**Bed of Nails type Test Fixtures**

**High Accuracy Design Features**

Over 4 time proven years of development and well evolved mechanical design provides:
Probing accuracy of +/-0.002" Repeatability of +/-0.0005" Increased probe pointing accuracy beyond the probes actual ratings. Increased probe life when compared to other fixtures.

**Plate Set Mechanical**

The High Accuracy Test Fixture plate set includes 4 plates

1. The top plate, Press Plate, is a 1/2" FR-4 (G-10) plate which contains press down fingers which press the board under test down against the BON (Bed Of Nails Plate). This press plate may also contain test probes and transfer pins for double sided testing.

2. The Mid Plate is a 1/8" Teflon impregnated Delrin plate which is machined out in 3 elevations to precisely form fit to the components on the board under test. This 3 level machining prevents thin walls between components which can break loose and give false test failures. The Mid Plate is also drilled to slip fit on the heads of the test pins. The first function of this Mid Plate is to hold the board under test above the probes while the fixture is open. The second and most important function of this Mid Plate is to guide the probes to the exact centers of the test pads on the board under test as the fixture closes. Thus increasing the probe pointing accuracy beyond the probes actual ratings.

3. The Bed of Nails Plate, (BON) Plate, is a 1/2" FR-4 (G-10) plate which contains the test pins, tooling pins which align the PCB under test, and two 1/2" Stainless Steel guide pins which provide alignment for the Turcite Bushed Press Plate. The BON Plate also contains two sheet metal side brackets for wired connector mounting. This BON Plate is one complete wired removable replaceable module that can be inserted and removed from the fixture with only two screws.

4. Guide Plate is a 1/32" FR-4 (G-10) plate which contains a hole pattern duplicating the BON Plate. This plate provides extra support needed for the smaller test pins (50 mil and under). This Guide Plate provides the receptacles with support from the bottom. The plate is mounted to shroud the bottom of the probe receptacles. This Guide plate eliminates receptacle bending which in turn helps to increase accuracy, but mainly increases probe life 2-3x over the basic fixture which simply supports the probes from the top swage ring only.
Manufacture
Extreme care is taken in the manufacture of all plates. All plates are precision ground, buffed to a high gloss, center drilled, then finally, drilled to an accuracy of 1/10 of a thousandth with carbide drill bits running at 20,000 RPM under high pressure coolant. Receptacles are then inserted and swaged with a custom built CNC machine providing an extremely high degree of perpendicularity exceeding 1/1000" per linear foot.