Robotic Process Systems
Automated Solutions for Process Control

202TL

Solderability Test System

FEATURES

- Microprocessor Control
- Greatly Improves Productivity
- Low Cost
- Compact Size
- Pre Fluxing Operation
- Setable Insertion/Exit and Dwell Times
- All Stainless Steel Solder Pot with PID Proportional
- Temperature Control
- Automatic Dross Wiper
- Accommodates all Device Types and Styles

DESCRIPTION

The RPS 202TL is a microprocessor controlled solderability test system that meets MIL-STD-202, method 208/MILSTD-2000 with speed and precision. All process parameters are set digitally. The microprocessor is capable of storing 8 different processes in memory for fully automatic operation. These process parameters include: flux and solder emersion and immersion speed, solder, flux and traverse dwell times, number of cycles required and solder temperature.

The RPS 202TL also has a calibrated depth gage that permits adjustments to 0.001" over the flux and solder pots.

All functions are set for automatic processing and deliver precise repeatability in continuous applications. Flux pot, static solder pot, and automatic dross skimmer are integral to the system. All controls are within easy operator access on the front panel with large digital displays. The microprocessor controls totally interlock the system for safety and ease of use.

Calibration:
The RPS 202TL is capable of auto-tuning the vertical axis is either the Single Speed MIL-Spec (1 in/sec.) or All Selectable Speeds (0.5 - 2.5 in/sec.) The flux station can be programmed out of process for "solder only" applications, and a manual mode provides easy controlled movement of the toolhead for set up. The system is also equipped with an output line for direct access to thermocouple readings in real-time. This line can be used for a chart recorder (model ST-CR), calibrating the thermocouple or any other SPC device that can utilize a "J" thermocouple.

The temperature controller has a programmable offset to allow synchronization with calibrated probe. Vertical speeds are calibrated through a plug-in service port on the side of the machine, Temperature parameters are set by the user, including a process tolerance of (+) or -(-) of set point. If the solder temperature falls outside of the process band, the equipment will not operate, thus decreasing the likelihood of operator error. A warm start timer is standard. This feature allows the solder to be a correct temperature at the start of the day.

Solder Pot:
The solder pot is constructed of a special alloy stainless steel, specifically selected for its non-contaminating attributes and durability. This is the only material that comes in contact with the solder and therefore provides metallurgical stability. A proportional temperature controller regulates the solder temperature within ±3'C of set point. Solder capacity of the pot is 6 lbs. The pot is charged with ultra-pure SN63 and tested at the factory for 8 hours. The pot simply lifts out of the RPS 202TL body for service.

Safety:
The RPS 202TL is equipped with an audible alarm to indicate: toolhead jam, cycle finished, system internal error, and solder over-temperature. An emergency stop switch is located on the control panel. The system features all UL components and UL equivalent wiring. Also, all process parameters are protected by a three-level password system, with 3 independent passwords (one for each system area).

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APPLICATIONS

MIL-SPEC requires solderability testing after the pre-tinning and steam aging process. Steam aging in accordance with MIL-STD 202, etc. accelerates defects within the 8 hour test. The RPS 202TL has been designed to meet all test requirements, and also has the added programmability to serve as a miniature complete pre-tinning system when not in use for test purposes.

Robotic Process Systems also offers highly accurate steam aging systems for companies requiring the complete aging and test system.

The 202TL accommodates all types of both axial and radial components. Components are loaded into titanium racks. The racks are then loaded into the pallets. Pallet capacity is typically up to 45 components (axial leaded devices), and 21 components (radial pallets). Pallets are loaded by sliding them into grooves in the machine, which locate the pallets flat to the working liquid surfaces. It takes less than 10 seconds to load, unload, and restart the cycle.

Standard tooling for axial and radial devices - D.I.PS., connectors, transistors, S.I.P.S., pins, quad and flat packs - are readily available from Robotic Process Systems. The 202TL comes with one magnetic and axial-radial tool.. Customized tooling can be supplied for all non-standard applications. Automatic loading equipment is available to further reduce labor and enhance productivity.

This precise ability of the RPS 202TL to control all process parameters make it the ideal solderability test system for both main and sub contractors dealing with government contracts. It is also a perfect pre-tinning system for general manufacturers needing smaller run tinning capabilities and allows them to also bid on government jobs. The system is extremely easy to use and highly accurate for all applications.

SPECIFICATIONS

Performance:

- Operation: Automatic with (8) eight different processes in memory.
- Accuracy:
- X-Axis: ±.010"
- Y-Axis: ±.002"
- Capacity: Varies - typical capacity up to 45 axial and 21 radial components at one time.
- Immersion Depth: Controlled by adjustable stops independently for flux and solder.
- Immersion Accuracy: ±.002"
- Speed In/Out: From .5" to 2.5"/sec.
- Immersion Time: From . 1 sec. to 1 0 sec

Solder Pot

- Temperature Controller: Remote proportioning, (0-350'C),±3'C PID.
- Usable Pot Surface is: 2" x 4" Static, with automatic dross skimmer.
- Solder Capacity: 6 lbs.
- Usable Depth: 2"

Operational:

- Electrical Input: 12O VAC/1 PH/6OHtz/10 Amperes
- Controller: Micro Processor

Physical

- Construction:
- Base constructed of heavy gauge steel with leveling feet, for table top mounting.
- Steel uprights and struts.
- All components are epoxy coated.
- Dimensions: 24"W x 16"H x 20"D
- Net Shipping Weight: 85 lbs.

Specifications subject to change without notice.

Options

- Heavy duty support stand
- Custom Tooling

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