



► inlet into oven with external humidifier



► burner



► oven outlet



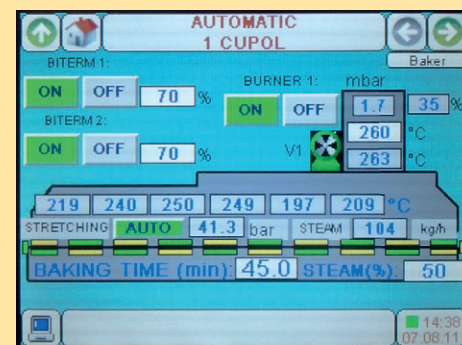
► Forced air recirculation »Biterm«



► hydraulic belt tensioning



► Automatic flaps regulation



► PLC regulation

MORE INFORMATION CAN BE OBTAINED BY DIALING  
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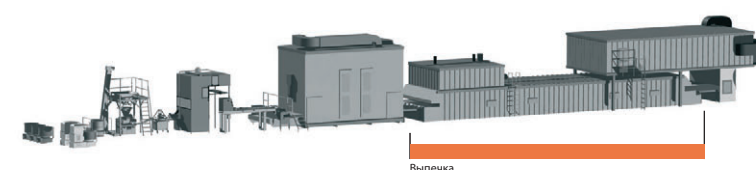
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## TUNNEL OVEN TPN

### ADVANTAGES:

- Extremely low consumption of energy needed for baking.
- A large scale of baking surface (from 25 to 165 m<sup>2</sup>).



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# TUNNEL OVEN TPN

Tunnel cyclothermic ovens are universal ovens used for continuous baking of all types of bread and cakes which requires baking temperature up to 320°C.

Transport through the baking area can be executed by means of a knitted steel mesh (TPN), granite plates (TPN\_GP) and hinge blade (TPN\_S). The heating medium used can be oil, gas or a combination of these two. It operates as an independent unit or within automated lines.

## Advantages

- ▶ Extremely low consumption of energy needed for baking.
- ▶ Possibility of baking of all types of bread and pastry (freely baked, in pans or on trays).
- ▶ A large scale of baking surfaces (from 25 to 165 m2). A possibility of one cupola extending up to 80 m2 of the baking surface.
- ▶ Adjustable diagram of baking time and temperature which are connectively adjustable. The minimal length of individual temperature zone is 3 m.
- ▶ Saving of heat energy with the use of insulation materials, high-quality insulated return part and windows, installed Waishaupt last generations burners, series WM-G10, and automatic regulation of traction in the baking zone.
- ▶ The oven drive is a direct drive with the planetary reduction gear
- ▶ Additional possibilities of energy saving with the automatic vapour flow and a possibility of installation of recuperators of flue gases and vapour.
- ▶ Saving of electrical energy with the optimization of heating valves and a centrifugal fan of flue gases driven by the frequency converter which provides for better transmission efficiency and, above all, essentially reduces maintenance needs and prolongs the oven lifetime.
- ▶ Vacuum heating system, safety flaps and other safety mechanisms provide for a high level of safety when working with the oven.
- ▶ In the baking area temperature can be separately regulated up-down.

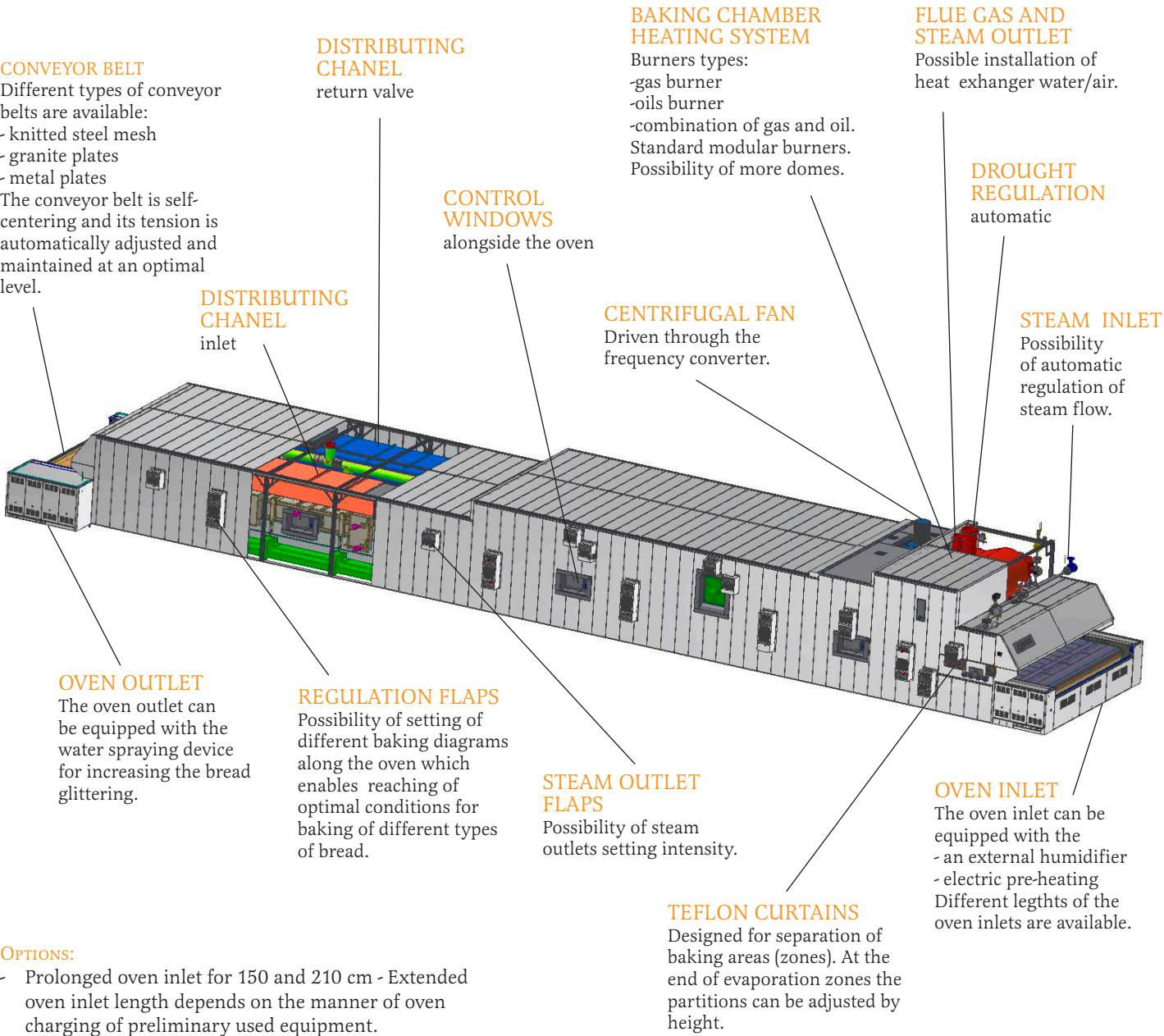
- ▶ The oven can be equipped with the system for forced air circulation in the baking hearth which enables more intensive transmission of heat on the product. The system is recommended especially for bread baking in pans and on trays.
- ▶ The oven can be covered with STIR coating which enables infrared radiation.
- ▶ Technological vapor is also brought in the baking area. The quantity is regulated by means of manual valves or the automatic regulation of vapor flow.
- ▶ The oven inlet and outlet are adjusted according to other equipment or buyer's requirements.
- ▶ The oven height is only 2.5m and the transport of already assembled oven is possible.
- ▶ Modern external appearance of the oven

## TECHNOLOGICAL AND TECHNICAL CHARACTERISTICS:

Surface (m )	25 - 165
Witdh (m)	2.1; 2.5; 3.0; 3.65 (only TP)
Length (m by steps 1,5 m)	12,1 - 45,1
Connection power (kW)	250 - 1700 kW

## BASIC MACHINE VERSION INCLUDES:

- electronic control panel (PLC) operation
- automatic regulation of the under-pressure
- main fan drive through the frequency converter
- hydraulic tightening
- stainless steel platings
- standard inlet's length



## OPTIONS:

- Prolonged oven inlet for 150 and 210 cm - Extended oven inlet length depends on the manner of oven charging of preliminary used equipment.
- Electrically heated prolonged inlet - is used for baking of rye bread. It is recommendable especially for dough which includes over 50% of rye flour and at the extended inlet.
- Cleaning brush.
- External humidifier - is used for baking of rye bread. It is recommendable especially for dough which includes over 50% of rye flour and at the extended inlet.
- Water spraying device.
- Automatic regulation of conveyor belt centering (only at TP) - at standard oven lengths and loads it is not needed since there is no mesh's incorrect moving.
- Automatic lubrication of the conveyor chain (only at TPS and TPGP).
- Excess steam outlet duct 6000 mm.
- Excess fumes and steam outlet ducts 6000 mm
- Vapour outlet and vapour and fume outlets are insulated stainless steel pipes of height up to 6 m with clamps, an anchor rope, a roof border, spacers and a finishing cap. The number of vapour outlets (OP) depends on the oven length. The price changes at the height over 6 m.
- Recuperator steam/water depends on burner power.

- Automatic regulation of steam flow.
- Teflon coated curtains adjustable by height.
- Additional fixed Teflon coated barriers.
- Forced air recirculation »Biterm« (only at TP) - it is a system which provides for air turbulence in the baking area and thus also better passing of heat on the baking products. Thus, bread is well-baked along its entire dimension. By means of the pressed air circulation shorter baking time is achived.
- Automatic flaps regulation in main distributing channel. Single and double dome, each has three flaps.
- Automatic flaps regulation.
- Infrared heat transfer »STIR« - radiation in infrared zone is achieved and thus faster heat transmission in the middle of the product. Consequently, shorter baking time is achieved. At least the first third of the oven must be coated in STIR.
- Burner (gas, oil)
- Prolonged evaporation zone - 6 pipes for evaporation
- Fans on the hoods - for accelerated steam outlet flow stream on the oven inlet and outlet
- Heat transmitter air/water for flue gases
- Heat trannsmmitter air/water for vapour