VECTECH 4500

BGA Rework System

BGA/SMD Rework System

USER

MANUAL

Thank you for choosing our BGA rework system. Designed for reworking and soldering surface-mounted components, this product should be used only after reading this manual carefully. Retain the manual for future reference.

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Chapter 1: Safety Precautions

1.1 Safety Instructions

DANGER	
	➢ Risk of electric shock. ➢ Do not touch potentially energized parts. Unauthorized personnel must not modify the equipment, as doing so may cause electric shock. ➢ In an emergency, immediately press the red emergency-stop button. ➢ Never use the equipment if the power cord is damaged. ➢ When idle for an extended period, turn off the power, disconnect the supply, and unplug the cord. ➢ Before inspecting or servicing electrical circuits, check the power status. Switch off power before carefully performing maintenance and inspections. ➢ This product uses a three-wire grounded plug and must be connected to a grounded outlet. Do not modify the plug or use an ungrounded three-prong adapter. If an extension is needed, use a three-conductor grounded extension cord. ➢ Dangerous voltages are present inside this equipment. In the event of a fault, repairs must be performed by qualified personnel, or contact the dealer or manufacturer.
	➢ Risk of injury. ➢ Do not reach into the equipment while powered on or operating. ➢ Keep the equipment dry. Do not disassemble it during operation or pull the power cord. ➢ Keep the machine and its surroundings clean to help prevent accidents. ➢ The upper and lower infrared heaters become very hot during operation. Do not touch the heated housing surfaces.
	➢ This product is not explosion-proof. Never use it in potentially explosive atmospheres. ➢ The laser positioning unit contains a Class 2 laser. Do not look directly into the beam.
WARNING	
	➢ Do not move motorized parts by hand; equipment damage or injury may result. ➢ Do not place your hands inside the equipment while it is running. Doing so may cause personal injury or physical damage to surrounding objects. ➢ If the machine is paused, inspect conditions carefully before manual intervention; otherwise, injury or property damage may result.
	➢ When unpacking the machine and accessories, obtain assistance if necessary to prevent items from falling and causing accidents. ➢ Watch for overhead brackets and guards to avoid striking your head. ➢ After moving the machine to its workplace, place it on level ground to prevent accidents caused by tilting.
	➢ Use or store this product in an environment with suitable temperature and humidity. ➢ Recommended temperature: 0-40°C; relative humidity: 20%-90% (non-condensing).



- This equipment is heavy. Keep it on a single level; do not stack units, as damage or accidents could result.
- Do not place any objects within the machine's operating envelope.
- Before handling or moving the machine, secure all movable components and then proceed with transport.
- After unpacking and before operating, ensure that all shipping restraints have been removed from movable components.



- Inspect, service, and repair this product regularly to help maintain its performance and extend its service life.
- Use the normal startup procedure.
- Before startup, check that the motion mechanisms are free of obstructions.

CAUTION



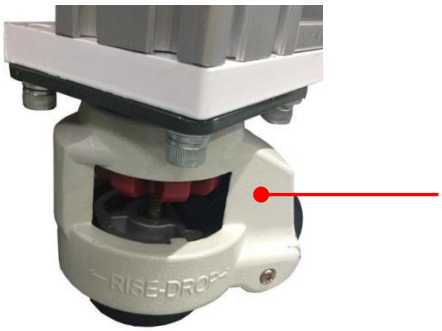
- Do not discard the packaging materials or protective foam.
- If the machine must be returned for service, secure and pack it in its original configuration.
- Keep the packaged machine upright. Do not invert or lay it on its side.
- Protect the machine with foam or equivalent cushioning before packing it.
- The packaging is not moisture-resistant. Protect it from rain and damp during transport or storage.
- Do not restart within 10 seconds of emergency stop or power loss, to avoid drive damage.

1.2 Unpacking and Installation Precautions

- Place the wooden crate upright on level ground and remove its shock-absorbing wrapping.
- Remove the crate screws with a power tool and open the cover.
- Move the equipment to the work area using a forklift.
- Adjust the leveling feet until the machine is horizontal and stable, as shown below.
- Remove all shipping locks from the motion axes before operating the equipment.
- Check the machine and accessories for damage or missing items; contact us or your dealer if needed.

1.3 Leveling Foot Adjustment

Turn the adjusting nut clockwise to raise the foot, or counterclockwise to lower it.



Chapter 2: Overview

Thank you for using the VECTECH 4500 BGA rework system. With microprocessor control and infrared temperature monitoring, it safely and accurately removes and solders surface-mounted components. The BGA SOFT application controls the rework process and records all process data to meet modern electronics manufacturing requirements. The VECTECH 4500 workstation comprises a BGA heating/rework system and a PL precision optical placement system.

The rework heating section provides 16,700 W of heating power, enabling controlled, repeatable PCB temperatures for both leaded and lead-free soldering and removal of various surface-mounted chips. To meet the tighter process window of lead-free soldering, the VECTECH 4500 uses genuine closed-loop reflow temperature control to manage PCB and component temperatures accurately. Uniform heat distribution and controllable peak temperatures support highly reliable lead-free solder joints.

The VECTECH 4500 has an open heating configuration and is PC-controlled. An external computer can be connected for setting and modifying parameters through the software.

The RPC (Reflow Process Camera) provides critical visual feedback for accurately determining solder melting throughout the soldering and desoldering process.

The VECTECH 4500 PL precision optical alignment/placement system provides accurate placement control for BGA rework. Fine adjustment and camera imaging ensure precise component alignment. Together with the IR heating section and RPC monitoring, the PL system forms a complete, advanced BGA rework workstation.

Chapter 3: Product Description

3.1 Product Illustration



3.2 Packing List

Check that the following components are complete and undamaged:

Description	Quantity
VECTECH 4500 main unit	1PCS
RPC reflow monitoring camera	1PCS
PCB irregular-edge support rod	1PCS
PCB anti-sagging support bracket	1PCS
VECTECH 4500 user manual	1PCS
BGA tool kit	1PCS
Computer	1PCS
LCD monitor	1PCS
Air nozzles	5PCS

Note: The packing list prevails. Optional items not ordered are not included. If any item is damaged, contact our company or your distributor immediately.

3.3 Specifications

IR Heating	
Total Power (W)	Max:18000W
Power Supply	AC380V±10% 50/60Hz
Lower Hot-Air Power (W)	1100W
Upper Hot-Air Heater Power (W) Bottom IR Preheater Power (W)	1600W 14000W
Vacuum Generator	0.1Mpa(max)
Laser Alignment Module	5 V / 30 mA x 2 units
Communication	Ethernet interface (PC connection)
Motion System	Precision motor drive system
Temperature Sensor (Range, °C)	0～400℃
External K-type Sensors	6 channels
Maximum PCB Size (mm)	950x750mm
Maximum Preheating Area	910x650mm
Maximum Chip Size	120x120mm
Axis Travel	X: 1200 mm Y: 900 mm Z: 180 mm
PL Precision Placement	
Power	Approx. 15 W
Cameras	Upper/lower 6 MP HD industrial cameras
Alignment Accuracy	±0.01mm
Vacuum Generator	0.1Mpa (max)
LED Lighting	White LED lower/upper lighting (adjustable brightness)
Prism Inspection Range	50 x 50 mm max.; +80 mm prism travel
Overall Dimensions (mm)	L2000 x W1620 x H1600 mm (screen deployed)
Net Weight (kg)	Approx. 600 kg

3.4 Pre-operation Inspection

- Unpack the BGA VECTECH 4500 and place the main unit on a level work surface.
- Check that the package and equipment are intact and all accessories match the packing list.
- After assembling and connecting the equipment, confirm that the supply voltage matches the rated voltage on the equipment nameplate. Then plug in the power cord and turn on the main switch.
- Confirm that the supplied air pressure is at least 0.65 MPa.

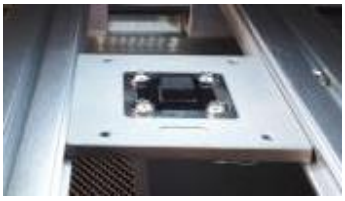
3.5 System Calibration Check

Vibration during shipping may affect precision alignment. Calibration can be performed before first use. Follow the procedure below:

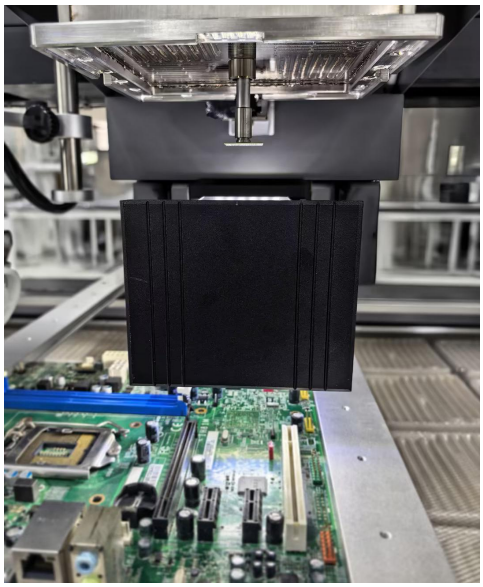
1. Determine whether calibration is required.
(1) Prepare an alignment calibration fixture as shown below.



(2) Fit the upper alignment module into the lower module as shown below.



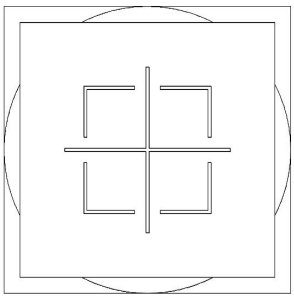
(3) Secure the entire assembly to the equipment and align the center. Click "Pick Up Chip" in the software to pick up the upper module. Do not move the support afterward, or repeat all steps.

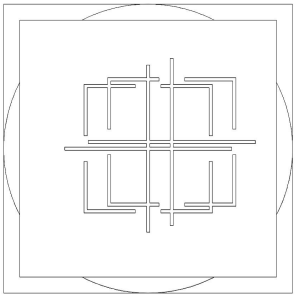


(4) After pickup, the alignment prism extends automatically. Adjust the image magnification and focus until both upper and lower modules are clearly visible; assess alignment as shown.

Upper and lower images overlap: alignment accurate

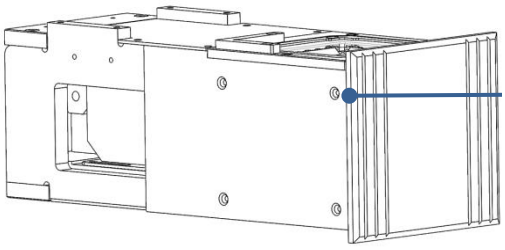
Images do not overlap: calibration required



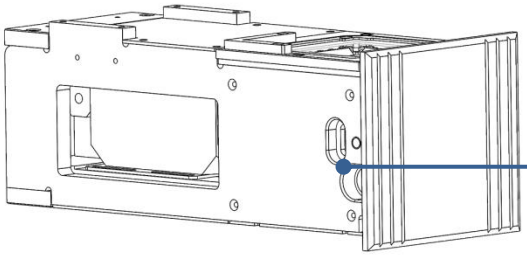


2. Calibration Procedure

(1) Remove four mounting screws (four per side as stated), remove the side covers and expose the locking screws.

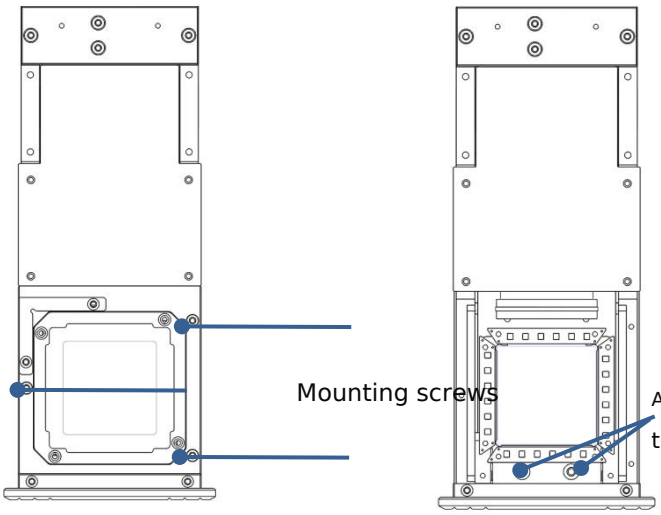


Mounting screws



Loosen the locking screws before calibration; they need not be completely tightened.

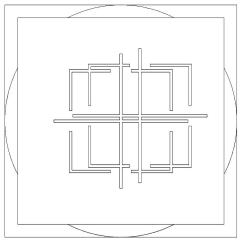
(2) Remove the three plate screws; remove the plate to expose the adjustment screws.



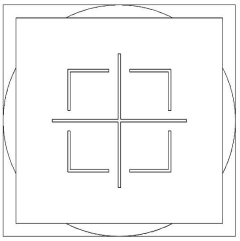
Mounting screws

Adjustment screws: turn both screws counterclockwise to change the pad and module image positions.

(3) Adjust the upper and lower module images until aligned.



1. Turn the right screw clockwise to move the upper image up-left;
turn it counterclockwise to move down-right. Horizontal movement is greater than vertical.
2. Turn the left screw clockwise to move the upper image up-right;
turn it counterclockwise to move down-left. Horizontal movement is greater than vertical.
3. Adjust the left and right screws together to move the solder-ball image in a zigzag pattern until the two images overlap.

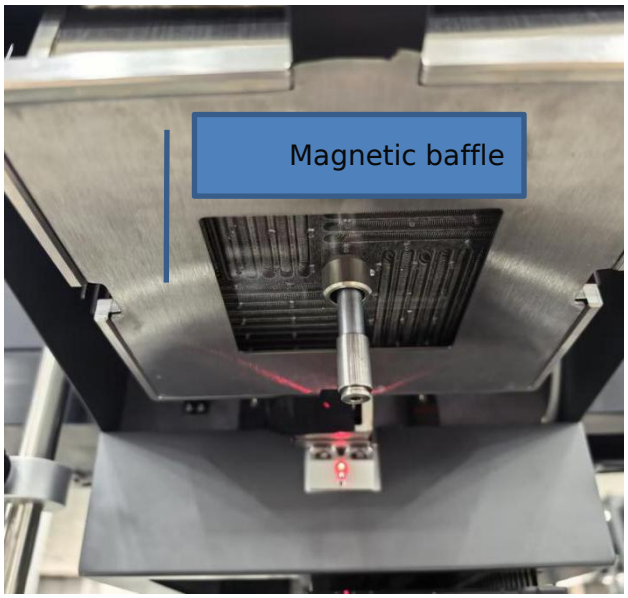


(4) Reassemble in reverse order and tighten the locking screws to finish calibration.
(5) Reinstall the decorative covers, then check alignment once more to verify successful calibration.

Chapter 4: Heating System

4.1 Upper Hot-Air Heater

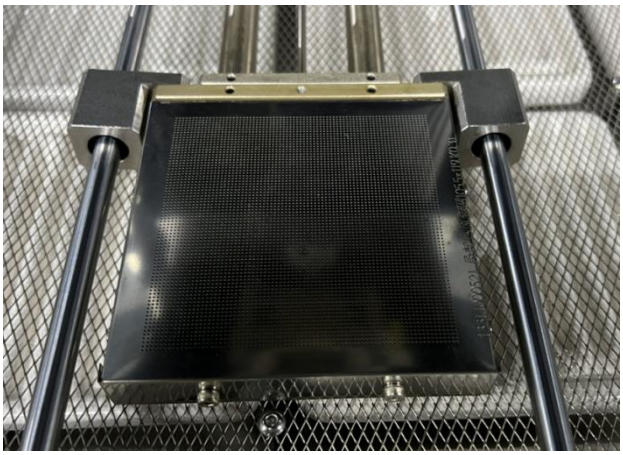
The upper heater is a 1600 W combined IR/hot-air unit. Select a suitable air baffle for the chip size.



The upper heater uses magnetic retention and locating pins for quick replacement.
* Note:
An appropriately sized heating nozzle limits heat transfer to components near the BGA, particularly glued components, reducing unintended solder melting and short circuits.

4.2 Lower Hot-Air Heater

The lower localized heater is a 1400 W hot-air heater with an 80 x 80 mm heating area. Its support keeps it concentric with the upper heater and moves them in synchronization.

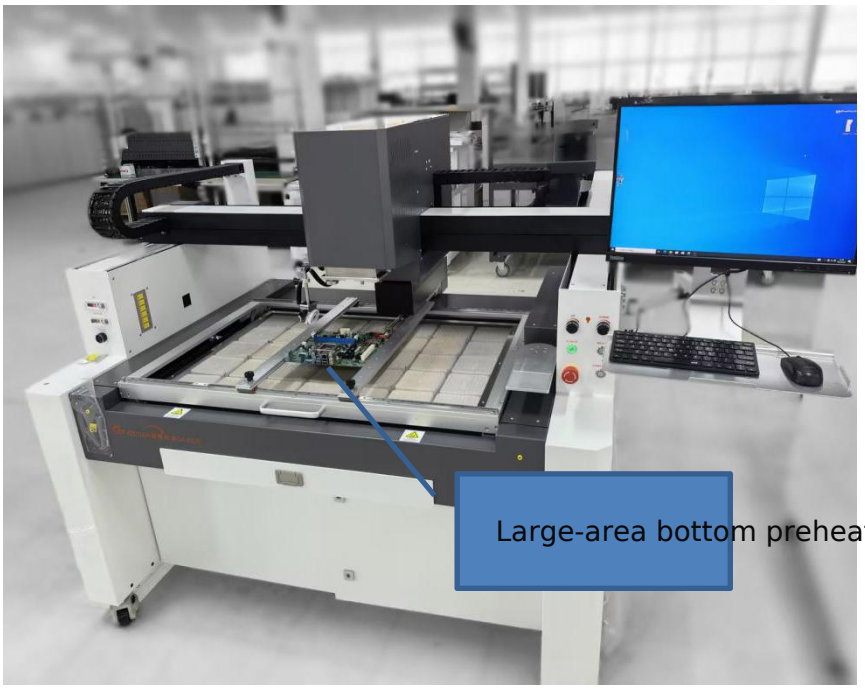


The lower localized hot-air heater works with the upper heater to provide similar temperature rise rates on both PCB surfaces, minimizing temperature differences, thermal stress, and warpage.

It also compensates for heat loss in localized heating and reduces the upper heater's required output, allowing joints to reach soldering temperature while the chip remains below 260°C.

4.3 Large-Area Bottom Infrared Preheater

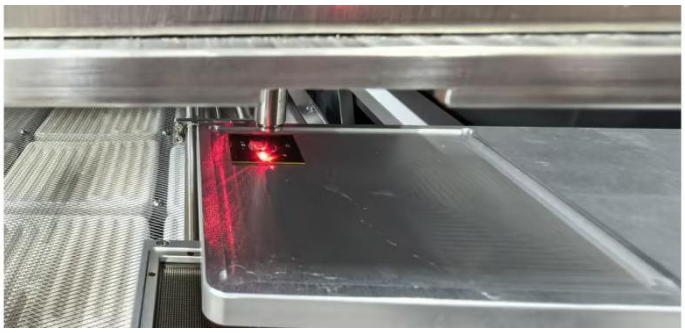
The large-area bottom IR preheater has a 650 x 910 mm heating area, suitable for large PCB rework. It can preheat the PCB to approximately 170°C, improving local rework conditions and minimizing temperature differences, thermal stress, and deformation within acceptable limits.



Chapter 5: PL Precision Alignment System

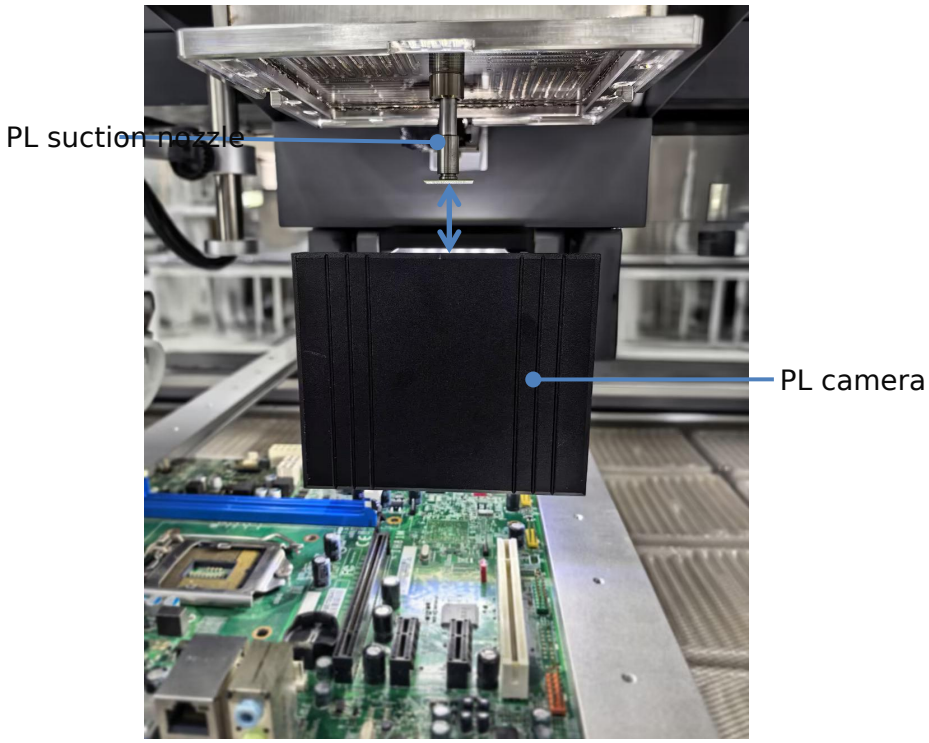
5.1 Rotary Component Tray

During alignment, place the chip against the upper-left corner of the rotary tray. The tray rotates automatically to the pickup position for the machine to pick up the chip. Rotary feeding standardizes placement, improves pickup precision, and expands the usable preheat area.

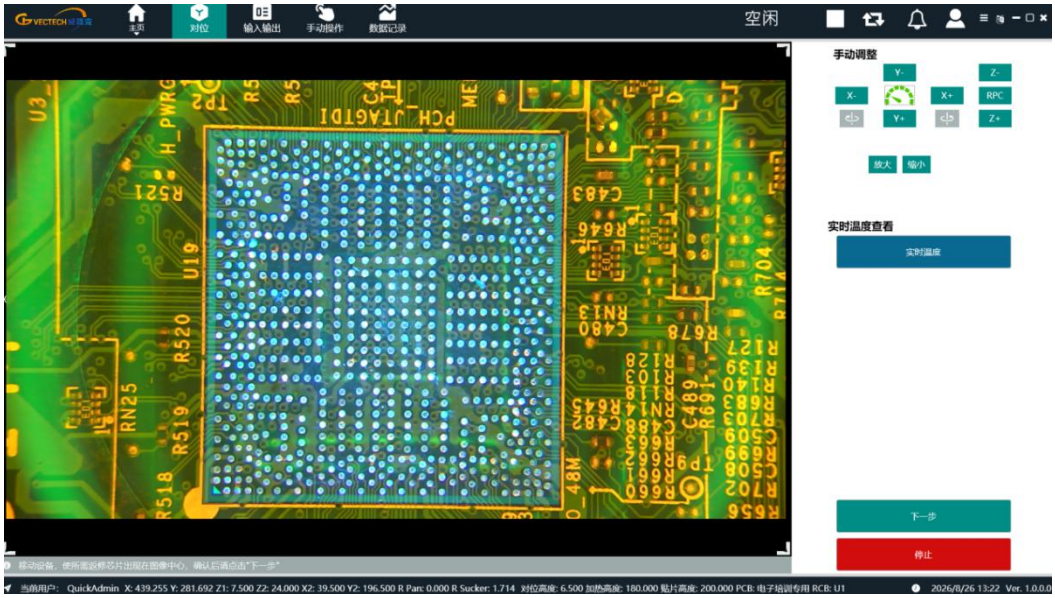


5.2 PL Camera

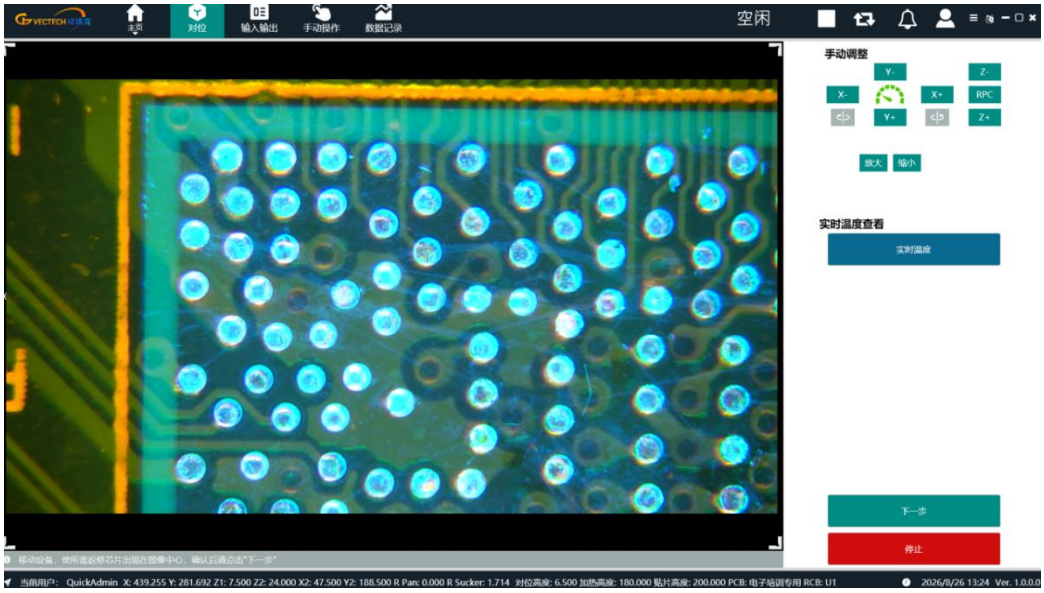
(1) The PL camera is used to align components. It sends images of the PCB solder pads and the component leads held by the pickup nozzle to the monitor, allowing the operator to view both and adjust alignment using the available controls.
(2) When the PL camera extends, adjust its upper and lower LED illumination using the knobs: turn "UP" for the upper PL arm illumination and "DOWN" for the lower illumination.



The prism alignment module has independent X and Y motion to accommodate larger chips. Move the prism to inspect images at the four corners of chips up to 100 x 100 mm.



Use the four-corner buttons to move the prism and inspect the chip's corners for accurate alignment.



Chapter 6: RPC Soldering Monitoring System

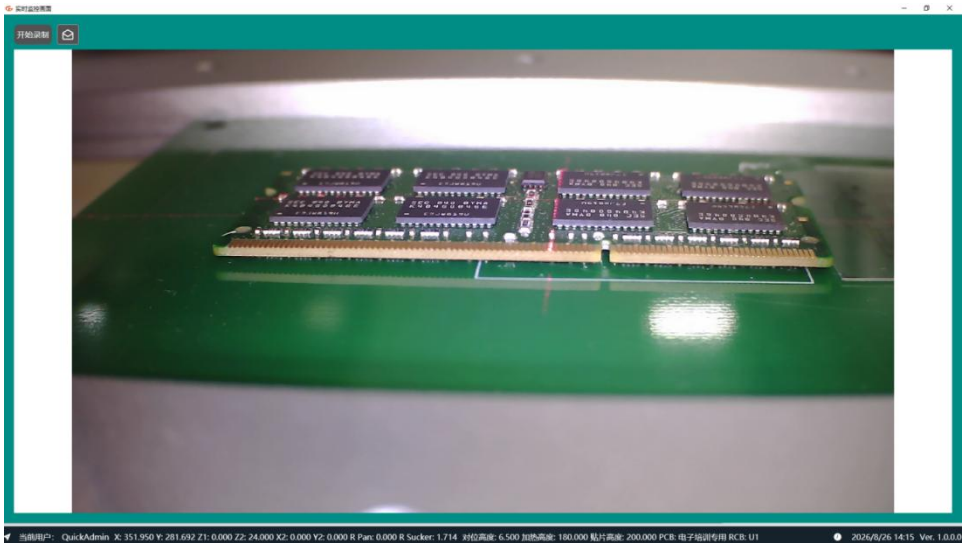
To adjust the RPC camera position, loosen the appropriate locking knob before moving it. The RPC camera can move vertically or rotate.



The RPC soldering monitoring system displays solder melting during the process, helping operators monitor conditions in real time and ensure soldering quality.

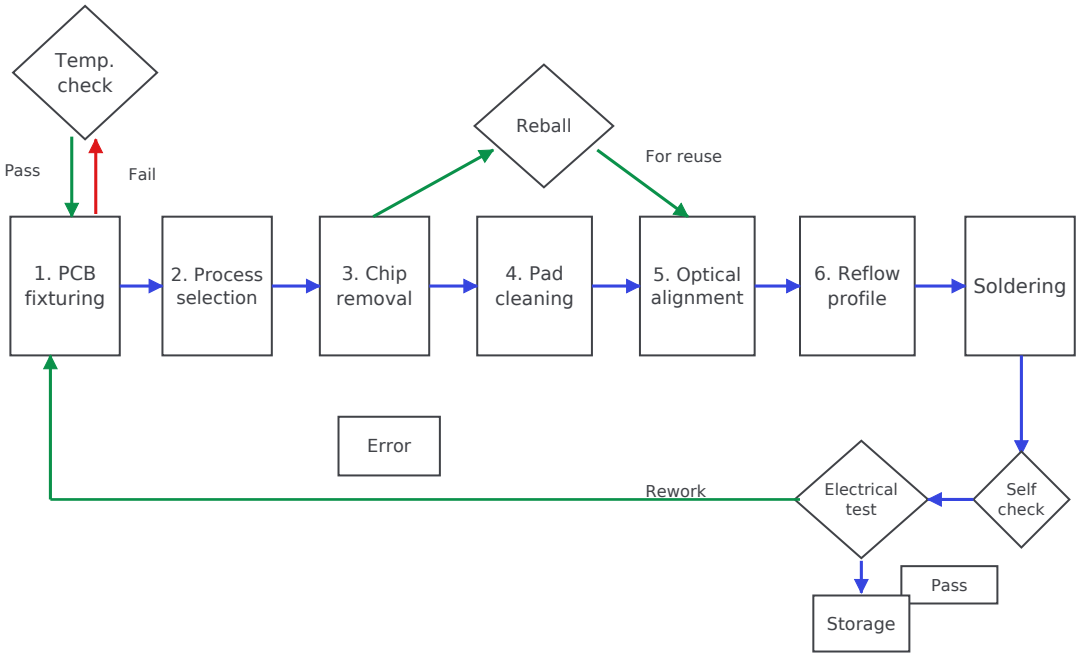


Click the RPC button to open the camera view.



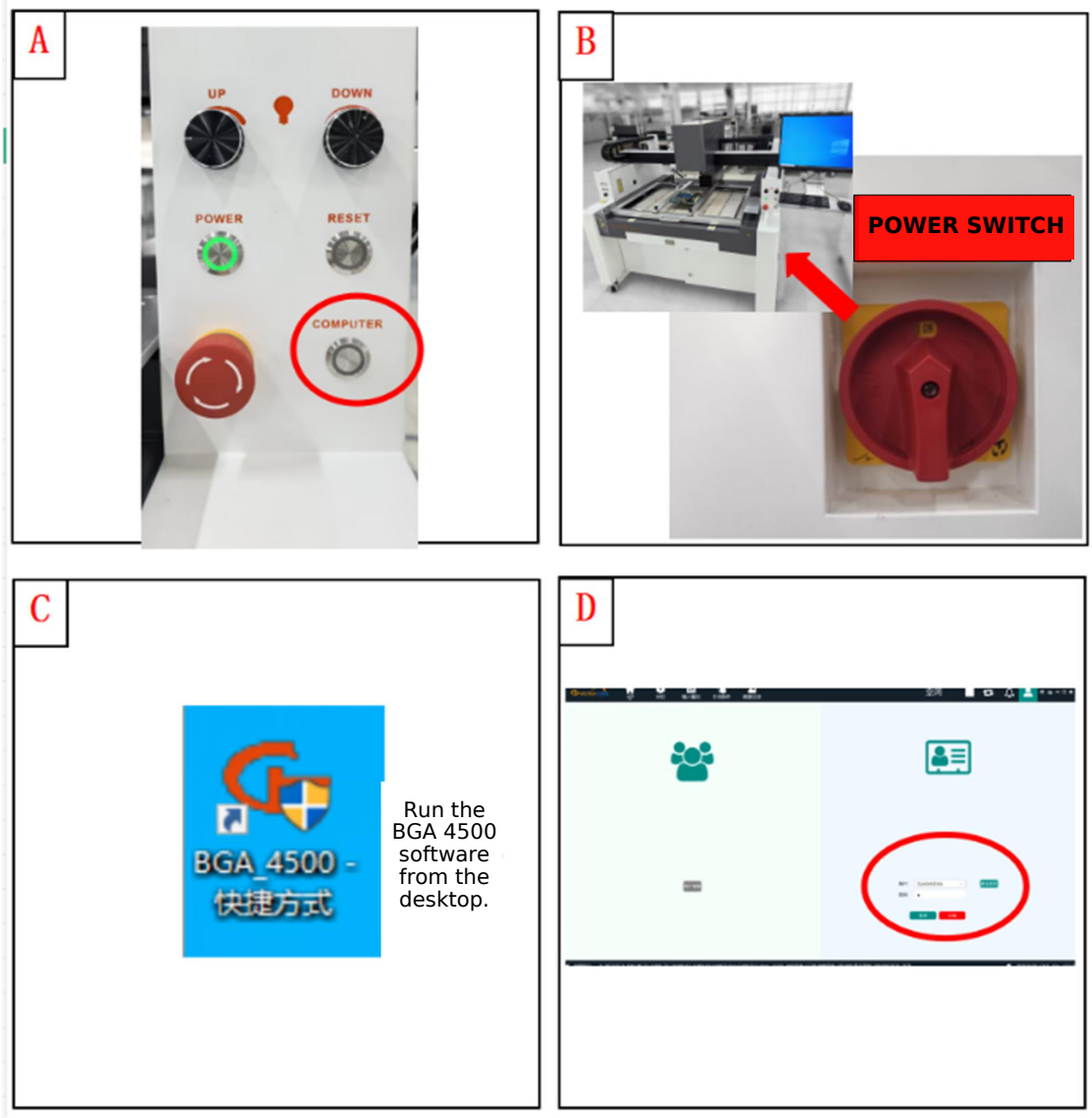
Chapter 7: RPC Soldering Monitoring System

7.1 Rework Process Flow



7.2 Startup Procedure

A	Turn on the equipment computer.
B	Turn on the VECTECH 4500 power switch (ON = on; OFF = off).
C	Wait 5 minutes for the computer and equipment to finish booting and stabilize. Once connected, launch the equipment control application.
D	Select the company-assigned user account and enter the password to log in.
A	Turn on the equipment computer.



Op. Steps	Power-on and Homing
A	After logging in, click POWER to energize the motors on all machine axes.
B	A confirmation dialog for homing appears.
C	Check the motion area for people or obstructions. Remove obstacles and warn personnel before homing to ensure safe operation.
D	Click Confirm; the machine homes automatically, completing the power-on procedure.

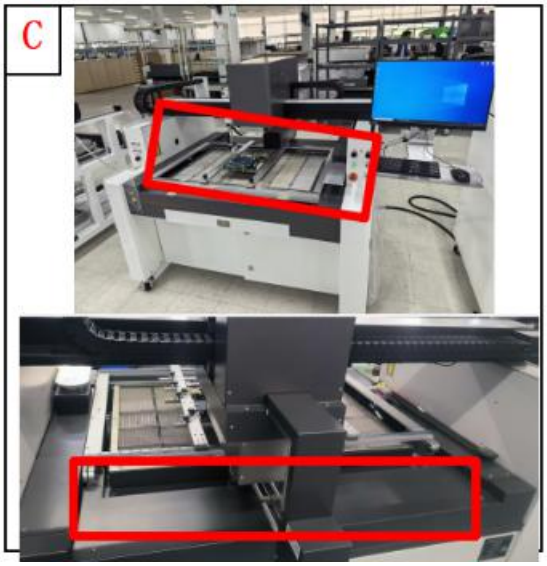
A



B



C



D



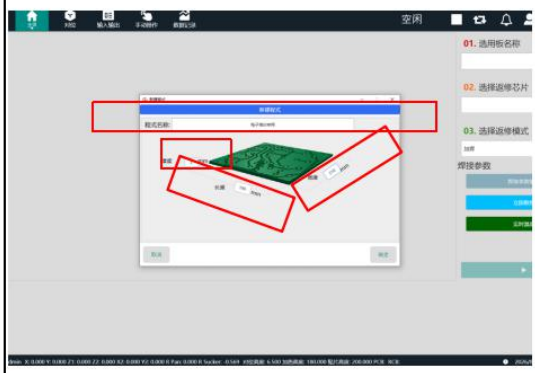
7.3 Creating and Editing Programs

Operating Steps	Create New Program
A	Click the arrow below the Home button, then select New Program.
B	The software opens the New Program screen. Enter the PCB model as the program name (or use a custom name), enter the PCB length, width, height, and thickness, then click OK.
C	The chip-program settings window A opens. Click New Chip to open window B, then enter chip length, width, height, and thickness and its reference name as shown on the PCB (e.g., U1). Click OK to finish.
D	The program has been created.

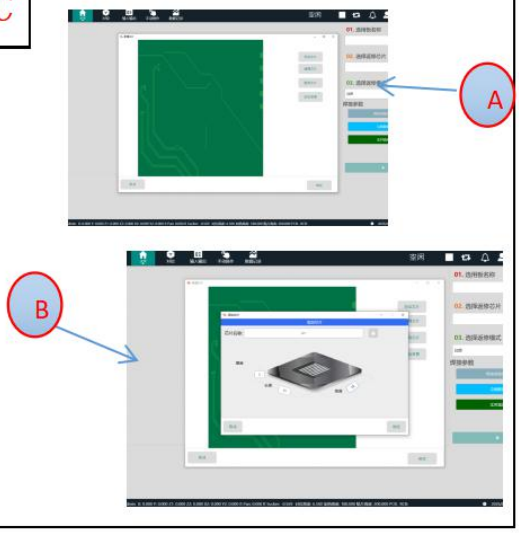
A



B



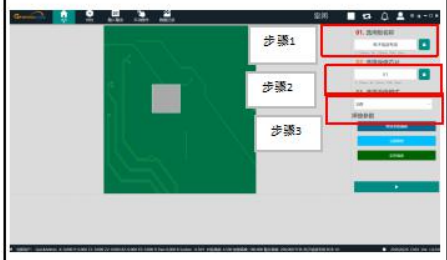
C



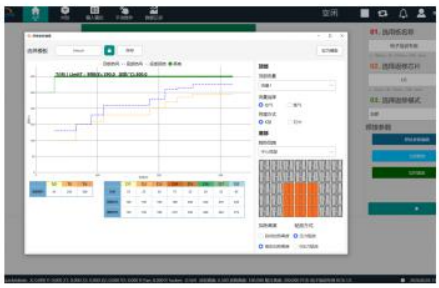
D

	Editing Chip Soldering Parameters
A	(1) Select the program under Board Name. (2) Select the target chip under Rework Chip. (3) Click Edit Soldering Parameters.
B	The parameter editor opens. Configure the following: (1) Upper air-flow setting (2) Upper air-source selection (3) Bottom preheat-zone selection (4) Heating-height mode (normally automatic heating height) (5) Placement mode selection (6) Heating parameter settings
C	After configuring, click Save as Default Template.
D	The program setup is complete.

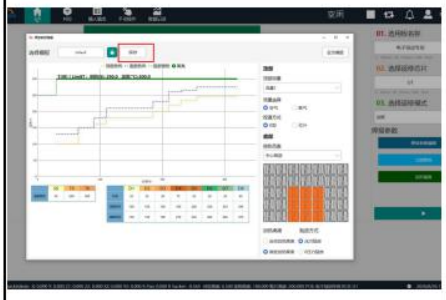
A



B

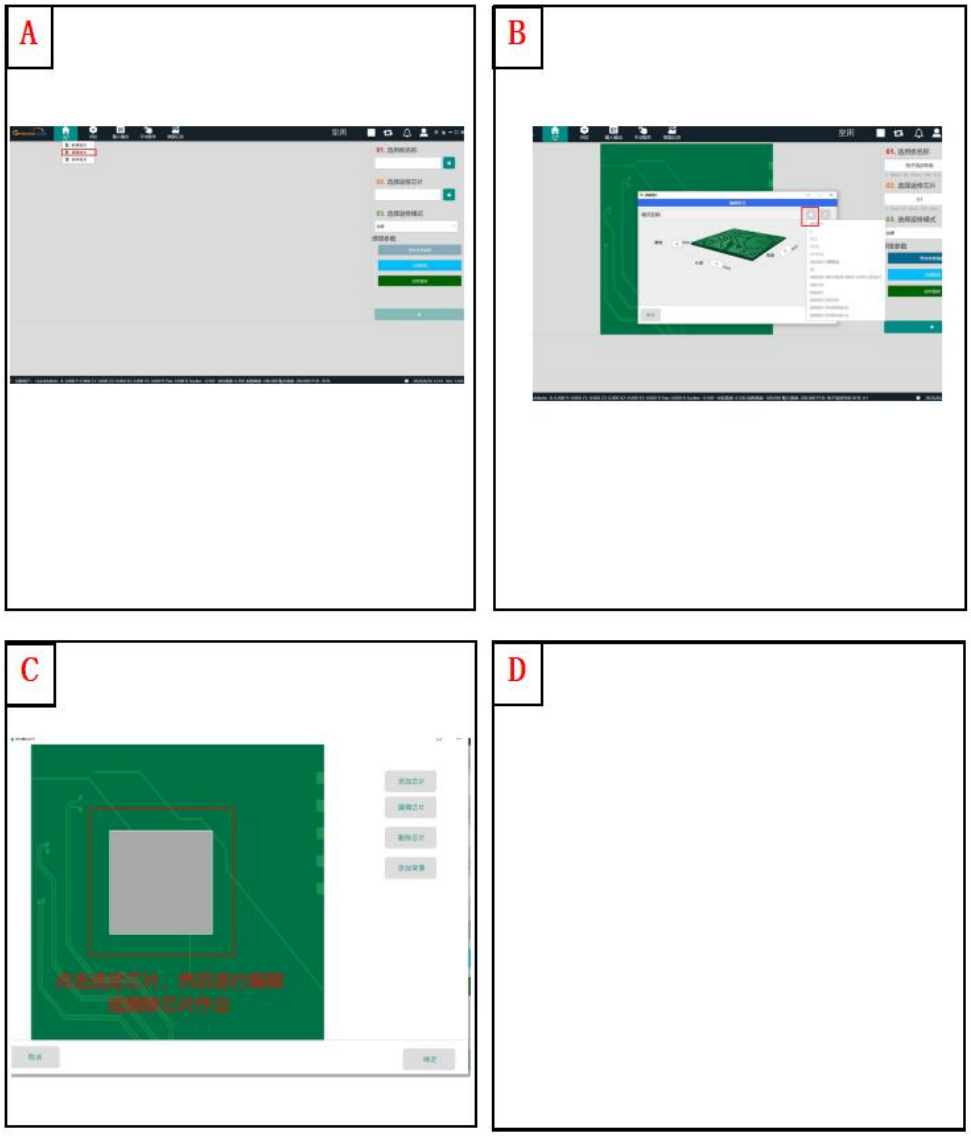


C



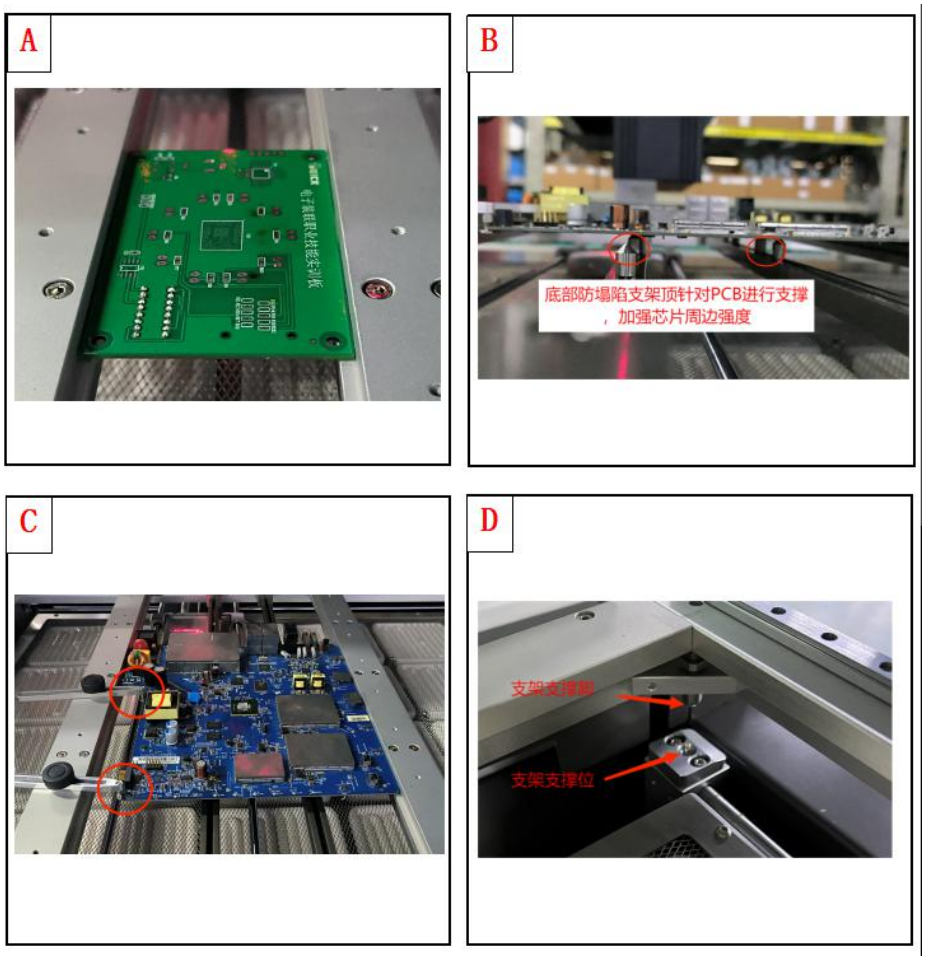
D

Operating Steps	Edit Program Parameters
A	Select Edit Program on the main screen.
B	The program dialog appears; select the program to edit, and modify the board parameters; then click OK.
C	The chip parameter editor opens: (1) Click New Chip to add a chip. (2) Select a chip, then click Edit Chip to modify it. (3) Select a chip and click Delete Chip to remove it. Add Background adds a PCB background to make the program easier to visualize.
D	Click Finish to save the program changes.



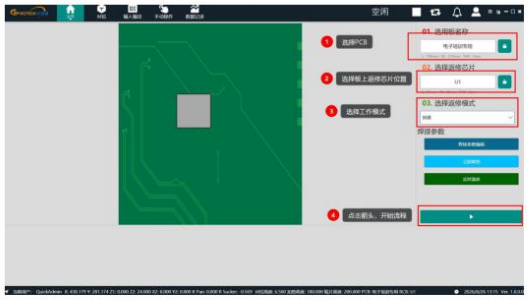
7.4 Standard Rework Procedure

Op. Steps	PCB Fixing
A	Remove the training PCB and secure it using the equipment's PCB support frame.
B	For larger PCBs, use the lower anti-sagging support. Adjust the support pins so they contact component-free locations on the underside around the chip being reworked.
C	Use the irregular-edge support rods to support the PCB edges, especially boards with nonstandard edges or multiple connectors.
D	Move the support frame into the work position to complete PCB fixing.



Op. Steps	Chip Removal
A	Follow the numbered illustrations to select the process and mode, then start.
B	The interface changes automatically. Click Next.
C	After the prism extends, press X+, X-, Y+, and Y- to move the head until the target chip image is centered in the video window. Then click Next.
D	The programmed process heats and removes the chip automatically, then cools it. When cooling is complete, click Next. The equipment places the removed chip on the output tray.

A



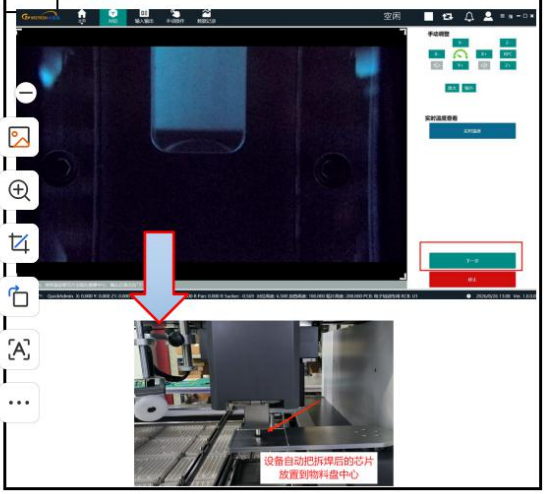
B



C

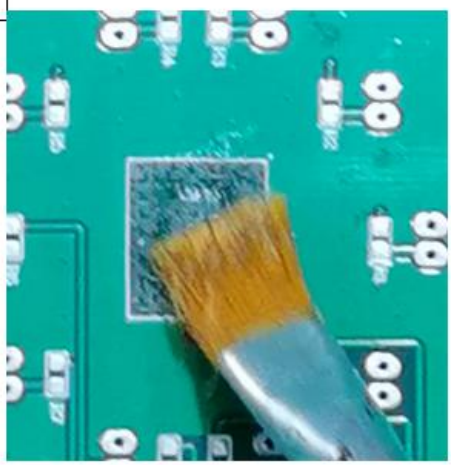


D

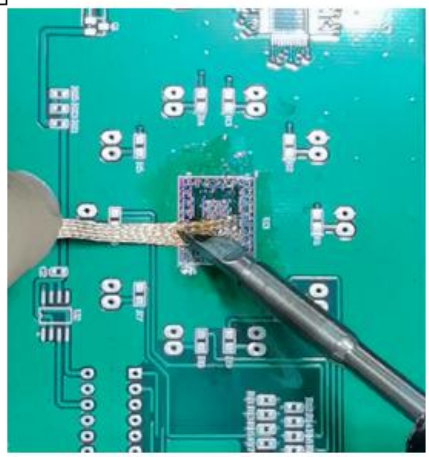


Op. Steps	PCB Pad Cleaning
A	Remove the PCB after chip removal. Apply flux paste to the pads at the manual workstation.
B	Use a knife-tip soldering iron and solder wick to remove solder from the pads.
C	Clean flux-paste residue from the pads with a lint-free cloth moistened with alcohol.
D	Use a small brush to apply a thin, even layer of flux paste to the pads.

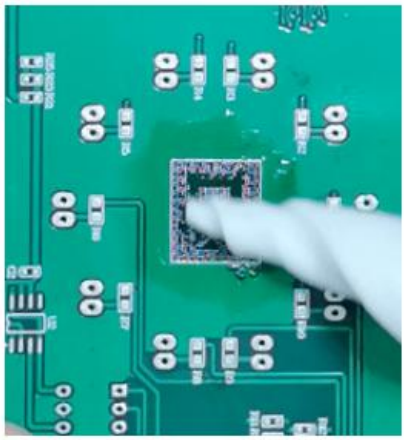
A



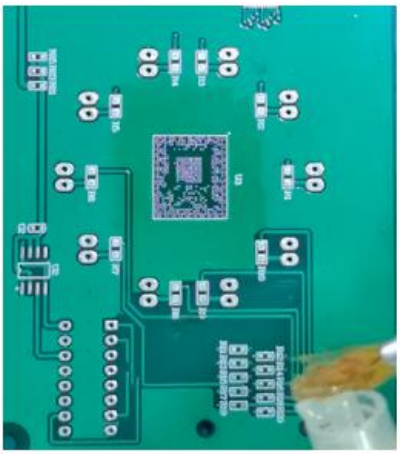
B



C

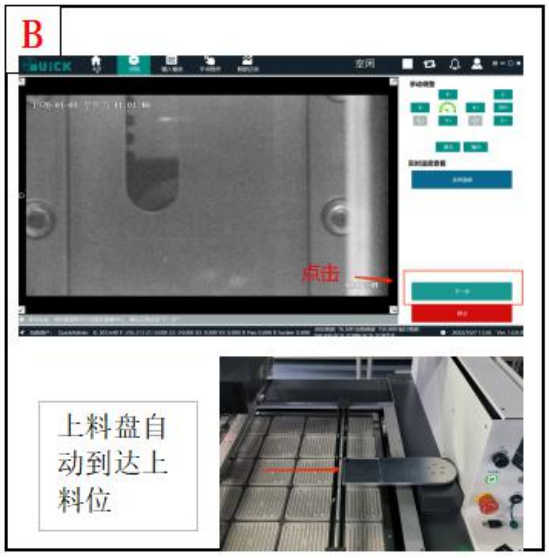


D

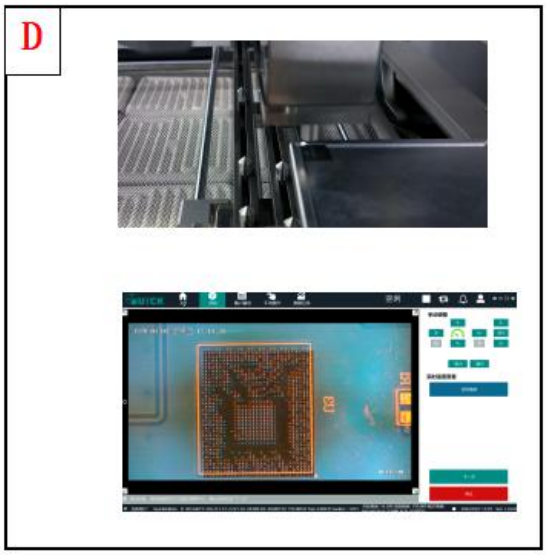


Op. Steps	Chip Placement and Soldering
A	1. Reinstall the PCB with cleaned pads on the support frame using the PCB fixing procedure. 2. Follow the numbered images to select the process/mode and start the procedure.
B	The interface changes automatically. Click Next; the rotary tray turns to the loading position.
C	1. Place the chip at the upper-left corner of the tray, with polarity matching the PCB. 2. Keep the chip against the tray's upper and left edges, then click Next.
D	The equipment picks up the chip and extends the prism for alignment and placement.

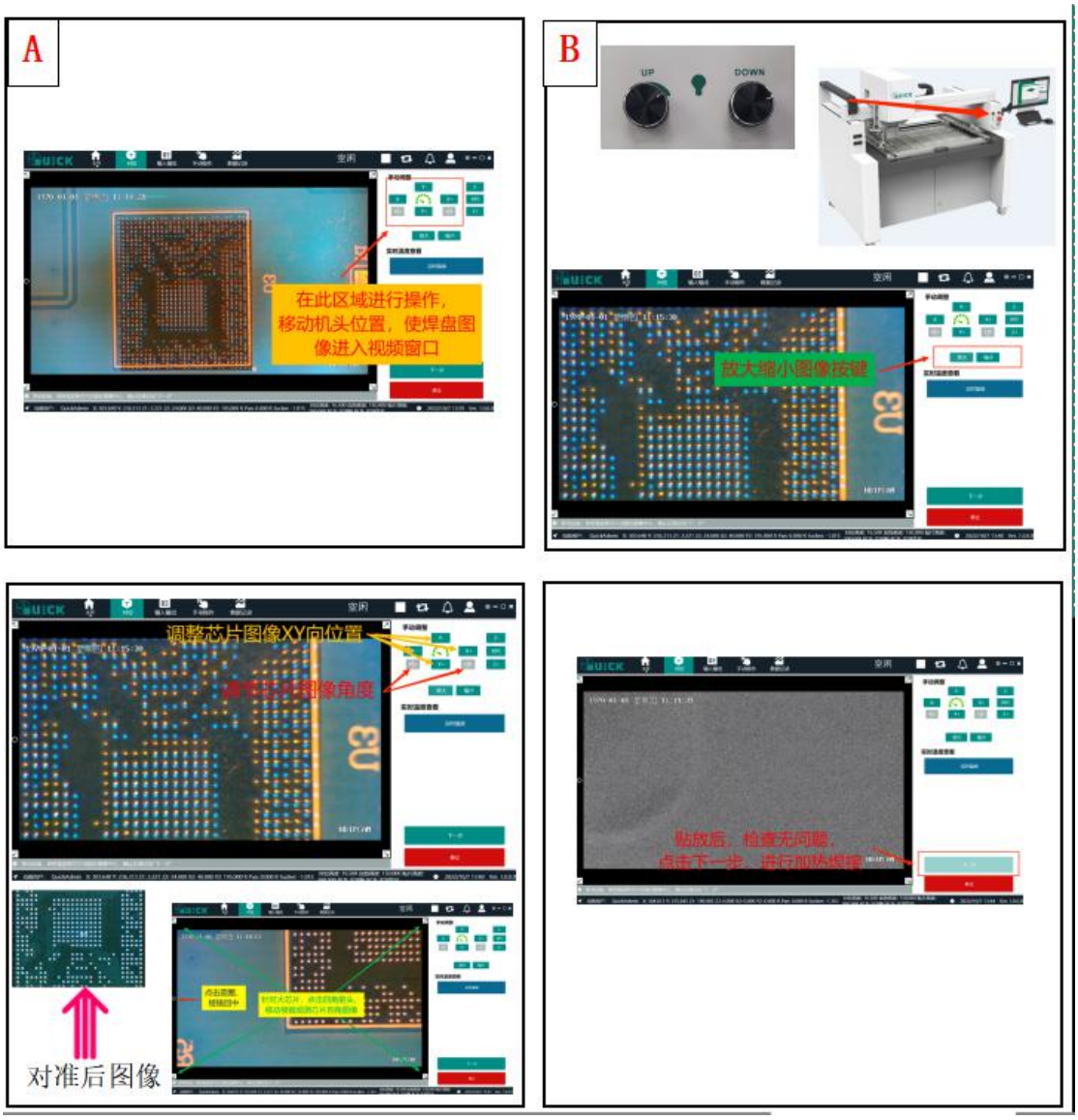








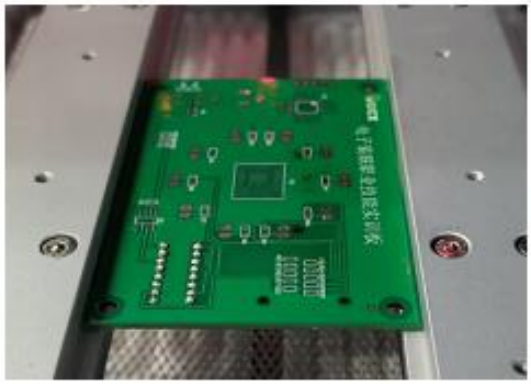
Op. Steps	Chip Placement and Soldering - Alignment
A	After the prism extends, use the directional controls to move the pad image into the video window for alignment.
B	1. Turn the UP/DOWN knobs to adjust brightness of the chip (blue) and PCB pads (yellow) for better image contrast. 2. Use the Zoom In/Out buttons to change image magnification.
C	Once the image is clear: 1. Click and the rotation controls to align chip and pads. 2. Move the head along X and Y until chip and pad images overlap. 3. Click Next to place the chip when aligned.
D	After automatic placement, check that the chip is positioned correctly. If satisfactory, click Next to solder automatically. The rework procedure is then complete.



7.5 BGA Reflow Soldering Procedure

Op. Steps	PCB Fixing
A	Remove the training PCB and secure it using the support frame.
B	If the PCB is large, use the lower anti-sagging bracket. Adjust the pins to evenly support component-free points on the underside around the rework chip.
C	Use irregular-edge support rods to support the PCB edges, especially boards with nonstandard edges or multiple connectors.
D	Move the frame into its working position to complete PCB fixing.

A



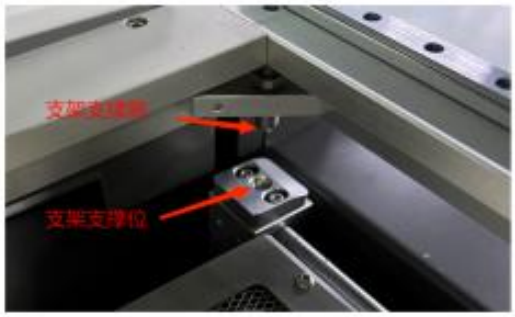
B



C

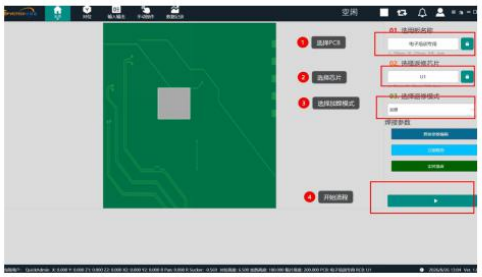


D



Op. Steps	Chip Reflow Soldering
A	Follow the numbered illustration: Select Program > Select Chip > Reflow Mode > Start Process.
B	The interface changes automatically. Click Next.
C	After the prism extends, press X+, X-, Y+, and Y- to move the head and center the target chip image in the video window, then click Next.
D	The machine runs automatically and completes reflow soldering.

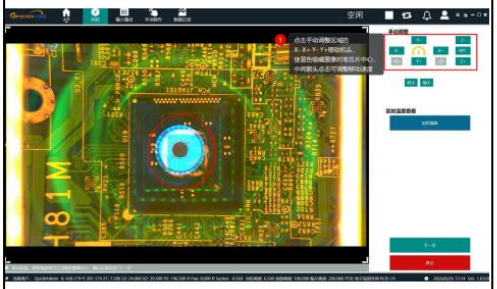
A



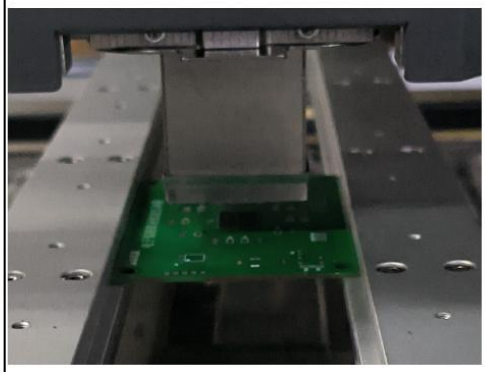
B



C

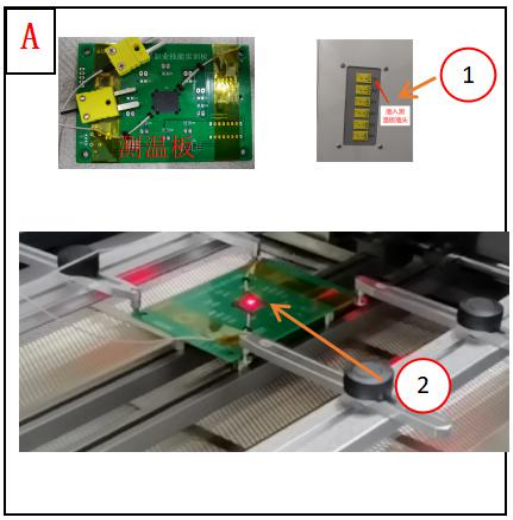


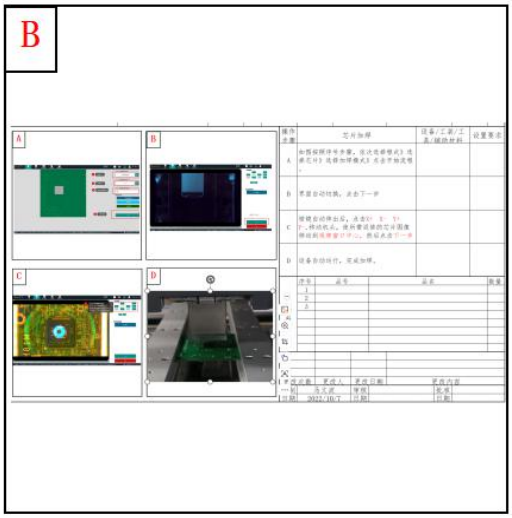
D

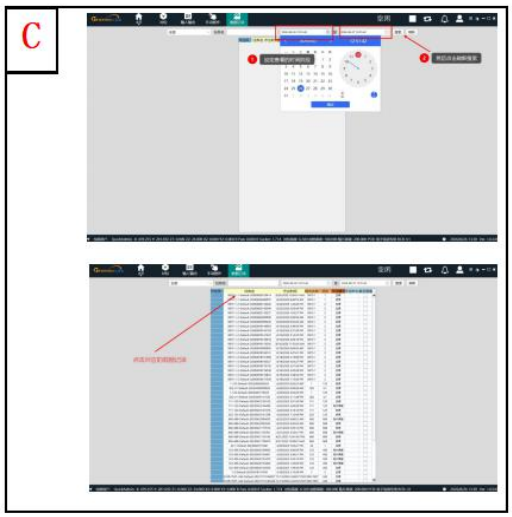


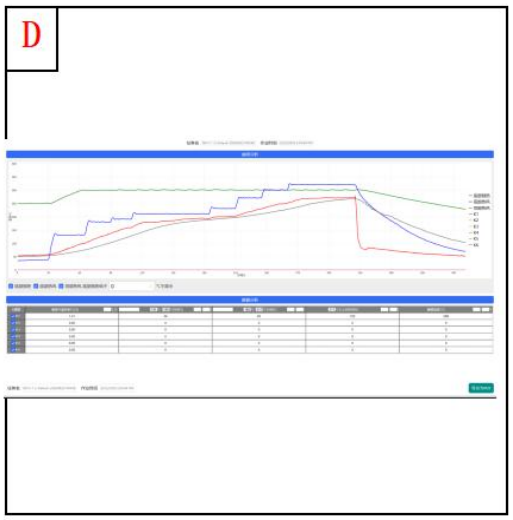
7.6 BGA Rework Temperature Measurement

Op. Steps	Process Requirements
A	Remove the temperature-measurement PCB and secure it on the machine support frame.
B	Perform chip reflow soldering according to the BGA reflow procedure.
C	Locate the corresponding soldering record in Data Records and double-click to open it.
D	Edit the temperature limits in the analysis screen to analyze the measured reflow profile, then adjust existing soldering parameters based on the analysis results.









Chapter 8: Maintenance

8.1 Equipment Maintenance

Remarks:

Use genuine consumables and accessories to ensure reliable operation.

When not in use, switch off all equipment components and disconnect the power cord.

CAUTION:

The heater housing remains hot after power-off. Clean only after switching off and cooling.

Do not use hazardous or flammable solvents for cleaning.

Cleaning:

- Use a clean cloth or lint-free wipe to remove dust from the equipment.
- Remove solder/flux from the bottom heater with a lint-free cloth and suitable thinner; avoid heater damage.
- Use an alcohol-moistened lint-free wipe on the prism; do not damage its optical coating.
- Clean the PCB support and rails; lubricate the guides and bearings regularly.

Note: This is precision equipment. Do not modify it, as this may impair normal operation.

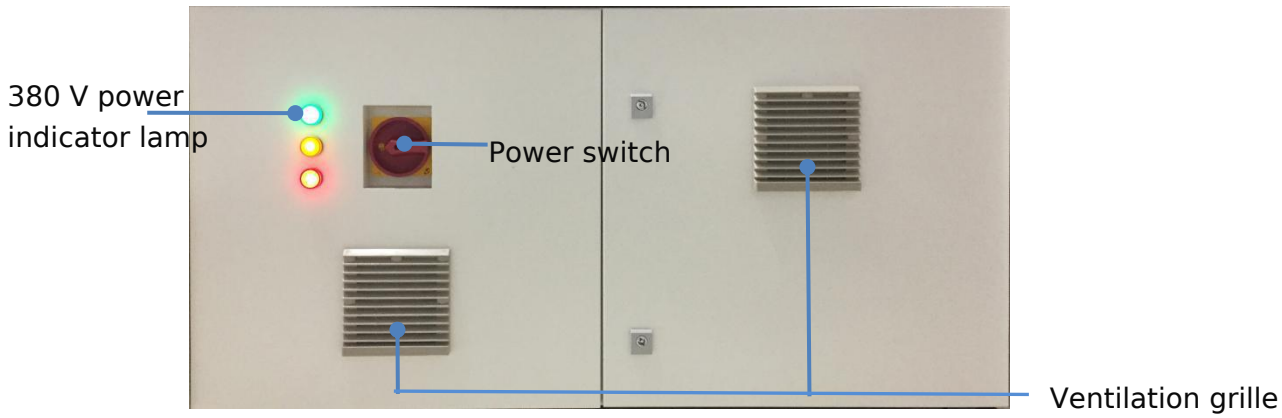
Replacing the Suction Pad:

Before replacement, turn off power and allow the vacuum nozzle and upper heater to cool.

Pull the old suction pad down off the nozzle and install a new pad in reverse order.

Note: This is precision equipment. Do not modify it, as this may impair normal operation.

8.2 Electrical Control Cabinet Maintenance



1) Check that the cabinet door is properly closed at all times, even when not in operation, to prevent debris entry. Set the operating handle to OFF before opening or closing the door.

2) Check for unusual dirt inside the cabinet. Identify the cause and clean as needed.

3) Verify cabinet ventilation and keep it away from heat sources.

4) Inspect indicator lights. Replace failed lamps and cracked or worn plastic lenses.

5) Dust accumulates on the ventilation filter and reduces cooling airflow. Clean or replace it as required. The molded vent must be removed as a whole for replacement.




8.3 Cooling Fan Maintenance

If the cooling fan fails, cabinet temperature rises and may cause electrical faults. Inspect the fan.

The internal and rear cabinet fans run when power is applied. Check that they are turning and that airflow is present at the exhaust and intake openings.

8.4 Checking the Power Supply Voltage

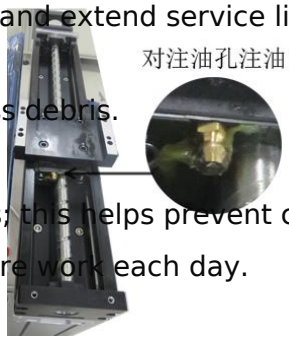
Electric shock hazard! Do not touch the metal probe tips while using a multimeter.

1) Set the multimeter to AC voltage measurement, 1000 V range.
2) Connect the red probe to V/ohm and the black probe to COM.
3) Measure voltage between live and neutral at the residual-current protection device.

8.5 Motion Mechanism Maintenance

Transmission parts are precision assemblies that require regular cleaning and lubrication. Remove dirt and replenish lubricant routinely to keep the machine in good condition, prevent frequent faults, reduce downtime, and extend service life.

8.5.1 Daily Maintenance



1) Remove solder residue and other process debris.
2) Check axis bolts regularly for looseness.
3) Do not touch guide rails with bare hands; this helps prevent corrosion.
4) Check the condition of components before work each day.

8.5.2 Periodic Maintenance

For heavily used machines, carry out thorough maintenance approximately every three months:

1) Remove the X-axis cover. Clean grease and dirt from the lead screw and guide rails (preferably with silk cloth). Check the screw, nut housing, front/rear supports, and coupling for loose fasteners. Apply No. 2 lithium grease and move the head back and forth several times. Quarterly, inspect rail straightness, perpendicularity, and motion accuracy; adjust if needed.

2) Replace seriously worn or damaged parts promptly.

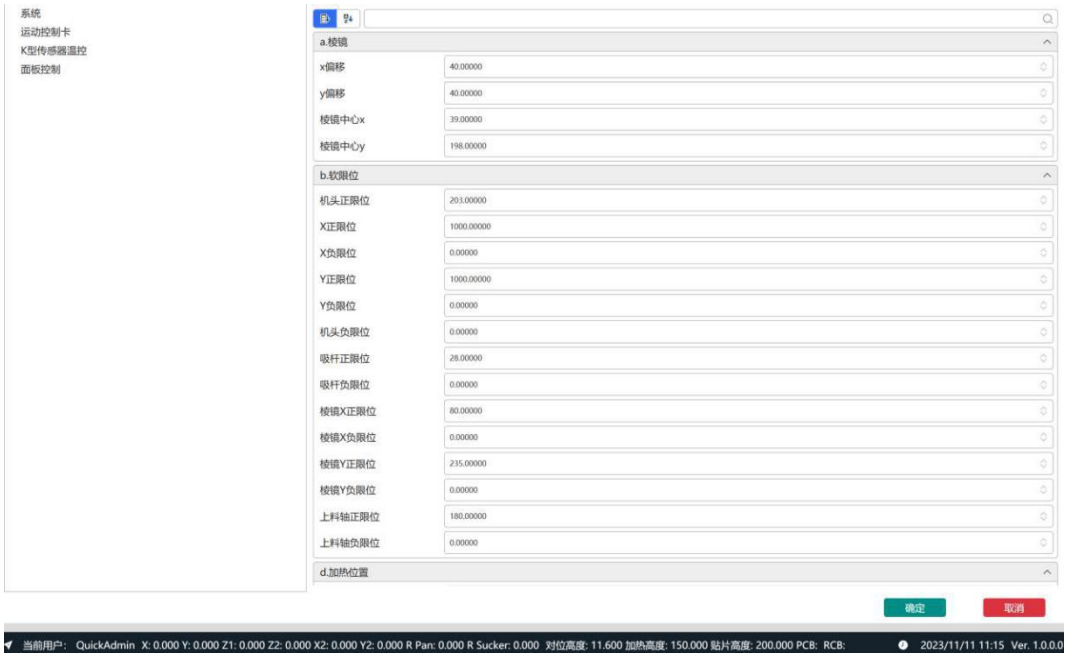
3) Inspect all electrical connectors for bent pins, damaged wiring, or detached soldered connections.

4) Open the cabinet and remove internal dust. Check for loose terminals, abnormal parts, and proper operation of switches and buttons.

5) After inspection, test signals and motion characteristics. Run a program for 10 minutes without lost steps, including full travel in each direction. Less frequently used machines may be serviced every six months using the same procedure.

Chapter 9: Equipment Parameter Settings

Parameter Settings



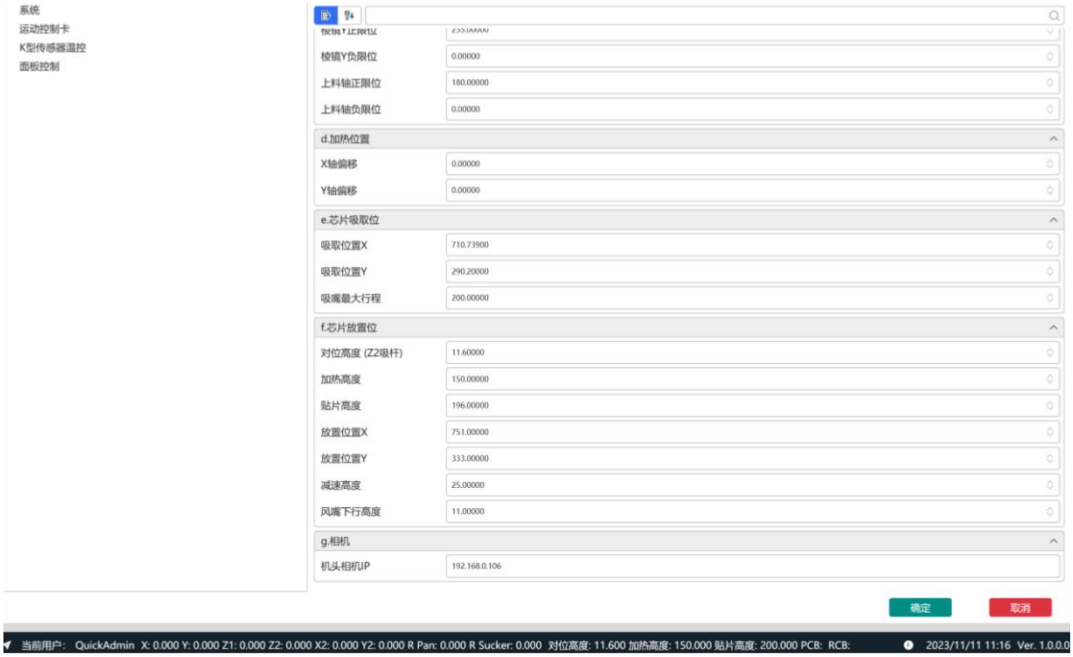
Prism Settings

X OffsetY Offset: After the prism extends, the defined X/Y offsets are used to inspect all four chip corners. Set each to half the relevant chip dimension, up to a maximum of 40.

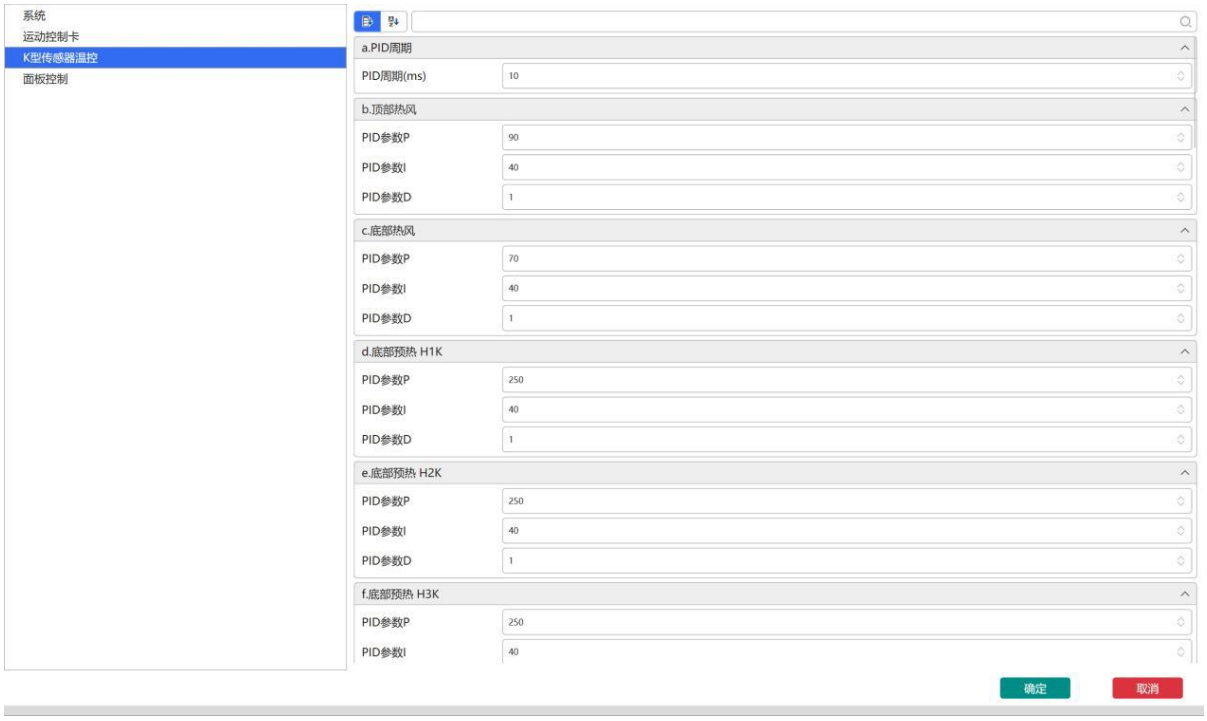
Prism Center X / Prism Center Y: prism operating coordinates; normally do not change.

Soft Limits

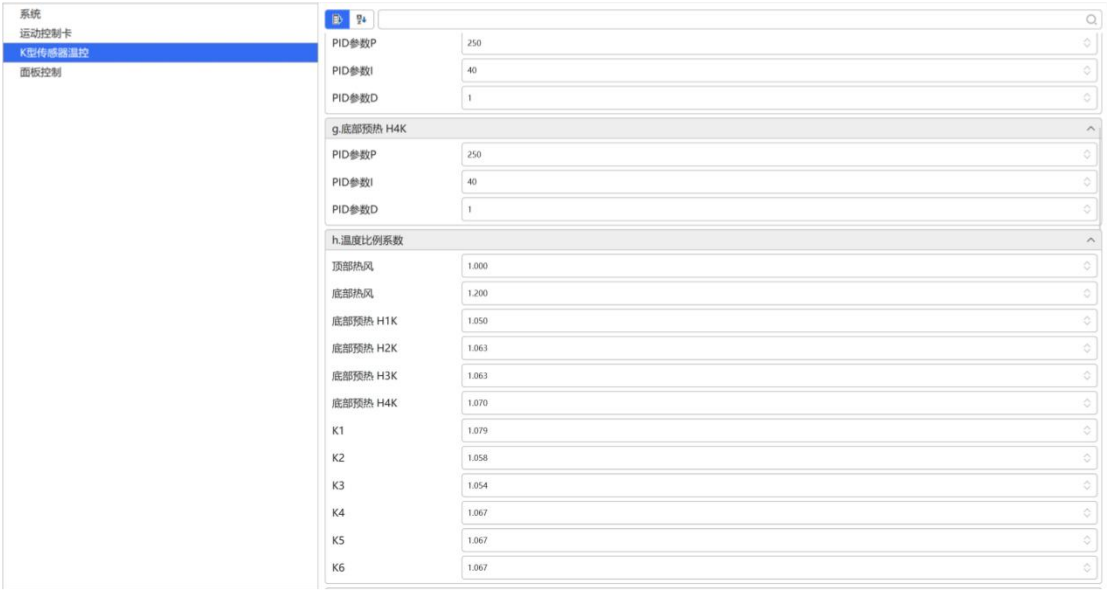
Set positive travel limits for each axis; set negative limits to 0. Use default values unless the manufacturer's engineer authorizes adjustments.



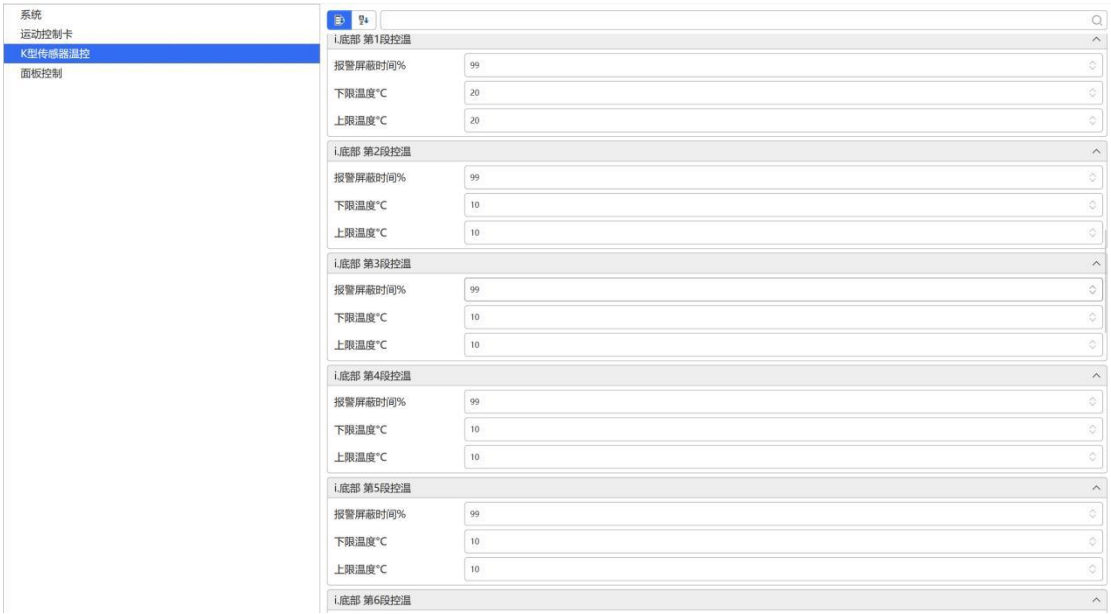
Heating Position: Set the heating offset to 0; alignment and heating axes are coaxial.
Chip Pickup Position:
Pickup X/Y: Defines the reference loading coordinates after the tray rotates 90°.
These are the coordinates of the tray's upper-left corner. In operation, the machine adds half the chip's length and width to reach the center for pickup.
Maximum Pickup Travel: Maximum Z-axis travel for picking up a chip.
Chip Placement Position:
1) Alignment Height (Z2 suction rod): Downward travel during alignment. The system uses chip and PCB thickness plus the alignment height to keep the chip image in focus.
2) Heating Height: Downward travel to the specified heating height in the process.
3) Placement Height: The system adds chip and PCB thickness to the placement height to calculate the height for zero-pressure placement in programming mode.
4) Placement X/Y: Coordinates for unloading the removed chip, generally the tray center.
5) Deceleration Height: Distance above the PCB where the heater head slows to avoid impact.
6) Nozzle Descent: Additional nozzle travel after the suction rod contacts the chip in auto mode.
Head Camera IP:
Configure the camera's network connection.

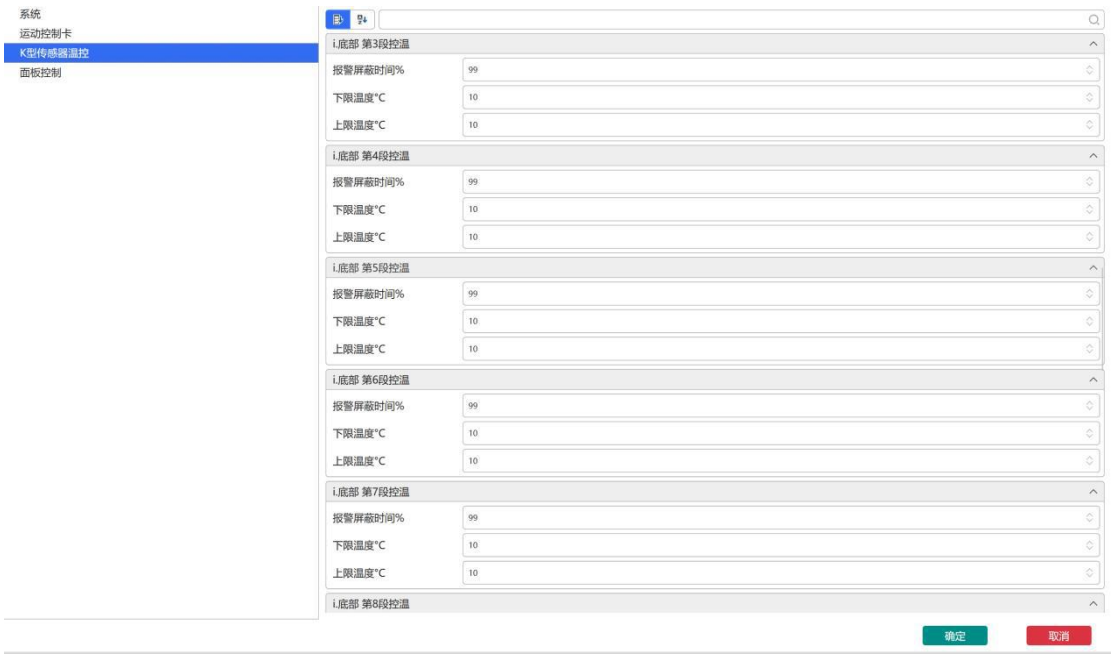


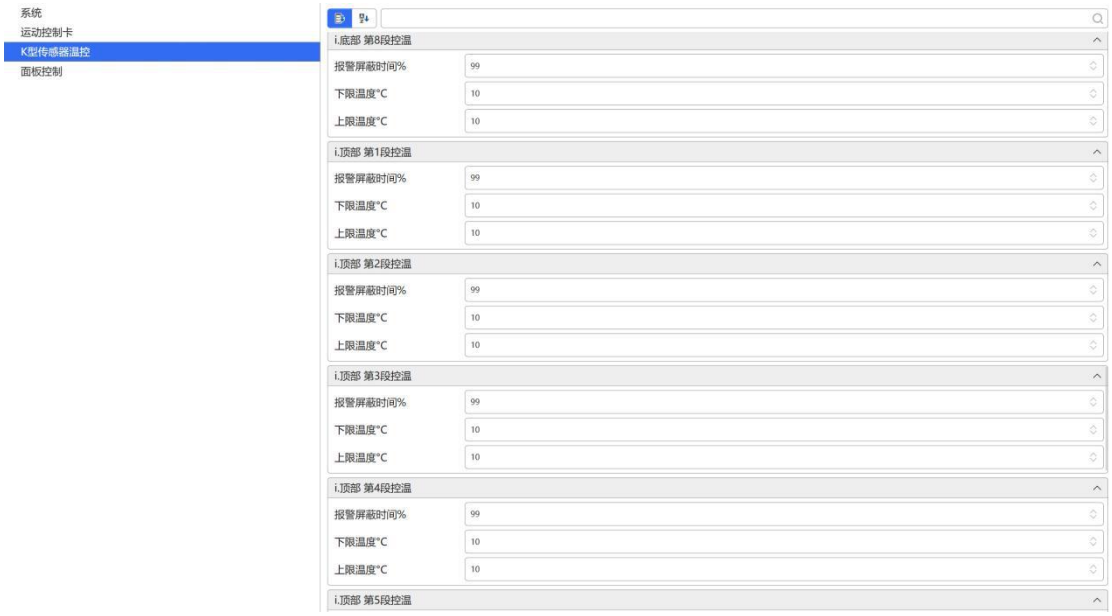
a. PID Period: Temperature controller sampling interval, in milliseconds (ms).
b-g. PID parameters for the six heating groups: upper hot air, lower hot air,
bottom preheat HK1, HK2, HK3, and HK4. Contact the manufacturer before changing them.

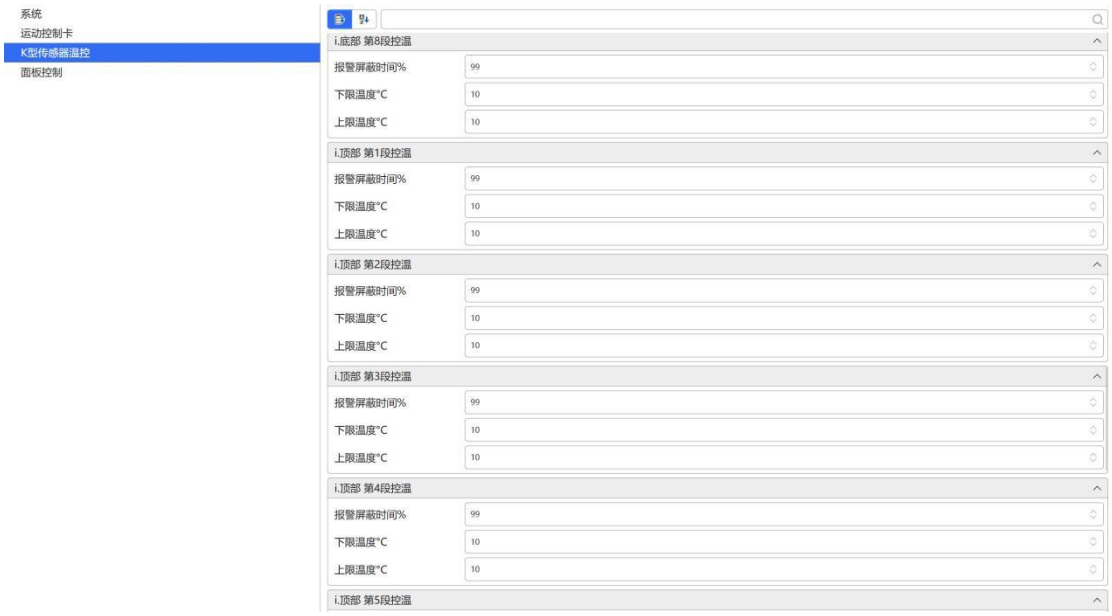


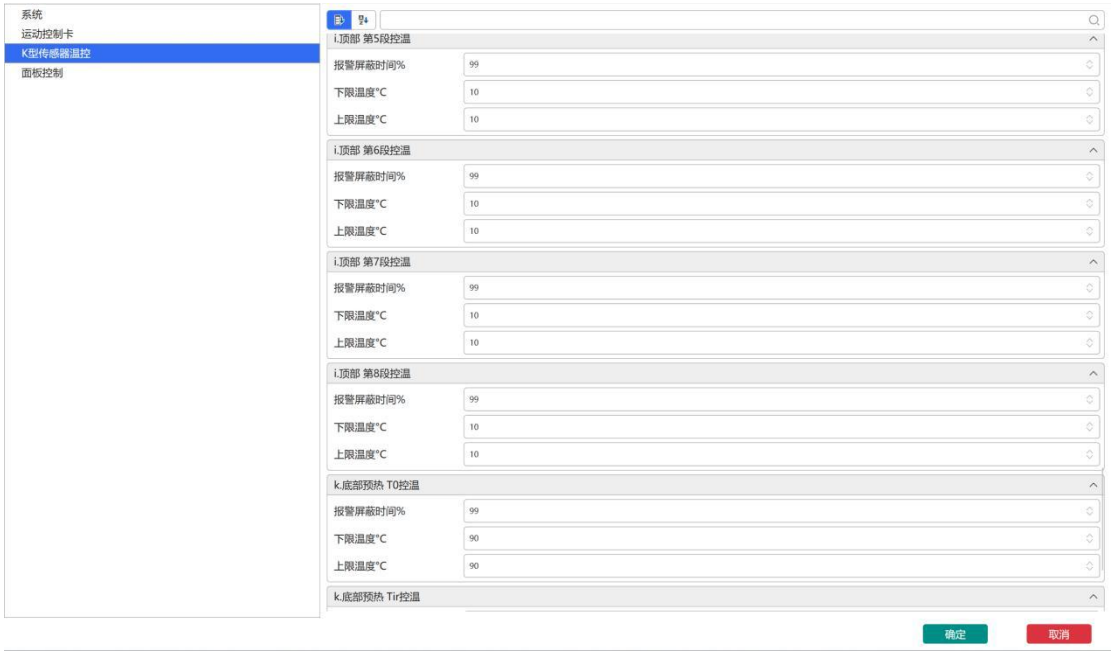
h. Temperature Scale Factor: Used for temperature calibration.
Example: Calibrating the upper hot-air temperature factor:
1) Set the upper hot-air factor to 1.
2) Set the process heating target to 300°C.
3) Run the heater; suppose the actual outlet temperature measures 260°C.
4) Calculate factor = setpoint 300 / actual 260 = approximately 1.153846153.
5) Enter 1.153 as the upper hot-air factor.
Calibrate lower hot air similarly. Leave preheat HK1-HK4 factors at 1.




系统
运动控制卡
K型传感器温控
面板控制
i.底部 第3段控温
报警屏蔽时间%
下限温度°C
上限温度°C
i.底部 第4段控温
i.底部 第5段控温
i.底部 第6段控温
i.底部 第7段控温
i.底部 第8段控温
99
10
确定
取消


系统
运动控制卡
K型传感器温控
面板控制
i.底部 第8段控温
报警屏蔽时间%
下限温度°C
上限温度°C
i.顶部 第1段控温
i.顶部 第2段控温
i.顶部 第3段控温
i.顶部 第4段控温
i.顶部 第5段控温
99
10


系统
运动控制卡
K型传感器温控
面板控制
i.底部 第8段控温
报警屏蔽时间%
下限温度°C
上限温度°C
i.顶部 第1段控温
i.顶部 第2段控温
i.顶部 第3段控温
i.顶部 第4段控温
i.顶部 第5段控温
99
10



All items i and k are temperature alarm settings: upper/lower deviation limits for each heating stage and the alarm time. If temperature exceeds these limits and fails to return within the allowed percentage of that stage, the equipment reports an error and stops. Communication: Configure the COM ports for the heating controller and external sensor controller. Find their port assignments in Windows Device Manager.

Motion Controller Parameter Settings

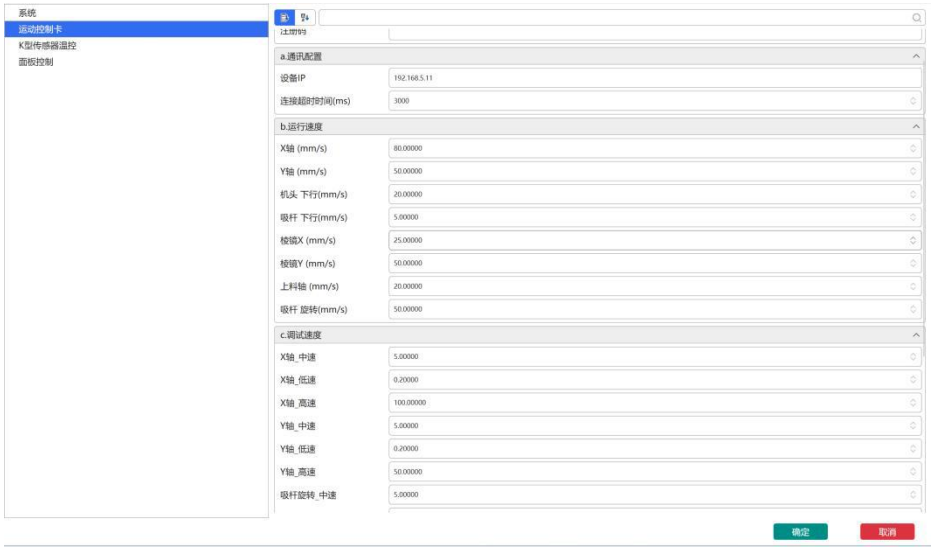
a. Communication: Network configuration between the host PC and PLC.

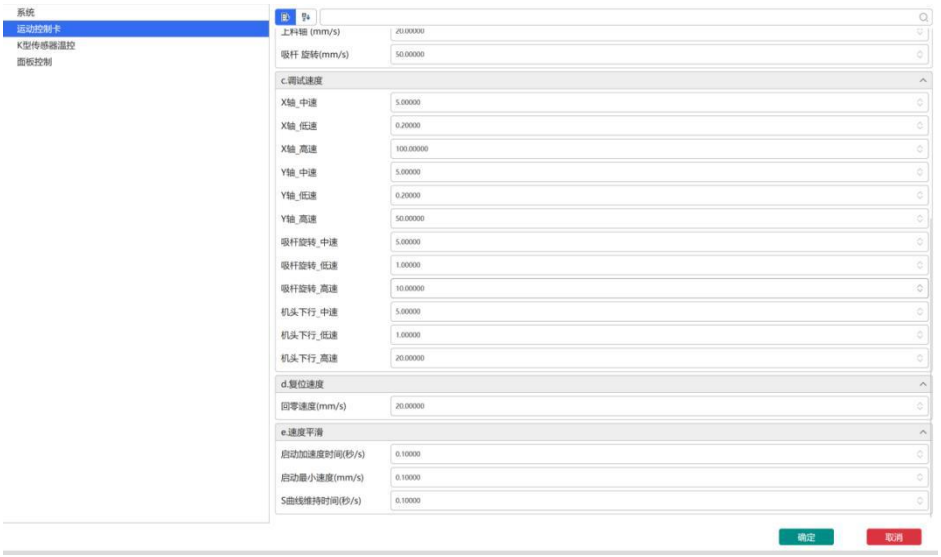
b. Running Speed: Speeds for each axis during automatic operation.

c. Jog Speed: High/medium/low manual-control speed settings for each axis.

d. Homing Speed: Axis speeds during homing.

e. Motion Smoothing: Axis acceleration and starting speed to reduce vibration.





Chapter 10: Accessories and Consumables

No.	Description	Part No.	Remarks
1	BGA2005IR suction pad	125H000308	
2	High-speed USB HD color industrial camera	198H000537	
3	Color camera FCB-CV7500	198H000334	
4	Image-combining prism 50 x 50 x 50 mm	115H000188	
5	Ceramic heater	114H000248	
6	2100 irregular-edge support rod assembly	215N000606	
7	Upper hot-air heater core assembly	7500593978.1	2100 W heater core assembly
8	1200 W local hot-air heater core assembly	7500701276.1	
9	LED constant-voltage dimmer	140H001130	
10	U.S.-standard laser module CG-6016LG650	144H000002	Temperature resistant to 70°C
11	BGA-LED PCB assembly (white), V1.0	204H101253	