



ITS 400 Isothermal Air Cavity Package Sealing System

Eliminates Blowouts in the Epoxy Sealing Manufacturing Process

RJR Polymers is a leader in developing sealing technologies that seal air cavity packages from environmental contamination in the final stage of package assembly.

We use a patented Isothermal Sealing System (ITS) to achieve:

- A substantial decrease in yield losses due to blowouts (yielding nearly 100%).
- Increase throughput because of faster cycle times.
- Increase location accuracy (machine vs. manual).
- Increase reliability because of more consistent seals.

This is accomplished by utilizing the ITS 400 patent isothermal sealing process. It eliminates the risk of seal failure because of blowouts during the sealing process. The key to this efficient process is accomplished by equalizing the pressure and temperature inside and outside the Air Cavity and by keeping the Lid and Package body separated during the heat up cycle. Not only is this faster than manual sealing methods, it produces a more accurate seal alignment. As a result, yields approach 100% and cycle times can be as low as 4 minutes with no additional post cure required.

The ITS 400

The ITS 400 improves sealing process conditions, assembly and ease of operator interface. The touch screen offers operators easy access to the pre-loaded sealing process parameters such as:

- Temperature for the top and bottom plates.
- Vacuum on and off cycle times.
- Pressure on and off cycle times.

Options for the ITS 400 include:

- Inert gas purge (i.e., nitrogen)
- Multiple vacuums
- Pistons top and bottom
- Custom size HB or pitch
- SPC Links



Custom-designed tooling accurately holds the lid on the top platen until the right isothermal condition is reached.

The lower platen is equipped with custom tooling plates to match specific customer package designs.

The microprocessor stores up to six different customer-specified sealing processes. Pressure and vacuum lines are equipped with filters for contamination control. Cycle times are designed so that one operator can operate up to three ITS units at the same time.

Customers can link the ITS 400 to their existing computer systems to obtain SPC data.

Dimensions & Specifications

- Length: 22.5"
- Width: 11.0"
- Height: 8.0"
- Weight: 37 lbs.
- Power requirements: User-selectable 120/240 Vac, 20 amp. max.
- Pressure: 40-60 psi
- Vacuum: 9.82 in./Hg



Custom Design Insert Plates

RJR's custom-machined insert plates are designed to meet the customer's specific package and lid configurations. The ITS 400 configurations (5 by 5, 6 by 8 and 4 by 8) are designed to accommodate a wide variety of package and lid configurations.



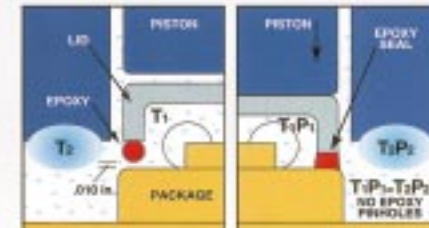
Package Types Sealed in ITS

Interchangeable plates enable a single ITS 400 to seal a variety of different package types, including:

- Microwave / RF devices
- Large hybrids
- Oscillator arrays
- CCD / CMOS
- High frequency plastic packages
- BFA / PGA

Major Advantages

- Produces 99%+ yield in seal consistency
- Eliminates blowouts in epoxy seals
- Accuracy location tolerance up to 0.001 inches
- Seals a wide variety of package formats
- Includes microprocessor-based control system
- Allows defective packages to be reworked
- Eliminates excess handling of expensive devices
- Maximizes use of operator's time



The lid is held by vacuum to keep it from touching the package body during heat up. The lid and package are heated to a desired temperature (when an isothermal condition has been reached) then the vacuum is released, the lid dropped and makes contact to the package. body, a piston gently applies pressure to the top of the lid until a proper seal and fillet is formed.

