

Model **KISS-101A**  
"Keep It Simple Soldering"  
**12" x 12" PCB Platform**



*Made in America*

The **KISS-101A** is by far the lowest cost "Bench Top" automated selective soldering machine available using the proven "traveling mini-solder wave" soldering process. The **KISS-101A** includes the following standard features:

**FEATURES:**

- Universal PCB location rails.
- Lead alloy solder pot and pump assembly (lead free available).
- 6mm and 12mm "Bullet" nozzles.
- Heated Nitrogen to the solder nozzle.
- Windows XP O/S.
- Rapid setup and time to "first production" using the machine "teach" functions or available "off line" programming.
- Programmable solder wave flow rate.
- 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 2 degrees C.
  - Height, and travel speed of the solder wave.
  - Programmable initial pre-heat soak time
- Will Process PCBs 12" x 12"
- Step and repeat capability in both X and Y axis for multiple boards in a panel.
- Set-up kit containing all necessary support tools.
- One year guarantee covering the entire machine and two years for the solder pot and pump assembly.

**ADVANTAGES:**

The **KISS-101A** is used to solder through hole components on

SMT boards within close proximity of adjacent components. This process overcomes the limitations of operator dependent soldering with a truly flexible automated molten solder delivery system.

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

The **KISS-101A** will out produce 4 or more operators soldering with an iron while significantly increasing the solder joint quality and to a predictable schedule.

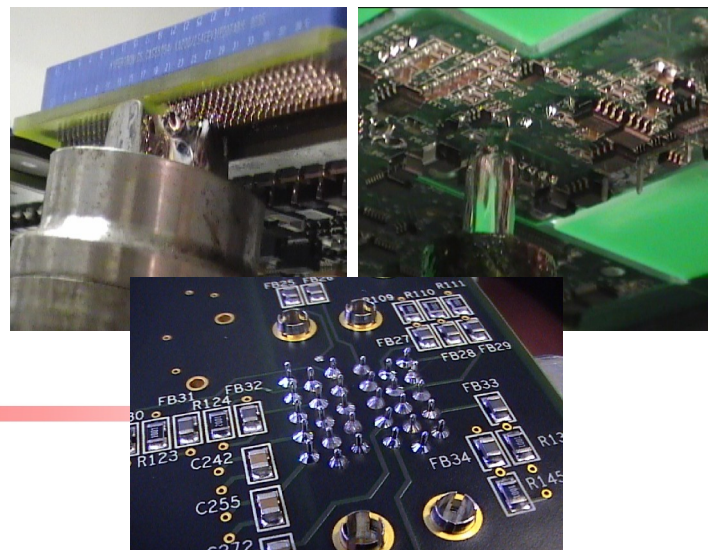
**"You can expect a ROI of 2-3 months or less"**

**PROCESS OVERVIEW:**

The operator places the components into the PCB, then the PCB is placed onto the universal PCB location rails. The cycle is started by depressing the dual green buttons. Flux may be applied (optional). 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 returns to the start position ready for the next cycle.

**APPLICATIONS:**

The **KISS-101A** 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.



## SOLDER POTS: (for lead and lead-free alloys)

The standard lead-alloy solder pot wetted surfaces are constructed of 316 stainless steel. The optional Lead-Free alloy solder pots are constructed of Titanium to withstand attack from aggressive tin rich alloys. The heaters are sized to bring the solder safely to temperature within an hour. Re-circulation of solder is accomplished via a programmable motor coupled to a precision impeller assembly that delivers the precise and consistent volume of solder to the nozzle. The solder distribution system is designed to minimize dross build up while providing an extremely consistent and repeatable solder wave shape.

A heated nitrogen blanket captured within the enclosed solder pot inerts the molten solder surfaces minimizing dross. The super heated nitrogen surrounds the solder nozzle and solder site as the solder wave contacts the terminals minimizing icicles and solder bridges while providing an inerted return of the solder back into the pot.

The solder temperature is interlocked within  $\pm 2^{\circ}\text{C}$  of set point. The capacity of the solder pot ensures sufficient solder mass for even the largest assemblies.

The nozzles are magnetically fixed and can be exchanged in seconds. B6mm and B12mm "Bullet Nozzles" are supplied with the system. These are sufficient for most applications. Additional "Bullet" and "Wave Nozzles" and special purpose nozzles are available enabling selective soldering of wide patterns (multiple rows) in close proximity to previously soldered components without danger of reflowing them (see the KISS nozzle data sheet).

### PROGRAMMING:

The initial programming is accomplished by one of two methods. At a desktop or on the machine..... At your desktop import the PCB CAD file into the KISSware 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.

Optionally, use the set up camera viewed on the monitor and joystick function on the keyboard to set the flux and solder pattern in real time. Usually an average board can be programmed within 15 minutes. You can fine tune the X,Y and Z positions, speeds, solder wave height and other parameters to perfect the process. Start the cycle.

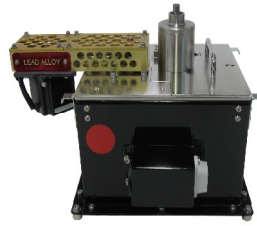
### OPTIONS:

- Titanium solder pot for lead-free alloys
- Additional solder nozzles (Wave and Bullet types)
- Atomized jet spray head

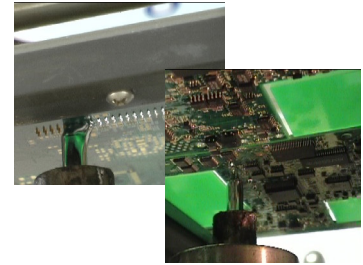
\* requires slight operator assist to achieve full 12" in the X axis

### SPECIFICATIONS:

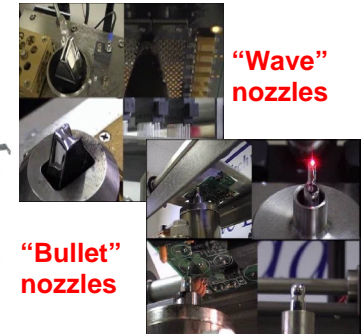
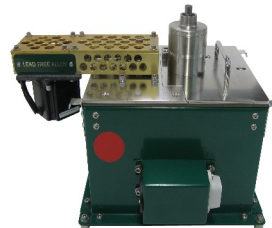
Standard lead



"The soldering process"



Optional lead-free



"Wave" nozzles

"Bullet" nozzles

### PCB Panel Size

Minimum	Maximum
2" x 2"	12" x 12"

(requires manual step over to flux and solder the full 12")

### Safe "Keep Away"

2mm

(distance to adjacent pads)

### Motion

- Z-Axis  
.002"

Accuracy/Repeatability +/-

- X and Y Axis  
.002"

Speed 0-20 inches/min

Accuracy/Repeatability +/-

Speed 0-100 inches/min

### Solder Pot

- Temperature

PID proportioning (0-400°C)  
 $\pm 2^{\circ}\text{C}$

- Solder Capacity  
30 lbs.
- Pump  
PC controlled

### Controls

PC with Windows XP O.S.

### Physical

- Dimensions  
high  
36" wide x 36" deep x 28"
- Weight  
275 lbs.

### Facilities

- Power  
120VAC/1 Ph/60 Hz 15 amps
- Air  
80 - 90 PSI
- Nitrogen  
15-50 CFH @ 60-70 PSI