

TMR-200 Automatic Taping Machine

User Manual V1.0



Preface

Congratulations on choosing the TMR-200 Automatic Taping Machine. This manual shows how to easily program and setup the tracker for the best results. Make sure to read this manual carefully before using this product, so as to avoid delays or confusion with its operation. Please note that specifications and instructions are subject to change without notice to facilitate product improvement. Updates and changes will be integrated into the latest release. The manufacturer assumes no responsibility for any errors or omissions in outdated documents.

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1. Machine introduction and installation

This chapter will briefly introduce some conditions required for the installation of the machine.

1.1 Installation environment

Cool, dry, ventilated and dust-free is the installation condition of the machine.

If the production environment is more humid and dusty, it will affect the performance and life of some transmission parts in the machine.

1.2 Air pressure requirements

4-6 kgf/cm² air pressure

1.3 Electrical requirements

The system power supply voltage of this machine is single-phase 220VAC, 50HZ. Please use a copper core power cord with a cross-sectional area not less than 2.5 square mm to connect the power supply to the terminal block "R, S" installed on the power board of the machine.

In order to prevent electric shock and leakage, please use a dedicated grounding wire with a cross-sectional area of not less than 2.5 square meters to connect the dedicated grounding terminal (yellow-green terminal) on the power board of the machine with the grounding wire of the entire power system. If the grounding is connected to the earth, The grounding resistance should be less than 100 ohms, and the length of the grounding wire should not exceed 20 meters. This must be paid attention to. Because the grounding resistance is greatly affected by the environment. For example: soil composition, moisture, seasons and the time when the wiring is buried in the ground, etc.

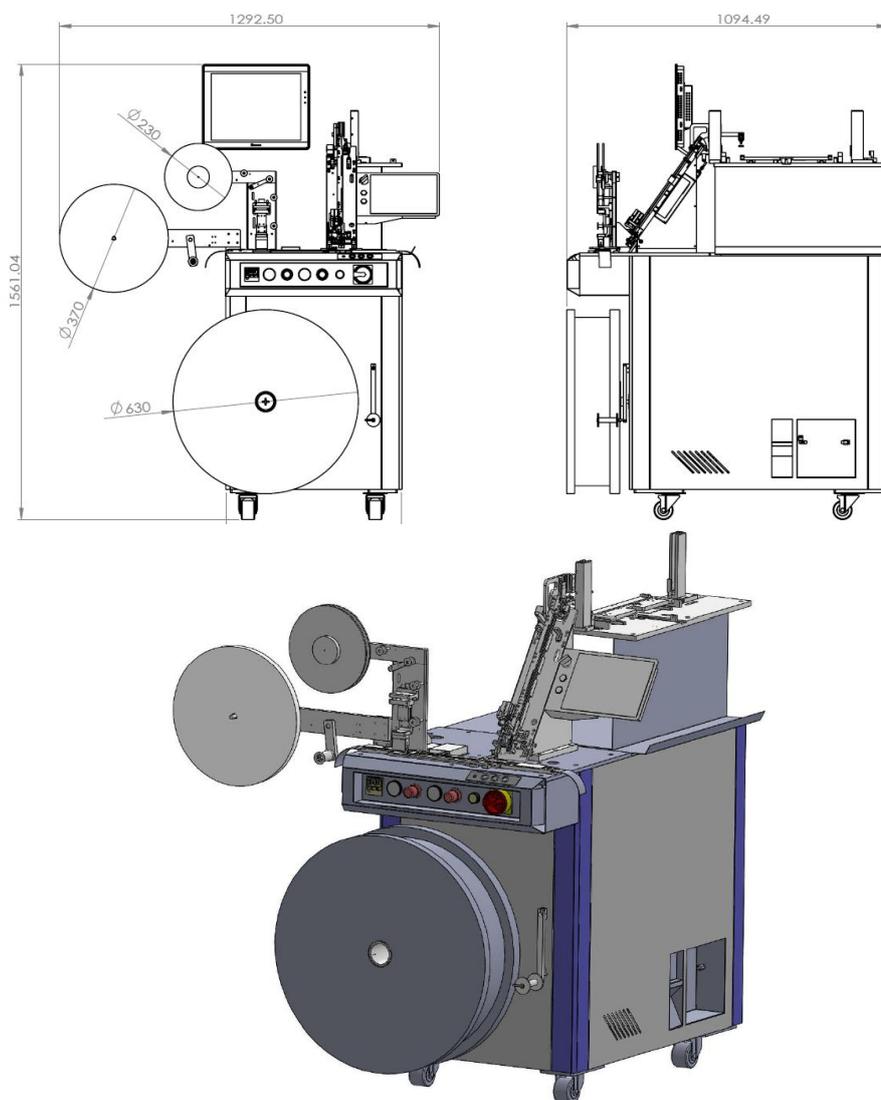
Anti-interference, please do not install the machine with high-power, high-current equipment, and the power supply should be isolated from it.

1.4 Technical parameters

Item	Description
Appearance	Approximately length 1200mm/width 1100mm/height 1700mm, weight 150kg
Power supply/air source	Single-phase AC220V, 50HZ; 5.0kg/cm ² ≧ air pressure ≧ 9.0kg/cm ²
Feeding system	Tube
Taping specifications	8, 12, 16 mm
Temperature Control System	Adjustable PID thermostat, temperature control should be 120°C—200°C
Taping speed	12000pcs/h-15000 pcs/h, depending on the product package
Counting function	Photoelectric counting
Sealing form	Self-adhesive/Hot Press

Rewinding tray	13 inch, 15 inch, 22 inch, 27 inch plastic tray or paper tray
working environment	0°C ≦ temperature ≦ 50°C、35% ≦ Humidity ≦ 85% non-condensing

1.5 Machine size and functional unit introduction



2. Touch screen

Main page: Basic usage and basic monitoring screen.

Manual : Manually run the cylinder, it will not work in automatic operation.

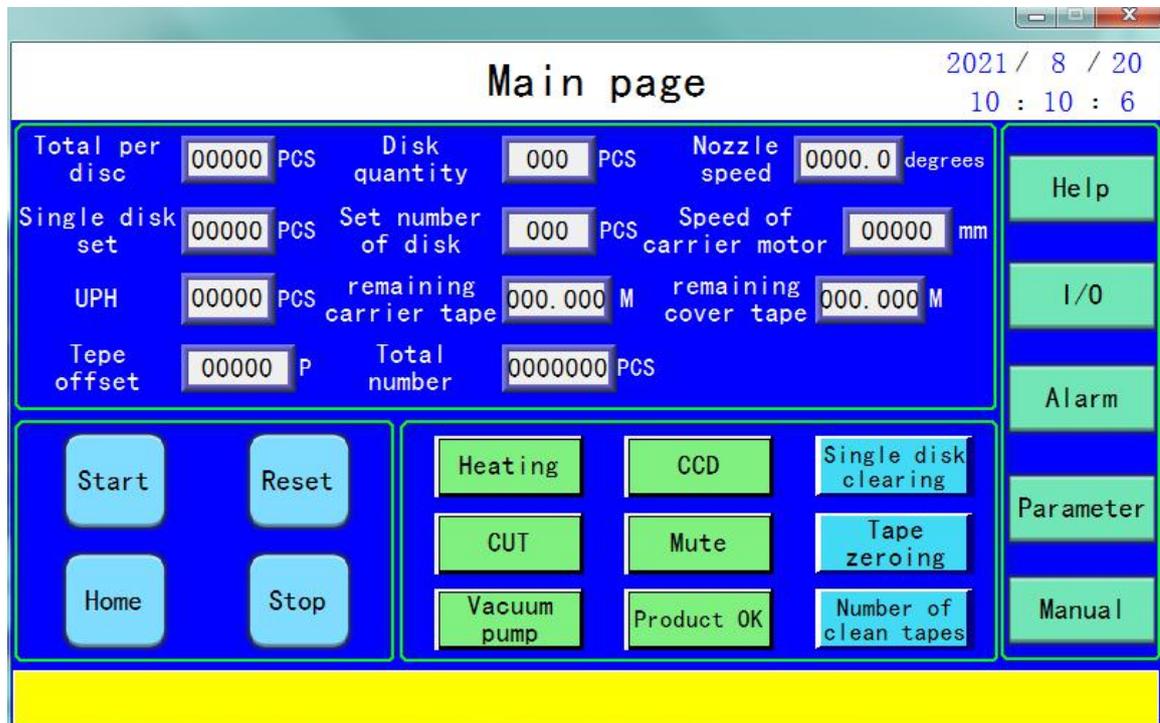
Parameter : The interface between motor parameters and motor manual. In order to prevent operators who are not familiar with the operation of the equipment, an advanced password is set (the default password is 111). (Contains save data and default data buttons)

Alarm : current alarm and historical alarm.

I/O : detect the current input and output status.

Help: record the company's contact information.

2.1 Main page



Numerical value

Total per disc: Display the number of the current single disk that has been programmed.

Single disk set: Set the number of tapes required for single reel.

UPH: Shows the taping speed per hour.

Tape offset: set how many disks are played

Disk quantity: Display the number of currently programmed disks.

Set number of disk: After setting how many disks are played, the alarm will stop.

Remaining carrier tape: The remaining carrier tape length.

Total number: The number of tapes that the equipment has been running from the beginning.

Nozzle speed: Set the speed of the spindle motor.

Speed of carrier motor: Set the speed of the carrier motor.

Remaining cover tape : The length of the remaining cover tape.

Button

Start : Start the taping machine button.

Reset : Clear the current alarm state, please ensure that the cause of the alarm is cleared.

Home: Return the equipment motor and cylinder to zero.

Stop : Set the current cycle to stop during the running process.

Heating: Press this button and the thermostat turns on and starts heating (power failure memory)

CCD: press this button, the CCD will be turned on and machine will automatic detection during automatic operation (power failure memory)

CUT: If press this button, when “total per disc” is completed, it is automatically cut off at the forward space and and back space positions (power failure memory).

Mute: Press this button, when there is an alarm and the buzzer does not sound. (power failure memory).

Vacuum pump: The vacuum pump is running.

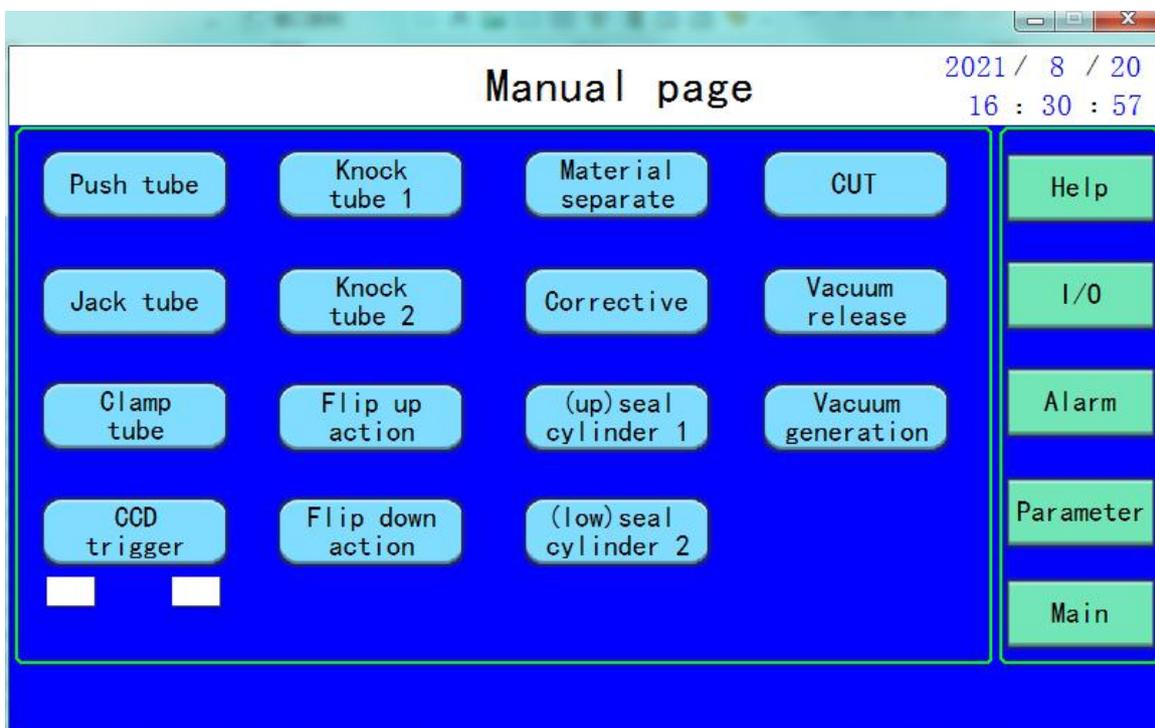
Product OK:When the CCD is turned on, if the CCD above the carrier tape judges that the material is NG, but the manual confirmation is OK, please press this button to confirm the product has passed.

Single disk clearing: Clear “Total per disc”,To prevent unintentional removal, please do not touch this button.

Tape zeroing: Clear “remaining carrier tape”. To prevent unintentional removal, please do not touch this button

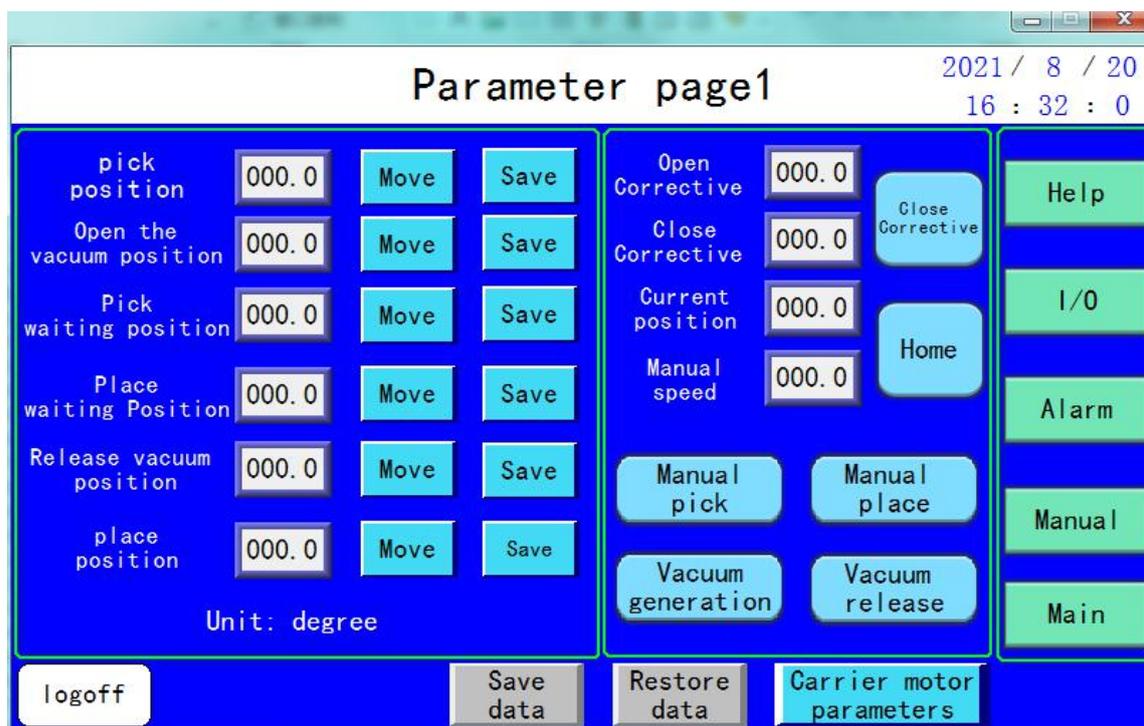
Number of clean tapes : Clear “Total number”. To prevent unintentional removal, please do not touch this button.

2.2 Manual page



When the sensor light is on, it indicates that the cylinder stroke is in place and whether there is material is sensed.

2.3 Parameter page: nozzle motor parameters



Numerical value

Pick position: Set the nozzle pickup position, click the [Move] button to move the nozzle to the pickup position, click the [Save] button to save the pickup position.

Open the vacuum position: Set “open the the vacuum position” in advance. (Can not be smaller than the pickup position)

Pick waiting position: The position of the pickup point, the nozzle close to the material.

Place waiting position: The waiting position when releasing material. When the carrier tape has not been completed, it stays at the waiting point.

Release vacuum position: Set “Release vacuum position” in advance. (between “Place waiting position ” and “Place position”)

Place position: The position of the releasing point, the material is completely put on the carrier tape.

Open Corrective: The angle of the”Open Corrective” (Not larger than the “Pick waiting position” point)

Close Corrective: The angle of the”Open Corrective” (The angle at which the material completely exits the **corrective** block).

Current position: The current angle of the nozzle motor.

Manual speed: Manually operate the speed of pickup, releasing material and positioning.

Button

Close Corrective: Reach the location you want to locate.

Home: Carrier tape motor back to origin point.

Manual pick:

Manual place

Vacuum generation

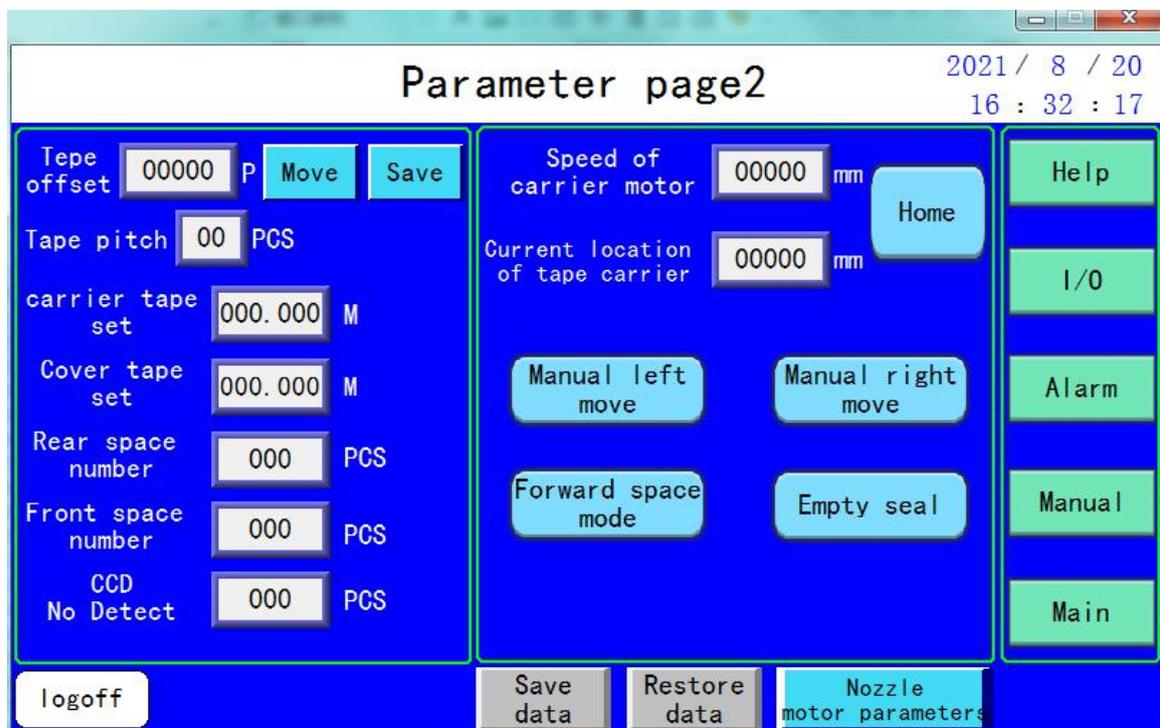
Vacuum release

Save data: Save the data on the interface in case the default data is restored after power failure.

Restore data

Carrier motor parameters: Jump to the parameter page 2 (Carrier motor parameters).

2.4 Parameter page: Carrier motor parameters



Numerical value

Tape offset: The offset value after the carrier tape returns to the origin, it is used to correct the position of the releasing material point.

Tape pitch: Number of cavity holes

Carrier tape set: Set the carrier tape length.

Cover tape set: Set the cover tape length.

Rear space number: set the number of empty seals on rear space.

Front space number: set the number of empty seals on front space.

CCD No Detect: The number of releasing material points to CCD photo points.

Speed of carrier motor: Motor speed when moving manually

Current location of tape carrier: The current position of the carrier motor is displayed in real time, and it will be automatically cleared after returning to Home.

Button

Home: The carrier motor returns to the original position.

Manual left move: Click the button, the carrier tape is moved manually to the left. (Speed according to carrier motor speed)

Manual right move: Click the button, the carrier tape is moved manually to the right. (Speed according to carrier motor speed)

Forward space mode: When you press the “Empty seal” button, which empty seal quantity is executed. (Front empty seal and back empty seal)

Empty seal: Carrier tape empty seal execution.

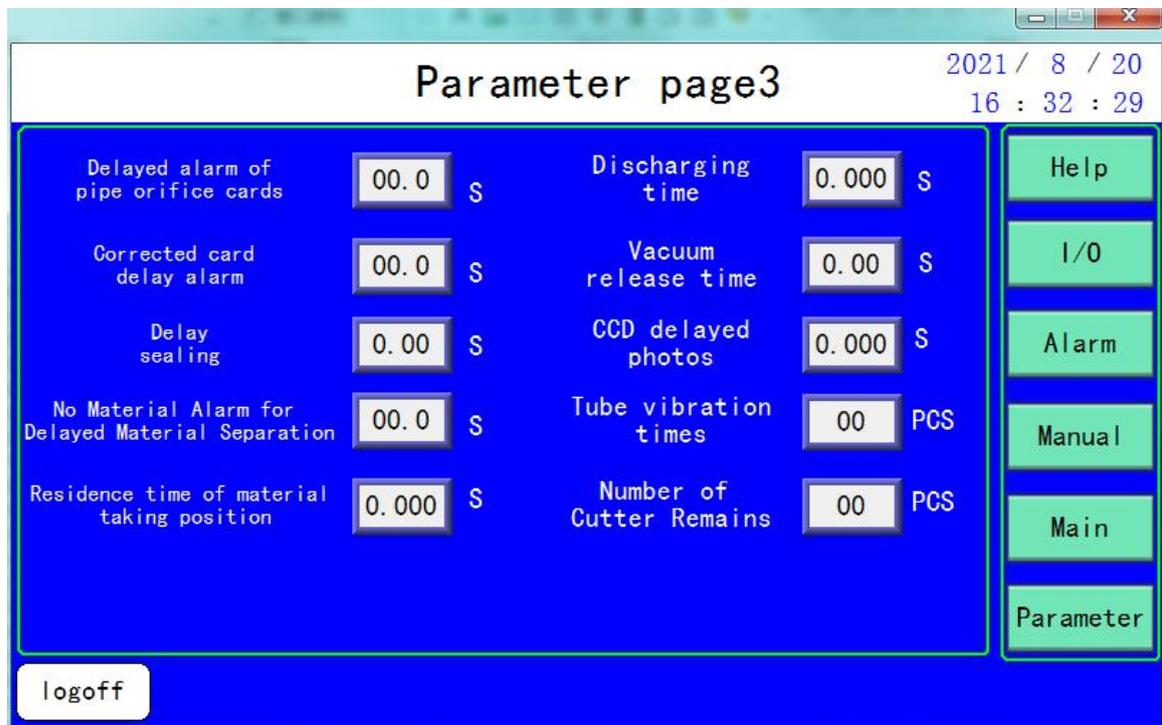
Logoff: Log out the current user, the next login requires a password.

Save data: Save the data on the interface in case the default data is restored after power failure.

Restore data: Restore the data at the time of saving.

Nozzle Motor parameters: Jump to the parameter page 3 (Delay interface).

2.5 Parameter page: Delay interface



You need to be logged in to your account. Touching the blank area in the upper left corner will bring you to the delay interface.

Delayed alarm of pipe orifice cards: When the sensor on the ramp senses that there is no material, how long is the delay before turning over the material tube to load.

Corrected card delay alarm: The material distribution has been activated, but the Corrective position's sensor cannot detect the material, How long it will give an alarm.

Delay sealing: the time of hot sealing carrier tape.

No Material Alarm for Delayed Material separation: How long will the alarm be sent when no material is sensed at the distribution point on the runner

Residence time of material taking position: After the nozzle reaches the suction position, how long does it take to move again?

Discharging time: After the nozzle reaches the releasing material position, how long does it take to move again?

Vacuum release time: Set the blowing time after the suction nozzle reaches the vacuum release position.

CCD delayed photos: After taking away a product, wait how long the CCD delay before taking pictures.

Tube Vibration times: The number of tube knocking actions must be at least more than 1 time.

Number of Cutter Remains: The number of products from the pick-up point to the cutter position. Used to adjust the cutting knife cutting down position.

Logoff: Log out the current user, the next login requires a password.

2.6 I/O monitoring: input monitoring (1)

The screenshot shows a software window titled "I/O Monitor page" with a date and time display "2021 / 8 / 20 16 : 32 : 44". The main content is a table listing 17 input signals (X0 to X17) and their descriptions. To the right of the table is a vertical sidebar with five buttons: "Help", "Alarm", "Parameter", "Manual", and "Main". At the bottom of the window, there are two buttons: "input down" and "output monitor".

X0	E-STOP	X6	Float sensor	XC	PC Online	X12	Push tube front limit
X1	Start	X7	Reset	XD	Temperature alarm signal	X13	Push tube rear limit
X2	Separation sensor	X8	Detection of pick material points	XE	CCD OK	X14	Tube sensor
X3	Clamp tube seneor	X9	Cover tape sensor	XF	CCD NG	X15	Flip lower limit
X4	P&P home	XA	Vacuum detection	X10	into Track sensor	X16	Flip upper limit
X5	Carrier tape home	XB	Stop	X11	Detection in track	X17	Supply tape motor sensor

2.7 I/O monitoring: input monitoring (2)

Input Point	Status	Input Point	Status				
X18	NC	X1E	NC				
X19	NC	X1F	NC				
X1A	NC						
X1B	NC						
X1C	NC						
X1D	NC						

input up output monitor

Help
Alarm
Parameter
Manual
Main

2.8 I/O monitoring: output monitoring (1)

Output Point	Function	Output Point	Status	Output Point	Function	Output Point	Function
Y0	servo pulse	Y6	NC	Y0	Vacuum generation	Y12	Push tube
Y1	Servo direction	Y7	Vacuum release	YD	(up) seal cylinder 1	Y13	Buzzer
Y2	Stepping pulse	Y8	Clamp tube			Y14	green light
Y3	Stepping direction	Y9	Knock tube 2			Y15	yellow light
Y4	CCD trigger	YA	Jack tube	Y10	Knock tube 1	Y16	red light
Y5	Material separate	YB	NC	Y11	(low) seal cylinder 2	Y17	CUT

input monitor output down

Help
Alarm
Parameter
Manual
Main

2.9 I/O monitoring: output monitoring (2)

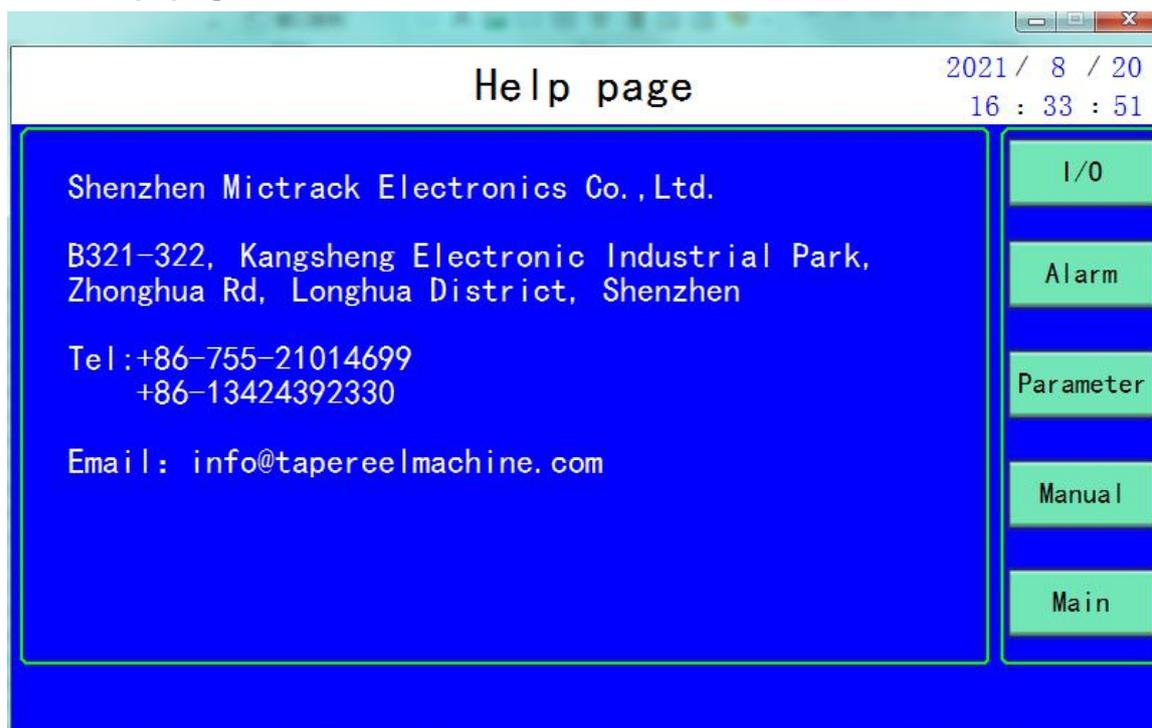
The screenshot shows the 'I/O Monitor page' with a date and time display of 2021 / 8 / 20 and 16 : 33 : 13. The main content is a table with 6 rows and 8 columns. The first two columns contain signal identifiers and descriptions, while the remaining six columns are empty. Below the table are two buttons: 'input monitor' and 'output up'. On the right side, there is a vertical menu with buttons for 'Help', 'Alarm', 'Parameter', 'Manual', and 'Main'.

Y18	Corrective						
Y19	temperature control						
Y1A	Flip up action						
Y1B	Flip down action						
Y1C	Tape feed motor						
Y1D	Clamp tube2						

2.10 Alarm page

The screenshot shows the 'Alarm page' with a date and time display of 2021 / 8 / 20 and 16 : 33 : 28. The main content area is a large, empty grey rectangle. On the right side, there is a vertical menu with buttons for 'Help', 'I/O', 'Parameter', 'Manual', and 'Main'.

2.11 Help page



3. Operating instructions

1. When the equipment is connected to the power supply, first check whether the air source and power supply are normal.

2. After the equipment is checked normally, turn on the required functions (**Heating**, CUT, Vacuum pump, CCD button on the touch screen.).

3. Wait for the temperature of the temperature control instrument to be equal to or greater than the set value.

4. Press the reset button ("Reset" on the touch screen interface or on the operation panel) to clear the alarm.

5. If you find that there is an alarm, please check the specific place of the alarm, and then press the reset button to clear the alarm after processing.

6. When there is no alarm, press the first "Start" button (on the touch screen interface or on the operation panel), and the motor and some cylinders of the equipment will automatically return to the origin.

After returning to the origin, the device starts after pressing the "Start" button for the second time.

7. If an alarm occurs, please ensure that the alarm condition has been cleared. You can press "Reset" button (on the touch screen interface). If the alarm is not cleared, the device will not start.

8. Press the "Stop" button (on the touch screen interface) and the device will stop after completing a cycle of work.

9. Emergency stop button: When an unexpected situation occurs, press the

emergency stop button immediately. When the danger is removed, release the emergency stop button.

As the emergency stop is pressed, the position of the motor is lost. so please press the stop button first and then press the start or home button.

After return to Home and then can start the machine again.

10. It is only allowed to return to Home by pressing the equipment when the equipment is stopped.

- If you find that the suction nozzle cannot suck, please consider increasing the waiting time for suction or increasing the angle of the "Open Corrective";
- If it is found that the carrier tape often protrudes, check whether the suction nozzle is stuck to the carrier tape when discharging the material. Properly adjust the carrier "tape offset" and nozzle placement Material angle.
- If it is found that the material is loaded, but the suction nozzle still puts one more material, please check the vacuum test table and adjust the value of the vacuum test table appropriately. There will be a large difference between the vacuum value of the individual material and the normal.
- If you find that the seal between the cover tape and the carrier tape is not good, please increase the temperature or increase the pressing time.

4. Alarm description

1. Please check if there is material in the material rack: The material rack sensor cannot sense the material, or the material rack is out of material.

2. The pipe turning cylinder is not in the original position: The sensor of the pipe turning cylinder does not light up.

3. The push tube cylinder does not return to position: The sensor origin of the push tube cylinder does not light up.

4. The emergency stop switch has been pressed, please release it: Make sure to release the emergency stop switch after the equipment eliminates the danger.

5. Clamping cylinder failure: The tube has been pinched, but the sensor is not sensing it.

6. The PC is not online: The CCD software is not opened, please open the CCD software and make sure that the software is running normally.

7. Failure of the push tube cylinder: The push tube cylinder acted, but the sensor did not get corresponding feedback.

8. The temperature has not reached, please wait a moment: The temperature is not reached, please check the temperature control table, if the temperature is not reached, please wait. If the temperature has reached, but the alarm is not cleared by pressing the alarm reset, please contact the manufacturer.

9. Flip cylinder failure: The pipe turning cylinder acts, but the sensor does not get corresponding feedback.

10. Carrier tape convex material: There is a phenomenon of protruding material on the

carrier tape. After adjustment, please press the alarm to clear it.

11. Correct the card material: There is material jam in the guide position.

12. The PLC battery is abnormal, please replace the battery in time: If the PLC battery is dead, please contact the manufacturer in time.

13. CCD is abnormal, please press the alarm reset to start: CCD abnormal alarm, please check whether the material is placed normally or for NG products, press the alarm to clear after adjustment.

14. The length of the carrier tape has been reached, please be ready and press the alarm reset: The carrier tape has been used up, please replace it.

15. No material: There is no alarm at the feeding position.

16. The suction nozzle motor returns to the origin failure:The return to the origin of the nozzle motor exceeds the normal return to origin time.

17. The carrier tape motor returns to the origin fault:The return to origin of the carrier tape motor exceeds the normal return to origin time.

18. Carrier tape cassette or induction abnormality: Check whether the carrier tape is stuck and not moving.

19. Nozzle jam: If the nozzle is stuck, please clear the nozzle of the material flow channel and press the reset button to clear the alarm.

20. Abnormal vacuum suction: If the material cannot be absorbed more than 2 times, please check whether the material is jammed or the material is not sensed.

21. The length of the upper belt is not enough:The upper tape (cover tape) is not long enough.

22. Servo alarm, please press emergency stop to restart:The servo motor has alarmed, please check whether it is stuck or abnormal.

23. Alarm for no material at the reclaiming point: Unexpected reclaiming point.

24. Abnormality of the carrier tape unwinding tray:The tape unwinding motor is abnormal, please check whether the tape is jammed.

25. The sensor of the tube turning or pushing mechanism is not in the original position:Please check if the sensor is sensing.

26. The number of completed disks has reached:After completing the number of disks you set, press reset and count again.

27. The sealing tape is out of material, please replace it:The sealing tape sensor senses that the tape is missing, please replace it.

28. No carrier tape or insufficient, please replace:Please check whether the carrier is detected by the sensor or not.

5. Appendix

5.1 Brief description of the operation of the thermostat

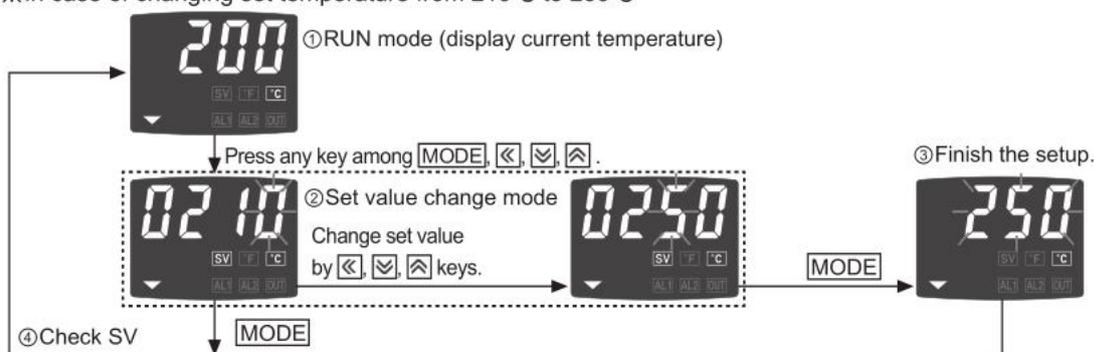
For more detailed please refer to document "TC4" document.



The basic parameters have been set before leaving the factory, and the customer only needs to adjust the temperature setting according to the sealing material actually used on site. Methods as below:

● **Flow Chart For SV Setting Group**

※In case of changing set temperature from 210°C to 250°C



After the setting is completed, wait for the current value of the temperature to be consistent with the temperature set value to work. When leaving the factory, the alarm temperature is set to 5 degrees, that is, when the current value of the temperature differs by 5 degrees from the set value, the thermostat will not alarm, allowing slight temperature fluctuations. For example, when the set value is 150 degrees, the current temperature changes between 145 and 155 degrees, and the thermostat will not alarm.

In the absence of skilled technical personnel for debugging, never modify the internal parameters of the temperature controller without authorization, so as not to cause the temperature controller to fail or malfunction.

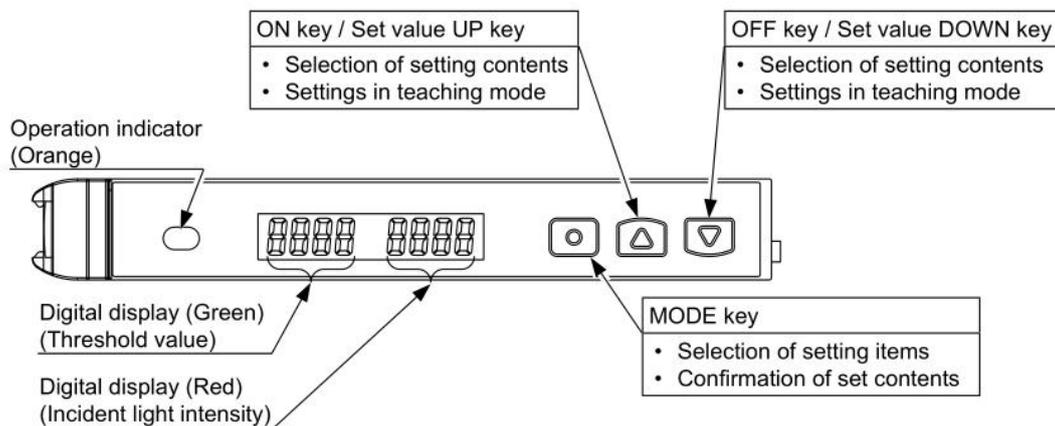
Note: This thermostat uses a membrane button control panel. When changing parameters, please do not use excessive force or contact with sharp objects to avoid damage to the appearance and function.

5.2 Brief description of the operation of the fiber amplifier

For more detailed please refer to the "fx-100_e" document.



The basic parameters have been set before leaving the factory, and the customer only needs to adjust the set value (threshold) according to the actual situation of the detection component on site. Methods as below:



Click the UP or DOWN button directly to increase or decrease the setting value (the green value on the left side of the fiber amplifier), so that the action indicator light is on when it detects the product, and the action indicator light is off when the product is not detected. Try to make the deviation between the set value and the current value larger when there is no product, so that even if there is a slight deviation on the surface of different products, which causes the current value to change, the detection can be stabilized. Or refer to the "fx-100_c" technical document, which introduces the setting method of multi-value setting value.

Any questions please do not hesitate to contact us:

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