

### **MIWE** impulse

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The vision of in-store baking: There is hardly an area in the baking trade that is changing as quickly and that shows so many different forms. And an ideal oven is something everyone needs, like the new MIWE condo pictured here (see page 4 and following). In-store baking, put into motion long ago by MIWE and Prof. Edgar Michael Wenz with great vision and vigorously propagated, has long been a successful model wherever you look. It has radically changed baking and, although the original idea is already over 40 years old, it is still going forward in leaps and bounds.

The manifold reasons for this global success can be read in my father's publications (and now also, condensed, in this issue of "MIWE impulse"). The incentive to buy through "sight-and-smell" baking, aroundthe-clock oven freshness, and the decoupling of production and final baking, which has granted bakers better working hours, much longer storage horizons and delivery distances, and fast availability of baked products at peak demand while simultaneously reducing the risk of return – these are all tangible advantages which will continue in the future to win over more and more fans to in-store baking.



Last but not least, thanks to the processing technology which MIWE has consistently further improved, first-class baked product quality can be achieved today with in-store baking methods, regardless of which MIWE convenience level a baker uses (you can find out exactly what we mean by this on page 16 and following).

Development will continue, that much is certain. And you can count on this: With our wide-ranging expertise, MIWE will be, as we already have been for more than forty years, the right partner for in-store bakers looking for customised system solutions and innovative concepts for their business.

We want you to do better business with better baked products.

With this in mind, we wish you stimulating reading.

Sabine Michaela Wenz

## Oven

Fine Tuning

The new MIWE condo The MIWE condo has been has again among the really special ge made strong gains in the bakehouse and shop

The MIWE condo has been among the really special gems in the bakehouse and shop for years – and for many reasons. Like its larger cousins, with its baking chamber made of stone and the static baking atmosphere of the deck baking oven, it provides many baked products with a little bit more unique character – just the thing for today's bakers in their struggle for market share.

Clear lines. Smooth, hygienic easy-to-clean surfaces. And a control system which leaves nothing to be desired.



It bakes evenly like hardly any other and it is available in any conceivable size for a wide variety of sheet dimensions, from the small single oven to the generously dimensioned 5-oven version with a baking surface area of more than 8 square meters. It can be very finely controlled. And it has proven to be a universal all-rounder, since it masters simply everything that can be baked, from sensitive confectionery products to heavy bread types. It will also take care of a roast or casserole, which is why it is also a very welcome guest in hotels and restaurants.

Others might have been happy to let it go at that. But we thought it was time to take a closer look at the MIWE condo and make it a little better in a couple of decisive ways.

Here, our main thinking – after all, we want to make baking easier – was that the MIWE condo has to be as easy, safe and convenient to operate as possible, even in the hectic environment of modern in-store baking.

No sooner said than done. Effective immediately, we are offering you the new MIWE condo. It has everything and can do everything that it's predecessor already featured. Just a little bit better. Even from a distance, you will notice that the



MIWE condo is now available with a new control system.

Experienced MIWE users will quickly recognize it as the Touch Control MIWE TC, which is also used in other MIWE systems. However, here it has a completely flat front made of glass, which not only looks classy, but makes cleaning especially easy, and a new, high-contrast 7" display, which is easy to read, even from far away.

Of course, the MIWE TC also has the practical "Easy-mode" in the MIWE condo, with its especially easyto-operate user interface, which is geared toward the needs and possibilities of in-store baking and safe operation.

Because the user is guided through the entire program with visual support, it generally doesn't take long to learn how to use it. immediately. And it will show you in large print what you need to know: Top heat and bottom heat, each with the nominal and actual values, and, most important of all: The remaining baking time, so that you can see, even at a distance, when the baked goods will be done.

For the expert, the control system has an "Expert-mode", where all of the fine details can be adjusted, from the exact baking temperature curve to the management of a maximum of 100 programs, as easily as possible. To keep the "Expert-mode" and "Easy-mode" users from getting into each other's hair, the control system also has an easy and effective user management system, which also controls what each user is allowed – and not allowed – to do.

Like other MIWE baking stations, the MIWE condo has an interface to the digital world on its front: A USB port, which allows you to in-

It doesn't get any more convenient: Backup and transmission of your baking programs via USB stick (right side). Do you want to bake pretzels? Then just tap the image with the pretzel – and the oven gets started



From left to right: Simple operation in the clearly laid-out "Easy-mode, ultra-fine baking details in the informative "Expert-mode" and – especially for your customers – the salespromoting branch outlet mode. sert a USB stick or connect the oven with another device. This way, not only programs and settings can be loaded into the oven, but, of course, operating data (switch-on point, baking readiness, program start, program selection) can also be read out on site.

Do we even have to mention that the control system doesn't use cryptic codes to communicate with you, but outputs all messages in plain language? In all common world languages – that goes without saying.

You might not even have noticed another important innovation, since it can only be seen when it is used: The new loading door made of glass. It is operated as before. But now, it can be opened into a special cleaning position after releasing two knurled screws (no tools required!), where the inner side of the pane faces out. This way, the inside can now be very easily cleaned without requiring you to

### Fresh from the oven: 00:02:36



Role



become a contortionist and without dirtying the baking chamber. This shortens and simplifies the cleaning routine considerably.

And it makes it easier for you to show your customers what they love to see most: Golden-brown baked products in the hot baking chamber, which are just waiting to be taken out.

All that's left to mention is a device which can usually be humbly found beneath the MIWE condo, but in cooperation with the oven is very important for the baked goods' quality: The proofing cabinet MIWE GS. Where dough, moisture and heat come together, particularly impeccable hygiene is required. It is even easier to achieve this now with the new proofing cabinet, because, with its deep-frozen proofing chamber, it gets along with many fewer grooves, edges and screws (where dirt could deposit) and has no mould-prone silicone. Where dirt doesn't even have a chance to accumulate, it also doesn't have to be removed with effort later.

The chamber is easily accessible and opens wide, the frame for the sheet metal supports is easy to remove, making cleaning child's play, and, as an added bonus, we have reliably eliminated all sharp-edged corners where you could injure yourself.

A clean little chap, isn't it? We think so, too. Feel free to get more detailed information about the new MIWE condo. ■

The baking sheet supports in the new proofing cabinet MIWE GS can be easily removed for cleaning. The doors open up to 180 degrees.



We even thought about hygiene on the seals: Rectangular magnetic seals are easier to clean! Your dough pieces are perfectly illuminated with long-life LED technology.





The new loading door (patent registered) can now be cleaned from inside with the greatest of ease. After cleaning the outside...

... first release the locking mechanism. To do this, you just have to turn the top knurled discs by approx. 45 degrees and then...



... the window shows its inner side after opening, ...

... which is now even easier to clean than the outer surface.







Safe, clean, efficient. And all that with convenience: The new MIWE cleaning control

> Far right: The label-free cleaning agent bottle fits seamlessly on the hidden tank inlet – operating errors can be nearly ruled out.

A cleaning solution for ovens means reconciling differences that are almost completely irreconcilable. After the procedure the oven should, of course, be spic and span and hygienically immaculate.

However – we're talking about food here, after all – both the cleaning agent used and the actual cleaning process must not pose any danger whatsoever – not for the baked goods, not for the operator and definitely not for the customer who will buy the baked products.

Squaring

It would also be good if the cleaning system would leave a neat and clean baking chamber, and since currently water and energy prices are constantly increasing, it would also be good if it handled these resources efficiently.

And, to top it all off, it would be best if the cleaning system could be smoothly integrated into the operational sequences of the shop via an automatic timing system.

Does this sound like squaring the circle to you? Then just take a look at the new fully automatic cleaning



the circle?

system MIWE cleaning control 3.0, which will be available starting immediately for our in-store baking station MIWE aero. With this, our developers have scored a really great success, which harmoniously fulfils all the different requirements for a cleaning system with an innovative overall concept.

On the subject of safety: Together with an expert laboratory, we developed the cleaning agent, MIWE cleaner, especially for use in our in-store baking stations. It is neither caustic nor irritating,





Although the baking chamber still looks really appetizing during baking...

... after opening and removing the baked products, the degree of contamination becomes apparent.

in other words it is not a harmful substance which has to be handled at arm's length, or which can only be transported, stored or used after taking safety precautions. Quite the opposite: The cleaning agent is food safe, and thus completely harmless health-wise, and therefore also environmentally friendly.

Still, it is strong when it comes to oven cleanliness. You have the choice between two cleaning levels ("light" or "strong contamination"). We recommend at least one cleaning cycle per week, two if there is strong contamination. This is sufficient to keep your oven continuously hygienically clean.



Und how does this look for practical operation? Our developers have made it a priority to keep all operational sequences involved with the automatic cleaning system as uncomplicated, safe and convenient as possible.

The cleaning agent tank in the oven holds about 6.5 litres of cleaning agent, for example. That's enough to last for approx. 11 to 22 cleaning cycles, depending on the degree of contamination. A full tank, then, can last up to six months, and at minimum at least 6 weeks, without having to be refilled. When it's got to this point, the oven will tell you on its own: "Tank empty". There is still enough in the tank for two more cleaning cycles, so that you still have time to refill it.

Refilling itself is child's play. Everything is done with the cleaning agent bottle specially developed and patented for MIWE. With its special neck, it fits seamlessly onto the tank inlet (patent registered), which is hidden behind the filling flap at the front of the oven. The operator doesn't come into contact with the cleaning agent at all. Screw off the sealing cap, push open the flap at the front of the oven and firmly press the bottle onto the inlet socket. That's all! A punch in the inlet socket punctures the safety membrane. The bottle reliably empties com-

Simply start the MIWE cleaning control with the push of a button (or automatically with the auto-start function to conserve resources) ...



pletely and quickly thanks to the special neck. Insert a second bottle and, presto, your cleaning system is ready to go for several weeks. The empty bottles, by the way, are the only waste the system leaves behind. You can simply dispose of them with the plastic garbage since the contents are food safe and environmentally friendly.

Now all that's left to mention is how easy and smooth it is to start the automatic cleaning system. Simply select the cleaning operation on the control and everything else is automatic. Even more convenience and energy advantages are offered by the autostart option. In the evening, you set a starting

... and already, the environmentally-friendly cleaner and intelligent control will start working.



time for cleaning in advance, ideally 2 hours before actual baking should begin again in the morning. Then the cleaning program runs not only outside of the bakery's business hours, but you can also use the residual heat remaining in the baking chamber for the first baking operation in the morning.

And what's with the operating costs, you ask? Very simple: A clever water circulation system ensures minimum water consumption (depending on the degree of contamination, approx. 8 to 10 litres per cleaning cycle) and lower energy and cleaning agent consumption, accordingly. The costs for electricity, water and MIWE cleaner are therefore much lower than for the previous automatic cleaning system from MIWE. For light contamination, the new system doesn't even need half as much water, a third less electricity and, to top it all off, also less cleaning agent.

Even for strong contamination, the new MIWE cleaning control also delivers a spic-and-span result without a rinsing agent and with noticeably lower costs: More than a third less water and a quarter less electricity than before go into one cleaning cycle.

Overall, then, perhaps not exactly squaring the circle (we're happy to leave that solution to others ...).

Nevertheless a cleaning system that sets entirely new standards.

Typically MIWE! ■



The hidden punch in the tank inlet opens the safety membrane of the cleaner cartridge.

The result speaks for itself.



# Many paths to the same goal



MIWE Convenience Levels – the process landscape of modern baking

In by-gone days, the world of baking was clearly structured: The large oven was in the bakehouse, where things were baked (usually very early in the morning) that would then be sold during the day at the front of the bakery. With variations, one can certainly find this traditional scenario even today.

Meanwhile, thanks to advances in bakery refrigeration and MIWE's development of "sight-and-smell" in-store baking, the process landscape and, as a consequence, the organisational forms of baking (and ultimately also the business model of bakers) has become significantly more sophisticated.

The prevalent organisational forms of baking today are usually sections or variations of five elementary basic models, which we refer to as "MIWE Convenience Levels" (MCL), similar to the terminology of some dough-piece manufacturers. From a sales perspective, they differ in their degree of "convenience", i.e. the simplicity with which oven-fresh, warm baked goods can be produced on short notice.

The MIWE Convenience Levels schematically describe the different stages of the air-conditioning processes in baking (proofing, cooling, freezing, baking) and their typespecific distribution over the production and/or store environment.

The overview shows the technological relationships in the overall context and makes it clear how exactly the processes from the production and bakery worlds have to be tuned to one another, even when the actors in both worlds are not the same. The upper half of the table shows the baked goods production world and underneath it is the sales world. Distribution (under the heading "transport") creates the necessary connection between both worlds.

Not only here do the great advantages of a partnership with MIWE come into play, with its comprehensive knowledge and mastery of all air-conditioning processes in baking, beyond the limits of the production and bakery worlds. Everyone benefits from this 360-degree panorama view and the experience gained from it, even bakers whose business model might only include one part of the value creation process.

Apart from that, the customer can very easily read from the diagrams what systems are necessary for the respective process sequence in production and in the store, what they specifically have to do and what requirements and consequences are otherwise involved with the decision for a certain process option.

In practice, in many businesses, several convenience levels are used in parallel for different product groups. For example, it is conceivable that rye and mixed breads are delivered freshly baked (MCL 0), but crescent rolls, on the other hand, are delivered proofed and frozen (MCL 3), and baguettes, in turn, are delivered as semi-baked goods (MCL 4). The wider the range of the convenience levels used, the higher the requirements on the versatility of the baking station, for example. ▷

> You can find more information in the basics booklet on processing technology for dough pieces. You can request a copy immediately per fax or via www.miwe.com/impulse-en



The closer the convenience level is to the traditional baking method (i.e. the lower the differentiation number after MCL), the higher the personnel qualification requirements are in the bakery.

Conversely, the amount of time required for the demandcontrolled availability of ovenfresh baked goods in the bakery decreases considerably as the convenience level increases. As special cases, we have shown two methods in the tabular overview where the dough is delivered frozen or cooled. The complete reprocessing takes place in the bakery in this case.

Thus there are many building blocks which can be used to build an individual baked goods business today. Success mainly depends on combining the decisive core features of the concept (e.g. the desired



product quality, the product range, the necessary batch sizes, the operational organisation, but also the costs for personnel and energy) to form a complete strategy. For MIWE customers it is easy because they can draw on the right equipment and entirely unbiased consulting expertise for any possible combination. hand – regardless of what business path they ultimately decide for – in finding solutions, methods and systems with which they can optimally reach their respective goals. Real baking expertise has many faces, after all. ▷

For years, we have been accustomed to giving bakers a helping

Finishing

Freezing

Frozen storage

Transport

Frozen storage

Defrosting (passive)

Proofing

Baking

Sales

Frozen,

unproofed

Finishing Finishing
Proofing
Proofing
Baking < 100%

Freezing

Frozen storage

Transport

Frozen storage





MCL 2

MCL 3

Bak. of frozen small prod.

Sales

Frozen proofed,

bak. of frozen small prod.

MCL 4

Baking

Sales

Half-baked.

frozen

Frozen storage

Transport

Frozen storage

MCL 5

Sales

Baked.

frozen

Recipe

Dough preparation

Dough fermentation

Finishing

Proofing

**Baking (100%)** 

Freezing

Frozen storage

Transport

Frozen storage

Defrosting/regenerating



#### MIWE Convenience Level 0: Standard traditional

Here, baking is done – like in the old days – in the bakehouse and completely baked goods are sold and delivered. The traditional method is from a time when products and product processes were not judged according to their "convenience" (therefore level zero). The method is actually not "convenient" in modern terms, but neither is it "outdated". Having demandcontrolled oven-fresh goods on short notice 24/7 is very difficult to accomplish this way.



The sales process is tightly coupled to the baking process, with regard to time as well as space. There is no time buffer, which would make the planning of requirements easier and make the long distances possible that baked goods sometimes have to travel today. Giving the customer a view of the baking process can only be done in a "glass bakehouse" that allows a look inside. The customer, however, then experiences the craft in its pure form.

The fact that many bakers consciously hold onto this traditional method for certain products (some even for their entire product range) might have to do with the fact that they have perfectly mastered what makes this method the ideal solution for the craft: Independent, characteristic products with a high level of freshness and delivery logistics which establish a reasonable balance between the desired volume of products on offer and the associated problem of unsold goods.

On the cost side, too, the method is extremely attractive: The baker doesn't have to invest in refrigeration / freezing technology in his bakery or delivery vehicles and he doesn't have the electricity costs that go with it.



A special variant of the long-time dough method, where baked goods still in production are placed on special proofing boards (stacks) right after reprocessing and are, quickly and gently, not frozen but cooled down with a suction blast freezer (MIWE SF-D) to an exactly defined core temperature in the lower positive range. While the yeast activity at this temperature is largely reduced, the enzymes remain active enough to do their important job of creating aroma.

Therefore, the method is mainly and preferably used for wheat buns and rolls, where consistently high baked-goods quality is produced in large batches and at comparably low energy costs.

Once cooled, the dough pieces are stored on the boards in corresponding cooling rooms, and are also delivered this way (without active cooling, at most protected in a thermobox at higher outdoor temperatures). This logistical solution saves not only on electricity costs, but also space, both in the storage cells as well as in the transport vehicles. The boards provide cold storage and allow driving times of up to 3 hours. In the branch outlets, remaining proofing times of up to 12 hours can be realised. Active cooling is only required when the dough pieces are delivered with a very high degree of maturity but are not intended to be ready for baking in less than 4 hours. The proofing quality of the dough pieces is retained over the entire time period.

In any case, the complete daily production can be stored this way and baked according to demand. There are no special requirements for the baking operation in the branch outlets. Due to the comparably low insertion temperature of the dough pieces, the requirements for the steam input are rather moderate. Whether equipped with a steam device or spraying device: You will get the best baking results with any oven from MIWE's baking station product range. ▷ MIWE Convenience Level 1: Long-time dough methods, MIWE smartproof™



MIWE Convenience Level 2: Un-proofed (raw), frozen dough pieces

Also referred to as the "raw-freezing method". The dough pieces go into production right after reprocessing, so un-proofed for the most part. For example, they are brought gently to a core temperature of -7 °C in the blast freezer MIWE SF and then typically first packed in plastic bags and then in boxes. In these boxes, they are brought to a freezer storage room (such as the MIWE TK) and are further cooled down to the storage temperature of -18 °C. The storage time of frozen goods can be up to 6 months. The yeast retains its strength despite the long storage period. The "rawer" the freezing, the more certain the regeneration during later proofing.

From the freezer storage room, the goods are delivered in boxes to the branch outlets, where they are usually stored in a freezer cell (such as the freezer MIWE TK-S) until their final processing. The deep-freezing chain must not be broken under any circumstances with the raw-freezing method.

A practical advantage of the method is obvious: Un-proofed, the dough pieces are much smaller than when they are proofed. They therefore take up less space, both in the storage rooms (production and in the shop) as well as in the delivery truck.

Another characteristic of the rawfreezing method is displacing significant parts of production to the branch outlet. As with every coin, here, too, there are two sides. The products of no other in-store baking method with freezing stages shine quite like this, with the real, convincing look of a fresh-baked product right in front of the eyes of the customer.

At the same time no other method demands as much baking knowhow and organisational talent from the personnel. There must be an expert available in the bakery who puts the raw frozen dough pieces on the proofing trays, puts them



into a trolley, allows them to thaw at room temperature and then monitors the proofing process with an expert eye. With modern technology like the MIWE automatic proofing machine MIWE GVA-S, this has, of course, become much simpler. It can be filled and programmed so that, in the early morning at the agreed-upon time, ready-to-bake goods are available.

Any MIWE in-store baking oven can be successfully used as a baking station in the branch outlet, because here, traditional baked goods (proofed dough pieces) are baked. Considering the bakery environment and the desired evenness of the products, it is recommended to have a baking station with a programmable control system, since the result will then be reliably more uniform, as experience has shown.

With the raw-freezing method, basically all bakery products can be processed, from wheat buns and rolls to Danishstyle pastries and puff pastry dough products. In the case of wheat buns and rolls, it is particularly ideal for handling Kaiser rolls, for example, and all other products which don't have to be turned or otherwise handled after proofing.

Until the moment an un-proofed, frozen hard roll makes it to the shop window, however, it takes a relatively long time with this method: Nearly two hours.



Real fresh baking in view of the customer, low requirements for personnel in the branch outlets, easy separation of the individual process steps, but still a quick reaction to demand peaks and practically no unsold goods – if that's what you're looking for, then the baking of frozen small products might be an attractive process for you. Together with a major customer and a baking goods manufacturer, we at MIWE developed this method in the 1980s and gave it the name "baking of frozen small products" since here – as opposed to raw, frozen dough pieces – proofed, frozen dough pieces, so-called "frozen pieces", are baked. MIWE Convenience Level 3: Proofed, frozen dough pieces ("frozen pieces") The process was introduced to a wide professional audience for the first time in 1992. Since then, this process has long prevailed on a wide front in the world of baking, supported by numerous professional seminars by our specialists.

A characteristic of the baking of frozen small products is the interruption of the manufacturing process after proofing, i.e. the freezing of veast-raised dough pieces. The proofed dough pieces are put directly into a blast freezer and are quickly and gently brought to a core temperature of -7 °C, and are then packaged in plastic bags. The frozen pieces are then kept in deep-freeze storage cells at -18 °C: in the case of wheat buns and rolls. for a maximum of 4 to 6 weeks, and for baked goods made of Danishstyle pastry or puff pastry dough, even several months. Within this time, the frozen pieces can be transported to the branch outlets and there, they can continue to be stored at –18 °C until they are baked.

Here, the important thing is quality: The frozen pieces must be reliably stored at a constant temperature of –18 °C. Especially in the case of deep-freezers, which are repeatedly opened and sometimes filled with a wide variety of products, sometimes even products at room temperature, it is imperative that the specified temperature be exactly complied with. A freezer with a fluctuating temperature level, where the frozen pieces are sometimes removed at -25 °C, sometimes at -15 °C, will inevitably lead to non-uniform product quality. The MIWE TK-S, for example, can ensure perfect, uniform deepfreeze storage in the branch outlet.

Finally the frozen pieces are removed from the freezer storage room depending on demand, are placed immediately on baking trays and are brought into the baking station. The baking station takes care of the rest – at least in the case of intelligent ovens like the MIWE aero, which has a special program for baking frozen small products. The frozen pieces are first quickly thawed (i.e. brought to a core temperature of approx. 0 °C) and are kept from drying out on the surface here with even, continuous steam and circulating air pulses. Afterwards, they are baked. The entire process takes a total of about 24 to 27 minutes.

Besides wheat buns and rolls, the baking of frozen small products method is also successfully used for many other products, such as baked goods from laminated or fat-containing doughs (Danishstyle and puff pastry doughs), as well as for pretzels and white breads.





Oven-freshness around the clock, ideally throughout the entire bread and roll product range. Immediate reaction to unexpected demand peaks with a fast, oven-fresh result? Simplest logistics and practically nothing left over at the end of the day? What baker doesn't want that?

It's no wonder that the in-store baking method, which unifies all these advantages more decisively than all others, is finding more and more fans. The interrupted baking method, where the baked goods are partially baked in the bakehouse, then frozen and stored and finally baked to completion in the bakery, consistently implements, like no other, the change in perspective of modern baking from the bakehouse to the point of sale and allows the shortest reaction times, even for a large range of products.

A characteristic of the interrupted baking method is the premature termination of the baking process, (usually) freezing and storage of the pre-baked products and baking to completion with correspondingly shortened baking times in the bakery "on demand". Both technologically as well as technically, the main requirements for the method are clearly in the production bakehouse. This is where the quality of the product is decided. The demands on the technology and the qualifications of the personnel in the bakery are comparably low.

The baking time must be shortened compared to the regular baking period and must take into account the "brown-and-serve" baking time which follows later. 55–75% of the MIWE Convenience Level 4: Half-baked frozen goods ("half-baked goods", "interrupted baked goods")



regular baking time is a good rule of thumb.

The quality of flash freezing has a decisive influence on the quality of interrupted baked goods. For this reason, interrupted baked goods should never be frozen in a storage room freezer but always in a special blast freezer, like the MIWE SF, which brings the products quickly and uniformly to a core temperature of -7 °C. Pre-baked frozen

goods must be protected against drying out, and should therefore be packaged under all circumstances, particularly when the storage period will be for longer than two days. Usually, one uses plastic bags, or boxes or baskets lined on the inside with plastic foil. The frozen products can be stored at –18 °C for up to 3 months, at room temperature for a maximum of 3 days and in a refrigerated warehouse for at most 5 days.

Those who want to completely utilise the logistical and organisational advantages of the interrupted baking method should also maintain the deep-freeze chain right to the bakery shop, e.g. deliver sufficient deep-frozen, pre-baked products for several days or a week and continue to store them deepfrozen at their destination until they are actually used. Because pre-baked products have already reached their final volume, they will require a corresponding amount of space for transport and storage.

"Brown-and-serve" baking itself is comparably unproblematic and does not require any further equipment or knowledge, except for a high-performance oven and maybe a basic introduction to "brownand-serve" baking: All important processes in the baked goods are already completed. However, deep-frozen pre-baked goods can no longer be refrozen once they are removed from refrigeration and defrosted.

The best baking results can be achieved with any oven from MIWE's baking station product range, e.g. the MIWE cube:air.

Interrupted baked goods require the shortest possible baking process in the bakery shop, providing the highest potential by far, both for the volume to be managed as well as the ability to react to unexpected demand peaks. With no other in-store baking method can such large volumes of oven-fresh goods be made in such a short period of time. The fresh-baked experience appreciated by the consumer can be realised at any time and without a lot of effort.

Besides wheat buns and rolls, the interrupted baking method is mainly used for bread, baguettes and other rustic Mediterranean products (ciabatta, etc.).



Here is where "convenience in purest form" prevails, and therefore also the highest level number. The baked goods are baked to completion and frozen and just have to be thawed in the bakery (or coffee shop), and in the very simplest case, passively at room temperature.

But even here, it is preferable to use an oven to accelerate the process and to add some warmth to the products (which many customers perceive to be proof of freshness), not to mention the fact that many products actually profit from this active "regeneration". Just think about a steaming chocolate muffin...

The oven requirements in this case are much lower than for all other methods, since neither a high baking temperature must be reached nor is steam needed to regenerate goods already baked to completion. Nevertheless, a higher-performance baking station with a convenient program selection is advantageous here, too, since it is easier to operate and can be much more widely used. ■ MIWE Convenience Level 5: Frozen goods, baked to completion

MIWE Convenience Level	<b>MCL 0</b> classic delivery business	MCL 1 long-time dough process
Typical baked products	Complete product range	Wheat buns and rolls
In-store baking know-how required	•••••	
Authentic baking experience	•••••	•••••
Oven-fresh (heat)	•••••	•••••
Freezer storage room required	No	No (mostly cooling)
Storage / transport	optional	Proofing boards
Storage horizon (freezer/refrigeration)		12 hours
Spatial requirement in the freezer storage room	•••••	(stack of boards)
Delivery cycle	daily	daily
Completion time (using rolls as an example)		18 minutes
Short-term reaction to demand peaks	•••••	
Bottle-neck risk	•••••	•••••
Return risk	•••••	•••••
Proofing system required	No	No
Steam generation required	No	Yes
"Baking of frozen small products" program advantageous		
Recommended MIWE products (the fine selection is made according to the capacity requirement, range of products, MCL mix and design)	A solidly equipped MIWE bakehouse	Oven: MIWE condo, aero, backcombi, Wenz 1919;

refrigeration: MIWE KR



MCL 2 un-proofed, frozen	MCL 3 proofed, frozen	MCL 4 half-baked, frozen	MCL 5 baked, frozen
Crescent rolls, wheat buns and rolls,	Complete product range (except for bread)	Complete product range	American Bakery, sweet and deep-fried pastries, bread,
•••••		•••••	•••••
•••••	•••••		•••••
•••••	•••••	••••	•••••
Yes	Yes	Yes	Yes
Plastic bag/cardboard box	Plastic bag/cardboard box	Plastic bag/cardboard box	Plastic bag/cardboard box
6 months	4–6 weeks (wheat buns and rolls) /several months	3 months	3–6 months
$\bullet \bullet \bullet \bullet \bullet \bullet$	•••••	•••••	•••••
< 6 months	< 4 weeks / months (depends on product)	< 3 months	< 3–6 months
nearly 2 hours	24–27 minutes	Approx. 18 minutes (with thawing time)	Defrost 30 minutes (reshape, if necessary)
•••••		•••••	
••••		•••••	•••••
•••••	•••••	•••••	•••••
Yes	No	No	No
Yes	Yes (except for pretzels)	Yes (Advant. for certain products)	No
	Yes		
Oven: MIWE condo, aero, econo, backcombi, shop-in, Wenz 1919; Proofing technology: MIWE proofing cabinet, GVA, GVAS; Refrigeration: MIWE TKS	Oven: MIWE condo, aero, econo, cube, backcombi, shop-in, Wenz 1919; Refrigeration: MIWE TKS	Oven: MIWE econo, cube, gusto, shop-in, (MIWE condo, Wenz 1919); Refrigeration: MIWE TKS	Oven: MIWE gusto, cube; Refrigeration: MIWE TKS



The oven that thinks

#### MIWE flexbake: The clever automatic system for partial loading

Baking programs are indispensable for in-store baking. They control at what temperature, how long and with what steam input baked products are baked (and even more than that).

Mere users don't have to worry about all these details with modern MIWE control systems. They just call up the right baking program based on a product image – the oven takes care of the rest, completely automatically. However, baking programs are usually designed for a fully loaded baking chamber. When you load a correctly preheated oven, the temperature first drops a little bit. The bakery products "cool" the baking chamber. The heating system automatically adjusts for this.

And if you have selected the right baking program, the exactly desired baking result will come out in the end.



But what do you do if, instead of the full number of baking sheets, you only insert half? When evening is approaching, for example, and you don't need to fill the oven completely.

The energy required for the program meant for full loading is much too high for partial loading. The temperature curve is too hot. The products would become too dark. With a reduced load, then, the baking program must be adjusted accordingly. Some bakers create a separate baking program just for this situation. Then, for example, for pretzels, they don't just have one baking program, but two: One for a full load and one for a specific partial load.

There is plenty of space for multiple programs in the MIWE controls. But this solution is certainly not brilliant. It carries risks of error and ultimately only covers a very specific partial load. ⊳ Do you just want to bake one more sheet close to closing time? Without wasting energy and with a perfect baking result? MIWE flexbake makes this possible. To teach MIWE flexbake, you just have to activate the corresponding key once in the basic settings for each product.



While baking a full load, the program remembers the real temperature curve (yellow) ...



This is also true for the so-called partial load key, which until now has been offered in various oven systems. When the operator presses this key, the baking program is changed so that it delivers optimal baking results for a certain partial load (e.g. 50%). But what happens when the oven is 30% loaded or 75%?

MIWE engineers therefore developed a patented system a few years ago under the scientific project name "Gradient baking", which is much more flexibly adapted to various partial loads and therefore leads to much better baking results with a minimum of operator effort. This clever automatic partial loading system – we call it MIWE flexbake – is available for the in-store baking stations MIWE aero in the touchscreen control system MIWE TC.

The principle of MIWE flexbake is very simple. The oven learns how it should correctly bake each product. In practical terms, this means that you bake once with a full load in learning mode. The oven "remembers" the actual temperature curve in the baking chamber during the learning passage. And in the future, it doesn't bake according to the nominal curve of the baking program, but along this learned temperature curve when you press



... and saves this as the new nominal curve (red). Starting now, this will always be called up when you press the key "Automatic capacity regulation for MIWE flexbake".



Baking along this new nominal curve guarantees not only an optimal baking result for partial loads, but also greatly saves on energy (see graphics below).

the key "Automatic capacity regulation for MIWE flexbake". Thereby ensuring, entirely automatically, that your baked products will get exactly the right energy for the partial load to get an optimal baking result.

As you might expect, MIWE flexbake is only available from MIWE.

Once again, you can experience a well-known fact: "MIWE makes baking easier". ■

From left to right:

Baking with a full load (learning phase); partial load with MIWE flexbake; partial load with a conventional control system. Note the especially energyintensive heating times (red bars)!

Setpoint setting ..... Actual temperature curve Heating in operation







Who invented it?

Where in-store baking has been successfully at home for more than 40 years

Prof. Edgar Michael Wenz: The talkative visionary propagated the "proof of freshness for nose and eye" over 40 years ago.



Younger people might take for granted being able to buy ovenfresh baked products on any corner around-the-clock. But it was not always like this, as those who are a little older might still be able to vividly remember.

When Prof. Edgar Michael Wenz, more than 40 years ago, gave the starting shot for modern in-store baking by lauding the advantages of "sight-and-smell" baking and "consumer-oriented production" wherever he went, German bakers were hesitant to give their approval... at first, anyway. He was – as was often the case – well ahead of his time.

And with his sharp, far-sighted vision, he foresaw what today is one of those things taken for granted everywhere: Customeroriented in-store baking, the "proof of freshness for nose and eye", the psychologically important component of which he tirelessly emphasised (and was the one who made it possible in the first place by developing the corresponding technology and methods).

"The oven as sales agent? Why not, actually? After all, it is the heart of every bakery. The psychology of advertising should recognize and use the advantages of bread and baked products as one of the many foods in constant competition with the others. With articles about 'sight-and-smell' baking, I wanted to direct attention to this open and inviting space," is how Prof. Wenz described his motives in retrospect.

Twenty years after the end of WWII, in the midst of the sprouting German economic miracle, it was no longer the bakers' objective to feed the hungry as it had been all those years previously. The distribution market developed into a buyer's market. No one had to wait in line for bread anymore. Selection grew, and so did expectations. People were real people again, and they could afford things.

Now the objective was mainly to make the satiated hungry, to lure customers into one's own bakery (instead of seeing them wandering into the shop next door) and, with the warm illumination of the oven and the tempting aroma of fresh baked products, to encourage them to buy a little more than what would actually have been necessary. A concept which is as true today as it ever was.

"It is an allure to be able to see the baking process from a distance and to smell the aroma of fresh bread. One can't help but get closer," Prof. Wenz said, when describing the very much intended mechanism. He had carefully observed how a new gastronomical concept had

The first baking stations were clearly regarded as "space age". Today, however, the trend is going...

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... toward original simplicity. With modern baking technology in historical garb, the Wenz 1919 also provides this in the bakery shop.

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History

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become a sensation: The "Wienerwald" restaurants. With certain justification, he also felt that the success of the chicken roasters was due to the fact that the readily-visible grilling stations they used not only radiated pleasant heat and an aroma which literally made your mouth water, but also brought about the irrefutable proof of the freshness of their product.

As he travelled abroad, he also noticed this phenomenon at the rapidly growing American doughnut franchise chains. For him, it was clear that "the production of food in plain view of customers has a stimulating effect on them and increases sales because customers perceive the visual stimuli. At the same time the ability to see the purity and apparent freshness of the product oneself, increases one's trust in its quality, and by association, this trust is also transferred subliminally to all other products offered. With oven-freshness, wheat buns and rolls," he was convinced, "are transformed from food to luxury goods. It is more than just a sign of quality." Marketing with freshness follows exactly these insights today as much as it ever did.

Prof. Wenz saw the huge potential of in-store baking and predicted what ground-breaking changes it would bring to the entire world of baked products. "Customer-oriented production, which one now calls 'in-store baking', is a sort of 'shopping experience', which is here

> Excitingly colourful 1980s: MIWE develops the baking of frozen small products – the first digital controls allow for easy practical implementation.



to stay in bakery chains and markets as well as restaurant franchises." – something that was said more than twenty years ago.

Wenz the visionary, however, did not stop at spirited forecasts of the future. He also made sure that the technology and methods were developed at MIWE which made in-store baking in its current form possible in the first place. The first technical manifestation, and thus the predecessor of all modern in-store baking stations, was the "MIWE Workshop" (from the 1960s), a modular concept for an early in-store baking oven. ▷



The great-grandfather of all baking stations: The "MIWE Workshop" from the 1970s – a modular concept around an early in-store baking oven.

#### History



Is there anything for free here? Back then, "sight-and-smell" baking was an amazing novelty.

Together with a major customer and a baking goods manufacturer, we at MIWE developed "baking of frozen small products" in the 1980s, which is the baking of proofed, frozen dough pieces. MIWE introduced the process to a wide professional audience for the first time in 1992 at the iba trade fair in Berlin. Since then, this process has long prevailed on a wide front in the bakery world, supported by numerous professional seminars by our specialists.

Its advantage compared to the previously available method of freezing dough pieces un-proofed is mainly the considerable simplifications in the branch outlets. No one there has to be able to expertly assess the proofing condition of the dough pieces anymore. Proofing technology is not necessary and the reaction time for unexpected demand peaks is shortened to about 30 minutes. This is still a few minutes longer than for the interrupted baking method, but the baker can offer

There are not only 40 years between the first baking station (see p. 35) and the modern MIWE aero, but thousands of hours of research, development and design.



the customer what he wants to see in a bakery: Fresh baked goods baking in the oven. Because frozen pieces – as opposed to interrupted baked goods – are baked all at once, the thing important to many consumers is true here with no restrictions: Baking of frozen small products is fresh baking.

Or take MIWE smartproof™: again, in cooperation with customers who position themselves on the market with premium wheat buns and rolls, we developed this new dough process and a matching system solution, which not only permanently and consistently meets the demand for high quality, but optimises daily operations at the same time. The preparation of dough and baking in-store are conveniently decoupled time-wise, and energy costs are minimised on top of that. We introduced this method and the associated refrigeration systems to a wide audience for the first time at the iba trade fair in 2006

So it was certainly correct for Prof. Wenz to succinctly say, on the occasion of the 75th anniversary celebration of MIWE in the company's commemorative publication about in-store baking: "This method of consumer-oriented production comes from us and from Arnstein."

That's just the way it is. If you are looking for the right baking technology for your bakery concept, there is just one address where you can expect products which unify the best of 45 years of experience, conceived and developed from the extensive knowledge of the process relationships. We're sure you know whom we're talking about. ■

#### Fair dates / Imprint

- *Fair dates*
- Gulfood
   Dubai / Dubai
   25.-28.02.2013
- INTERNORGA
   Hamburg/Germany
   08.–13.03.2013
- Sachsenback Dresden / Germany 13.–15.04.2013
- Modern Bakery Moscow/Russia 24.-27.04.2013
- ÖBA Wels / Austria 27.– 30.04.2013

- Bakery Congress Canada / Vancouver 05.-06.05.2013
- ANUGA Cologne / Germany 05.-09.10.2013
- IBIE
   Las Vegas / USA
   06.-09.10.2013
- Südback
   Stuttgart / Germany
   19.-22.10.2013

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