Conceptronic
DIVISION OF CVD EQUIPMENT CORPORATION

HVN^{HT}102

rediscover Conceptronic

Conceptronic HVN^{HT}102 (High Velocity Nitrogen) 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 atmosphere control provides computerized switching between Air or Oxygen PPM levels below 50 PPM. Tight uniformity and repeatable computerized control guarantees good solder joints today and many years to come.

rediscover

The best of Conceptronic.

The Conceptronic HVN^{HT}102 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
- Closed loop water cooling – standard.
- 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.

www.conceptronic.com www.research-intl.com 1860 Smithtown Avenue, Ronkonkoma NY 11779 USA PH: 01.631.981.7081 sales@conceptronic.com

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HVN^{HT}102

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.

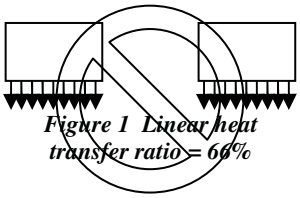


Figure 1 Linear heat transfer ratio = 66%

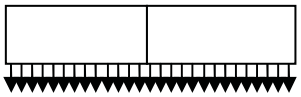
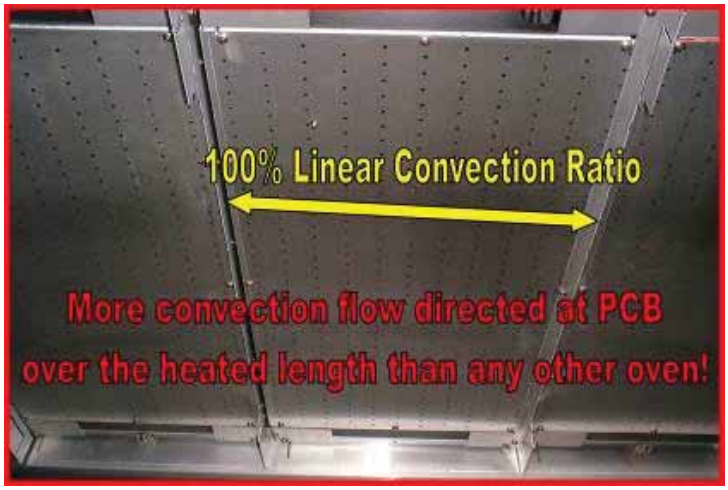
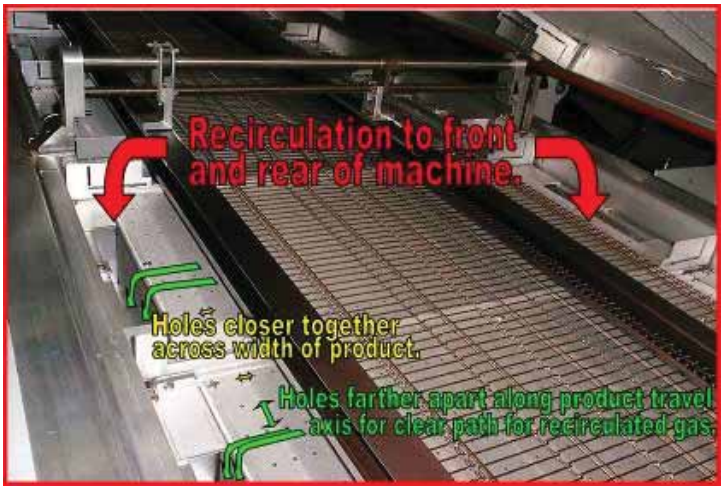


Figure 2 Linear heat transfer ratio = 100%



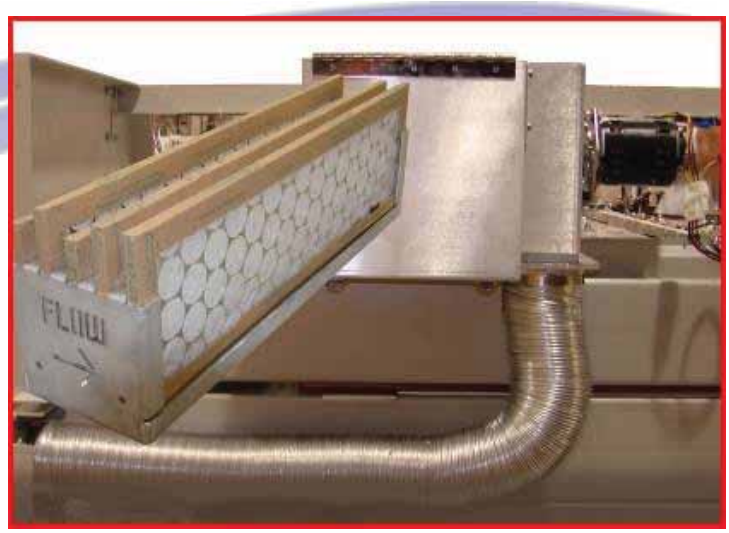


discover
Discover controlled convection flow.

- 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

Certified Lead Free

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HVN^{HT}102

Conceptronic HVN^{HT}102 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	105 Inches (2667 mm)
Heating Zones	14 Closed Loop Heating Zones, 7 Top, 7 Bottom
Closed Loop Water Cooling	Fully integrated, maintenance-free closed loop heat exchanger is standard.
Setpoints	Maximum Setpoint is 350°C
Linear Heat Transfer	High Ratio of Impingement Flow / Heated length ratio = 100%
Cooling Zones	27.5 Inches (700 mm) of cooling, 2 zones upper, 2 zones lower with 2 blowers in each zone = 8 powerful cooling blowers.
N_2 Atmosphere	Computerized Air / Nitrogen Control is Standard, <50 PPM at 1200 CFH (460 lpm), 5 Oxygen sample ports are standard.
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 HVN^{HT}102 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	Clutch minimizes the drive power to the conveyor motion if the conveyor becomes jammed by external interruption.

Conceptronic HVN^{HT}102 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%
Automatic Oxygen Sampling	Oxygen Sampling ports are automatically sampled and machine "Ready" status is determined by PPM levels.
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 HVN^{HT}102 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 HVN^{HT}102 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.

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NOTES:
1.) NITROGEN - 25 CFM / 42 M^3/HR
@ 60PSI / 4.1 BAR
3/8" FEMALE NPT FITTING

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

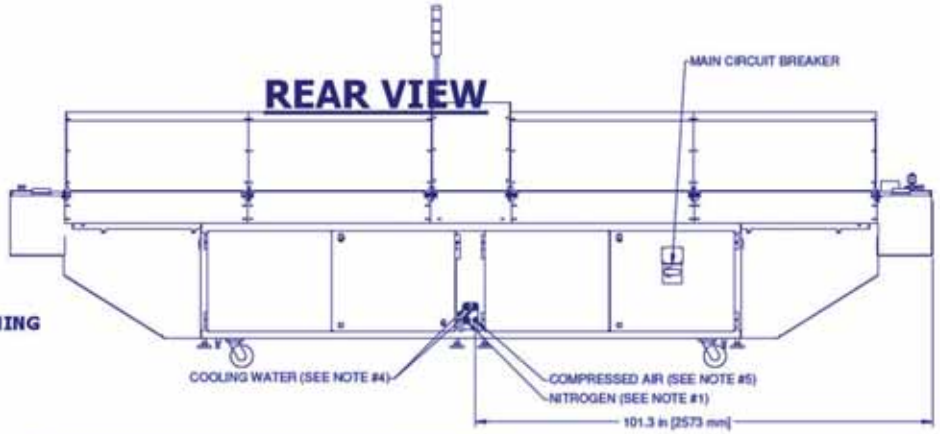
3.) EXHAUST REQUIREMENTS:
ONLOAD - 200 CFM +/- 20 CFM,
340 M^3/hr +/- 34 M^3/hr

OFFLOAD - 200 CFM +/- 20 CFM,
340 M^3/hr +/- 34 M^3/hr

4.) COOLING WATER - ONLY REQUIRED IF "CUSTOMER SUPPLIED WATER OPTION"
3 GPM / 11 LPM @ 45 PSI / 3 BAR
1/2" FEMALE NPT (X2)

5.) COMPRESSED AIR - ONLY REQUIED IF "CENTER SUPPORT OPTION"
45 PSI / 3 BAR < 1 SCFH / .03 M^3/HR
3/8" FEMALE NPT

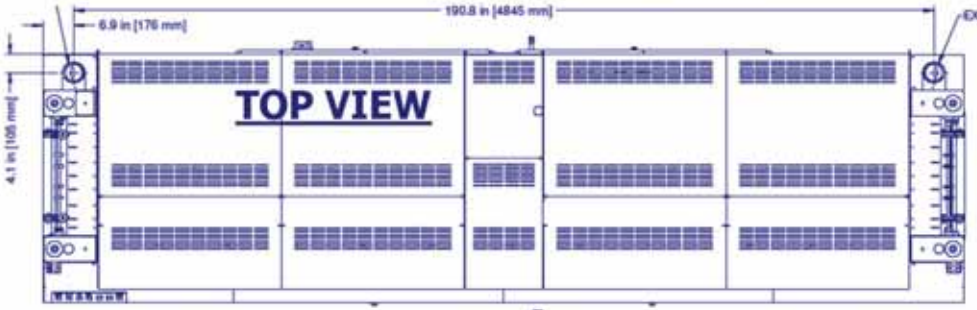
REAR VIEW

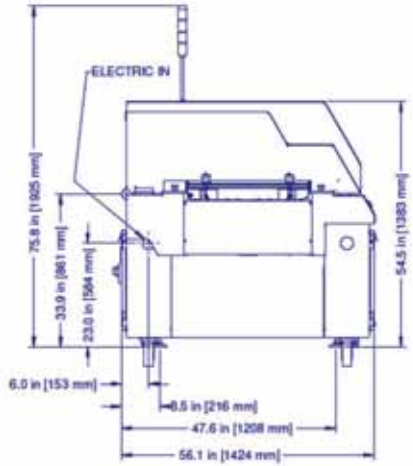


VOLTAGE	MAXIMUM CURRENT	MAIN CIRCUIT BREAKER SIZE
208	186	225
208	192	225
220	208	225
240	214	225
380	97	100
380	98	100
400	95	100
415	96	100
440	135	125
480	108	125

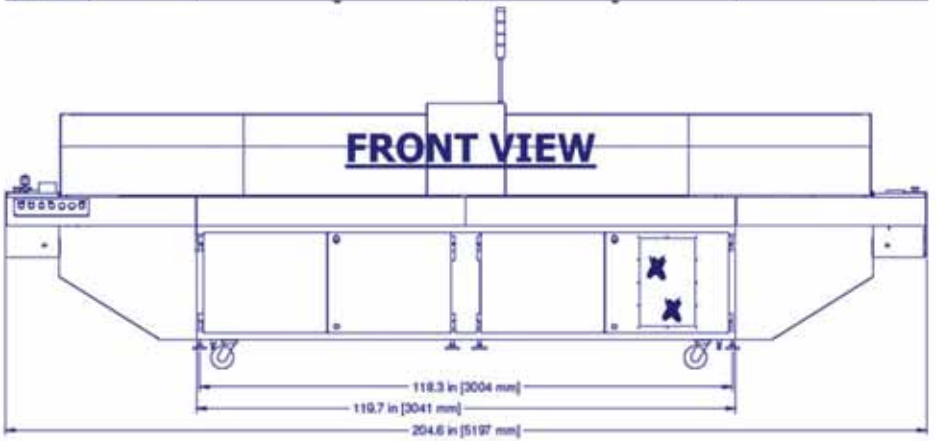
NOTES:
1. TYPICAL POWER CONSUMPTION IS 10 KVA.
2. MAIN CIRCUIT BREAKER SIZE CAN BE REDUCED DRAMATICALLY WITH "GREEN" SOFT-START OPTION. PLEASE CONTACT THE FACTORY WITH YOUR SPECIAL POWER REQUIRMENTS.

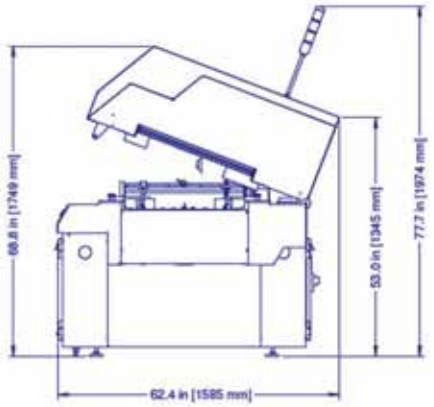
TOP VIEW





FRONT VIEW





END VIEW