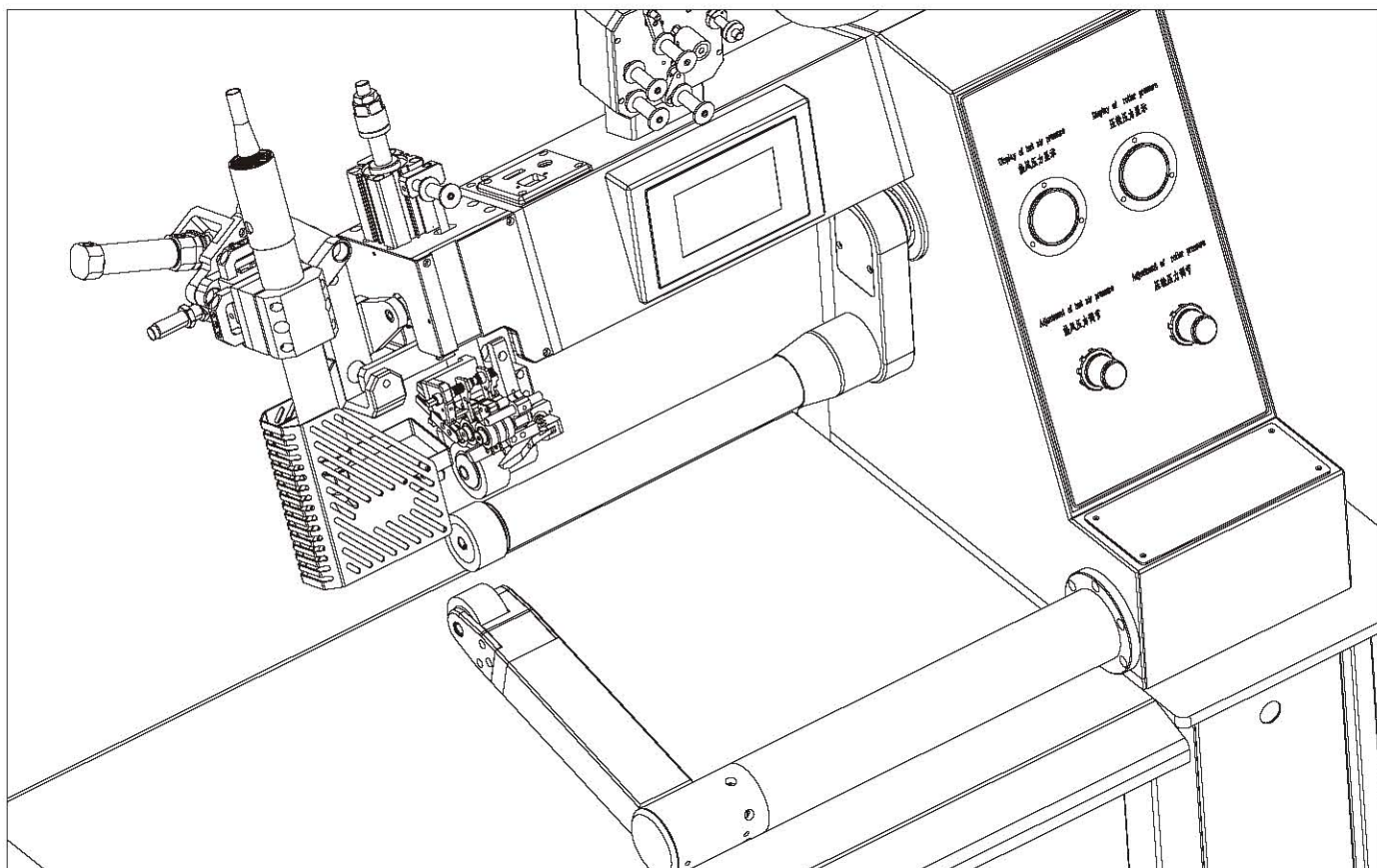


HOT AIR SEAM SEALING MACHINE

(Computer type)

OPERATION MANUAL



Brief introduction

computer type air heater is the newly designed and developed program-controlled hot air seam sealing machine.

Computer type air heater applies the microcomputer technology, single-chip program control, digital setting and parameter adjustment, reinforced trisquare, ultrathin lower column design, automatic temperature control, automatic scissors, tape feeding and backlashing, etc to provide the advantages of easy operation, easy maintenance and better performance and reliability.

Computer type air heater provides extra large operation space and best tape pressing result, suitable for high and middle class waterproof clothing and tent factory, especially suitable for high class clothing factory manufacturing three-ply cloth.

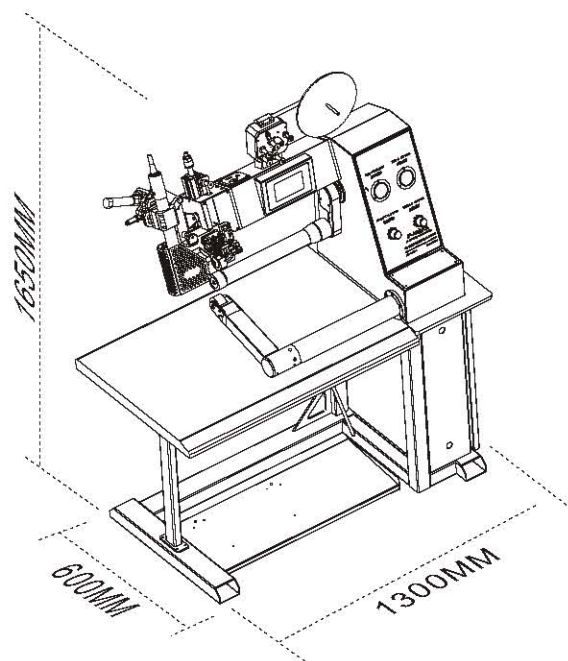


Note: before using this machine, please read the instructions carefully so as not to cause unnecessary injury.

Product appearance & structure -----



1. Tape support	11. castor
2. Hot air nozzle	12. Up press cylinder
3. Swinging gun air cylinder	13. Touch screen
4. Protective cover	14. pressure gauge
5. Roller	15. pressure regulating valve
6. Lower arm	16. middle arm
7. Table	17. Power switch
8. Steel structure	18. air compressor
9. Left pedal	19. Emergency stop
10. Right pedal	20. Filter



1. Principle, characteristic and performance parameter -----

1.1 Principle

It warms (heats) the heat sealing adhesive tape by hot air and presses the tape by continuous running of pinch wheel to perfectly adhere the heat sealing adhesive tape to the seams of water-proof clothing (or other products) to achieve the aim and effect of sealing.

1.2 Characteristics

- 1.2.1 Automatic temperature control and high stability with $\pm 2^{\circ}\text{C}$ temperature fluctuation. Upper temperature limit alarm to protect the heating coil.
- 1.2.2 PLC automatic control and the program could be changed any time according to the request of user.
- 1.2.3 Some parts of the machine are made of high quality steel. It's designed to be strong and durable. Some components are the imported electric components with high reliability.
- 1.2.4 Synchronous drive of chains of upper and lower pinch wheels, automatic compensation of blank position and automatic backlashing could reduce the blank tape to ensure the quality.
- 1.2.5 The double pedal control program is designed according to human mechanics, which is suitable for long term operation, as it makes the operation easy and comfortable and makes operators not easy to be tired.
- 1.2.6 The unique structure of heating tube makes filtration of inlet air to be free of water and oil.
- 1.2.7 Automatic tape cutting, tape feeding and automatic tape trailer completion to reduce the material loss.
- 1.2.8 Special casting of reinforced trisquare structure to provide the super large operation space.
- 1.2.9 The special ultrathin design of lower column makes it suitable for sealing tapes of large, medium and small products.
- 1.2.10 It integrates the advantages, advanced mechanical and electrical technology of different machines in China and abroad.

1.3 Performance parameters

- 1.3.1 The power is about 3KW to be determined according to heating temperature, rated voltage: AC~220V; rated frequency: 50Hz.
- 1.3.2 Maximum temperature of heating tube $\leq 700^{\circ}\text{C}$
- 1.3.3 Power of heating tube: about 2500W.
- 1.3.4 Total air pressure: 3-3.5kg/cm².
- 1.3.5 Pressure of upper column pinch wheel: 1-1.5 kg/cm².
- 1.3.6 Speed: 23mm/min.
- 1.3.7 Dimension: 600X1350X1650mm.
- 1.3.8 Motor power: 100W.
- 1.3.9 Lifting travel of upper wheel: 18-30mm.
- 1.3.10 Width of pinch wheel: 25.4mm (1inch) .
- 1.3.11 Diameter of pinch wheel: 65mm.
- 1.3.12 Width of air heater gun nozzle: 24mm.
- 1.3.13 Noise: less than 80dbA.

2. Structure and function description -----

2.1 Structure of mechanical components

It's made up of frame table assembly, base trisquare assembly, air tube assembly, slider assembly, swinging gun and adjusting assembly, upper column assembly, lower column assembly and drive assembly, tape loosening assembly and tape feeding assembly.

2.2 Circuit control components

It consists of control panel, drive component/program control component and heating component.

2.3 Air control components

It consists of water filter, atomized lubricator, pressure regulating valve, solenoid valve, muffler, pressure gauge, flow restrictor, air cylinder, connector and air pipe.

2.4 Function of mechanical components

2.4.1 Frame table assembly: used to support the components and electric box of the machine.

2.4.2 Base trisquare assembly: used to fix upper column assembly, lower column assembly, swinging gun and drive assembly.

2.4.3 Air tube assembly: used to connect blower fan and heating tube (gun).

2.4.4 Slider assembly: for the up-down movement of upper column (upper pinch wheel).

2.4.5 Swinging gun and adjusting assembly: used to fix, adjust and swing in and out the heating gun.

2.4.6 Upper column assembly: used for installation and drive of upper pinch wheel and pressing of heat sealing tape and clothing.

2.4.7 Lower column assembly: used for installation of drive component of lower pinch wheel and support the clothing for pressing with heat sealing tape.

2.4.8 Drive assembly: used for the drive of upper and lower pinch wheel.

2.5 Function of circuit control components

2.5.1 Control panel and power switch

A. Power switch: used to start and stop the power of the machine.

B. Temperature controller: used to display, set and automatically control the temperature of heating tube. In order to change or set the temperature of heating tube, it's just necessary to press the R/S key of temperature controller and press ^key or Vkey to change to number of PV when PV window flashes.

C. The touch screen controls the program control of parameter setting and displays the parameters.

2.5.2 Function of drive components

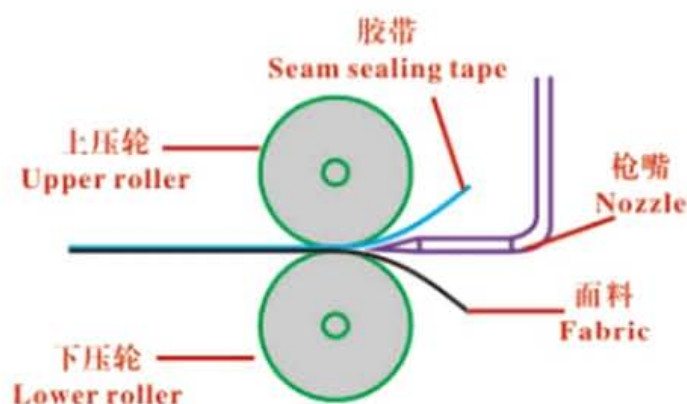
A. Blower fan: used for air blowing of heating tube and the blower fan must work normally before starting the heating tube; a copper gate valve and pressure gauge are installed at the outlet port and it's possible to adjust the air output according to the demand.

B. Powerful DC motor: used to provide the power supply to the upper and lower pinch wheel through drive system.

2.5.3 Refer to the operation manual of touch screen for details.

2.5.4 Function of heating component

The heating component consists of inner heating tube and outer tube, transferring the heat from blower fan heating inner tube to heat sealing adhesive tape and clothing for adhesion as below picture.



2.5.5 Function of hot components

- A. PLC temperature controller: used to display, set and automatically control the temperature of heating tube, and control the current of solid state relay heating tube to regulate the temperature range of heating tube.
- B. Voltage stabilizer (solid state relay): used to control the current of heating tube to control the temperature of heating tube.

Note: the control circuit applies the most advanced voltage stabilizer (solid state relay) to prevent damage of inner heating tube caused by instable voltage during operation and improve the lifetime and temperature accuracy of inner heating tube.

- C. Temperature sensing wire: used to transfer the temperature signal of heating tube to the temperature controller to control the operation of voltage stabilizing and regulating module (solid state relay).

2.6 Function of air control component

- A. Water filter, atomized lubricator and total pressure regulating valve are usually connected together (referred to as atomized lubricator assembly); its main function is filter the water in the air, feed suitable lubricant to the air circuit and regulate the total air pressure.
- B. Pressure regulating valve: used to regulate the pressure of upper pinch wheel. Pull the handle up and move the handle to the left or right direction. Increase by moving clockwise and decrease by moving anticlockwise.
- C. Solenoid valve: used to control the movement of all air cylinders.
- D. Muffler: used for air exhaust of electromagnetism and muffling.
- E. Pressure gauge: (on the control panel)
 - a. The total pressure gauge is used to display the total air pressure value.
 - b. The pressure gauge of upper pinch wheel is used to display the pressure value of upper pinch wheel.
- F. Flow restrictor: used to regulate the movement speed of air cylinder.
 - a. The flow restrictor of upper column air cylinder is used to regulate the speed, stability and smoothness of upper column lifting.
 - b. The flow restrictor of swinging gun air cylinder is used to regulate the speed, stability and smoothness of swinging gun.
- G. Air cylinder: upper column air cylinder, swinging gun air cylinder and scissor air cylinder.
 - a. The upper column air cylinder is used to control the lifting of upper column (upper pinch wheel).
 - b. The swinging gun air cylinder is used to control the swinging in-out of heating gun (outer heating tube).
 - c. The scissor air cylinder is used to control the opening and closing of scissors.
- H. The air pipe and quick connectors are used to connect the pneumatic control assemblies.

2.7 Function of other switches

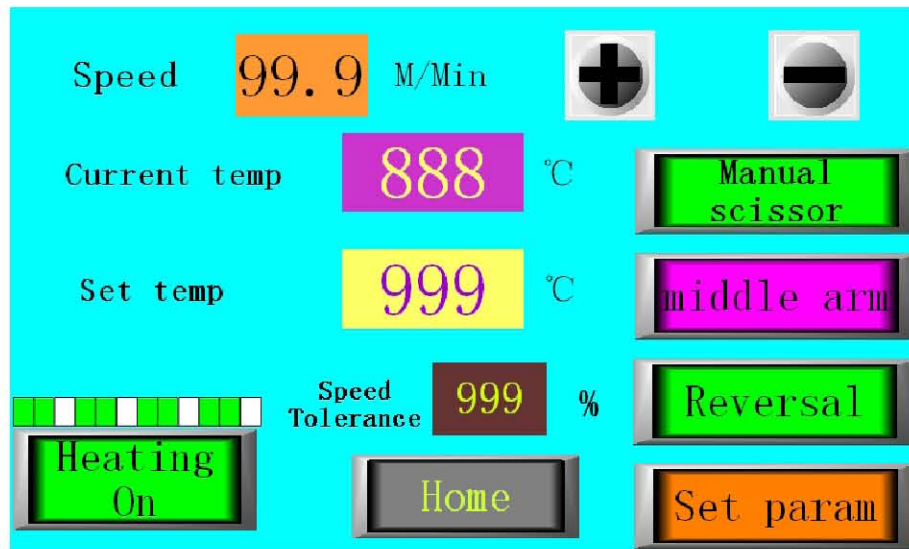
- A. Pneumatic travel switch: used blow the air to the copper tube before tape pressing, so that it's easy to press the adhesive tape to the wheel.
- B. Anticreeping air switch: used to protect the main power of the machine.
- C. Left pedal switch: control the lift of upper column pinch wheel; stepping down is to control the lowering of upper column pinch wheel and loosening the pedal is to raise the wheel.
- D. Right pedal switch: control the swinging in of heating gun and start the pinch wheel.

Note 1: If the left pedal is not stepped down and just stepping down the right pedal, only the pinch wheel will move and the heating gun will not be swung in. This function could feed the tape.

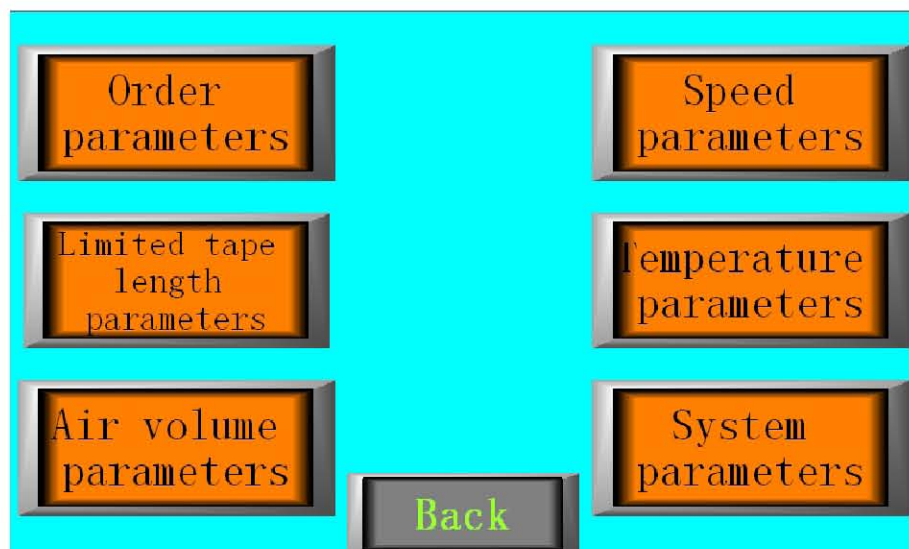
Note 2: Under the condition of automatic tape cutting, loosening the left pedal first and then loosening the right pedal, it will cut the tape automatically and feed the tape after automatic tape trailer completion.

3. Operation guide

3.1 Touch screen



- Speed:m/min,working speed and value,input position to set speed
- Current temp:,display the nozzle current temperature
- Set temp:to set the adjusting temperature
- Heating On:Press it for 10s and it will turn to green,heating tube temperature will arise;Press it for 10s again and it will turn to red,heating tube stop making heat
- Speed Tolerance:To make up and down roller with same or different speed and its based on up roller speed.if set to 100%,up and down roller speed is same;if its value is over 100%,down roller speed will be faster than up roller;if it's value is below 100% down roller speed will be slower than up roller.100% is default value,other value is used for stretch fabric and curved seam sealing.
- Home:to back to start page
- Manual scissor:press it to have manual type cut tape
- Middle arm:model 1 and model 2 could be switched freely when you seal different barrel sharp and cuff sharp products
- Reversal:Press it,roller will move back
- Set param:Press it to get access to parameter setting page as below.2222 is password.if 2222 is wrong,the setting is forbidden from factory.




- Limited tape length paramters:To set the tapping length of the end tapping and then machine will auto cut the tape.

Delay of crosswise gun swing in	9.99 S	Roller back length	9.99 MM
Delay of lengthwise gun swing in	9.99 S	Tape feeding length	99.9 MM
Delay of lengthwise gun swing out	9.99 S	Tape tail delayed length	99.9 MM
Roller delay for tape tail	9.99 S	Tape tail setting length	999 MM
Scissor delay	9.99 S	Roller stop delayed length	99 MM
		Switch off delay	9999 S


formula Parameters
Back

- Display of crosswise gun swing in: To adjust the synchronization between Y-axis nozzle left-right move and roller start move. press it and input 0.01s and press enter. if the fabric or tape burn down, pls reduce the value. If blank tapping occurs, pls add the value. value adjusting range is 0.01-0.1s
- Display of lengthwise gun swing in: To adjust the synchronization between X-axis nozzle left-right move and roller start move. press it and input 0.01s and press enter. if the fabric or tape burn down, pls reduce the value. If blank tapping occurs, pls add the value. value adjusting range is 0.01-0.1s
- Roller delay for tape tail: Roller move delay time after tapping
- Scissor delay: Tape cutting delay time
- Switch off delay: switch off delay time to control close heater first and then close the power. Adjusting range is 1-10min
- Roller back length: To control the roller back length after tapping. if value set is bigger it will burn down the tape; if too small, it will have blank tapping. Adjusting range: 1-15m
- Tape feeding length: To control the feeding tape length after cutting. Adjusting range: 1-100mm
- Tape tail delayed length: Control roller move forward length after tapping
- Tape tail setting length: to control have ending tape finished
- Roller stop delayed length: Control the roller stop length after tapping
- Back: Back to pre page

Current temp	888 ℃	P	999
Set temp	999 ℃	I	999
		D	999
Temp alarm	999 ℃	Max temp	999 ℃



Heating Off



Auto adjust

Back

- Current temp: same as main page
- Set temp: same as main page
- Temp alarm: Over this value, it will auto alarm

- Max temp: The max temperature you can set
- Auto adjust: Have machine heat on, and press it, it will turn to green to auto adjust temperature to have temperature more stable. Once it turn to red, it will close auto adjust.
- Back: to pre page

1:	9999	MM	9:	9999	MM	Present code	99
2:	9999	MM	10:	9999	MM	Total qty of code	99
3:	9999	MM	11:	9999	MM	Code adjustment	▲ ▼
4:	9999	MM	12:	9999	MM		
5:	9999	MM	13:	9999	MM		
6:	9999	MM	14:	9999	MM		
7:	9999	MM	15:	9999	MM		
8:	9999	MM	16:	9999	MM		

Tape length setting OFF

Back

- 1-16 items, you can input the tapping length you want
- Present code: Its current tapping item
- Total qty of code: Allow codes qty
- Code adjustment: to adjust and change the current code
- Tape length setting off/on: To control tape length functions open or close
- Back: to pre page

Reversal speed	99.9	M/Min	Tape tail delay speed	99.9	%
Back speed	99.9	M/Min	Motor speed up time	999	MS
Tape feeding length	99.9	M/Min	Motor speed down time	999	MS

Test start

Test stop

Back

- Reversal speed: Roller reversal speed
- Back speed: Roller back speed
- Tape feeding length: tape feeding device speed
- Tape tail delay speed: Ending tape delay speed after tapping, adjust between 10-100% to have ending tape attach well
- Motor speed up time: factory setting, same as main page
- Motor speed down time: factory setting, same as main page

Up roller diameter	99.9	MM	Sup motor speed contrast	99.99	%
Middle roller diameter	99.9	MM	Down motor speed contrast	99.99	%
Down roller diameter	99.9	MM	<div>Down motor for tape feeding OFF</div>		
Step motor pulse count	99999	P/R	<div>Scissor ON</div>		
Up roller speed contrast	999.9	%	<div>Left pedal manual model</div>		
Max speed	99.9	M/Min	<div>Back</div>		

- Step motor pulse count: Factory setting
- Up roller speed contrast: Control up and down roller speed same or difference
- Max speed: same as main page
- Sup motor speed contrast: Factory setting
- Down motor speed contrast: Factory setting
- Down motor for tape feeding off: Close tape feeding, motor will stop
- Scissor on: same as main page
- Left pedal manual model: Press it, manual left pedal control or auto control

3.2 Starting procedure

3.2.1 Start the main power supply anticreeping switch in the electric box and the power switch in the front of electric box (to supply power to blower fan, temperature controller and PLC).

3.2.2 PLC parameter setting operation procedure

1. This machine applies the Panasonic PLC with user-friendly interface and it's only necessary to push the keys with fingers to complete all settings.
2. Start the power switch to enter the first main menu.
 - 2.1 It shows the speed of pinch wheel: "m/min".
 - 2.2 Total working time: "hours".
 - 2.3 Heating key: press the heating key for three seconds and the heating tube will heat automatically; and press it again for three seconds, the heating tube will stop heating.
 - 2.4 Reverse key: press the reverse key, the pinch wheel will reverse.
 - 2.5 Scissor key: press the scissor key, it will cut the tape manually.
 - 2.6 Setting key: press the setting key, it will enter the second menu to set the parameters, view operation instruction and troubleshooting, etc.
3. Second main menu
 - 3.1 Password function key: during parameter regulation, press ? or * key, the keyboard will appear; enter the password "2222" through the keyboard and press Enter key; press the Enter key again to enter 11 menus of parameter regulation; if the password is wrong, enter the password again.

3.2 Operation notice

- 3.2.1 Before the operation, it's necessary for operators to be familiar with the principle, structure and performance parameters of the machine and to receive the operation training.
- 3.2.2 First the operators should have the consciousness of ensuring product quality to ensure the water-proof adhesive tape will adhere to the seam of clothing well.
- 3.2.3 Pay attention to set the speed according to the clothing and heat-sealing adhesive tape; the speed should not be too fast; otherwise it will directly affect the adhesion result.

Pay attention to set the temperature according to the clothing and heat-sealing adhesive tape; the temperature should be not too high; otherwise it will directly affect the life-span of heating coil.

- 3.2.4 Pay attention to the changes of all parameters (mainly temperature, speed and pressure) during the operation, especially after a break.
- 3.2.5 During the heating process of heating tube, it's prohibited to increase the air output quickly; otherwise it's easy to burn the inner heating tube. Inform the maintenance staff to make maintenance in time if the machine is found to go wrong.
- 3.2.6 In order to ensure the quality and result of heat-sealing tape pressing, it's better for two operators to cooperate with large-piece product; one operator responsible for operating the machine and other operator responsible for pulling.
- 3.2.7 Align the clothing seam when pressing the water-proof heat-sealing adhesive tape; the operator shall know the original direction of the clothing and align the seam in the middle of pinch wheel without deviation.
- 3.2.8 The supporting staff pulls the clothing with pressed tape to ensure the clothing will not be stuck in the upper pinch wheel and keep the pinch wheel move spontaneously.

3.3 Shut down procedure

- 3.3.1 Press the power off button, machine will auto close heat and after the delayed time finished, it will auto close
- 3.3.2 Close the air compressor power and discharge out the air and water from it
- 3.4 Routine maintenance
 - 3.4.1 No matter whether it's dry or humid, it's necessary to exhaust the air and water in the air tank of air compressor every day.
 - 3.4.2 Lubricate every moving mechanical position (such as chain, gear, bearing and slider, etc) of the machine regularly.
 - 3.4.3 Add certain amount of pneumatic lubricant (7# engine oil) into the oil cup of atomized lubricator.
 - 3.4.4 Clean the rags and threads to prevent entanglement to ensure the smooth operation of the machine.

4. Installation and commissioning -----

It's known that one newly installed mechanical equipment could work smoothly only after the commissioning according to the strict installation requirement.

4.1 Inspection before installation and commissioning

- 4.1.1 Inspect whether the mechanical components become loose during the shipment.
- 4.1.2 Inspect whether the wirings become loose or short circuit.
- 4.1.3 Inspect whether the input supply voltage is AC-220V.
- 4.1.4 Inspect whether the air supply reaches 3.5 kg/cm².
- 4.1.5 Inspect whether the pressure of total pressure gauge reaches 3-3.5 kg/cm².
- 4.1.6 Inspect whether the oil cup of atomized lubricator is added with suitable lubricant.
- 4.1.7 Inspect whether the nozzle touches the upper and lower pinch wheels during swinging-in of heating gun.
- 4.1.8 Inspect whether the control air circuits have leakage.
- 4.2.1 A set of atomized lubricator assembly is installed at the low right of air heater table, and the water filter of atomized lubricator assembly has an air supply interface to connect the compressed air source. Connect the compressed air source from air compressor first and regulate the total air pressure to be 3.5kg-4 kg/cm² and pay attention to add the pneumatic lubricant into the oil cup of atomized lubricator.
- 4.2.2 It's necessary to install an AC-220V, 20A independent anticreeping switch before starting the machine. If the local supply voltage is not stable, it's necessary to install a 3KVA voltage stabilizer in order not to affect the stability of the machine.
- 4.2.3 Fasten the screws of all mechanical components, inspect the wiring connection of electrical components and whether the control air circuits have leakage.

4.2.4 Air pressure commissioning

Start the main power air switch of electric box and the power switch in front of electronic box, step down the left pedal and press down the upper pinch wheel; the pressure of upper pinch wheel is required to be 1-1.5 kg/cm². The inspection method is to step down the left pedal continuously and observe the index of upper column pressure. The regulation method is to pull out the handle of pressure regulating valve manually and rotate; rotate clockwise is to increase the pressure and rotate anticlockwise is to decrease the pressure; the pressure is fine when the index reaches 1-1.5 kg/cm².

Note: when the air cylinder of upper column is pressed down, it's only possible to increase the pressure; trying to decrease the pressure could only seal up the exhaust, so the pressure gauge could not be reset.

4.2.5 Commissioning of swinging gun

A. Speed and smoothness commissioning of swinging gun: step down the left pedal and step down the right pedal repeatedly to make heating gun swing in and out to observe whether the swinging gun moves smoothly; if it doesn't move smoothly, it's possible to regulate the flow restrictors at two ends of swinging gun cylinder; regulate it clockwise to make it slower and regulate it anticlockwise to make it faster until the swinging gun moves smoothly.

B. Vibration commissioning of swinging gun: observe whether the heating gun vibrates strongly when it swings out and it's possible to regulate the position of damper.

4.2.6 Lifting commissioning of upper pinch wheel

Step down the left pedal and observe whether the upper column (upper pinch wheel) moves smoothly; if not, it's possible to regulate the flow restrictor of upper column cylinder and fastening screw of slider.

A. The regulation of flow restrictor of upper column cylinder is the same as that of flow restrictor of swinging gun cylinder.

B. The slider fastening screw could regulate the clearance between upper slider and slider holder; if the clearance is too small, it's easy to cause the unsmooth lifting of pinch wheel; if the clearance is too large, it's easy to cause the blank position. Pay attention to this during commissioning.

Note: the slider fastening screw has been commissioned by the specialized technician before delivery. Do not regulate it without permission.

4.2.7 Commissioning of heating gun nozzle and pinch wheel position

A. Loosen the front and rear fastening screw and regulate the front and rear adjusting screw to make the heating gun nozzle 2-4mm away from the upper pinch wheel and then fasten the front and rear fastening screw.

B. Loosen the upper and lower fastening screw of heating gun and regulate the upper and lower adjusting screw to make heating gun 4-6mm away from the tangent line of lower pinch wheel, and then fasten the upper and lower fastening screw.

C. Regulation of left and right position of gun nozzle: loosen the left and right fastening screw and regulate the left and right adjusting screw to make the nozzle parallel with pinch wheel, and then fasten the left and right fastening screw.

D. When the cold machine is heated to basically meet the above-mentioned technical requirements, it's possible to set the temperature of heating tube: press the heating key on the control panel for three seconds, i.e., connect the current to the heating tube

When the temperature controller shows the temperature of 550°C-700°C inspect whether the distance between gun nozzle and pinch wheel meets the requirement of front, rear, upper and lower distance. If it doesn't meet the technical requirement, readjust the heating gun.

Note: the heating gun is prone to change due to "expand when hot and shrink when cold". The regulated distance between the nozzle and pinch wheel when the cold machine is not heated will change during the heating process, so it's necessary to repeat the regulation procedure to reach the required distance.

4.3 Technical requirement after commissioning

4.3.1 The input air supply of compressor shall be above 3.5 kg/cm².

4.3.2 The total air pressure shall be between 3 and 5 kg/cm².

4.3.3 The pressure of upper column pinch wheel shall be between 1 and 1.5 kg/cm².

4.3.4 The oil level of atomized lubricator shall be between the highest and lowest level.

4.3.5 The lifting of upper wheel shall be smooth without strong vibration and rapid impact noise.

4.3.6 When the upper and lower wheels are pressed together, the edges of two wheels shall be parallel.

4.3.7 Backlashing requirement

Step down the left pedal and then step down the right pedal. Loosen the right pedal after the pinch wheel moves and observe whether the upper and lower pinch wheels have some reverse rotation, i.e. backlashing. Backlashing is necessary, as it is the main action to eliminate the blank of pressing tape.

4.3.8 Requirement of swinging gun

The swinging in-out of heating gun shall be smooth and spontaneous, the speed shall be moderate and it shall be free of rapid impact noise.

4.3.9 Requirement of drive technology

Inspect to ensure the least blank position (use one hand to catch one pinch wheel and use the other hand to rotate the other pinch wheel and the voidage of rotation of two pinch wheels is the blank position). Too much blank position is prone to generate blank. Inspect whether the drive chains of complete machine are tightened correctly and whether the fastening screws of sprocket gear, sprocket wheel and universal joints are loose.

4.3.10 The heating coil (inner tube) and outer heating tube shall not be loose and the inner heating tube shall be aligned with air inlet of outer tube.

4.3.11 All control air circuits are required to be sealed without leakage.

4.3.12 The heating gun nozzle shall be located 20 degrees to the parallel line of upper and lower pinch wheel and the heating gun shall be adjusted to be 4-6mm above the centerline of upper and lower pinch wheel and 2-4mm away from the upper pinch wheel. But the distance between the heating gun and two pinch wheels could be regulated according to the water-proof clothing material and heat-sealing adhesive tape to meet the requirement of adhesion.

4.3.13 It's required that the gun nozzle should be horizontally parallel with the edges of upper and lower pinch wheels. If it's not parallel, it will cause one side of tape not to be adhesive.

Note: As the different thickness of clothing materials, different heat-sealing adhesive tapes, different competence of operators and different environmental climates will directly affect the product quality. The commissioning staff shall pay attention to the main change elements as following:

A. The heating temperature is adjustable.

B. The total air pressure is adjustable and pressure of upper wheel is adjustable.

C. The air output is adjustable.

D. The distance between gun nozzle and upper and lower wheels is adjustable.

5. Repair and maintenance

5.1 Inspection and maintenance item

5.1.1 Air circuit repair

A. Inspect to ensure the total air supply shall maintain the pressure of 3.5 kg/cm².

B. Inspect the total air pressure regulating valve: pull out the handle of total air pressure regulating valve and rotate the handle one round; if the index of total pressure gauge, it's necessary to clean the water filtration cup.

C. Inspect whether the flow restrictors of air cylinders become loose.

D. Inspect whether the air pipes are aging, damaged, loose and leakage.

E. Inspect whether the oil cup of atomized lubricator is of enough pneumatic lubricant (7# engine oil).

5.1.2 Electric circuit repair

- A. The installation, maintenance and repair of the electric control system of this machine should be in compliance with the national safety regulation to prevent the equipment and fatal accident.
- B. When it's necessary to replace the electric component, try to select the same type component as original piece or equivalent component.
- C. Clean the interior of electric control cabinet regularly when the machine is shut down (depending on the condition of working field).
- D. Fasten the connecting terminals of electric control system regularly when the machine is shut down.
- E. To prevent the damage of PLC, display panel and operation panel, do not plug and pull the connecting wires between PLC and display panel and operation panel when the power is on.
- F. If the trouble could not be solved, please contact our service network all over the country in time.
- G. We're not responsible for the consequences caused by violation of safety operation and repair regulation (refer to relevant national standards).

5.1.3 Repair of mechanical components

- A. Inspect whether all the drive sprockets are moved or loose; if so, adjust or fasten the screw of sprocket.
- B. Inspect whether the chain is too loose or too long; adjust the chain tension or adjust the distance of bearing support; if the trouble could not be solved after the adjustment, shorten the chain.
- C. Inspect whether the heating gun nozzle is parallel and aligned with upper column wheel; if it's not parallel and aligned, make adjustment according to the above-mentioned method.
- D. Inspect whether the lifting of upper column is smooth or the blank position is too big.

Note: No matter how durable the mechanical part is, it will generate the wearing after long-term usage to cause abnormal mechanical movement and if it's not repaired in time, it will cause the serious damage of some components, which could not repaired, so it's necessary for maintenance staff to be familiar with them and make daily maintenance and routine maintenance strictly according to technical requirement to prolong the service life of the machine.

5.2 Common trouble and troubleshooting

5.2.1 Bad adhesion of heat-sealing adhesive tape and water-proof clothing

Cause:

- A. Improper matching of adhesive tape and water-proof clothing, for example: when the water-proof clothing is PU coating and the adhesive tape is PVC, the components of these two materials are different, so they're not adhesive.
- B. When the materials are correct, the bad adhesion could be caused by the distance between heating gun nozzle and upper pinch wheel (too far, too high or too low), blocking of gun nozzle, too fast rotation of pinch wheel, too low temperature of hot air and too low air output.

Troubleshooting:

- A. Confirm the same components of water-proof clothing coating and heat-sealing adhesive tape and change the heat-sealing adhesive tape.
- B. Clean the dirt inside the gun nozzle and regulate the distance of gun nozzle and reset the temperature and speed.

5.2.2 Too much blank position during rotation of pinch wheel and tape pressing generates the blank.

Cause:

- A. The drive chain is too loose or too long due to wear.
- B. Wear of gear and universal joint.
- C. The blank position occurs at upper and lower pinch wheel bearing and radial direction of pinch wheel.

Troubleshooting:

- A. Fasten each chain.
- B. Replace the gear and universal joint.
- C. Replace the pinch wheel and make it fit with pinch wheel bearing.

5.2.3 The upper column could not be lift to the right position or moves unsmoothly and unstably.

Cause:

- A. The air pressure is not enough or the flow restrictor is not regulated well.
- B. The three fastening screws beside the slider support are not regulated well (too tightly).
- C. The exhaust muffling net is blocked with dirt.

Troubleshooting:

- A. Regulate the air pressure, repair the leakage or readjust the flow restrictor.
- B. Add the lubricant to the moving part of slider support.
- C. Clean the dirt in the muffling net.

5.2.4 Too much deviation of value of temperature controller or the temperature controller displays “” during normal operation.

Cause:

- A. The temperature sensing wire is damaged or the compensation lead wire breaks up somewhere.
- B. Reset the parameters of temperature controller.

5.2.5 The tape could not be cut off.

Cause:

- A. The scissors are not sharp.
- B. The spring of scissor support is too loose or fails.
- C. The air pressure is not enough or it leaks.

Troubleshooting:

- A. Replace or sharpen the scissors.
- B. Replace or adjust the spring.
- C. Regulate the air pressure and check the air circuit.

Besides the above-mentioned common troubles, the other troubles which are not found by our company exist during the long term production. Please contact us when you can't solve the problems by yourselves. We'd like to receive your feedback about your impression on our machine and performance of our machine from you.