



**Made in America**

The **KISS-101** is a low cost automated selective soldering machine featuring a lead alloy solder pot, spray fluxer and a programming camera, all in an enclosed superstructure.

### **KISS-101 Standard Features:**

- “Super Quick” motion for fastest processing times
- Will completely process PCBs 12” x 12” (300mm x 300mm) and up to 24” long PCBs (600mm) using a manual step over
- Universal PCB location rails with multiple PCB positions
- **Automated Fiducial Correction**
- **Board Warp Compensation**
- Windows 7 OS with SWAK-OS programming interface with rapid setup time to “first production” using the machine “teach” functions
- Step and repeat capability in both X- and Y-axis for multiple boards in a panel
- Lead alloy solder pot and pump assembly included—lead-free alloy (all titanium) and HMP alloy pot and pump available
- Programmable solder wave flow rate
- Programmable solder pot timer
- 6mm and 12mm Bullet nozzles
- Heated nitrogen to the solder nozzle
- Precision KFS-SP atomizing flux applicator
- Set the time/temp profile for each individual component type for maximized process control and TAKT time
- Absolute control over all critical process parameters:
  - Solder temperature interlocked to within 10°C
  - Height and travel speed of the solder wave
  - Programmable initial preheat soak time
- Set-up kit containing all necessary support tools
- One year warranty covering the entire machine and two years for the solder pot and pump assembly

### **Advantages:**

The **KISS-101** is used to solder through-hole components on SMT boards within close proximity of adjacent components. This process overcomes the limitations and high labor cost of operator dependent soldering with a truly flexible automated molten solder delivery system.

The **KISS-101** couples high throughput with precise process controls. The programmable features provide the tools to set all process parameters, including flux deposition, immersion depths, preheat dwells, travel distances and speeds, and solder temperature. Once set, the system will repeat precisely.

The **KISS-101** will out produce four or more operators soldering with an iron while significantly increasing the solder joint quality and to a predictable schedule.

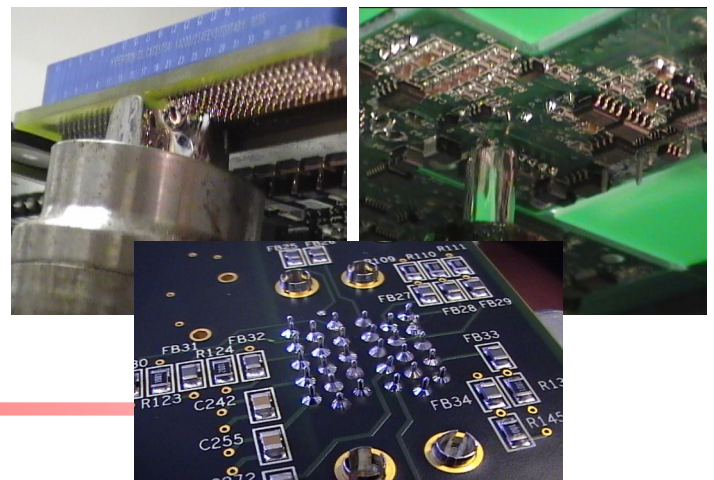
**“You can expect a ROI of three to four months or less”**

### **Process Overview:**

The operator places the PCB onto the location rails and starts the automated cycle. The **Automated Fiducial Correction** identifies the start point. The cycle begins by automatically applying flux to all the programmed sites. Next, the mini solder wave is automatically moved under the component to be soldered. The solder nozzle raises to “wet” the first pins. The solder wave travels the length of the component, soldering the through hole leads to the PCB. At the completion of the travel, the solder pot lowers and moves to the next site. All programmed sites are soldered in the same cycle. An automated stepping function allows solder arrays of boards in an X-Y matrix. After completing the cycle, the pot can be programmed to return to the start position, ready for the next cycle.

### **Applications:**

The **KISS-101** is designed to selectively solder components such as connectors and leaded through hole components into printed circuit boards, panels, and other assemblies without disturbing nearby SMT components.

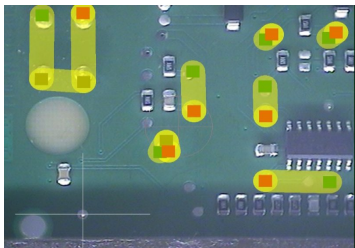


**Programming:**

The programming is accomplished by one of two methods, either on the machine or with the optional Offline Teach programming interface software. On the machine use the set up camera viewed on the monitor and point-and-click method to set the flux and solder pattern in real time. Usually an average board can be programmed within 10 minutes. You can fine tune the X,Y and Z positions, speeds, solder wave height and other parameters to perfect the process.

Alternatively, at your desktop import a JPEG (photo) or the Gerber file into the Offline Teach program. Pick the solder nozzle size (this becomes your cursor). Choose the start/stop positions for all devices to be soldered. The process path becomes highlighted and script is automatically created for you. Circular or angular interpolation allows the soldering of large round arrays in a spiral pattern and connectors not perpendicular to the X-Y plane (see the SWAK-OS data sheet and video).

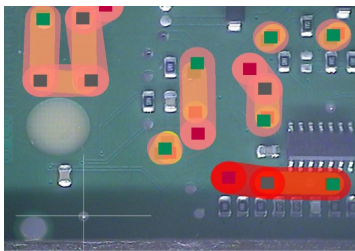
Set the datum point, then choose the flux width and solder nozzle and "paint" the process paths. It is that easy.



Programming the flux paths



Applying the flux



Programming the solder paths

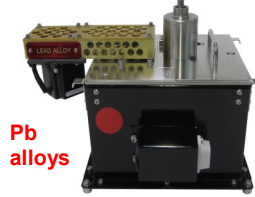


Soldering the components

**Options:**

- Additional solder pot/pump assemblies for Pb, lead-free or HMP alloys
- Additional Bullet or Wave solder nozzles and W-75mm wide wave nozzle for mass wave soldering
- Process witness camera and second process witness camera
- Dual monitors (great for simultaneous video feed from cameras)
- Drop-jet precision flux applicator (for no-clean processing)
- Offline programming software
- Barcode reader to verify or change programs
- Closed Loop Rotary Encoders
- Universal PCB location rack with adjustable fingers to hold the PCB in position suitable for processing
- Topside Preheat with pyrometer controls\*
- Skyhook fixture with adjustable 'hook' for pulling the bow from the PCB

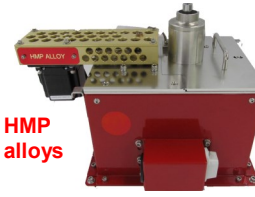
**The KISS solder pots**  
(See the KISS-SPA data sheet)



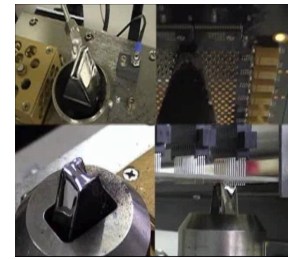
Pb alloys



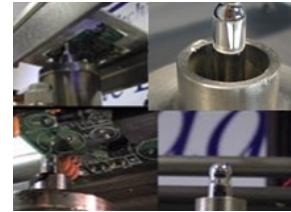
Pb-free alloys



HMP alloys



Wave nozzles



Bullet nozzles

**KISS-101 Specifications:**

PCB Panel Size

Minimum	Maximum
2" x 2" (50mm x 50mm)	12" x 12" (300mm x 300mm)

Safe "Keep Away"

(distance to adjacent pads) 1mm

Motion

- Z-Axis Accuracy/Repeatability +/- .002" Speed 0-3 inches/sec.
- X- and Y-Axis Accuracy/Repeatability +/- .002" Speed 0-4" inches/sec.

Solder Pot

- Temperature PID proportioning (0-400°C) ± 2°C
- Solder Capacity 30 lbs. (14 kilos)
- Pump PC controlled

Software

Windows 7 OS and SWAK-OS programming interface

Physical

- Dimensions 54" wide x 40" deep x 45" high (1371mm wide x 1016mm deep x 1143mm high)
- Weight (dry) 650 lbs. (295 kilos)

Facilities

- Power
  - Standard 120VAC/1 Ph/60 Hz 15 amps
  - Optional 208/220-240VAC/1 Ph/60 Hz 15 amps
  - \*With Preheat/Prep power changes to: 208/220-240VAC/1PH/60 Hz 20 amps
- Air Less than 10 SCFH @ 90(min) to 100 (max) PSI
- Nitrogen 99.999% pure, 30-50 CFH @ 60 (minimum) to 100 (maximum) PSI
- Exhaust 250 CFM recommended

**Compliance:**

OSHA, NEC, CE, UL, ULC