



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, pre-heat 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 2 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 pre-heat 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.

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
- Windows 7 O/S with the interactive SWAK on machine programming interface (see the SWAK data sheet and video) Rapid setup and time to “first production”, usually within 10 minutes
- Offline programming software
- **Automated Fiducial Correction**
- 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
- In process top side pre-heat with pyrometer controls
- Lead alloy solder pot and pump assembly included—lead free alloy (all titanium) and HMP alloy pot and pump available
- **Full set of 7 “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
- 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 pre-heat soak time
- 4 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

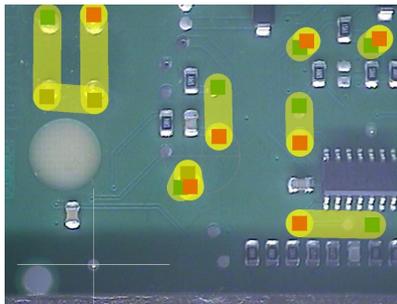
Programming:

The programming is accomplished by one of two methods 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.

Optionally, 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 data sheet and video).

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

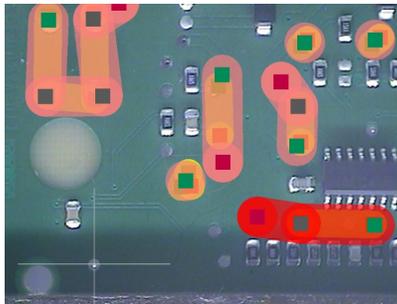
It is that easy.



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, Sn 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)
- De-bridging Nitrogen Jet
- N2 (bottom side) Spot Preheat
- Closed loop position feedback with linear encoders
- Solder pot exchange cart with pot warmer controller
- Dual nozzle solder pot/pump assembly
- 6 channel data logger preheat profiler
- Barcode reader (over conveyor)

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



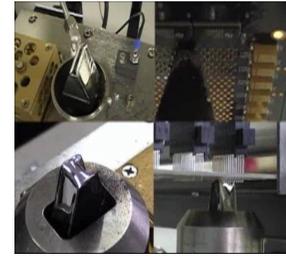
PB alloys



PB free alloys



HMP alloys



"Wave" nozzles



"Bullet" nozzles

KISS-105IL Specifications:

PCB Panel Size

- Minimum 10" x 10" (250mm x 250mm)
- 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 O/S and SWAK 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 208-230VAC/1 Ph/60 Hz 60 amps
- Air 90 (minimum) to 100 (maximum) PSI
- Nitrogen 99.999% pure, 30-50 CFH @ 60 (minimum) to 100 (maximum) PSI
- Exhaust 350 CFM recommended
(2) 4" dia. Take-offs at rear panel

Certification of compliance:

OSHA, NEC, CE, UL, ULC

Call for a free video of the KISS machines and the selective soldering process