

# IN-LINE DIP COATING and CURING SYSTEMS



Model DC3005 (Courtesy of TRW Transportation Electronics, England)

## General Description

The DC3000 dip coating and curing systems are designed for the automatic application of conformal coating materials onto printed circuit assemblies at capacities of 350-700 per hour.

The DC3005 system comprises a variable speed indexing conveyor with cross rods to which are attached suitable jigs or fixtures carrying the assemblies. The indexing conveyor automatically stops above the dip tank which is then raised and lowered at the pre-set immersion, dwell and withdrawal rates preselected for the substrate/material requirements. The dip tank has standard dimensions of 1000mm x 242mm x 250mm (39" x 9½" x 10") and is equipped with a constant recirculating pump

system which will provide both repeatable uniform coating results and constant level precision dipping control. An inert gas (argon/nitrogen) manifold is fitted inside the top of the tank to provide a barrier above the liquid to minimise solvent release and help maintain viscosity.

A convection/IR oven zone is incorporated within the machine so that coated boards are cured to a handling cured condition on return to the load/unload station.

The DC3000 basic system incorporates a continuous running, variable speed conveyor. This system is fitted with a static tank and the assemblies are conveyerised through the dip tank and curing zone.

These systems are designed to meet with BS5501.

# DC3000

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## In-Line Dip Coating and Curing Systems

The DC3000 systems are constructed using a robust box section steel frame painted in stoved epoxy for complete protection against solvents. All process work areas and the dip tank are of 16 gauge stainless steel fabrication. Hang-on panels are provided for ease of inspection and are constructed of formed coated steel. All electrical pre-set controls are provided in an independent electrical control console which is linked to the pneumatic override on/off controls fitted to the right of the load/unload station.

The complete frame is mounted on castors and adjustable feet for ease of location.

## Standard Features

- System can handle most circuit board configurations not exceeding 900mm (36") long with up to 300mm (12") immersion.
- Tank, 1000mm x 242mm x 250mm (39" x 9½" x 10").
- Viscosity monitoring and control.
- Three mode operation (auto dip cycle, manual dip cycle, conveyor run).
- PLC computerised control.
- Index speed change (approx. 1m [3'] x per minute standard).
- Lower tank height limit option.
- Emergency stop at load/unload station.
- Tank gas blanket and flow meter.
- Dip and withdrawal rates are independently adjustable.
- Adjustable immersion dwell and drip dwell.
- Meets BS5501.

## Options

- Auto coating/solvent replenishment system.
- Coating/solvent weighscale management.
- Paper drip collector.
- Additional oven zones.
- Component jigs/fixtures.
- Jig locking mechanism.
- Wider-deeper tanks.
- Teflon® coated tank.
- Additional cross rods.

## Facilities Required

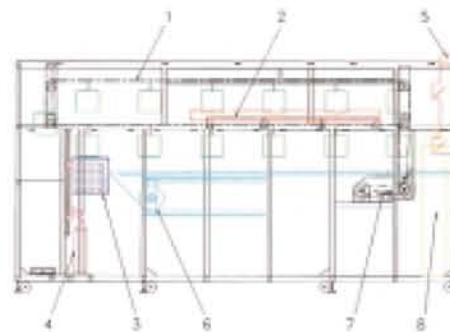
Electrical: 415V 3 phase 50 Hz. Approx: 70 amp.  
Compressed air: 0.5m<sup>3</sup>/min at 5 bar (15 cfm at 80 p.s.i.).  
Argon/nitrogen: 0.1m<sup>3</sup>/per minute at 2.5 bar (3 cfm at 40 p.s.i.).  
Extraction at 0.35m<sup>3</sup>/s (800 cfm).  
Overall size: 4.4m long, 1.7m wide, 2.4m high.



Model DC3000  
(Courtesy of El Limerick, Ireland)



Model DC3005  
(Courtesy of SOFREL Electronique Services SA, France)



Schematic of DC3005

1. Conveyor Chain.
2. Oven Plates.
3. Dip Tank.
4. Lift System.
5. Exhaust Duct.
6. Drip Paper System.
7. Conveyor Drive.
8. Argon Supply.



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