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## PRINTED CIRCUITS EQUIPMENT

### PRINTED CIRCUITS EQUIPMENT

- Insulator machines
- Etching machines
- Special equipment and machines

On customer request it is possible to supply:

- Benches for PCB
- Oven for PCB
- Chemicals and accessories (boards, tanks, etc)
- Solders

Ci riserviamo il diritto di apportare senza preavviso modifiche e migliorie tecniche alle nostre apparecchiature.  
We reserve the right to change these specifications without notice

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## INSULATION MACHINE FOR PCB

### IT.0210.CO SINGLE - DOUBLE SIDE U.V. EXPOSURE UNIT

U.V contact printer for the exposure of photosensitive material.

Especially designed for electronic applications, this unit allows to realise prototype or small series of printed circuit by using the method of the photoengraving in a short time.

Suitable for the exposure of any type of photosensitive paint or pre sensitised boards, it allows also to obtain positive master from negative masters and vice-versa.

To obtain printed circuits it is enough a master realised on drawing tracing paper.

It is possible to print also double sided circuits by exposing a side and then the other. The exposure is realised through 4 U.V. tubes 15W reared placed, and this make easy the positioning of the master on the circuit.



The rubber cushion pressure system ensures a perfect contact between master and circuit.

The electronic timer enables to obtain time from 0 to 10 min.

This contact printer can be used without protective glasses because there is no vision contact between the user and the lighted tubes.

It is not necessary work in the dark.



#### Technical characteristics

- External dimensions 500 x 450 x 170mm
- Exposure working area 255 x 385mm
- Electromechanical timer, programmable from 0 to 15 minutes
- 4 U.V. tube 15W
- Pressure system with soft neoprene cushion
- No maintenance
- Micro-switch to avoid vision contact between the user and the switched on tubes.
- Voltage: 220V
- Absorption: 80W
- Weight: 13Kg

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## INSULATION MACHINE FOR PCB



### IT.0211.CO

#### SINGLE SIDE U.V. EXPOSURE UNIT

Compact contact printer with drawer, which saves space.

This unit is equipped with a vacuum pump that can be displayed on the vacuum gage.

Photoengraving is realised by means of 6 UV tubes 15W with speed reactors.

It includes a valve for a quickly depression.

Digital timer enables to program exposure time from 0 to 9998 sec.

#### Technical Specifications

- External dimensions 485x600x160mm.
- Exposure working area 255 x 385 mm.
- Digital timer 3 digits
- Vacuum control through vacuum gage
- Exposure by means of 6 UV tubes 15W
- Pressure system on masters with vacuum-air-pump.
- Uniform exposure area.
- Voltage 220V.
- Absorption 130W.
- Weight: 28kg

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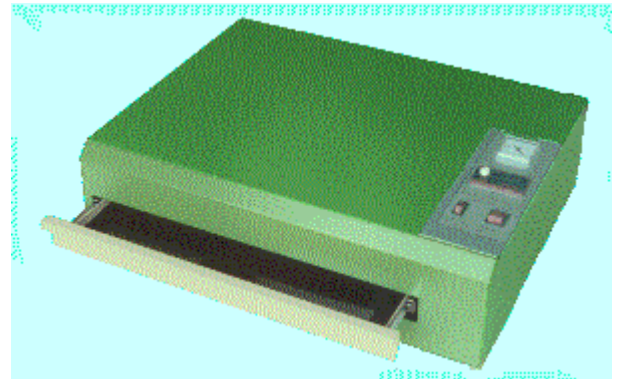
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## INSULATION MACHINE FOR PCB

### IT.0212.CO SINGLE SIDE U.V. EXPOSURE UNIT

Single face contact printer, with built-in vacuum-air-pump, suitable for the exposure of photosensitive materials.

It is suitable for electronic applications and for graphic arts, and it allows to obtain circuits or masters on positive or negative film in a very short time, starting from a drawing.



The exposure takes place on the upper side, this makes easy the positioning of the photosensitive boards.

The digital timer, which is programmable - in minutes and seconds - from 0 to 10 minutes, allows a more suitable selection of exposure times.

The inside pump, producing a very high vacuum, assures excellent definition of the details.

Finally, the vacuum can be checked by the vacuum gauge placed on the control panel.

This contact printer is provided with crystal upper plane fit for exposure of flat objects like C.S. boards or films.

It is equipped with a safety-switch on the door, which enables to light on the lamps only with closed door, so that to avoid the vision contact between the operator and the lighted lamps.

#### Technical Specifications

- External dimensions 760 x 600 x 180 mm.
- Exposure working area 500 x 375 mm.
- Digital timer
- Programmable times from 0 to 10 minutes
- Exposure through 6 U.V tubes 20W
- Pressure system of the drawing on the boards with built-in vacuum-air-pump
- Uniform exposure area
- No vision contact between the user and lighted tubes
- Voltage 220V
- Absorption 300W
- Weight: 32Kg

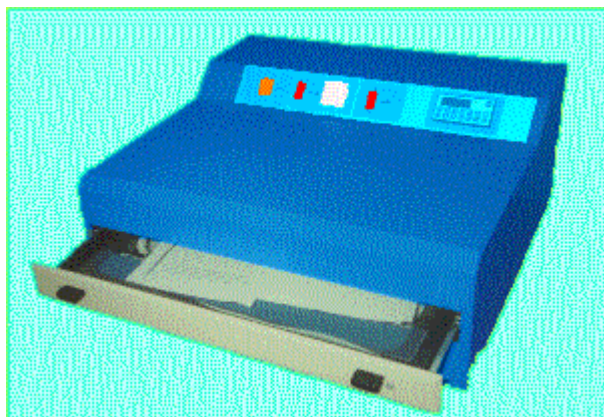
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## INSULATION MACHINE FOR PCB



### IT.0213.CO

#### DOUBLE SINGLE SIDE U.V. EXPOSURE UNIT

Double face contact printer, supplied with vacuum-air-pump, for the exposure of photosensitive materials.

It has been designed for the realisation of double sided printed circuits by using the photoengraving system, but it may be used also as single side contact printer with the exclusion of lower lamps set through a suitable push-button on the control panel.

The exposure drawer-sliding frame makes it possible the save of space.

Upper and lower layers realised with soft transparent material, ultraviolet-proof, which assures a strictly identical exposure on both sides.

The inside pump, producing a very high vacuum, assures excellent definition of the details.

The vacuum control is possible through a meter placed on the control panel.

The timer allows the time programming in seconds or minutes, from 0 to 10 minutes, enabling a more suitable selection of exposure.

#### Technical Specifications

- Exposure working area 500 x 375 mm.
- Exposure through 12 U.V. tubes 20W
- Digital timer.
- Uniform exposure area.
- No vision contact between the operator and lighted tubes.
- No maintenance.
- External dimensions 635 x 600 x 290 mm.
- Metal case, epoxy paint treated.
- Voltage 220V.
- Absorption 400W.
- Weight: 37Kg

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## ETCHING MACHINES FOR PRINTED CIRCUIT BOARD

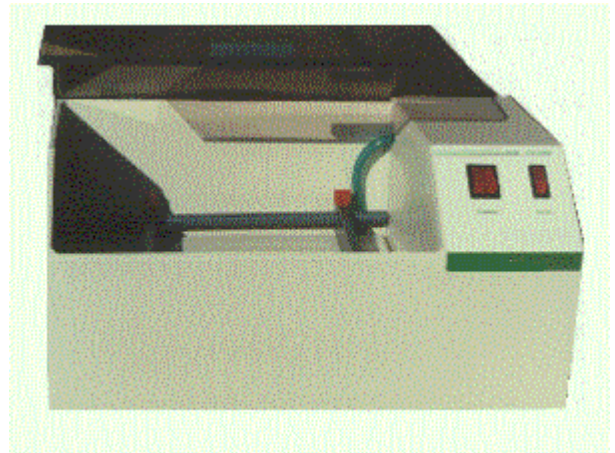
### IT.0214.CO SINGLE/ DOUBLE SIDED ETCHING MACHINE

Bubble etch system  
It allows to obtain good results in short time (3:7 min.).

Completely anti-acid PVC made.  
The machine is equipped with a transparent cover, which enables a continuous control of etching feeding.

A built-in pump produces a great quantity of bubbles, which removes the copper from the boards.

A heater with thermostat assures the optimal temperature of the ferric chloride.



#### Technical Characteristics

- Working area 220x280mm
- Tank capacity 2 litres
- Built-in pump
- Heater with thermostat 100W
- Supply 220V

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## ETCHING MACHINES FOR PRINTED CIRCUIT BOARD



### IT.0215.CO

#### ETCHING MACHINE FOR PRINTED CIRCUITS

Completely anti-acid PVC made it allows the treatment of single and double side boards. When only single-side boards have to be etched, they could be put back-to-back so as to double the working area. The machine is equipped with a magnetic dragging pump which does not need maintenance.

In this type of pump the acid never gets in touch with the metallic part of the pump, this allows to use any type of acid for printed circuits between the common ones present on the market.

Floating nozzles during their movement provide a uniform distribution on all the surface to be treated. The horizontal position of the boards has been chosen in order to avoid the phenomena of over-etching which is present in the machine which treats the boards in vertical position.

This phenomenon happens because in this case the lower part of the boards is reached by the spray of the nozzles and by the acid, which runs down the same boards.

The heating element is quartz made and allows a high safety degree against breaking if acid is added when the machine has already reached the temperature.

An adjustable thermostat placed on the control panel enables to choose the suitable temperature, while the thermometer placed on the same panel allows a continuous monitoring of the reached temperature.

A timer enables to set the etching time.

When this time is reached the timer stops the pump and the nozzle movement, remains inserted the heating element so as the machine remains in temperature.

The machine is equipped with a transparent cover, which enables a continuous control of etching feeding.

A safety switch on the cover stops the process when the cover is open in order to avoid spray of acid.

On the rear side of the machine there is an outlet for the external vapour drain while a useful clock allows quick emptying of the tank containing the acid.

#### Technical characteristics:

- Working area 400x500mm
- Spray etching system with floating nozzles
- Magnetic dragging pump
- Timer 0/15min
- Safety switch on the door
- Rear cock for acid drain
- Outlet for the external vapour drain
- Supply 220V
- Absorption 550W
- Dimensions 735 x 582 x 575h mm
- Weight 23Kg

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## ETCHING MACHINES FOR PRINTED CIRCUIT BOARD

### IT.0215-S ETCHING MACHINE

This machine has been designed to satisfy the needs of the middle productions.

Realised with the same standard used for the industrial machines it allows to obtain printed circuits, ready to be drilled in few minutes.

Its operation is very simple: a board has to be inserted into the machine (keep attention that it has to be well expanded); the lower roller will move the board to the etching chamber where 12 spray nozzles remove the copper.

The etched boards will then moved to the washing chamber where it will be washed by means of other nozzles.



#### Technical characteristics:

- Realised completely in PVC
- PVC roller with soft coating and titanium core
- Double side etching chamber 480mm length
- Maximum area of the boards 410x infinite mm length
- Minimum are of the boards 40x40mm length
- Tank capacity 15 litres
- External dimensions 550 x 1200 x 1200h cm.
- Magnetic dragging pump 65 lt./m 220V 50Hz
- Heating 800W titanium with digital thermostat
- Titanium core for the dragging of the roller
- Level switch which stops pump and resistance in absence of liquid
- Safety micro-switch on covers
- Dragging rollers speed adjustable 0 to 120cm/min
- DC motor with tachometric dynamo with ON-OFF switch
- Supply 220V /24 auxiliaries
- Absorption max. 1000W
- Connection to the mains 20mm/ 1/2"

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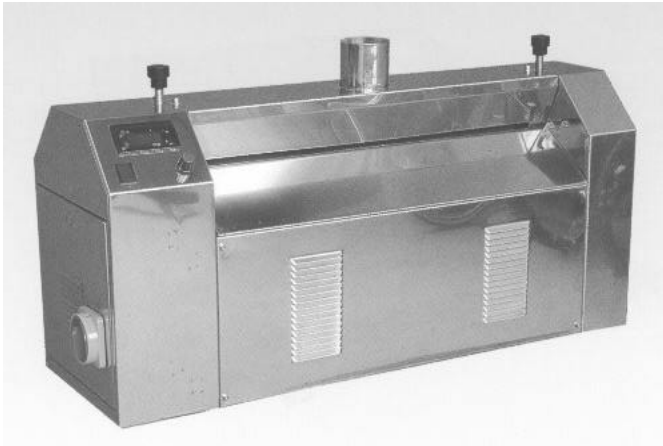




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## TINNING MACHINE GALVANIC PLANT

### IT.0200.CO-STA TINNING MACHINE WITH ROLLERS



This machine allows the tinning of the printed circuits' tracks, in this way they are protected from oxide and could be soldered in a better way.

The upper roller is coated with a layer of silicone rubber; it is height adjustable to allow a correct pressure depending on the thickness of the printed circuit.

Temperature is visualised on a display.

Thermostat is controlled by means of a platinum probe dipped into the tin, which allows to keep the tin at the same temperature during the processing.

Furthermore a safety thermostat prevents the roller from accidental switching on of the rollers during the period necessary to the tin, presents into the melting pot, to reach the melting point.

Roller speed is controlled by means of an electronic system, which regulates the revolution number, keeping constant the supplied power of the motor.

In order to be protected from the corrosion, machine frame is steel inox made.

#### Technical characteristics:

- Roller length 600mm
- Temperature 0/400°C
- Electronic thermostat with platinum probe
- Display for temperature
- Speed regulation of rollers rotation
- Height regulation of the press roller 0/10mm
- Resistance 2 x 1200W
- Heating time 30' approx.
- Steel inox frame
- Adapter for the external smoke drain
- Supply 220V 50Hz
- Weight 70Kg
- Absorption 2600W
- External dimensions 900x300x450mm

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TINNING MACHINE GALVANIC PLANT

### IT.0218.CO - GALVANIC PLANT FOR THE HOLES METALISATION

It allows a quick and safe realisation of prototypes and small series of printed circuits with metallized holes.

The equipment is realised in antacid PVC and it is made up of 14 tanks: No.12 tanks of about 10 litres and No.2 tanks of about 15 litres.

Low voltage resistance for the heating of the chemicals and low voltage commands are provided to warranty safe operation and operator security. Realised in PVC with metallic frame with antacid protection

Transparent PVC cover for development baths protection, when the system is not used.

Max. boards size 200x300mm;

Possibility to treat more board contemporary



#### Technical specifications:

- No.14 tanks with drain tap
- Bubble action by means of a motor reducer
- No.4 tanks with timer controlled heating
- No.1 central tank for the running water, with sprinkle on both sides for boards' washing
- Tank capacity: about 10 litres; Tank with electrolytic copper: about 15 litres
- 36 displays timer for the progressive positioning of the boards during the production
- Sequence indicated by means of warning horn
- No.2 ammeters placed on the commands panel to control the correct current absorption
- External dimensions: 101x90x116cm
- Supply: 220V Absorption: 1600W

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