



### **The same VLT® AutomationDrive family in baking lines all over the World**

Can you imagine life without bread? For Slovenian company Gostol-Gopan d.o.o. Nova Gorica, bread means more than just food, it is important part for their business. The company is original equipment manufacturer – OEM for industrial bakery solutions, present on the market since 1947. Throughout the world, baking lines produced in Gostol-Gopan bake different kind of bread and other bakery product every day.

Gostol-Gopan delivers complete baking lines and individual bakery equipment to their customers: for dough preparation, dough dividing, dough moulding, fermentation, bread baking and bread cooling. Energy efficiency is the key in line development. New generation of tunnel baking ovens type TPN, TPN\_S and TPN\_GP is the result of this process.

Tunnel cyclothermic ovens are universal ovens used for continuous baking of all types of bread and cakes. Transport through the baking area are executed by means of a knitted steel mesh (TPN), granite plates (TPN\_GP) and hinge blade (TPN\_S). The heating medium used is oil, gas or combination of these two. It operates as an independent unit or within automated lines. Main advantages are:

- Extremely low consumption of energy needed for baking. For freely-baked bread also below 200 kWh/tonne of bread.
- Heat energy saving with the use of insulation materials, high-quality insulated return part and windows, installed last generations burners 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 vapor flow and a possibility of installation of recuperators of flue gases and vapor.
- Electrical energy saving with the optimization of heating valves and a centrifugal fan of flue gases driven by the frequency converter which provides better transmission efficiency and, above all, essentially reduces maintenance needs and prolongs the oven lifetime.
- Temperature in the baking area can be separately regulated up-down.
- Technological vapor is brought in the baking area. The quantity is regulated by means of manual valves or the automatic regulation of vapor flow.

### **Regulation with great energy efficiency performance**

Adjustable diagram of baking time and temperature is the key reason for well baked, soft bread with nice color of crust. Baking time is from 8 – 90 min variable, depending on how long the oven



is (12 to 60 meters in length). Danfoss VLT AutomationDrive FC302 is responsible for the right/correct baking time, it regulates the speed of steel mesh. Baking temperature can be up to 300°C. A centrifugal fan is delivering the heat from burners to radiators, located below and above steel mesh. The system for forced air circulation in the baking hearth enables more intensive transmission of heat on the product. This system has roughly the same function as a fan in home oven. All these fans are regulated with Danfoss VLT Drives, which enable electrical energy savings. The basic principle of saving is: hot air has lower density and needs less transmission force. If a frequency converter decreases the speed of a fan for 20%, the energy consumption will decrease for around 50%!

### **The same products for different geographical areas**

Gostol-Gopan is mainly working with European and Russian customers. In 2013 they delivered first tunnel baking oven of new generation type TPN also in the US market, which works in the New Jersey area. Mr. Srečko Lukan, automation department manager explains: "We started to look for suitable equipment with certification for the US market. Among others companies, we also contacted VLT sales office in Slovenia for the right configuration of frequency converters. And this is the real value of Danfoss. The recommendation was VLT AutomationDrive FC302. This is the same VLT we have been working with for years, the only difference was the supply voltage (3 x 208 VAC, 60 Hz). We save many working hours and energy – during designing work, installation and start-up."

### **After sales service**

One of the key Danfoss benefits to the customer is Global service support. Danfoss offers global service network in more than 100 countries. Mrs. Irena Šinigoj, purchase department manager sees advantages of Danfoss global service support: "Gostol-Gopan d.o.o. Nova Gorica is export oriented company, some of our baking lines work more than thousand miles from us. During a service case we are faced with many challenges. We work professionally with our customers, the core thing is that line starts to work again without big downtimes. It's a good feeling, added value for our customers and us, that Danfoss 24/7 service support can help us with service cases abroad. Downtimes and costs for organization service cases can be dramatically reduced. In case of the need we will use offered support from Danfoss, and hopefully we will not need it often."

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