

RBEW9305

Fully Automatic Double-End Terminal Crimping Machine

Operation Manual



Fully Automatic Double-End Terminal Crimping Machine **Table of Contents**

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1. Warnings & Safety Precautions

Warning

This section covers hazards that may lead to bodily injury or fatal accidents. Strictly comply with all marked warning instructions.

Caution

This section covers risks that may cause damage to equipment or fixtures. Follow all restrictions and operating steps to avoid misoperation.

General Safety Notes

Read this manual thoroughly before installation, operation, maintenance and inspection. Only professionally qualified personnel are allowed to assemble and operate the machine.

Perform regular equipment maintenance as required.

Two levels of safety prompts are used in this manual:

Warning: Severe hazards that may result in death or serious injury if ignored.

Caution: Minor hazards that may cause slight personal injury or machine damage if unresolved.

Caution: Deliver this manual to the end user to maximize its guiding value.

All machines undergo full functional testing before shipment. After unpacking, inspect the following items in sequence:

- (1) Confirm the machine model matches your ordered unit.
- (2) Do not connect power if the machine is damaged during transit.

2.Operation Procedures

Mechanical Operation

(1) Wire Threading

Feed wires through the straightening mechanism into the wire feeder until reaching the cutting blade assembly. Tighten the wire feeder properly and check that all wires stay on the same horizontal plane.

(2) Terminal Loading

Mount terminal reels on the terminal stands. Thread terminal strips through the material baffle to below the terminal crimping mold. Manually perform a test crimp to verify terminal appearance, crimp dimension and pull-out strength meet specifications.

(3) Wire Cutting Setup

Set target wire length and stripping lengths on the main screen. Adjust the Blade Depth parameter according to wire gauge: higher values mean deeper blade penetration, and vice versa.

(4) Trial Run

To reduce material waste, set the total wire length to 100mm first. Switch the machine to Single-Step mode on the main screen, then tap the Start button to run a trial cycle.

(5) Enable Detection Switches

After successful single-step trial samples, enter the Function Settings page from the main screen and activate all detection functions.

(6) Semi-Automatic Test Run

If single-step operation runs smoothly with all detections enabled, switch to Single-Cycle mode on the main screen. Tap Start to run several full cycles and inspect finished wire quality.

(7) Full Automatic Production

After confirming qualified products from single-cycle runs, switch to Full Auto mode on the main screen and tap Start to launch continuous mass production.

Electrical Operation

Initial Startup Steps

- (1) Verify power supply is AC 220V / 50Hz.
- (2) Confirm the socket is reliably grounded for machine earthing.
- (3) Inspect power cables for cracked insulation and loose connectors.
- (4) Clear all foreign objects from moving machine parts.
- (5) Lubricate all designated lubrication points as required.
- (6) Connect power and supply air pressure $\geq 0.6\text{MPa}$.

Power-On Steps

- (1) Plug in the grounded 3-prong power cord.
- (2) Release the emergency stop button and turn on the air valve to maintain stable air pressure.
- (3) Pre-Operation Condition Check
 - ① Confirm cutting blades are properly installed.
 - ② Check all wiring connections are secured.

Single-Step Jog Operation

(1) Open the touchscreen main page and select Jog mode. Tap Run to execute each mechanical action step-by-step for position adjustment.

(2) Jog mode separates all complete production movements. If jog mode works normally but auto mode malfunctions, the auto running speed may be too high or parameter conflicts exist.

Automatic Continuous Operation

(1) On the touchscreen main page, switch from Jog mode to Auto mode and tap Start.

(2) Double-check all parameter values before auto production.

Shutdown Procedures

(1) The machine stops automatically once the preset bundle quantity is reached, and a pop-up notification appears. Tap Confirm to clear the alert. The machine will auto-restart after a delay set under Bundle Pause Time in Function Settings. If the total production target is met, the machine halts fully with a pop-up reminder.

(2) Tap Start directly to resume production after finishing a batch. Cut off the main power supply if the machine will remain idle for a long time.

3.Operation Interface Introduction

Main Work Screen

2026-06-29
16:37:56

Full-automatic 2ends Crimping Machine

Safe Door OFF

Length0.00

BACK

Head0.00

Cutter depth0.00

End0.00

FEED

Strip0.00

Retract0.00

Strip0.00

CUR.PRO.0

CRIMPING F. OFF

CRIMPING B. OFF

Output Set0

Batch Set0

Capacity

FUNCTION

Total Output0

Batch Count0

0

JOG MODE

LOAD

STEP

START

STOP

RESET

EM-STOP

This primary operation page provides access to all setting and sub-operation interfaces.

Three Operating Modes

- (1) Single-Step Mode: One complete mechanical action per tap of Start.
- (2) Single-Cycle Mode: One full production loop per Start tap, then machine stops.
- (3) Full Auto Mode: Continuous cyclic production until the preset production quantity is completed.

Core Functions

- Program Selection: Save parameter presets for quick recall when switching product types.
- Target Production Volume: Preset total required production quantity.
- Completed Total Count: Actual finished wire tally; editable for quantity correction.
- Target Bundle Size: Set the number of wires per bundle.
- Bundle Pause Time: Delay before auto-restart after finishing one bundle; set to 0 to require manual Start tap.
- Wire Feed: Manual wire feeding (only available when emergency stop is pressed and released, non-running state) for threading.
- Wire Retract: Manual wire retraction (only available when emergency stop is pressed and released) to eject defective wires.

Parameter Definitions

- Total Length: Overall wire length excluding terminal crimp sections.
- Front Strip Length: Front-end insulation stripping length, cannot exceed front blade spacing.
- Front Pull Strip Length: Pull distance after front stripping to adjust crimp position.
- Rear Strip Length: Rear-end insulation stripping length, cannot exceed rear blade spacing.
- Rear Pull Strip Length: Pull distance after rear stripping to adjust rear crimp position.
- Blade Depth: Adjust cutting penetration for stripping blades; higher value = smaller blade gap.
- Blade Retract: Adjust blade retraction distance based on insulation thickness; higher value = larger retraction gap.
- Function Settings: Enter function configuration page.
- Manual Debugging: Enter manual motor & cylinder test page.

Function Settings: Enter the function configuration page.
Manual Debugging: Enter the manual operation test page.

Function Settings Page

FUNCTION

Front crimp chk OFF	TOTAL SPEED	0	AIR BLOW TIME	0.000	Pre.Send
Back crimp chk OFF	ROLLER	0	CRIMP F	0	DROP LINE STAY
Front CFA Sensor OFF	CUTTER	0	CRIMP B	0	CHIT CUT COUNT
Back CFA Sensor OFF	STRIP F.	0	TWIST F.	0	CHIT CUT TIME
Front mold:Pneumatic	STRIP B.	0	TWIST B.	0	P.WINDER CHK TIME
Rear mold:Pneumatic	CARRY F.	0	Back up	0	ROLL PAPER F.FREQ.
Wire chk OFF	CARRY B.	0	Back up	0	F.PAPER WIND TIME
Knotted chk OFF	DROP ARM	0	Back up	0	ROLL PAPER B.FREQ.
Air chk OFF	PRE-FEED	0	STRIP	0	PAPER WIND TIME
Safe door chk OFF					BATCH PAUSE
PIPE FIRST OFF					
Crimper Auto					

SIDE FRONT

SIDE BACK

FUNCTION

POSITION

MID.CUT

RETURN

TOTAL SPEED	0
ROLLER	0
CRIMP F	0
CUTTER	0
CRIMP B	0
STRIP F.	0
TWIST F.	0
STRIP B.	0
TWIST B.	0
CARRY F.	0
Back up	0
CARRY B.	0
Back up	0
DROP ARM	0
Back up	0
PRE-FEED	0
STRIP	0

Unified Speed Control

Adjust the global unified speed slider to modify all motor speeds simultaneously, or set individual motor speeds separately. Reduce motor speed if step loss occurs during operation.

Front crimp chk OFF
Back crimp chk OFF
Front CFA Sensor OFF
Back CFA Sensor OFF
Front mold:Pneumatic
Rear mold:Pneumatic
Wire chk OFF
Knotted chk OFF
Air chk OFF
Safe door chk OFF
PIPE FIRST OFF
Crimper Auto

Detection Switches

Toggle individual detection functions ON/OFF. When enabled, the machine triggers an alarm and stops upon corresponding faults; faults must be cleared to reset the alarm. Terminal switches control activation of front/rear terminal crimping units.

Air Blow Duration: Time for blade holder suction to remove insulation scraps after stripping; longer duration = more thorough cleaning.

Wire Hold Delay: Waiting time after wire pick-up before moving to target position.

Scrap Interval: Cycle count for cutting terminal carrier tape scraps.

Scrap Cut Time: Cylinder hold duration for terminal scrap cutting.

Winder Activation Delay: Startup delay for carrier tape winders.

Front Winder Frequency: Trigger interval for front carrier tape winder.

Front Winder Delay: Standby delay before front winder operation.

Rear Winder Frequency: Trigger interval for rear carrier tape winder.

Rear Winder Delay: Standby delay before rear winder operation.

Bundle Pause Time: Rest delay after completing one full bundle.

Pre-Feed Motor: Function enable switch.

Pre-Feed Delay / Pre-Feed Count: Pre-feeding timing and cycle parameters.

SIDE FRONT

CRIMPING F.	OFF	TWISTING F.	OFF	SINGLE TER.MODE	OFF
CRIMP POS.	0.00	TWIST DIR	OFF	PUSHER BACK DLY F.	0.000
CRIMP AHEAD	0.00	STRIP F.TWIST POS.	0.00	PUSHER FEED DLY F.	0.000
ROLLER CRIMP BASE	0.00	ROLLER STRIP BACK	0.00	CRIMP BE.DLY.	0.000
ROLLER CRIMP SEND	0.00	ROLLER TWIST SEND	0.00	CRIMP AF.DLY.	0.000
ROLLER CRIMP SEND2	0.00	TWIST CYCLES	0.0	HALF CRIMP HEIGHT	0.00
ROLLER CRIMP BACK	0.00	TWIST AIR TIME	0.000		
STRIP F.CRIMP BASE	0.00	PRE-SEND	OFF		
STRIP F.CRIMP SEND	0.00	PRE-SEND POS.	0.00		
STRIP F.CRIMP BACK	0.00	PRE-SEND LEN.	0.00		

SIDE FRONT

SIDE BACK

FUNCTION

POSITION

MID.CUT

RETURN

- **Front Crimp Toggle:** Enable/disable front terminal crimping unit.
- **Translation Crimp Position:** Horizontal coordinate for front crimp translation axis.
- **Advance Crimp Offset:** Pre-feed distance for early crimp positioning.
- **Roller Crimp Reference:** Front crimp axis home position after reset.
- **Roller Pre-Feed 1 / Pre-Feed 2:** Two-stage forward travel distances for front crimping.
- **Roller Crimp Retract:** Retraction distance after front crimp completion.
- **Front Strip Crimp Reference:** Trigger position of front stripping sensor.
- **Front Strip Pre-Feed / Retract:** Forward and retract travel for stripping-to-crimp transfer.
- **Front Twist Toggle:** Wire twisting enable switch.
- **Twist Direction:** Forward / reverse twist selection.
- **Front Strip Twist Position:** Travel coordinate from front stripping to twisting station.
- **Roller Strip Retract:** Retraction distance after front stripping.
- **Roller Twist Pre-Feed:** Wire feed distance before twisting.
- **Twist Rotations:** Number of wire twist cycles.
- **Twist Suction Duration:** Air suction time to remove insulation scraps post-twisting.
- **Pre-Feed Function:** Pre-wire feeding enable switch.
- **Pre-Feed Position / Length:** Coordinate and travel distance for pre-feeding.
- **Loose Terminal Mode:** Toggle for loose terminal feeding system.
- **Front Pusher Retract Delay / Advance Delay:** Waiting timing for front material pusher cylinder movements.
- **Pre-Crimp Delay / Post-Crimp Delay:** Standby time before and after terminal crimping stroke.
- **Half-Crimp Height:** Vertical descent depth of terminal crimp punch.

SIDE BACK

CRIMPING B.	OFF	TWISTING B.	OFF
CRIMP POS.	0.00	TWIST DIR	OFF
CRIMP AHEAD	0.00	STRIP B.TWIST POS.	0.00
STRIP B.CRIMP BASE	0.00	TWIST CYCLES	0.0
STRIP B.CRIMP SEND	0.00	TWIST AIR TIME	0.000
STRIP B.CRIMP SEND2	0.00	SINGLE TER.MODE	OFF
STRIP B.CRIMP BACK	0.00	PUSHER BACK DLY B.	0.000
CRIMP BE.DLY.	0.000	PUSHER FEED DLY B.	0.000
CRIMP AF.DLY.	0.000	HALF CRIMP HEIGHT	0.00

SIDE FRONT

SIDE BACK

FUNCTION

POSITION

MID.CUT

RETURN

Rear-End Settings Page

- **Rear Crimp Toggle:** Enable/disable rear terminal crimping unit.
- **Translation Crimp Position:** Horizontal coordinate for rear crimp translation axis.
- **Advance Crimp Offset:** Pre-feed distance for early rear crimp positioning.
- **Rear Strip Crimp Reference:** Rear crimp axis home position after reset.
- **Rear Strip Pre-Feed 1 / Pre-Feed 2:** Two-stage forward travel distances for rear crimping.
- **Rear Strip Crimp Retract:** Retraction distance after rear crimp completion.
- **Pre-Crimp Delay / Post-Crimp Delay:** Standby time before and after rear terminal crimp stroke.
- **Rear Twist Toggle:** Rear wire twisting enable switch.
- **Twist Direction:** Forward / reverse twist selection.
- **Rear Strip Twist Position:** Travel coordinate from rear stripping to twisting station.
- **Twist Rotations:** Number of rear wire twist cycles.
- **Twist Suction Duration:** Air suction time to remove insulation scraps post-twisting.
- **Loose Terminal Mode:** Toggle for loose terminal feeding system.
- **Rear Pusher Retract Delay / Advance Delay:** Waiting timing for rear material pusher cylinder movements.
- **Half-Crimp Height:** Vertical descent depth of rear terminal crimp punch.

MID.CUT

	Mid strip Pos	length		Mid strip Pos	length	Mid Cut	OFF
01	0.00	0.00	09	0.00	0.00	Mid Cut Speed	0
02	0.00	0.00	10	0.00	0.00	Mid Cut Value	0.00
03	0.00	0.00	11	0.00	0.00	Mid Cut Back Value	0.00
04	0.00	0.00	12	0.00	0.00		
05	0.00	0.00	13	0.00	0.00		
06	0.00	0.00	14	0.00	0.00		
07	0.00	0.00	15	0.00	0.00		
08	0.00	0.00	16	0.00	0.00		

SIDE FRONT

SIDE BACK

FUNCTION

POSITION

MID.CUT

RETURN

Mid-stripping cuts insulation windows at arbitrary positions along the wire length. Optional dedicated cutting blades are required; do not activate this function with standard blades.

Supports up to 16 mid-strip segments. Avoid mid-stripping within 100mm of either wire end to prevent severe wire bending.

Rule: Mid-Strip Position + Mid-Strip Length < Total Wire Length (machine alarms if violated).

Mid-strip positions must be entered in ascending order; all subsequent mid-strip parameters become invalid once a position value is set to 0.

Mid-Strip Blade Depth: Cutting penetration for mid-stripping; higher value = smaller blade gap.

Mid-Strip Blade Retract: Blade retraction distance after cutting insulation, adjust based on insulation thickness.

Mid-Strip Speed: Critical parameter, recommended range 10~20 for optimal stripping quality.

JOG MODE

ROLLER	0.00	FORWARD	REVERSE	
CUTTER	0.00	FORWARD	REVERSE	DATUM
STRIP F.	0.00	FORWARD	REVERSE	DATUM
STRIP B.	0.00	FORWARD	REVERSE	DATUM
CARRY F.	0.00	FORWARD	REVERSE	DATUM
CARRY B.	0.00	FORWARD	REVERSE	DATUM

Motor1 Motor2 Cylinder IO Monitor Return

JOG MODE

DROP ARM	0.00	FORWARD	REVERSE	DATUM
PRE-FEED	0.00	FORWARD	REVERSE	
CRIMP F	0.00	FORWARD	REVERSE	DATUM
CRIMP B	0.00	FORWARD	REVERSE	DATUM
TWIST F.	0.00	FORWARD	REVERSE	
TWIST B.	0.00	FORWARD	REVERSE	

Motor1 Motor2 Cylinder IO Monitor Return

JOG MODE

- **Wire Feed:** Forward / backward jog of wire feeding motor
- **Cutter:** Up / down jog of cutting blade motor
- **Front Stripping:** Forward / backward jog of front stripping motor
- **Rear Stripping:** Forward / backward jog of rear stripping motor
- **Front Translation:** Left / right jog of front translation axis
- **Rear Translation:** Left / right jog of rear translation axis
- **Wire Pick:** Left / right jog of wire pick-up axis
- **Pre-Feed:** Forward / backward jog of pre-feeding motor
- **Front Crimp:** Actuate front crimp cylinder
- **Rear Crimp:** Actuate rear crimp cylinder
- **Front Twist:** Actuate front wire twist cylinder
- **Rear Twist:** Actuate rear wire twist cylinder

POSITION

FPEEL SEND POS.	0.00	CARRY B.BASE POS.	0.00	STRIP B.GET	0.00
FPEEL CUT DOWN POS.	0.00	B.MOVE PEEL POS.	0.00	FULL CUT POS.	0.00
FPEEL STRIP BACK POS.	0.00	B.MOVE TWIST POS.	0.00	CUT OPEN.	0.00
CARRY F.BASE POS.	0.00	CARRY B.OUT POS.	0.00	FIRST MODIFY	0.00
F.MOVE PEEL POS.	0.00	ARM PACK LINE POS.	0.00		
CARRY F.TWIST POS.	0.00	ARM SENSOR POS.	0.00		
F.MOVE SENSOR POS.	0.00	OUT NG.CUT LEN.	0.00		
F.MOVE OUT POS.	0.00	NO GOOD POS OF ARM	0.00		
		GOOD POS OF ARM	0.00		
		ARM.WAIT.POS.	0.00		

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- **Front Strip Feed Position:** Distance from front stripping guide tube to cutting blade
- **Front Strip Cut Position:** Cutting coordinate of front stripping guide tube
- **Front Strip Retract Position:** Motor retract coordinate after front stripping completes
- **Front Translation Reference:** Home position of front translation axis after reset
- **Front Translation Strip Position:** Axis coordinate moving to stripping station post-cutting
- **Front Translation Twist Position:** Axis coordinate moving to twisting station
- **Front Translation Sensor Position:** Terminal detection sensor coordinate for front translation
- **Front Translation Eject Position:** Wire ejection coordinate of front translation axis
- **Rear Translation Reference:** Home position of rear translation axis after reset
- **Rear Translation Strip Position:** Axis coordinate moving to rear stripping station
- **Rear Translation Twist Position:** Axis coordinate moving to rear twisting station
- **Rear Translation Eject Position:** Terminal detection coordinate of rear translation axis
- **Wire Pick Clamp Position:** Clamping coordinate of wire pick-up jaw
- **Wire Pick Sensor Position:** Forward/backward coordinate of wire presence sensor
- **Defective Wire Cut Position:** Station for cutting defective crimped wires
- **Good Product Position:** Storage coordinate for qualified finished wires
- **Wire Pick Standby Position:** Idle coordinate of wire pick jaw
- **Rear Strip Clamp Position:** Distance from rear stripping cylinder to blade holder (higher value = closer to blade holder)
- **Cut Blade Depth:** Vertical penetration depth of cutting blade (higher value = deeper cut)
- **Blade Open Gap:** Blade opening distance after cutting stroke
- **First Wire Compensation:** Automatic length calibration offset for the first production wire

JOG MODE

X00: Cutter Origin	X16: Safe door sensor	Y00: Back Strip	Y16: Cable Feeder
X01: Fpeel Origin	X17:	Y01: Arm Clamp	Y17: Buzzer
X02: Strip B. Origin	X18:	Y02: P.CABLE F.	Y18: Green Led
X03: Carry F. Origin	X19:	Y03: F.Thread	Y19: Yellow Led
X04: Carry B. Origin	X20:	Y04: Twist clip F	Y20: CRIMP F.
X05: Drop arm origin	X21: Manual Feeding	Y05: Twist clip B	Y21: CRIMP B.
X06: Crimp F. Origin	X22: Manual unload wire	Y06: F.Guide	Y22: CFA F.Start
X07: Crimp B. Origin	X23: Tread	Y07: B.Guide	Y23: CFA B.Start
X08: Front CFA Sensor	X24: Start(Step)	Y08: PUSH TER. F	Y24: Air blow
X09: Back CFA Sensor	X25: Start	Y09: PUSH TER.B	Y25: Crimp F.Down
X10: Air pressure detection	X26: Stop	Y10: CHIP CUT F.	Y26: Crimp F.UD.
X11: Unload wire detection	X27: Emergency Stop	Y11: CHIP CUT B.	Y27: Rest CFA
X12: Knotted detection	X28: Crimp f.jog button	Y12: Twist air F	Y28: Safety door lift 1
X13: Front Paper collecting induction	X29: Crimp b.jog button	Y13: Twist air B	Y29: Safety door lift 2
X14: Paper Recyc Sensor	X30: Crimp jog down	Y14: P.WINDER F.	
X15: Adv.Round origin	X31: Crimp jog up	Y15: P.WINDER B.	

Motor1

Motor2

Cylinder

IO Monitor

Return

Manual Speed	0	Cutter Dist.F	0.00	Servo Alm:NO
Test Speed	0	Cutter Dist.B.	0.00	Motor En:NO
SystemPWD	0	Reset Feed Len.	0.00	Pressure Check:NO
ParameterPWD	0	Cut Down Delay	0.000	Front Roll Paper:NC
Strat-upPWD	0	Cut Strip Delay	0.000	Back Roll Paper:NC
Alarm Time	0.000	Crimp Pulse	0	Rear fiber check:Out
		Twist Pulse	0	Safe Door Debug:OFF
				Crimp F.Mac:Ordinary
				Crimp B.Mac:Ordinary

- **Single Step Speed :** Speed for single-step jog operation of the whole machine.
- **Test Speed:** Running speed for motor testing.
- **System Password:/**
- **Parameter Password:/**
- **Power-On Password:/**
- **Front Blade Distance:/**
- **Rear Blade Distance:/**
- **Pre-Reset Feed Length:** Length of waste wire fed out after system reset.
- **Cutting Delay:/**
- **Stripping Delay:/**
- **Terminal Crimp Pulse:/**
- **Twisting Pulse:** Pulse equivalent for one full rotation of the wire twisting motor.

	OPEN DELAY	CLOSE DELAY		OPEN DELAY	CLOSE DELAY
Back Strip	0.000	0.000	CHIP CUT F.	0.000	0.000
Arm strip	0.000	0.000	CHIP CUT B.	0.000	0.000
P.CABLE F.	0.000	0.000	Crimp F.Down	0.000	0.000
F.Thread	0.000	0.000	Crimp F.UD.	0.000	0.000
Twist clip F	0.000	0.000	Safe Door	0.000	0.000
Twist clip B	0.000	0.000	Back up	0.000	0.000
F.Guide	0.000	0.000	Back up	0.000	0.000
B.Guide	0.000	0.000	Back up	0.000	0.000
PUSH TER. F	0.000	0.000	Back up	0.000	0.000
PUSH TER.B	0.000	0.000	Back up	0.000	0.000

		PULSE PER MM	BASE SPEED	START SPEED	DATUM SPEED	JOG SPEED	ACCEL	MAX. STROKE	
Test OFF	CRIMP F	0.00	0	0	0	0	0	0.00	STEP
Test OFF	CRIMP B	0.00	0	0	0	0	0	0.00	STEP
Test OFF	TWIST F.	0.00	0	0	0	0	0	0.00	STEP
Test OFF	TWIST B.	0.00	0	0	0	0	0	0.00	STEP
Test OFF		0.00	0	0	0	0	0	0.00	STEP
Test OFF		0.00	0	0	0	0	0	0.00	STEP
Test OFF		0.00	0	0	0	0	0	0.00	STEP
Test OFF		0.00	0	0	0	0	0	0.00	STEP

Motor1Motor2CylinderOtherReturn

This chart serves as the reference for the running speed of motors and pneumatic cylinders.

4.Malfunctions & Troubleshooting Table

No.	Fault Phenomenon	Root Cause	Solution
1	Machine stops suddenly during normal operation	1. Preset production volume reached2. Terminal detection failure3. Wire tangling4. Insufficient air pressure	1. Tap Clear Count to reset tally2. Readjust fiber optic sensor position3. Untangle jammed wires4. Raise air pressure above 0.4MPa
2	Diagonal uneven cutting edge	1. Excessively bent raw wire (install wire straightener)2. Wire guide tube misaligned with blade center3. Wire guide positioned too close to cutting blades	1. Adjust top wire cylinder pressure screw2. Calibrate rack-and-pinion clearance3. Install wire guide matching wire gauge
3	Insufficient stripping / Wire fails full cut	1. Incorrect blade depth parameters for cutting & stripping2. Worn or damaged cutting blades	1. Recalibrate cut blade depth and strip blade depth values2. Replace worn blades
4	Inconsistent finished wire total lengths	1. Slipping wire feed rollers (insufficient clamping force)2. Over-tight straightening rollers3. Worn feed roller surface	1. Adjust feed roller knob to apply proper clamping pressure on wires2. Same as above3. Replace worn wire feed rollers
5	Machine fails to auto-run after power-on startup	1. Production quantity set to zero2. Axis origin sensor misaligned / no signal3. Emergency stop button not released	1. Reset production target count2. Inspect all motor origin sensors and tighten mounting screws3. Release emergency stop knob
6	Axes fail to return to origin during homing cycle	Origin position sensor fails to trigger signal	Inspect all origin sensors and ensure reliable signal detection for each axis