Model UEW-PPE-2

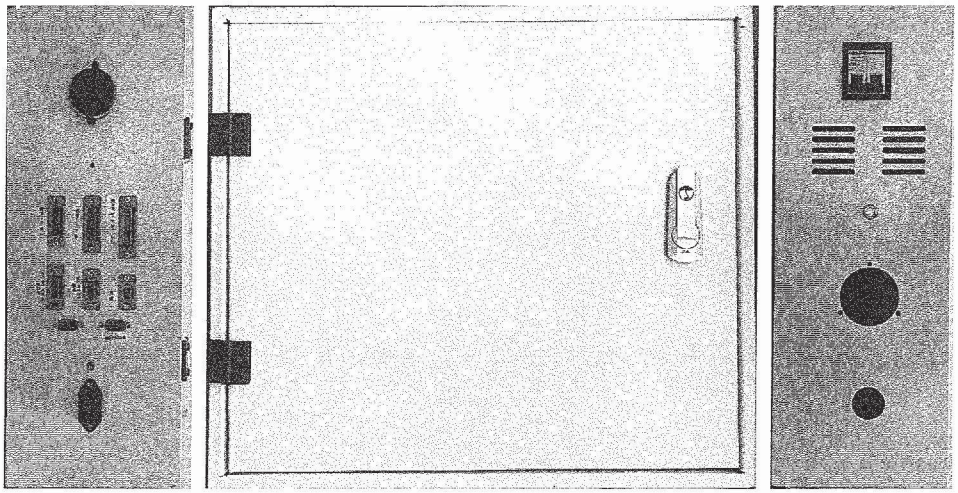
ULTRASONIC EMBOSSING WELDER

OPERATING INSTRUCTIONS

1、FEATURES

Ultrasonic electric control integrated machine is an integrated design of full - function electric control + ultrasonic system.

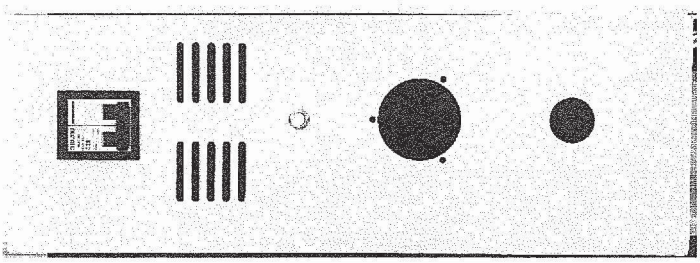
- ✓ Integrated triaxial stepper motor control system
- ✓ Integrated cylinder control and fan control
- ✓ Pedal control motor speed, ultrasonic wave, cylinder lift.
- ✓ With a soft-start function, it can prevent the inrush current when the power is turned on.
- ✓ It has perfect protection functions, with over temperature, over current and overovervoltage, making the equipment more stable and safer to work.
- ✓ With 4.3-inch touchscreen, it can display working parameters such as frequency,power,phase,tracking frequency,temperature, and provide the direct and clear information.
- ✓ With 4.3-inch touchscreen, can set the parameters such as gear,phase,starting frequency,etc, and easy to operate and safe.
- ✓ Provides a serial port interface, convenient to communicate with PC.



2、MAIN PARAMETERS

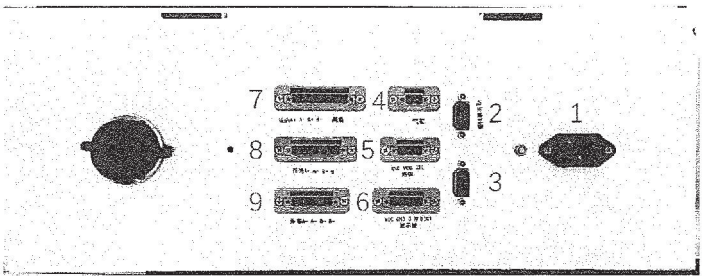
Dimensions:	L335mm×W330mm×H140mm
Net Weight	6.8Kg
Speed	0-40m/min
Voltage	110V/220V
Frequency	19-21KHz
Power	0-2600W
Current	0-5A
Operation Temperature	-40 ~ 85℃

3、FRONT PANEL FUNCTION DESCRIPTION



- Power Switch: used to turn on and off the main power supply of the equipment, push it up to turn on, and pull it down to turn off.
- Ultrasonic Test Button: press to turn on ultrasonic, release to turn off ultrasonic.

4、REAR PANEL INTERFACE DESCRIPTION



1. AC power interface
2. Rotary stepper motor encoder interface
3. Encoder interface of stepper motor for tug wheel
4. Cylinder solenoid valve Interface (24V)
5. Pedal interface
6. Touch screen interface
7. Stepping motor interface of transducer + fan interface (220V)
8. Driving interface of flower wheel stepping motor
9. Driving interface of the stepper motor of the tug wheel

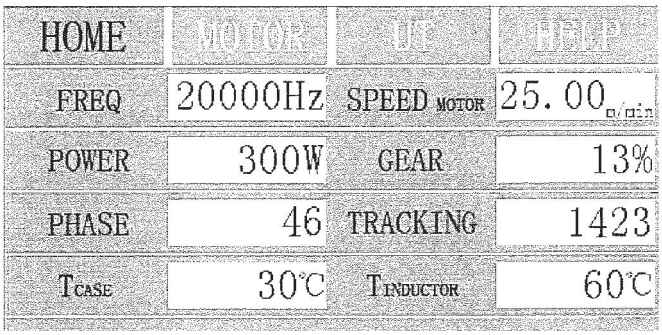
5、OPERATING INSTRUCTIONS

Touch screen can display the parameters of ultrasonic operation, and can set the parameters.

Touch screen has four operation interfaces: home page, process, setting and help.

5.1 Homepage:

The home page is mainly used to display the parameters of ultrasonic work.In order to prevent workers from misoperation, the parameters in the home page can not be modified, only used for display.



1. Frequency: Used to display the working frequency of ultrasonic waves, 200000HZ, representing 20.000KHz.

2. Speed: Used to display the working speed of the embossing machine in meters per minute.Represents the number of meters that the embossing machine can sew in 1 minute.

3. Power: It is used to display the input power of ultrasonic power source. Generally, the power of embowelling machine is between 150-200W, and the instantaneous power of edge sealing machine is between 300-500W. Other models are set according to actual needs.

4. Amplitude: It is used to display the amplitude setting of ultrasonic power supply. The setting range is 5%-48%. The higher the amplitude setting is, the higher the output power will be.General recommendation is less than 30%, input power less than 900W.

5. Phase: Used to display the effect of ultrasonic frequency tracking.The factory setting is 46. Generally, the actual operation is between 40-50, indicating that the frequency tracking is normal, and the phase value is over 46±20, indicating that the frequency tracking fails and the work is not at the optimal working point.

6. Tracking: Displays the tracking characteristics of ultrasound.

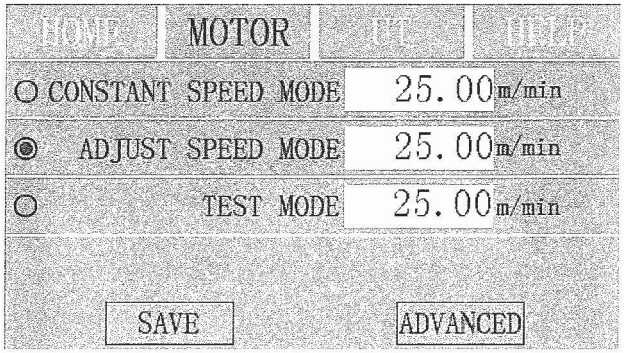
7. Chassis temperature: Display the chassis temperature of the ultrasonic power supply.

8. Inductance temperature: display the inductance temperature of the ultrasonic power supply. The inductance is an important power component of the ultrasonic power supply. The operating temperature is high and the normal operating range is below 100℃.

5.2 Process:

The process interface is used to set the ultrasonic working occasions, mainly has the continuous mode and the intermittent mode.

In order to prevent workers from misoperation, enter the process page, need to enter the password, password is "8888".



5.2.1 Constant speed mode

The constant speed mode is fixed speed. The pedal controls the start and stop. After starting, it enters the set speed.

In constant speed mode, the cylinder is put down and the ultrasonic wave continues to send after the motor is started.

5.2.2 Speed regulation mode

Speed control mode is pedal control speed, according to the depth of pedal, control motor speed, free control suture speed.The set value of speed in the speed regulation mode is the maximum speed, and the actual motor speed changes linearly from zero to the maximum speed according to the pedal depth.

In the speed regulation mode, the cylinder is put down and the ultrasonic wave continues to send after the motor is started.

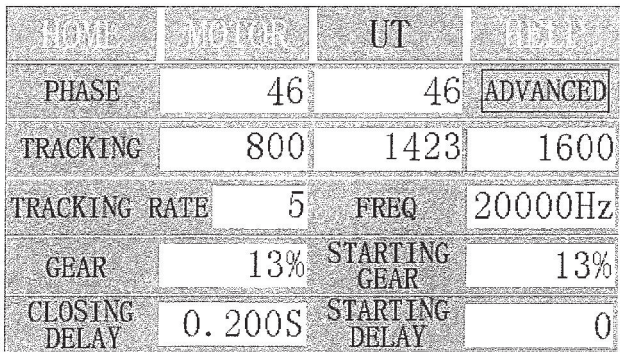
5.2.3 Test mode

The test mode is used for synchronous motor debugging. In the test mode, the cylinder is lifted by default without ultrasonic waves.

5.3 Set up

The setting interface is mainly used for ultrasonic debugging.Generally, after factory delivery, ultrasonic power supply and transducer have been matched, no debugging is needed.You may need to debug on this interface when changing transducers from different brands or manufacturers.When operating this page, the operator needs to have a certain debugging ability.

To prevent workers from misoperation, enter the setting page and enter the password. The password is "8888".



Phase: represents the effect of ultrasonic frequency tracking, factory setting is 46, the left box shows the set value, the right box shows the actual detection value.No modifications are required during debugging.

Tracking: represents the system control value of ultrasonic tracking. The left box is the tracking lower limit, the right box is the tracking upper limit, and the middle box is the actual detection value.The setting of tracing upper and lower limits is an important parameter for adjusting ultrasonic transducer matching.

Tracking rate: Set the ultrasonic tracking speed with a range of 1-10. The higher the setting value, the faster the tracking rate and the faster the frequency response. It can adapt to the change of the high-speed cutter pattern, and may increase the heat of the transducer.

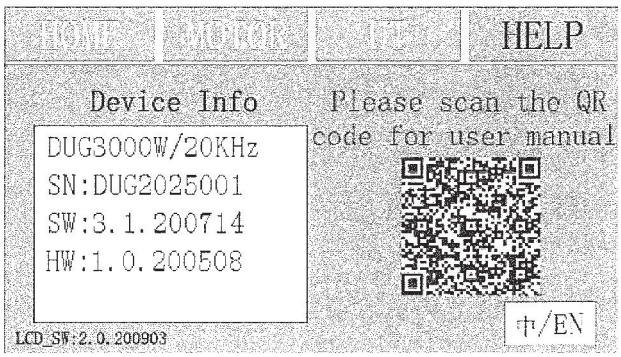
Amplitude: Set the size of ultrasonic output power, the same as the process page

Current frequency: Displays the current frequency of the ultrasonic operation.

Start frequency, start amplitude, start time: Set start parameters.At the start of the moment, a short time of a specific frequency of ultrasonic signal, quickly start the transducer.Generally, the start time is set to 0, which means no start waveform is required and the output can be traced directly.

5.4 Help

The help interface mainly displays the trace information and version information of the ultrasonic power supply.And provide a two-dimensional code, scan the two-dimensional code can get the manual electronic file.



6. TROUBLE SHOOTING

6.1 Match

This power supply adopts the vibrator automatic matching algorithm. Generally, the vibrator near 20KHz can be powered on and work normally. There is no need to scan frequency or debug.

6.2 Process

Embossing machine, the use of continuous wave mode, set the amplitude by about 13%, to close delay 0.2 seconds, the home page shows the input power at work, 150-200W.

Tablet machine, using continuous wave mode, set the amplitude by about 20%, close the time delay of 0.2 seconds, while working home page displays the input power, 300-500W.

Edge banding machine, the use of intermittent hair wave pattern, set the amplitude by about 25%, the preparation time of 0.5 seconds, welding time of 0.5 seconds, 0.3 seconds cool down, work in an instant home page displays the input power, 400-700W.

6.3 Phase

Factory set value 40-50, do not modify.During normal operation, if the phase fluctuates between the set value ±5, the frequency lock is successful.If the phase exceeds the range of ±20 set value, the frequency locking is unsuccessful, and it is necessary to check whether the tracking value is at the upper or lower limit.

6.4 Track

Settings Pages can set the upper and lower limits of trace values.The lower limit of 20KHz is 1000 and the upper limit is 1600.Generally no modification is required.The higher the gear or the larger the load, the smaller the tracking value will be.The lower the gear or the lighter the load, the greater the trace value.

Under heavy loading, if the trace value reaches the lower limit and the phase is constant away from the set value, the phase can be re-locked to the set value by reducing the trace lower limit.On the contrary, in the case of light load, if the tracking value reaches the upper limit and the phase is constant and deviates from the set value, the tracking upper limit can be increased.

6.5 Frequently asked Questions

6.5.1 Poor welding effect and impenetrability

Check process Settings to increase welding amplitude or welding time appropriately.

6.5.2 Vibrator heating

In the case of good welding effect, the vibration heat can be effectively reduced by appropriately reducing the amplitude and welding time.

6.5.3 Frequency cannot be locked

If the tracking frequency is greater than 22KHz, try to increase the tracking upper limit. Conversely, if the ultrasonic tracking frequency is less than 18KHz, an attempt can be made to reduce the tracking upper limit.

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