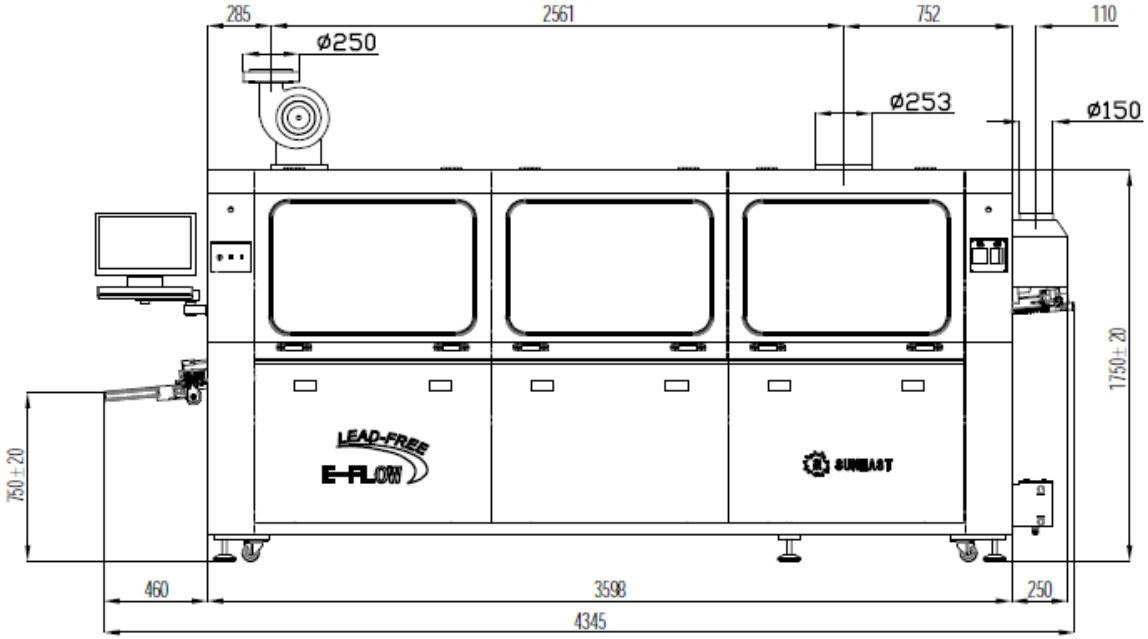
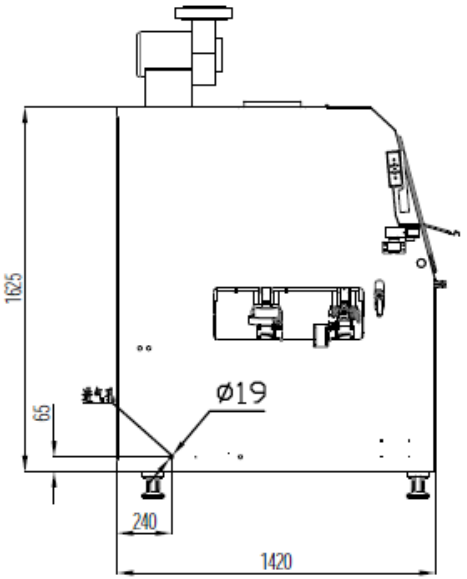
Sun East E-Flow Wave Solder Machine

E- Flow with External Spray fluxer

E-FLOW


285
2561
752
110
ø250
ø253
ø150
1750±20
750±20
LEAD-FREE
E-FLOW
SUNEAST
460
3598
250
4345


1625
65
ø19
240
1420

型号 Model NO	E-FLOW	E-FLOW-450	E-FLOW-610
外形尺寸 Dimension：L×W×H(mm)	4420×1420×1750	4420×1520×1750	4420×1690×1750
重量 Weight	Approx.1600kg	Approx.1750kg	Approx.1950kg
电源 Power Supply	3PH 380V 50HZ	3PH 380V 50HZ	3PH 380V 50HZ
启动功率 Startup Power	33KW	33KW	45KW
正常运行功率 Operation Power Consumption	Approx.8KW	Approx.8.5KW	Approx.11KW
控制系统 Control System	PC+PLC	PC+PLC	PC+PLC
喷雾移动 Spraying movement	步进马达(Step motor)	步进马达(Step motor)	步进马达(Step motor)
喷雾气压 Spray Pressure	0.2Mpa~0.4Mpa	0.2Mpa~0.4Mpa	0.2Mpa~0.4Mpa
助焊剂流量控制 Flux Flow Arrange	Option	Option	Option
助焊剂自动添加 Auto Fill Flux	标配(Standards)	标配(Standards)	标配(Standards)
抽风方式 Exhaust	上抽风(Top exhaust)	上抽风(Top exhaust)	上抽风(Top exhaust)
抽风管直径 Exhaust Ducting Diameter (mm)	Ø250	Ø250	Ø250
抽风机功率 Exhaust fan power	750W	750W	750W
预热方式 Preheating Mode	微热风/红外(Convection/IR emitter)	微热风/红外(Convection/IR emitter)	微热风/红外(Convection/IR emitter)
温度控制方式 Control Mode	PID	PID	PID
预热区数量 Preheating Zone Number	3	3	3
预热区长度 Preheating Length (mm)	1800	1800	1800
预热温度可调范围 Preheating Temperature	室温(Room temperature)~200℃	室温(Room temperature)~200℃	室温(Room temperature)~200℃
预热升温时间 Warm-up Time(min)	Approx.12min(setting:150℃)	Approx.12min(setting:150℃)	Approx.12min(setting:150℃)
热风马达 Blower Motor	150W 3PH 220 VAC	150W 3PH 220 VAC	250W 3PH 220 VAC
宽度范围 PCB Width(mm)	50~350	50~450	50~610
PCB传送方向 Conveyor Direction	L→R(Option:R→L)	L→R(Option:R→L)	L→R(Option:R→L)
传送速度范围 Conveyor Speed(mm/min)	500~1800	500~1800	500~1800
运输高度 Conveyor Height(mm)	750±20	750±20	750±20
允许PCB元件高度 Available Component Height(mm)	上(Top)120下(Bottom)15	上(Top)120下(Bottom)15	上(Top)120下(Bottom)15
速度控制方式 Conveyor Speed Control Mode	变频器闭环无级调速(Closed-loop stepless speed regulation Inverter)	变频器闭环无级调速(Closed-loop stepless speed regulation Inverter)	变频器闭环无级调速(Closed-loop stepless speed regulation Inverter)
爪 Fingers	弹簧压片爪(Spring Pressing Finger)；D-40 型鸭嘴爪 (D-40 Type Finger)；双钩爪 (Double-hook Finger)； 重型 双钩爪 (Heavy type double hook finge)任选其一(Options)		重型双钩爪 (Heavy type double hook finge) Option：治具专用爪 (Special jig for fixture)
导轨角度 Conveyor Angle	4~7°	4~7°	4~7°
锡炉类型 Type of solder Pot	机械式(Motor drive)	机械式(Motor drive)	机械式(Motor drive)
锡炉材质 Solder Pot Material	铸铁(Casting Iron)	铸铁(Casting Iron)	铸铁(Casting Iron)
波峰调节方式 Wave Height Adjustment	变频器(Inverter) Approx：电脑数字控制(Digital Control by PC)		
冷却方式 Cooling Method	强制风冷(Air Cooling) Option：冷水机(Water cooling)		
锡炉加热功率 Heater Power	13.5KW	13.5KW	18KW
锡炉最高温度 Solder Pot Temperature	300℃	300℃	300℃
锡炉容量 Solder Pot Capacity	480kg	550kg	640kg
波峰驱动功率 Wave Drive Power	180W×2 3PH 220 VAC	180W×2 3PH 220 VAC	180W×2 3PH 220 VAC
锡炉升温时间 Solder Pot Warm-up Time	Approx.150min(setting：250℃)	Approx.150min(setting：250℃)	Approx.150min(setting：250℃)
炉温控制方式 Temperature Control Mode	PID	PID	PID
洗爪系统 Finger Cleaning System	毛刷(Brush)	毛刷(Brush)	毛刷(Brush)

Innovation:

Conveying system: The conveyor system is designed to limit wear in key areas to ensure a consistent and finger to solder wave height during the soldering process

The application also greatly improves the conveying load capacity and the service life of the rail.

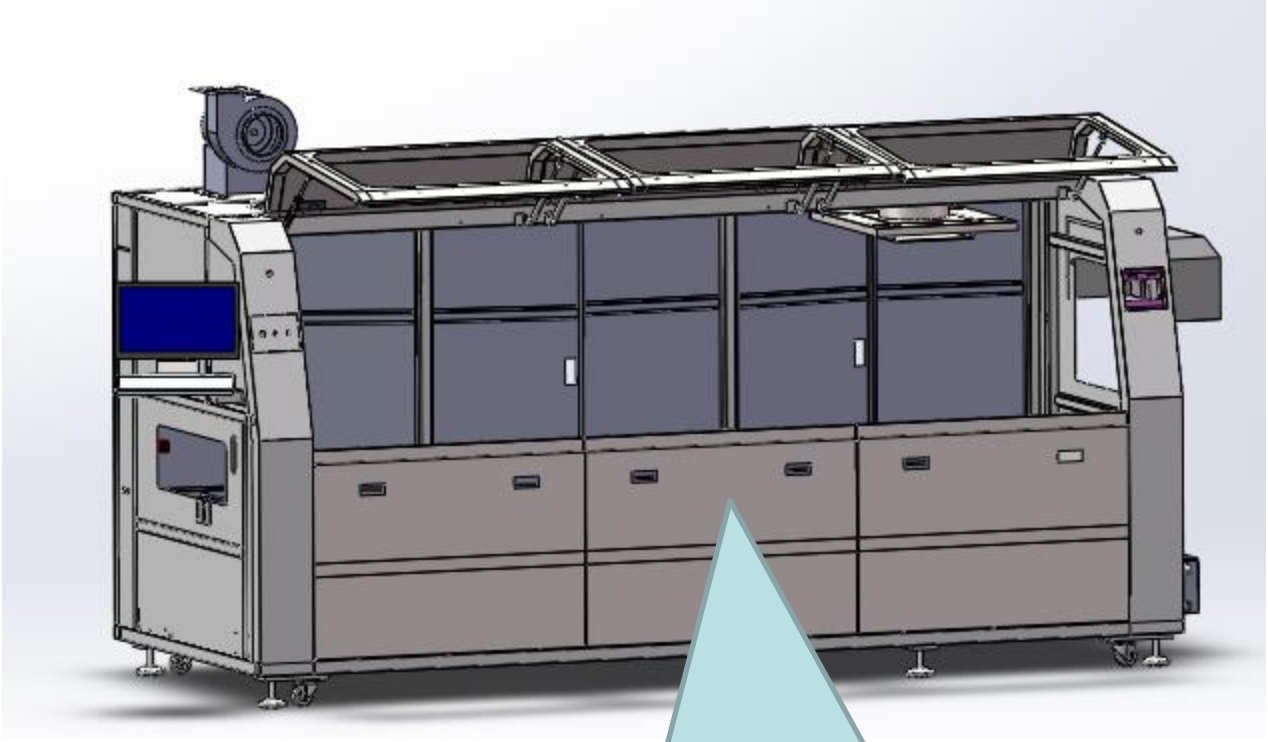
Preheating System: Air flow is optimised to ensure low delta T across the width of the conveyor ensuring even heating throughout the PCB assembly

Spray exhaust system: The spray fluxer is designed to ensure consistent and uniform covering of the PCB with width control and spray head speed control per profile. Whilst the housing and exhaust is designed to minimize flux transfer to preheater area to minimize cleaning maintenance.

Contents

1.Machine Enclosure
2.Spraying
3.Spraying exhaust
4.Preheating
5.Cooling
6.Conveying
7.Finger cleaning box
8.Solder pot

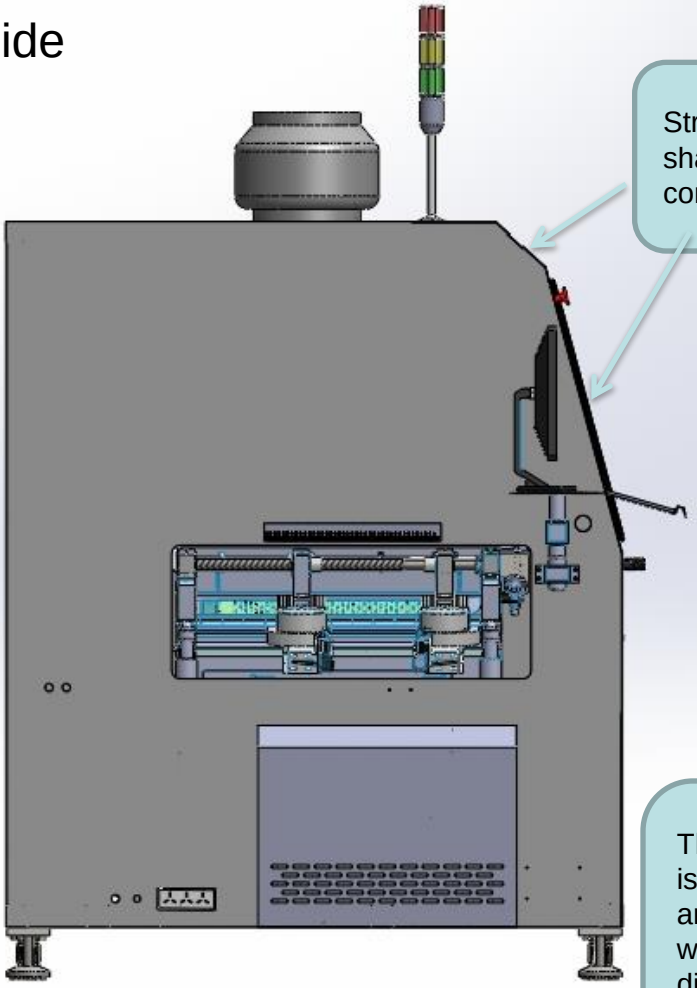
1.Enclosure design



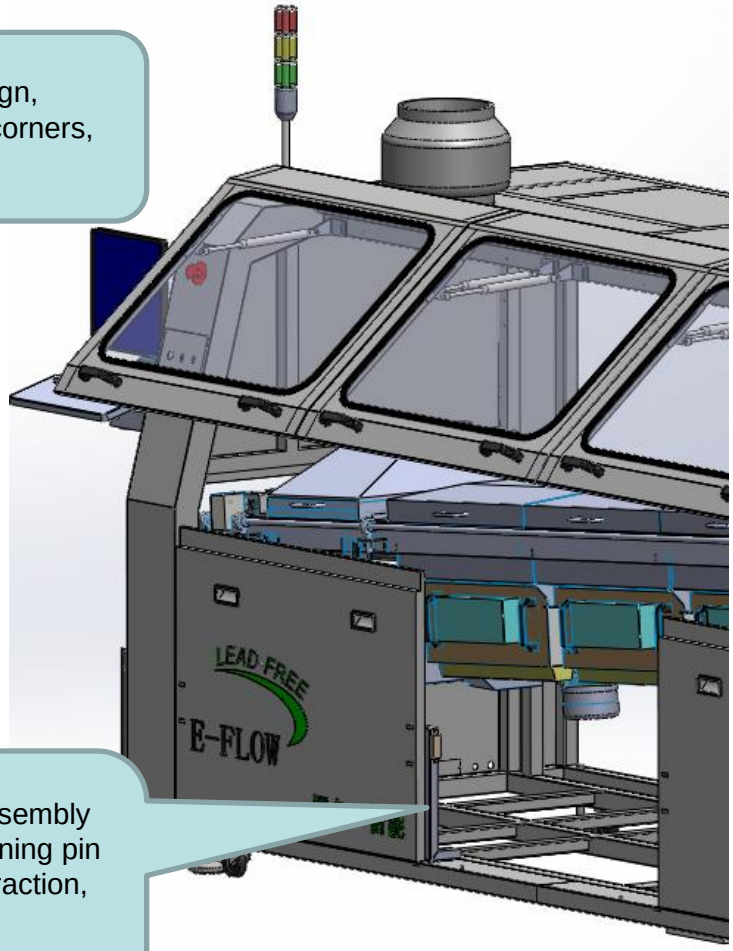
The doors are open design, Total accessibility to simplify maintenance.

Optimum technical solutions

Side



Straight edge design, sharp edges and corners, concise.



The front door assembly is fixed by positioning pin and magnetic attraction, which is easy to disassemble and assemble.

2.Flux Spraying Module

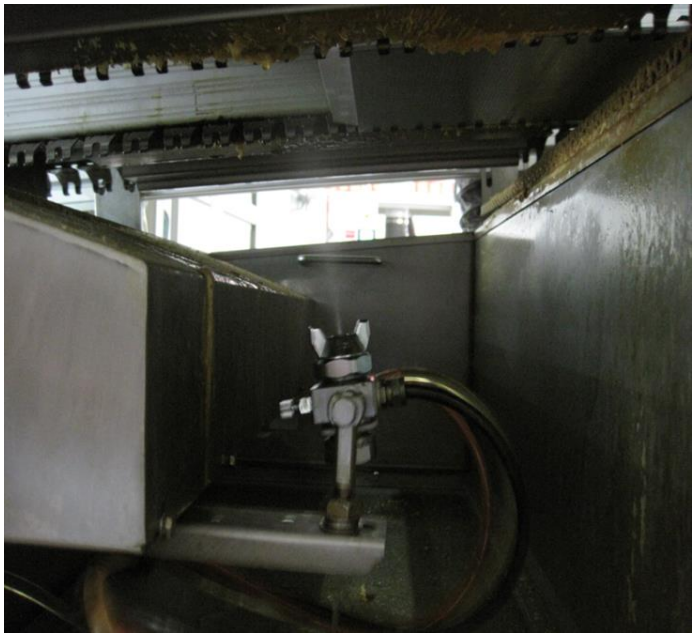
With air knife to improve flux overflow situation and reduce potential safety hazards.

The front and rear sides of the spray box are sealed by hanging cover plates to prevent flux fume escape, and the plates areeasy to remove for maintenance.

Independent control box design, which can avoid the components corrosion.

Adopts drawer structure, which is easy to install, remove and maintenance, and etc.

Vertical spray to optimise spray coverage



Optimises the flux penetration

Optimises the flux atomization effect

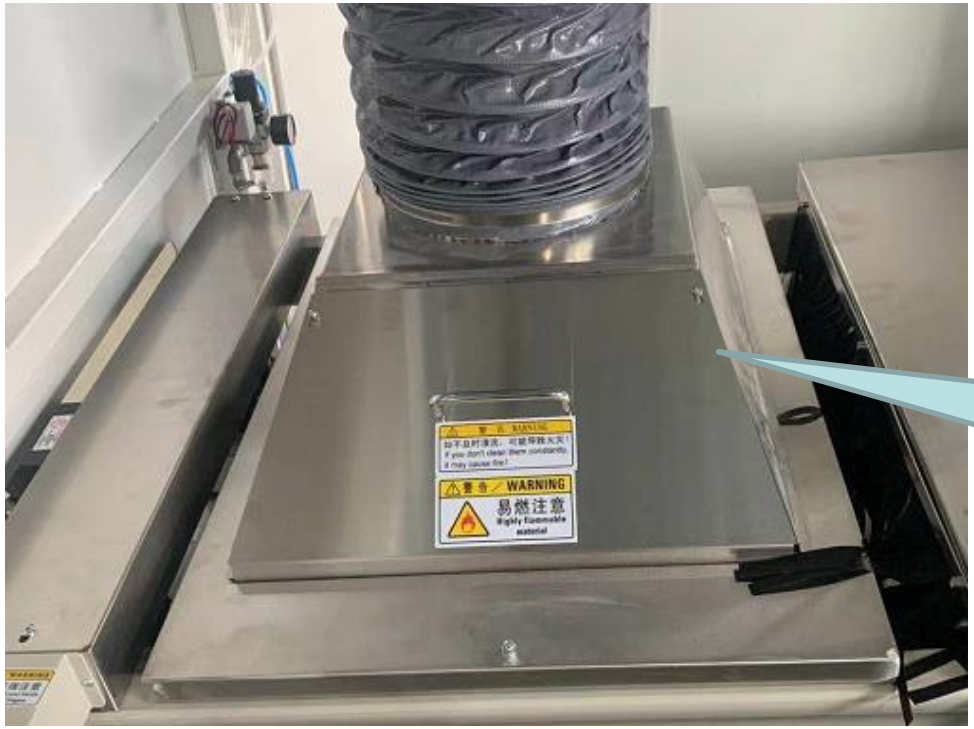
Reduces customer operating costs

Patent No.：201020220532. 3

Independent control box, fully sealed design, protect the control components from flux damage.

Quick coupling plug design

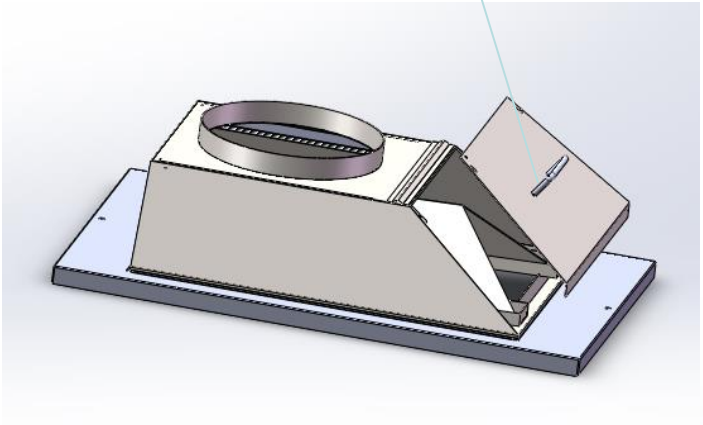
3 Spraying exhaust

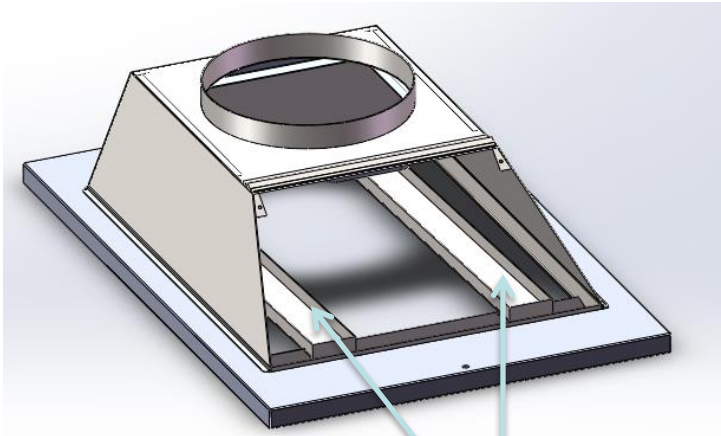


Adopts split design, easy to maintenan, and no screws required to fix.

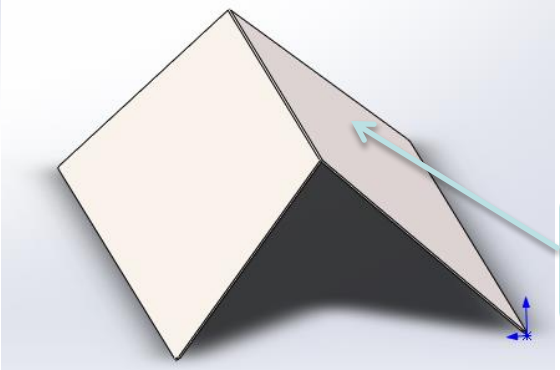
Internal structure

The front plate prevents the flux fumes from leakage, and the hanging structure is adopted for easy assembly and disassembly.





flux collection box



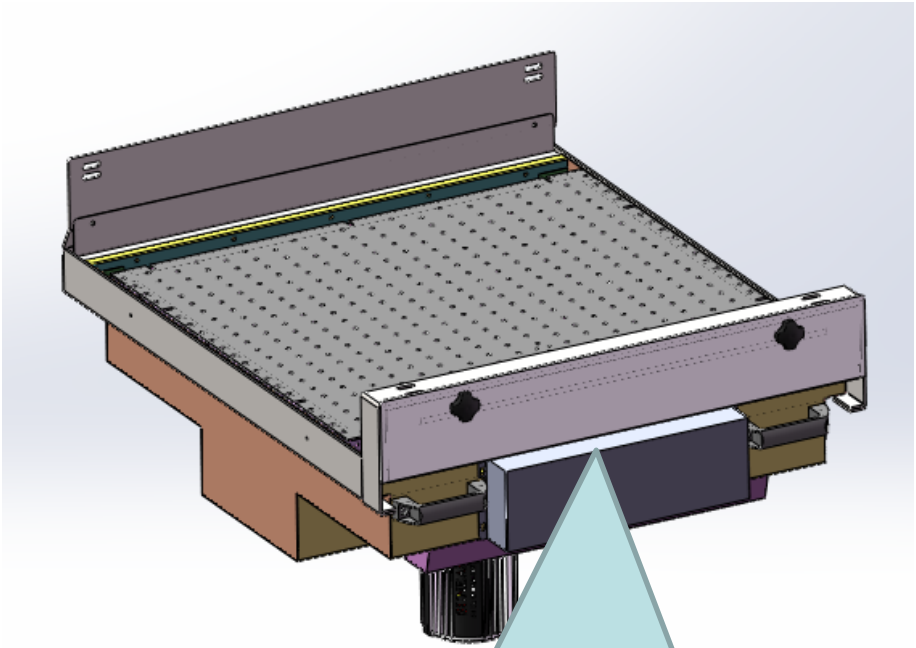
。Flux guide plate. The inclined design is to prevent flux dropping to PCB surface during spray

4. Preheating

Hot Air preheating module design

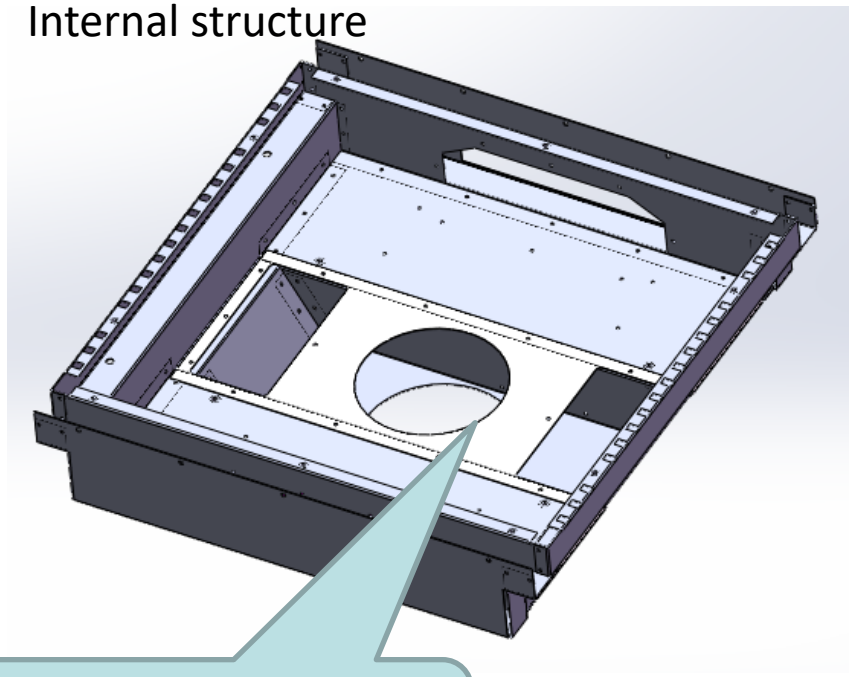
Quick coupling plug with the machine

Drawer type design for quick assembly and disassembly



After optimization, the overall weight of the module minimised, the load-bearing deformation of sub-track is improved, and it is also good for installation and maintenance.

Internal structure



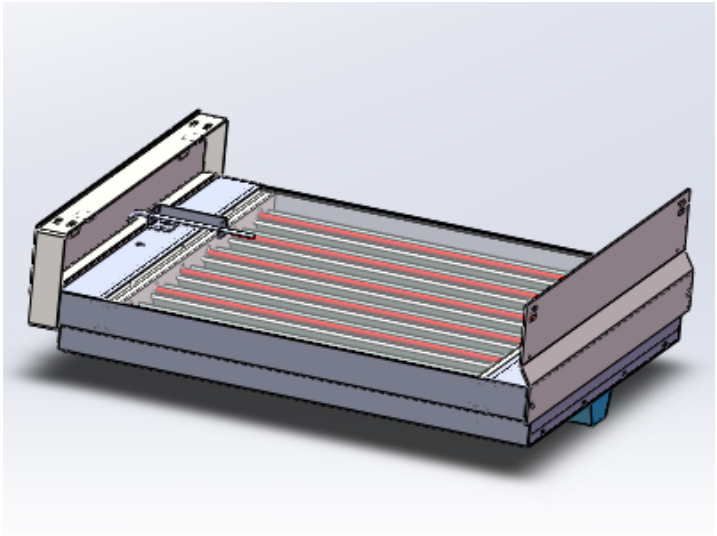
Flow guides, effectively improves the efficiency of hot air - equipped with 150W motor + 6 “ fan.

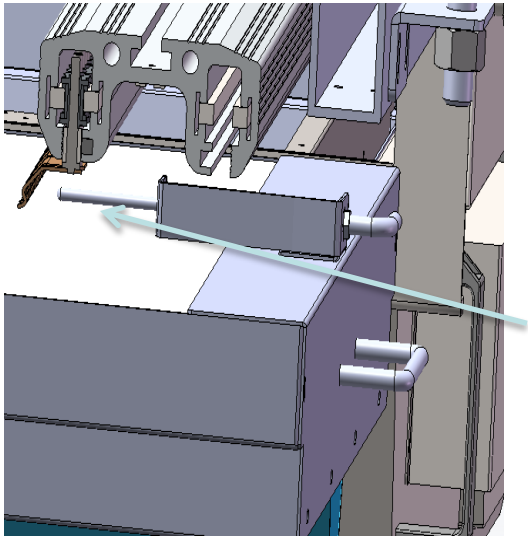
IR preheating module design

Quick coupling plug with the machine

Drawer type design for quick assembly and disassembly

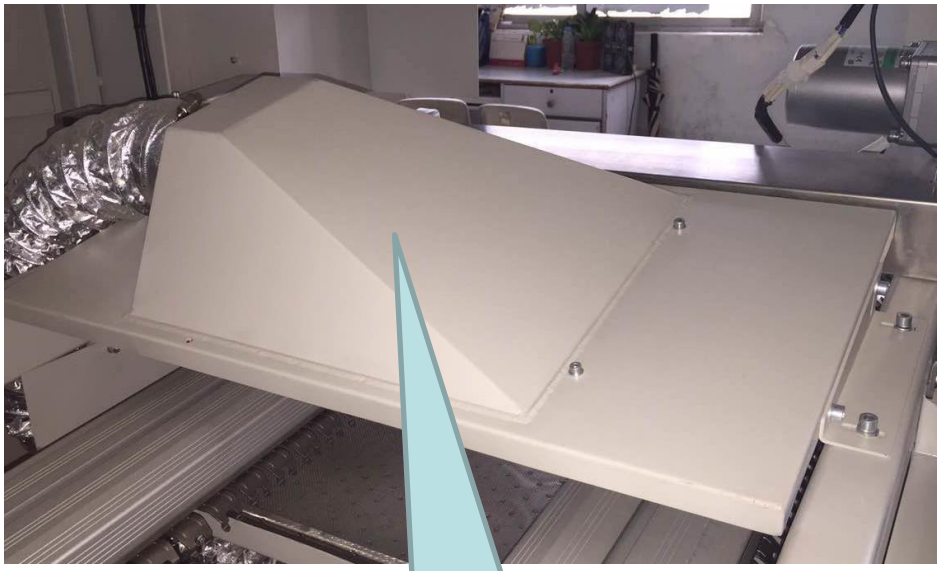
Thermocouple measures temperature above the preheater to represent the temperature effect on the PCB assembly



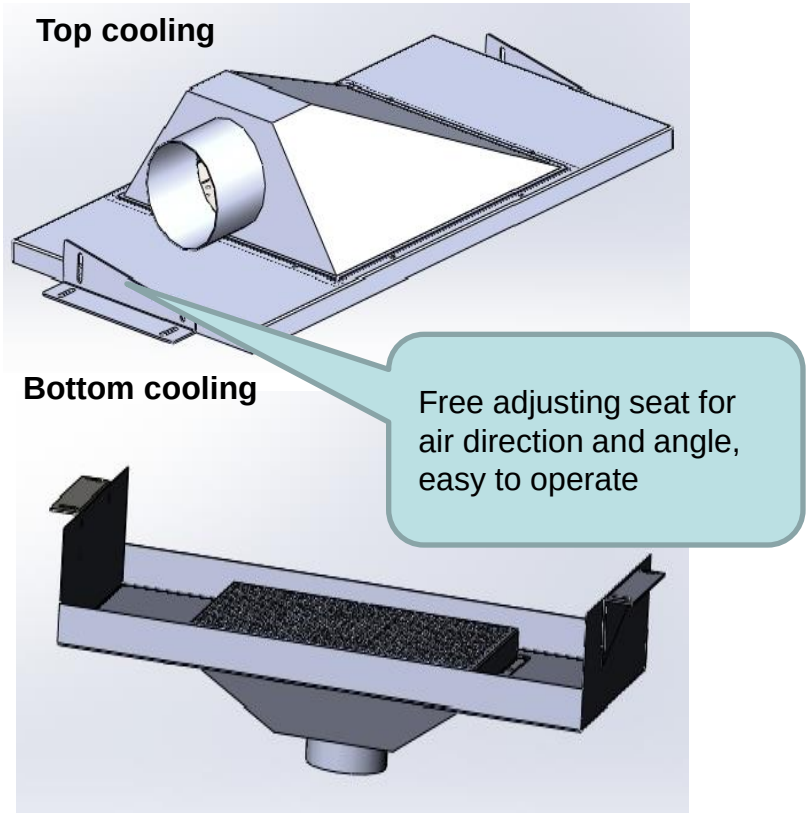


The thermoprobe bracket design is optimized and rigid to prevent deformation; the thermocouple is built-in to prevent bending and to eliminate potential safety hazards.

5. After Solder Cooling Unit

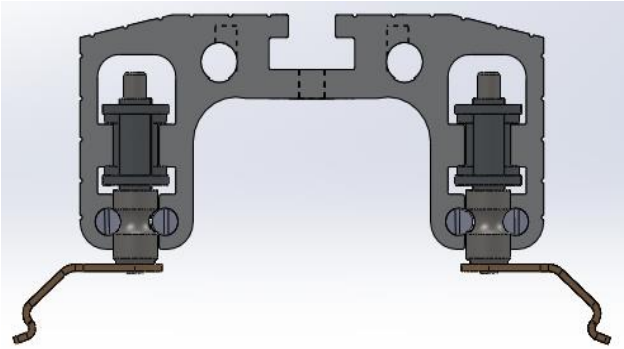


With top and bottom cooling, high cooling efficiency

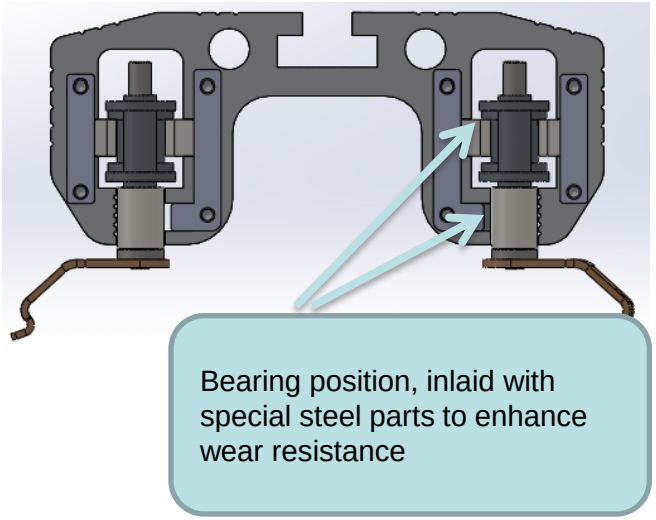


6. Conveying system

Heavy type double hook finger

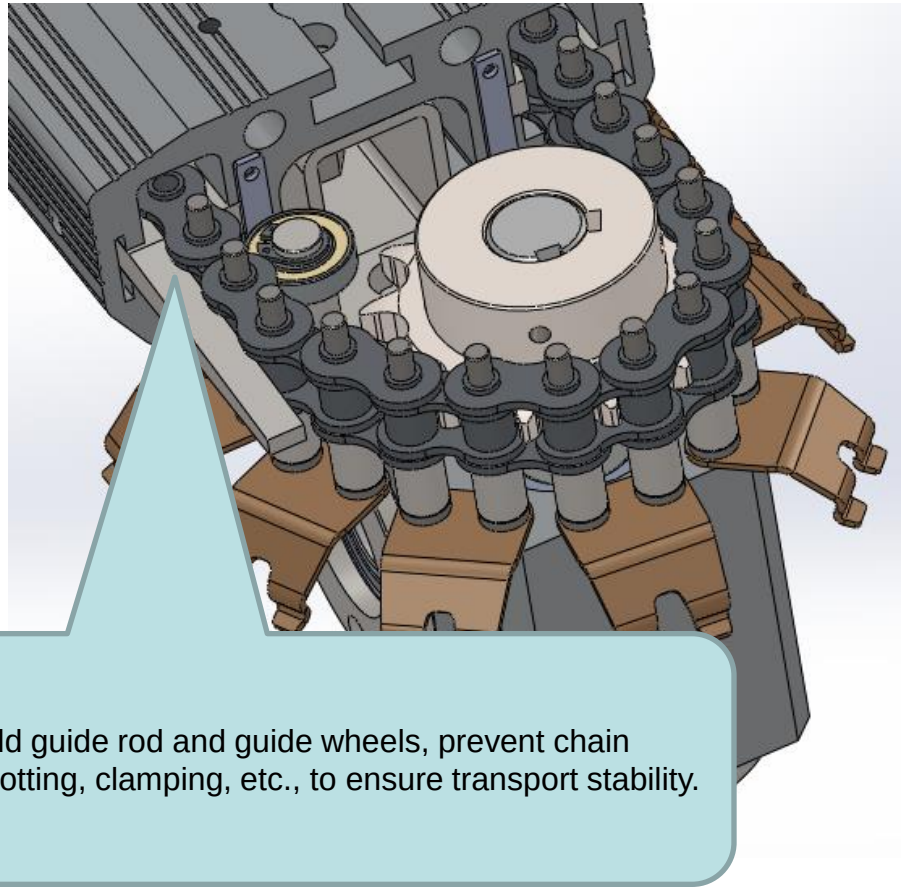


Roller type finger



Conveyor chain drive Outlet

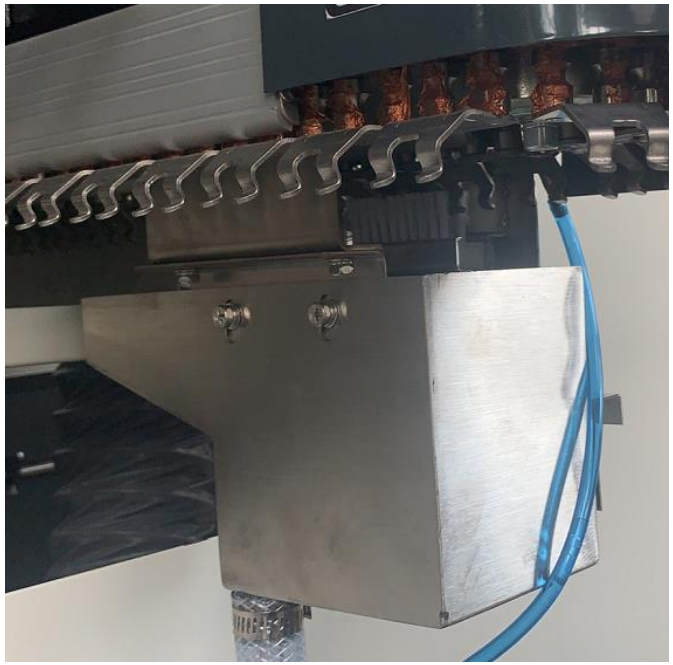
New

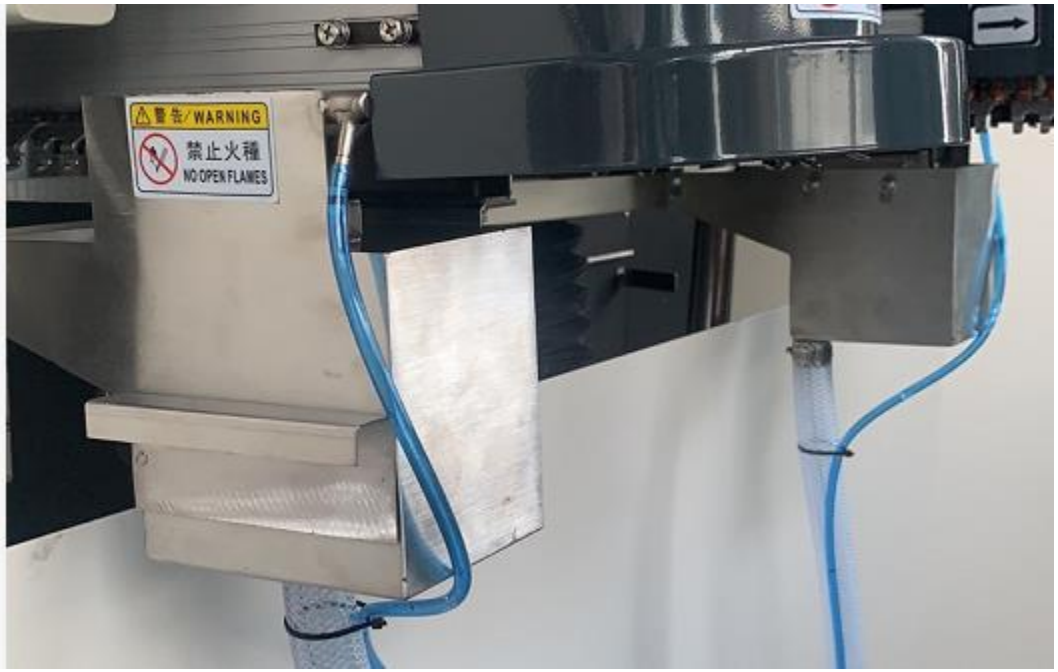


Add guide rod and guide wheels, prevent chain knotting, clamping, etc., to ensure transport stability.

The loading capacity of single pair of fingers ≥ 0.5 kg
The loading capacity of the whole conveyor ≥ 60 kg.

7. Finger cleaning box





8. Solder pot

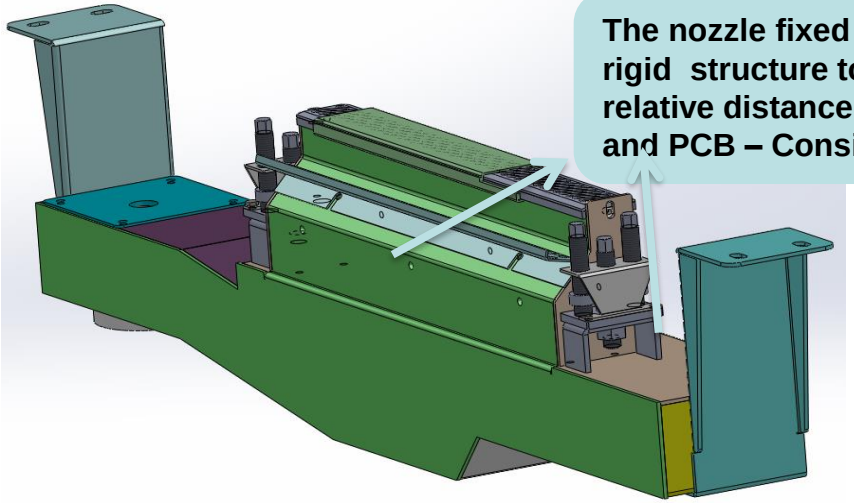
Modularization

Quick coupling plug design with the machine Standardization solder pot, which is suitable for different series of wave soldering machine.

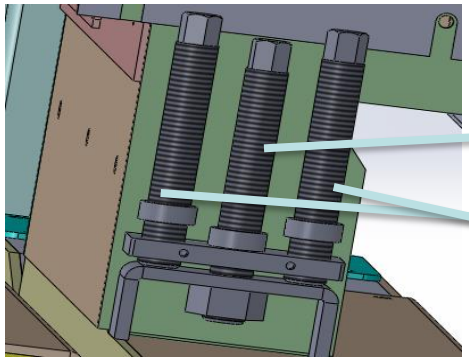
Add one set of stainless steel tray for tools on the side

Channels – Easy to adjust to water level and finger to nozzle distance

E-FLOW



The nozzle fixed adjustment adopts a rigid structure to ensure consistent relative distance between solder wave and PCB – Consistent contact time



Central with lock screw

Sides with adjusting screws

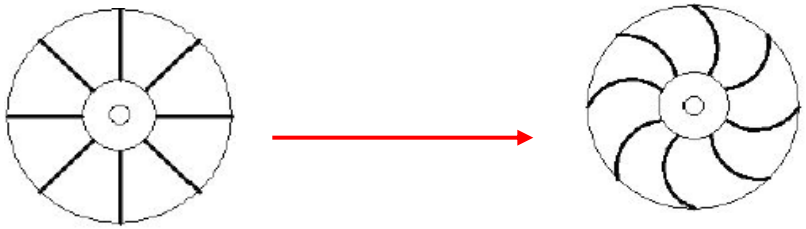
Optimum technical solutions

Impeller and channel designed to optimise the smoothness of the wave

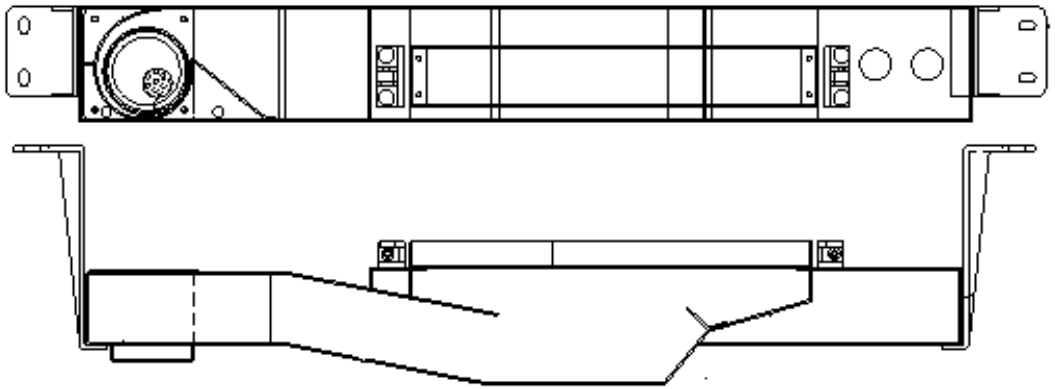
The structure of the nozzle, channel and propeller will directly affect the smoothness of the wave.

In new design, the wave height can be accurately controlled to improve the soldering consistency

New impeller design



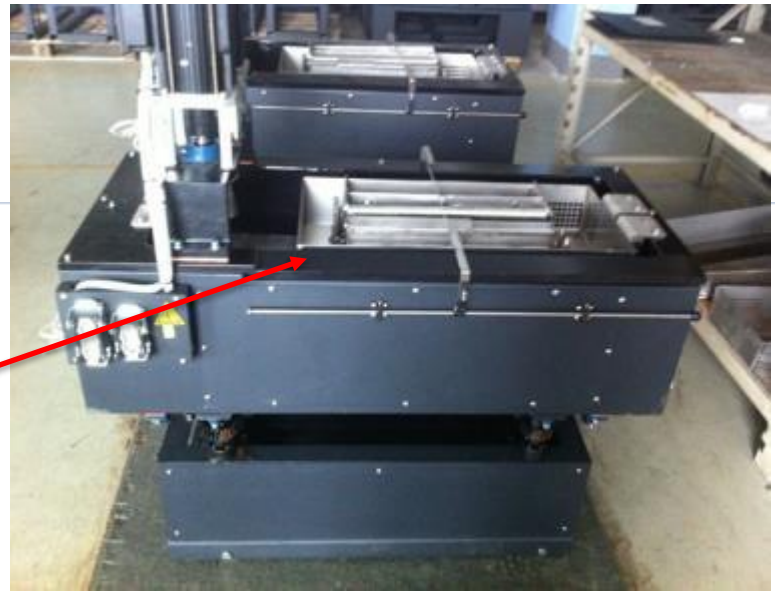
New channel design



Patent No.: ZL201020220271. 5

Patent No. : ZL200720121628. 2

Long lifetime and good temperature uniformity solder pot by cast iron with ceramic coating



casting iron solder pot

Guaranteed for 5 years

	Solder Pot Size (mm)	Solder Pot Thickness (mm)	Service life (year) 8 hour / day
316 stainless steel	1150 × 480 × 265	3	≥1
Titanium		2	≥5
Heat-resistant casting iron		10	≥8

E-FLOW Other options

Optimum technical solutions

- Local N2 covering
- Auto rail adjustment
- Nozzle and flow channel(Titanium)
- Spraying flow meter
- Top heating zone
- 610MM Customized to conveying width 610mm
- Roller type finger
- CBS for conveying system
- UPS
- MES interface
- Barcode reader
- Bar feeder 20kg capacity
- External spray flux module
- Additional 600mm heating zone (With External fluxer option)

N_2 Option

The N2 unit includes the protective cover, nitrogen-filled nanotubes, and stainless steel protective tube. The device is installed on the solder pot, and the nitrogen-filled nanotubes are slightly higher than the tin surface, so that the solder pot can achieve the effect of nitrogen-filled soldering

Thank You

Sun East

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