



# New vacuum conditioning for small chain stores

Cetravac AG is among the most successful suppliers of vacuum conditioning plants for chain stores in Europe. Company founder Adolf Cermak announces new developments for the südback trade fair.



++ Adolf Cermak, CEO of cetravac AG

**+ brot+backwaren:** Mr. Cermak, your company has stood for the use of vacuum conditioning plants in the baking sector for twenty years. How were plants adapted to the baking sector's needs, and what has happened to the chambers, pumps etc. in that time?

**+ Cermak:** Vacuum technology has been used in food production and in other sectors for decades. The decisive factor when using it for fully or part-baked bakery products is the vacuum generation process, so heat is removed quickly but moisture and flavors are retained. The chambers and their geometry are less decisive in this respect. Cost-effectiveness, benefit and the amortization period are decided by the pumping technology and the experience of our application technologists, who assist customers for many years. Since 2012 we have relied on a very specific combination of pumps, which ensures that our plants consume significantly less energy, and thus cause the smallest CO<sub>2</sub> footprint that is to be found in this application area.

**+ brot+backwaren:** To what extent can and must control of the baking process and of the vacuum plants be matched to one another to optimize the result when fluctuations occur in air humidity etc.?

**+ Cermak:** Every baker knows that not only the climate in the proofer and oven but also the air pressure and humidity in the room influence the development of baked products. Some companies attempt to exclude or reduce this influence by actively air-conditioning the production rooms, but this has only limited success because the rooms are never hermetically compartmentalized. That's why experienced bakers include climatic factors into the process controller. When our master bakers start up plants or carry out training sessions, they regularly go through the product portfolio as well, and together with the bakers on site they define the products and weather conditions for which the baking or vacuum process is adjusted. It's not rocket science. As a rule, defining two or three weather variants and the associated control parameters is sufficient. Each baker decides for him/herself whether to change the control parameters in the baking phase or in the vacuum conditioning phase. In most cases, lengthening or shortening the baking process and possibly changing the temperature will be sufficient. Incidentally, our plants can also implement weather-dependent program changeover automatically via an integrated weather station.

**+ brot+backwaren:** Is that one of the reasons why, at least in Europe, there are more batch vacuum chambers than continuous plants? Tunnel ovens can be adjusted only slowly.

**+ Cermak:** It's not so one-dimensional, of course. The period of time needed to change the process data effectively in an oven thirty or forty meters long certainly plays a part, but it's rather a small part. Another reason may be the fact that industrial manufacturing as a rule aims at a wide

market which the producer can no longer influence after the goods have left the loading ramp. Freezing is the safer way for this situation. Vacuum-conditioned products can certainly last a week or more, but definitely not for months like frozen goods. In that case, however, a rethink is on the horizon in connection with the READY TO EAT® method we have developed. There are also new approaches on the subject of sliced bread that will give vacuum conditioning a considerable boost. Our experience shows that vacuum technology is used more often in artisan businesses because manufacturers, logistics providers and sellers are one and the same company, thus the owners can fine-tune and optimize the whole added value chain together. For major customers, I can take into account the time from the moment of delivery until sale or use, and I can take account of the weather and much more besides. For an artisan business, this differentiated control brings quality and efficiency to a common denominator. Quite apart from the fact that process energy costs are considerably less than with freezing.

Incidentally, the advantages an artisan can derive from vacuum technology also caused us to develop a "Junior Plant" for smaller chain stores. We will also present that at the südback trade fair.

**+ brot+backwaren:** What does the situation look like with regard to the possibilities of automation in batch operation? Products coming out of a rack oven are transferred into the vacuum chamber by hand, and goods coming from a multideck oven need to be repacked. Is any thought being given to automating this process?

**+ Cermak:** It certainly is; for example, we are working on solutions to transport trays or entire rack trolleys automatically.

**+ brot+backwaren:** Your company has sold over 100 vacuum chambers worldwide, most of them in Europe. What is the reason for that?

**+ Cermak:** It's due mainly to the fact that vacuum plants, as just explained, yield the biggest benefits to those people who have an expert understanding of the entire baking process, and consequently can also undertake meaningful optimizations. If this person is also someone who is in contact with end customers, he/she knows what they want and can respond to it. This situation does not exist in all the world's markets. So it's no surprise that the development of vacuum technology was initiated in European markets that have a strong artisan culture and a well-developed chain store character.

**+ brot+backwaren:** You began by showing the technology on croissants and bread rolls – is that really still the main area of use, or what else is being sent through vacuum conditioning plants nowadays?

**+ Cermak:** Small baked goods and fine pastries are certainly still the most important products that pass through vacuum conditioning, simply because then can be “moved around” faster than a one kilo loaf. Otherwise, however, there is a wide spectrum for its use, from toast-bread to a Swiss roll, as well as in the periphery to cool hot-soaked grain, rice, fillings etc.

**+ brot+backwaren:** You still manufacture in Switzerland. What's the situation regarding service in Europe, specifically in the DACH (Germany/Austria/Switzerland) region? Where

and how do you maintain consultancy capacities in the form of master bakers?

**+ Cermak:** Production is located in Switzerland and will also remain there, on quality grounds alone. Service also operates via Switzerland in conjunction with national representatives, e.g. the Kövy company in Germany. All the master bakers come from the DACH countries.

**+ brot+backwaren:** At the iba 2018 trade fair you presented a vacuum oven for a shop – what became of that technology? Are there already any practical applications?

**+ Cermak:** Der UDO (UnterDruckOfen = vacuum oven) we presented at the iba trade fair in Munich was a prototype that attracted great interest. From it, we have in the meantime developed two variants that we will show at the südback in Stuttgart, a production-ready snack oven – comparable in size with Merry-Chef etc. – and an instore oven. Both operate using vacuum technology, and have the advantage that we completely avoid microwaves, thus bringing the quality of the baked element (pizza crust, baguette halves etc.), to a level that one could only dream of in the past. Moreover, there is no weight loss in vacuum baking, which brings an advantage of up to 10% less initial dough weight.

**+ brot+backwaren:** Mr. Cermak, many thanks for your time. +++

## The other road to success

The range of breads has top priority at the Der Brotmacher GmbH in Klingenberg, Germany. They succeed with this, in contrast to the general sector development, and are also a successful employer.

Köhler's system also includes vacuum cooling, which was purchased a year ago. Köhler says “I compared what was available on the market, then decided in favor of the Cetravac plant.” The background to this was firstly the supply of bread rolls to the 21 branches, and secondly the experience that fully baked products do not become “tough” so quickly if they cool down in vacuum. Klingenberg is located in the valley of the river Main, where it is not uncommon for the climate to cause the crusts of bread and bread rolls to lose their crispness quickly. Vacuum cooling stabilizes the crusts. To prevent the crumb losing water, Köhler has modified the recipes and uses even more water-retaining pre-soaked flours than in the past.

Wheat baked products and baguettes, seeded rolls, croissants and pretzel products now entirely run through the vacuum cooler. The result with the three varieties of crusty “Mainwurzeltrot”, a specialty bread made from spelt flour whose dough is processed for three days, was almost a stroke of genius. After Köhler introduced vacuum cooling for these varieties, sales shot up more than 50%. Volume and shape are retained better, and crispness is kept for a longer time. That is also true for the wood oven bread and wood oven baguettes, which come from a pellet-heated oven. Both are so sought after that they are currently available almost only by ordering in advance. +++



++ Vacuum cooling gives the range of bread rolls longer lasting crispness