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InterElectronic

INTRODUCTION



INTEON reflow ovens are build for the middle and high volume productions which allows attractive price and high quality performance for lead free process. IN-TEON reflow soldering systems assure an optimum of process stability by innovative technology. All the electrical system totally match the European quality standard and other international safety standard. We are offering energy saving, flexible or economical systems to find the best solution for your production even you are manufacturing OEM or own LED/SMT products.

WARRANTY

Best in the industry warranty – 2 years full warranty and 5 years for the heaters and blowers system.

SUPPORT

For more complex appliances our company offers a well-needed training for set up and usage. We grant the repair of all of the products traded by our company during and after the warranty period. As well as we guarantee the continuous supply of accessories.

ON-SITE VISIT

In case if any of our products aroused your interest INTEON would be glad to visit your company and hold a presentation of the product of your interest. Major machines also could be observed at our partners' site.

OFFERS

Most of the prices of our products can be requested on our website and will be sent via email to you. In case of special and more complex machines the prices are given after consultation individually through a price offer. If you are interested in more information or user manuals of our products we recommend you to visit our website (www.inte-on. com), which is updated continuously with professional information. We also recommend you to visit our office, where you can purchase any of the needed devices and spare parts of the product of your interest.

p. 20-23



RT-Series

High Class Energy Saving

Nitrogen system

REFLOW OVENS



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INTEON 2 YEAR FULL WARRANTY

5 YEAR FOR HEATER AND BLOWER **SYSTEM**

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REFLOW OVEN

RT Series Reflow oven with 8-10-12 heating zones



MAIN FEATURES

- Combination pin chain and mesh belt conveyors (Standard)
- Motorized width adjust (Optional: PC control width adjustment)
- 3 independent cooling zone with up and down (standard)
- Full updated thermal transfer and preservation technology to reduce power consumption
- Full new Flux collection system (Standard)
- Windows 7. Operator interface
- Smema communication
- Light tower
- Uninterruptible power supply
- Guaranteed Lead Free process ready
- 300°C high temperature processing capabilities
- Comprehensive warranty
- Automatic edge rail lubrication system
- Board counter
- Board drop detection
- Dual lane conveyor with independent speed control (Optional)
- Dual lane with dual center support system (Optional)
- Full nitrogen system (Optional)

RT reflow soldering systems assure an optimum of process stability by innovative technology and are equipped with the following advantages:

Special process chamber system for optimal temperature uniformity.

Independent air velocity controlling system allows flexible process control to easy handle complicated lead free soldering requirements.

Efficient power design and heat management system greatly improves energy savings while lowering carbon emissions.

Multi-stage condensate filter at the cooling zone for efficient cleaning.



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Excellent thermal convection system

Efficient power design and heat management system greatly improves energy savings while lowering carbon emissions.

- Power savings of 15 to 20 %, due to large aluminum alloy heat plates.
- Double isolation around the body prevents heat loss
- Short warm-up time
- Low power consumption: 9 Kw to 10.5 kW (8 zones), 10 to 12.5 kW (10 zones)

• New and improved highly effective exhaust design with piping in each zone to extract flux.

The cooling configuration recycles the filtered air or N2 back to the oven chamber reducing thermal loss while getting better flux reclamation.

- Two powerful fans force recirculated cooled air into the cooling zone
- Total cooling length: 800 mm (31.5")

• Filtration system is easily accessible for quick mainte-nance and Easy access to cooling panels for quick maintenance.





Provide Maximum heat capacity to rapidly reach temperature setting points at low rates of power consumption within a short period of time. The special process champers de-sign makes the air convection uniformly and temperature profile changeover easily.

Profile spikes per zone is eliminated with better zone segregation and decrease cross flow. The nozzle plate design allow to cover the boards with hot air in all direction for good uniformity. In a reflow oven, the efficiency of the heat transfer has a primary effect on all aspects of quality. Productivity and running costs which directly influence profitability. Our heat transfer guarantee a minimum ΔT which translates into maximum profile flexibility.

Our heater generate the desired temperature faster than any other reflow heat source and respond in less than half a second to temperature change of less than 0.1°C thus maintaining the highest level of temperature repeatability. Due to our secure transport system you receive a stabile process while reducing maintenance expenses and machine downtime. The standard conveyor system is equipped with mesh and chain rail which ensure the repeatability for 24/7 3 shift production.

Maintains rail width distance at high temperature environment with only +/- 1.0mm to keep the boards transportation stable and avoid board dropped and misalignment.

With dual lane, production becomes simpler and faster with top and bottom run in a single oven.

Provides more production space, less assets and operational cost saving.

Independent motor per lane to control the speed possibly to run different kinds of PCBs simultaneously with different temperature profile.

THE RT ADVANTAGE

- INTEON has a tradition of providing quality equipment and excellent service support
- Best in the industry warranty 2 years full warranty and 5 years for the heaters and blowers systems
- Lifetime free software upgrades
- Lifetime free training at customer location
- More standard features than any other oven available in the market



Dual lane with dual independent speed



Center support system with packing position

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POWERFUL COOLING ZONE

Cooling zone is achieved with 3 top and bottom zones allowing adjustable convection speed for desired cooling slope.

Water chiller cooling system is optional.

The fans in the individual zones, which can be controlled separately as an option, allow for accu-rate control, and cooling gradients can be corre-spondingly influenced. This assures stress-free cooling for your PCBs, for lead-free soldering as well.



Assembled with Know branded parts: Lenovo PC, SIEMENS PLC, AB American con-troller, Schneider switch , Panasonic motor, Carlo Gavazzi relay, etc.

All the electrical system totally match the European quality standard and other international safety standard.



PROFILE MONITORING

Provides profile monitoring solutions with per product per line, per board etc.

Built-in KIC integrated real-time monitoring (Optional).

RT series reflow oven - 8-10-12 heating zones

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Items		Description	
Model	RT-0803	RT-1003	RT-1203
Machine dimensions (L*W*H) mm	5581*1400*1522	6372*1400*1522	7187*1400*1522
Standard color	Ivory white	Ivory white	lvory white
Numbers of heating zone	8 zone (top and bottom)	10 zone (top and bottom)	12 zone (top and bottom)
Lengths of heating zone	3124mm	3894mm	4709mm
Numbers of cooling zone	3 zone (top and bottom)		
Nozzle plate	Aluminum plate		
Exhaust volume	10 m³/ min*2		
Flux collection system	Standard configuration		

Control system 3 Phase, 400V 50/60 Hz Power supply Total power 64KW 80KW 92KW 28KW 34KW 38KW Startup power Normal power consumption 7KW 8KW 9KW Warming time Approx. 30 min Temperature setting range Room temperature to 300°C PID Close loop control + SSR driving Temperature control method Temperature control precision +/- 1°C Temperature deviation on PCB +/- 1.5°C Cooling method Forced air cooling (Optional: Water-chiller) Data storage Process data and status storage (80GB) Abnormal alarm Temperature abnormal alarm Board dropped alarm Standard (Tower light and Buzzer)

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Rails structure	subjection integrated type
chain structure	singled buckle (Optional: Double buckle)
Max.PCB width	50 mm to 400 mm (single lane,optional: 50 mm,610 mm)
Components clearance	Top/ bottom clearance of boards: 25 mm
Conveyor direction	L to R/ (Optional: R to L)
Fixed rail side	Front rail Fixed
Conveyor speed range	300 – 20000 mm/min
Conveyor heights	900 mm+/-20 mm
Conveyor method	Chain + mesh as standard (Optional: Chain+ center support system)
Chain Lubrication	Automatic (standard)

Optional configuration	
Full nitrogen system	Nitrogen hermetic configuration, nitrogen flow meter, water chiller, oxygen analyzer (PPM control: 300-1000PPM, 18—20m ³ /hr, single lane oven)
Center support system	Unique retractable, special parking position with Maximum flexible
Water chiller cooling	Optional
Dual lane conveyor	Conveyor width: Min.50 mm*50 mm in each lane, Max.300 mm * 300 mm in each lane, Rail 1and Rail 4 are fixed, Rail 2 and Rail 3 are adjustable
Dual lane dual speed	Independent conveyor speed in each lane
Dual lane dual center support system	Independent conveyor speed of chain and center support system in each lane

REFLOW OVEN

RH Series Reflow oven with 6-8-10-12 heating zones



MAIN FEATURES

- Combination pin chain and mesh belt conveyors (Standard)
- Motorized width adjust
- Flux collection system (Standard)
- Windows 7 Operator interface
- Smema communication
- Light tower
- Uninterruptible power supply
- Guaranteed Lead Free process ready
- 300°C high temperature processing capabilities
- Comprehensive warranty
- Automatic edge rail lubrication system
- Board counter
- Board drop detection
- Dual lane conveyor with independent speed control (Optional)
- Dual lane with dual center support system (Optional)
- Full nitrogen system (Optional)





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Independent air velocity controlling processing system allows flexible processing control to easily handle compicated lead free soldering requirements.

The RH-0802 has 2 ramp up zones, 4 soaking zones, 2 reflow zones, and 2 cooling zones.

Profile spikes per zone is eliminated with better zone segmentation and decrease cross flow. Hole designs allow to cover the board with hot air in all direction for good uniformly.



Center support system for preventing the de-formation of PCB board puzzle (Optional)

The unique retractable center support system is easy to use with maximum flexibility. It can hide itself when not used and will not hit the components on double sided boards or boards with long components leads.

Efficient flux collection system is standard features. Both front-back end exhausts are installed with quick release metallic filters similar with the heat exchanger for less and easy maintenance.

RH series reflow oven - 6-8-10-12 heating zones



Closed loop nitrogen control system (Option)

To maintain stable user-selected oxygen PPM levels automatically. A wide range of PPM levels can be selected with nitrogen consumption rate as low as depending upon board size. An internal oxygen sensor and proportioning valve is used to minimize nitrogen consumption and related costs by up to 50%! Use completely sealed design inside the chamber of oven to be effective protection for nitrogen, the nitrogen content of the minimum can be as low as 150 ppm. Under the circumstances of 300-800 ppm oxygen, the consumption of nitrogen is lower than 18 m3/hour.

Best cost-efficient dual lane reflow oven in the world.

With dual lane, production becomes simpler and faster with top and bottom run in a single ovens. It provides more production space, less assets and operations cost saving. Independent motor per lane to control the speed possibly to run different kinds of PCBs simultaneously with different temperature profile.

The RH Advantage

- INTEON has a tradition of providing quality equipment and excellent service support
- Best in the industry warranty 2 years full warranty and 5 years for the heaters and blowers systems
- Lifetime free software upgrades
- Lifetime free training at customer location
- More standard features than any other oven available in the market

RH series reflow oven - 6-8-10-12 heating zones INTEON

Items		Descri	ption	
Model	RH-0602	RH-0802	RH-1002	RH-1202
Machine dimensions (L*W*H) mm	4100*1384*1492	5581*1400*1522	6372*1400*1522	7187*1400*1522
Standard color	lvory white	lvory white	Ivory white	lvory white
Numbers of heating zone	Top 6/ bottom 6	Top 8/ bottom 8	Top 10/ bottom 10	Top 12/ bottom 12
Lengths of heating zone	2358 mm	3124 mm	3894 mm	4709 mm
Numbers of cooling zone	Top 1 Forced air cooling		Top 2 Forced air cooling	
Nozzle plate		Aluminur	n plate	
Exhaust volume		10m ³ /min *2 channel exhaust		
Flux collection system		Standard co	nfiguration	

Control system

Power supply	3 phase, 400V 50/60Hz (Optional: 3 phase ,220V 50/60V)			
Total power	52KW	64KW	80KW	92KW
Startup power	26KW	28KW	34KW	38KW
Normal power consumption	6KW	7KW	8KW	9KW
Warming time		Approx. 30	min	
Temperature setting range		Room temperatu	re to 300°C	
Temperature control method	PID Close loop control + SSR driving			
Temperature control precision	+/- 1°C			
Temperature deviation on PCB	+/- 1.5°C			
Cooling method	Forced air cooling (Optional: Water-chiller)			
Data storage	Process data and status storage (80GB)			
Abnormal alarm	Temperature abnormal alarm			
Board dropped alarm	Standard (Tower light and Buzzer)			

Conveyor system

Rails structure		subjection integrated type		
chain structure	singled buckle	singled buckle singled buckle (Optional: Double buckle)		
Max.PCB width	400 mm	50 mm to 400 mm (single lane,optional: 50 mm,610 mm)		
Components clearance		Top/ bottom clearance of boards: 25 mm		
Conveyor direction	L to R/ (Optional: R to L)			
Fixed rail side		Front rail Fixed		
Conveyor speed range		300 – 20000 mm/min		
Conveyor heights		900 mm+/-20 mm		
Conveyor method	Chain + me	sh as standard (Optional: Chain+ center support system)		
Chain Lubrication	Automatic (standard)			

Optional configuration	
Full nitrogen system	Nitrogen hermetic configuration, nitrogen flow meter, water chiller, oxygen analyzer (PPM control: 300-1000PPM, 18—20m³/hr, single lane oven)
Center support system	Unique retractable, special parking position with Maximum flexible
Water chiller cooling	Optional
Dual lane conveyor	Conveyor width: Min.50 mm*50 mm in each lane, Max.300 mm * 300 mm in each lane, Rail 1and Rail 4 are fixed, Rail 2 and Rail 3 are adjustable
Dual lane dual speed	Independent conveyor speed in each lane
Dual lane dual center support system	Independent conveyor speed of chain and center support system in each lane

REFLOW OVEN

RC Series Reflow oven with 6-8-10-12 heating zones

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MAIN FEATURES

- Combination pin chain and mesh belt conveyors
- Motorized width adjust
- Flux collection system
- Windows operator interface
- Smema communication
- Light tower
- Uninterruptible power supply
- Guaranteed Lead Free process ready
- 300°C high temperature processing capabilities
- Comprehensive warranty
- Automatic edge rail lubrication system
- Board counter
- Board drop detection

Independent air velocity controlling system allows flexible processing control to easily handle complicated lead free soldering requirements.

CS series of reflow oven allows the heating zone temperature controllers have an accuracy of $\pm 1^{\circ}$ C and, in conjunction with a high-speed blower adjacent to each heat source for maximum convection, ensure a ΔT of $\pm 2^{\circ}$ C across the PCB assembly. The CS Series design provides low-velocity, low-turbulence air flow to prevent component shift or disturbance.



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The cooling configuration recycles the filtered air or N2 back to the oven chamber reducing thermal loss while getting better flux reclamation.

- Two powerful fans force recirculated cooled air into the cooling zone
- Total cooling length: 800 mm (31.5")
- Filtration system is easily accessible for quick maintenance and Easy access to cooling panels for quick maintenance

Center support system for preventing the deformation of PCB board puzzle (Optional)

The unique retractable center support system is easy to use with maximum flexibility . It can hide itself when not used and will not hit the components on double sided boards or boards with long components leads.

Pin -- Mesh -- Chain Conveyor Meets Virtually Any Product Specification or Production Requirement

The RH series is supplied as standard with an adjustable-rail, pin-type conveyor system that handles PCBs up to a maximum of 400 mm installed over a 500 mm stainless-steel mesh belt. The pin conveyor permits inline and double-sided processing. The mesh belt is ideal for fast changeovers.

To eliminate the possibility of jamming or dropped PCB assemblies, all components are constructed of high-quality, high-strength, stainless steel and are built to maintain dimensional tolerances at the high temperatures of lead-free processing.

Advanced automatic chain lubrication and motorized width adjustment are standard features on the pin conveyor. For processing of larger PCBs at higher lead-free temperatures, a center support system is available to prevent board warpage.

Conveyor speed is programmable from 400-2000 mm/minute to accommodate any process requirement.

Nitrogen Atmosphere Compatible Models Widen Lead-Free Processing Window Through Reduced Oxidation (Option).

To maintain stable ,user-selected oxygen PPM levels automatically. A wide range of PPM levels can be selected with nitrogen consumption rate as low as depending upon board size. An internal oxygen sensor and proportioning valve is used to minimize nitrogen consumption and related costs by up to 50%! Use completely sealed design inside the chamber of oven to be effective protection for nitrogen, the nitrogen content of the minimum can be as low as 150 ppm. Under the circumstances of 300-800ppm oxygen, the consumption of nitrogen is lower than 18 m3/hour.

RC series reflow oven - 6-8-10-12 heating zones INTEON

Items		Descri	ption	
Model	RC-0602	RC-0802	RC-1002	RC-1202
Machine dimensions (L*W*H) mm	4100*1383*1490	5310*1353*1490	6100*1353*1496	6915*1353*1496
Standard color	lvory white	lvory white	Ivory white	lvory white
Numbers of heating zone	Top 6/ bottom 6	Top 8/ bottom 8	Top 10/ bottom 10	Top 12/ bottom 12
Lengths of heating zone	2359 mm	3121 mm	3891 mm	4706 mm
Numbers of cooling zone	Top 1 zone		Top 2 zones	
Nozzle plate		High quality :	Steel sheet	
Exhaust volume	10m ³ /min *2 channel exhaust			
Flux collection system		Standard cor	nfiguration	

Control system				
Power supply	3	phase ,380V 50/60Hz (opti	onal : 3 phase ,220V 50/60V)	
Total power	52KW	64KW	80KW	92KW
Startup power	26KW	28KW	34KW	38KW
Normal power consumption	7KW	9KW	10KW	11KW
Warming time	< 15mins		Approx. 30 min	
Temperature setting range		Room tempera	ature to 300°C	
Temperature control method	PID Close loop control + SSR driving			
Temperature control precision	+/- 1°C			
Temperature deviation on PCB		+/- 1	.5°C	
Cooling method	Forced air cooling (Optional: Water-chiller)			
Data storage	Process data and status storage (80GB)			
Abnormal alarm	Temperature abnormal alarm			
Board dropped alarm	Standard (Tower light and Buzzer)			

Conveyor system			
Rails structure		subjection integrated type	
chain structure	singled buckle	singled buckle (Optional: Double buckle)	
Max.PCB width		400mm (Optional 610mm)	
Components clearance		Top/ bottom clearance of PCB: 25 mm	
Conveyor direction		L to R/ (Optional: R to L)	
Fixed rail side		Front rail Fixed	
Conveyor speed range		300 – 20000 mm/min	
Conveyor heights		900 mm+/-20 mm	
Conveyor method	Chain + me	esh as standard (Optional: Chain+ center support system)	
Chain Lubrication		Auto-lubrication + Manual-lubrication	

Optional configuration	
Full nitrogen system	Nitrogen hermetic configuration, nitrogen flow meter, water chiller, oxygen analyzer (PPM control: 300-1000PPM, 18—20m ³ /hr, single lane oven)
Center support system	Unique retractable, special parking position with Maximum flexible
Water chiller cooling	Optional
Dual lane conveyor	Conveyor width: Min.50 mm*50 mm in each lane, Max.300 mm * 300 mm in each lane, Rail 1and Rail 4 are fixed, Rail 2 and Rail 3 are adjustable
Dual lane dual speed	Independent conveyor speed in each lane
Dual lane dual center support system	Independent conveyor speed of chain and center support system in each lane

NITROGEN SYSTEM IN REFLOW OVENS



The main advantages of using Nitrogen for Pb-Free Assembly in the reflow process v/s atmospheric air are as follows:

Improved soldering quality: Higher surface tension as well as less reoxidation of IC terminals will increase the wetted surface by 20% to 30%, resulting in increasing solder joint strength. Higher surface tension minimizes solder balling when using fine pitch solder paste. Less oxidation also improves the wetting on NiAu and bare copper solder lands.

Enlarged Process Window: The soldering process will be less sensitive to poor solderability and solder lands and component terminals, thereby improving the soldering BGA and CSP devices. This is more applicable for Pb-Free Assemblies that would be RoHS compliant.

Other Benefits: Visual appearance of the solder joint surface will be smoother and shinier, especially for Pb-Free Assembly making it easy to inspect and rework. Larger surface tension can hold larger and heavier components on bottom side when performing double reflow.

- Our chamber technology delivers highly efficient heat transfer throughout the entire process zone
- Efficient control of convection dynamics provides well-defined transitions between zones
- Patented cooling technologies in top and bottom cooling zones
- Nitrogen control capability: below 1000 ppm/O² for lead free when the oven was under heavy board load
- Innovative exhaust flow management significantly reduces cooling zone maintenance
- Lower N2 consumption levels through optimized design and performance
- Intelligent flux control efficiently collects flux vapors from the reflow zone



Nitrogen flow meter

Full nitrogen flow in each zone to improve the soldering quality and it is easy to select the nitrogen flow level in each zone according to the end user's requirements.

Oxygen analyzer

The smart oxygen analyzer is high precision to collect the real PPM level in the oven and also connected it to the computer which can display the real time PPM level.

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Nitrogen system in reflow ovens

Powerful evaporator to improve the cooling effects and it is easy for maintenance.



Evaporator of recycling bin





Nitrogen flow supply tube in each zone

- Multi protection for the nitrogen hermetic channel and each hot air motor.
- Protect from the heat loss and avoid the nitrogen gas leak.
- Nitrogen flow supply is available to set in economic type to save the consumption

Nitrogen system in reflow ovens





Standard configuration with water chiller.

The external water chiller holds CE certificates and also allow the end users to set the temperature easily.

Reflow operation system: File(F) Mode(M) Utilities(U)	<operate mode=""> Main over) Window(W)</operate>	view window asa					
Conveyor S SP 1 10. PV 1 0. SF 2 0. StartUp Convey StartUp Convey		2 3 0 0 150 300 0 150 150 150 150 150 150 150 150 150 100 E 150 200 T 30 150 200 T 30 150 200 T 100 E 150 200 Control 100 Control 1	4 5 6 0 0 150 150 150 100 155 150 150 150 150 150 0 0 150 150 150 0 0 150 150 150 0 0 150 150 150 9 0 150 150 150 9 9 150 100 150 9 9 150 100 100 150 9 9 150 100 150 100 9 9 150 100 100 150 9 9 150 100 100 150 9 9 150 100 100 150 9 9 150 100 100 100 100 100	7 8 0 150 150 150 150 150 0 150 150 100 PCB count P Real 100 PcBin Count P Real 100 PcBin Count P Pc	9 10 0 0 180 300 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 150 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100 0 100	gen Denzit	PPM real-time display

- •Full nitrogen system options includes nitrogen hermetic, nitrogen flow meter, water chiller, oxygen analyzer, and nitrogen flow magnetic valve
- •Normally 800 PPM 1000 PPM for lead free process under heavy board load without any problem
- •Nitrogen consumption: 18m³/hour to 20m³/hour at 800 PPM 1000 PPM conditions (conveyor width: 400mm)
- •All system with CE certificates

Friendly user interface



INTEON H-1222 Budapest, Gyár street 15. Phone: +36 1 225-74-15 Phone/Fax: +36 1 207-37-26 E-mail: info@inte-on.com

VE-05/2016