



# ROTOAVANT *HR / FB*

# THE BEST TECHNOLOGY FOR A 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 HR/FB, 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.

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.

# FLEXIBLE IN A UNIQUE WAY

## Functions to simplify production



RotoAvant HR / FB improves production thanks to a series of functions designed to facilitate and optimize the work, such as:

- programmed switch-on;
- a function to indicate the time required to have the oven temperature ready once it has been put on stand-by or off;
- the ease of programming baking cycles by establishing all the variables in each phase;
- storing recipes;
- the possibility to backup recipes in versions with USB input.

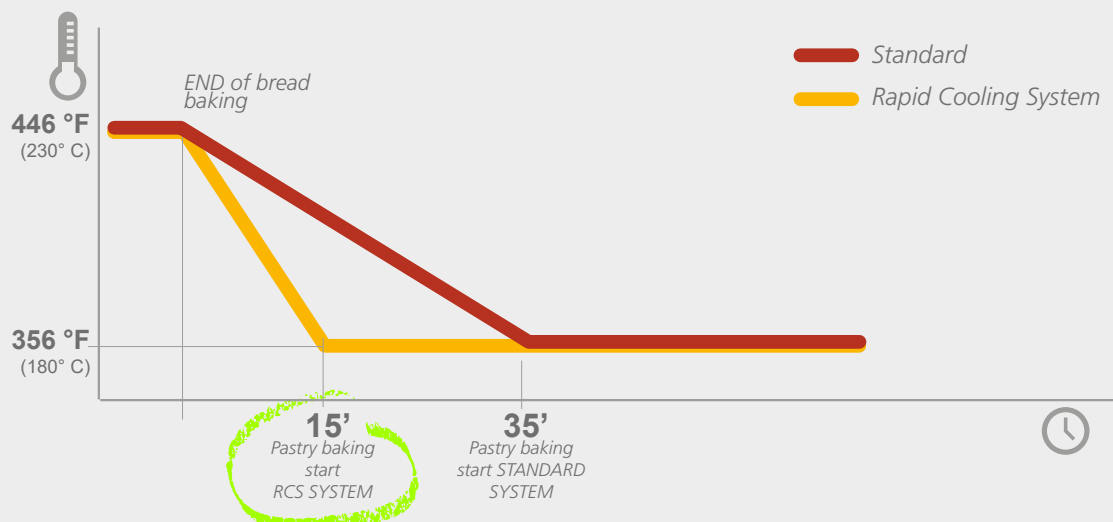
## An oven to improve your productivity



The rapid heating and cooling of RotoAvant HR / FB allows a fast temperature change. This contributes to a greater productivity ensuring a perfect product.

## Rapid Cooling System: from bread to pastry baking in 15 minutes

The rapid cooling system drastically reduces the waiting time needed to switch from high to low temperature production, with the oven door closed and thus keeping the working microclimate in the bakery unchanged.



## 2/EFFICIENCY

# STRICT IN ENERGY CONSUMPTION

### Equipped with a certified low-consumption heat system



RotoAvant HR / FB has a High Efficiency heat generation system. The optimized operation of the combustion chamber determines a high level of efficiency proved by a lower working temperature compared to normal combustion chambers. This reduces consumption and increases durability.

Efficiency certified by DVGW, one of the most accredited European bodies.

### Thermal dispersion reduced to a minimum



The quality of the materials used and the many design features contribute to minimize the heat loss.

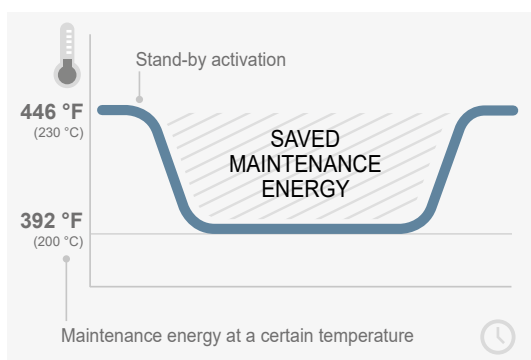


Efficiency Certificate  
Deposited at the Certifying  
Body DVGW

### No more waste during non-productive phases



Thanks to the stand-by function the energy consumption during the non-productive phases is reduced to a minimum, and the oven kept ready for a rapid restart.





## TECHNOLOGY TO CREATE A HUGE AMOUNT OF HEAT

### + High efficiency combustion chamber (SC version)

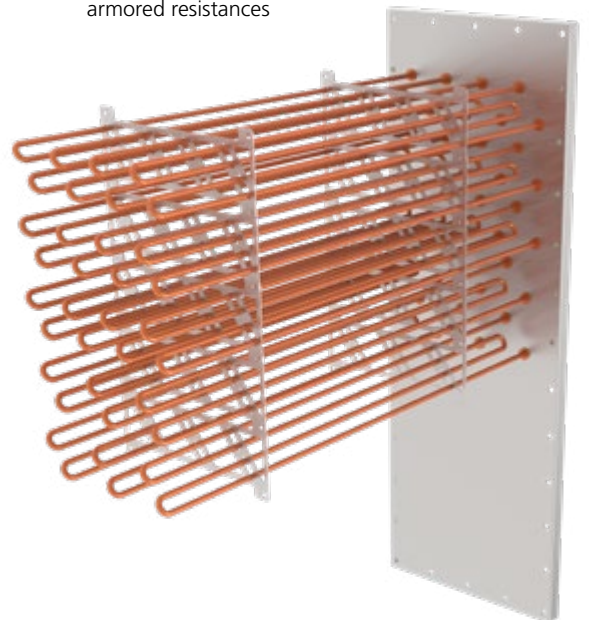


The heart of the RotoAvant HR / FB heat system is the very thick refractory stainless steel combustion chamber with a shape of the flue gas circuit designed for maximum efficiency.

It works at lower temperatures than normal chambers ensuring a high level of performance and a long life.

The large amount of heat that it produces and makes readily available, allows the product to always be wrapped in the optimal temperature for its baking.

Heat generator with armored resistances



### Special armored resistances (SE version)



In the electric version (SE) the ovens of the RotoAvant HR / FB line are equipped with special armored steel resistances, studied in thickness, shape and power to improve performance.

Thanks to a special surface treatment, the heat radiation is improved and more penetrating on the product.

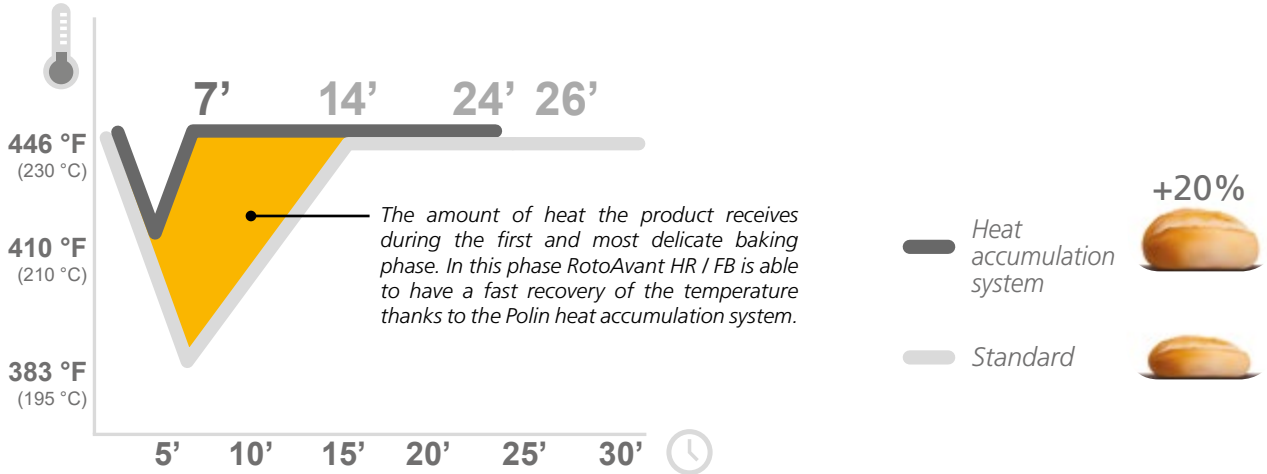
*Increased combustion chamber with large radiating surface (RotoAvant HR)*

# OPTIMAL HEAT FROM THE FIRST STAGE OF PRODUCT DEVELOPMENT

## + Polin heat accumulation system

The first phase of product development is the most delicate one, as it affects the rest of the baking. This is why we have created a heat accumulation system that makes the oven immediately ready at the desired temperature, with a recovery speed that allows cooking times to be reduced, ensuring a perfect result.

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



	STANDARD system	HEAT ACCUMULATION system
Temperature loss during loading	122°F (50°C)	68 °F (20°C)
Time to reach the optimal temperature after loading	14 min.	7 min.
Baking time	26 min.	24 min.

## A SOFT AND HOMOGENEOUS AIR FLOW ON THE PRODUCT

### + A huge airflow to wrap the product

To ensure greater airflow capacity in the baking chamber, RotoAvant HR / FB uses the **Wide Flow System**, conveying a large mass of the generated air through ducts designed and built based on the principles of flow dynamics. This system allows a perfect air quantity / pressure ratio, and a wide enveloping flow that guarantees an active and uniform baking over the entire surface of the tray.

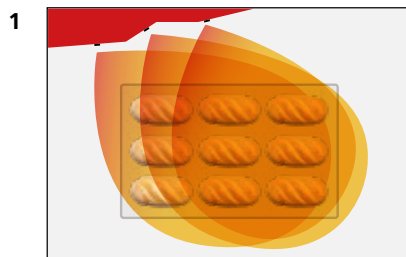


Figure 1: air flows in a single duct rack oven.

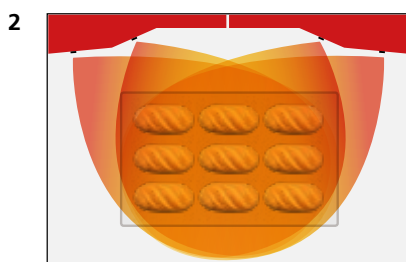
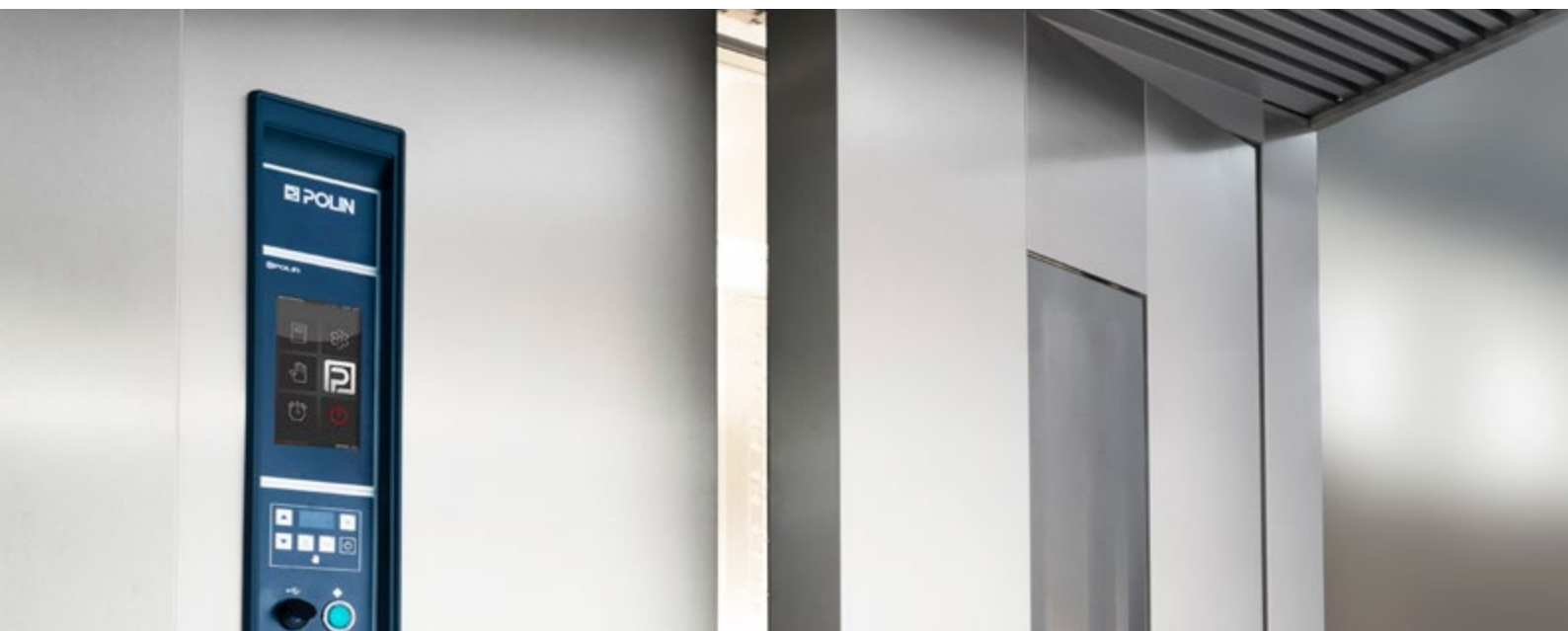
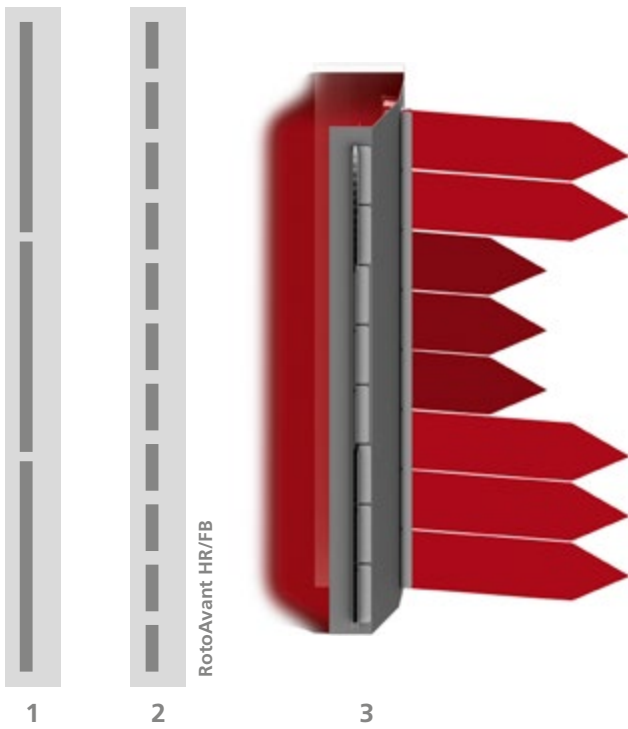


Figure 2: air flows of a Wide Flow double duct system, which allows to generate an enveloping air flow over the product.







**A perfectly uniform baking over the whole rack**



The vertical uniformity of the air flow is guaranteed by the **Vertical Air Direction** through 30, 33 or 44 registers. Thanks to this system with special registers, the air is directed to the product with precision, creating the maximum envelopment on the surface of the product and an optimal supply of heat at the center of the tray, along its entire perimeter, and on the whole rack height. The more the registers are, the better is the direction of the flows, for this reason also in RotoAvant HR / FB, as in all Polin rack ovens, there are many more of them, than the in normal rack ovens on the market: 30 in the FB 4676 and 44 in the HR/FB 80100.

Compared to a normal rack oven (fig. 1), RotoAvant HR/FB has a higher number of registers through which the air is directed (fig. 2). This allows a more precise adjustment of the air flow that wraps the product. (fig. 3).

**Designed to recreate the ground effect**



To recreate the ground effect on the base of the bread and to obtain a perfect baking, more than 200 conveyors are placed along the ducts which softly direct the air flow from the bottom to the top.

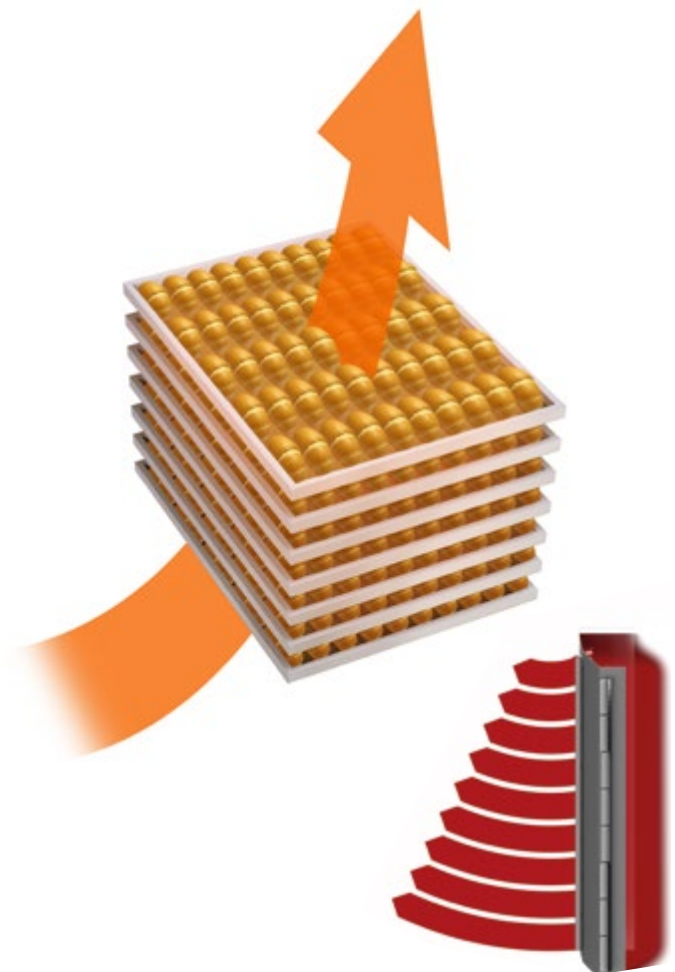
**The right amount of air according to the product**



The use of inverter technology in RotoAvant HR/FB allows to select the right amount of air for each baking phase, both in manual and in automatic cycles.

There are 5 speeds that have a preset value but are freely modifiable according to your specific production needs.

The **Air Fine Control** system allows optimal baking for any type of product, from large pieces of bread to fine pastry (standard on HiControl version).



The conveyors on the ducts guide the air flow from the bottom to the top, creating the ground effect on the base of the baked product.

## THE BEST STEAM ON THE PRODUCT

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



Roto Avant HR / FB is equipped with a steam generation system to ensure a constant, abundant and homogeneous steam flow.

The system is composed of a large mass spherical steamer with a modular vaporiser unit with cascade elements, equipped with spheres.

The suction system that guides the steam into the chamber, the positioning of the steamer and the path of the air inside the oven, have been designed in order for the steam to easily stick to the product.

### + Automatic steam distribution system

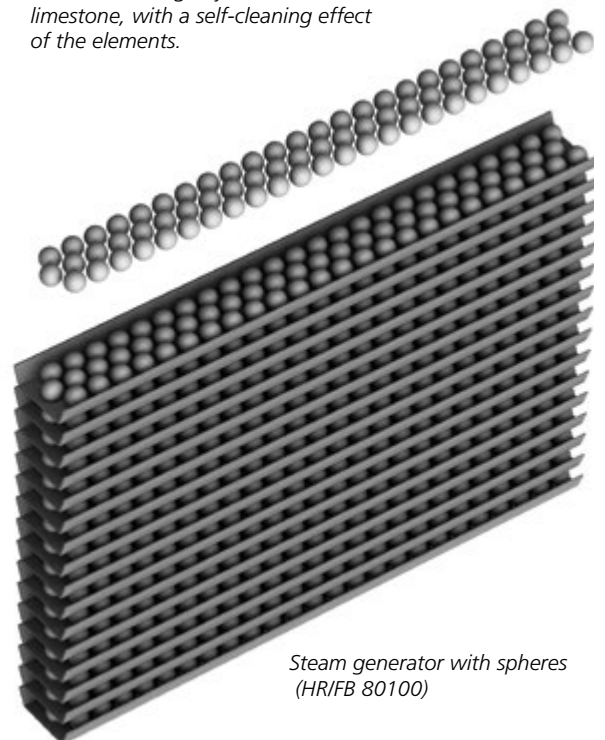


The automatic steam distribution system is managed by a software. In combination with constant pressure inside the baking chamber, it keeps the surface of the product moist during the most delicate initial baking phase.

*Steam generator with spheres.  
The self-cleaning spheres, vibrate when placed in contact with the water, crumbling any formation of limestone, with a self-cleaning effect of the elements.*



Steam generator with spheres (FB 4676)



Steam generator with spheres (HR/FB 80100)

**+ For a crunchier product**

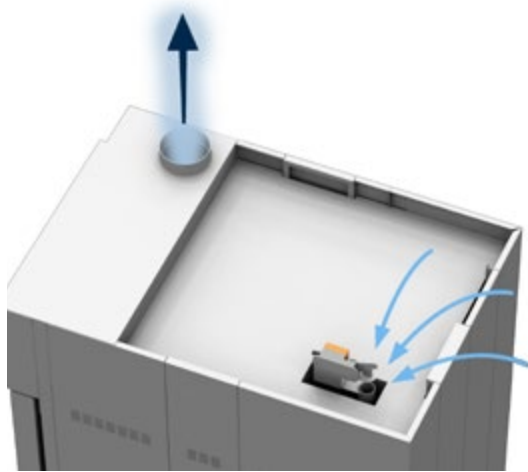
RotoAvant HR/FB is equipped with **Fast Air**, a faster steam exhaust function, which allows a rapid steam evacuation during the final baking phase, ideal to obtain crusty products.



**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 vaporized is always the one desired, regardless of the pressure of the water mains or crumbling any formation of limestone which reduces flow (optional). The stainless steel fittings last longer over time.



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

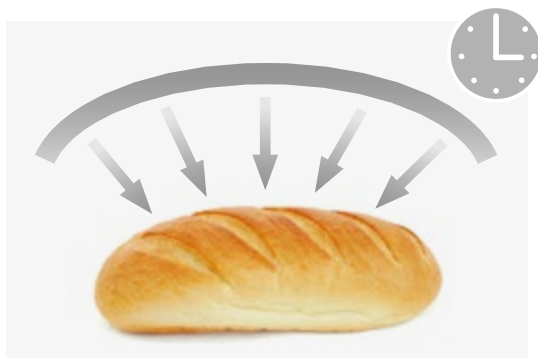


The large exhaust hood limits steam dispersions to the environment when the door is opened. It is 25,9" (660mm) deep, with a capacity of 83 gal (315 liters) and a suction capacity up to 24.720 ft3 (700 m3) / hour with the double speed.

**+ Constant pressure in the baking chamber for a better product**



An innovative system with a gravity valve maintains the pressure inside the baking chamber and guarantees daily production homogeneity under all environmental conditions (Hi-Control).



# OPTIONALS



## Hinged opening

The hinged opening of the double glass guarantees easy cleaning.



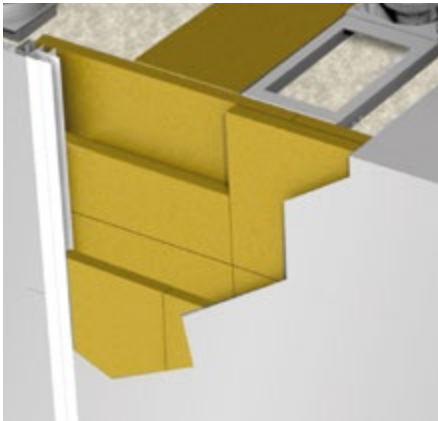
## Cast and larger hook

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.



## Pre-compressed panels

Thermal dispersion has been reduced to a minimum thanks to the use of precompressed panels and compressed wool of 264 lb/pt (120 kg/sq. cm)



## Chrome-plated ergonomic handle

The shape of the handle has been designed to facilitate gripping and make the door easy to open (only on FB).



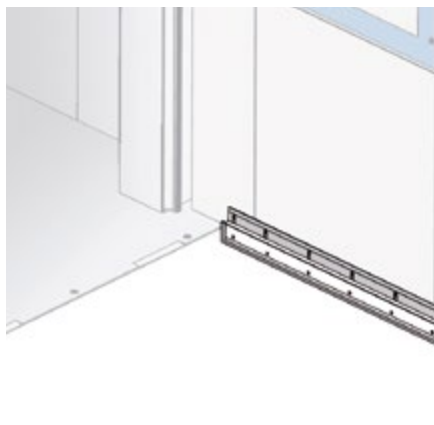
## Stainless steel coating

RotoAvant FB can be made even more resistant and long-lasting, with special stainless steel panel coating.



## Dual stainless steel/silicone gasket

Placed over the entire perimeter of the door, allows a perfect seal and a longer durability.



## Adjustable lower gasket

The lower rubber door gasket has adjustable height.



## Hood grid

Functional grid to evenly distribute suction over the whole width of the hood (standard on FB, optional on HR).





**The great thickness of the door ensures**  
an optimal thermal insulation and remarkable robustness.



**Cast iron rotation unit**  
The structure of the rotation unit is of a single cast anticorodal aluminium.



**Pressure relief outlet vent**  
The models with burner are equipped with pressure relief outlet vent.



**Dual door closing system**  
The dual door closing system improves the steam seal (only on FB).









**Door cooling**  
The external part of the door is cooled thanks to a special system that makes the air flow through a dedicated duct (only on FB).

# OPTIONAL



## REPORTED PHASES:

-  Oven ready (green)
-  Baking in progress (white)
-  End of baking (flashing blue)
-  Open doors (flashing white)
-  Alarms (red)
-  Stand-by (flashing green)

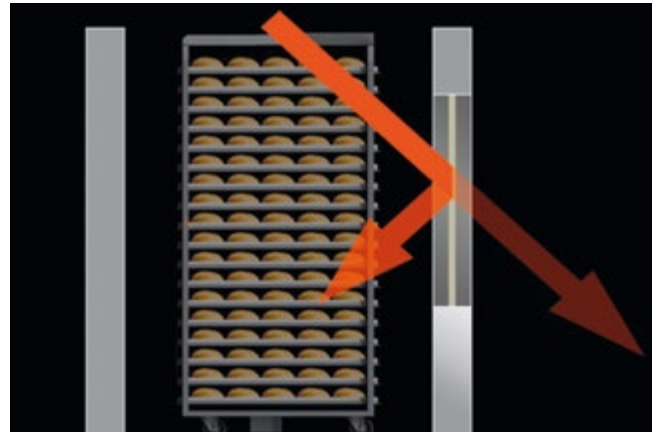
### LED indicator lights for hood

Designed to facilitate the work of the operator especially in presence of several ovens in a row: the LEDs visually indicate the operating status of the oven indicating the different phases: oven ready, baking in progress, end of baking, doors open, alarms, stand by.



### Racks lifting

RotoAvant HR/FB is designed for a levered semi automatic lift, activated by door opening or closing (up to 551 lb) (250 kg). An automatic lifting and rotation unit is also available for racks up to 881 lb (400 kg).



### Low emission glass

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



### Rotating platform

Allows an extremely easy use of racks with different sizes and hooks.



### Single fusion cast siphon

Single cast unit implemented in anticorrosive aluminium, prevents the steam to escape during baking. (standard on HR/FB 80100).



# KEYBOARDS



MULTI  
BAKE



POLIN  
TOUCH

	MULTI BAKE	POLIN TOUCH
Storage of 99 baking programs (+ 1 manual), shown on the LCD display	✓	
100 baking programs		✓
Each program can be divided into 10 different phases with control of:		
1) Air temperature	✓	✓
2) Baking time	✓	✓
3) Steam quantity and times (once or more times) - steamer optional	✓	✓
4) Baking air speed (inverter optional)	✓	✓
5) Steam damper position (optional)	✓	✓
6) Steam exhaust fan speed		✓
7) Start / stop vapor exhaust fan (double-speed optional)	✓	
Display of real oven temperature	✓	
Display of baking time	✓	
Visualisation of baking time / temperature on hood display (optional)	✓	
Set programs list	✓	✓
Temporary modifications available	✓	✓
Heat accumulation system (only on RotoAvant)	✓	✓
Automatic system for uniform distribution of vapor in the baking chamber	✓	
Adjustable air fan time, 6 intervals, during steam injection (steamer optional)	✓	✓
Stand-by function: energy saving function	✓	
Weekly automatic programmed oven start-up / ending	✓	
Automatic steam exhaust system (optional)	✓	
Adjustable steam injection, traditional or pulses		✓
Precise metering of the amount of water introduced into the vapor generator (optional)	✓	
Audio alarm and pre-alarm for termination of the baking cycle	✓	
Alarms display with basic information of the problem causing the alarm		✓
Software key to protect programs	✓	✓
USB frontal connection (if provided) + pen drive (if provided) for saving programs and firmware upgrade	✓	✓
Can replace previous models of OP and 10P digital keyboards	✓	
Oven serial number visualization	✓	
Scroll bar to display baking progress		✓
Automatic stand-by function: energy saving function		✓
Energy saving functions		✓
Diagnostics functions		✓
Automatic switch-off available		✓
Automatic start and ending function, secured with password		✓
Variables of time and temperature limiter to prevent misuse of the oven		✓
Serial port RS485 to connect the oven's computer with a "PC" and Modem		✓
Emergency controls		✓

# **ROTOAVANT *HR.* HIGH PERFORMANCE RACK OVEN**

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





*RotoAvant HR*

# 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

Polin Control

Polin Touch



Energy Save

Hi Control

### CONTROL

Control type	Polin Control	Polin Touch
Baking programs	100	200
Password-protected recipes	✓	✓
Phases for each baking cycle	12	10
Display	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

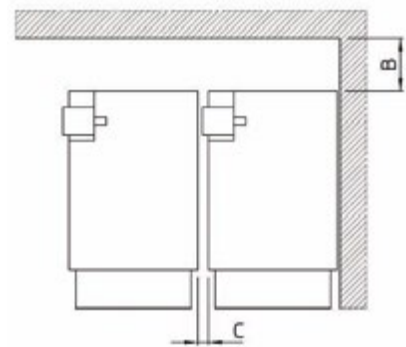
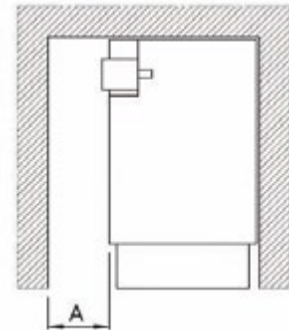
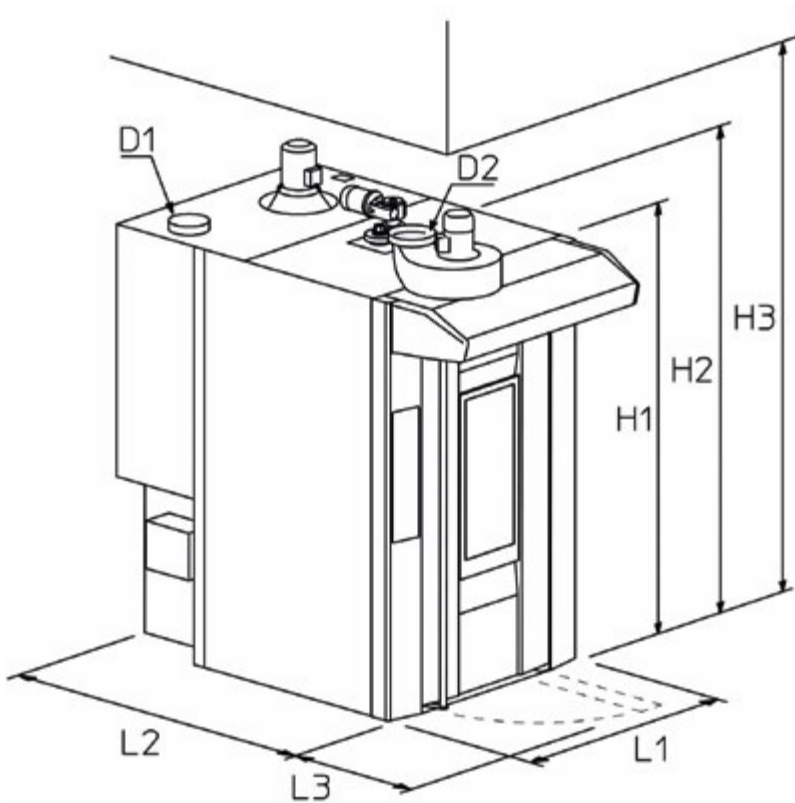
Steam generator with spheres	✓	✓
Automatic steam distribution system	✓	✓
Steam generator liter counter	○	○
Steam exhaust hood second speed (80100 and 80120)	○	○
Fast steam exhaust device (Fast Air)	○	○
Larger steamer	○	○
Air steam condenser (only for SE)	○	○
Automatic steam exhaust valve	✓	✓



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 5,5" (140 mm)	✓	✓
Compressed silicone insulation 264 lb/ft3 (120 kg/m3)	✓	✓
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 550 lb / 250 kg)	○	○
Automatic rack-lifting (up to 880 lb / 400 kg)	○	○
Rotating platform	○	○
Symmetrical oven	○	○
Boosted electric unit (6080)	○	○
Manufactured according to UL regulations	○	○

✓ STANDARD    ○ OPTIONAL

# FEATURES



Oven type		L1 in (mm)	L2 in (mm)	L3 in (mm)	H1 in (mm)	H2 in (mm)	H3 in (mm)	A in (mm)	B in (mm)	C in (mm)	Fume exhaust D1 Ø in (mm)	Steam exhaust D2 Ø in (mm)
80100	SC	68 (1730)	89,3 (2270)	44 (1120)	94,5 (2400)	109,9 (2790)	117,3 (2980)	23,6 (600)	23,6 (600)	1,9 (50) [*]	7,8 (200)	9,8 (250) [***]
	SE							39,3 (1000)	0	0 [**]	-	9,8 (250) [***]

[\*] Minimum distance with Riello gas burner (for easier maintenance we suggest to increase the distance at least 3,9"/ 100 mm)

[\*\*] To replace the electric elements group it is necessary to move the oven

[\*\*\*] Minimum diameter pipe = 7,8" (200 mm)



			80100 SC	80100 SE
Oven weight	lb (kg)		4180 (1900)	4070 (1850)
Trays capacity	n°		16/18	16/18
Trays pitch	in (mm)	0,6 (16)	4,1 (105)	4,1 (105)
		0,7 (18)	3,7 (93)	3,7 (93)
Trays dimensions	in (mm)		31,5x39,4 (800x1000)	31,5x39,5 (800x1000)
Minimum door width	in (mm)		33,1 (840)	33,1 (840)
Increased electrical power	kW		3	65,8
Thermal power	BTU (kcal/h)		317.465,7 (320.000)	-

**SE** electric    **SC** with burner (power: L.P.G., gas, diesel)

# **ROTOAVANT *FB.* HIGH PERFORMANCE IN A LIMITED SPACE**

**THANKS TO THE FRONTAL ACCESS  
TO EACH ELEMENT,  
THIS MODEL ALLOWS AN  
OPTIMIZED USE  
OF THE SPACE**





*RotoAvant FB 80100*

# OPTIMIZE YOUR SPACE

### Frontal access



RotoAvant FB has been designed to offer extremely reduced dimensions, with the possibility to frontally access the heat system (burner or heating elements), the electrical panel and hydraulic systems. This allows a serial installation maximizing the space.

### You can put it against the wall



Frontal access to burner, control unit and hydraulic system allows to install the ovens in a row by placing them side by side and putting them against the wall, making the most of the workshop space.



## 2/INSTALLATION

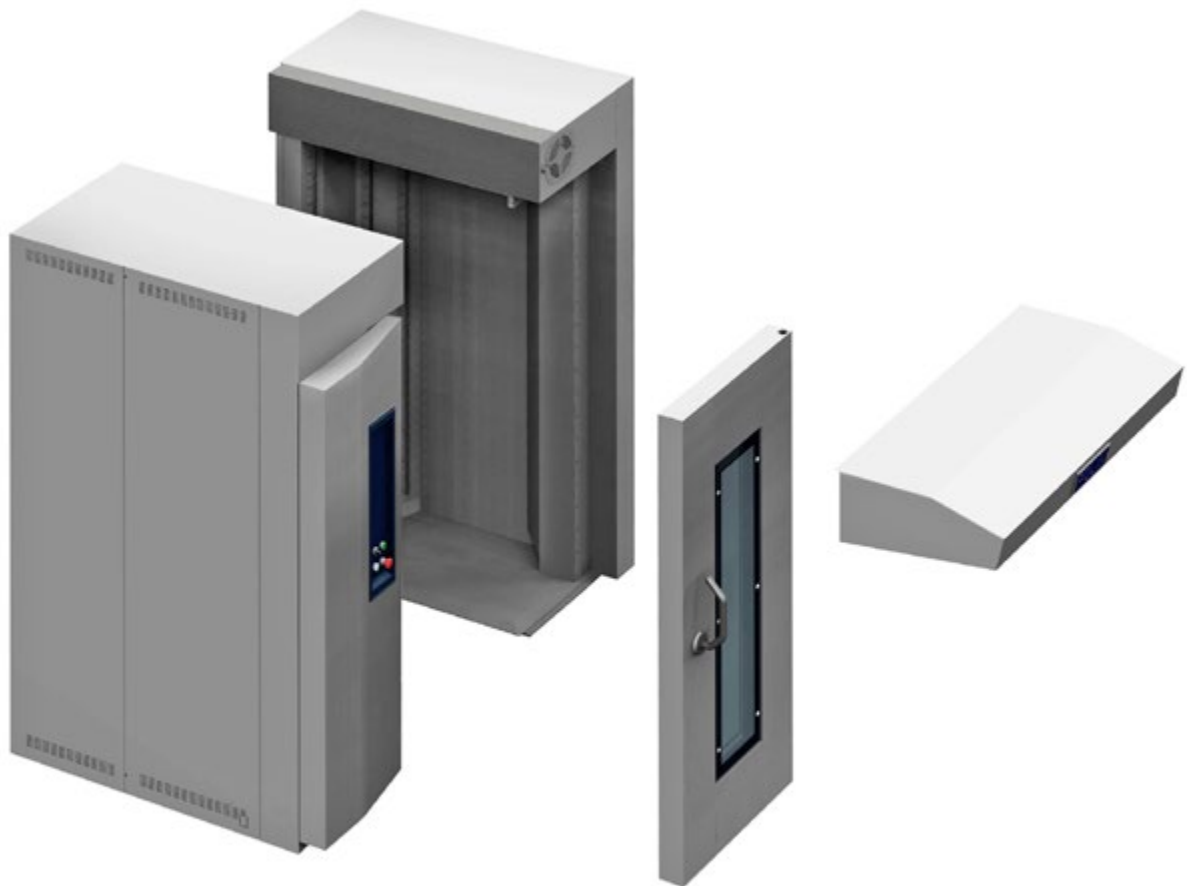
# FAST TO INSTALL

### Quick and easy installation



RotoAvant FB 4676 and 80100 have been designed to minimize assembly time. The oven is delivered in 2/3 main preassembled

elements, adding hood and door afterwards. The assembly operations inside the workshop become faster and easier.



*Upon request, Roto Avant FB 4676 and 80100 can be shipped in 2 or 3 already pre-assembled main elements. Door and hood to be added on site.*

# FEATURES

## Spare keyboard

A reserve command keyboard ensures the working continuity in case main keyboard is damaged; it is equipped with all essential control functions of the oven.



Flex Energy



Hi Control

INDUSTRY PACK

CONTROL			
CONTROL TYPE	Multibake	Polin Touch	
SPARE DIGITAL KEYBOARD	✓	✓	
BAKING PROGRAMS	100	100	
PASSWORD-PROTECTED RECIPES	✓	✓	
PHASES FOR EACH BAKING CYCLE	10	10	
DISPLAY	LCD	Touch screen	
USB PORT SAVING PROGRAMS + PEN DRIVE	✓	✓	
ENERGY STAND-BY	✓	✓	
TIME/TEMPERATURE LIMITER	✓	✓	
AUTOMATIC START	✓	✓	
ALARMS TO DISPLAY MALFUNCTION	✓	✓	
PREDISPOSITION FOR REMOTE CONTROL THROUGH BAKE APP	✓	✓	●
LED HOOD INDICATORS	○	○	●
DIAGNOSTICS FUNCTIONS	✓	✓	
AUTOMATIC SWITCH-OFF	✓	✓	
CONSTRUCTION ELEMENTS			
STAINLESS STEEL COATING	✓	✓	
ISOLATION IN COMPRESSED WOOL 264 lb/pt (120 Kg/mq)	✓	✓	
BAKING CHAMBER IN STAINLESS STEEL	✓	✓	
FRONTAL CONTROL PANEL	✓	✓	
GLASS WITH HINGED OPENING	✓	✓	
FRONTALLY ACCESSIBLE ELECTRIC PANEL AND BURNER	✓	✓	
DOUBLE DOOR GLASS	✓	✓	
DOUBLE CLOSING DOOR	✓	✓	
CAST ROTATION GROUP	✓	✓	
INTERNAL AND EXTERNAL LOW EMISSION GLASS	✓	○	
AUTOMATIC LEVER LIFTING	○	○	
DOOR COOLING SYSTEM	✓	✓	
ENLARGED CAST HOOK	✓	✓	
SMOOTH FLOOR	✓	✓	
ISOLATION WITH PRECOMPRESSED PANELS	✓	✓	
ERGONOMIC CHROME HANDLE	✓	✓	
ROTATING PLATFORM	○	○	
GREAT DOOR THICKNESS	✓	✓	

✓ STANDARD ○ OPTIONAL



Flex Energy

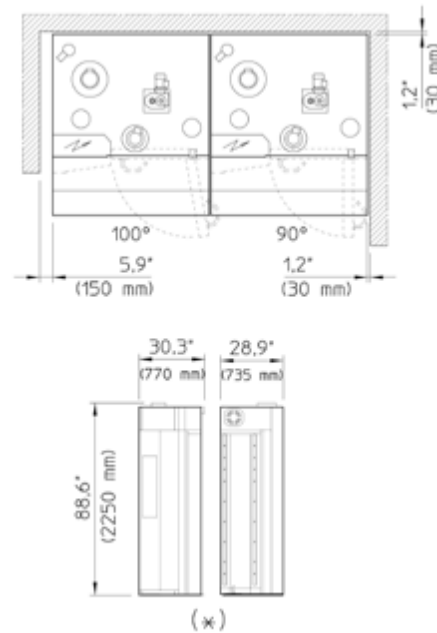
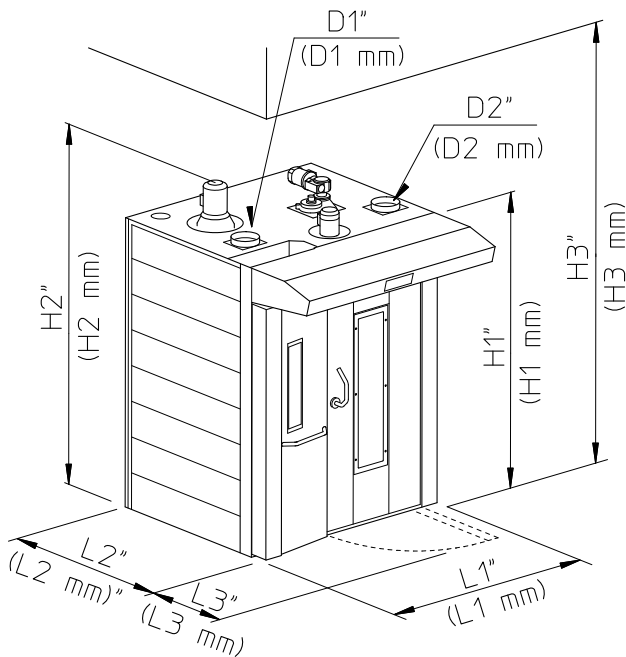
Hi Control

INDUSTRY PACK

ROTOAVANT FB

CONSTRUCTION ELEMENTS			
PRESSURE RELIEF VALVE	✓	✓	
SINGLE CAST SIPHON	✓	✓	
DOUBLE SILOCONE AND ST/ST SEAL	✓	✓	
ADJUSTABLE LOWER SEAL	✓	✓	
DOOR SAFETY SYSTEM	✓	✓	
HEAT SYSTEM			
AIRFLOW DIRECTION	✓	✓	
AIR SPEED THROUGH INVERTER (AIR FINE CONTROL)	✓	✓	
FRONTAL BURNER OR ARMORED RESISTANCES	✓	✓	
RAPID COOLING SYSTEM	✓	✓	
STEAM SYSTEM			
STEAM UNIT WITH SPHERES	✓	✓	
STEAM UNIT LITER COUNTER	○	○	●
SUCTION HOOD WITH GRID	✓	✓	
AUTOMATIC STEAM EXHAUST SYSTEM (FAST AIR)	✓	✓	
ENLARGED STEAM UNIT WITH DOUBLE ENTRANCE	○	○	●
CONSTANT PRESSURE INSIDE THE BAKING CHAMBER (WITH GRAVITY VALVE)	✓	✓	

✓ STANDARD ○ OPTIONAL ●



Oven type	L1 in (mm)	L2 in (mm)	L3 in (mm)	H1 in (mm)	H2 in (mm)	H3 in (mm)	Fume exhaust D1 Ø in (mm)	Steam exhaust D2 Ø in (mm)
4676	57,5 (1460)	54,7 (1390)	26,2 (665)	86,6 (2200)	99,4 (2525)	108,3 (2750)	5,9 (150) SC - SE	7,9 (200) SC/SE
80100	88,6 (2250)	68,3 (1735)	44,4 (1128)	94,5 (2400)	107,9 (2740)	117,3 (2980)	7,9 (200) SC - SE	7,9 (200) SC/SE

# FEATURES

			4676 SC	4676 SE	80100 SC	80100 SE
Oven weight	lb (kg)		2.860,0 (1300)	2.750,0 (1250)	4.290,0 (1950)	4.180,0 (1900)
Trays capacity	n°		15/18	15/18	16/18	16/18
Trays pitch	in (mm)	0,6 (15)	4,1 (105)	4,1 (105)	4,1 (105)	4,1 (105)
		0,7 (18)	3,4 (87)	3,4 (87)	3,7 (93)	3,7 (93)
Trays dimensions	in (mm)		18,1x29,9 (460x760)	18,1x29,10 (460x760)	31,5x39,4 (800x1000)	31,5x39,5 (800x1000)
Minimum door width	in (mm)		30,789x88,9 (780x2260)	31,789x88,9 (780x2260)	22,8* (580*)	22,8* (580*)
Increased electrical power	kW		400/3N~/50	400/3N~/50	400/3N~/50	400/3N~/50
Thermal power	kW		2,1	-	3	65,8
	Btu/h (kcal/h)		177.542,7 (44.740)	0	317.465,7 (80.000)	-

**SE** electric    **SC** combustion (feeding: GLP, natural gas, diesel)

(\*) 40,2"x97,2" (1020x2470 mm) if shipped in blocks