

Wise can supply new machines covering the complete range of wet processing and pre-treatment equipment, requested by PCB manufacturers.

**Scrubstar**

Deburring & Planarizing machine for printed circuit board

**Copperstar&Custar**

Water saving and Copper removal systems

**Jetstar**

Jet scrubbing machine for aluminium oxide use for printed circuit boards

**Desmearstar**

Modular series for desmearing line

**Oxidestar**

Modular series for direct plating and oxide replacement line

**Cleverstar**

Grinding machine for removing the residues of resins, pastes and inks after the hole plugging process

**Alustar**

Scrubbing brushing machine for pumice or aluminium oxide use for rigid printed circuit boards

**Aluflexstar**

Scrubbing brushing machine for pumice or aluminium oxide use for semi-rigid and flexible printed circuit boards

**Cleanstar**

Pumice or aluminium oxide cleaning system and water saving

**Chemstar**

Modular plastic series for chemical wet processing line

**Devstar**

Developing machine for alkaline dry-films process

**Etchstar**

Etching machine for alkaline and acid solutions

**Stripstar**

Stripping machine for dry films

**Solderstar**

Modular developing machine for alkaline or solvent solder-mask process

**Platostar**

Modular series for horizontal plating line

**Fluxstar&Halstar**

Cleaning machine for fluxes removal

**Washstar**

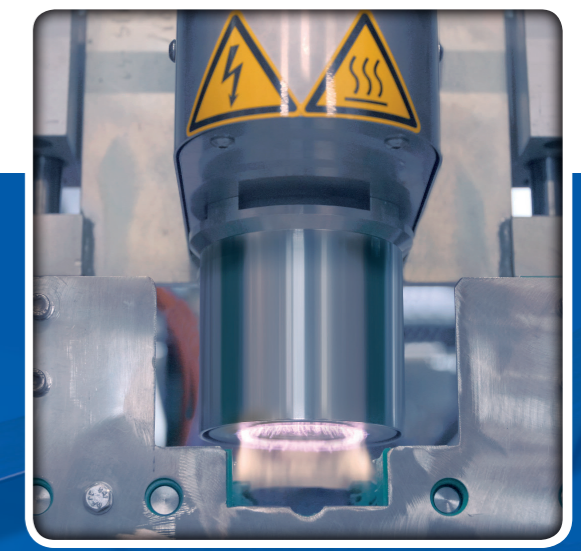
Compact cleaning unit for final washing of finished small printed circuit boards

**Ultraflex series**

New concept range of machines for panels and reel to reel Flexible Printed Circuit production.



Artoni@grafica  
WonderWise - 10 / 2019



**WonderWise**  
WonderWise is a compact machine for the horizontal Innerlayer copper surface preparation.

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We reserve the right to carry out modifications without prior notice.



**The Excellence of Italian Quality**

The machine is suitable in two configurations, double side or single side process and it is fully automatic friendly use

The machine adopts a new concept method of producing Atmospheric Plasma with low pressure and high density to obtain high efficiency of activation on the copper surface for the adhesion of photosensitive film.

The Plasma system is Patented.

The concept of the surface preparation is totally different than the conventional process.

Plasma does not produce a roughness but an energy surface tension which produce an activation of the copper surface, suitable for the adhesion of the photosensitive material.



WonderWise has a significant impact on the fabrication of PCB such as:

**Cost of the process Reduction**

- Management cost
- Energy consumption cost
- Water treatment cost
- Waste chemical treatment cost
- Working space

**Improvement**

- Machine in-line with the following processing equipment
- Installation in Yellow room (clean process)

WonderWise

**Quality of the board Reduction**

- Distortion of the board during the process
- Copper thickness
- Impedence
- Heat dissipated by the circuit

**Improvement**

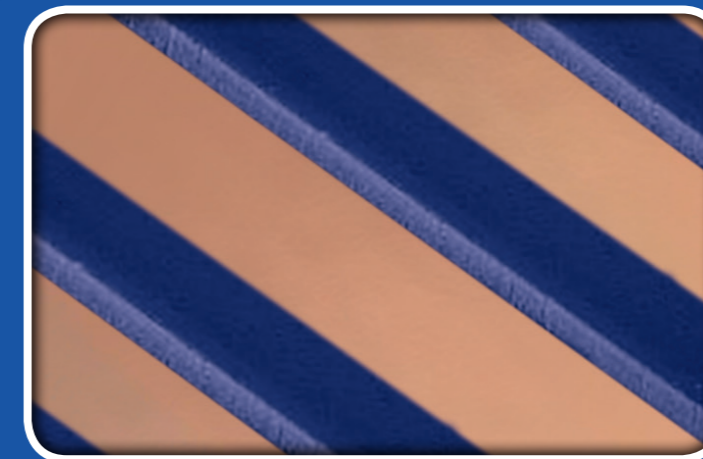
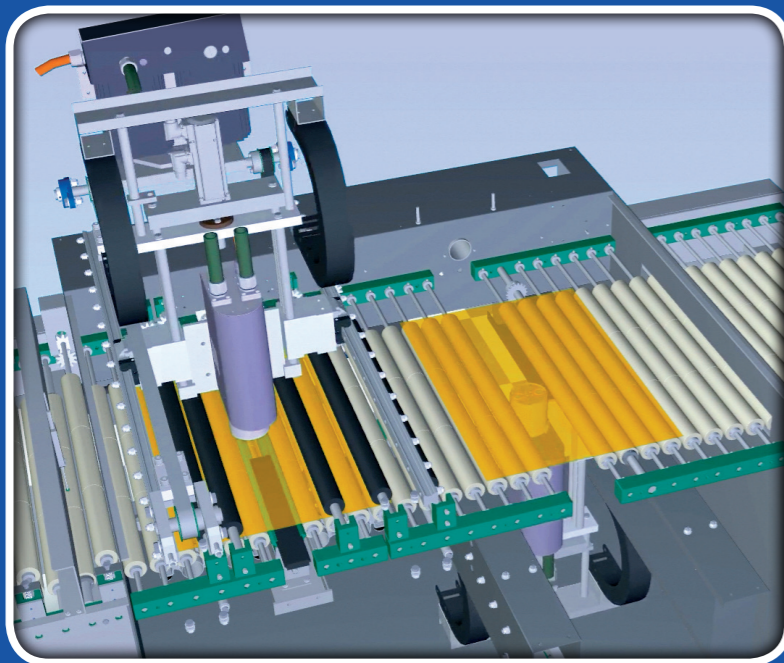
- Electrical signal uniformity
- No alteration of the copper surface
- Signal quality at high frequency
- Aesthetics panel

**Benefit of the process in ecological optics**

- Chemical consumption
- Water chemistry and water purification
- Chemical gases into the atmosphere
- Fume extraction and abatement system cost

**Improvement**

- Environmental operator conditions



The Plasma is in alternative to chemical or mechanical process and it uses with normal compressed air or gases in relation to the process.



The high surface energy allows good wettability synonymous of high coating adhesion.

