



Made in America

The **KISS-101A** is by far the lowest cost 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.
- 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.

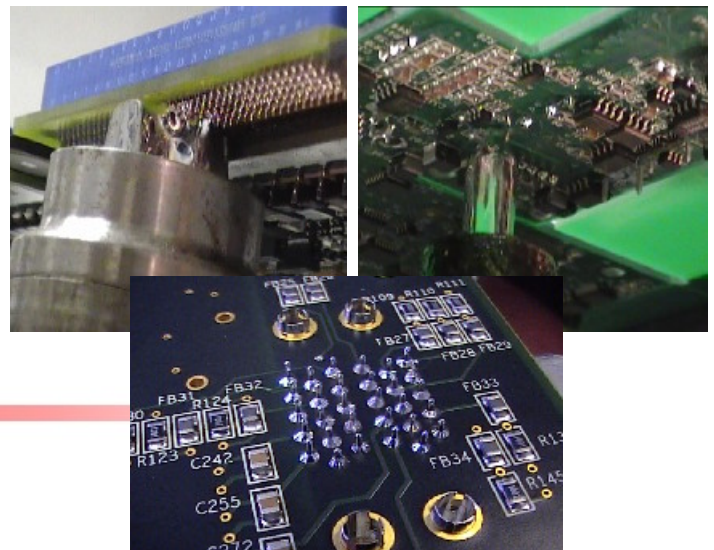
“You can expect a ROI of 2-3 months or less”

PROCESS OVERVIEW:

The operator places the components into the PCB, then applies flux (automated flux application is available, see options). The PCB is placed onto the universal PCB location rails. 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 "look down" laser pointer is used in conjunction with the direction keys to jog the solder nozzle to the start and finish points of each site to be soldered. A simple "enter" at each point creates the program. 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. Then start the cycle.

OPTIONS:

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

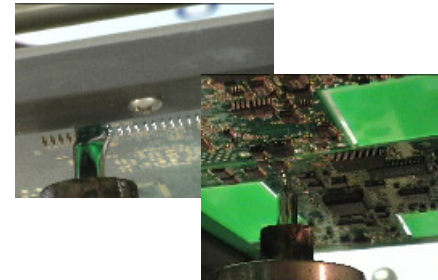
* requires slight operator assist to achieve full 12" in the X axis



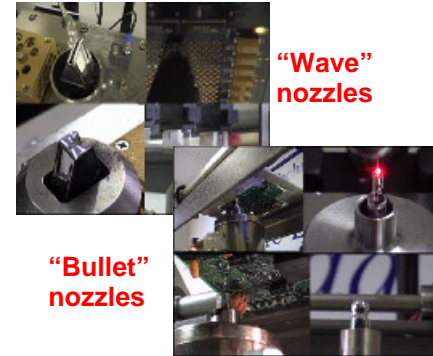
Standard lead alloy pot



"The soldering process"



Optional lead-free alloy pot



SPECIFICATIONS:

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" (distance to adjacent pads) 2mm

Motion

- Z-Axis Accuracy/Repeatability +/- .002" Speed 0-20 inches/min
- X and Y Axis Accuracy/Repeatability +/- .002" 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 36" wide x 36" deep x 28" high
- Weight 275 lbs.

Facilities

- Power 120VAC/1 Ph/60 Hz 15 amps
- Nitrogen 15-50 CFH @ 60-70 PSI
- Exhaust Hood with 350 CFM recommended