RBEW9305

Fully Automatic Double-End Terminal Crimping Machine

Operation Manual

Fully Automatic Double-End Terminal Crimping Machine

Table of Contents

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 ≥0.6MPa.

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

①Confirm cutting blades are properly installed.

②Check 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.

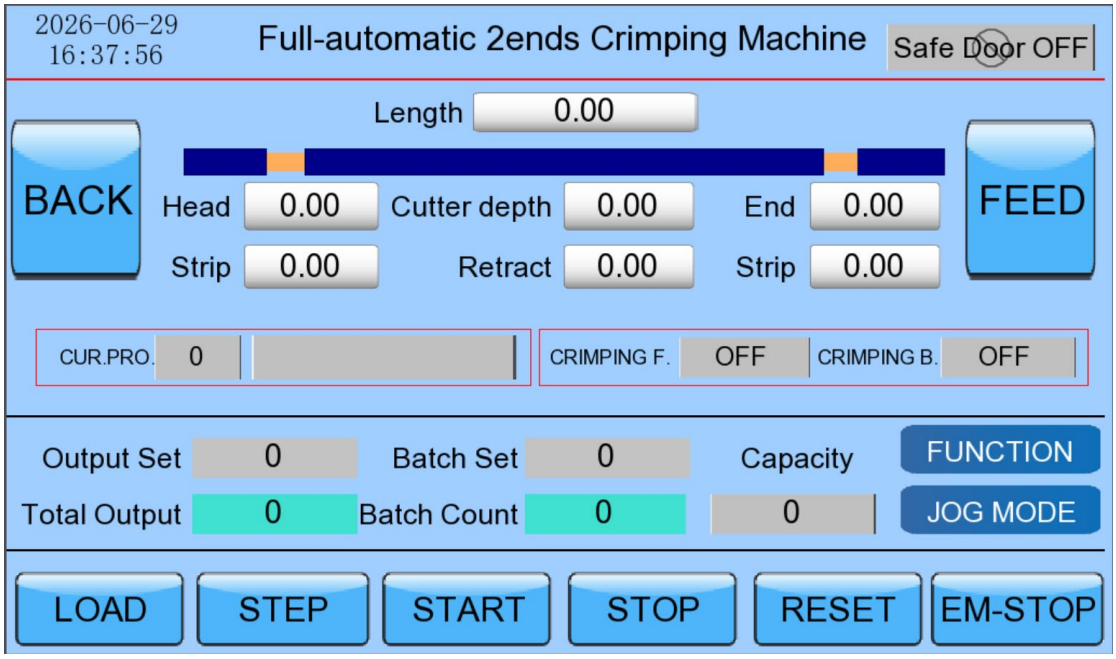
Shutdown Procedures

（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



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

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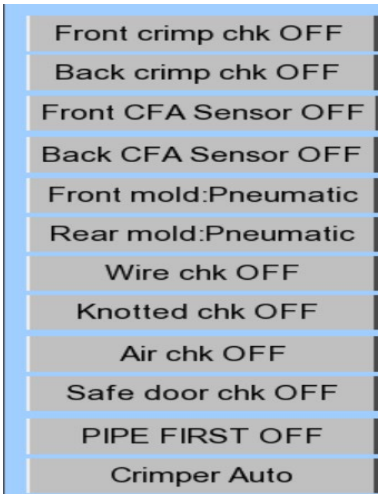
Unified Speed Control

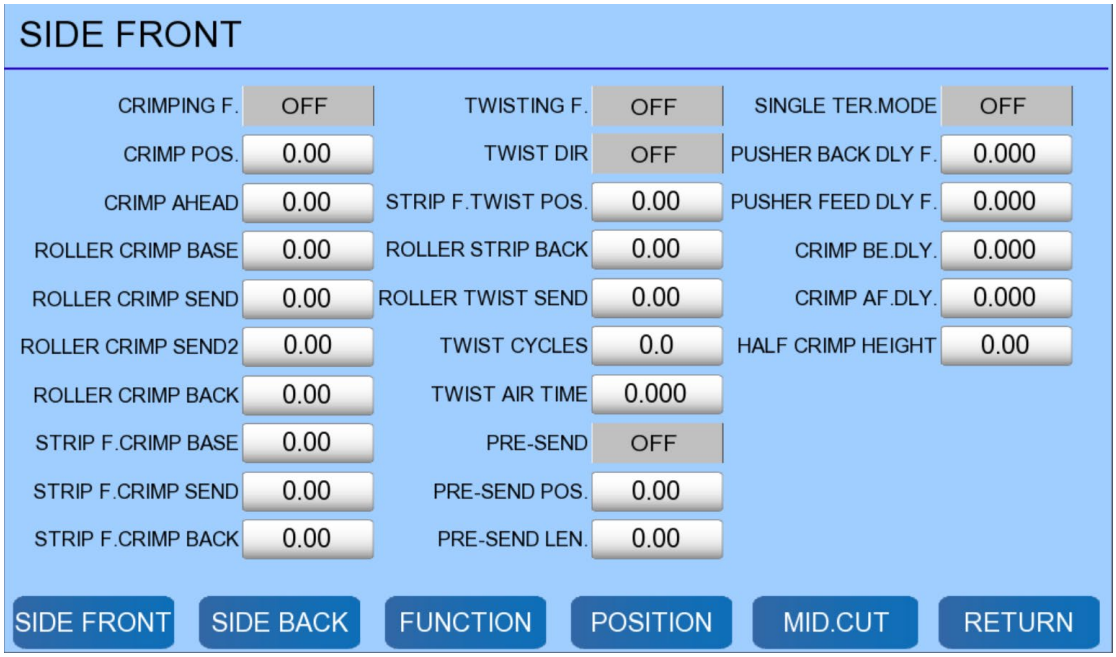
Adjust the global unified speed slider to modify all motor speeds simultaneously, or set individual motor speeds separately. Reduce motor speed if step loss occurs during operation.



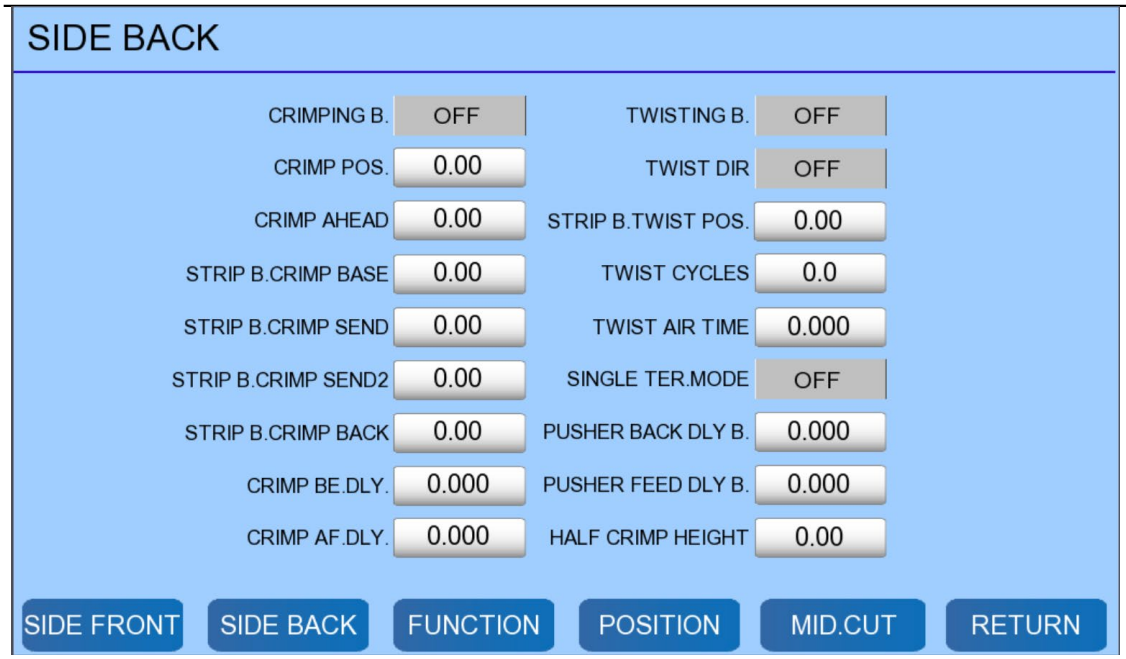
Detection Switches

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.

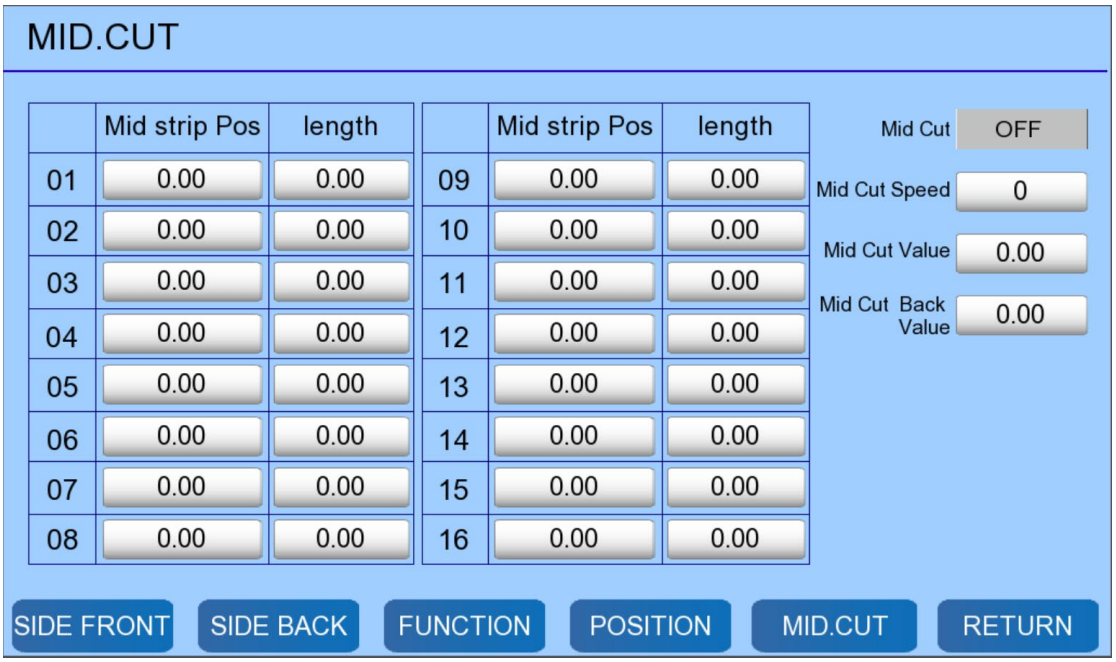


- Front Crimp Toggle: Enable/disable front terminal crimping unit.
- Translation Crimp Position: Horizontal coordinate for front crimp translation axis.
- Advance Crimp Offset: Pre-feed distance for early crimp positioning.
- Roller Crimp Reference: Front crimp axis home position after reset.
- Roller 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.



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-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.

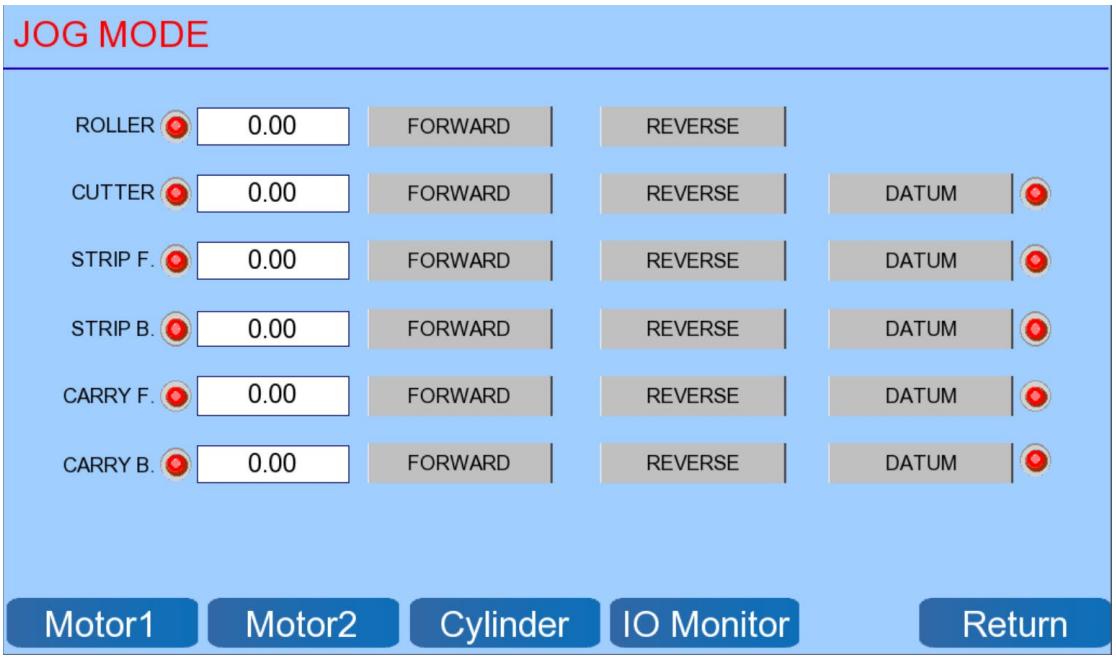
Rule: Mid-Strip Position + Mid-Strip Length < Total Wire Length (machine alarms if violated).

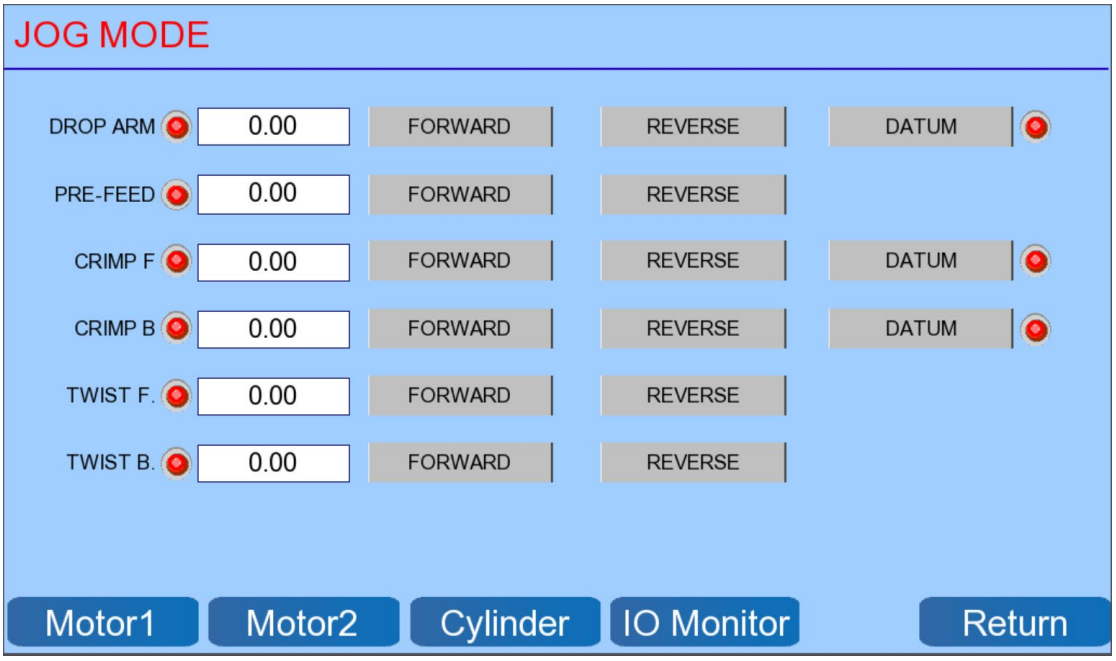
Mid-strip positions must be entered in ascending order; all subsequent mid-strip parameters become invalid once a position value is set to 0.

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.

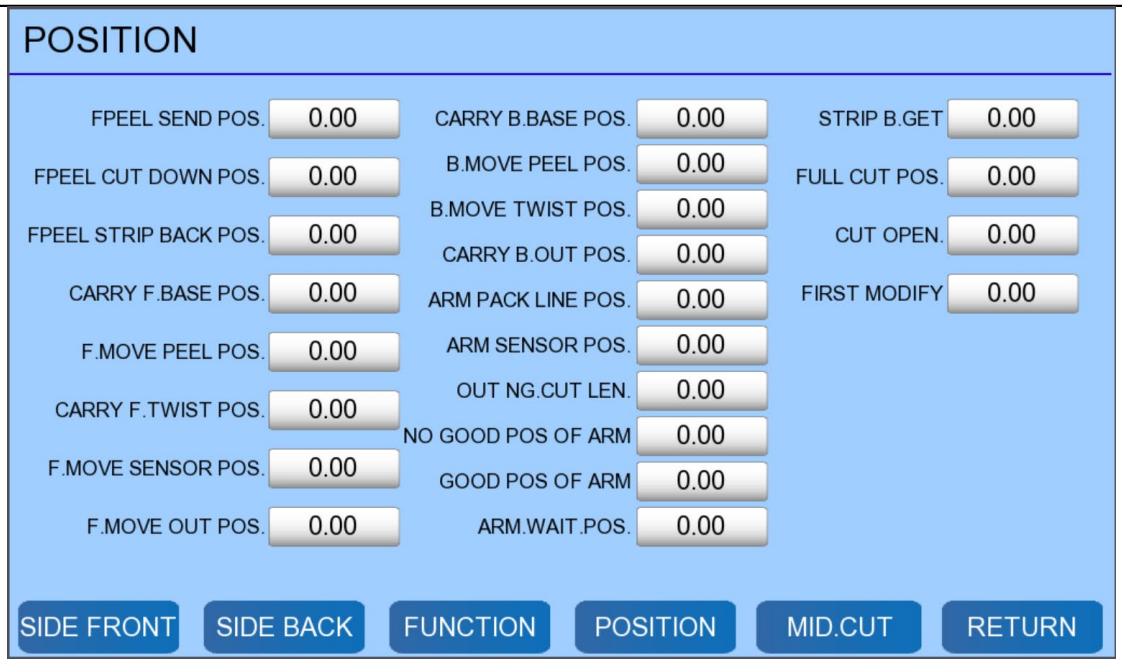
Mid-Strip Speed: Critical parameter, recommended range 10~20 for optimal stripping quality.



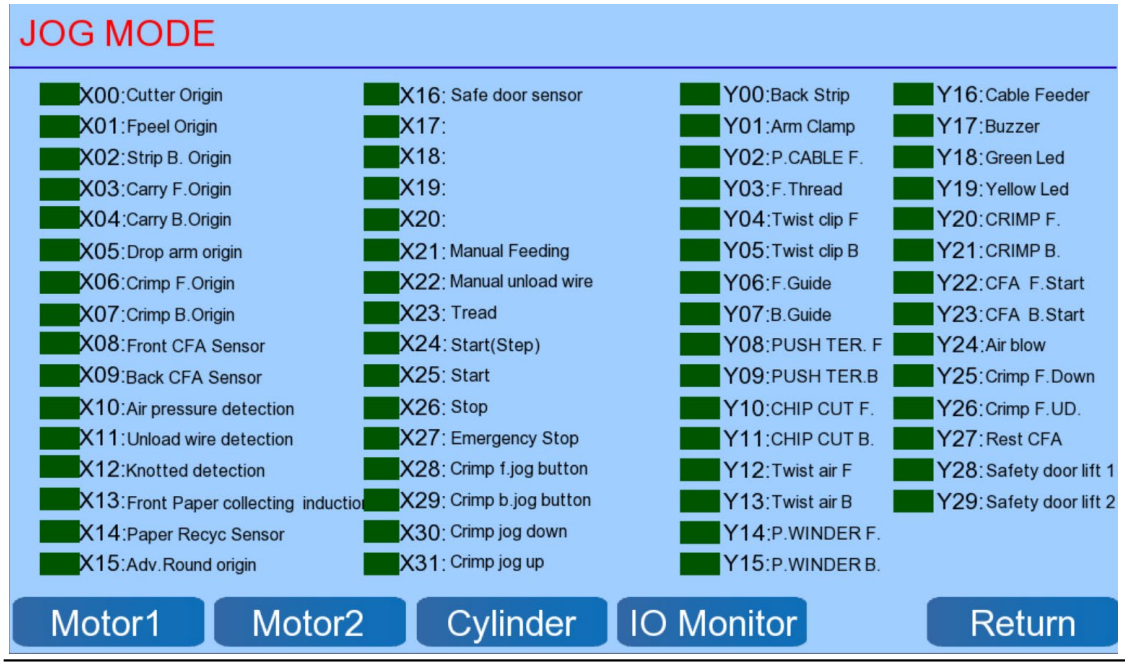


JOG MODE

- 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



- 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



- **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.**

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