

USER MANUAL

(Version 1.0)



Nonel-tube Sealing and Labeling Machine

Special Statement

1. Our company provides warranty of free warranty and technical services for 12 months since it leaves the factory.
2. Our company charges for any maintenance beyond the warranty period and services.
3. The following conditions are not within the warranty:
 - Damage caused by using device in abnormal circumstances.
 - Equipment failure caused by the working environment that is not meet the device requirements.
 - Equipment damages caused by private reparation or transformation.
 - Battery <app:ds:battery> and other easy to wear and tear parts
 - Spare parts
 - Appearance and package of equipment
 - Incidents or damages caused by natural disasters
4. The contents of this manual is only for reference, any questions please contact the service hotline: 0631-5690110.
5. This manual and the equipment technical data belongs to Weihai kaer Sonic Co., Ltd., No permit for any change and copy.

1. General Information

Nonel tube sealing and labelling automatic machine is mainly used for sealing and labelling technique integration in civil explosion industry. Replacing the original techniques (such as adhesive and glue, etc.) ultrasonic welding have the remarkable advantages of high efficiency, good welding quality, protect environment and save energy.

2. Structural characteristics and Working principle

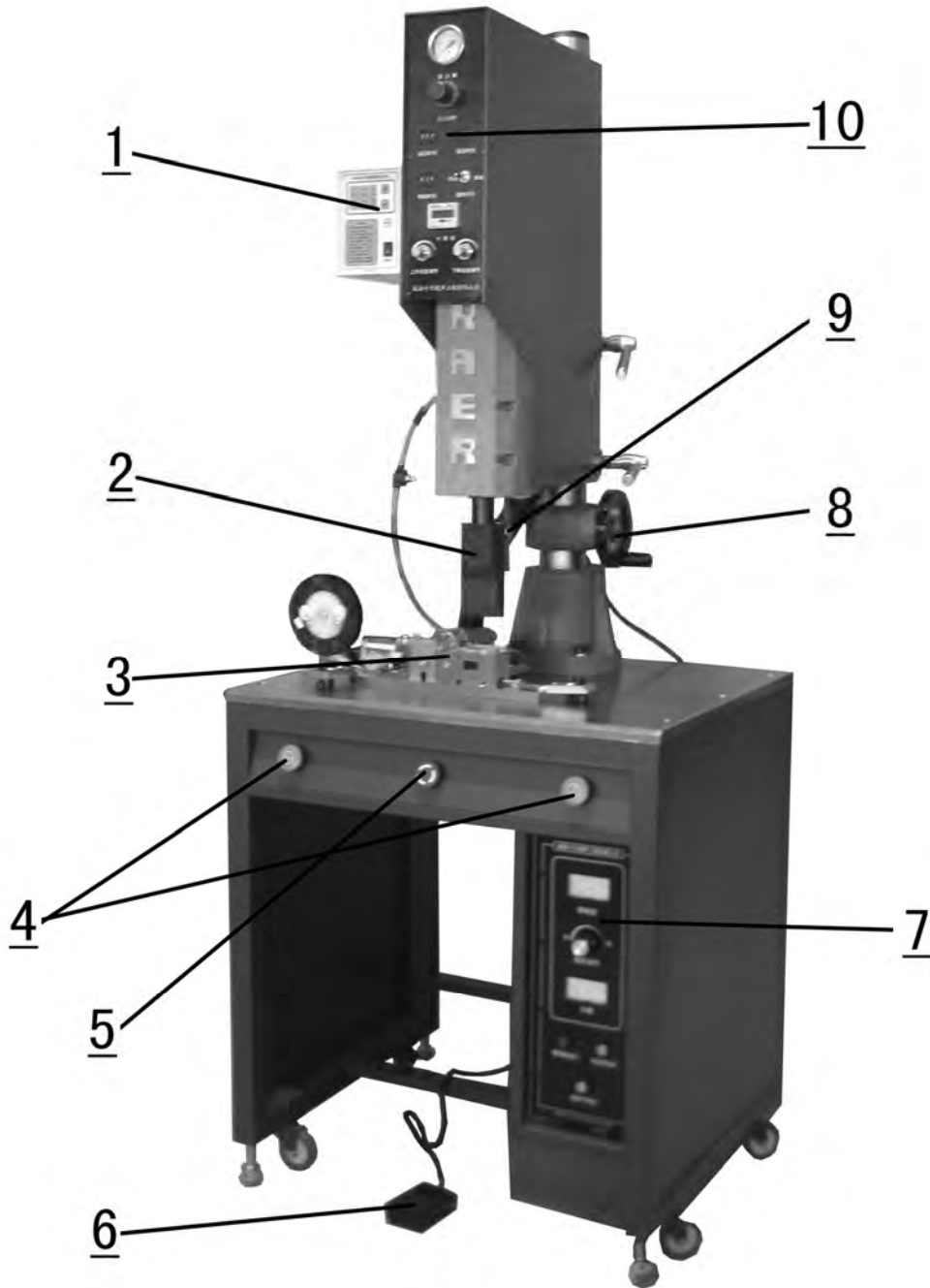
Nonel tube sealing and labelling automatic machine use the advanced ultrasonic technique, feeding label to positioning tooling by single clip computer. The welding is in harmony with feed, operation simple and high efficiency.

KCH-1520 ultrasonic welder converts the electric energy into ultrasonic energy through the ultrasonic transducer (high-frequency mechanical vibration energy with the frequency exceeding the threshold of human's auditory sense). Conducted to the label and nonel tube by the welding head, the ultrasonic energy melts down the joint faces of label and nonel tube after the joint faces are violently friction with ultrasonic frequency at the speed of tens of thousands of times per second and with certain amplitude. The transient pressure maintained at the work piece after stopping vibration makes two pieces of weldment solidify together in the form of molecular interlinkage. By adopting electronic program control, the machine has such features as high automation, built-in full automatic protective circuit, easy and safe operation, stable and reliable running, etc.

The positioning tooling of label automatic feeding has a fiber optical transducer which can identified the segment position of label and then feed two segments label exactly. And then the ultrasonic welder seal ends of the two nonel tubes, following labeled, cutting. The single clip computer controls the matching order of feeding and welding.

(一) Equipment structure instruction

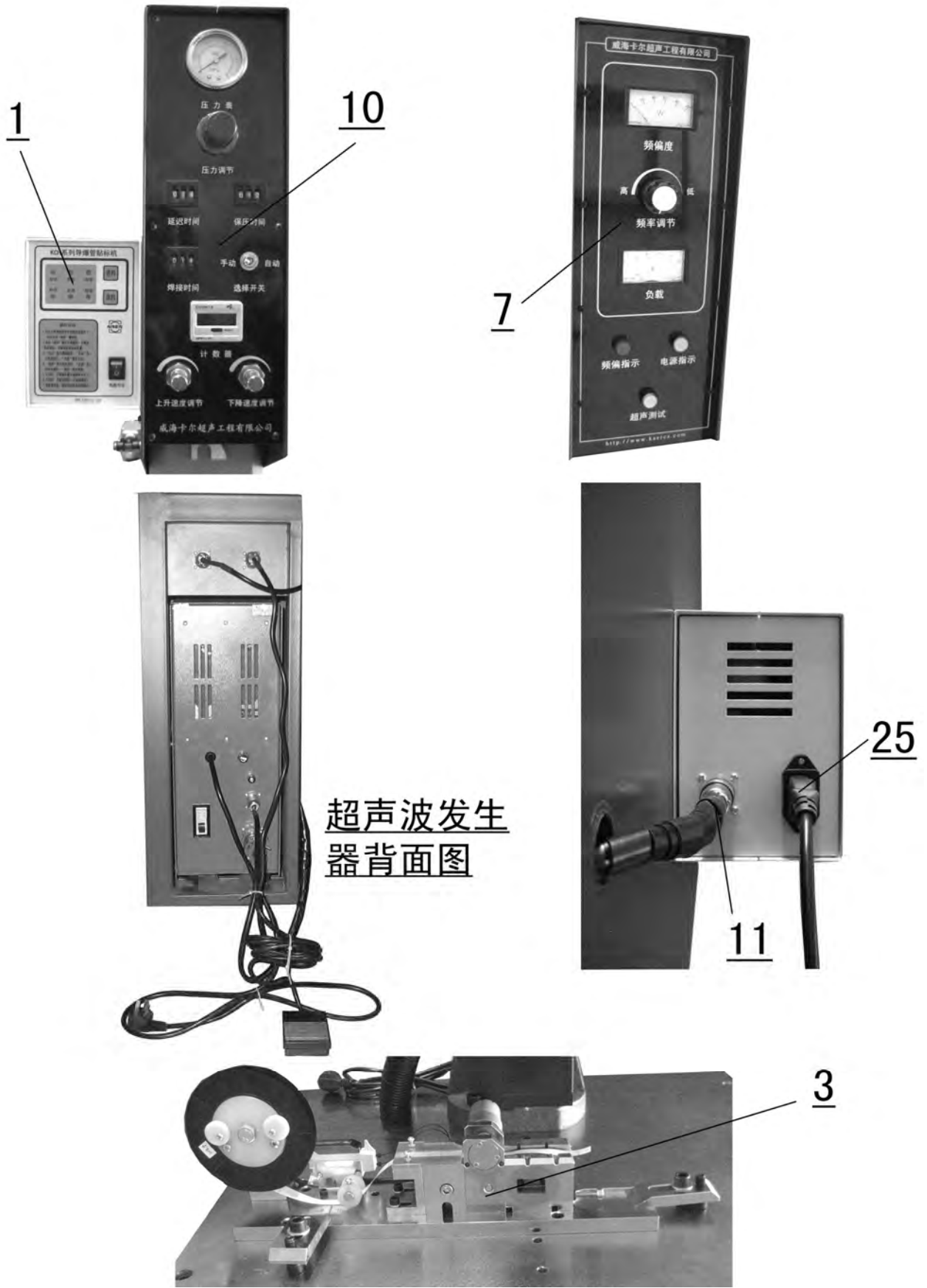
External view and all parts introduction, as follows:



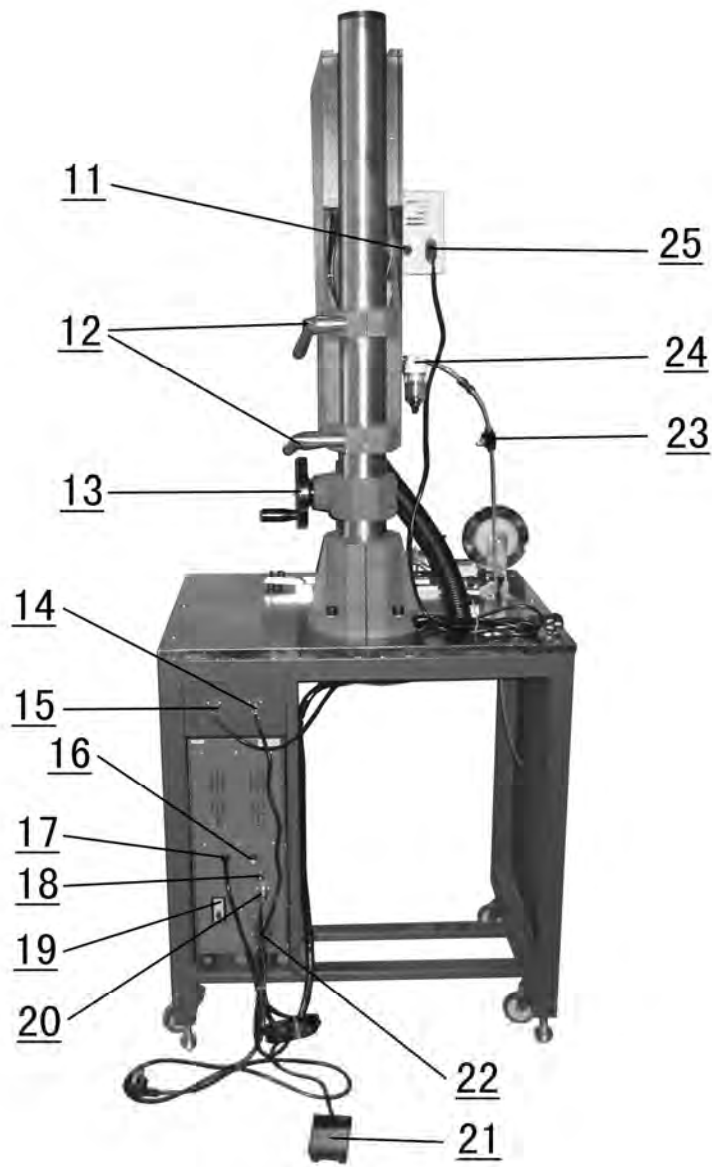
Front view

- 1. Controller of automatic label feed tooling
- 2. Acoustic welding head
- 3. Automatic label feed tooling

4. Double-start button
5. Jerk button
6. Foot switch
7. Ultrasonic generator
8. Lifting hand wheel
9. Limiting bolts
10. Ultrasonic control panel



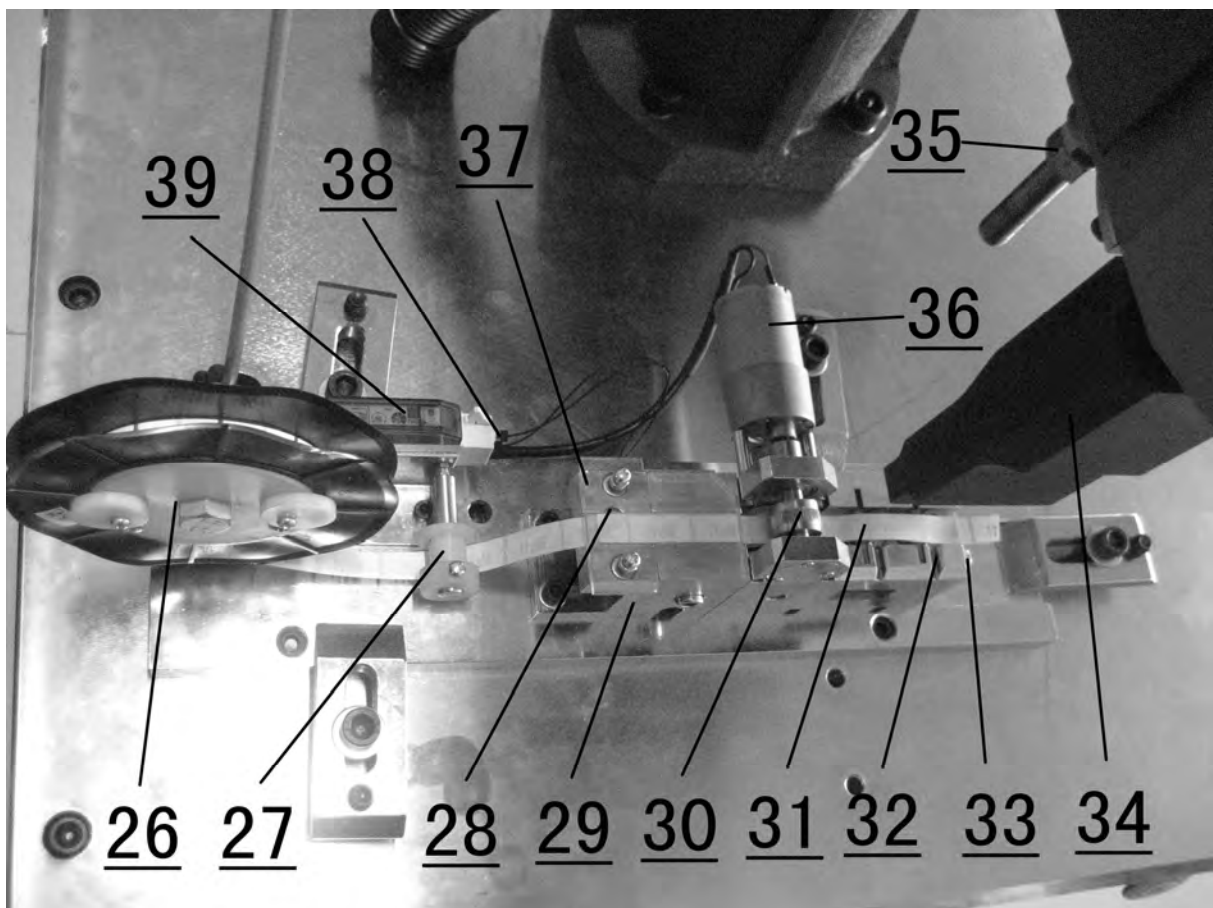
超声波发生器背面图



Back view

- 11. Automatic label feed tooling controller data line hub
- 12. Locking lever
- 13. Lifting hand wheel
- 14. Foot switch hub
- 15. Control line hub
- 16. Insurance tube

- 17. Outlet of ultrasonic generator power supply
- 18. Earth rod
- 19. Generator power supply switch
- 20. Logic plate hub
- 21. Foot switch
- 22. Transducer hub
- 23. Throttle valve
- 24. Air filter
- 25. Automatic label feed tooling controller power line hub



26. Decoil wheel

27. Label guide wheel

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28. Fiber sensor
 29. Mounting base
 30. Label press roll
 31. Cutting blade
 32. Nonel tube feeding tank
 33. Blade strength adjust
 34. Acoustic welding head
 35. Limiting bolts
 36. Motor
 37. Label clamp
 38. Fiber insert
 39. Fiber Amplifier

(二) Troubleshooting for Frequently Asked Questions and Equipment Maintenance

After equipment adjusted, each hand holds a nonel tube at its 5-6cm, and the end of nonel tube will be put on the label tank pass feed tank horizontally. Label tank under the welding head. When the foot switch is opened, the welding head fall down and send ultrasonic as determined time, after that the two nonel tube labeled and sealed is completed. Taking the completed tube after the welding head is lift, two segment label is feed at the same time.

3. Main Technical Parameters

- (1) Operating voltage: monophase AC220V±%5
- (2) Working current: less than 6A
- (3) Apparent power of transducer: 1500W
- (4) Ultrasonic frequency: 20KHz
- (5) Power supply noise: no more than 100Vp_p
- (6) Momentary interruption permission: less than 10ms
- (7) Working temperature: 0 ~ 50°C
- (8) Storage Temperature: -10 ~ 60°C
- (9) Environment humidity: 20 ~ 70% (no condensation)
- (10) No source of vibration environment.
- (11) Dust-free, non-corrosive gases environment
- (12) Dimension of equipment: 800 mm (L)×800 mm (W)×1800 mm (H)

4. Installation and adjustment

(1) Installation requirements

The equipment should be installed on the solid table board, with a space of 150mm in the rear.

Since the welder has relatively higher requirements for power supply, unstable voltage will exert direct influence on the welding effect, or in an even more serious case, result in shortening service life of power generator or burning it! Areas with unstable voltage require a voltage stabilizer with fluctuation of output voltage below

2% and the output power double the nominal power of the welder.

There should be no fire source around, and well-ventilated, and the installation should be smooth.

Before operating the welder, make sure to connect the ground wire properly, with ground resistance less than 0.5ohm.

Never operate the welder without proper grounding!

Before switching on, please make sure that proper power supply and air supply are used, the cable wires have been connected correctly, the limit of welding head has been well set, and the hands and other parts are at safe operation position

(2) Adjustment

At first, adjusting single equipment: 1.adjusting the relative position between the welding head and positioning tooling; 2.adjusting the position and sensitivity of automatic label feed fiber sensor; 3. adjusting blade strength of automatic label feed; 4. adjusting position of fiber mount base; 5. adjusting weld parameter and air press value. Operation steps are:

- 1) Adjusting the relative position between the welding head and positioning tooling;
 - a. For adjusting cylinder range, rotated lifting bolt under the welding head supports should be done (air pressure adjusted to zero, observed the range by lifting weld head supports), it is continents to nonel tube enter in tooling.
 - b. Loosen locking lever. Adjust height of equipment according to tooling and nonel tube, and then lock the lever.

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- c. Align the position of welding head, nonel tube and tooling: put label feed tooling on platform horizontally, and the labeling tank surface of tooling weld parts coincide with underside of welding head.
 - d. Adjusted air pressure to 0.14Mpa, and press pneumatic test button or press button or step on foot switch when select the manual on ultrasonic control platform, the welding head will drop. Check the welding head in the middle of label tank, fine turning the limited bolt as fusing weld depth and locked. Keep the tooling fixed by locking lock clamp of tooling base, the welding head will back to when reset pneumatic test or pres jerk button.
- 2) Adjusting the position and sensitivity of automatic label feed fiber sensor;
- a. Open label feeding tooling control power switch.
 - b. If the ultrasonic generator is open and the ultrasonic welding is stop for the moment, please press jerk button for keeping personnel safety.
 - c. Confirmed fiber inserts fiber Amplifier completely and locked.
 - d. Put the label on fiber base face down, a circle green light spot projected on the label by fiber sensor. When the little light spot projects on white of label, indicator of fiber amplifier is off. When the little light spot projects on colors of label, indicator is red. If little light spot projects on the two positions alternatively, the indicator is off. It is shows that the position of fiber sensor is far from label, micro adjusting its fixed nut should be done, the distance will be reduced. Then observed the indicator effect of two colors of label, until the indicator action is right, locked the distance.
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e. Or adjust sensibility button on fiber amplifier for adjusting fiber sensibility: adjusting as table below then utilized; observe the table below carefully, because some operation will cause the changing of indicator.

顺序	探测类型		调节	VR	
	漫反射型	对射型		粗调	细调
1	内部设定		VR(粗调)应该固定在最小位置,VR(细调)应该固定在中心(▼)		
2			当有光被接收时,慢慢的顺时针调节VR(粗调)到ON位置		
3			转动VR(细调)直到OFF对着(-),然后继续转动,直到ON对着(+),确定此位置为A		
4			接着调VR(细调)直到ON对着(+),OFF对着(-),在没有接收光的情况下,确定该位置为B位置。(当不在ON位置时,最大的位置将是B)	粗调 VR不需要向后转	
5	—	—	装在A和B的中间位置,这个位置是最容易设定		
6			如果按照上面的方法都不能调节的话,设定VR(细调)在max.位置对准(+),然后再从顺序1操作。		

Because the fiber sensor is sensitive and it has a professional adjusting in factory. The second adjusting is caution.

3) Adjusting blade strength of automatic label feed;

a. Reset the label automatic feed tooling controller.

b. At the first time, send label under the press roll by hand, then push “feeding” key; it will be feeding back by pressing “back”, feeding and back alternatively the initial position will be confirmed.

c. Reset jerk button.

d. There is the nonel tube on the feeding tank, press foot switch, one weld is

completed. Press the jerk button, and observed the kerf is disconnected completely and trimly or not.

e. If kerf is not complete and trimly, at first, micro adjusting blade strength and bolts, strengthen adjustment of blade (to short is strong, to long is weak);

f. If it is not meet the requirements when strength adjusted to maximum, sharpen blade should be considerable, and cautions: sharpen along original edge by special mould oil stone, avoiding double blades.

g. If original blade is not available, new one should be chose: ①two blade height in the same, ② dimension of blade should be accordance with blade tank, not too loosen, not too fasten, ③ new knife will be off virtual blade.

h. Add welding time makes the kerf trim, method see 5. .

i. Test welding again, observed kerf until it satisfied.

Caution: jerk button should be used repeatedly for keeping personal safe.

4)Adjusting position of fiber mount base;

a. The right label position is the red line and nonel tube feeding tank are in the same line.

b. After working repeatedly, if label is not on right position, loosen fixed bolt on fiber base, observed red line on right or left of feeding tank. If it on the left, move fiber base to right, if it on the right, move fiber base to left. Moving repeatedly, lock the bolt makes fiber base fixed when label is on right

position every time, and completed this part adjustment.

5) Adjusting weld parameter and air press value.

Revise the working time parameters and air press value as “KCH Series Ultrasonic Plastic Welding Machine Instruction”.

Caution: during welding test, it is forbidden that put hand under acoustic welding head, pay attention to personal safety.

That is necessary nonel tube on tooling, empty weld will damage welding head.

5. Operation

(1)Regular operation

- a. Check air press is normal or not. Confirm again welding head on a shrink position..
 - b. Check and confirm voltage of power supply in normal range, open power supply switch of ultrasonic generator and tooling controller.
 - c. According to requirements of product, check the position of welding head, tooling is fit or not, and welding parameter set is fit or not.
 - d. After all is ready, hold 5-6 cm of nonel tubes in each hand, and the end of nonel tube will be put on the label tank pass feed tank horizontally. Label tank under the welding head. When the foot switch is opened, the welding head fall down and send ultrasonic as determined time, after that the two nonel tube labeled and sealed is completed. Taking the completed tube after the welding head is lift; two segment labels will feed at the same time.
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(1) Other operation

1) During the equipment is operating, when some accident happened, and needs stop, press jerk button on operation panel. The equipment stop, welding head cylinder will back automatically. After the accident is treated, turn right jerk button, it will popup and reset. Equipment returned initial station, waiting for working order to restart.

2) Foot switch and Double-start button have the same function, pay attention to hands safety during working.

3) Adjustment should be done under manual operation, set 'working mode' on 'manual'.

6. Failure and solution

(1) If the finish product is too thin or thick even leakiness when welding, it should be adjust the relative position of welding head and tooling or parameter of ultrasonic welder or air press.

Detail see 4, (2) ,1) and 4, (2) ,5 of this instruction.

(2) If it is found feeding more label or less label during welding, adjusting location and sensitivity of label feeding tooling fiber sensor.

Detail see 4, (2), 2) of this instruction.

(3) The kerf of finished product is not cut completely and trimly, adjust blade and strength of label feeding tooling should be done.

Detail see 4, (2), 3) of this instruction.

(4) If it is found feeding tank and red line of is not in a same line, adjust

mounting base location of label feeding tooling.

Detail see 4, (2), 4) of this instruction.

(5) Judgment and check of usual failure refer to <Instruction of KCH Ultrasonic Plastic Welder >.

7. Safety and Caution

(1) It is forbidden that many operators! Only on operator working, others please don't close to crowd!

(2) Press jerk button when operator leave the equipment, preventing unnecessary failure and personal harm by others mistake operating.

(3) For guarantee operator safety, it is forbidden that put non weld piece (esp. hands) under welding head.

(4) Do not use equipment unless safe grounding.

(5) For guarantee safe working, do not welding head touch mounting base or other metal clamps during working or testing.

(6) After power on equipment, please do not try to move welding head, prevent from defect welding because of equipment location offset,

(7) Abnormal during operating, press jerk button or stop to checking, restart after back to normal situation.

(8) Cut power supply and gas source during inspection and maintenance.

(9) After finished every working, power off, clean the pour on surface of welding head, and wipe by clean cloth ready for using.

8. Special Statement

(1) Nonel tube sealing and labelling machine only using KCH-1520 ultrasonic welder manufactured by our company. If equipment is damaged and personal harm because that sealing and labelling machine matched with other equipments can not working in normal situation, user is fully responsible for any resulting consequences.

(2) Nonel tube sealing and labelling machine only using label manufactured by our company, if it is not recognized label or logic confuse by using other label, user is fully responsible for any resulting consequences.

(3) Nonel tube sealing and labelling machine and special purpose label is our company patent products. For commercial purpose of manufacture, copy, using and sales, are all treated as infringement acts, our company reserved the rights of legal proceedings.

(4) Weihai Kaer Sonic Power Co., Ltd reserves the right for interpretation and revision for this manual. This manual is subject to change without notice.