



ELECTROFORMING-HOLOGRAPHIC PROCESSING SYSTEM : PC Control System

This is an especially designed system for the control of the electroforming tank modules for automated processing of holograms from the photo resist plate stage to the final embossing shims and available in a choice of sizes and electroforming methods.

- 1) Standard system for static shim growth at 460mm x 350 mm maximum shim growth size
- 2) Reciprocal agitation system for large format flat shims for master shims from photo resist and plastic recombination plates up to 1070 x 915 mm maximum shim growth size
- 3) Rotary drum system for large flat shims for embossing dies. 406-mm diameter x 965-mm deep drum unit for large shim growth 1250 mm x 915-mm maximum growth size.

These modules can be mixed to suit requirements and controlled from the central PC unit.

SPECIFICATION;

Automatic controller for electroforming modules (without rectifiers)

Housed in a modern control cabinet the following system to control as below;

- 1/ MS windows based personal computer with 17 inch monitor
- 2/ Allan Bradley plc unit
- 3/ 2-switch mode dc power supplies
- 4/ thermostats for solution temperature control
- 5/ heater contactors
- 6/ circulation pump/filter contactors
- 7/ inverters for rod/drum speed control

This will allow for the following;

- 1/ to individually control up to 4 electroforming module tanks
- 2/ ramp up dc amperage over a pre determined period on each module
- 3/ turn rectifiers on/off
- 4/ log amp/hours for each module
- 5/-pump on/off control at pre determined times
- 6/ solution temperature control
- 7/ drum rotation / rod oscillation speed control as relevant
- 8/ alter speeds of item 8 at pre determined time

Rectifiers are included in modular tank pricing attached and 2 can be housed within control unit housing, if more are required (up to a total of 4 rectifiers) these will be housed externally.

The PEL windows based program installed on the PC will control the following items via an Allan Bradley plc.

- 1/ Amperage applied to cell, with control over ramp up speed and duration
- 2/ turn off rectifier after set time or amp/hours
- 3/ turn circulation pump/filter on/off at set or elapsed times
- 4/ start/stop cathode movement /drum rotation at set or elapsed times
- 5/ regulate oscillation speed of cathode movement /drum rotation with variable ramp up/down speeds
- 6/ accumulate amp/hours per module

PC / PLC will carry out above controls on up to 4 electroforming modules connected to this.

Temperature thermostats, amp and voltmeters for each module will be fitted to the front of the controller below the PC keyboard.

Connections to module or heater pump /filter dc power will be at the back of the cabinet.

Power supply can be single-phase 11/120-v or 220/240-v 50/60 supply for 25 amp rectifiers 200 amp rectifiers must be 3-phase connection

