

**Conceptronic**  
DIVISION OF CVD EQUIPMENT CORPORATION

**HVA<sup>HT</sup>120**

rediscover  
**rediscover Conceptronic**



Conceptronic HVA<sup>HT</sup>120 (High Velocity Air) Series forced convection ovens are designed for SMT mass reflow soldering, Sn-Pb as well as Pb-Free alloys including epoxy, adhesive, and encapsulant curing. Tight uniformity and repeatable computerized control guarantees good solder joints today and many years to come.

**rediscover**  
**The best of Conceptronic.**

The Conceptronic HVA<sup>HT</sup>120 ovens improved the great thermal performance that made Conceptronic original HVC ovens preferred by engineers for Automotive, Telecommunications, Medical, Military, and Semiconductor industries.

- 125% more heated length per zone.
- 100% linear convection
- Controlled convection flow
- Simple flux management
- Cooling above and below the product
- More standard features – Battery back-up, Redundant thermocouple over temperature protection, Motorized conveyor adjust, Scheduled auto-start, SPC logging, Current limiting soft-start.

**Conceptronic. We make technology simple.**

## discover

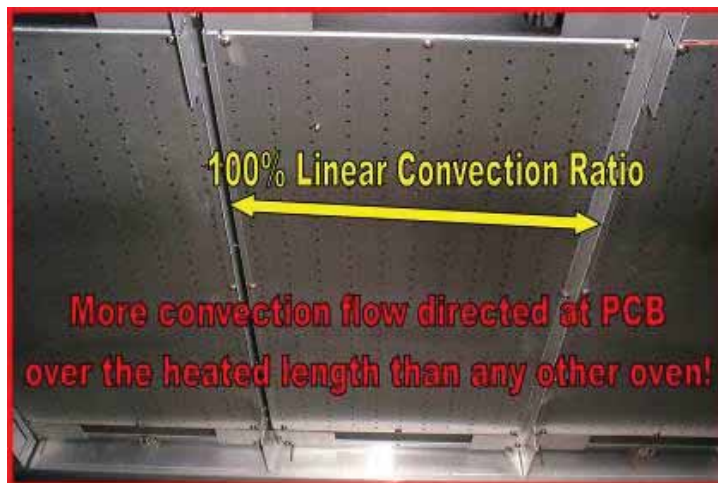
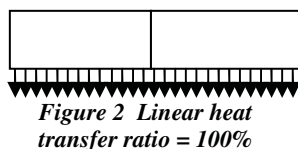
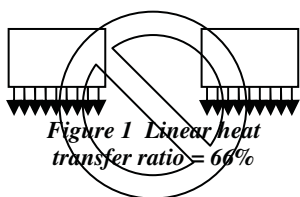
### Discover the highest convection rates.

- Process PCB's with low setpoints and tighter process windows.
- Process a wide range of PCB types with minor recipe changes.

## discover

### Discover 100% linear convection ratio.

- Direct more flow at the PCB per zone than any other oven for better profiles.



## discover

### Discover controlled convection flow.

- Maximize velocity and angle transferring heat to the board to avoid component shift.
- Control recirculation flow – “first in, first out” to minimize process contamination and flux condensing on warm heater cavity parts.
- Control flow from cooling into reflow, so process gas is cleanest where the solder joint is formed and flux does not condense in cooling.

## discover

### Discover simple flux management.

- Minimize recirculation loops for cleaner process atmosphere, and lower maintenance heating tunnel.
- Filter out flux in powered exhaust ducts prior to factory ductwork.



## discover value



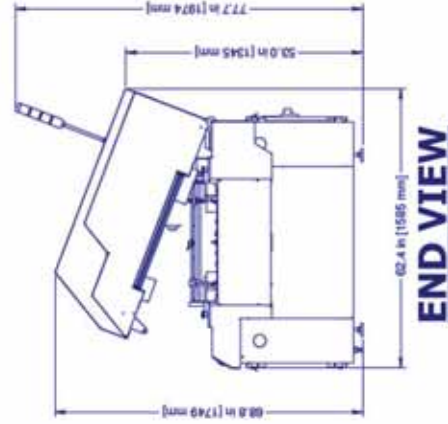
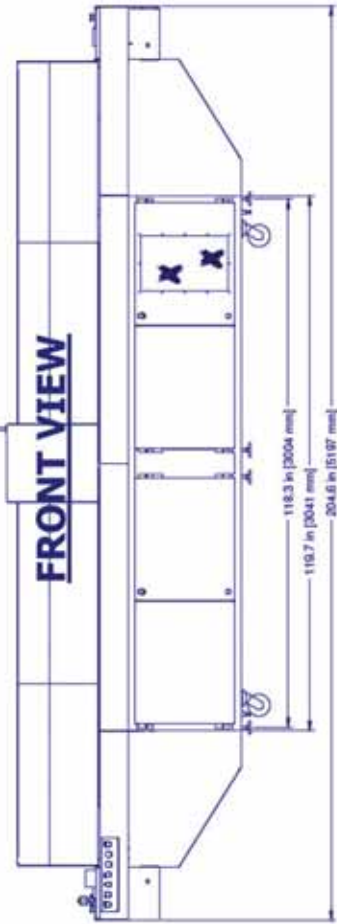
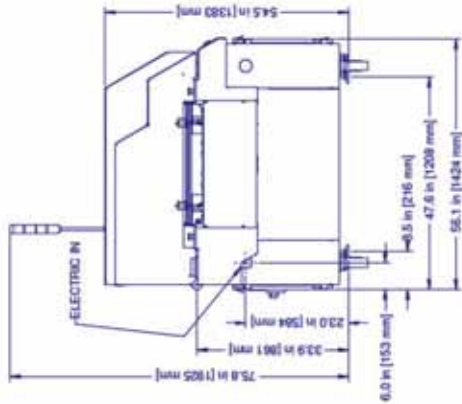
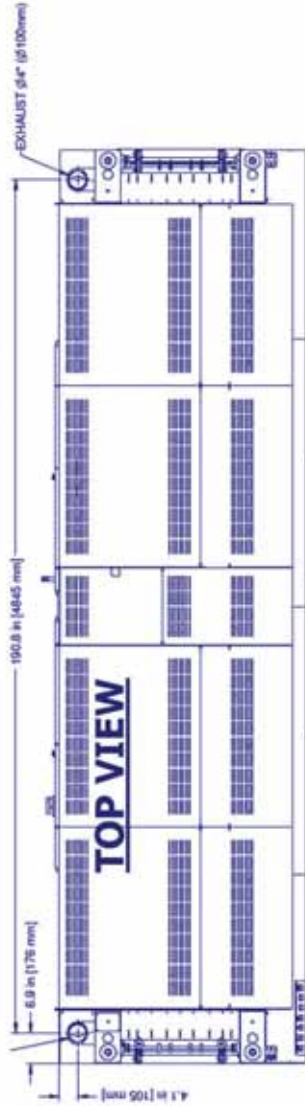
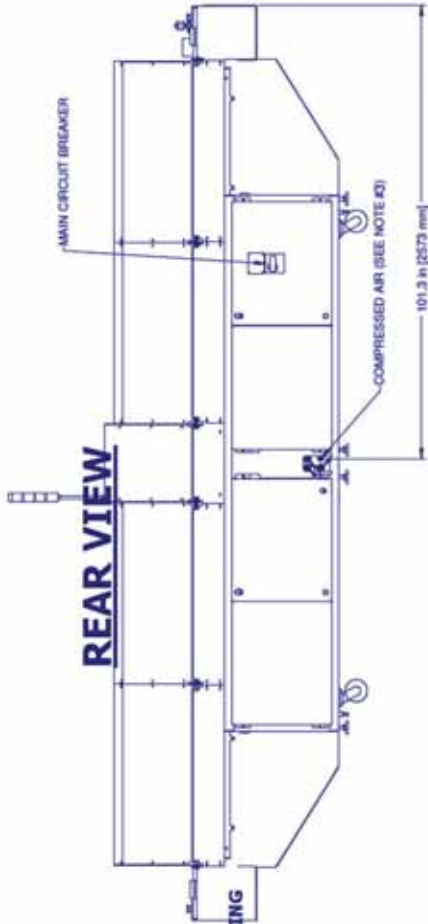
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Conceptronic HVA <sup>HT</sup> 120 Standard Features	
Machine Size	204.5 Inch (5195 mm) Long, 56.1 Inch (1420 mm) Depth, 55 Inch (1400 mm), Height
Heat Transfer Method	High Volume, High Velocity Forced Convection, Air Atmosphere Only
Heated Length	120 Inches (3048 mm)
Heating Zones	16 Closed Loop Heating Zones, 8 Top, 8 Bottom
Setpoints	Maximum Setpoint is 350°C
Linear Heat Transfer	High Ratio of Impingement Flow / Heated length ratio = 100%
Cooling Zones	30 Inches (762 mm) of cooling, 2 zones upper, 1 zone lower.
Controlled Cooling	Manual Blower Speed Cooling Standard, Independent Upper zone & Lower Zones
Process Control	Microprocessor control, with Laptop Computer interface, Fast Ethernet connection to Controller. PC can be disconnected and the oven will continue to run and be in control. SPC data logging, Unlimited recipe storage, with Archived revisions, multiple password levels for ultimate process control.
Conveyor Adjust	Motorized is standard.
Powered Exhaust	Direct Connect, Powered Exhaust, 200 CFM onload, 200 CFM offload.
Power Fail Protection	Battery backup system for 10 – 20 minutes of continued controlled conveyor operation during a power loss is standard.
On / Off-load	12" (300 mm) on load table / 12" (300 mm) off load table
Conceptronic HVA <sup>HT</sup> 120 Safety Features	
Over temperature Protection	Redundant over temperature protection of every zone is included.
Clamshell Lift	Two Hand Activated Electric Safety Bonnet Lift with motion alarm.
Keyed Access	Safety interlock keys are required to access electrical panels.
Main power disconnect	Lockable, machine mounted, main disconnect is standard.
Emergency Stop Buttons	Easy Access to 4 EMO buttons on each corner of the oven.
Conveyor Clutch Mechanism	Torque limiting clutch minimizes the drive power to the conveyor motion if the conveyor becomes jammed by external interruption. Recovery from the conveyor jam requires no disassembly/reassembly restoring production quickly.

Conceptronic HVA <sup>HT</sup> 120 Common Options (More Options Available)	
Light Tower	3-color: green-amber-red signal tower (mounted above head level) constantly reports machine status.
Board Counter / SMEMA Interface	Link to upstream and downstream machines communicates line readiness. Includes board count sensor.
Blower Speed Control	5 Independent Blower Speed Controls for Variable flow from 20-100%
Nitrogen Ready	Machine heater cavity, blowers, and cooling section is prepared for Field-Retrofittable nitrogen operation
Under board Support	Bead Chain over rail system with x, y adjust, along the full length of the oven.
Multiple Lane Conveyor	Choose 2, 3, 4, or even more rail systems with independent width control.
Balance Weave Belt	For semiconductor processing.
High Setpoint Temperatures	Available with maximum temperatures up to 450 C.
Custom Configurations	HV+ "Rigid Chassis" frame allows for easily customizable lengths for additional cooling or selective soldering modules.
Conceptronic HVA <sup>HT</sup> 120 Maintenance Friendly	
Low Part Count, Common Parts	Maintenance design philosophy with common blower throughout entire oven – 1 blower fits all. Common drive motor / and width adjust motor. Easy access to all areas of the oven.
Exhaust is Filtered	Easy to change exhaust filters collect all flux prior to factory exhaust for reduced building maintenance.
Self-diagnostics and backed – up.	Off-the-shelf computer communicates via Ethernet to industrial microprocessor based control with daily "restore" points created on all critical oven files. No calibration required for 20,000 hours.
Conceptronic HVA <sup>HT</sup> 120 Environment Friendly	
Energy Saving "soft-start"	Standard Adjustable "Sequential-zone" startup for reduced power consumption limits the maximum current draw during startup.
Current Smoothing	Smart Software: limits current spikes by applying the most power to the zones with the greatest deviation 60 times per second. Current draw is "smooth" resulting in lower electricity costs.
Efficient Insulation	Efficient internal insulation in upper and lower heater cavity reduces power consumption, operating costs, and facilities air conditioning requirements.

LINE VOLTAGE (Vrms)	MAX. CURRENT (Amps)	CIRCUIT BREAKER SIZE (Amps)
208	211	225
208	217	225
220	226	225
240	242	250
345	348	350
380	402	425
400	405	425
415	408	425
440	413	425
480	421	425

NOTES:  
 1. TYPICAL POWER CONSUMPTION IS 10 KVA.  
 2. MAIN CIRCUIT BREAKER SIZE CAN BE REDUCED  
 DRAMATICALLY WITH "GREEN" SOFT-START OPTION.  
 PLEASE CONTACT THE FACTORY WITH YOUR SPECIAL  
 POWER REQUIREMENTS.



- NOTES:
- 1.) ELECTRICAL REQUIREMENTS:  
 3 PH. 50/60 HZ.  
 LOAD PER CHART AT RIGHT, 2" CONDUIT OPENING
  - 2.) EXHAUST REQUIREMENTS:  
 ONLOAD - 200 CFM +/- 20 CFM,  
 340 M<sup>3</sup>/hr +/- 34 M<sup>3</sup>/hr  
 OFFLOAD - 200 CFM +/- 20 CFM,  
 340 M<sup>3</sup>/hr +/- 34 M<sup>3</sup>/hr
  - 3.) COMPRESSED AIR - ONLY REQUIRED IF  
 "CENTER SUPPORT OPTION"  
 45 PSI / 3 BAR < 1 SCFH / .03 M<sup>3</sup>/HR  
 3/8" FEMALE NPT