

CEDAL EQUIPMENT[®]

INNOVATING SYSTEM

PINLESS REGISTRATION SYSTEM Indubond System



NEWS

Precise Pinless Lay-up, Alignment and Inductive Bonding of Multilayers

The Pinless Registration System allows for pinless lamination of multilayers and sequential lamination build up technology. Three different processes take place in one unit, layup, layer to layer alignment and Inductive Bonding. This process eliminates the added tolerances associated with pin lamination.



*Innerlayers held in position
by Gripper & Center
positioning Platen prior
to bonding operation*

Mechanical Tolerance Buildup is Eliminated

Mechanical tolerance variations such as, tooling hole size, lamination plate bushing locations and pin size are eliminated. Utilizing existing technology and stringent tooling practices will guarantee at best only 2 to 3 mils (50-75 micron) of layer to layer registration. The Pinless Registration System will align innerlayers to within +/- 0.7 mils (17 micron). The system will process all panel sizes from 12" x 18" to 24" x 30" (305 x 455mm to 610 x 760mm).

These are some of the process improvements that are quickly realized:

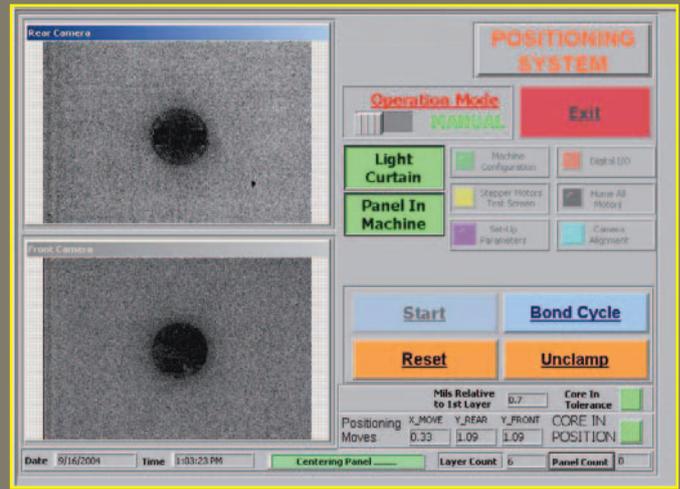
- No need for rivets.
- No need to tool prepreg or foil, foil can be used on a roll, thus less handling.
- No double handling of innerlayers, they will only be handled at lay-up.
- No need to punch innerlayer tooling.
- No need to retool targets on phototools, works with all existing targets.

The unit aligns each layer to a preset zero position, each innerlayer is held completely flat and aligned to two reference points. The innerlayer is then held in the aligned position by two sets of grippers.

The center vacuum platform is raised and the next innerlayer with the associated sheets of prepreg is introduced into the work area. The vacuum platform is lowered onto the innerlayer, completely flattening the innerlayer.

Vacuum is then activated and the platform raises less than 0.015", the CCD cameras digitize the targets and a positioning system moves the innerlayer to the aligned position.

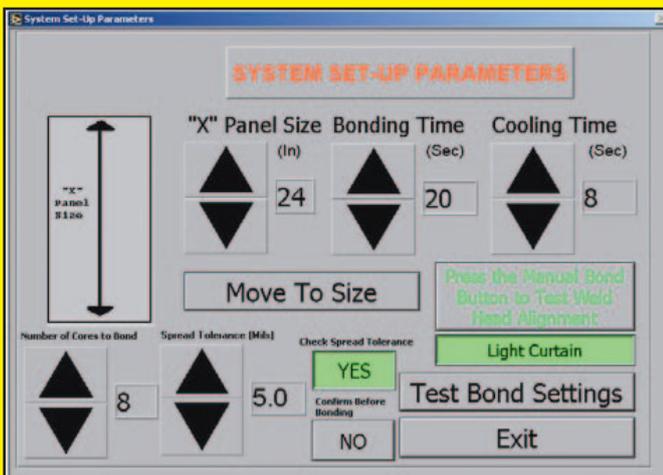
The platform is lowered and the vision system rechecks the alignment, the grippers release and regrip, the grippers now hold both innerlayers with the prepreg sandwiched between them.



Main Screen

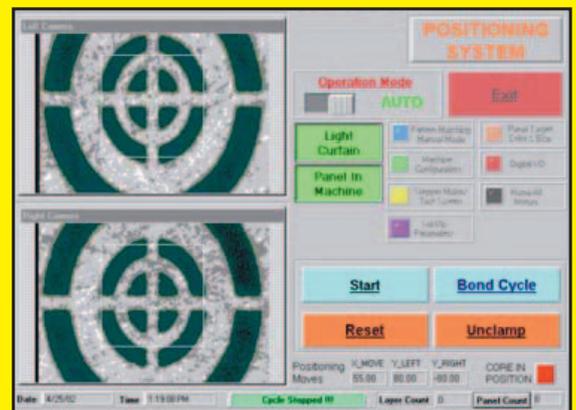
All functions are controlled via a touch screen monitor

This sequence repeats for the successive innerlayers. When the lay-up is completed, the bond cycle is activated and the layers are held in position at four bonding locations. The operator removes the bonded package and begins the next lay-up. The integrated Indubond Inductive System allows faster production by increasing the number of panels stacked prior to bonding. Multiple panels up to 10mm total can be aligned and then bonded.



System Set-up parameters

Set-up is complete in a few seconds, the operator selects the parameters needed via the touch screen.



Example of Bulls eye targets



Example of different size targets

COMPANY PROFILE

All **CEDAL EQUIPMENT**'s managements have been dealing with the PCB field from many years and they all have a large experience reached in International companies, producing Lamination Press, Indubond and other Equipment related to it. So all our background in the Press performances and its application has been used to develop our Equipment. High quality and High productivity are both the guide lines of all new projects we are developing for the PCB market. **CEDAL EQUIPMENT** bases its production power on a solid company which has been in the Machine-Tools field for many years. Our experience, world-wide matured, plus the knowledge of this market, assure a perfect customer's satisfaction and follow-up.



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