

OPERATION/SERVICE MANUAL

ULTRASONIC HOT-FIXING MACHINE MODEL NS-106



NAMSUN ENGINEERING

Product description

Thank you for choosing Namsun Engineering product.

This hot-fix setting machine is to fix rhinestones onto any fabric regardless of thickness as this model equipped with ultrasonic function.

If you have any query or problem about our product, please feel free to contact as mentioned below.

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1. Safety

1) Safety rule

Namsun engineering provides information about its product and the associated hazards but it assumes no responsibility for the user's operating and safety practices. It is imperative that all personnel who work with this equipment understand the hazards described in this manual and take precautions to protect against possible injury.

It is required to perform maintenance in any part with understanding circuits and voltages present along with high voltages (**230V AC**) are employed for the operation.

2) Mechanical safety

A. Electrical safety

Use only original fuses with the specified current rating. Switch off or plug-off the machine immediately if trouble occurs in the electrical system.



<sticked on plug>



<sticked on ultrasonic/heater oscillator>

B. Pneumatic/ Heater safety

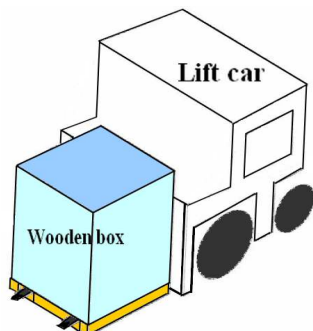
To prevent from unintended movement of cylinder, it is required to block up pneumatic lines when repairing and maintenance. Also, take care about heater-horn on working table when operate by heat.



<sticked on working table>

2. Transportation

Use an appropriate sized forklift and carry the machine slowly and carefully without jarring significantly.



- Shipping weight : 100kgs
- Machine weight : 80kgs

3. Specifications

Head	1 heads (working for 1 size 1 color)
Cylinder	1 up-down cylinder
Setting type	Ultrasonic
Ultrasonic capacity	0.2kw
Rated current	1A
Electricity	230V AC, 50/60Hz, 1Phase
Air pressure	5.5~6kg/cm ³ 80PSI
Noise level	80dB

4. Installation

- 1) Due to **230V AC** 1Phase on delivery, operator is required to confirm plug.
- 2) When connect compressed air to air unit, it is required to adjust air pressure 5.5~6kg/cm³.



4. Designation of main components

Air gauge

Up-down cylinder

Plate brush

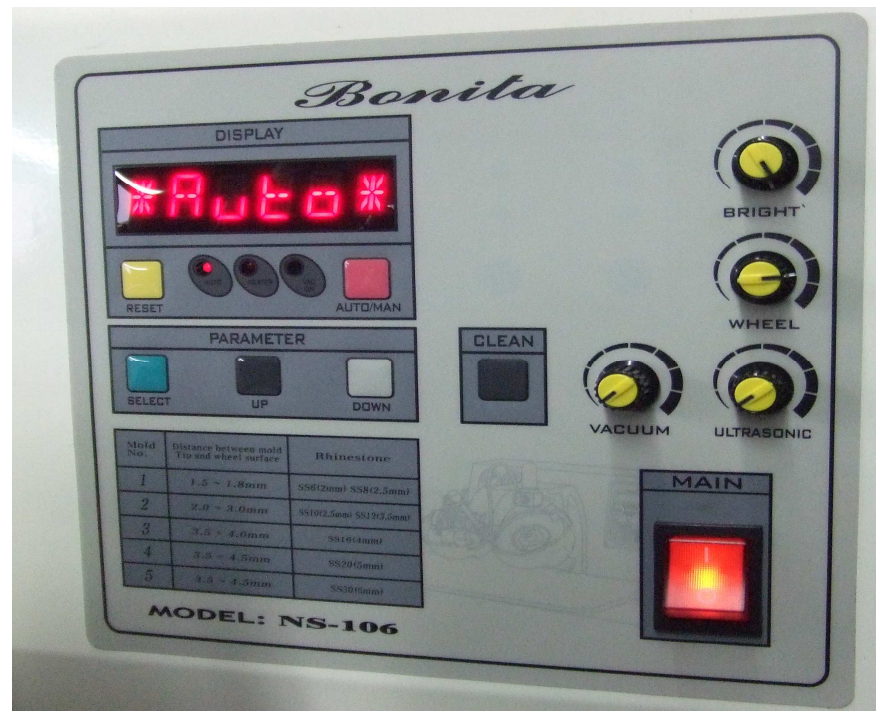
Operation panel





6. Operation

1) Explanation of operation panel



- A. **LED display** : It shows all functions at particular mode through each button.
- B. **RESET button** : This is to return into initial setting value in case of manual or wrong setting value due to materials changed or testing.
- C. **AUTO/MAN. button** : It shows **AUTO** or **MANUAL** on **LED** when push one time.
Auto mode is continuous setting material if push operation pedal continuously while **Manual** mode is setting one piece only even pushing operation pedal continuously.
- D. **SELECT button at Parameter** : This is to change any figure(parameter) of all functions at Auto & Manual mode in push **UP & DOWN** buttons
- E. **CLEAN button** : This is to blow out dust or any foreign materials on nozzle of up-down cylinder.
- F. **BRIGHT volume** : This is to adjust laser pointing light whether it is strong or weak.
- G. **WHEEL volume** : This is to adjust speed of rotation plate and set the speed to suck stone when cylinder moves to stone.
- H. **ULTRASONIC volume** : This is to adjust strength of ultrasonic oscillation whether it is strong or weak.

2) Explanation of each function shown on LED [Full acquirement is required]

Functions at Auto. mode

N1 : Adjust waiting time before setting with holding stone. [Setting speed may change]

N2 : Adjust air blowing-down time after setting stone. [Setting speed may change]

Functions at Manual mode

N5 : Adjust waiting time after setting stone. [Setting speed may change]

REF-** : Adjust value of air-pressure sensor.

MAK-** : Laser light is shown as figures (when turn **BRIGHT** volume, figures are not settable but light can be adjusted as desire)

T-MODE

- a. When press **AUTO** button, oscillation of ultrasonic can be checked. (if press it for long, it may be burnt on PCB for which attention is required)
- b. When press **DOWN** button, Front-back cylinder can be checked.
- c. When press **CLEAN** button, Up-down cylinder can be checked after Front-back cylinder motion.
- d. When press **UP** button, **VAC***** is shown on LED and it is for checking air pressure. Then, after drawing back Up-down cylinder by force, operator can achieve a half of figures from the difference between figures in closing up nozzle by finger and in removing the finger under pressing **UP** button. So the operator can set the half of figures at REF value.

Functions at Auto. and Manual Mode

NR Adjust ultrasonic setting time of Up-down cylinder. This is because not for adjusting strength of ultrasonic but for setting time in condition of ultrasonic volume fixed, operator may make time for long and melt glue of stone as much as possible, if it is thicker fabric. [Setting speed may change]

3) Operating procedure

- A.** Check power connection with voltage correctly and air connection at backside of machine.

- B. Switch on the main switch at operation panel.
- C. Fill up rhinestone onto rotation plate. (Order between B & C may change)
- D. Wait for rotation plate along with rhinestones rotates 360 degrees automatically.
- E. Press **CLEAN** button intentionally to remove any dust and foreign materials from nozzle.
- F. Press operation pedal. Then rotation plate rotates and air sensor operates automatically (about 4 seconds). Operator can keep setting rhinestones on fabric.
- G. In any case of not proper sucking due to nozzle inside is blocked, it is required to press **CLEAN** button. Then rotation plate turns with pumping air out to clean any dust and air sensor operates automatically (about 4 seconds)
- H. When nozzle converting to exchange another size/color of rhinestone is required, press **CLEAN** button slightly then, rotation plate rotates and stops and straight cylinder keeps upright position simultaneously.
Operator can change as mentioned on next page

7. Maintenance

1) Exchange of rotation plate

Rotation plate has 4 sizes. (**SS6** : 2mm, **SS10~12** : 3mm, **SS16** : 4mm, **SS20~30** : 5~6mm)

Pull out bigger bolt in the middle of plate by hand and then hold two small bolts and take off old plate.

After that, exchange new rotation plate and tight bigger bolt again.



Photo 1-1



Photo 1-2

2) Exchange of nozzle

Nozzle (suction cup) has five sizes (No. 1~5).

Push **CLEAN** button slightly and make straight cylinder upright position like Photo 2-1.

Hold 12mm-spanner(**A**) and loose 8mm-spanner(**B**) for old nozzle, and then exchange new nozzle (Photo 2-2).



Photo 2-1

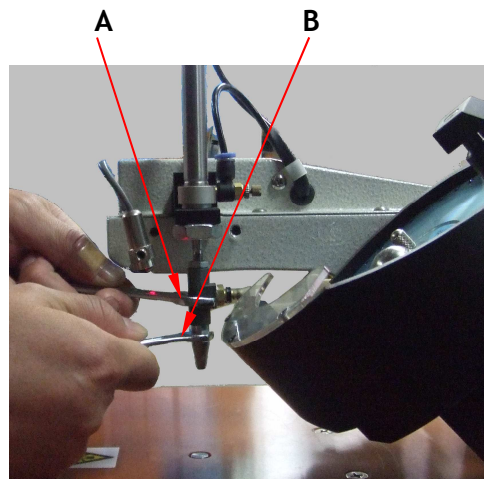


Photo 2-2

3) Height adjustment of nozzle

Turn height adjuster right and left for gap in between nozzle and stones on rotation plate so as to pick-up and carry the stones rapidly and correctively whenever exchange nozzle.

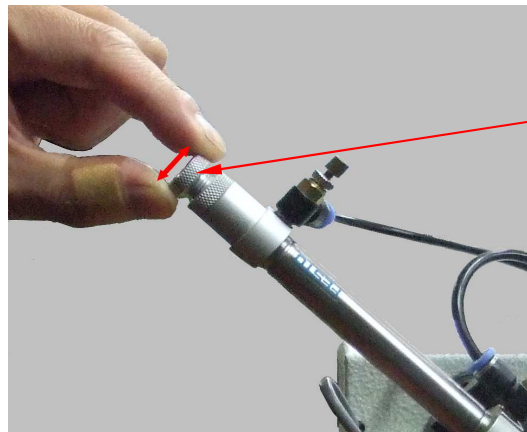


Photo 3

4) Adjustment of front-back cylinder

When open cover, this cylinder is as Photo 4.

Actually, front-back cylinder helps up-down cylinder to work smoothly.

So, maintenance engineer may adjust vertical angle (90degree) with bolt **A** and sucking angle (45degree) with bolt **B** for up-down cylinder only in particular case like assembly from total repairs.

Generally, it is not required due to adjustment is done before delivery.

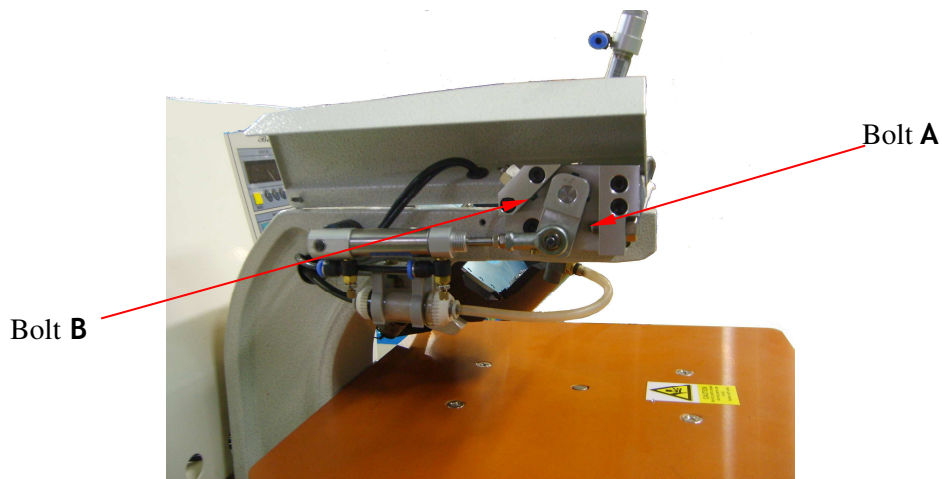


Photo 4

5) Exchange of dust filter

Clean foreign substance within a glass pipe.

Dust filter should be exchanged because pressure becomes high and thus suction power is reduced in the event that dust is in contact with this filter (white filter turns grey).

Dust filter should be exchanged by opening glass pipe in Photo 5.

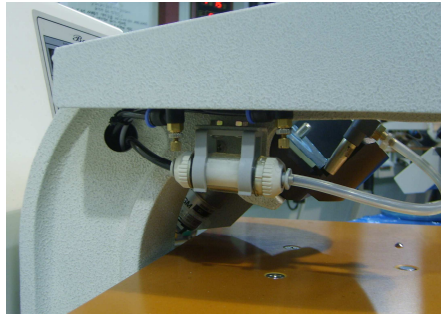


Photo5

6) Air Unit

It is preventing damage of solenoid valve due to leaching water/oil created at air-compressor
Removing the water/oil after checking is required to extend life of pneumatic parts.



Photo 6

7) Adjustment of regulator

Regulator is located at front side.

Operator may adjust air pressure at 5kg/cm³ or more by adjuster (black one).

It helps movement of front-back cylinder and up-down cylinder to set stones properly.




















Photo 7


8. Troubleshooting

Problems	Check items	Action
Up-down cylinder keep repeating same motions without holding and setting stone.	<p>1. Nozzle gets blocked. [Due to this, air sensor perceive as holding stones and stones may be crushed.]</p> <p>2. REF value is too higher or lower [Due to this, air sensor may not perceive properly.]</p>	<p>1. Clean the nozzle thru CLEAN button. Otherwise perforate by needle if keep same motion even after clean.</p> <p>2. At manual mode, adjust REF figures. [Refer to functions at manual mode] Otherwise check air leakage in control box if keep the same still.</p> <p>* If REF value is too higher, this cylinder doesn't work even holding stone and it works without holding if REF value is too lower.</p>
Up-down cylinder heats rotation plate.	It is happened when air pressure is not enough or fitting bolt is too tightened	<p>Confirm air gauge of backside is 5.5~6kg/cm³ and frontside is 4kg/cm³.</p> <p>And confirm fitting bolt is too tightened and open slightly if it is.</p>
Up-down cylinder is setting stones with forcing aside of fabric		Open upside fitting bolt slightly.
Up-down cylinder is moving up before setting even holding stone.		Open downside fitting-bolt slightly and adjust. But if too open the bolt, stone may be broken due to too strong setting power.
Up-down cylinder is not smooth for returning back after setting stone.		Open upside fitting bolt slightly and adjust. But if too open the bolt, stone may drop down due to quick ascension.

9. Main part list

No.	Name of Parts	Part Nos.	Photos
1	Rotation cylinder	ACPCB16-26S-25	
2	Up-down cylinder	DSNU12-50PA-SA36176KR	
3	Up-down cylinder holder		
4	Front-back cylinder		
5	Laser pointing light		
6	Dust filter	ZFC 200-06	
7	Rotation plate		
8	Rotation plate fixing bolt		
9	Plate brush		
10	Drum		
11	Rotation plate motor	GJGAJ20	
12	Air regulator	KAR 2000	
13	Air gauge	ARG20-02-BG1	
14	Fuse		
15	Transformer	100VA 60/50Hz	

16	Ultrasonic Board		
17	Main Board		
18	ON/OFF switch		
19	Operation pedal		
20	Wheeler		
21	Ultrasonic oscillator		
22	Ultrasonic oscillator cover		
23	Working plate		
24	Air unit		
25	One touch fitting unit		
26	Air hose		
27	Air sensor		
28	Sol-valve & controller set		
29	Sol-valve 2lines		
30	Nozzles		
31	Working plate supporter		
32	Power cable		

33	Spanner		
34	Wrench set		