



Made in America

Model **KISS-105IL**

“Keep It Simple Soldering”

Large In-Line PCB Platform **36”x 28”** (900mm x 700mm)

Advantages:

The **KISS-105IL** is a larger version of our **KISS-103IL** designed to handle the board size and weight of backplanes and other oversized product. The **KISS-105IL** overcomes the labor issues and process difficulties of hand soldering components into thick backplanes. **No more pad damage, inconsistent barrel fill or voids.**

The PCB is processed in a 1” (25mm) border transport carrier which supports and locates the PCB through the **KISS-105IL** process. Like all KISS machines, the PCB is kept stationary during the process preventing components from toppling over causing “unset” inter-metallic fillets.

The **KISS-105IL** 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.

The **KISS-105IL** will out produce 6 or more operators and will pay for itself within 6 months.

Process Flow:

The process begins with the PCB (in the frame) entering the **KISS-105IL** on the edge rail conveyors built into the system in normal SMEMA fashion. 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. Preheating of the top side elevates the PCB to the set temperature and holds temperature throughout the soldering process. Additional fluxing for difficult sites can be programmed. 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, 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 the process the PCB/frame can be returned to the operator or convey out down stream and the next PCB/frame conveys into the **KISS-105IL** in normal SMEMA fashion.

KISS-105IL Standard Features:

- Heavy duty edge conveyor to support the added weight of large backplane PCB's and large tooling fixtures “**Super Quick**” motion for fastest processing times
- The direction of board movement is left to right unless otherwise specified
- Windows 7 OS with the interactive SWAK-OS on machine programming interface (see the SWAK-OS data sheet and video) rapid set-up and time to “first production”, usually within 10 minutes
- Offline programming software
- **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 (all titanium) or HMP alloy pot and pump available
- **Full set of seven Bullet Nozzles**
- Heated nitrogen to the solder nozzle
- Programmable flux deposition
- Programmable solder wave flow rate
- Programmable solder pot timer
- Two (2) process witness cameras
- Closed Loop Rotary Encoders
- Automated in process solder wave height check / adjust
- Automated solder pot level check and fill
- 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
- Two PCB transport carriers
- 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

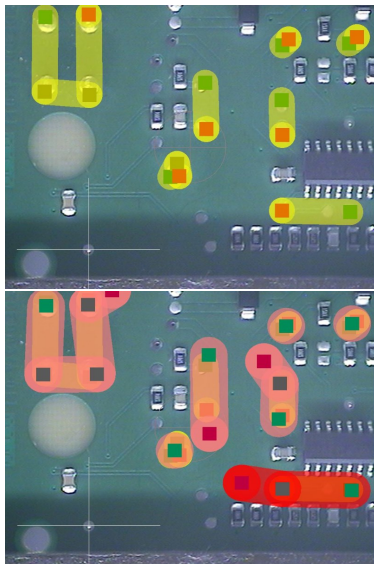
Programming:

The programming is accomplished by one of two methods, either on the machine or with the 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.

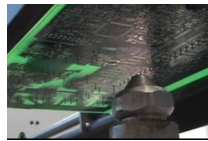
Alternatively, at your desktop import a JPEG (photo) or the Gerber file into the Offline Teach program. Pick the solder nozzle size (this becomes your cursor). Choose the start/stop positions for all devices to be soldered. The process path becomes highlighted and script is created for you. Circular 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

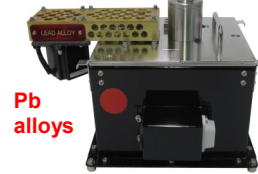


Soldering the components

Options: (see individual data sheets)

- Additional PCB transport frames
- 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
- Drop Jet precision flux applicator (for no-clean processing)
- Topside Preheat with pyrometer controls
- N₂ (bottom-side) Spot preheater (on single nozzle pots only)
- De-bridging nitrogen jet (on single nozzle pots only)
- 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
- In process top side preheat with pyrometer controls

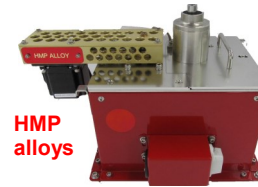
The KISS solder pots: (See the KISS-SPA data sheet)



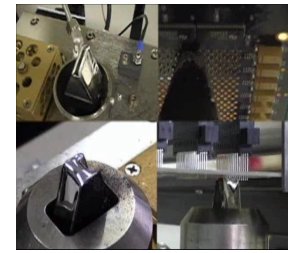
Pb alloys



Pb-free alloys



HMP alloys



Wave nozzles



Bullet nozzles

KISS-105IL Specifications:

PCB Panel Size

- Minimum 2" x 2" (50mm x 50mm)
- Maximum 36" x 28" (900mm x 700mm)
- Thickness up to 12mm
- Weight up to 50 lbs (23 kilos)

Safe "Keep Away" (distance to adjacent pads) 1mm

Motion (Super Quick)

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

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 78" wide x 69" deep x 54" high (1981mm wide x 1752mm deep x 1371mm high)
- Weight 1250 lbs. (570 kilos)

Facilities

- Power: 208/220-240VAC/1 Ph/60 Hz 60 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 350 SCFM recommended (2) 4" dia. Take-offs at rear panel
- Exhaust

Compliance:
OSHA, NEC, CE, UL, ULC