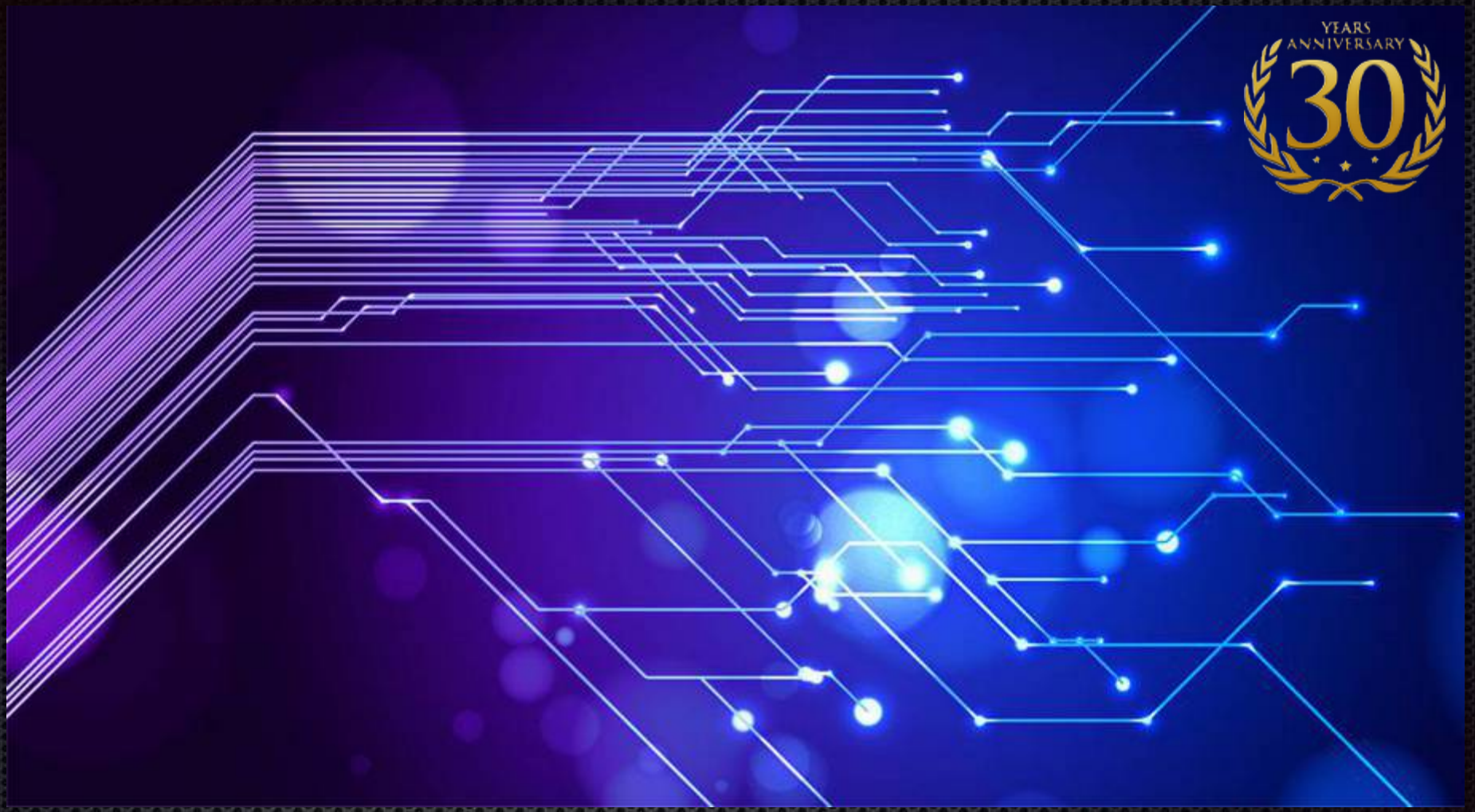


IBL TECHNOLOGIES'

VAPOR PHASE REFLOW SOLDERING SYSTEMS SOLVE PRODUCTION CHALLENGES

IBL

WHY CHOOSE IBL VAPOR PHASE SOLDERING SYSTEMS?

- Lowest possible soldering temperatures
- No overheating of components - Fluid boiling point = max temperature
- Low delta T's throughout the assembly
- Oxygen free soldering without the use of nitrogen
- Reduce energy consumption by 50 %
- Fastest setup and changeover times

A Vapor Phase Solution For Every Need

Products are getting smaller, yet more powerful, often combined with void-free requirements.The combination of heavy mass and smaller components in an ever smaller footprint poses a challenge for for conventional convection reflow soldering. Add the higher temperatures required for lead-free reflow, the challenges of profiling in a high mix environment and the operating costs associated with conventional convection reflow and you have quality, resource and cost pressure. IBL Technologies' vapor phase reflow soldering equipment has been designed to addres all of these challenges.

The Optimum Solution for RoHS-Products

Lead-free soldering requirements combined with higher density PCBA designs continue to challenge manufacturers. Other reflow methods use temperatures of **260˚C** or higher, in which case steam pressure in plastics and laminates can cause the PCB surface to delaminate or popcorn. With lead-free soldering a PCBA temperature of at least **250˚C** is likely.

IBL Technologies' vapor phase soldering equipment offers a lower temperature solution. Comparatively, the recommended maximum temperature of vapor phase reflow of SnAgCu solder is **230˚C**, as the melting point of that solder is **221˚C**

QUALITY IS NOT EVERYTHING, BUT WITHOUT QUALITY EVERYTHING IS NOTHING!

IPC

ISO 9001
EINGETRAGENE FIRMA

Improved Solder Joint Quality

Vapor Phase technology helps minimize voids and tombstoning by using temperatures in the **217-227°C** range even for RoHS-compliant assemblies. There is equal heat distribution because the PCBA is immersed in a vapor blanket with perfect wetting properties due to the inert environment.

IBL's patented Soft Vapor Temperature Control (SVTC) mode supports the creation of customized profiles that reduce the ramp rate down to **0.7/sec.**, after the assembly reaches **200°C**. The assembly is driven by temperature set points and will not exceed the maximum programmed temperature or the boiling point of the fluid. This ability to control the speed of immersion and position in the vapor blanket limits tombstoning. The combination of SVTC soldering with a vacuum process creates a thermal soaking zone that produces void-free, high quality solder joints. IBL's vacuum vapor phase soldering system operates in an inert atmosphere throughout the entire reflow and vacuum process.

Reduced Costs

- Nitrogen is unnecessary because the vapor blanket creates an inert environment
- Power consumption is less because 98 percent of the machine's heat is focused on heating in PCBA rather than the factory
- IBL machines have a very good vapor recovery system so loss of Galden fluid is minimal
- Machine footprints are smaller
- IBL vapor phase machines freeing up factory floor space
- Preventative maintenance is only required once or twice a year for IBL machines, which reduces technician workload and increases capacity
- The best profile window is broader and IBL's software enables rapid new product profiling, providing a fast changeover option for high mix production
- SVTC temperature-driven profiles reduce the number of profiles required, enabling new products to be run with existing profiles and reducing production start-up time dramatically

LAB, BATCH AND HIGH VOLUME

Batch Soldering Machines

- The **MiniLab** table top machine is ideal for laboratory use and prototyping operations
- The **SV260** and **SV540** economy series is perfect for small to medium production requirements
- The premium **BLC** systems satisfy the highest demands for process stability and flexibility in the smallest footprint and incorporate IBL's Soft Vapor Temperature Control (SVTC)

Vacuum Vapor Phase Machines

- Vacuum soldering technology provides maximum solder quality for void-free soldering
- The **VAC745/VAC765** machines are available as batch or inline vapor phase systems

Inline Soldering Machines

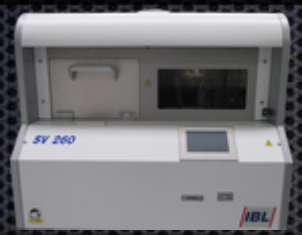
The **CX600** and **CX800** machines offer the highest quality for medium to high throughput and incorporate IBL's Soft Vapor Temperature Control (SVTC).

ECONOMY BATCH EQUIPMENT

MiniLab Features

- Ideal for development, prototyping and mini series production
- Board sizes up to **300 x 275 x 80 mm**
- Desktop unit
- Easy operation due to soldering automatic and patented process
- Low energy and fluid consumption with integrated heat exchanger
- 230 V operation
- Maintenance-free transport system

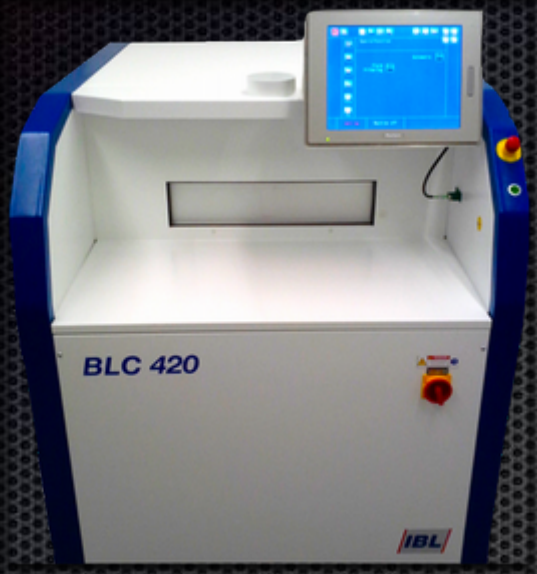
SV260 Economy Unit Features



- Optimized for laboratory operation, prototyping and small series production
- Board sizes up to **300 x 260 x 80 mm**
- Desktop unit with easy front loading
- Low energy and fluid consumption with 2-chamber design and integrated heat exchanger
- Professional operator panel automated soldering program storage
- Easy profile recording option
- 230 V operation
- Maintenance-free transport system

SV540 Economy Unit Features

- Powerful unit for single and serial production
- For large board sizes up to **560 x 360 x 80 mm**
- Low energy and fluid consumption with
- 2-chamber design and integrated heat exchanger
- Small footprint
- Touch panel and automated soldering process provide ease of operation
- Maintenance-free transport system
- Integrated fluid filter system



BLC PREMIUM UNITS FEATURES

- Highest precision and process quality with patented Soft Vapor Temperature Control (SVTC)
- PC-System with 15“ touch-screen
- Built-in software profiling capability
- Production data can be stored for traceability
- Temperature-regulated profiles lead to a repeatable process
- Lead-free and leaded soldering with one fluid only, with different maximum temperatures
- Maintenance-free transport system
- Optional inline-handling (upgrade possible)
- Machine types for board sizes from **450 x 540 x 80** mm up to **840 x 540 x 80 mm**
- Special sizes available on request
- Low energy and fluid consumption with 2-chamber design and integrated heat exchanger
- Low maintenance due to cool handling (all moving parts outside process chamber)
- Small footprint
- Optional patented Rapid Cooling System (RCS) for reduced cycle time and heat reduction of sensitive parts

CX600/CX800 FEATURES

- Fully automatic inline operation
- Built-in software profiling capability
- Production data can be stored for traceability
- Temperature-regulated profiles lead to a repeatable process
- Three internal process chambers with automatic airlocks
- Easy programming of solder data via intuitive touch screen display
- Optional uninterrupted power supply
- Two independent stations for loading and unloading of carriers via IBL's cool handling system (no moving parts in the process chamber)
- A cycle time of under **20 sec.** per board is possible
- Energy management system includes standby mode for lower energy consumption
- Maintenance-free transport system
- Carrier size from **680 x 650 x 80 mm** up to **825 x 650 x 80 mm**

VAC745/VAC765 FEATURES

- Patented vacuum system in the vapor phase for void-free soldering
- PC-System with 15“ touch-screen
- Built-in software profiling capability
- Production data can be stored for traceability
- Temperature regulated profiles leads to a repeatable process
- Low process temperature and time optimized vacuum process
- Highest precision and process quality with patented Soft Vapor Temperature Control (SVTC)
- Optional inline-handling (upgrade possible)
- Low energy and fluid consumption with 2-chamber design and integrated heat exchanger
- Board sizes from **635 x 440 x 70 mm** up to **635 x 640 x 70 mm**
- Low maintenance due to Cool Handling (all moving parts outside process chamber)
- Optional patented Rapid Cooling System (RCS) for reduced cycle time and heat reduction of sensitive parts
- Maintenance-free transport system
- Versatile automatic profile editing using the pilot mode (set-up and profiling in one step)
- Easy touch screen control
- Small footprint

GROWING INSTALLED USER BASE

Improvements in materials and machines have made vapor phase soldering a viable alternative to convection soldering systems. RoHS requirements and miniaturization have increased demand as manufacturers have seen the advantages it offers in terms of lower temperature and more even heating. Today, there are more than **500** systems installed in North America, more than **1000** in Europe and **300-500** in Asia. Both original equipment manufacturers (OEMs) and electronics manufacturing services (EMS) companies are adding the technology.

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