1809 MARK III

HELLER INDUSTRIES

MARK III SERIES REFLOW SYSTEM

Advanced Technology for Demanding Processes

TWO VISION AWARDS FOR NEW PRODUCT INNOVATION, TWO MARKET LEADERSHIP AWARD, TWO SERVICE EXCELLENCE AWARDS,

Common To All Heller Reflow Ovens

- Pure forced convection heating
- Advanced Windows operating system with Data logging, Alarm logging and GEM / Secs Host Computer interfacing option
- 5 T/C Profiling with KIC or ECD software
- Signal light tower
- Calendar startup
- 350° Operating temperatures
- 400° and 450° options
- Edge hold conveyor / Mesh belt option
- Nitrogen option with < 1000 SCFH@40PPM
- GEN 5 Filterless / Waterless cooling option
- Nitrogen retrofit option
- RMATS-Remote monitoring and technical Support option
- UL/CE configuration option
- Lead-Free processing capability
- Dual edge hold conveyor option

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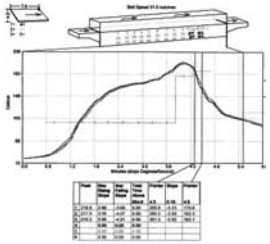
Advancements like the invention of the first waterless / filterless flux separation system earned Heller the prestigious Vision Award for Innovation in soldering. But more importantly, this development extended preventative maintenance intervals from weeks to months.
Now, the latest breakthroughs associated with the MK III reflow system provide even lower cost-of-ownership for our customers. The new heating and cooling technologies deliver up to 40% reduction in nitrogen and electrical consumption. This makes the MK III system not only the premier soldering system but the best overall value in the industry !

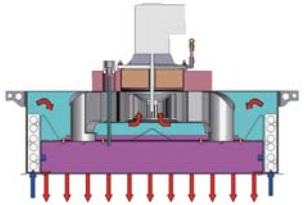
Ultra-Parallel Conveyor System

Four (4) lead screws ensures the tightest tolerances and parallelism-even on boards with 3 mm clearance at the edges!



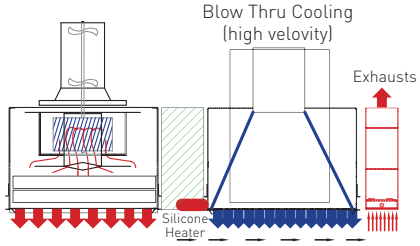
Enhanced Heater Modules

Enhanced heater modules "blanket" the PCB with heat for the lowest Delta Ts on the toughest boards! Additionally, the Uniform Gas Management system eliminates "net fl ow" which results in nitrogen consumption reductions of up to 40%!



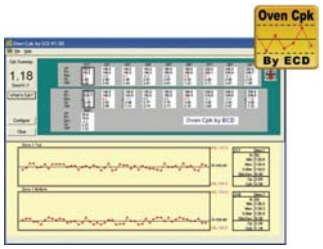
Fastest Cooling Rates

The new blow thru cooling module provides cool rates of >3 deg C/Sec - even on LGA 775! That rate meets even the most demanding Lead Free Profi le requirements!



Process Control

Powered by ECD, this innovative software package provides three levels of process control from Oven CpK, to Process CpK and Product Traceability, this software ensures that all parameters are optimized and SPC reporting is fast and easy.



A Heller Exclusive !

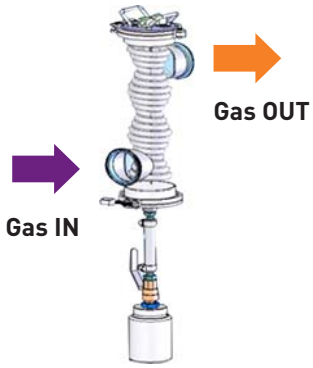
Heller's 10" (250 mm) long heater modules are 2" (50 mm) narrower than our competitors so we can provide more modules than anyone in the industry! More modules means more process control and a 17% lower liquid time for the tightest tolerances of all!

New Flux System Virtually Eliminates Maintenance

This new fl ux collection system traps the fl ux in a separate collection box with easy to remove plates. As a result, the oven tunnel is kept clean - thus saving time consuming P.M.A collection jar captures the flux and can be removed while the oven is running for the ultimate in time savings!

New Frame

More than simply beautiful, this new frame utilizes twice the insulation. This reduces heat loss and saves up to 40% on electricity costs!



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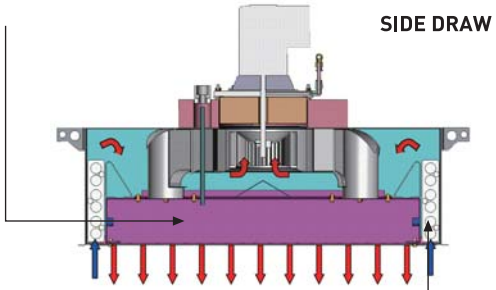
Balanced Flow Modules for MKIII With SIDE DRAW GAS FLOW

New Flux System Virtually Eliminates Maintenance

Heat Modules MKIII Series

Thermocouple measuring ONLY the gas temperature released to the process chamber.

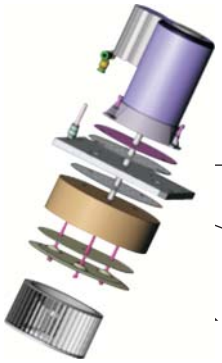


Low-Mass Heater-elements located at the front and rear of the module – away from the process area.

Blower Assemblies MKIII Series

MKIII

Nitrogen blower assembly With teflon seals for Nitrogen containment – Eliminates N2 bleed and Reduces N2 consumption



Convection Heat Zone

Convection Flow Statistics.

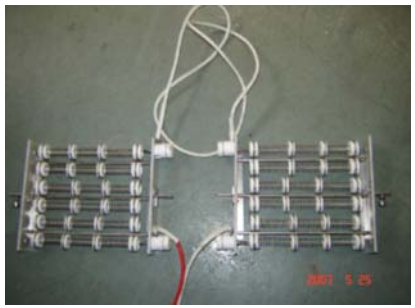
- Mass Flow: 4.53cu.m/min of Process Gas
- Wafer Level Velocity: 426.7m/min of Process Gas
- Motor is rated for over 70.000 hours
- Replacement Motors are pre-balanced
- 3-year Warranty

Heater Position MKIII Series

Heaters elements have A 6000 W Capacity. Open weave coil heaters for same quick response to variation in oven loading and for Quick profile changeover.

B. MKIII oven

D. MKIII oven



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Photos-1809 MKIII

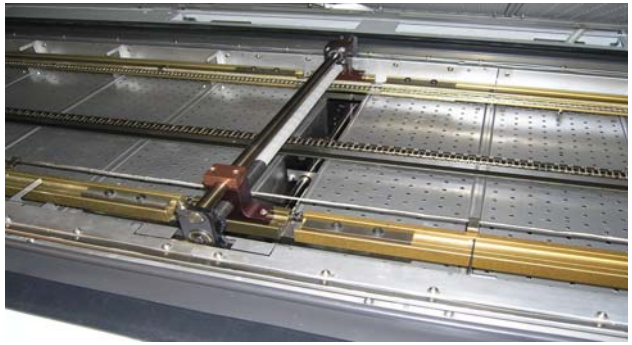
Blowers on the Cooling Module
• Combination conveyor – EHC and Mesh Belt
• EHC rails Auto-Lube valves • Auto-Lube Reservoir
• EHC and CBS • EHC, CBS and Mesh Belt
• Nitrogen features at Oven Entrance
• Cool Zones inside a Nitrogen oven
• Keyboard and control panel
* Power adjust EHC width control * E-Stop
* Reset button * Thermocouple sockets – 5 on 1809MKIII

• Air Exhaust consists of 2 blowers • Ambient air intake
• Hot air exhaust

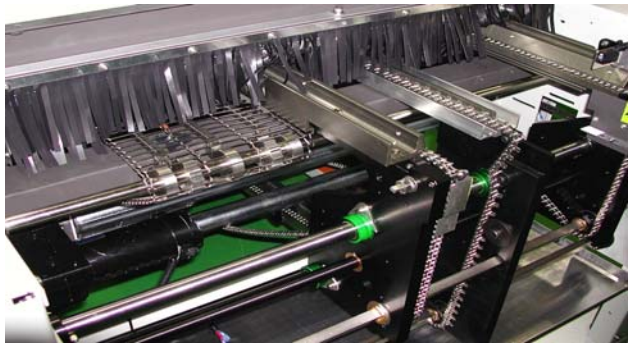
• Edge conveyor & Mesh belt combination
• Automatic lubrication solenoids for edge conveyor

Edge Hold Autolube MKIII Series

Auto-lube Reservoir Mounted On Rear Of Oven Lid. For Easy Access.



Edge-Hold conveyor and Center board support with center lead-Screw assemblies



CBS / Mesh belt combination

• Center board support 'Z' Axis air cylinder actuated
• Edge-Hold conveyor Auto-lubrication valves • Entry exhaust

• 1809MKIII N2 oven 3 internal cool Zones • Thin Sled CBS
• Exit exhaust

• Key operated hood lift •Key operated edge conveyor power adjust
• 5 Built In thermal profile T/Cs

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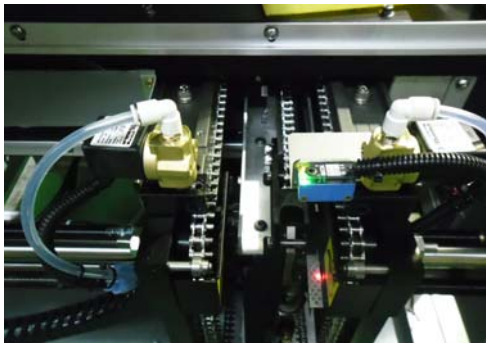
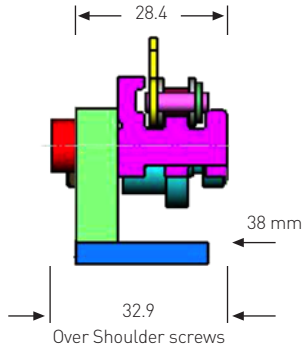






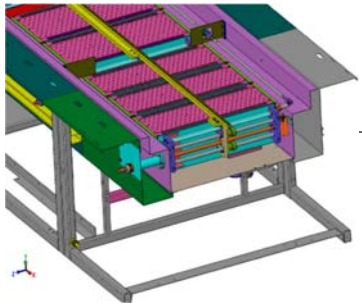

Thin Profile CBS With Center Lead Screw

- Thinner mechanism allows for smaller minimum board width
- Less mass below board for smaller thermal impact
- Will maintain 0.080" (3 mm) straightness with center lead screw
- Minimum board width remains at 85 mm with the Thin-Sled.



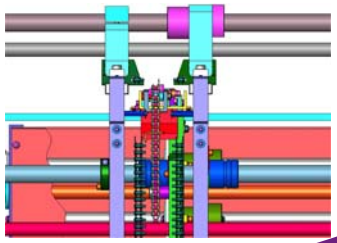
CBS With Center Lead Screw

- High precision adjustment and parallelism
- Will stay within 3 mm lane on 1800 & 1900 models
- Lateral Adjustment without Tools



Cut away drawing of Lead screw cartridge For CBS assembly

Thin Profile CBS-Optional 50 mm Minimum board width



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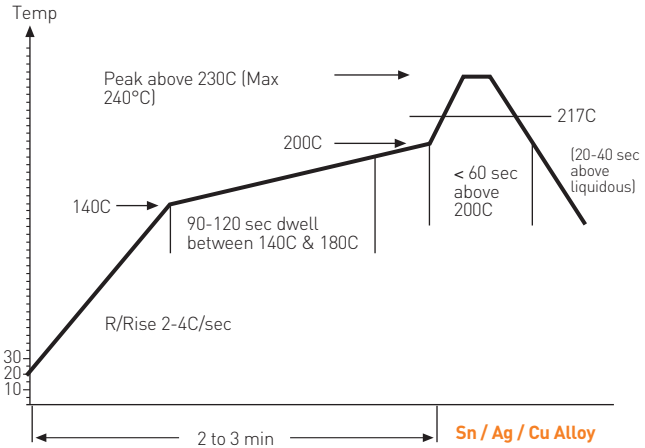
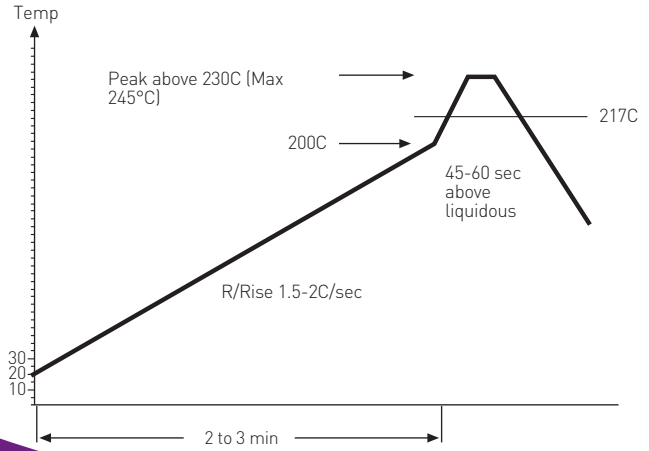
Oven Layouts How Many Zones Do We Need?

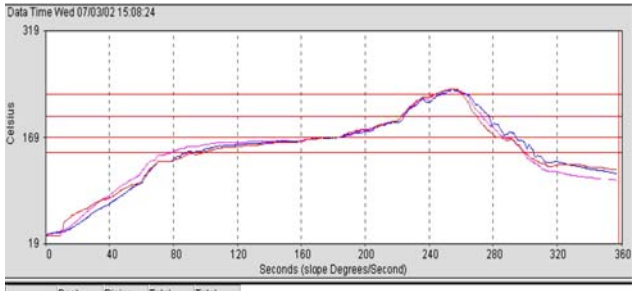
- Multiple short zones to give profile flexibility
- Short zone length 250 mm or 300 mm
- 6kw available power per zone
- Zones top and bottom to give profile stability and repeatability

The Evolving No-Lead Profile



The Evolving Profile Tent Shape



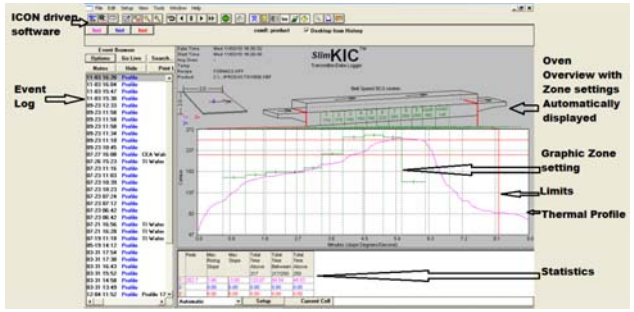


	Peak	Rising Time Between 150/170	Total Time Above 200	Total Time Above 230
1	239.3	102.52	49.94	20.04
2	238.5	94.51	52.69	16.48
3	238.8	82.40	46.82	17.83
TC Range	0.9	20.11	5.87	3.56

Heller Models

- 1809 MKIII – 5 On-board Profiling ports
- Optional – Additional Profiling ports

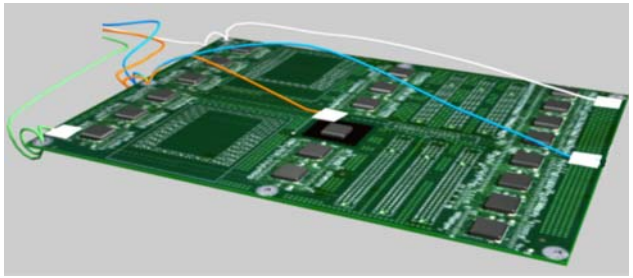
Software Overview



Heller / KIC Functions

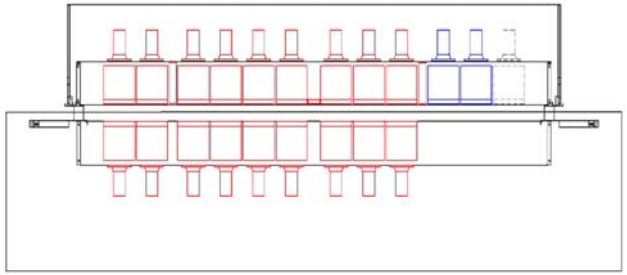
- KIC application configured to the OVEN type
- Oven settings transfer to the KIC thermal profiling application automatically, via software bridge
- Real-time display of the Thermal Curve as the PCB progresses through the oven
- KIC Prediction can recommend oven zone settings
- Predicted Settings from the KIC application can be loaded back to the Heller oven via the software bridge

Thermocouples Mounted To The PCB Connect Directly To The Heller Reflow Oven



Model 1809 MARK III Configuration

MKIII 1809 NITROGEN IS FULL CONVECTION AND HAS OPTIONAL 3RD COOLING ZONE



Total Lenght	Heated Lenght	Typical Belt Speed
4.65 m	2670 cm	85 cm / min

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	1809 MKIII (Air)	1809 MKIII (Nitrogen)
Electric Supply		
Power Input (3 Phase) Standard	480 Volts	480 Volts
Breaker Size / KW	100 amps @ 480v / 7.5 - 16 Continuous	100 amps @ 480v / 7.5 - 16 Continuous
Typical Run Current	20 - 35 amps @ 480v	20 - 35 amps @ 480v
Optional Power Inputs Available	208 / 240 / 380 / 400 / 415 VAC	208 / 240 / 380 / 400 / 415 VAC
Frequency / Sequential Zone Turn On	50 / 60 Hz / S	50 / 60 Hz / S
Dimensions		
Overall Oven Dimensions	465 (L) x 137 (W) x 160 (H) cm	465 (L) x 137 (W) x 160 (H) cm
Typical Net Weight	4350 lbs. (1970 kg)	4550 lbs. (2060 kg)
Typical Shipping Weight	5500 lbs. (2490 kg)	5850 lbs. (2650 kg)
Typical Shipping Dimension	195" x 73" x 77"	495" x 185" x 195"
Computer Control		
Amd Or Intel Based Computer	S	S
Flat Screen Monitor W/Mount	S	S
Windows Operating System	Windows 7® Home Premium	Windows 7® Home Premium
Auto Start Software / Data Logging	S	S
Password Protection / Lan Networking	S / O	S / O
Inert Atmosphere		
Minimum Ppm Oxygen	-	10-25 PPM*
Waterless Cooling W/ Flux Separation System	-	O
Nitrogen On / Off Valve	-	O
Oxygen Monitoring System	-	O
Nitrogen Standby System	-	O
Typical Nitrogen Consumption	-	500 - 700 SCFH **
Additional Features		
Kic Profiling Software	S	S
Signal Light Tower / Powered Hood Lift	S	S
Five (5) Thermocouple Profiling	S	S
Redundant Alarm Sensors	O	O

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	1809 MKIII (Air)	1809 MKIII (Nitrogen)
Additional Features		
Intelligent Exhaust System	O	O
Kic Profiler / ECD Profiler	O	O
Center Board Support / Board Drop Sensor	O	O
Board Counter / Bar Code Reader	O	O
Custom Paint & Decal	O	O
Battery Backup For Conveyor And Pc	O	O
Gem / Secs Interfacing	O	O

*May require additional hardware to achieve these levels ** Varies with PPM, PCB size and oven configuration

Mesh Belt Conveyor		
Height From Floor	90 cm + 5 cm	90 cm + 5 cm
Maximum PCB Width **Requires Wider Heat Modules	56 cm / 61cm **	56 cm / 61cm **
Space Required Between Pcb's	0.0 cm	0.0 cm
Conveyor Length On-load	46 cm *	7.5 cm *
Conveyor Length Off-load	46 cm *	7.5 cm *
Heated Tunnel Length	254 cm	254 cm
Process Clearance Above Mesh Belt	5.8 cm	5.8 cm
Mesh Belt Pitch	1.27 cm	1.27 cm
Maximum Conveyor Speed	188 cm / min	188 cm / min
Conveyor Direction Left To Right	S	S
Conveyor Direction Right To Left	O	O
Conveyor Speed Control	Closed loop	Closed loop
Edge Hold Conveyor System Option		
Height From Floor - Standard	94 cm + 5 cm	94 cm + 5 cm
Height From Floor - Optional	83 cm + 10 cm / -1 cm	83 cm + 10 cm / -1 cm
Clearance Above & Below Conveyor Pins	2.9 cm	2.9 cm
Length Of PCB Support Pins	4.75 mm	4.75 mm

	1809 MKIII (Air)	1809 MKIII (Nitrogen)
Edge Hold Conveyor System Option		
3 mm Long Support Pins	O	O
Minimum / Maximum Board Width	5 - 46 cm, 56 cm optional	5 - 46 cm, 56 cm optional
Power Width Adjustment	S	S
Computer Controlled Width Adjust	O	O
Auto Lubrication System	O	O
Forced Convection Zones		
Top & Bottom	9	9
Heater Type	Instant response open coil	Instant response open coil
Heater Material	Nichrome	Nichrome
Profile Change Time	5 - 15 minutes	5 - 15 minutes
Temperature Control		
Accuracy Of Temperature Controller	+ .1 °C	+ .1 °C
Cross-Belt Temperature Tolerance	+ 2.0 °C	+ 2.0 °C
Heater Wattage Per Zone	6000 W**	6000 W**
Temperature Range Standard	60 - 350 °C	60 - 350 °C
High Temperature Up To 450°C	O	O
Cooling Systems		
Number Of Cooling Zones Standard	2	2
Additional Cooling Zones	O	O
Water Cooling	-	O

Notes: S = Standard, O = Optional. * A 12" (30 cm) Conveyor extension is an available option
** 380V heater wattage 4800 Specifications continue on reverse.
A continuous program of product improvement may result in changes to specification and performance.
The right is reserved to institute these improvements without notice or liability. January 2012

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Grup Endüstri Otomasyon
Ticaret ve Sanayi Limited Şirketi

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GSC GLOBAL SERVICE CENTER
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