



OVEN LINE

# ROTOAVANT *HR*

FOR BREAD AND PASTRY



# THE ART OF CREATING HEAT, SINCE 1929





**"We have always considered heat as being an actual ingredient in bread as with the other ingredients it must be of the highest quality."**

For over eighty-five years we have been designing and building ovens to create the ideal baking conditions for bakers and pastry makers.

For them we produce the highest quality products, able to provide specific production requirements and to respond to the need to optimize time and costs.

Our long history as leading company, popular worldwide for our professionalism and reliability, is founded on the values of Quality, Clarity and Honesty.

Today, as always, we want to offer our customers a technological innovation to offer the best performance and great reliability over time.

*A Polin installation of the 60s*



# HIGH PERFORMANCE RACK OVEN

POLIN'S DEDICATED  
RESEARCH AND  
TECHNOLOGICAL  
DEVELOPMENT  
TO GIVE YOU  
THE BEST BAKING  
CONDITIONS



Most of the technological innovations developed for our rack ovens, have introduced important project and construction models on the market.

RotoAvant, represents the best of our experience, improving great production flexibility while offering first-class baking and maximum energy efficiency.

It controls and maintains optimal conditions that determine the ideal air in the chamber, guiding



the gentle and homogenous heat and steam exchange from the onset and most delicate baking phases.

RotoAvant is an oven designed to provide high performance with maximum energy efficiency, combining innovative technology solutions for advanced control functions.

Built in five different versions, developed to meet the most specific requirements of bakers and

pastry chefs, RotoAvant offers you the utmost of benefits and services.

The flexible system is ideal for small scale and large scale productions because you can position your oven symmetrically and install it in series, but also integrate Industry Packs to every model, including a set of accessories and ideal functions for bakers with several ovens for larger productions.

# 1/PRODUCTION HIGH PRODUCTIVITY AND GREAT FLEXIBILITY TO OFFER YOUR CUSTOMER THE BEST

## A system designed to produce more



An exclusive system that ensures a greater heat exchange in the baking chamber, making it possible for the large amount of heat produced by RotoAvant to be readily available, always enveloping the product at the optimal temperature. This makes higher productivity possible because a higher quality and quantity of energy transmitted to the product, reduces baking time and guarantees optimal results.

## Functions to simplify production



RotoAvant designed a series of functions to facilitate and optimize the work of bakers and pastry chefs, such as:

- Automatic start up
  - The function that indicates the time needed to have the desired temperature in the oven when in stand-by or off.
  - Simple programming cycles by controlling steam and setting all of the variables in each phase.
  - Storing recipes.
  - Baking up recipes for models equipped with USB key.
  - The simple and immediate control of all functions.
  - Rapid Cooling System with the door closed in Rapid Cooling System models only.
- RotoAvant can also be equipped with a second independent digital control panel to ensure continuity of production.





# 2/EFFICIENCY LOW OPERATING CONSUMPTION AND HIGH EFFICIENCY. ROTOAVANT HELPS YOU SAVE. INDEED

## Low consumptions heating system



Designed for heat efficiency and technology solutions for high savings making it possible to consistently reduce energy consumption.

RotoAvant was designed with a High Efficiency System, to optimize the combustion chamber. The high efficiency is determined by the low temperature compared to the normal combustion chambers, resulting in low operating consumption and longer lasting life.

Certified efficiency by DVGW, one of Europe's most accredited institutions.



Certified efficiency filed at  
the DVGW Certifying Body

## Waste reduction in non-productive phases



The stand-by function, through a dedicated standard key, makes it possible to reduce energy consumption when not operating, keeping it ready for quick oven recovery.



## Reduced heat loss

The quality of materials used and the many design features reduce RotoAvant heat loss including:

- The dual stainless-silicone seal positioned around the door perimeter.
- The double door closing system prevents steam dispersion.
- The thickness of the door is 140 mm.
- The compressed wool insulation is 120 kg/sqm.
- The mirrored glass which reduces heat dispersion by 4%.
- The optimal unloading control system.



## HIGHEST TECHNOLOGY FOR OPTIMAL PRODUCTS

### + High efficiency combustion system



The innovative combustion chamber was designed to provide high efficiency and is equipped with a thick refractory stainless steel structure which has provided considerable results, introducing important project and construction models on the market twenty five years ago.

The large number of tubes and the particular form of the fume circuit determine the large radiant surface.

The special heat exchange system allows you to use the entire surface for heat exchange. For this reason the combustion chamber operates at lower temperatures than normal chambers.

The High Efficiency Combustion System is the best for high efficiency, low operating consumption and long life.

The heat accumulation system envelops the product at the optimal baking temperature.



*Bigger combustion chamber with  
a large radiant surface*



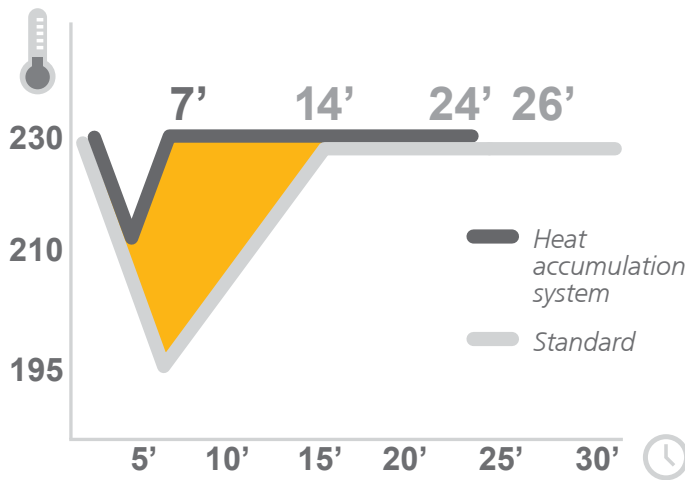
## + Rapid temperature recovery



RotoAvant is a flexible and excellent high-performance oven whose value is widely acknowledged by professionals around the world. The first phase of baking is the most delicate, which is why the RotoAvant heat accumulation system makes it possible for the oven to have the desired temperature, with a speed of recovery to reduce baking times, while maintaining an excellent end result.



## COMPARISON BETWEEN A STANDARD SYSTEM AND POLIN HEAT ACCUMULATION SYSTEM



The orange-coloured part represents the amount of extra heat which the product receives in the first baking phase, the most delicate, in which RotoAvant makes it possible to have a rapid temperature recovery.



	STANDARD System	HEAT ACCUMULATION System
Loss of temperature when loading	50°C	20°C
Time to reach the optimal temperature	14 min.	7 min.
Baking time	26 min.	24 min.



## + **Exclusive Wide flow system to direct air flow in the chamber**



To ensure greater air flow in the baking chamber, RotoAvant uses the Wide Flow system, with which the large mass of air generated is conveyed through ducts designed and constructed on the principles of flow dynamics.

This large air mass is excellent, and the large air flow envelops the product to guarantee active and uniform baking surface on the pan.

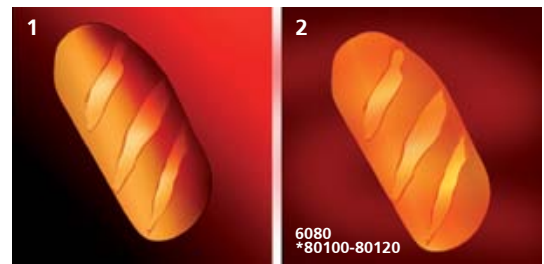
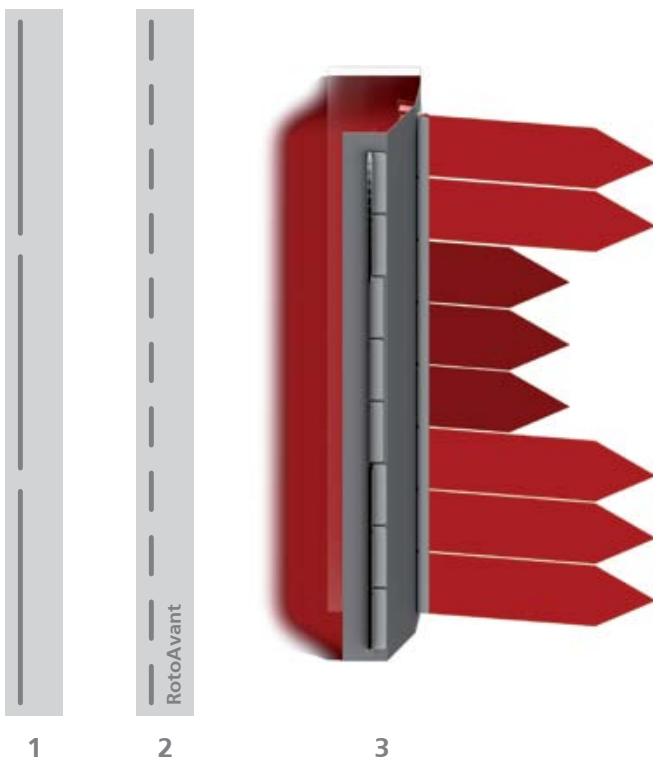


Figure 1, the air flows in a normal rack oven.

Figure 2 a Wide Flow dual duct circuit, which guarantees a flow of hot air enveloping all products.



## **33 or 44 Vertical air direction: a perfectly uniform air flow**



The regulation of air flows by means of numerous registers maximises vertical baking uniformity of the product. This aspect allows air to be directed precisely, surrounding the product surface and providing an optimal supply of heat to the centre of the pan and the perimeter, and across the entire height of the rack. The numerous registers improves the regulation of the flows; RotoAvant as all Polin rack ovens, has been equipped with a lot more compared to normal rack ovens on the market (33 in the model in 6080 and 44 in models 80100 and 80120).

Compared to a normal rack oven (figure 1), RotoAvant has a greater number of registers through which the air is directed (Figure 2).

This allows a more precise control of the air flow that surrounds the product, for the best baking result (figure 3).



### Designed to recreate the ground effect



To recreate the ground effect on the bread surface for perfect baking results along all ducts, over 200 conveyors were placed which gently direct the air flow upwards.

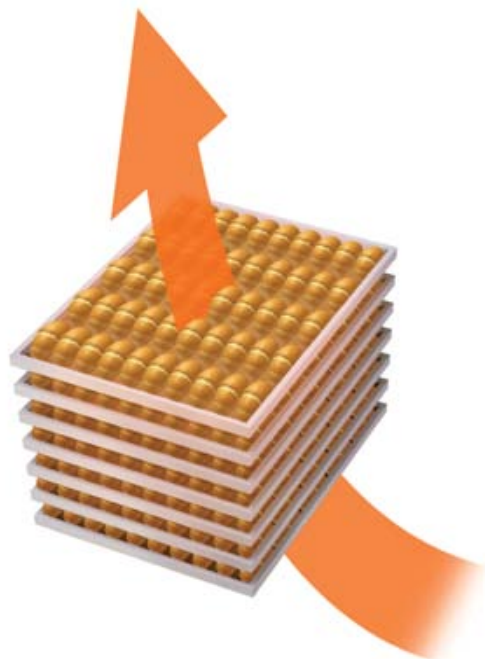
### Air fine control: the right amount of air on the product



The RotoAvant inverter technology enables the selection of the right amount of air for each baking phase that the product requires, in manual and automatic mode.

There are 5 speeds with a default value, that can be freely adjusted to suit your specific production needs.

Air Fine Control guarantees perfect baking for all types of products, such as large breads and delicate pastry products (standard on Flex, Energy Save and HiControl version).



*The conveyors on the ducts guide the air flow upwards, creating the ground effect on the surface of the product baked.*



## THE BEST STEAM ON THE PRODUCT. ABUNDANT AND HOMOGENEOUS

### + The best system to generate high quality steam



The RotoAvant steam generator is designed to produce a constant, abundant and homogeneous steam flow to ensure optimal baking.

It has a large steam generator with spheres with a modular vaporizer unit with cascading elements. The suction system that determines the ideal steam in the chamber, the position of the steam engine and the air flow inside the oven, have been designed to envelope the product with moist steam, that easily sticks to the product because it almost reaches condensing temperature. It is possible to install a larger steamer with dual water delivery to further increase the availability of steam and to increase thermal mass (optional or Industry Pack).

### Constant pressure baking for even better bread



The innovative system guarantees homogeneity and consistency in daily production under all environmental conditions. This also further improves product quality as the flavoured and fragranced steam released by the baking bread is retained and constantly redistributed inside the oven.

### + Automatic steam distribution system



The automatic steam distribution system is managed by software. In combination with constant pressure baking, it keeps the surface of the product moist during the most delicate initial baking phase.

*Steam generator with spheres.  
The self-cleaning spheres placed in contact with the  
water vibrate, crumbling any formation of limestone,  
with a self-cleaning effect for the elements.  
There are 782 spheres in the 6080 model, 1152 in the  
80100 and 1322 in the 80120.*





## **Fast air: rapid steam evacuation**



RotoAvant can be equipped with Fast Air, a faster steam exhaust function, useful when you want crustier product (Flex, Energy Save and HiControl).

## **Liter counter to measure the intake of water to be vaporised and stainless steel fittings**



The liter counter measures the intake of water to be vaporised according to the quantity required by the program, and not based on time. Thus the quantity of water vaporised is always the one desired, regardless of the pressure of the water mains or crumbling any formation of limestone which reduces flow (optional or with Industry Pack). The stainless steel fittings last longer over time.

## **Large hood and dual speed stainless steel exhaust fan**



The large exhaust hood limits steam dispersions to the environment when the door is opened. It is 630 mm deep, with a capacity of 200 liters and a suction capacity of 800 liters / hour. The stainless steel exhaust fan is also available in the dual speed version ( 80100 and 80120 Flex versions, Energy Save, or HiControl with Industry Pack).

## **Steam recovery duct**



The recovery duct intervenes immediately when the door is opened to prevent steam dispersion to the environment.



*The large hood in stainless steel may be provided with a grid*

## **Steam condensing device**



Steam condensing device, without steam discharge pipes.

An automatic software control is used with four speeds and anti-odour device filters is also available (optional in RotoAvant electrically powered, SE).



*Steam condensing device*

# CONSTRUCTION FEATURES

RotoAvant ovens are designed to create ideal conditions for bakers and pastry makers.

This oven is designed with a focus on detail, and to the structural features, which increases production quality and long-lasting performance with the possibility to choose useful accessories for better results.



## Hinged opening

The hinged opening of the double glass guarantees easy cleaning.



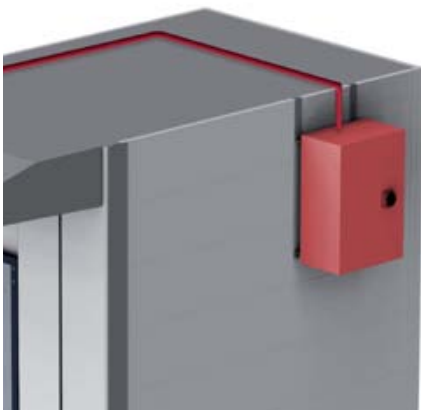
## The hook is entirely cast and larger

The hook is a monoblock cast of large dimensions. The larger section increases the surface of contact with bearings, reducing wearing.



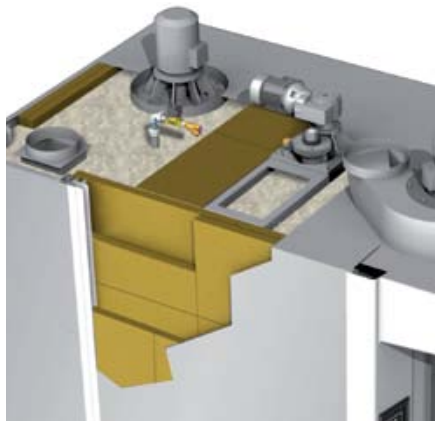
## Smooth base

The smooth base makes cleaning inside the oven easier.



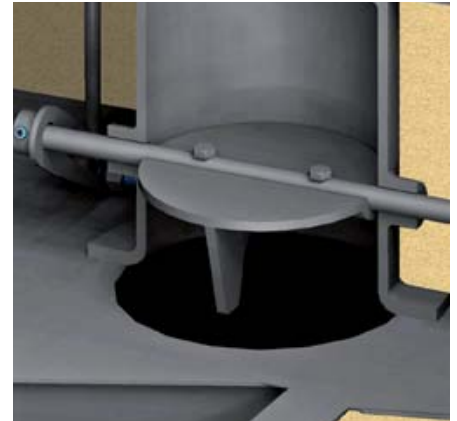
## Electrical panel

The electrical panel can be hung on the oven walls. This prevents overheating and makes maintenance operations easier.



## Pre-compressed panels

Thermal dispersion has been reduced to a minimum thanks to the use of pre-compressed panels and compressed wool of 120 kg / sq.cm.



## Cast iron automatic steam exhaust valve

It enables automatic steam exhaust when desired (Flex, Energy Save and HiControl).



## Hood

Functional grid to evenly distribute suction over the whole width of the hood (optional).



## Stainless steel baking chamber

Helps to maintain baking quality constant because it is resistant and long lasting.



## Stainless steel exhaust hood

The steam exhaust hood is equipped with a stainless steel fan.



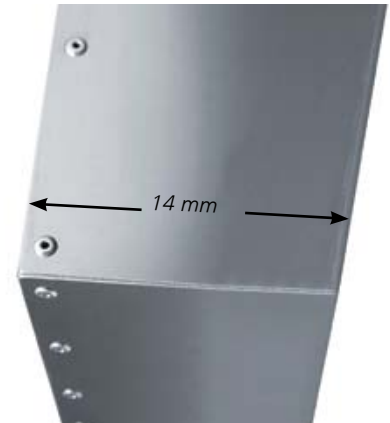
### Rotating platform

This simplifies the use of multi-sized racks (optional).



### Cast iron rotation unit

The structure of the rotation unit is made of a single cast "anticorodal" aluminum.



### Thickness of the door

The thickness of the door ensures optimal heat insulation and considerable robustness.



### Pressure relief outlet vent

The models with burners are equipped with pressure relief outlet vent



### Singular Cast Siphon

Made of a singular cast anti-corrosion aluminum, it prevents steam dispersion during baking (80100 and 80120)



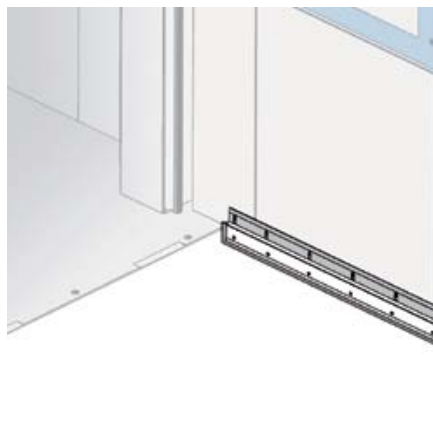
### Door dual closing system

The door dual closing system provides a perfect seal.



### Dual silicone + stainless steel gasket

Positioned along the whole door perimeter, it provides a perfect seal that lasts over time.



### Adjustable lower gasket

The lower rubber door gasket has adjustable height.



### Hood display with oven heating indicator

Ideal baking conditions for bakers with several ovens in a row. In addition to standard functions, a green indicator light is divided in 6 LEDs, which light up in sequence as an oven gets ready for loading (optional).



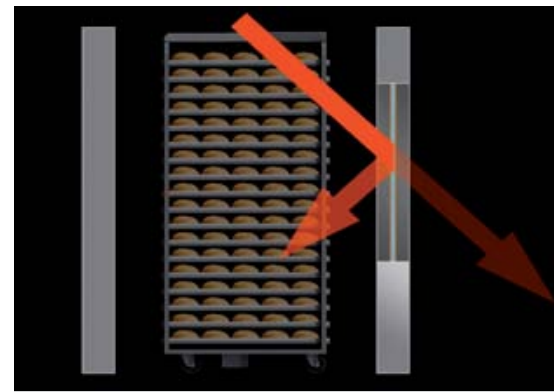
### Stainless steel coating

The oven can be made even more resistant and long-lasting, with special stainless steel panels (optional).



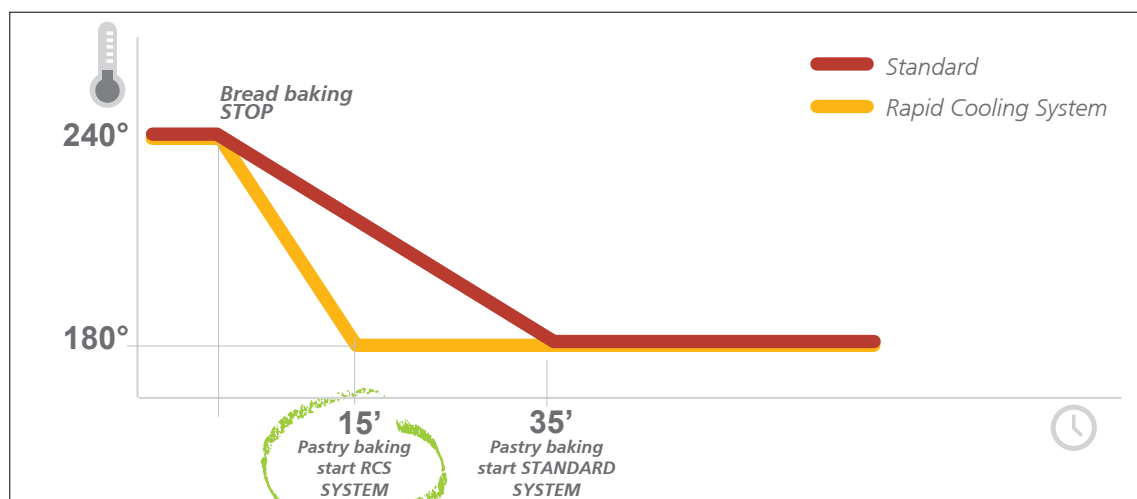
### Automatic lifting

RotoAvant is designed for a levered semi automatic lift, activated by door opening or closing (up to 250 kg). An automatic lifting and rotation unit is also available for racks up to 400 kg (optional).



### Low emission glass

Higher thermal efficiency is possible with a mirrored glass which reduces heat dispersion by 4% (on Energy Save).



### Rapid cooling system: baking bread and pastry in 15 minutes

The rapid cooling system allows you to drastically reduce the waiting times to pass from high to low temperature baking. To be used when the oven door is closed in order to keep the room temperature in the bakery unchanged (standard on Flex and HiControl).



## Pastry baking start STANDARD SYSTEM



RotoAvant can be equipped with a LAN or WLAN special electronic card for remote control.

This device allows you to monitor and manage one or more ovens connected in a network, through an internet connection and from any browser in IOS, Windows and Android, by using Smartphones, Tablets, or PCs from a remote point.

There are many things you can do, including: loading and unloading baking programs, change settings, get instant diagnosis and analysis of consumption in real time, to check oven's and operator's efficiency, detect baking statistics, and manage alarms.

Or simply see if an oven is turned on but not used.



## SECURITY & ALARMS

### Time/temperature limiter

It prevents the possibility of introducing recipes with incorrect parameters which may cause malfunctions or unsafe situations.

### Warning analysis

The system automatically identifies the presence of problems not yet highlighted by faults and notifies the operator through the display.

### Alarms to display malfunction

An alarm indicating a malfunction is associated with a visual display which indicates the cause.

### Auto off

If the oven is forgotten "on" for too long without operating, the system will start reducing the temperature gradually until the oven turns off.

### Door security system

It prevents the oven from operating when the door is open, even in case the security system breaks down.



## CHOOSE THE IDEAL VERSION FOR YOUR PRODUCTION

The long-lasting relationship with the artisans who promote the Art of Baking around the world allows us to fully understand each production detail and design technical solutions adapted to specific applications. Smart, Flex, Save Energy and HiControl, are the four RotoAvant versions created to offer the best features of an excellent high-performance oven. These four versions are completed with the basic electromechanical keyboard model.

It is also available Industry Pack, a set of accessories and ideal functions for those with multiple ovens for large productions.

### SMART

RotoAvant's key to the big performance market. This basic version allows you to manage stored recipes and oven control panels directly from the manual control or through a simple but integrated software.

"Smart" offers high standard and unique features compared to other rack ovens: a high efficiency combustion chamber with lower operating consumption, higher airflow in the cooking chamber, surrounding and steady steam flow, thanks to the spheres steam generator.

It is controlled through the new 100-program computer with 12 phases, 8 rows LCD display, which allows you to manage all the useful functions to simplify production: automatic start, energy saving stand-by, baking programs and recipe storage.

### FLEX

This version is designed for those who desire to determine production parameters for each type of product, in a simple and specific way; from large-sized bread products to delicate pastry items. RotoAvant Flex introduces important technological evolutions and unique "Smart" features to which the features designed to make it ideal for flexible production have been added.

The inverter technology makes it possible to change the speed and quantity of air in the chamber, to obtain the best baking quality.

Steam can be quickly evacuated from the chamber thanks to Fast Air function while a rapid cooling system allows you to quickly reduce the oven temperature, while the door is closed.

RotoAvant Flex also has a front USB port that makes it possible to backup programmed recipes.

This version can also be equipped with a second, independent, digital control panel to ensure continuity of production.



## ENERGY SAVE

RotoAvant Energy Save stems from a research and development project to achieve maximum energy efficiency, combining innovative technology solutions to advanced control functions. As a result the oven offers high-level technology to manage heat and steam for the Polin rack ovens, combining several elements that contribute to energy savings, while preserving the great performance of the oven: from the materials used for heat insulation to low-emission glass, the optimal management of the discharge system to reduce heat loss, motorised inverters for dosing energy without waste.

Energy Save, besides ensuring maximum production flexibility, guarantees a 38% savings in long-lasting non-productive phases.

## HI CONTROL

HiControl is the RotoAvant version with a new and modern computer control panel with Polin Touch keyboard. All oven functions can be managed instantly thanks to this easy but integrated control panel, with a simple touch: automatic start, energy saving stand-by, baking programs and recipe storage. Polin Touch enables an easy and clear view of the control panels, alarms and diagnostics.

It facilitates the analysis of several production data, including monitoring oven efficiency and recording baking phases.

RotoAvant HiControl is a high performance and flexible oven as the Flex version, with the inverter technology, which allows you to change the speed and quantity of air in the chamber, the rapid steam evacuation system and rapid oven cooling system when the door is closed. HiControl is an excellent oven.

## PELLET LINE

ROTOPELLET significantly reduces combustion costs; this oven combines the high RotoAvant performance to the pellet economic convenience.



**ROTOAVANT**



# INDUSTRY PACK

## FOR THOSE WITH MULTIPLE OVENS

Industry Pack is a set of accessories and extra functions, designed to make RotoAvant's performance ideal for those with multiple ovens for large productions. Industry Pack contains:

### HOOD DISPLAY

Ideal baking conditions for bakers with several ovens in a row.

### STEAM GENERATOR LITER-COUNTER

It doses the quantity of water in the established value, regardless of the network pressure or limestone obstructions.

### SECOND SPEED EXHAUST

The second speed in exhaust hood reduces the dispersion of steam in the environment even more effectively, when you open the door.

### STAINLESS STEEL PANELS

Stainless steel panels for an even more resistant and long-lasting oven.

### LARGER STEAMER

Larger steamer to provide large quantities of steam even in on-going production.

### REMOTE CONTROL

Remote control set up through a special electronic card for remote management via LAN or WLAN.



# FEATURES

## + SPARE KEYBOARD

A reserve command keyboard allows you to carry on working in case of main keyboard fault; it is equipped with all essential control functions of the oven.



EXCLUSIVE of POLIN OVENS



(\*) Available from 2014

### CONTROLLO

Control type	Polin Control	Polin Control	Polin Control	Polin Touch
Baking time	100	100	100	200
Password-protected recipes	✓	✓	✓	✓
Phases for each baking cycle	12	12	12	10
Display (Lcd 8 lines, Touch Screen)	LCD 8 lines	LCD 8 lines	LCD 8 lines	Touch Screen
USB port saving programs	○	✓	✓	✓
Energy Stand-by	✓	✓	✓	✓
Energy saving functions	✓	✓	✓	✓
Time/temperature limiter	✓	✓	✓	✓
Automatic start	✓	✓	✓	✓
Alarms to display malfunction	✓	✓	✓	✓
Spare keyboard	-	✓	✓	✓
Network control of multiple ovens	○	○	○	○

### HEATING SYSTEM

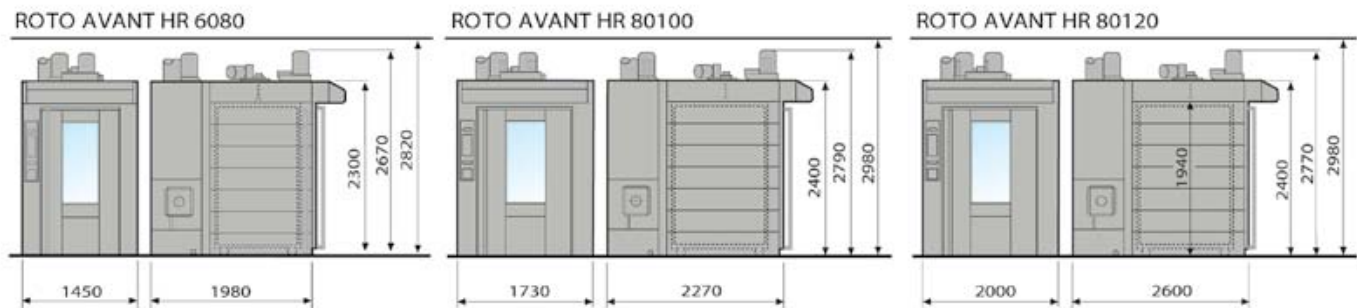
High-performance Combustion chamber	✓	✓	✓	✓
Wide Flow	✓	✓	✓	✓
Vertical Air Direction	✓	✓	✓	✓
Air Fine Control	-	✓	✓	✓
Rapid Cooling System	○	✓	○	✓

### STEAM SYSTEM

Steam generator with spheres	✓	✓	✓	✓
Automatic steam distribution system	✓	✓	✓	✓
Steam generator liter counter	○	○	○	○
Steam exhaust hood second speed (80100 and 80120)	○	○	○	○
Fast steam exhaust device (Fast Air)	○	✓	○	○
Larger steamer	○	○	○	○
Air steam condenser (only for SE)	○	○	○	○
Automatic steam exhaust valve	○	✓	✓	✓

BUILDING ELEMENTS				
Low-emission glass	○	○	✓	○
Stainless steel panels	○	○	○	○
Stainless steel exhaust fan and hood	✓	✓	✓	✓
Hood grid	○	○	○	○
Dual stainless steel/silicone seal positioned along door perimeter	✓	✓	✓	✓
Double door-locking system	✓	✓	✓	✓
Door thickness 140 mm	✓	✓	✓	✓
Compressed silicone insulation 120 kg/sqm.	✓	✓	✓	✓
Stainless steel baking chamber	✓	✓	✓	✓
Control panel with front opening	✓	✓	✓	✓
Hinged opening glass	✓	✓	✓	✓
Pressure relief outlet vent	✓	✓	✓	✓
Cast syphon	✓	✓	✓	✓
Cast iron rotation unit	✓	✓	✓	✓
Time/temperature hood display	○	○	○	○
Semi-automatic rack-lifting (up to 250 kg)	○	○	○	○
Automatic rack-lifting (up to 400 kg)	○	○	○	○
Rotating platform	○	○	○	○
Symmetrical oven	○	○	○	○
Boosted electric unit (6080)	○	○	○	○
Manufactured according to UL regulations	○	○	○	○

✓ STANDARD ○ OPTIONAL



		6080 SC	6080 SE	80100 SC	80100 SE	80120 SC	80120 SE
Oven weight	kg	1450	1450	1900	1900	2220	2150
Trays capacity	n°	16/18	16/18	16/18	16/18	16/18	16/18
Trays pitch	mm	105/93	105/93	105/93	105/93	105/93	105/93
Trays dimensions	mm	600x800 n°2 600x400	600x800 n°2 600x400	600x800 800x800 800x1000	600x800 800x800 800x1000	800x1200 n°2 600x800	800x1200 n°2 600x800
Minimum door width	mm	500	500	800	800	800	800
Electrical power	kW	2	49+2,8	2,8	63+2,8	2,8	81+2,8
Increased electrical power	kW	-	57+2	-	-	-	-
Thermal power	kcal/h	60.000	-	80.000	-	95.000	-
	kW	70	-	93	-	110	-
	BTU	240.000	-	320.000	-	380.000	-

SE electric SC with burner (power: LPG, gas, diesel, pellet)



## The Art of Baking since 1929

We represent the largest Italian industrial market in building ovens and machinery, for bread pastries and cookies.  
we entirely produce the most complete high quality wide range for the modern "Art of Baking" laboratory.  
We have introduced important technological innovations for over eighty years worldwide.





**Ing. Polin & C. S.p.A.**

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