return operations for all motors.

## 1-6. Parameter setting

Parameter Setting I		×10ms
Manual pay-off to top rod limit trigger delay start time		5
After pay-off start to reset 1 cycle cycle, pay-off can trigger delayed start time		3
Pay-off time from the top rod trigger to the start of spinning stripping		20
	Empty	00
	Empty	00
	Empty	00
Restore initial Settings (initialization)		0000
Colloidal box can hold maximum quantity		1000
Automatic mode when unmanned machine vibration disk stop working time		500

Down
Monitor IO
Alarm message
Home

(Figure 13)

1-6-1. Enter this interface: main screen → parameter setting; the password required when modifying parameters is **8888** .

1-6-2. The above setting time is the time between sequences, the setting value × 10ms. The above time does not need to be modified except under special circumstances.

1-6-3. Main screen: Return to the main interface.

Parameter Setting II		×10ms
The time when the terminal die rises from the terminal to the start of the terminal		30
Detect terminal vibration in place until terminal start time		30
Left feed terminal in place start to fall until feed terminal reset time		30
Check whether the terminal time is stuck when the terminal is sent		300
The feed terminal in place begins to fall until the copper guide clip opens		45
Copper guide clip open import terminal to copper guide clip reset time		40
Copper guide clamping until terminal die drop reset time		30
	Empty	00
	Empty	00

Down
Up
Alarm message
Home

(Figure 14)

1-6-4. Enter this interface: main screen → parameter setting.

- 1-6-5. The above setting time is the time between sequences, the setting value  $\times$  10ms. The above time does not need to be modified except under special circumstances.
- 1-6-6. If the terminal feeding is not smoothly fed into the terminal guide, you can modify the "blowing terminal delay time" to observe the actual situation.
- 1-6-7. Main screen: Return to the main interface.
- 1-6-8. Release trigger delay start time: it can change the sensitivity of the release trigger. The smaller the value, the more sensitive it is.
- 1-6-9. Reset the wire release trigger delay start time: after the crimping is completed, the delay will take effect and the next trigger will take effect. When the wire is taken slowly, it will not be accidentally triggered again. This time can be adjusted according to the worker's speed of taking the wire. Cooperate.
- 1-6-10. Delay triggering time for detecting terminal in place: when the next terminal is connected, how long does it take for the terminal with vibration to detect the presence of material before the terminal is sent.
- 1-6-11. Detect whether there is material jamming time when feeding the terminal: when the terminal is sent to the upper end of the blanking pipe, it will alarm if the terminal does not fall or the blanking is slow and times out.
- 1-6-12. Detect the time when the vibration plate sends the terminal to the position of the terminal guide ring: it is the detection when the vibration plate sends the terminal to the position of the terminal guide ring. If no terminal is detected after the timeout, it will alarm. You can increase the time to wait.
- 1-6-13. Main screen: Return to the main interface.
- 1-6-14. Enter this interface: main screen  $\rightarrow$  parameter setting  $\rightarrow$  next page.
- 1-6-15. Restore initial setting values (initialization): restore the factory-set default values, and the password is 1001.
- 1-6-16. Quantity of rubber particles: Different quantities can be set according to the size of the rubber particles. When the set quantity of the operation reaches the standard, an alarm will be prompted, and production can continue after reset.
- 1-6-17. Main screen: Return to the main interface.

## 1-7. IO monitoring

Monitor IO (Input)		Monitor IO (Motor)		Monitor IO (Other output)	
X00	Crimp motor origin	Y00	Crimping motor pulse	Y20	Rotary swinging cylinder
X01	Crimping motor alarm	Y10	Crimping motor direction	Y21	Mold penetration terminal
X02	Backward motor origin	Y01	Reverse motor pulse	Y22	Copper core guide clip
X03	Recoil motor alarm	Y11	Reverse motor direction	Y23	Push terminal left
X04	Empty	Y02	Clamp motor pulse	Y30	Rotary stripping motor switch
X05	Pay-off trigger induction	Y12	Wire clamp motor direction	Y31	Stripper brake
X06	Terminal missing	Y03	Deep motor pulse	Y32	Crimp motor power supply
X07	Empty	Y13	Depth motor direction	Y33	Backward motor supply
X10	Origin of swinging cylinder	Y04	Length motor pulse	Y34	Vibration disk control
X11	Through terminal induction	Y14	Length motor direction	Y35	Twist direction
X12	Empty	DA0+	Spinning motor(SV)	Y36	Run output signal
X13	Emergency stop	DA0-	Spinning motor(COM)	Y37	Alarm output signal
X14	Wire clamp motor origin				
X15	Depth motor origin				
X16	Brushless motor origin				
X17	Foot switch trigger				

Down    Up    Home

(Figure 15)

1-7-1. Enter this interface: Main screen → IO monitoring.

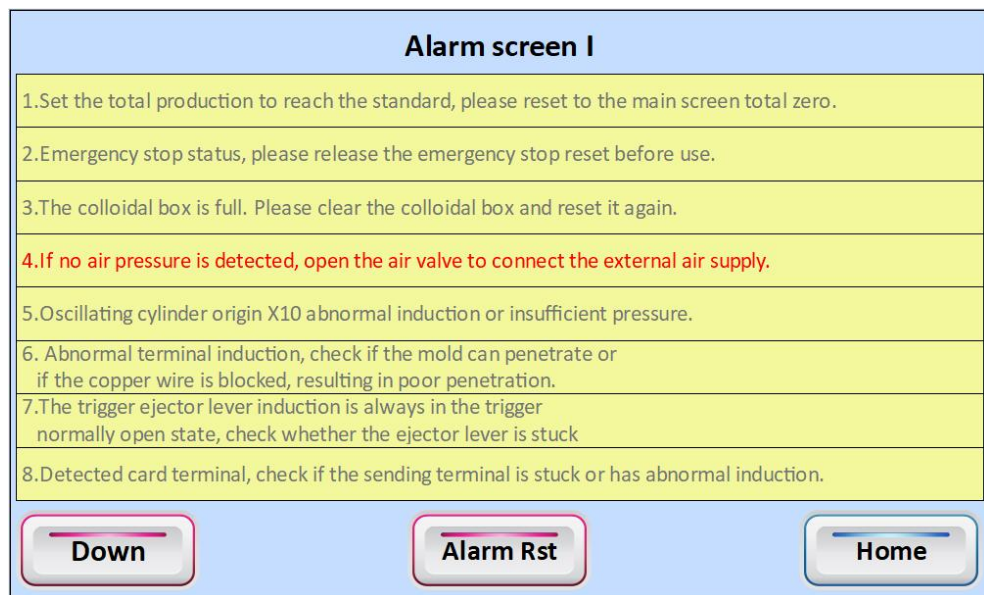
1-7-2. Under normal standby conditions, only the above 7 input monitors display red, and the others are gray.

1-7-3. Main screen: Return to the main interface.

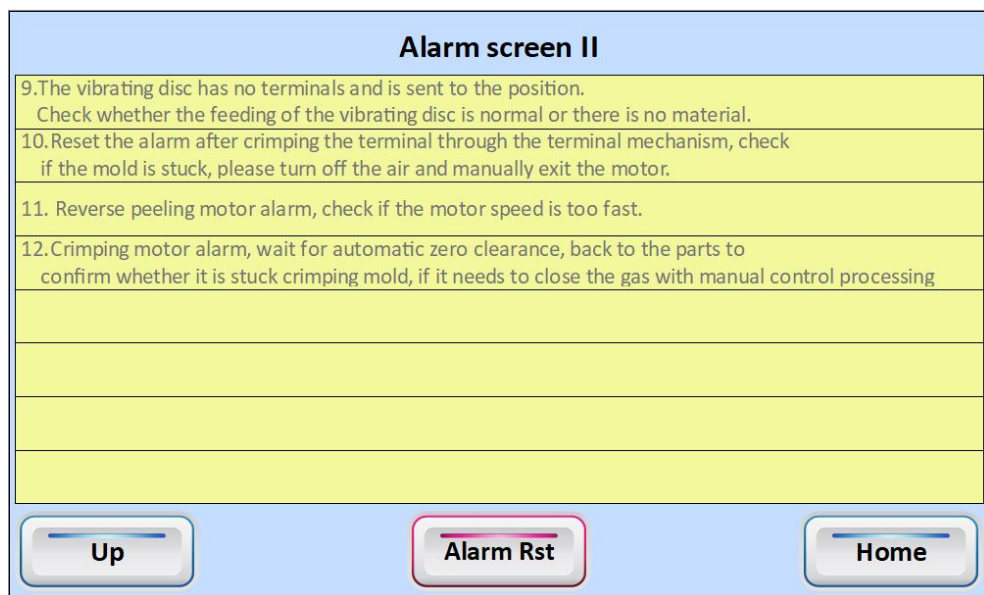
## 1-8. System settings

1-8-1. Enter this interface: main screen → function control → system settings.

## 1-9. Alarm information list



(Figure 17)

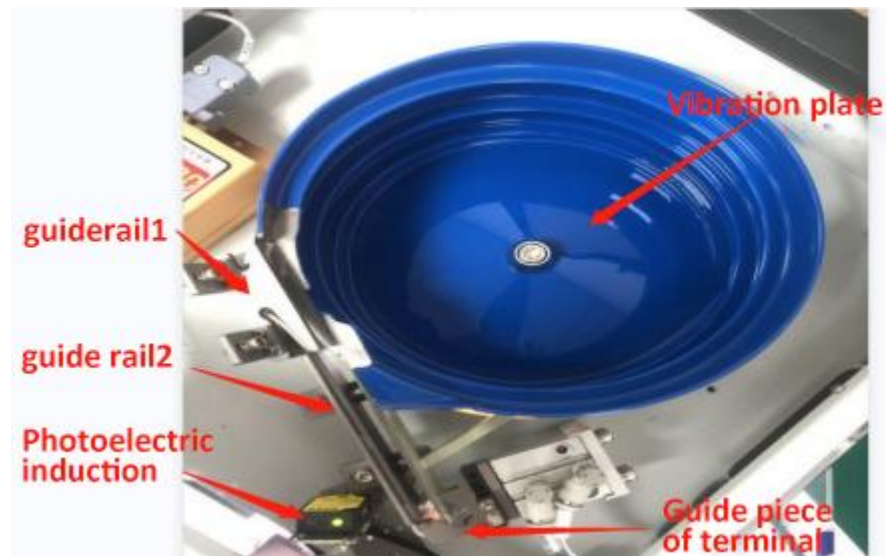


(Figure 18)

- 1-9-1. Enter this interface: main screen → parameter setting → alarm information.
- 1-9-2. When there is an alarm, it will automatically switch to this interface.
- 1-9-3. The alarm information will be prompted according to the alarm information serial number. If the alarm fault is solved, click Reset and the alarm information will be cleared. If it is still displayed, it means that the fault still exists.
- 1-9-4. For detailed troubleshooting, please refer to the section "3. Troubleshooting and Handling Methods".
- 1-9-5. Main screen: Return to the main interface.

## 2. Product replacement and adjustment

### 2-1. Vibrating plate feeding adjustment



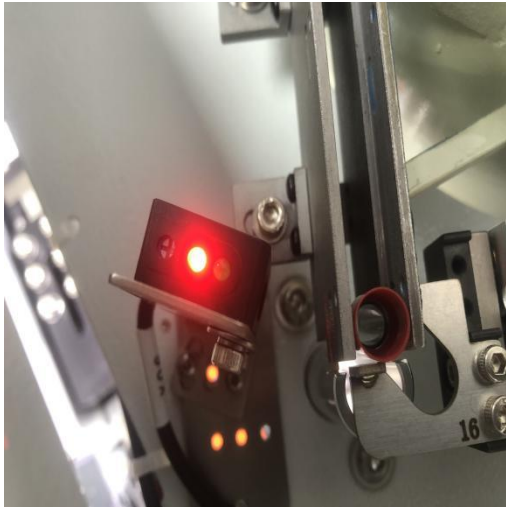
(Figure 19)



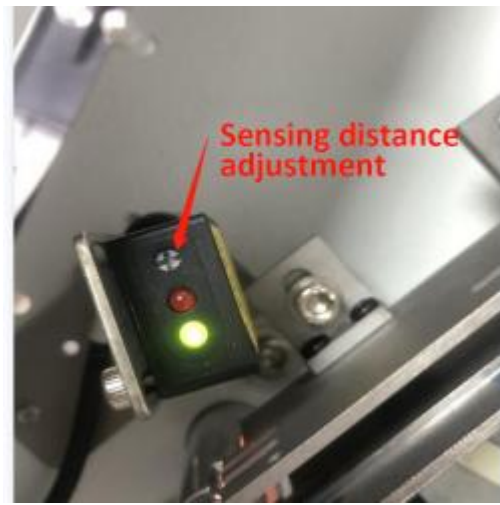
(Figure 20)



(Figure 20)

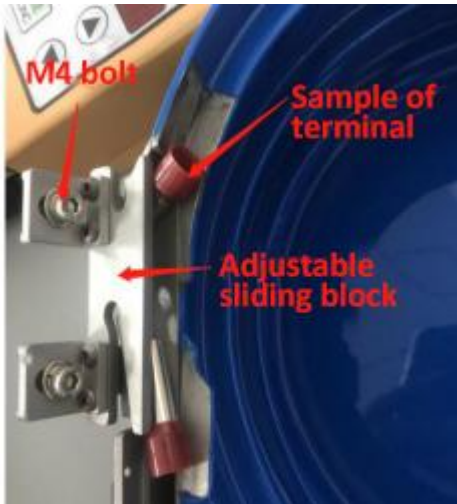


(Figure 22)

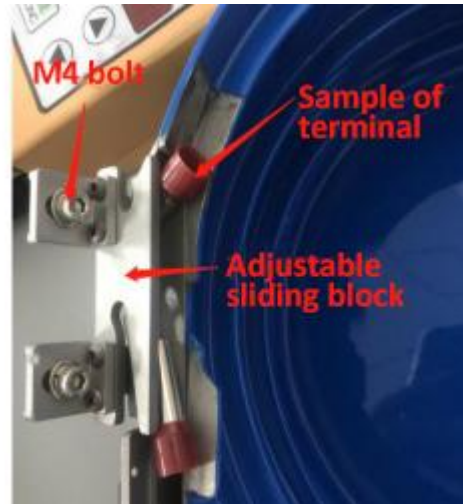


(Figure 23)

- 2-1-1. Figure 19 shows the names of various components of the vibration plate.
- 2-1-2. Figure 20 is the vibration plate controller. The screen displays voltage H120. When the feeding speed of various terminals is too fast or too slow, you can press the up and down buttons to adjust the voltage to the appropriate one. Usually, the terminals are placed first. Observe whether adjustments are needed.
- 2-1-3. Figure 21 This screen displays frequency E100; the frequencies are only E50 and E100. A frequency of E100 has been selected when the machine leaves the factory, so there is no need to adjust when changing terminals (except in special circumstances).
- 2-1-4. Figure 22 shows the photoelectric sensor that detects the presence or absence of terminals; the green light is on when there is no terminal in place, and the red light is when there is a terminal in place.
- 2-1-5. Figure 23. If the green light lights up when there is a terminal in place, or the red light lights up when there is no terminal in place, you can slightly adjust the sensing distance to the normal state.



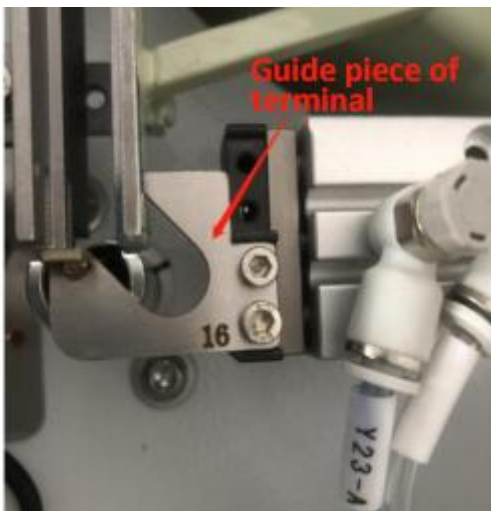
(Figure 24)



(Figure 25)

2-1-6. First confirm the terminal specifications that need to be updated, and confirm whether to adjust the discharge guide rail 1 (Figure 24) and discharge guide rail 2 (Figure 25).

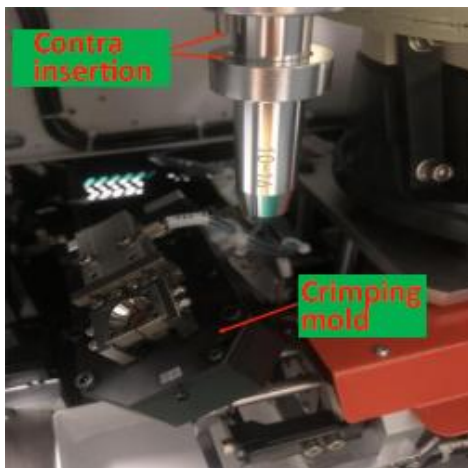
2-1-7. Discharge guide rail 1: (Figure 24) Discharge guide rail 2: (Figure 25) Discharge width adjustment: loosen 2 M4 bolts to adjust; insert the terminal that needs to be crimped as a reference to adjust the width Adapted to terminals.



(Figure 26)



(Figure 27)



(Figure 28)



(Figure 29)

2-1-8. Figure 26 shows the terminal guide installation. The terminal guide and the crimped terminal must be of the same specification. After installation, it is shown in Figure 27.

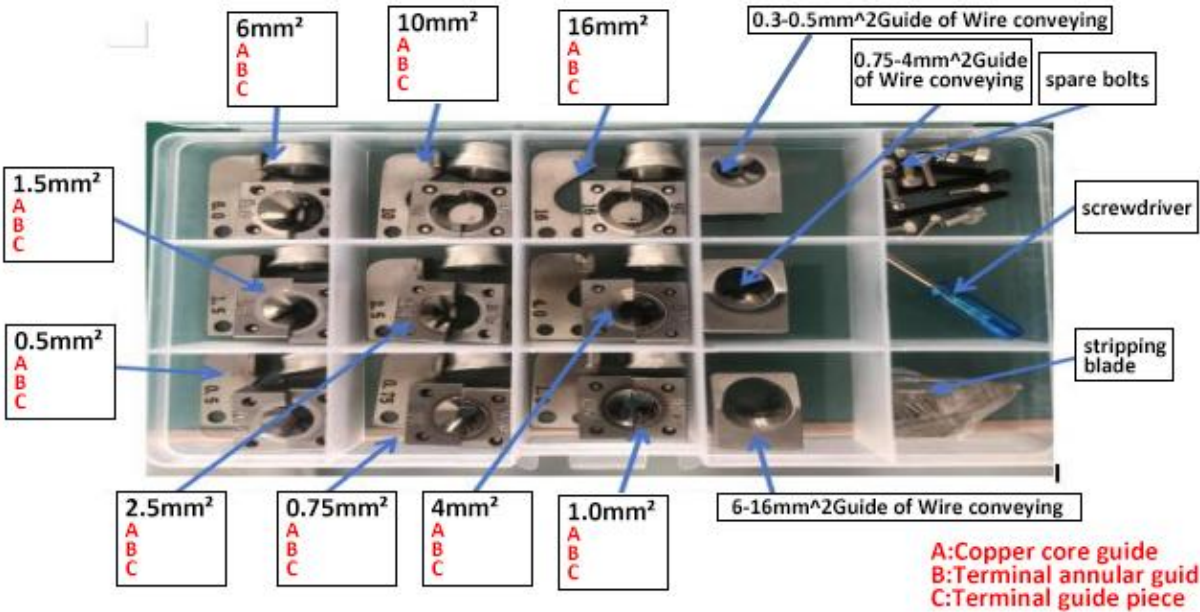
2-1-9. When installing and replacing the blanking pipe, it is necessary to place the oblique crimping mold, insert the blanking pipe pin and the fixing hole, and push it upward into place, as shown in Figure 28 and Figure 29.

2-1-10. There are 4 specifications of the blanking pipe, namely: 0.3-0.5 square meters, 0.75-2.5 square meters, 4.0-6.0 square meters,

10-16 square meters, it can be replaced according to the specifications of the upper terminal;

**0.3 square meters is custom-made, so some fixtures are not available.**

**2-2. Fixture parts box**

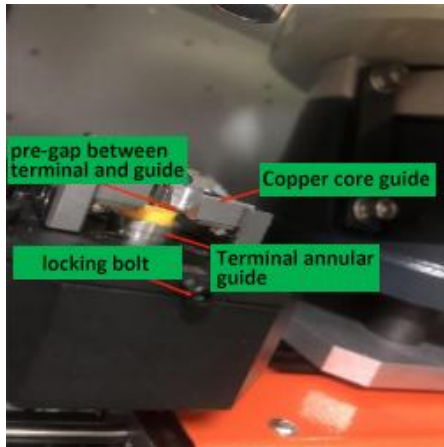


(Figure 30)

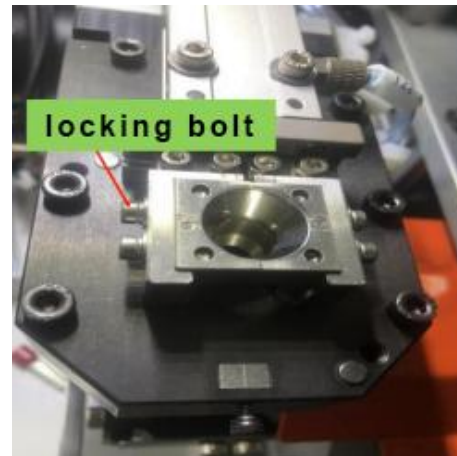


(Figure 31)

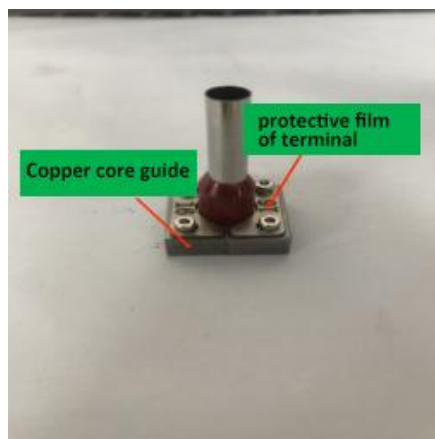
## 2-3. Replacement and adjustment of fixtures



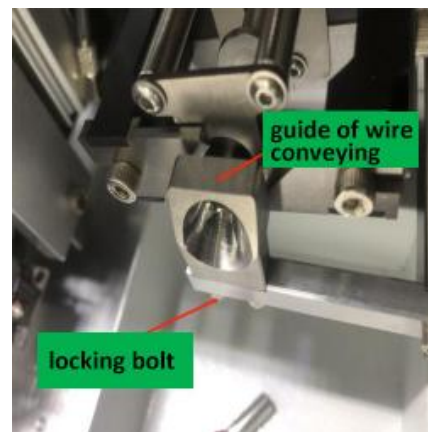
(Figure 32)



(Figure 33)



(Figure 34)



(Figure 35)

- 2-3-1. Confirm the terminal specifications. The terminal guide rings are 0.5, 0.75, 1.0, 1.5, 2.5, 4.0, 6.0, 10, and 16 square meters respectively. There are 9 specifications in total.
- 2-3-2. Figure 32, loosen the locking bolt of the terminal guide ring (just loosen it one turn), replace it with the required specifications and then tighten it.
- 2-3-3. Confirm the terminal specifications. The copper core guides are 0.5, 0.75, 1.0, 1.5, 2.5, 4.0, 6.0, 10, and 16 square meters. There are 9 specifications in total.
- 2-3-4. Figure 33, loosen the copper core guide locking bolt, and pre-lock it before changing to the required specifications.
- 2-3-5. As shown in Figure 32, use 1 selected terminal to put into the terminal guide ring for copper core guide alignment. Leave about 0.3 between the corresponding terminal and the copper core guide. mm to 0.5mm seam, the two guide surfaces should be flat, aligned, and then locked.
- 2-3-6. As shown in Figure 34, when the size of the plastic shell of the terminal terminal changes, the position of the clip on the copper core guide can be adjusted. During adjustment, the plastic shell must be aligned with the center of the copper core guide.
- 2-3-7. There are three types of pay-off guides, namely: 0.3-0.5 square meters, 0.75-4.0 square meters, and 6-16 square meters. They can be replaced according to the

required specifications. When replacing, remove the guide locking bolts for replacement.

### 3. Troubleshooting and handling

#### 3-1. Alarm content and handling methods

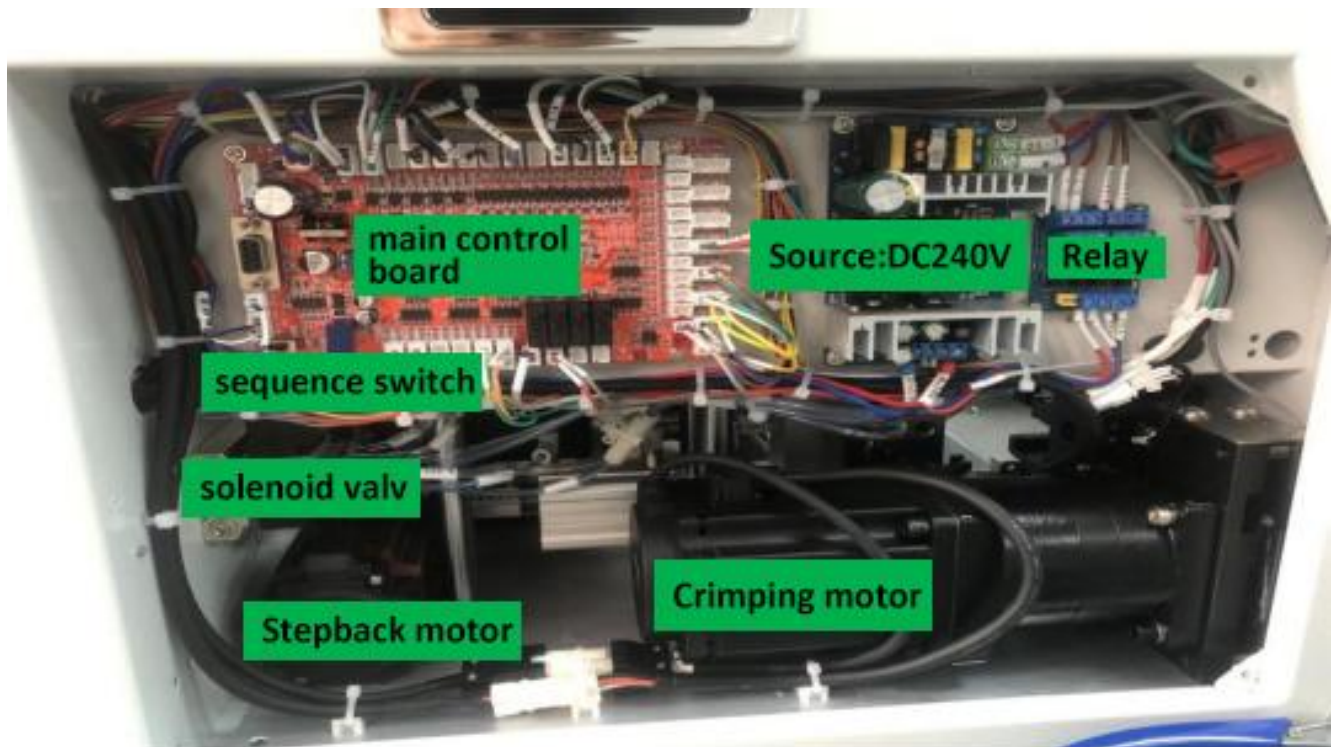
serial number	Alarm content	Approach
1	Set production total to reach target	Click Alarm Reset to return to the main screen. Click to clear the total number to continue booting.
2	In emergency stop state, please release the emergency stop reset before use.	It cannot be used in the emergency stop state. If the emergency stop alarm is not pressed, you can check the input X13 (normal red) in the IO monitoring. If not, it means that the wire is broken or the terminal connector plug is loose.
3	The pellet box is full, please clear it and reset it.	The number of colloidal particles can be modified according to their size.
4	If no air pressure is detected, please open the air valve and connect the external air supply.	Check whether the external air supply is connected.
5	The origin of the swing cylinder X10 is abnormal or the air pressure is insufficient.	Red when X10 is shut down normally, check whether the swing cylinder is extended in place. When shut down normally, the rotating swing mechanism is in a vertical state, or the X10 induction terminal plastic seat plug is loose, or the external air source is not turned on. The rotating swing mechanism must be ensured before turning on the air. in vertical position.
6	If the terminal penetration is abnormal, check whether the mold can be penetrated or the copper core is blocked by the reverse wire, causing poor penetration.	Check whether the mold can be penetrated or the copper core is blocked by the reverse wire, causing poor penetration. If the mold cannot penetrate, you need to manually control the crimping motor to fine-tune the ejector position, and then reset the copper core.
7	The trigger ejector sensor is always in the triggering normally open state. Check whether the ejector pin is stuck.	Check whether the ejector pin is supported by rubber particles, and then clean the rubber particles. Or whether the ejector spring does not pop up normally.
8	Material is jammed when feeding terminals. Please check whether the terminal feeding mechanism is jammed or normal.	If a terminal is stuck, you can use the manual control interface to control the terminal feeding cylinder to handle the clamped terminal. You also need to check whether the terminal is chipped or deformed.
9	The vibration plate is delivered to the position without terminals. Check whether the vibration plate is feeding normally or there is no material.	If there is any material, check whether the terminal photoelectric sensor lights up red or check whether input Just light.
10	After the terminal crimping mechanism resets the alarm, check whether the mold is stuck.	When the mold is stuck, you can turn off the air and use manual control to fine-tune the position of the crimping mechanism ejector until the mold can be pulled by hand.

11	The back peeling motor alarms, check whether the motor speed is too fast.	If the rear peeling motor alarms, you can check whether the peeling depth is too deep, causing the peeling knife to jam the copper core and increase the force of retreat, causing the motor to overload and alarm. If it is not for the above reasons, you can slow down the rear peeling motor speed.
12	The crimping motor alarms and is waiting for automatic zero return and clearing. After returning to zero, confirm whether the crimping mold is stuck. If it is necessary to turn off the air, use manual control.	When the crimping motor alarms, check whether the crimping speed of the crimping motor is set too fast, resulting in overload, and whether the crimping height is set too high, resulting in overloading of the motor during crimping.

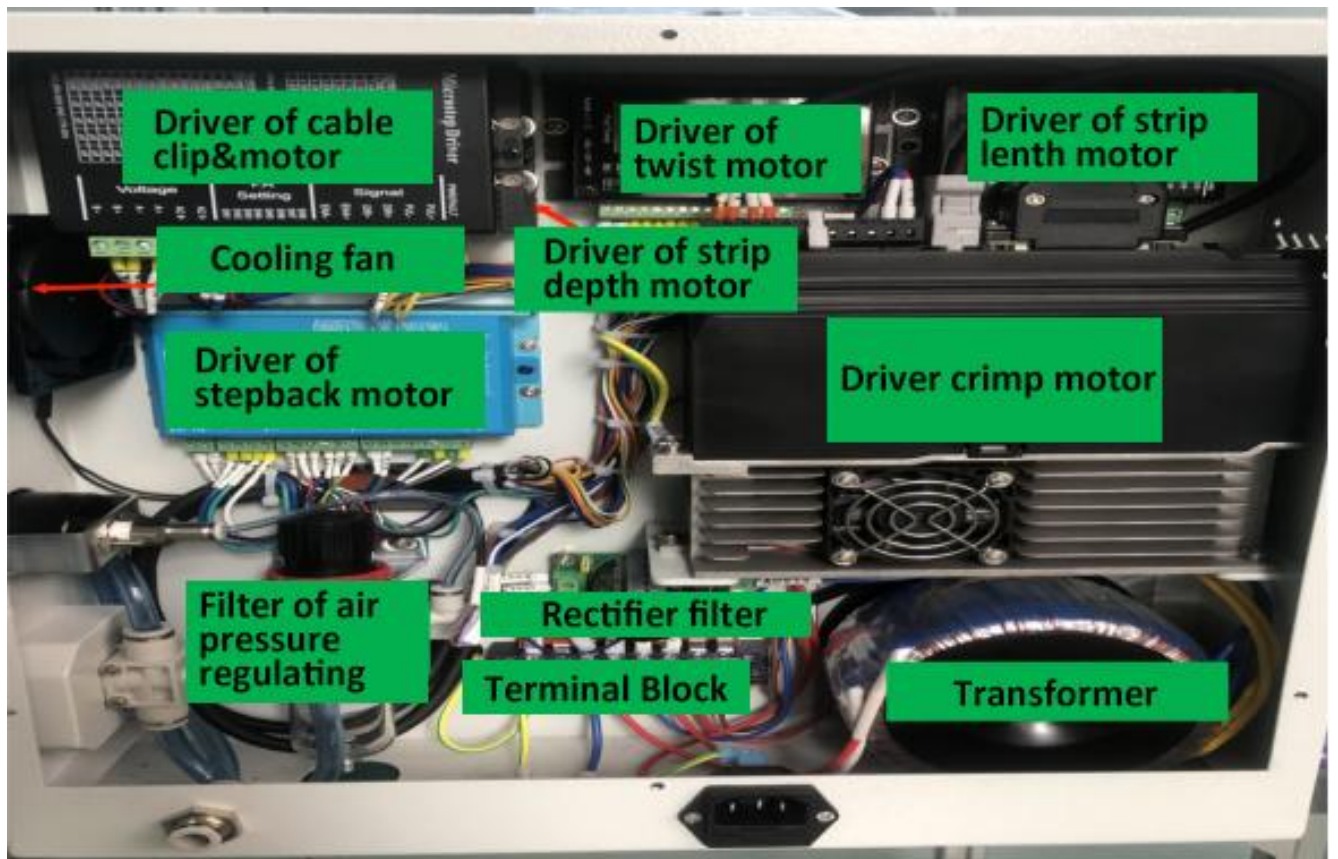
**warn! ! When the above alarm occurs and you need to handle the fault inside the machine, you must turn off the automatic mode or make an emergency stop. If necessary, turn off the power and air source to avoid hurting people.**

## 4. Electrical control arrangement

### 4-1. Electronic control layout



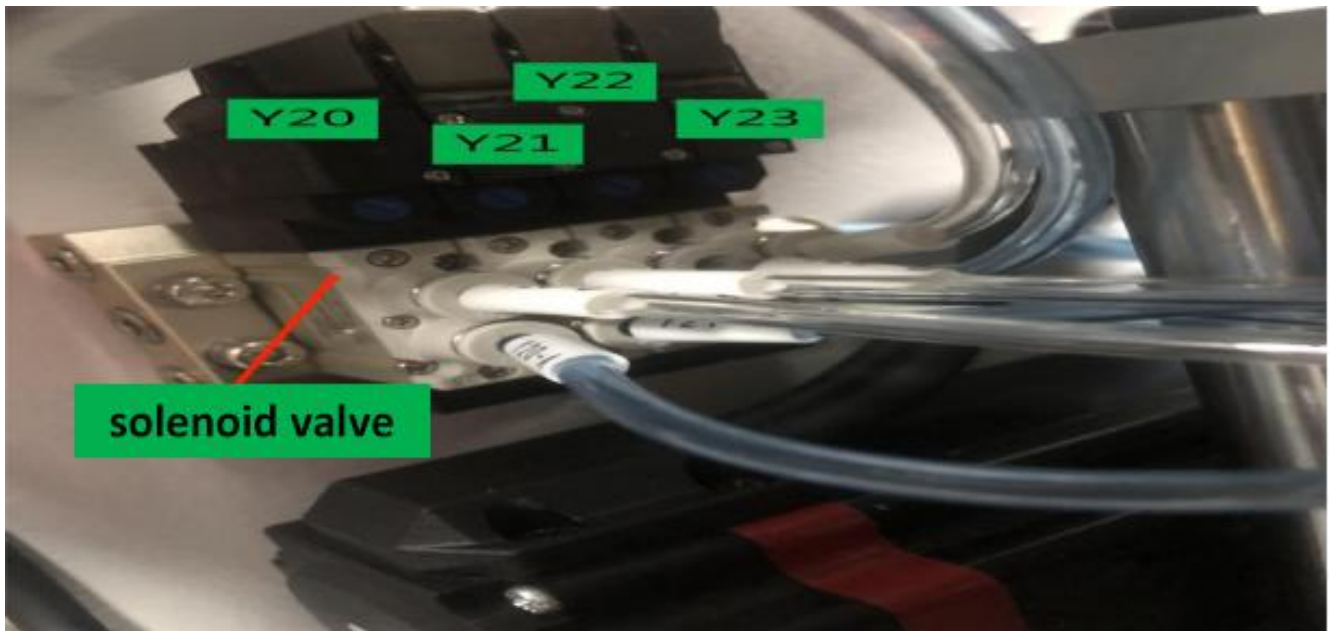
(Figure 36)



(Figure 37)

- 4-1-1. The relay is used to control the power on and off of the crimping servo motor driver and the peeling and retreating motor driver.
- 4-1-2. The peeling depth motor driver is installed at the bottom of the wire clip motor driver.
- 4-1-3. The main control board, relays and lights use DC24V.
- 4-1-4. The toroidal transformer has dual output voltages: AC30V and AC21V respectively. AC21V is connected to the power rectifier filter board, and AC30V is connected to the wire clamp motor driver and peeling depth motor driver.
- 4-1-5. The power rectifier and filter board inputs AC21V power and outputs DC30V power to supply power to the peeling back motor driver, twisting motor driver and peeling length motor driver respectively.
- 4-1-6. The input power supply of the crimping servo motor driver is AC220V.
- 4-1-7. The input power supply of the wire clamp motor driver is AC30V.
- 4-1-8. The input power supply of the peeling depth motor driver is AC30V.
- 4-1-9. The input power supply of the twisted wire motor driver is DC30V.
- 4-1-10. The input power supply of the peeling length motor driver is DC30V.
- 4-1-11. The input power supply of the peeling and retreating motor driver is DC30V.
- 4-1-12. The input power supply of the cooling fan is AC220V.

## 4-2. Solenoid valve layout



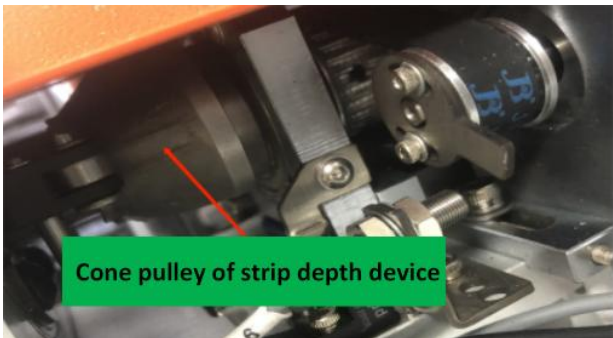

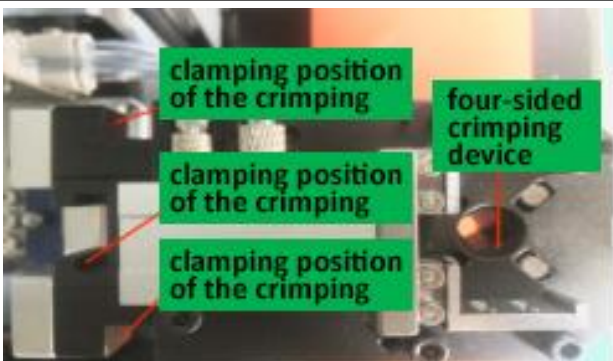
- 4-2-1, Y20 is for swing cylinder control.
- 4-2-2, Y21 is the mold penetration cylinder control.
- 4-2-3, Y22 is controlled by copper core guide cylinder.
- 4-2-4, Y23 is the feed terminal cylinder control.



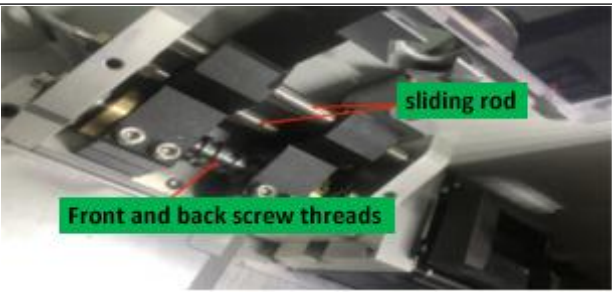
## 5. Maintenance

**5-1. It is forbidden to use an air gun to blow a certain position of the machine. If you use an air gun to blow, it may cause a short circuit in the control or damage to the mechanical structure.**

**Clean only with vacuum cleaner or rag.**

5-2. When adding butter or lubricating oil as above, pay attention to controlling the amount of oil. It is not easy to add too much, but it must be comprehensive.

project	Maintenance inspection content	Check cycle	Maintenance and inspection methods	Mechanical parts diagram
1	Clean and grease the peeling depth cone wheel regularly.	Monthly inspection	Clean with rag and add clean grease	
2	Regularly clean and grease the ejector pin of the terminal crimping mechanism and the clamping position of the crimping die.	Monthly inspection	Clean with rag and add clean grease	
3	Regularly clean the four-sided crimping mechanism and the crimping die clamping position.	Monthly inspection	Use fine cloth or cotton mixed with alcohol to wipe the terminal pressure interface	

4	Peeling and cutting mechanism	daily Weekly inspection	Clean with rag and add clean engine oil	
5	Peeling length motor gear and rack	Monthly inspection	Clean with rag and add clean grease	
6	Line clamp sliding polished rod and front and back screw rod	daily Monthly inspection	Remove the dust cover of the cable clamp, clean it and add clean grease	
7	Clean the debris inside the chassis; it is prohibited to use an air gun to blow a certain part of the machine. If you blow with an air gun, it may cause a short circuit in the control or damage to the mechanical structure.	daily Monthly inspection	Clean with a vacuum cleaner or rag. Note that the electronic control components cannot be vacuumed with a vacuum cleaner.	In or around the machine chassis