

## STE-800D Reflow oven 10/10 zone single lane

- Excellent welding quality
- Top thermal engineering performance
- High efficiency and stable productivity
- Minimum operating energy consumption
- The control system of artificial intelligence



## **Specification:**

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**Heating zones quan.:Top 10,bottom 10 (length:3892mm)**

**Chain structure:Stuck-free type**

**PCB Max. width:50-350mm**

**Component height:Top/bottom 30mm**

**Conveying direction:Left to right**

**Rail fixed method:Front fix**

**Conveying height:900±20mm**

**Conveying method:Mesh+ chain**

**Conveying speed:300-2000mm**

**Lubrication:Automatically or manually**

**Cooling method: Forced-air cooling**

**Cooling zones quan.:Top 3/Bottom 3**

**Cooling zones:PCB exit temp.: ≤50°C**

**Warm up time:approximate 20 minutes,from two side**

**Profile transfer time:<15min**

**Heating zone temp. control accuracy:±1°C**

**Empty→ full load heat balance respond time:≤20 s**

**Electricity supply:3P 380V 50/60HZ**

**Total power:83KW, Start power:38KW**

**Consumption power:11KW**

**Speed control:3 Inverters adjust**

**Warm up time:Apprx.20minute**

**Temp. control range:Room temp.~300°C**

**Temp. control accuracy:±1°C (statical state)**

**Temp. control method:PID +SSR drive**

**Abnormal alarm:High, low temp. alarm**

**Exhaust capacity:11m<sup>3</sup>/min×2**

**Current plate structure:Galvanized plate**

**Dimension(L\*W\*H):6300\*16800\*1530mm**

**Weigth:APPROX:2500KG**

# Top thermal engineering performance

**An excellent reflow soldering product should meet the following standards:**

- **Minimum blast temperature deviation of furnace chamber section**
- **Minimum PCB solder spot temperature deviation**
- **Higher heating efficiency**
- **Faster thermal compensation capability**

**STE-800D Hot air lead-free reflow Oven will  
bring you a new performance experience!**

# Top thermal engineering performance

- **minimum air temperature deviation in furnace section:**
  - 1. Get the actual temperature closer to the set temperature**
  - 2. More uniform temperature uniformity of furnace chamber can be obtained**

STE-800D product and other excellent product wind temperature comparison  
(according to the industry standard)

The serial number	Test project	Other excellent products	STE-800D
1	The set value deviates from the actual value	+1/-3°C	±1°C
2	Peak temperature deviation of wind temperature at 7 o'clock	≤1.5°C	≤1.0°C

# Top thermal engineering performance

- **Minimum PCB solder spot temperature deviation:**
  - 1. Prevent uneven heating of components with different sizes on the PCB board, cold welding or over-welding**
  - 2. Easy to obtain consistent welding quality**

PCB temperature comparison between STE-800D product and other excellent products  
(according to industry standard)

The serial number	Test project	Other excellent products	STE-800D
1	The set value deviates from the actual value	250°C/≥230°C	250°C/≥235°C
2	Peak temperature deviation at 4	≤5-8°C	≤±1.5°C

# Top thermal engineering performance

- **Higher heating efficiency**

**What is thermal efficiency:**

The extent to which the heat provided by the furnace is effectively utilized, that is, the percentage of the total heat absorbed by the heating element.

**Higher thermal efficiency:**

1. The more heat the components absorb
2. The higher the thermal utilization rate of the equipment is

Comparison of thermal efficiency of STE-800D products with other excellent products (according to industry standards)

The serial number	Test project	Other excellent products	STE-800D
1	Single point thermal efficiency (deviation between set temperature and actual temperature)	300°C/≥220°C	300°C/≥235°C
2	Multipoint thermal efficiency (peak temperature deviation at 7 points)	≤7°C	≤4°C

# Top thermal engineering performance

- **Faster thermal compensation capability**
  - 1. Significance of rapid thermal compensation capability:**
  - 2. To ensure that the furnace temperature still meets the production process requirements in the continuous mass production process**

Comparison of thermal compensation capability between STE-800D product and other excellent products (according to industry standard)

The serial number	Test project	Other excellent products	STE-800D
1	Peak temperature deviation(no load and load data comparison)	$\leq 3-5^{\circ}\text{C}$	$\leq 1.5^{\circ}\text{C}$ (latest figures)

## Performance characteristics of reflow welder are introduced

- Double corner fan cover, adequate hot air infiltration air volume, more even air, higher heating efficiency, temperature difference can reach  $\pm 1^{\circ}\text{C}$  or so.
- Upper and lower independent heating modules, independent hot air circulation, the temperature difference between adjacent temperature zones can be drawn to about  $100^{\circ}\text{C}$ , double welding zone set; Temperature zone independent wind speed control, so that the process adjustment range is wider, easy to cope with all kinds of complex lead-free welding process.
- Drawer type heating wire and hot air motor structure, convenient and fast maintenance, 15 minutes to complete the replacement work.
- The rectifying plate adopts 8MM thick aviation high-pressure aluminum plate imported from the United States with original packaging, which has strong heat storage capacity and strong heat radiation ability. It enables the components to be heated by hot air infiltration and heat radiation infiltration at the same time, effectively reducing the influence of small circulation heating wind Angle shadow, greatly improving the welding quality of components and reducing the power consumption of equipment.
- Exhaust system layout is more reasonable, the whole process of rosin recovery device makes the rosin treatment effect more thorough, avoid the occurrence of rosin accumulation and pollution products in the furnace, and the cleaning cycle is extended twice.
- Air volume in the cooling zone can be adjusted to avoid too high or too low cooling slope affecting the welding quality and improve the welding quality of PCB
- The whole process of each temperature zone has a temperature patrol to monitor the temperature change at all times, which better ensures the stability of welding temperature.
- The transportation adopts American AB frequency converter stepless speed regulation, and it is equipped with American santer UPS uninterruptible power supply and hand-shaking function, which can effectively prevent PCB from burning out in the furnace due to power failure. Guide rail with my company's independent design of special aluminum profile, superhardening treatment, no deformation. The structure adopts 2 sections of indenting extension type. After heating, the guide extends inward after thermal expansion. Avoid the occurrence of PCB board dropping due to deformation of guide rail, size head and fish belly.



The electronic control performance of the product is guaranteed

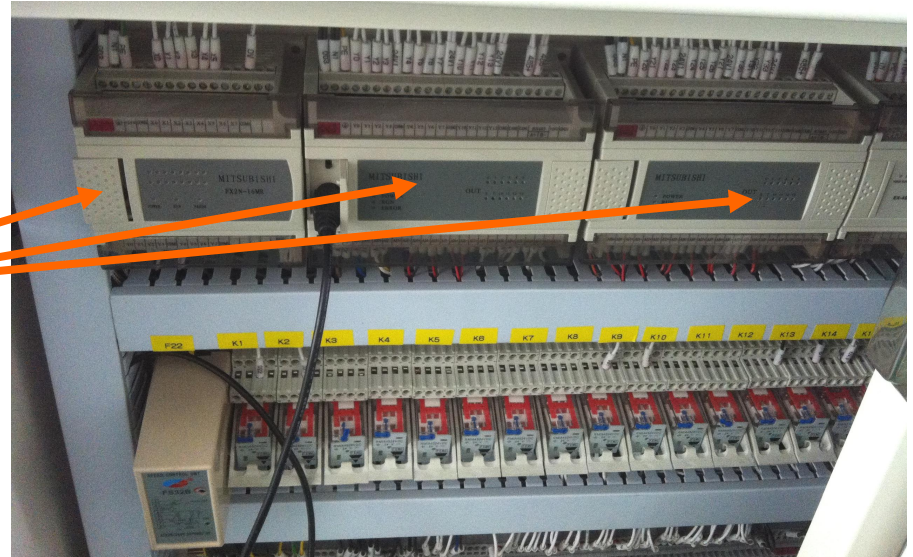
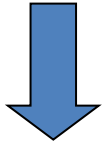
**The electrical control box of each machine has been elaborately made, with the most excellent international brand, through strict testing, striving to achieve the best quality**



The electrical control system of the international CE standard and the control system of the neat standard are one of the reference points to check whether a equipment is qualified.

## PLC control module

The whole machine control system adopts Japanese mitsubishi PLC for control, temperature control mode adopts full closed-loop PID control mode, the control accuracy error value is within 1°C.



-- PLC is a programmable logic controller, which adopts a kind of programmable memory, used for its internal storage program, to execute logic operation, sequence control, timing, counting and arithmetic operation and other user-oriented instructions, and control various types of machinery or production process through digital or analog input/output.

## Intermediate relay

Intermediate relay, from Swiss jiale, with high quality and stable performance, can ensure the stable operation of the control system and the normal operation of the machine.



## Switching power supply plus filter

In the power supply, not only use the best quality switching power supply, but also in each power add a high-strength filter, so that all interference can not affect the performance of the equipment



High stability  
switching  
power supply

Inlet filter

The power filter can separate the interference signal from the useful signal, improve the anti-interference and signal-to-noise ratio of the signal, and improve the analysis accuracy. To protect the electrical control system from interference current and voltage.

----Switching power supply is a kind of power supply that USES modern power electronic technology to control the time ratio of switching tube on and off and maintain stable output voltage.



## Inverter stability

transportation, air, cooling system are adopted AB inverter, stepless speed regulation, so that your welding speed, hot air, cooling speed can be selected to the best state.



The American  
AB variation is  
more stable

AB inverter is an industrial control terminal manufactured by rockwell automation, USA. AB inverter is manufactured according to European CE standard and Chinese CCIB standard

- frequency converter

The inverter is mainly composed of rectifying (ac to dc), filtering, rectifying again (dc to ac), braking unit, driving unit, microprocessing unit and so on.

How it works: change the speed of the motor by changing the output frequency.

## Overcurrent protection air switch

We add an overcurrent protection switch above each heating zone to automatically cut off the power supply when the heater fails, thus protecting the fault from spreading. Of course our best hope is that he doesn't provide protection that hasn't worked.



---Air switch in the low-voltage control circuit, the air switch is the circuit breaker (must be separated in the high-voltage distribution), in the circuit for switching on, breaking and carrying the rated working current, and can be in heating and motor overload, short circuit, undervoltage in the case of reliable protection. The dynamic and static contact and contact bar of the circuit breaker are designed in parallel, and the electric repulsion force generated by the short circuit is used to make the dynamic and static contact disconnect, with high breaking capacity and strong current limiting characteristics.

## Temperature patrol instrument

We also installed a temperature patrol on each machine to monitor the temperature of each temperature zone at all times, so that the temperature of each temperature zone is within the normal range, beyond the set temperature range immediately alarm.

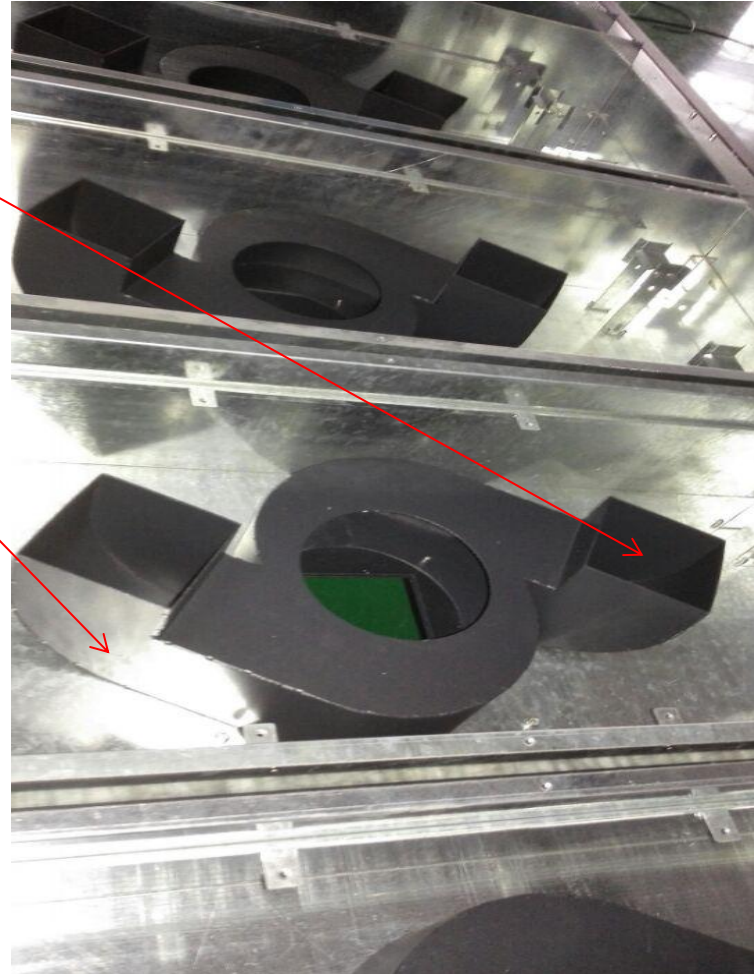


The temperature patrol produced by Shanghai hongrun precision instrument, the first brand in China, with real artificial intelligence calculation, no need for manual adjustment of parameters, temperature control precision up to  $\pm 0.1^{\circ}\text{C}$ , able to monitor the control temperature of each temperature zone, and further improve the quality of PCB components.

## Double Angle fan cover function

Double Angle fan cover is our company's patent technology

The double corner fan cover structure can effectively divide the air in the flow passage for the first time, which can reduce the temperature difference control precision of reflow welding at 3 points by 1°C immediately on the basis of the single corner fan

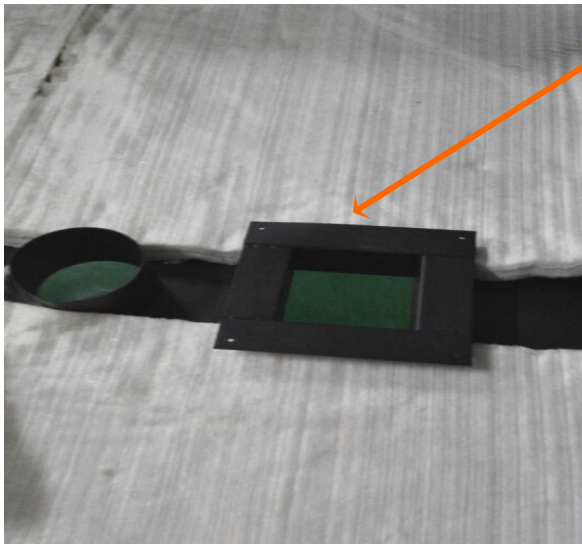




## Heat insulation cotton in furnace



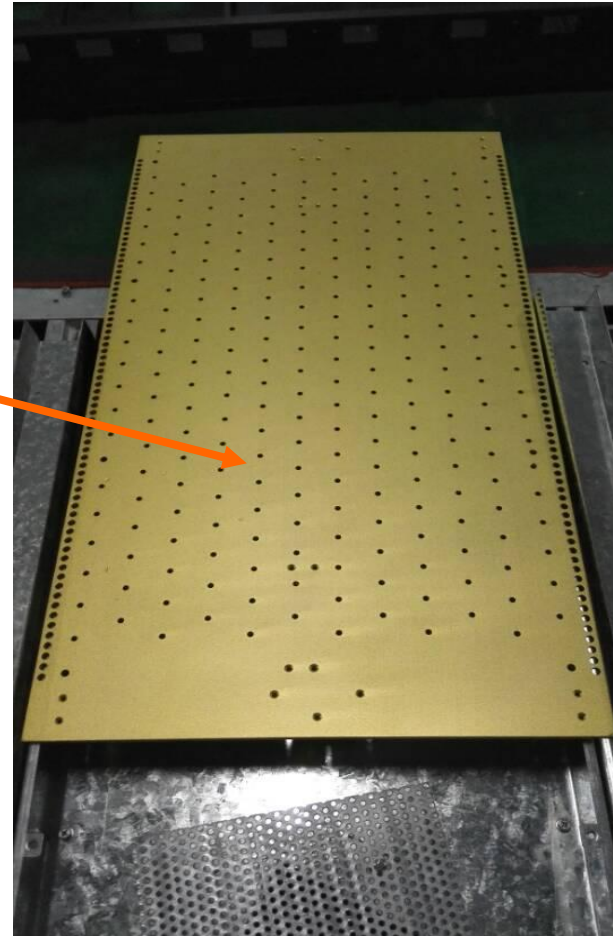
The intermediate heat shield of the liner is made of American high quality sisal heat insulation cotton, which effectively increases the thermal conductivity resistance by 3 times, and the reflow welding surface temperature does not exceed 30 ° c



Low-end equipment is glass fiber cotton, poor insulation, quickly aging, insulation more and more poor, and harmful to human health.

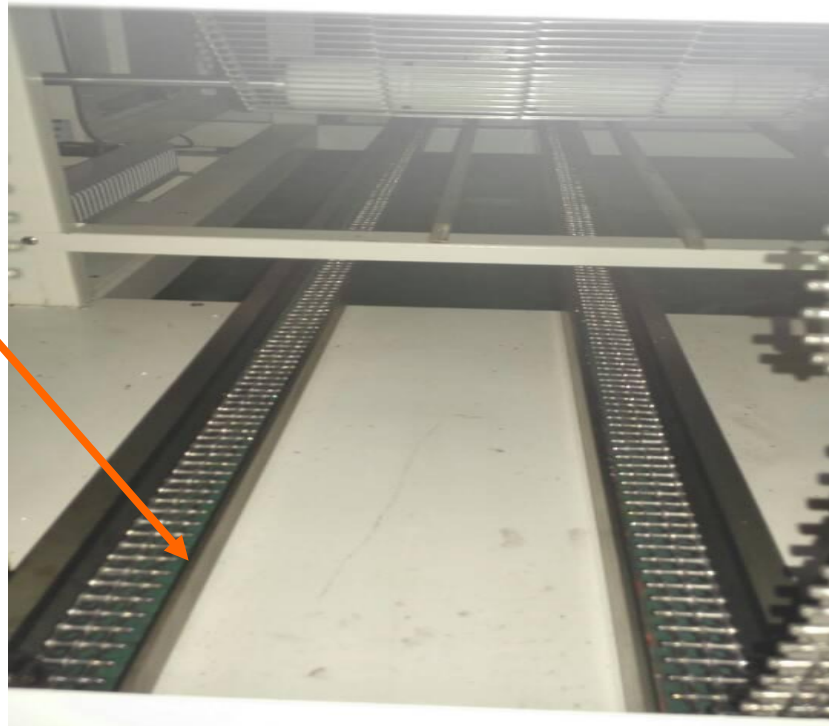
## Rectifying plate moving structure

Rectifying plate adopts the imported from 10 mm thick (JT10MM) aviation aluminum alloy material, high temperature after hardening treatment, precision CNC machining, punching, polishing, make each hole location error value within 0.02 mm, its material itself has excellent effect on the heat storage, thermal radiation ability, make components get hot air permeability and thermal radiation penetration at the same time two heating mode, effectively reduce the influence of pulmonary circulation heating cape wind shadow, greatly improve the welding quality components, and reduce the power consumption equipment.



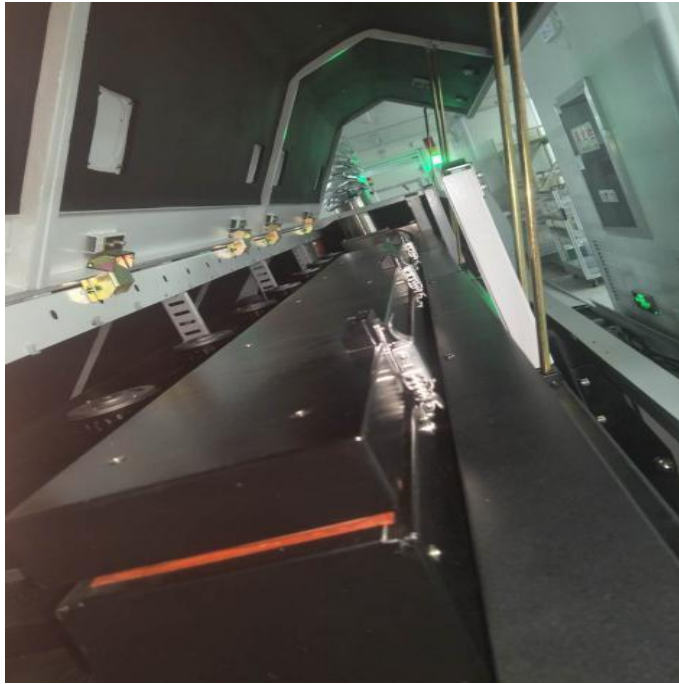
## Chain loop construction

The chain loop adopts special guide rail for the loop to avoid chain jitter and displacement of components during welding



## Rosin recovery system

- ◆ The inlet and outlet of the equipment and each temperature zone are equipped with rosin recovery system, you will never have to worry about rosin pollution of your products and furnace bile cleaning!



Unified waste gas recovery pipeline; During the welding process, each temperature zone has a different effect on the solder paste, thus the residual gas is also different, and in each welding zone there is a recovery pipe, the exhaust gas is uniformly recovered and discharged into the outdoor.

# Efficient production capacity

Capacity -- the key factor that decides production cost!

Factors affecting productivity:

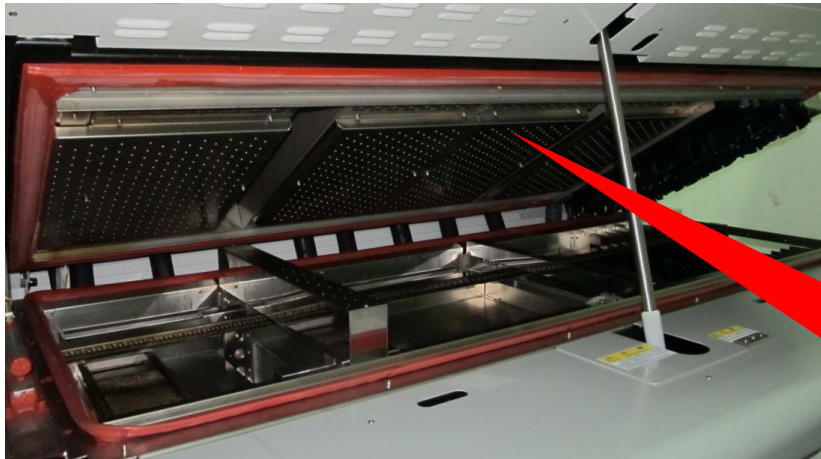
1. Production chain speed of equipment
2. Operation stability of the equipment (including electrical control and mechanical structure)
3. Equipment maintenance cycle

STE-800D series products, is a truly efficient, high-speed, stable, easy to maintain reflow welding equipment

# Efficient production capacity

At present, reflow welding equipment production chain speed is limited within 100cm/min for all manufacturers

KT series products  
Maximum heating zone :12  
Maximum heating  
length :4305mm  
Fastest chain speed:  
160cm/min



Standard 3 cooling zones  
Effective cooling  
length :1397mm  
Guarantee the cooling effect  
of high speed production

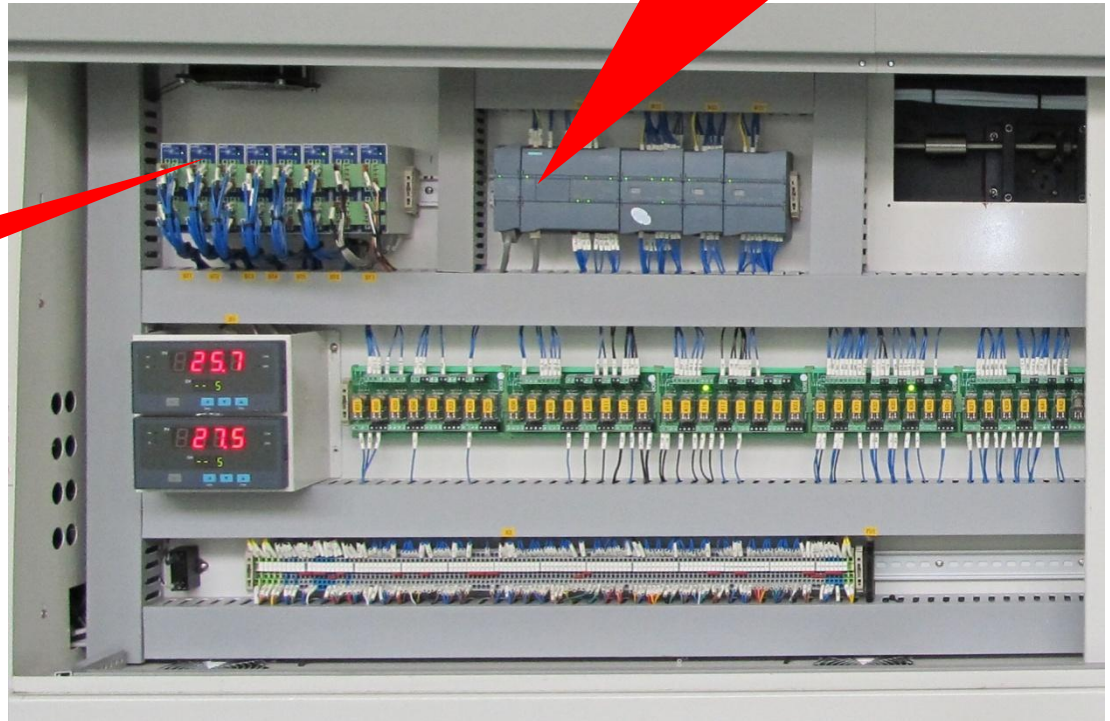


# Efficient production capacity

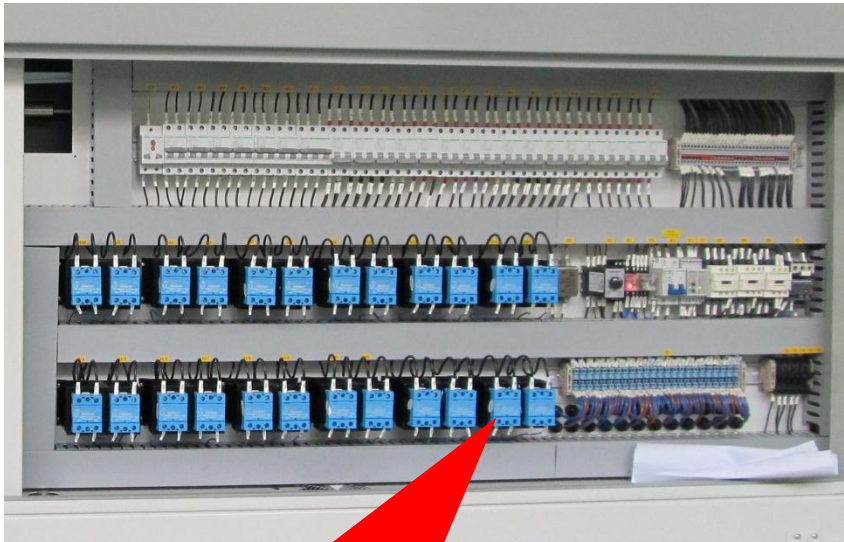
Whether the operation of the equipment is stable and reliable,  
Decided whether the equipment can continue to produce benefits!

Mitsubishi PLC control  
system, stable and reliable

Mitsubishi temperature  
control module, with  
self - tuning function,  
high repeat accuracy of  
temperature control



## Efficient production capacity



PID control +SSR drive,  
accurate temperature  
control

Each temperature zone is  
protected by independent  
inspection of temperature

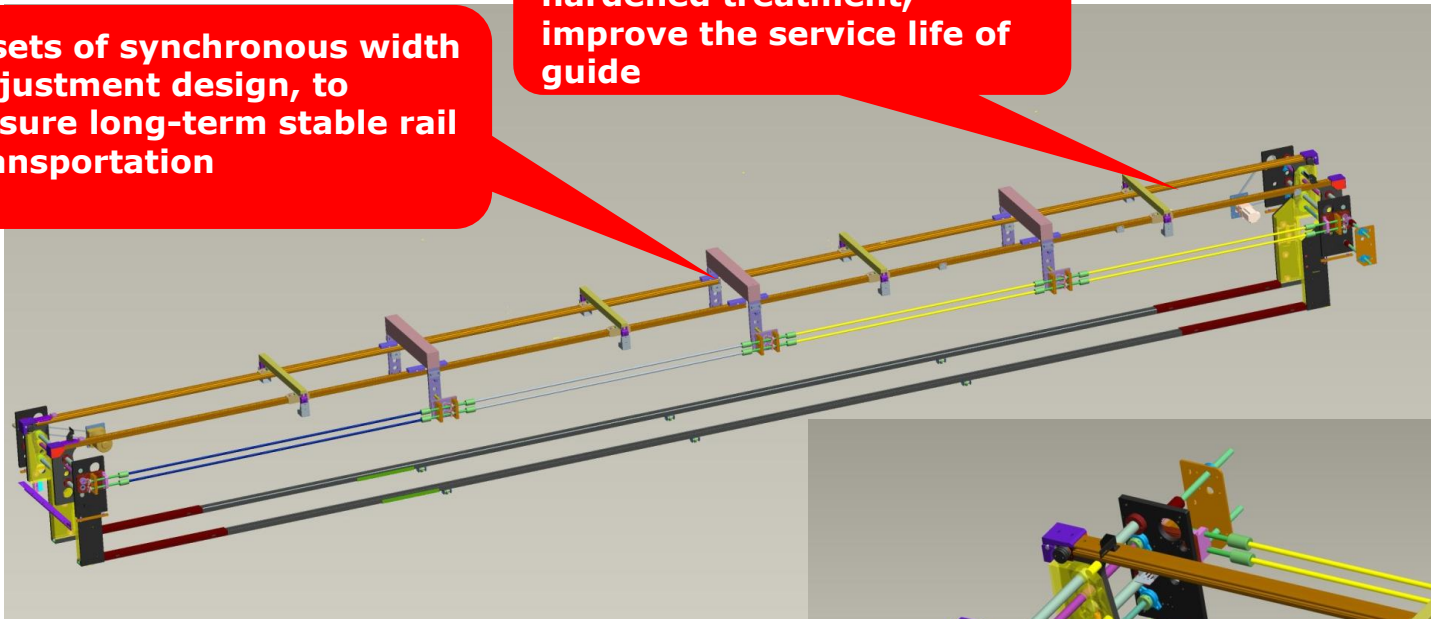




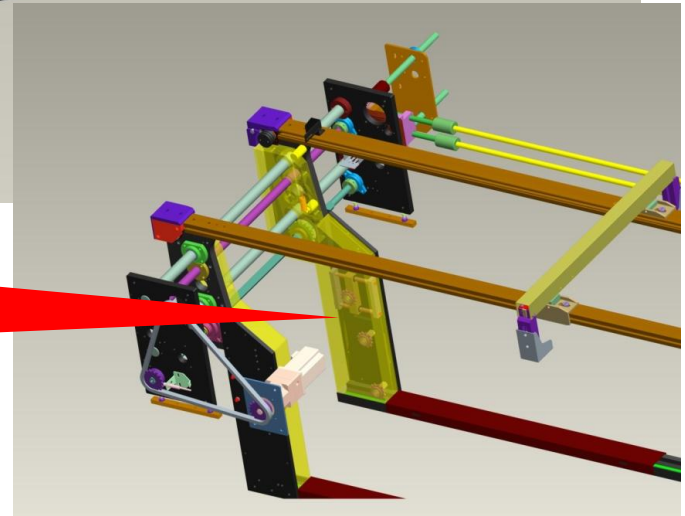
# Efficient production capacity

**5 sets of synchronous width adjustment design, to ensure long-term stable rail transportation**

**Transportation guide hardened treatment, improve the service life of guide**

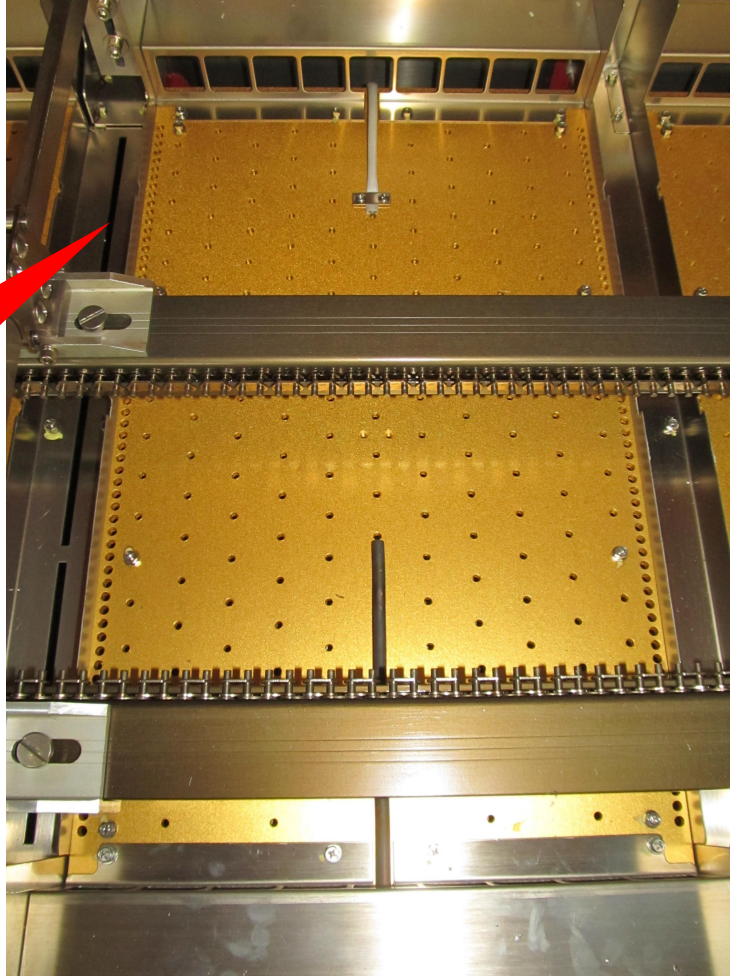


**Transport chain cover, prevent foreign body from entering, avoid transport vibration, even stuck**



## Efficient production capacity

The draft design under flux avoids the problem of drip dirty plate caused by traditional draft design.



# Minimum operating energy consumption

Power consumption is the main operating cost of the equipment!

The factors that determine power consumption:

1. Electrical and thermal conversion efficiency
2. Heating efficiency of equipment
3. Heat dissipation of furnace body
4. flux recovery heat loss
5. Production saturation

Low power consumption,  
compared to similar  
products on the market  
to save electricity 20%



## Welcome inquiry

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