



REPAIR OF VARNISH-COATED, PRINTED WIRING BOARDS

This specification covers the repair of printed circuit boards which have a coating of varnish.

I. MATERIALS REQUIRED

- (1) 40 or 60-watt, electronic-type, soldering iron such as Hexacon
- (2) Distilled water or deionized
- (3) Small, stainless-steel, wire brush
- (4) Methylene chloride
- (5) Rosin core solder
- (6) Alcohol or Freon TMC in aerosol can
- (7) Polyurethane varnish 1A27 PDS-32101JB--purchase in aerosol can from Columbia Tech. Corporation., Woodside, New York (2 cans minimum) or varnish thinned 20% with Xylene #2694 and a camels-hair brush.

II. PROCEDURE

- A. If the board is dirty, blow off dirt using an air hose.
- B. Two kinds of varnish have been used:
 1. Epoxy varnish
 2. Polyurethane varnish.

If the board is varnished on only one side, epoxy varnish was used. If on both sides, it is probably polyurethane dipped but some are coated both sides with epoxy varnish (sprayed). The difference can be detected by observing whether there are varnish run marks on the board.

If the varnish is epoxy type, it must be removed from the area to be repaired, using methylene chloride and a clean cloth. If this is not done, it will require so much heat to solder thru the varnish that the printed circuit is apt to be lifted.

After removing the epoxy varnish, or without removal of the polyurethane varnish, proceed to the next step (the soldering iron will vaporize the polyurethane varnish).

- C. Cut the defective component from the board using diagonals.
- D. Unsolder and remove leads. This should be done with a 40-watt or 60-watt maximum, electronic-type, soldering iron or you will damage the printed circuit board.
- E. If the varnish was polyurethane, remove the charred varnish around the part to be replaced by means of a small, stainless-steel brush.
- F. If the part to be replaced is a thyristor or transistor, the cap and 1/8" of the leads should be dipped in Humiseal (polyurethane) 1A27 PDS-32101JB. Allow varnish to dry 1/2 hour before using the part. Use new-type transipad S# 425A307H01.

- G. Replace component using only rosin core solder and electronic-type soldering iron.
- H. Remove flux from boards by flushing with alcohol or spraying with freon and wiping with a clean cloth.
- I. Rinse with distilled water or deionized water. Do not touch repaired areas with fingers or thumbs as salts will be left as finger prints which will cause leakage and corrosion. Boards should be handled by their edges only.
- J. Dry in a 60°C oven for two hours.
- K. Test the board.
- L. Apply two, heavy, flow coats of Humiseal varnish 1A27 (polyurethane) using the aerosol can or brush on. Apply varnish liberally around transipad and leads. Allow 30-minutes drying time between coats. Care must be used not to spray the varnish on such items as potentiometer shafts and terminals. Masking with melted parafin may be necessary.