Instructions for Use

NHG1000Q2S

General

NHG1000-Q2S roller bonding machine (Fig. 1) is a medium-sized pneumatic double-roller pressing and automatic deviation-correcting hot-melt bonding machine developed by our company. The maximum bonding width (belt width) is 1000 mm. The machine adopts variable frequency stepless speed regulation technology. The working speed of the conveyer belt can be stepless speed regulation between 0 and 10m/min. The machine has wide process adaptability and automatic air pressure type deviation correction function. That is to say, in the process of bonding, the conveyer belt can always be kept in the middle and proper position to work. In case of deviation, can be automatically pushed by deviation correcting limit switches and corresponding electromagnetic valves and cylinders, the position of the roller is properly adjusted, Keep the conveyor belt in the correct position at all times. When the deviation correcting action is not enough to overcome the deviation condition to generate excessive deviation, the machine can be automatically shut down so as to find out the cause of deviation and continue to work after the deviation is eliminated. When the air supply pressure of the air source is too low, the machine cannot be started; When in use, if the air pressure is too low to correct the deviation, the machine can be automatically shut down.

The adhesive machine is suitable for hot-press bonding of garment fabrics and hot-melt linings. can be widely applied to the adhesion between the fabrics at the collar, the front chest, the placket, the cuffs, the flanging, the waistline and the like of various clothing fabrics which do not contain flammable agents and the adhesive linings. Because of the reasonable and compact structure, large heating area, uniform temperature, convenient speed regulation, sensitive pressure regulation and automatic deviation correction function, the series bonding machine has the advantages of simple and convenient operation, accurate and stable process parameters, stable operation, low noise, convenient belt change and maintenance, etc. It is the most suitable professional equipment for large and medium-sized garment manufacturing enterprises.

Main technical parameters

Model No.	1000-Q2S
Maximum bonding width mm	1000
Working speed of conveyor belt	0-10
Bonding pressure MPa	0~0.5
Bonding temperature ℃	≤195
Width of upper conveyor belt ×	1000×3700
Width of lower conveyor belt ×	1000X4770
Conveyor belt motor power W	200
Electric heating power kW	20.6
Overall dimension (L×W×H) mm	3190×1506×1513
Complete machine weight kg	~600
Power supply	3P/380V
Compressed air pressure MPa	0.7

Fig. 1 NHG1000-Q2S adhesive machine

1. Control box; 2. Upper shield and rear shield; 3. Left shield; 4. Special rocker handle insertion port for emergency shutdown 5. Workpiece outlet end platform; 6. Electrical box; 7. Compressed air inlet pipe; 8. Front shield; 9. Workpiece import; 10. Workpiece inlet end workbench; 11. Power supply cable; 12. Roller for moving machine; 13. Adjustable feet.

Performance characteristics

1. The machine adopts continuous operation with high production efficiency. the bonding width can reach 1000mm, the double-roller pressing is suitable for the process requirements of large and medium-sized enterprises for bonding fabrics and hot-melt linings with wider widths.

2. It has the function of automatic deviation correction to ensure that the upper and lower conveyor belts will not deviate, which is beneficial to ensuring the bonding quality and prolonging the service life of the conveyor belts.

3. The latest Teflon belt is selected, with good material and better durability. It is applicable to various fabrics and can achieve high-quality adhesion.

4. The latest digital temperature measurement and control technology and equipment can realize the precise measurement and control of front/upper and rear/lower temperature, and the operation is very convenient, and the control and display of temperature are accurate.

5. The upper and lower conveyor belts are equipped with 9 pieces of electric heating elements to ensure uniform temperature distribution and appropriate pressure to ensure uniform and reliable bonding quality.

6. Variable-frequency stepless speed regulation technology is adopted for the conveyor belt speed. The “speed adjustment” knob on the operation panel can be used to set a proper speed. The operation is very simple. Satisfactory bonding quality can be obtained with proper bonding temperature and pressure.

7. The scraper device is adopted at the outlet side to clean the upper and lower conveyor belts respectively, so that the cloth can be accurately stripped from the conveyor belt, and cloth scraps and sundries can be removed in time.

8. The outlet side is provided with a mesh conveyor belt and a fan, so that the bonded workpieces can be cooled easily, so as to ensure the molding quality after bonding, and the productivity is also higher.

INSTALLATION INSTRUCTIONS

1. After unpacking the machine, relevant contents and quantity shall be counted according to the packing list. Attached tools (special rocking handle for rubber lined roller rotation).) should be hidden.

2. Three-phase four-wire 380V power supply shall be adopted for the machine, and the maximum power consumption shall be 18(20.7)kW. The user shall select and install the isolating switch. The specification and capacity shall meet the above requirements. The safety grounding wire shall be installed. The power cord access point is at the left front of the rack body and at the lower left corner of the electrical cabinet (see Figure 1).

3. After the installation position of the machine is determined, it shall be positioned accurately. Finally, adjust the adjusting bolts at the four corners below the machine frame to separate the roller from the ground and make the machine work normally.

4. The compressed air pressure is 0.7MPa. The user shall use DN15(G1/2) galvanized water pipe to connect it to the vicinity of the air inlet of the machine. One stop valve shall be installed at the end. The above is provided by the user. The Supplier shall supply 1 set of 1/2×Φ8 lock nut, 1 set of Φ8×1 nylon hose and 1 set of Φ8×5(1/4) quick-change connector at random for the connection between the stop valve and the air inlet triple. The air inlet is located at the left rear of the frame body (see Figure 1).

5. After installation, carefully check all parts of the machine, and clear away sundries and particles on the table top, material inlet and outlet, conveyor belt, etc. to prevent damage to conveyor belt, rubber roller or other parts.

6. After the above-mentioned items are completed, the machine can be started for debugging or work.

Method of operation

The operation panel of the control box on the left body of the machine is as shown in Figure 2. Refer to the figure and the circuit diagram (Figure 4) to explain the operation method as follows:

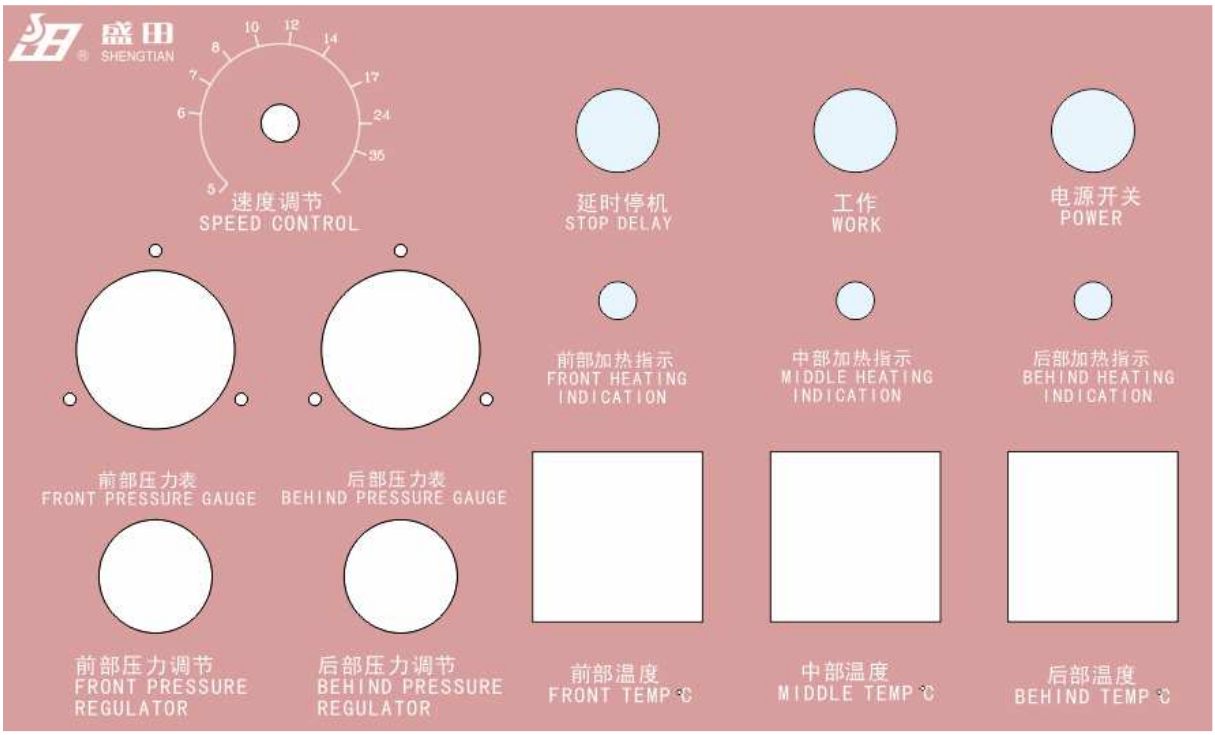

Fig. 2 Operation panel of NHG1000-Q2S bonder

1. Before the machine is put into use, the power supply and compressed air are at the cut-off position, and the power supply indicator light is off; Both PRESSURE REGLATOR and PRESSURE VALUE are in the "0" position. In this way, the rubber-lined roller at the outlet side is not subjected to pressure, and permanent deformation (out-of-round roller) caused by long-term extrusion can be avoided, thus affecting the bonding quality. The speed adjustment knob is in the neutral position or the last working position. After energization, the temperature indicated by both thermostats is also at the relevant value at the time of the last operation. Other parts are also in standby mode.

2. Open the door of the electric box and close the power isolation switch QF1, that is, the power supply has been connected. Press the button "POWER" SB1 in the lower left corner of the panel of the operation box, and its built-in indicator lights up. Indicates that the machine control circuit is powered on. Press the “WORK” button SB2 again, and its built-in indicator light will be on. The electric heating element has been powered on and heated. After proper preheating, it can work.

3. Setting and Adjustment of Bonding Temperature

In the middle of the operation panel, there are two digital temperature controllers, FRONT/Upper TEMP °C and BACK/DOWN TEMP °C. which sets and controls the temperature of the electric heating element at the set temperature.

The bonding temperature is set as follows:

a. Press the left mode key. At this time, the setting temperature value of SV window flashes and enters the temperature setting state.

b. Press the down key on right to set the temperature value. After setting, press the mode key to finish the temperature setting.

c. When the △, □ and ▽ indicators on the left of the temperature display value are on, the trend of temperature change is respectively indicated. That is, when the difference between the real side value and the set value is greater than, equal to or less than 0.25% the corresponding indicator light will be on. While in the process of adjustment, the temperature display flashes.

The bonding temperature shall be set reasonably according to the characteristics of the fabric and the adhesive lining, and the bonding speed and pressure shall be considered. Generally, the temperature shall be between 130° C and 160° C. Do not exceed 190° C to avoid damaging the lubrication conditions due to overheating of the roller bearings.

5. Adjustment of Bonding Speed

By turning the knob of SPEED CONTROL potentiometer DW1 at the upper left corner to the appropriate position in the middle, the speed of the main motor can be changed by frequency conversion to obtain the required bonding speed. the bonding speed can be regulated accurately and steplessly between 0 and 8 m/min, and the bonding speed can be kept stable. The scale value of “speed adjustment” knob does not correspond to the value of speed. The specific speed shall be determined through process test according to the characteristics of fabric and adhesive lining. Generally, about 2.5m/min is suitable.

6. Adjustment of bonding pressure

The NHG900-Q2S bonder is a pneumatic pressure bonder that uses compressed air to apply

and adjust the bonding pressure. After the air supply valve is opened, there is an air supply triple (see Fig. 5) at the left rear air inlet of the machine. Its pressure regulating valve shall be adjusted to the maximum value (≤0.7MPa), and the output pressure of the pressure regulating valve shall be adjusted through the "PRESSURE REGULATOR" knob on the right side of the operation panel. and then the pressurizing cylinder is controlled to push the pressurizing device to exert pressure on the outlet side rubber lining roller. The value of the air pressure is indicated by the Pressure Indication table above it. the operation method of the pneumatic pressurizing mode is more convenient, sensitive and accurate, and is beneficial to improving the bonding quality.

In the bonding process, the three main technological parameters, such as temperature, speed and pressure, can be adjusted independently, interrelated and well matched, and shall be determined and adjusted during the production process according to the material and thermal bonding characteristics of the fabric and the adhesive lining. The bonding pressure is generally adjusted to the indicated value in the middle of the pressure gauge and corrected in time according to the actual bonding effect.

7. After startup and proper adjustment, the normal operation can be started after about 20-30 minutes and the heating temperature reaches the set bonding temperature.

8. After use, adjust the pressure to zero, then press the "WORK" button SB2 on the panel, the built-in indicator is off, the electric heating system will stop heating immediately, but the conveyor belt will continue to run and enter into the delayed shutdown state. At this time, the indicator in "TIME COOL" SB3 will still be on. until the temperature display value is less than or equal to 70 DEG C, the conveyor belt can be stopped, This is a real time-delay shutdown. The indicator light is off. In this way, the conveyor belt can be prevented from being burnt out by high temperature after the conveyor belt stops moving suddenly.

9. In the state of delayed shutdown during the shutdown process, the pollutants on the upper and lower conveyor belts and scraper can be wiped off with silicone oil during the idling time of the whole machine.

10. This machine is equipped with "Emergency Stop" button SB4. In case of sudden power failure or other sudden accidents (for example, the conveyor belt deviation correction function fails to maintain the normal working position, or when sundries are entrained between the conveyor belts, etc.), press the "Emergency Stop" button to shut down

the whole machine immediately. At this time, the special crank supplied with the machine shall be sleeved on the square tenon of the upper compression roller at the outlet end, and the conveyor belt shall be continuously rotated manually until the temperature display value is ≤70° C. In this way, the conveyor belt can be prevented from being burnt or the joint is degummed due to excessive heating, and irregular permanent deformation caused by long-term pressure of the rubber-lined roller barrel can be avoided.

Immediately after the emergency stop, turn the "pressure adjustment" knob back to the 0 position to eliminate the pressure between the conveyor belt and the rubber lined roller.

11. Oil for cylinder lubrication shall be regularly added to the oil atomizer of pneumatic triple; For the water separated from the gas-water separator, the water drain valve at the bottom shall be pressed regularly to drain the accumulated water.

12. The automatic deviation correction of the upper and lower conveyor belts is caused by touching the micro travel switches SQ1/SQ2 and SQ3/SQ4 after the edge of the conveyor belt deviates, and then driving the solenoid valves BV1/BV2 through the intermediate relays KA1/KA6 to supply gas to the corresponding deviation correction cylinders (refer to Fig. 5), so as to realize the function of automatic deviation correction. When the air supply pressure of the rectification system is too low, the pressure controller PK will cut off the power supply of the control loop and stop it in an emergency. Subsequent operations shall be handled in accordance with Clause 10 "Emergency Stop".

Replacing the conveyor belt

When replacing the conveyor belt, the power and air supply shall be cut off, and the operation shall be carried out at normal temperature. NHG900-Q2S bonding machine is a medium-sized roller bonding machine. Generally, two persons are required to cooperate in

construction. The specific operation method and steps for disassembling the conveyor belt are as follows:

1. Align the electrical control box face to the left to make the panel parallel to the feeding and discharging direction. Therefore, the disassembly of the upper shield and the like can be facilitated, and the collision phenomenon of the upper shield and the control box can be avoided.

2. Lift up and remove the upper shield of the main body. (1) Turn up the front and rear shields with handles installed in the front and rear direction of the upper shield and place them above the upper shield. (2) Lift the upper shield and front and rear shields as a whole from the left and right sides and move them away.

3. Remove the heat shield under the upper shield cover.

4. Remove the left and right shields on the left and right sides of the main body. (1) Lift the right and left shields up slightly and move the left and right shields out. (2) Remove the left and right shields.

When the tape is replaced and reinstalled, the right shield shall be connected with the connection line of the emergency stop button, and then the inner upper edge of the right shield shall be hung in the inner groove of the right wallboard. Except that the inner upper edge of the left shield shall be hung in the inner groove of the left wall panel, the small groove at the front side of the shield shall be hung on the small hook of the electric box sealing plate.

5. Take the cleaning cloth rod at the outlet end of the upper conveyor belt upwards out of the groove, and then remove the right end of the upper scraper device (the right end support shall be removed first) and move away from the outlet direction, and no longer press on the upper conveyor belt.

6. Put down the inlet and outlet workbench. Remove 2 socket head cap screws from both ends of the left and right wall panels (8 sets in total at the left and right sides of the inlet and outlet), and loosen the 3rd socket head cap screws at the lower corner of the side plate of the inlet and outlet workbench

(1 piece on the left and right side, 4 in total) to make the inlet and outlet workbench hang downwards naturally.

7. After loosening and removing the tension spring between the upper and lower right wall panels and the main tension shaft, pull out the upper and lower tension shafts from the large holes of the upper and lower right wall panels.

8. Remove the pressurizing cylinder between the lower right wallboard (close to the outlet end) and the bonding pressure arm. （1）Remove the cotter pins on the pin shafts at both ends of the right pressurizing cylinder. （2）Move the cylinder as a whole inward along the pin axis to remove the cylinder as a whole.

9. After marking (or verifying) the crossing marks between the upper and lower wallboard on the right side and between the lower wallboard and the rack, remove the 8 hexagon socket screws, nuts and other fasteners between the upper and lower right wallboard and the right lower wallboard and the rack.

10. Put the attached 4 Φ27×3 and 1200 lifting rods (pipes) on the 4 supporting column heads (Φ20 and 70 long) of the upper and lower right wallboard, lift up the pipe end to make the upper and lower right wallboard and the frame separate from each other, generate a certain gap, and support the pipe with the square pipe strut.

11. Put the loosened conveyor belt over the upper and lower right wallboard to the right, and then pull it out to the right side. Put it on 4 lifting rods temporarily, and then remove the square pipe supporting rod to remove the conveyor belt. The direction of its lap joint shall be recorded before removing the conveyor belt. When replacing a new conveyor belt, the conveyor belt shall also be installed in the original direction, which shall not be reversed.

After replacing the conveyor belt with a new one, install the conveyor belt in the reverse order of the above steps and restore it to its original state. Pay attention to the following when refitting the conveyor belt:

1. Generally speaking, the upper and lower conveyor belts are mostly replaced together. If necessary, only one of them can be replaced.

2. After reassembly, the left and right wall panels shall be restored to the original correct positions. After fastening the fasteners such as 8 sets of socket head cap screws between the upper and lower right wall panels and between the wall panels and the frame, check the inner sides of the upper and lower right wall panels with a ruler. The straightness error shall be less than 0.5mm, and the length difference of diagonal lines on the wall panels shall be less than 1.5mm.

3. Check whether the original red paint marks between the upper and lower right wall panels and between the wall panels and the frame are consistent as before.

4. After the wallboard is installed, after restoring the components and devices as per steps 8 to 5, attention shall also be paid to whether the left side and the right side are symmetrical, so as to avoid deviation of the conveyor belt as far as possible. After trial run and necessary adjustment, gradually restore the original state.

5. When reloading the conveyor belt, pay attention to whether the direction of the lap joint is correct, so as to prevent the lap joint from being blocked by the scraper device to damage the conveyor belt or cause a larger fault.

Precautions

1. Do not shut down for no reason during normal operation. Do not suddenly break the power switch or unplug the power plug without normal shutdown! This will cause the conveyor belt to stop rotating and be burned by the high temperature of the electric heating element, and the rubber lining roller will stop rotating and be compressed and deformed.

2. In case of sudden power failure or abnormal shutdown due to misoperation, or emergency shutdown is required due to accident, the operator shall immediately use the attached rocking hand to rotate the square tenon □14 at the shaft end of the gluing roller at the

outlet end, manually rotate the conveyor belt and continue to rotate continuously until the temperature drops below 70° C.

3. During operation, small hard objects must be prevented from getting stuck between the upper and lower conveyor belts, hindering the normal operation of the machine, or damaging the conveyor belts, upper and lower rubber rollers, etc.

4. The adhesive lining must be placed in the right direction (the adhesive lining is placed on the fabric) and slightly smaller than the size of the fabric. Otherwise, glue will be stuck on the surface of the conveyor belt or the surface of the roller, causing dirt on the surface to increase the transmission resistance or cause abnormal deformation, thus affecting the bonding quality. If possible, a double-sided bonding process may be considered to ensure that the conveyor belt and rollers are clean and durable.

5. Always clean the conveyor belt surface and scraper so that the scraper always clings to the roller and conveyor belt. If there is too much adhesive on the conveyor belt, wipe the cloth with silicone oil while running at a slow speed.

6. The conveyor belt shall be cleaned frequently with silicone oil or cleaning powder during the working process. At the end of each shift, the conveyor belt must be cleaned in time.

7. Always clean the upper and lower scrapers at the end of the conveyor belt to remove the scraped sundries and dust on the machine body. When dirt is found on the cleaning cloth rod, it shall be cleaned in time. If the cleaning cloth rod is too dirty, it can be rotated 90° for reuse. After all sides are dirty, the cleaning cloth rod shall be replaced with new lining cloth in time.

8. There is an electric heating element in the middle of the machine. During operation, the temperature of the conveyor belt and the cover plate on the body is very high. Please do not touch it.

9. During operation, hands may be twisted between rollers. Therefore, be

careful when feeding the raw materials to be bonded.

10. The power supply must be equipped with safety protection grounding wire to prevent electric shock accidents.

11. The conveyor belt and the electric heating element are not covered by the warranty.

Maintenance of daily use

1. Turn off the power supply and turn the pressure adjusting knob back to the zero position and close the air inlet valve when the machine is shut down after use to avoid deformation of soft parts such as conveyor belt, rubber lining roller and scraper device due to long-term heating and pressure.

2. The conveyor belt shall be cleaned every day, and the cloth scraps, dust and other dirt adhered on the cleaning cloth rod and scraper device shall be removed, and the appearance of the machine shall be kept clean.

3. If necessary, the conveyor belt shall be cleaned with silicone oil when the machine is in hot state. However, care shall be taken to prevent silicone oil from coming into contact with electrical components.

4. After the cloth piece wrapped on the cleaning cloth rod is contaminated, please rotate the rod and stick the clean side on the conveyor belt. Meanwhile, the scraped dirt shall be removed frequently and timely. If the wrapped piece of cloth is contaminated, it shall be replaced in time.

5. Please check the amount of lubricating grease and its lubrication condition of bearings at both ends of each roller every 3-6 months, and add lubricating grease in time. High temperature grease No. 4 (SH0376-1992) is preferred. It is advisable to add engine oil (not too much) in time for lubrication. The air-water separator shall be frequently drained with accumulated water to facilitate drying of the air.

Common faults and troubleshooting methods

The mechanical structure of the machine is relatively simple. The main motor is a gear reduction motor with a power of 200W. It drives the upper and lower conveyor belts and their rubber-lined rollers to rotate through V-belt transmission. The frequency converter is used to adjust the stepless speed of the conveyor belt at 0~8m/min. Daily use of the maintenance focus on regular lubrication and reasonable commissioning and cleaning. The circuit part is slightly more complicated. It is mainly composed of the electric heating part, the variable-speed drive of the conveyor belt driven by the main motor and its rectification system, and the control part (secondary circuit) (see the circuit diagram). See the table below for common faults and troubleshooting.

Failure phenomenon	Cause of failure	Elimination Method
Power supply indicator light does not light up	Power supply is abnormal A fuse is blown. The indicator light is damaged	Check the power supply and make the power supply normal Replace the fusible core Check or replace the power button and switch
The power indicator is on, but other indicators are off.	Insufficient air supply pressure	Check the air supply Adjusting pressure

The main motor works normally, but the conveyor belt does not rotate or is slow	Too much bonding pressure Belt tension too loose Rubber roller drive belt is loose Conveyor belt joint stuck by scraper Tension shaft caught by pieces or debris Out-of-limit shutdown due to deviation correction function failure	Adjust the cylinder air pressure properly Adjust the belt tension properly Properly tighten the drive belt Reinstallation of the conveyor belt in the correct direction Loosen the bonding pressure and take out the carded pieces and sundries Check and adjust the conveyor belt side deviation correction switch or relay
Main motor does not work properly	Fault of speed regulating potentiometer in panel Abnormal operation of frequency converter Main motor speed measuring coil fault Motor fault	Check and replace potentiometer Check, adjust or reset Check and replace coil or main motor Check, repair or replace the motor
Abnormal temperature regulation and temperature	Damaged temperature sensor or bad connector Wiring of electric heating element is loose Damaged electric heating element Fault or poor display and setting of temperature controller	Check to repair or replace the sensor or connector Check, reconnect or replace Replace the electric heating element Check and replace the temperature controller