





Model GF-120-HT

- 3 vertical heating zones plus cooling zone
- Low mass 12" wide stainless steel conveyor
- Easy lift clamshell design

STANDARD FEATURES IN ALL MODELS

- Computer controller with:
 - 100 menu profile storage
 - 7 day timer
 - Real time temperature profiler with graphic display
 - SPC fault monitoring & reporting
 - English or metric units
 - Battery memory backup
 - Password protection
- Horizontal Convection [™] technology^{**}
- Cool-down Station
- Low mass stainless steel conveyor
- Stainless steel chambers
- Viewing windows with lights provide full visibility of entire process
- Full access for quick maintenance and easy cleaning
- Unsurpassed performance, service and support

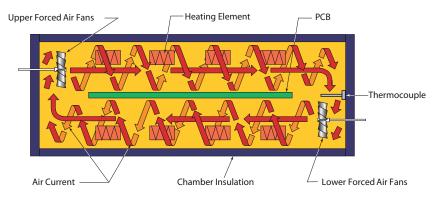
**Machines covered under patent 6,936,793

Model GF-120-HT with 12" wide conveyor and 41" heated tunnel length shown with optional enclosed stand

HORIZONTAL CONVECTION

DDM Novastar ovens are used for reflowing solder on PC boards, curing, drying and thermal cycling. Our patented^{**} Horizontal Convection TM system provides the most accurate, most consistent and most repeatable profiles. Air is circulated horizontally in one direction above the board, and in the opposite direction below the board. This circular air current or "cyclone" provides better thermal penetration across the board and yields better results with tough-to-solder components such as BGAs and J-leaded quad flat packs.

ТМ



Cross-section of chamber (end view)

CURING APPLICATIONS

All models are available with conveyor motor gear reduction, or speed increase, for your curing requirements. Special tunnel heights are available with all models.

Nitrogen Inerting



Novastar's isolated chamber design (recirculation of atmosphere within each chamber) maintains low oxygen levels while conserving nitrogen.

with revolutionary Horizontal Convection



Model 1800-HT with 18" wide conveyor and 50" heated tunnel length, shown with edge conveyor and PC interface options

Model 1800-HT

- 4 vertical heating zones plus cooling zone
- Low mass 18" wide stainless steel conveyor
- · Easy lift clamshell design with gas strut assist
- Status light tower

Model 2000-HT

- 6 vertical heating zones plus cooling zone
- Low mass 20" wide stainless steel conveyor
- · Easy lift clamshell design with gas strut assist
- Status light tower

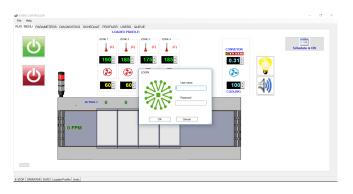
OPTIONS

- Capable of High Temp to 400°C (752°F) for lead free solder
- Status light tower for Model GF-120-HT, (standard on 1800 and 2000)
- Edge rail conveyor (Models 1800 and 2000 only)
- Nitrogen inerting
- PC interface/windows [®] software
- Enclosed stand (GF-120-HT only)
- Enhanced printing option
- PAK profiling accessory kit
- Custom (curing, drying) applications

ProcessSentry TM COMPUTER CONTROL

The ProcessSentry [™] microprocessor control is the brain of DDM Novastar ovens. All parameters are set and displayed in real time.

The ProcessSentry [™] is sophisticated yet clear and straightforward. Programming is intuitive and operation is truly user-friendly. The system provides unrivaled accuracy and repeatability while assuring safety and reliability.



ProcessSentry [™] display showing the real-time temperature profile as PC board travels through the oven.

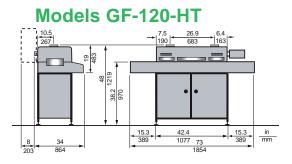


UPPER HEATING ZONE SHOWING :

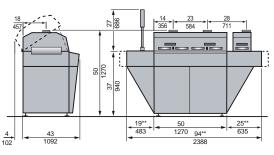
- heating elements (1)
- upper forced turbine (2)
- inert gas suffuser (3)
- interior lighting (4)

Model 2000-HT with 20" wide conveyor and 72" heated tunnel length shown with PC interface option

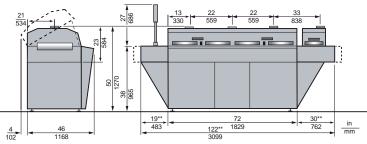
REFLOW OVEN SPECIFICATIONS



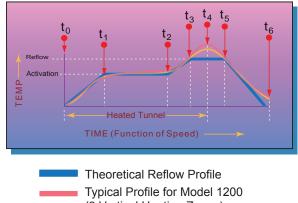
Models 1800-HT



Models 2000-HT



| MACHINE SPECIFICATIONS | Models GF-120-HT | Models 1800-HT | Models 2000-HT |
|---------------------------|---|---|---|
| Emitter Technology | Horizontal Convection [™] | Horizontal Convection TM | Horizontal Convection™ |
| Heat Tunnel Length | 41" (1042mm) | 50" (1270mm) | 72" (1829mm) |
| Standard Heating Zones | 3 Top, 3 Bottom | 4 Top, 4 Bottom | 6 Top, 6 Bottom |
| Cooling Fans | 2 | 2 | 4 |
| Electrical Power*** | 220 VAC, 50/60 Hz 1Ø, 50A | 220 VAC, 50/60 Hz 3Ø, 70A | 220 VAC, 50/60 Hz 3Ø, 100A |
| Peak Power | 8.7 kW | 23.2 kW | 34.8 kW |
| Maximum Temperature | HT: 400° C (752° F) | HT: 400° C (752° F) | HT: 400° C (752° F) |
| Maximum Board Width | 12" (300mm) | 18" (457mm) | 20" (508mm) |
| Maximum Board Height† | 1.375" (35mm)† | 1.375" (35mm)† | 1.375" (35mm)† |
| Height of Conveyor | 37.5" ± 1/2" (940mm) | 37.5" ± 1/2" (940mm) | 37.5" ± 1/2" (940mm) |
| Venting Requirements | Two 4" (102mm) Dia. Flanges 200 CFM (340m ³ /h) each | Two 4" (102mm) Dia. Flanges 250 CFM (425m ³ /h) each | Three 4" (102mm) Dia. Flanges 200 CFM (340m ³ /h) each |
| Cooling Zone Venting | NA | 4" Dia. Flange, 0-400 CFM (680m ³ /h) | 4" Dia.Flange, 0-400 CFM (680m ³ /h) |
| Approx. Shipping Weight | 325 lbs (148 kg) | 1050 lbs (476 kg) | 1650 lbs (748 kg) |
| | | | |



 1) picture rome for model 1200

 (3) Vertical Heating Zones)

 Typical Reflow Profile for Model 2000

 (7) Vertical Heating Zones)

 to-t1

 PREHEAT

 t1-t2

 ACTIVATION

 t2-t3

 RAMP

 t3-t4

 REFLOW

 t4-t6

 COOLING

t₃-t₅ LIQUIDOUS

*All DDM Novastar reflow ovens are covered under patent 6,936,793

Add 4 inches to each end for edge conveyor *Other electrical configurations available

[†]Up to 4" (102 mm) special application tunnel height

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