

In-Line Selective Soldering

24" x 18" Platform

(600mm x 450mm)



Made in America

The **KISS-103IL** is a fully configured *In-Line SMEMA compatible* Selective Soldering Machine ready to process "LARGE" PCBs.

KISS-103IL Standard Features:

- SMEMA edge conveyor with program controlled width adjustment, positive PCB location and PCB flattening
- The direction of board movement is left to right unless otherwise specified
- **ACE "Super Quick"** Z-motion control for fastest processing times
- Windows 7 OS with the 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**
- Dual monitors (great for simultaneous video feed from cameras)
- 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 (titanium) and HMP alloy pot and pump available
- **Full set of seven Bullet Nozzles**
- Heated nitrogen to the solder nozzle
- Programmable solder wave flow rate
- Programmable solder pot timer
- Two (2) process witness cameras
- Offline programming software
- Closed loop rotary encoders
- Automated in process solder wave height check/adjust
- Automated spray fluxing system
- Automated solder pot level check and fill
- 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, 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-103IL** performs the soldering of through-hole components to PCBs in a "lights out" in-line process while maintaining the PCB stationary which prevents components from toppling over causing "unset" inter-metallic fillets. The **KISS-103IL** is a fully automated selective soldering machine using the proven traveling mini solder wave. The **KISS-103IL** is used to flux and solder through hole components on SMT boards within close proximity of adjacent components. The **KISS-103IL** 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-103IL** 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-103IL** will out produce six 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 automated process begins with the PCB/panel entering the **KISS-103IL** on the edge rail conveyors built into the system in normal SMEMA fashion. The PCB is clamped flat into location. The **Automated Fiducial Correction** identifies the location of two points on the board and resets the zero start position. The cycle begins by applying flux precisely to all the sites to be soldered. Next the mini solder wave is automatically moved under the components to be soldered. The solder nozzle raises to just below the site allowing the heated nitrogen to preheat the site and activate the flux. The nozzle raises up further, immersing the first of the leads and dwelling for initial "soak". The nozzle travels over the entire site leaving perfect top and bottom-side fillets at each pin. At the completion of the travel the solder pot lowers and moves to the next site. After completing all sites the pot returns to the start position ready for the next cycle, while the completed PCB/panel conveys out, downstream.

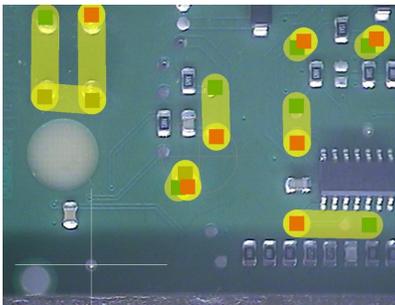


Programming:

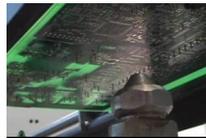
The programming is accomplished by one of two methods, either on the machine or with the optional Offline Teach programming interface software. On the machine use the setup camera viewed on the monitor and point-and-click method to set the flux and solder pattern in real time. Usually an average board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

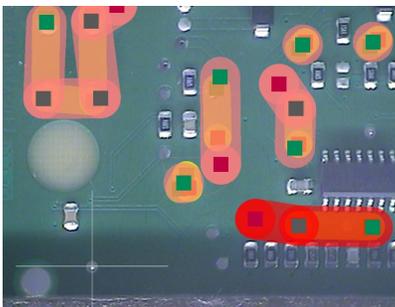
Set the zero point, then choose the flux width and solder nozzle and "paint" the process paths. It is that easy.



Programming the flux paths



Applying the flux



Programming the solder paths



Soldering the components

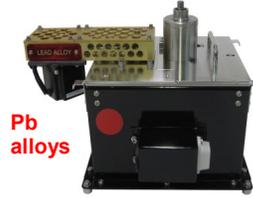
Options: (see individual data sheets)

- 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
- Topside Preheat with pyrometer controls*
- Drop Jet precision flux applicator (for no-clean processing)
- Solder pot exchange cart with pot warmer controller
- Dual nozzle solder pot/pump assembly
- Six channel data logger preheat profiler
- 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)

Compliance:

OSHA, NEC, CE, UL, ULC

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



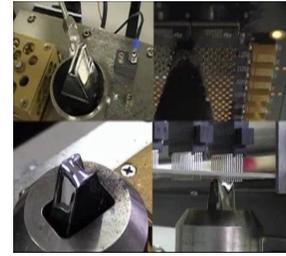
Pb alloys



Pb-free alloys



HMP alloys



Wave nozzles



Bullet nozzles

KISS-103IL Specifications:

PCB Panel Size

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

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 67 wide x 57" deep x 54" high
(1701mm wide x 1447mm deep x 1371mm high)
- Weight (dry) 950 lbs. (431 kilos)

Facilities

- Power

Standard	120VAC/1 Ph/60 Hz 15 amps
Optional	208/230/240VAC/1 Ph/60 Hz 15 amps

*With Preheat/Prep power changes to:
208/230/240VAC/1PH/60 Hz 50 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
(2) 4" dia. Take-offs at rear panel