

**Conceptronic**  
DIVISION OF CVD EQUIPMENT CORPORATION

**HVA<sup>HT</sup>70**

rediscover  
**rediscover Conceptronic**



Conceptronic HVA<sup>HT</sup>70 (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.

We took what was great, and made it better. The High Temp Conceptronic HVA<sup>HT</sup>70 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

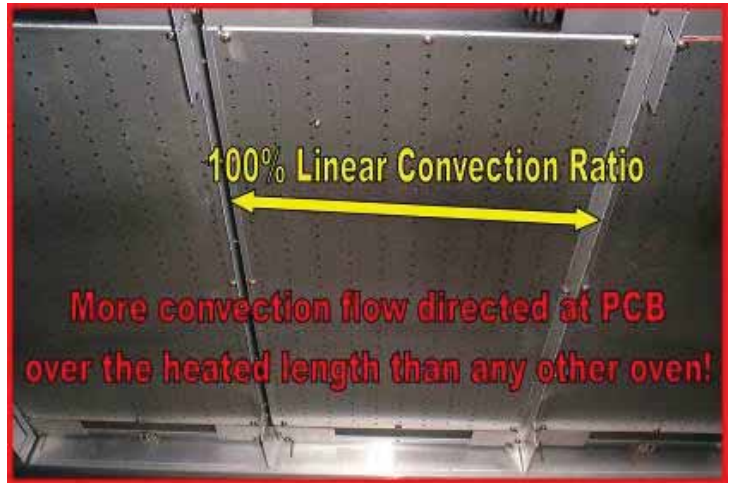
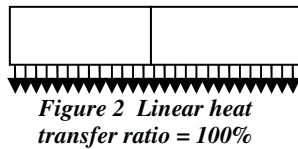
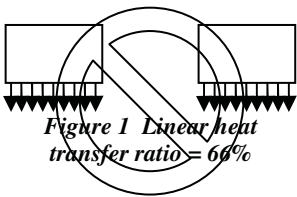
### Discover the highest convection rates.

- 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



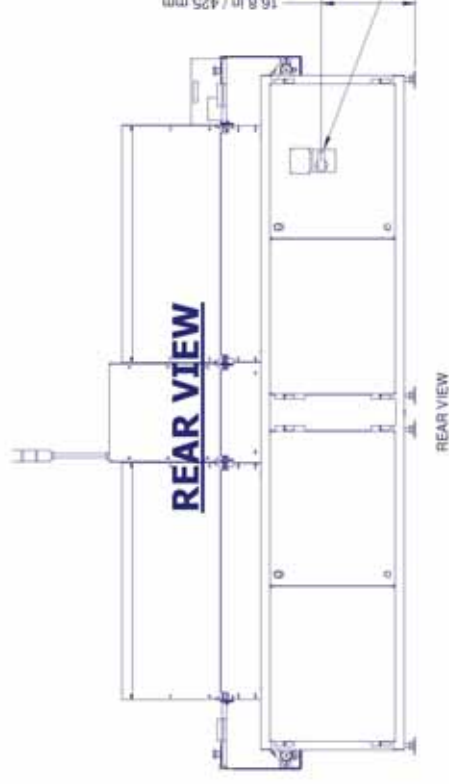
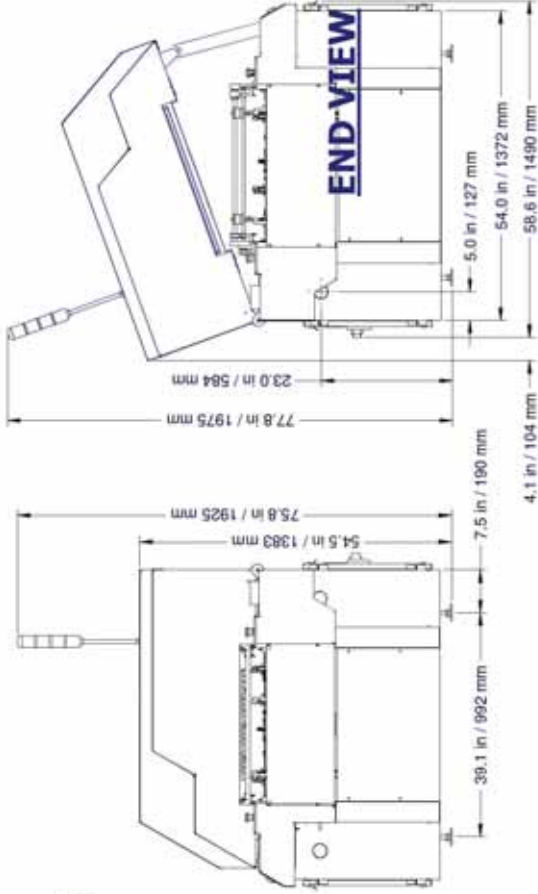
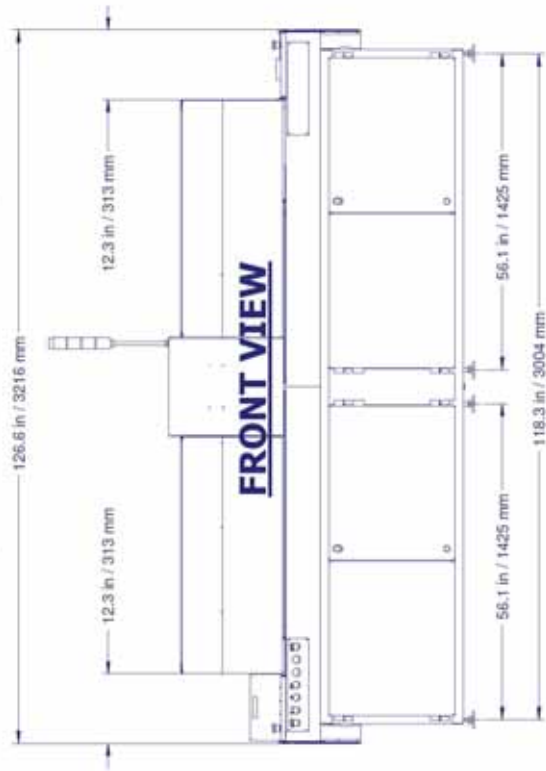
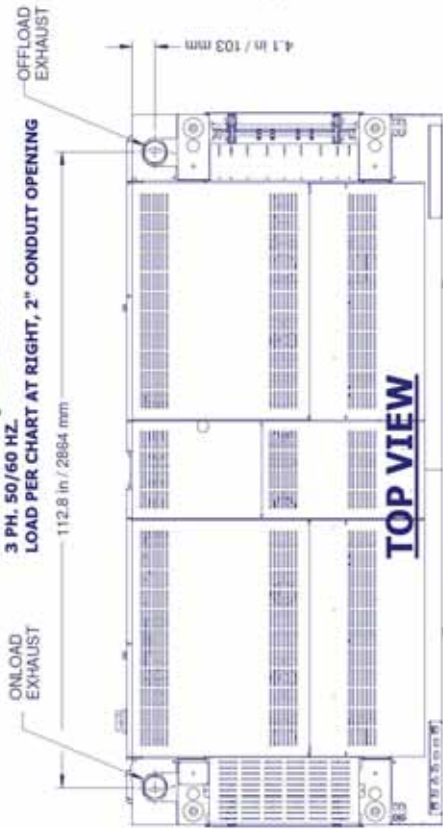
**Conceptronic. We make technology simple.**

Conceptronic HVA <sup>HT</sup> 70 Standard Features	
<b>Machine Size</b>	126 Inches (320 cm) x 56.1 Inches (142 cm) x 55 Inches (140 cm)
<b>Heat Transfer Method</b>	High Volume, High Velocity Forced Convection, Air Atmosphere Only
<b>Heated Length</b>	75 Inches (1900 mm)
<b>Heating Zones</b>	10 Closed Loop Heating Zones, 5 Top, 5 Bottom
<b>Setpoints</b>	Maximum Setpoint is 350°C
<b>Linear Heat Transfer</b>	High Ratio of Impingement Flow / Heated length ratio = 100%
<b>Cooling Zones</b>	18 Inches (460 mm) of cooling, 1 zone upper, 1 zone lower.
<b>Controlled Cooling</b>	Manual Blower Speed Cooling Standard, 1 upper zone, 1 lower zone
<b>Process Control</b>	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.
<b>Conveyor Adjust</b>	Motorized is standard.
<b>Powered Exhaust</b>	Direct Connect, Powered Exhaust, 200 CFM onload, 200 CFM offload.
<b>Power Fail Protection</b>	Battery backup system for 10 – 20 minutes of continued controlled conveyor operation during a power loss is standard.
<b>On / Off-load</b>	12” (300 mm) on load table / 12” (300 mm) off load table
Conceptronic HVA <sup>HT</sup> 70 Safety Features	
<b>Over temperature Protection</b>	Redundant over temperature protection of <u>every zone</u> is included.
<b>Clamshell Lift</b>	Two Hand Activated Electric Safety Bonnet Lift with motion alarm.
<b>Keyed Access</b>	Safety interlock keys are required to access electrical panels.
<b>Main power disconnect</b>	Lockable, machine mounted, main disconnect is standard.
<b>Emergency Stop Buttons</b>	Easy Access to 4 EMO buttons on each corner of the oven.
<b>Conveyor Clutch Mechanism</b>	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> 70 Common Options (More Options Available)	
<b>Light Tower</b>	3-color: green-amber-red signal tower (mounted above head level) constantly reports machine status.
<b>Board Counter / SMEMA Interface</b>	Link to upstream and downstream machines communicates line readiness. Includes board count sensor.
<b>Blower Speed Control</b>	5 Independent Blower Speed Controls for Variable flow from 20-100%
<b>Nitrogen Ready</b>	Machine heater cavity, blowers, and cooling section is prepared for Field-Retrofittable nitrogen operation
<b>Under board Support</b>	Bead Chain over rail system with x, y adjust, along the full length of the oven.
<b>Multiple Lane Conveyor</b>	Choose 2, 3, 4, or even more rail systems with independent width control.
<b>Balance Weave Belt</b>	For semiconductor processing.
<b>High Setpoint Temperatures</b>	Available with maximum temperatures up to 450 C.
<b>Custom Configurations</b>	HV-HT "Rigid Chassis" frame allows for easily customizable lengths for additional cooling or selective soldering modules.
Conceptronic HVA <sup>HT</sup> 70 Maintenance Friendly	
<b>Low Part Count, Common Parts</b>	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.
<b>Exhaust is Filtered</b>	Easy to change exhaust filters collect all flux prior to factory exhaust for reduced building maintenance.
<b>Self-diagnostics and backed – up.</b>	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> 70 Environment Friendly	
<b>Energy Saving “soft-start”</b>	Standard Adjustable “Sequential-zone” startup for reduced power consumption limits the maximum current draw during startup.
<b>Current Smoothing</b>	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.
<b>Efficient Insulation</b>	Efficient internal insulation in upper and lower heater cavity reduces power consumption, operating costs, and facilities air conditioning requirements.

**EXHAUST REQUIREMENTS:**  
 ONLOAD - 180 CFM +/- 20 CFM, 300 M<sup>3</sup>/hr +/- 34 M<sup>3</sup>/hr  
 OFFLOAD - 180 CFM +/- 20 CFM, 300 M<sup>3</sup>/hr +/- 34 M<sup>3</sup>/hr

**ELECTRICAL REQUIREMENTS:**  
 3 PH, 50/60 HZ.  
 LOAD PER CHART AT RIGHT, 2" CONDUIT OPENING  
 OFFLOAD EXHAUST



VOLTAGE	MAXIMUM CURRENT	MAIN CIRCUIT BREAKER SIZE
200	154	175
208	158	175
220	165	175
240	175	175
360	72	100
380	75	100
400	77	100
415	79	100
440	83	100
480	88	100

**NOTES:**  
 1. TYPICAL POWER CONSUMPTION IS 7-8 KVA.  
 2. MAIN CIRCUIT BREAKER SIZE CAN BE REDUCED DRAMATICALLY WITH "GREEN" SOFT-START OPTION.  
 PLEASE CONTACT THE FACTORY WITH YOUR SPECIAL POWER REQUIREMENTS.