WAVE SOLDERING

INTEON WTR-500

Lead-free dual wave soldering machine for PCBs up to 500 mm

PCB width 50-500 mm | Dual wave | Cast iron solder pot, approx. 700 kg | 4-zone hot air preheating, 1800 mm | PLC + PC control



OVERVIEW

The **INTEON WTR-500** is a lead-free dual wave soldering machine for THT assemblies, for PCBs from 50 to 500 mm wide. A cast iron solder pot of approx. 700 kg, 1800 mm four-zone hot air preheating and PLC + PC control give stable, repeatable soldering. Flux is applied by a step-motor driven spray system that detects the incoming PCB's speed and width; an air curtain keeps the flux out of the preheating zones. The streamlined machine has a fully enclosed glass front door with pneumatic support.

KEY FEATURES

Dual wave
two waves, wave height 0-18 mm, set by frequency conversion

Cast iron solder pot
approx. 700 kg, 4th generation adjustable pot, low oxidation solder flow design

Precise temperature
solder pot up to 350 °C, accuracy ±1 °C, PID + SSR control

4-zone hot air preheating
1800 mm preheating length, 20 kW, drawer-type heating modules for easy service

Flux spraying
step-motor driven nozzle, PCB speed and width sensing, flux tray and double-filter exhaust

Stable conveyor
aluminium rails, titanium fingers, width accuracy better than 0.2 mm, manual or motorized width

Automatic finger cleaning
pump washes the fingers from both sides, the cleaning alcohol is recycled

PLC + PC control
separate control of preheating, solder pot, conveyor, spraying and cooling; alarms and weekly timer

FLUX SPRAYING

- Spray range 20-65 mm, adjustable; nozzle height 50-80 mm; max. flow rate 100 ml/min.
- Step-motor nozzle drive with Mitsubishi PLC, proximity switch and entrance sensor: spraying starts according to the speed and width of the incoming PCB.
- Acid and alkali resistant air pipes; flux and waste collected in a pull-out tray for easy maintenance.
- Exhaust with stainless steel mesh frame and double-layer filter; air knife curtain blows excess flux into the recycling box and keeps it out of the preheating zones.
- Spraying box made of stainless steel: corrosion resistant, easy to clean and repair.

PREHEATING

- Preheating length 1800 mm in 4 sections: plenty of adjustment room for large and complex PCBs, less heat stress on the board.
- Mitsubishi temperature module with precise, stable PID control; fast heaters with long life and small thermal lag, even heat in the zones.
- Preheating power 20 kW; drawer-type heating modules, easy to replace and repair.

CONVEYOR AND SOLDER POT

- Aluminium rails, wear resistant and without distortion; width adjusting accuracy better than 0.2 mm, manual or motorized.
- Conveyor speed set in 1 mm/min steps, 0-1800 mm/min, electric closed-loop control within 0-10 mm/min; Panasonic conveyor motor.
- Low oxidation solder pot with liquid solder flow design, steady heat; motorized pot movement; wave height 0-18 mm by frequency conversion.
- Cooling by high-power centrifugal fan, reduces voids and solder pad stripping. Automatic finger cleaning from both sides.

CONTROL SOFTWARE

- Automatic failure alarms (thermocouple abnormal, temperature too high or too low); heating stops if the preheating or the solder pot is abnormal.
- Preheating temperature, solder pot temperature, conveyor speed, spraying and cooling controlled separately.
- Weekly automatic power on/off timer, three times a day; emergency stops at the front and rear of the machine.
- UPS available to protect the control section and the conveyor; SMEMA connectors at the entrance and exit.

Configuration, demo and quotation

InterElectronic supplies INTEON equipment in Hungary and Central Europe: application advice, installation, training and service.

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TECHNICAL SPECIFICATIONS

Model	WTR-500
PCB Width	max. 50-500 mm
PCB Conveying Height	750±50 mm
Conveyor Speed	1500-1800 mm/min
Conveyor Direction	left to right
Conveyor Angle	3-7°
Component Height Limit	max. 100 mm
Wave Quantity	2 (dual waves)
Wave Height Range	0-18 mm, steady
Preheating	1800 mm, 4 individual zones, hot air
Preheat Power / Temperature	20 kW; room temperature to 250 °C (adjustable)
Solder Pot	4th generation, adjustable; cast iron; approx. 700 kg
Solder Pot Temperature	room temperature to 350 °C, accuracy ±1-2 °C; temperature accuracy ±1 °C
Solder Pot Power	14 kW
Heating Technology	matrix straight heating, heating efficiency up to 95%
Solder Type	lead-free
Finger Type	strong titanium finger/customized
Temperature Control	PID + SSR
Machine Control	PLC + PC
Width Adjustment	manually/motorized
Flux Application	automatically; step motor + A-100 nozzle; flow rate 10-100 ml/min
Electricity	3-phase 5-wire 380 V / 3-phase 220 V
Power	max. 22 kW total; approx. 3-5 kW running
Air Supply	4-7 kg/cm²
Dimensions (L × W × H)	4500 × 1600 × 1730 mm
Weight	approx. 2300 kg

Specifications according to INTEON. Subject to change without notice.