



Made in America

The **KISS-103** is a fully configured high Speed Selective Soldering Machine ready to produce "LARGE" PCBs.

KISS-103 Standard Features:

- "Super Quick" motion for fastest processing times
- Will Process PCBs 24" x 18" (600mm x 450mm) unassisted (flux and solder) and up to 48" long PCBs with manual step over
- Universal PCB location rails with motor driven adjustment and multiple board stops for processing several boards together
- Interactive SWAK-OS on machine programming interface (see the SWAK-OS data sheet and video) rapid setup and time to "first production", usually within 10 minutes
- Automated Fiducial Correction
- Board Warp Compensation
- 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) or HMP alloy pot and pump available
- 6mm and 12mm Bullet nozzles
- Programmable solder wave flow rate
- Process witness camera and programming camera
- Automated in process solder wave height check/adjust
- Automated solder pot level check and fill
- 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
- Safety cover with internal lighting and fume vents
- Set-up kit, on site installation and training included
- One year warranty covering the entire machine and two years for the solder pot and pump assembly

Advantages:

The **KISS-103** is a stretched version of the **KISS-102** machine, intended for larger PCBs. The **KISS-103** is used to flux and solder through-hole components on SMT boards within close proximity of adjacent components. This process overcomes the limitations and high labor costs of operator dependent soldering with a truly flexible automated flux application and molten solder delivery system.

The **KISS-103** couples high throughput with precise process controls. The programmable features provide the tools to set all process parameters, including immersion depths, preheat dwells, travel distances and speeds, solder temperature and wave height. Once set, the system will repeat precisely.

The **KISS-103** will out produce five or more operators soldering with an iron while significantly increasing the solder joint quality and to a predictable schedule.

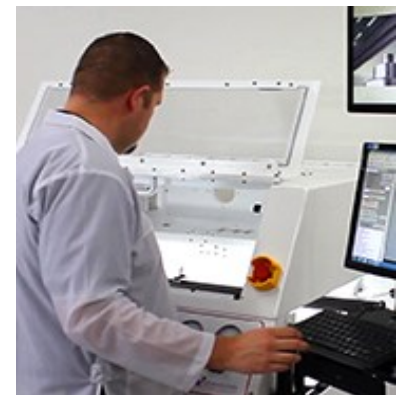
"You can expect a ROI of four months or less"

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 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-103** is designed to selectively solder components such as connectors and through-hole components into "LARGE" printed circuit boards, panels, and other assemblies without disturbing nearby SMT components.

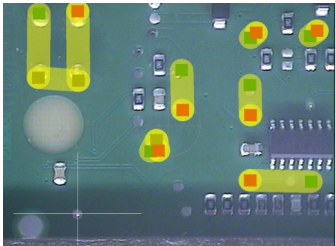


Programming:

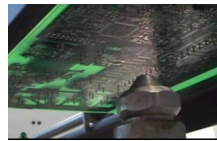
The programming is accomplished by one of two methods on either the machine or with the optional Offline Teach program interface software. On the machine use the set up camera viewed on the monitor and point-and-click method to set the flux and solder pattern in real time. Usually an average board can 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).

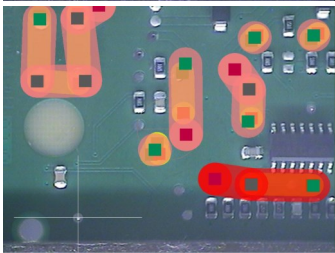
Set the zero point, then choose the flux width and solder nozzle and "paint" the process paths. It is that easy.



Programming the flux paths



Applying the flux



Programming the solder paths

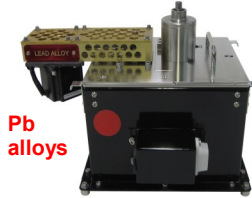


Soldering the components

Options: (see individual data sheets)

- Additional solder pot/pump assemblies for Pb, lead-free or HMP alloys
- Additional Bullet or Wave solder nozzles and W-75 wide wave nozzle for mass wave soldering
- Dual nozzle pot/pump assembly
- Topside Preheat with pyrometer controls*
- Drop Jet precision flux applicator (for no-clean processing)
- Additional witness camera
- Offline programming software
- Barcode reader to verify or change programs
- N₂ (bottom-side) Spot preheater (on single nozzle pots only)
- De-bridging nitrogen jet (on single nozzle pots only)
- Closed Loop Rotary Encoders
- Solder pot exchange cart with pot warmer controller
- Dual monitors (great for simultaneous video feed from cameras)
- Six channel data logger preheat profiler
- Universal PCB location rack with adjustable fingers to hold the PCB in position suitable for processing
- Skyhook fixture with adjustable 'hook' for pulling the bow from the PCB

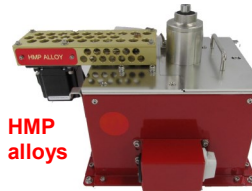
The KISS solder pots (See the KISS-SPA data sheet)



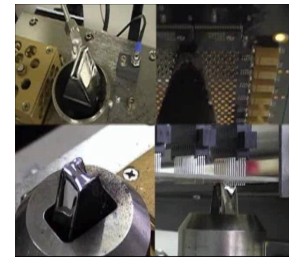
Pb alloys



Pb-free alloys



HMP alloys



Wave nozzles



Bullet nozzles

KISS-103 Specifications:

PCB Panel Size

Minimum	Maximum
2" x 2"	24" x 18"
(50mm x 50mm)	(600mm x 450mm)

(up to 48" long PCBs with manual step over)

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 58" wide x 57" deep x 54" high
(1473mm wide x 1447mm deep x 1371mm high)
- Weight (dry) 930 lbs. (422 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 50 amps
- Air Less than 10 SCFH @ 90(min) to 100 (max) PSI
- Nitrogen 99.999% pure, 30-60 SCFH @ 60 (minimum) to 100 (maximum) PSI
- Exhaust 250 SCFM recommended
(2) 4" dia. Take-offs at rear panel

Compliance: UL