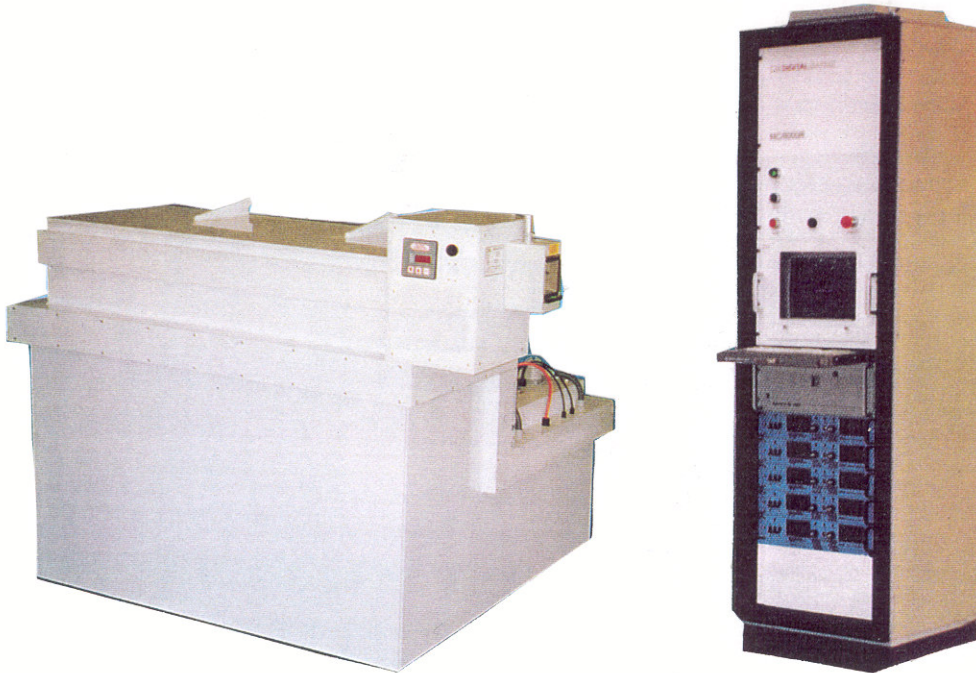




WIDE WEB Basic Holographic ELECTROFORMING UNIT

**HOLOPRESS
EF 2442**



Equipment Description and Function

This equipment has been designed especially for the replication of holographic nickel shims by means of an electroforming process.

It consists on the electrodeposition of an metal (nickel) on a model capable of n conducting electric current. When the deposition is completed, the new nickel copy, which is an exact negative, can easily be separated from the master.

The Purpose of this system is to generate a first metal master from photoresist and to provide a constant supply of the necessary quantity of shims for the embossing machine.

This electroforming capacity is especially designed for transferring holographic- micro- nanostructures from recombined plates (father) and for growing from this father a generation of positive / negative replications in order to receive a mother from which the continuous supply of embossing shims (daughters) for wide web production is copied.



Shim Specification

Shim size: up to 50 x 30 inch (1270 mm x 762 mm)
for an embossing size of 42 x 24 inch (1067 mm x 609,6 mm)

Shim thickness: programmable (recommanded 80 µm)

Shim hardness: variable according to electrolyt chemistry and aditives.

Process feature

- Computerized programmable cycle to:
- optain Nickel Master from silvered photoresist
- optain Nickel Copy from master.
Each cycle is automatic

Time process:

- approx. 120 / 200 min. for nickel copy
- approx 16 hours for master.

Production output:

- continous replication of 2 to 4 nickel shims per day.

Control and Services

Electrolyt bath temperature:

- computer controlled

Inlet Ampere regulation for shim Thickness and deposition speed:

- computer controlled

Bath level:

- computer monitored

Services:

- 380 Volt, 60 Hz

Electronic board:

- Computerized Control Panel

Specification

HOLOPRESS EF 2442



-3-

Price: Upon inquiry

Additional: Electroforming-Chemicals
and supplies
Nickel-Pallets (Recommended to be ordered on site)

Terms: 50 % down, 50 % by irrevocable L/C payable at sellers bank
upon signature of Certificate of Acceptance at sellers factory.

Delivery Time: Approx. 12 –16 weeks

Remarks: 2 days of installation, training on site, flight and accomodation is
to be paid by the buyer.