

UNICOTE-Finishes



HSL-175 LEAD FREE

Lead Free Horizontal Solder Leveling Service introduced by UNICOTE-Halco.

All the benefits of **Horizontal Solder Leveling** combined with **RoHS compliant** Lead Free Solder in a **High Quality, High Volume, 1 Day*** service.

UNICOTE-Finishes features the **UNICOTE-Halco HSL-175 Solder Leveler** and **NIHON SUPERIOR SN100C(L)** as supplied by Florida CirTech, Inc (www.floridacirtech.com).

Our process is compatible with all circuit processing from flexible to rigid up to .250" thick.

The **UNICOTE-Halco** horizontal process allows re-soldering of routed inventory to a lead free surface.

Preheat through Cool Down, the HSL-175 maintains a consistent thermal profile with minimal thermal shock.

Strict process standards allow surface mount pads to be uniformly coated to a thickness controlled within a 3 sigma standard deviation.

*In by 10:30 am (EST), out by close of business day.

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Features

Horizontal Solder Leveling Systems

The UNICOTE-Halco advantage in lead free processing:

The UNICOTE HSL 175 addresses concerns in the PWB industry of multiple thermal excursions and uncontrolled temperatures by providing a system that controls the temperature profile of the entire leveling process.

Lead Free & Tin/Lead Systems Available

The UNICOTE-Halco process advantage:

The HSL-175 lead free process: After pre-cleaning, boards move into the infrared preheating module. In the automatic temperature sensing mode, panels pause during heating, and then advance into the fluxer/leveler module only when the desired temperature has been achieved. Flux is uniformly applied on the preheated panels before they pass through the solder chamber. The high transport speed of the HSL 175 assures dwell time in solder is kept to a minimum. That, combined with a preheated core minimizes the opportunity for thermal shock and excessive z axis expansion. The controlled exposure to temperature translates to fewer barrel cracks and lifted pads. Intermetallic compound growth is kept to acceptable levels and delamination is obviated.

Economical Horizontal In-Line Leveling

The UNICOTE-Halco quality advantage:

The higher process temperatures and reduced surface tension of lead free solder contribute to improved SMD pad quality. Molten solder flows readily over the pad surface improving the distribution of lead free solder on the pad surface over that of leaded solder.

The typical solder thickness on the most critical feature of a SMT board is controlled within 200 to 400 micro inches with 3 sigma standard deviation.

Quality Machine, Quality Finish

The Unicote-Halco customer advantage:

All of the points listed above combined with the horizontal hot air leveling process allows you to provide your customer with a product that will consistently provide superior performance at assembly.



Preheater

Infrared
Panel Temperature Control
Mode 1: Adjustable Power & Speed
Mode 2: Stop mode With Adjustable Power & Speed
Conveyor Width = 24" (610 mm)
48" Standard Length (1220 mm)
60" Extended Optional Length (1525 mm)
81" Extended Optional Length (2060 mm)

Fluxer

1 Chamber, 1 Sump Section
Single Immersion Application
EDPM Roll Type

Air Heater

1 Heat Exchanger on Cart

HSL Conveyor

24" Maximum Effective Width (610 mm)
15 FPM Speed, Adjustable
Tapered Roll Conveyor

Leveler

Solder Tank Capacity - 600 lb (270 kg)
Solder Circulation: 1 Pump Feeds
SDS Manifolds
Solder Pumps = 1 Adjustable Pulley
Inverter Pump Optional
Solder Dwell Time = 2.5 seconds

Air Knives

Unicote® Air Knives With Precision Adjustments

Cooling System

Airbed
4' Length (1220 mm)
No Stops or Delay Mechanism
1 Stop/Delay Optional

Capabilities

175 Panels Per Hour
Min. Panel Size=12" x 12" (305 mm x 305 mm)
Max. Panel Size=18" x 24" (460 mm x 610 mm)
Max. Angle of Max. Panel Size = 22°
Panel Thickness=
.015" - .125" Standard (.40 mm - 3 mm)
.004" - .015" (.10mm - .40 mm)*
and .125" - .250" (3 mm - 6 mm)*
*with special processing
Typical Plated Through Hole
Reduction = .001" - .003" (.025 mm - .075 mm)

HSL-175

Horizontal Solder Leveling Systems

Technical Data

Electrical Standards - Standard HSL-175

Energy (Maximum)	72 kw/system
Standard Voltages	HSL 240 VAC, 3 phase, 60 Hz other voltages require transformers
Current	175A @ 240 VAC, 50 HZ
Main Disconnect	200A @ 240 VAC

Compressed Air Requirements

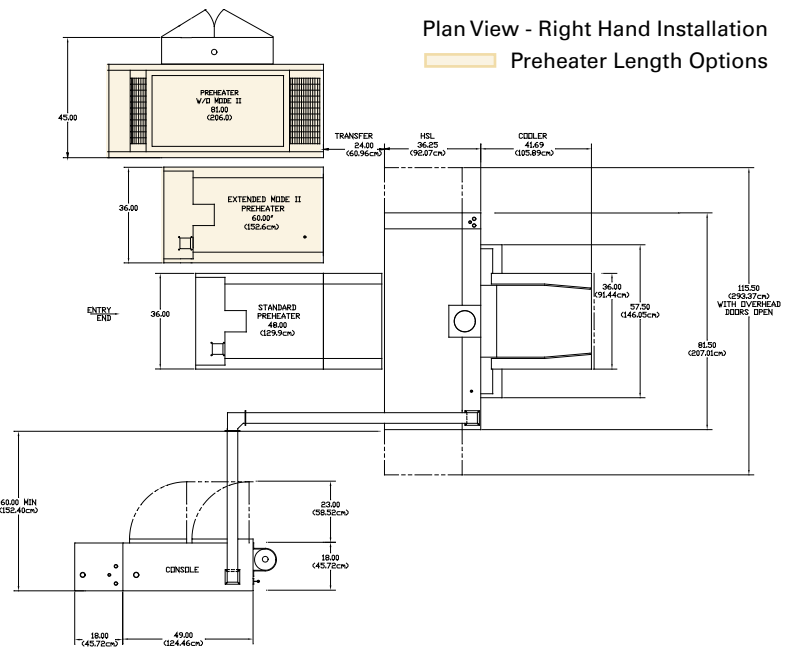
Supply Volume	75-150 std. cu. ft./minute 2-4 std. m ³ /minute Equivalent 50 HP
Supply Pressure	100 PSI 8 BAR

Exhaust

800-1600 cu. ft./minute
22-44 m³/minute
800 cu. ft./minute
(absolute minimum for HSL only)
1600 cu. ft./minute exhausts
heat and fumes for total
system Damper Required

Weights

Solder Tank Capacity	600lb.	270 kg
Estimated Shipping Weight	8200 lb	3720 kg



UNICOTE-HALCO PRODUCTS
WSL-375A WSL-375M HSL-350 HSL-175

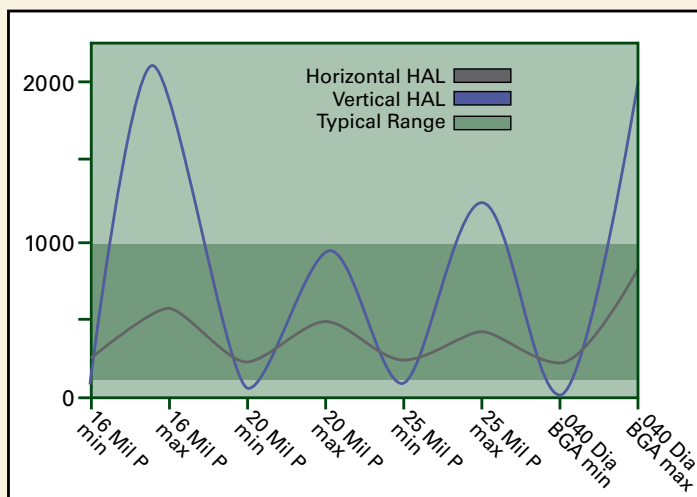
Compare horizontal versus vertical solder leveling...

When dealing with identical SMD pad configurations with a mean solder thickness of 200-300 millionths of an inch, the Unicote® system yields results with a typical standard deviation of only 50-60 millionths. Compare this to vertical processes that have standard deviations well over 200 millionths in the same thickness range.

Knife angle improves quality...

Processing panels at an angle through an air knife improves solder distribution within a pad and improves coplanarity across a panel. Unicote® solder quality standards are explained in greater detail on our website at www.unicote-halco.com. Horizontal controlled angled HAL processing insures customers high quality solder coating. Uniform coating of solder provides assemblers higher yields.

Horizontal Vs Vertical HAL Capability



HSL -175 Thickness Distribution

